AFMSS

U.S. Department of the Interior
Bureau of Land Management

Application for Permit to Drill

APD Package Report

Date Printed:

APD ID:	Well Status:
APD Received Date:	Well Name:
Operator:	Well Number:

APD Package Report Contents

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Well Plat: 1 file(s)

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 1 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 1 file(s)
  -- Casing Design Assumptions and Worksheet(s): 3 file(s)
  -- Diagram of the equipment for the circulating system in accordance with Onshore Order #2: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 1 file(s)
  -- Other Facets: 2 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New Road Map: 1 file(s)
  -- Road Drainage Control Structures (DCS) attachment: 1 file(s)
  -- New road access plan attachment: 1 file(s)
  -- Access road engineering design attachment: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Aquifer documentation: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 1 file(s)
  -- Existing Vegetation at the well pad attachment: 1 file(s)
  -- Existing Vegetation at the road attachment: 1 file(s)
  -- Existing Vegetation Community at the pipeline attachment: 1 file(s)
  -- Existing Vegetation Community at other disturbances attachment: 1 file(s)

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-- Weed treatment plan attachment: 1 file(s)
-- Monitoring plan attachment: 1 file(s)
-- Pit closure attachment: 1 file(s)
-- Other SUPO Attachment: 1 file(s)

- PWD Report
- PWD Attachments
-- None

- Bond Report
- Bond Attachments
-- None

Form 3160-3
(October 2024)

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2027

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

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

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-039-31393

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

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

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

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

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	Name *(Printed/Typed)*	Date
Title		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	Office	

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 02/12/2026

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INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Released to Imaging: 3/23/2026 10:09:09 AM

Approval Date: 02/12/2026

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Additional Operator Remarks

Location of Well

0. SHL: LOT 11 / 2591 FSL / 1795 FWL / TWSP: 24N / RANGE: 7W / SECTION: 3 / LAT: 36.342087 / LONG: -107.566002 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 9 / 2380 FNL / 0 FEL / TWSP: 24N / RANGE: 7W / SECTION: 3 / LAT: 36.343449 / LONG: -107.554236 (TVD: 6082 feet, MD: 16408 feet)

PPP: LOT 10 / 2376 FNL / 2168 FEL / TWSP: 24N / RANGE: 7W / SECTION: 3 / LAT: 36.343449 / LONG: -107.561595 (TVD: 6082 feet, MD: 16408 feet)

BHL: LOT 11 / 2396 FNL / 2409 FWL / TWSP: 24N / RANGE: 7W / SECTION: 1 / LAT: 36.343443 / LONG: -107.528131 (TVD: 6082 feet, MD: 16408 feet)

BLM Point of Contact

Name: CHRISTOPHER P WENMAN
Title: Natural Resource Specialist
Phone: (505) 564-7727
Email: cwenman@blm.gov

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Conditions of Approval

Operator:	Hilcorp Energy Company
Wells:	Canyon Largo Unit 2407-03F 1H, 2H, 3H, 4H
Legal Location:	Sections 3, 8, 9 of Township 24 North, Range 7 West
NEPA Log Number:	DOI-BLM-NM-F010-2025-0034-EA
Inspection Date:	May 14, 2025
Lease Number:	NMNM078383

The following conditions of approval will apply to Canyon Largo 2407-03F Pad, Water Supply Well, Access Road, and Pipeline, and other associated facilities, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in an assessment or civil penalties pursuant to 43 CFR 3163.1 or 3163.2.

Take notice of COAs 35 through 39, the attached BLM Cultural Record of the Review, and the attached CRCF and BRCF for stipulations specific to the protection of cultural and biological resources.

1. **Disclaimers:** BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State, or other jurisdictional entities.

2. **Copy of Plans:** A complete copy of the APD package, including Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

3. **Surface Owner:** An agreement between the operator and fee land owner will take precedence over BLM surface stipulations unless (In reference to 43 CFR Part 3160) 1) BLM determines that the operator's actions will affect adjacent Federal or Indian surface, or 2) the operator does not maintain well area and lease premises in a workmanlike manner with due regard for safety, conservation and appearance, or 3) no such agreement exists, or 4) in the event of well abandonment, minimal Federal restoration requirements will be required. If surface owner changes any stipulations in the conditions of approval, the operator will contact the BLM authorized officer before implementing surface owner stipulation.

4. **Best Management Practices (BMPs):** Farmington Field Office established environmental Best Management Practices (BMPs) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMPs are found in the Gold Book, Fourth Edition-Revised 2007. Farmington Field Office

BMPs are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

Construction, Production, Facilities, Reclamation & Maintenance

5. **Construction & Reclamation Notification:** The operator or their contractor will contact the Bureau of Land Management, Farmington Field Office Environmental Protection Staff (505) 564-7600 or by email, at least 48 hours prior to any construction or reclamation on this project.

6. **Grazing Permittee Notification and Concerns:** The operator will notify the grazing lease operator(s) at least ten business days prior to beginning any construction activity to ensure there will be no conflicts between construction activities and livestock grazing operations. The operator is not obligated to cease or delay construction unless directed by the Authorized Officer (AO). Any range improvement (fences, pipelines, ponds, etc.) disturbed by construction activities will be repaired immediately following construction and will be repaired to the condition the improvement was in prior to disturbance. Cattle guards will be installed to replace any livestock fencing or gates removed for road construction.

7. **Cattleguards:** Cattle guards shall have grid identification marks welded into them indicating ownership, well name and number associated with the cattle guard, and foundation designs. Construction shall meet the American Association of State Highway and Transportation Officials (AASTHO) load rating H-20, although AASTHO U-80 rated grids shall be required where heavy loads, (exceeding H-20 loading) are anticipated. (See BLM standard drawings for cattle guards). Cattle guard grid width shall not be less than eight feet and length of not less than 14 feet. A wire gate with a minimum width of 16 feet will be provided on one side of the cattle guard.

8. **Cutting of Fences:** All cut fences are to be tied to H-braces prior to cutting. The opening will be protected as necessary during construction to prevent escape of livestock. A temporary closure will be installed on all cut fences the day the fence is cut. A sixteen-foot gate will be installed adjacent to the cattleguard. The holder shall minimize disturbance to existing fences and other improvements on public land. Holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them.

9. **Crossing Existing Improvements:** Prior to crossing, using or paralleling any improvement on public land, the operator shall contact the owner of the improvement to obtain mitigating measures to prevent damage to the improvements.

10. **Facility Layout:** Specific layout of facilities will be deferred until an onsite with BLM-FFO surface protection staff is conducted to determine the best location. DJR or their contractor will contact the Bureau of Land Management, Farmington Field Office, Environmental Protection Staff (505) 564-7600 or by email to schedule a facility layout

onsite. Production facilities will be placed to allow for maximum interim reclamation and revegetation of the well location. Production facilities will be clustered to maximize the opportunity for interim reclamation. Production, cathodic equipment, and meter runs associated with pipeline construction will be placed on location near tear drop road as not to interfere with reclaiming the cut and fill slopes to their proper ratio. Gas metering equipment will face to the interior of the well pad to provide easy access to equipment from the driving surface. Production equipment [including any facilities associated with pipeline construction] shall be placed on location as not to interfere with reclaiming the cut and fill slopes to their proper ratio. If equipment is found to interfere with the proper reclamation of the slope, the company will be required to move the equipment so proper re-contouring can occur. In instances where chain link fences are constructed around the location, the fence will be engineered and constructed so that the interim reclamation, seeded areas and vegetation are not compromised or degraded. Additionally, the enclosed area will not be utilized as a storage facility. Berms or firewalls will be constructed around all storage facilities sufficient in size to contain the storage capacity of tanks, or the combined capacity of tanks if a rupture could drain more than one tank. Berm walls will be compacted with appropriate equipment to assure proper construction. Containment dikes around oil/water facilities will not be constructed with topsoil. Gravel will not be unloaded or relocated into areas where interim reclamation will occur or onto areas where interim reclamation has been completed.

11. **Open Trenches:** No more than ½ mile of trench or the amount of trench that can be worked in one day will be open at any given time.

12. **Staking:** The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

13. **Weather:** No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts more than 6 inches deep, the soil shall be deemed too wet.

14. **Stockpile of Soil:** The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be free of brush and tree limbs, trunks, and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the reserve pit, cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

15. **Painting of Equipment:** Within 90 days of installation, all above ground structures not subject to safety requirements shall be painted by the Holder to blend with the natural color of the landscape. A reflective material may be used to reduce hazards that may occur when such structures are near roads. Otherwise, the paint use shall be a non-glare, non-reflective, non-chalking color of: 18-0617TPX (Covert Green).

16. **Storage Tanks:** All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted, or otherwise covered to protect migratory birds and other wildlife from access.

17. **New & Existing Access:** All sections of the proposed access road associated with this permit shall be sited, designed, constructed, and maintained utilizing standards, requirements, guidelines and instructions specified in BLM Manual 9113 "Roads", BLM Manual 9113-1" Roads Design Handbook", BLM Manual 9113-2 "Roads National Inventory and Condition Assessment Guidance & Instructions Handbook" and Surface Operations and Guidelines for Oil and Gas Exploration and Development "The Gold Book".

18. **Driving Surface Area:** All activities associated within the construction, operation, maintenance, and abandonment of the well location is limited to areas approved in the APD or ROW permit. During the production of the well, vehicular traffic is limited to the daily driving surface area established during interim reclamation construction operations. This area typically forms a keyhole or teardrop driving surface from which all production facilities may be serviced or inspected. A v-type ditch will be constructed on the outside of the driving surface to further define the driving surface and to deter vehicular traffic from entering onto the interim reclamation areas.

19. **Berms:** Berms or firewalls will be constructed around all storage facilities sufficient in size to contain the storage capacity of 110% of the largest tank, or 110% of the combined capacity of tanks if a rupture could drain more than one tank. Berm walls will be compacted with appropriate equipment to assure proper construction. Metal containment barriers, used for secondary containment, will be properly installed, per the manufacturer directions.

20. **Temporary Use Area Reclamation:** All temporary use areas indicated on the plats will be reclaimed at the interim reclamation stage to BLM Standards.

21. **Contouring of Cut and Fill Slopes:** The interim cut and fill slope grade shall be as close to the original contour as possible. To obtain this ratio, pits and slopes shall be back sloped into the pad during interim reclamation. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

22. **Maintenance:** In order to perform subsequent well operations, right-of-way (ROW) operations, or install new/additional equipment, it may be necessary to drive, park, and operate on restored, interim vegetation within the previously disturbed area. This is generally acceptable provided damage is promptly repaired and reclaimed following use. Where vehicular travel has occurred as a "convenience" and interim reclamation/vegetation has been compromised, immediate remediation of the affected areas is required. Additionally, where erosion has occurred and compromised the

reclamation of the well location, the affected area must be promptly remediated so that future erosion is prevented, and the landform is stabilized.

23. **Non-Permitted Disturbance:** Construction maintenance or any other activity outside the areas permitted by the APO will require additional approval and may require a new cultural survey and clearance.

24. **Layflat Lines:** Layflat lines used for development of the wells may be on the ground for a maximum of 6 months and shall be retrieved immediately following completion operations. If the layflat lines are needed for longer than 6 months a Sundry NOI shall be submitted to the BLM FFO for review and decision that includes a rationale for the time extension.

25. **"Hotwork" and Construction Affecting Fire Safety:** The holder or its contractors will notify the BLM of any fires and comply with all rules and regulations administered by the BLM concerning the use, prevention and suppression of fires on federal lands, including any fire prevention orders that may be in effect at the time of the permitted activity. The holder or its contractors may be held liable for the cost of fire suppression, stabilization and rehabilitation. In the event of a fire, personal safety will be the first priority of the holder or its contractors.
    The holder or its contractors shall:
    1. Operate all internal and external combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with a qualified spark arrester. Qualified spark arresters are maintained and not modified, and meet the Society of Automotive Engineers (SAE) Recommended Practices J335 or J350. Refer to 43 CFR §8343.1.
        a. *Refueling of any combustible engine equipment must be minimum of 3 meters away from any ignition source (open flame, smoking, etc.).*
    2. Maintain and clean all equipment regularly to remove flammable debris buildup and prevent fluid leaks that can lead to ignitions.
    3. Carry at least one shovel or wildland fire hand tool (combi, Pulaski, McLeod) per person working, minimum 5 gallons of water, and a fire extinguisher rated at a minimum as ABC - 10 pound on each piece of equipment and each vehicle.
    4. When conducting "hotwork" such as, but not limited to welding, grinding, cutting, spark-producing work with metal, work that creates hot material or slag; choose an area large enough to contain all hot material that is naturally free of all flammable vegetation or remove the flammable vegetation in a manner compliant with the permitted activity. If adequate clearance cannot be made, wet an area large enough to contain all hot material prior to the activity and periodically throughout the activity to reduce the risk of wildfire ignition. Regardless of clearance, maintain readiness to respond to an ignition at all times. In addition, keep one hand tool per person and at least one fire extinguisher ready, minimum, as specified earlier (#3) during this activity.
    5. Keep apprised of current and forecasted weather at https://www.weather.gov/abq/forecasts-fireweather-links and fire conditions at www.wfas.net and take additional fire precautions when fire danger is rated High

or greater. Red Flag Warnings are issued by the National Weather Service when fire conditions are most dangerous, and ignitions escape control quickly. Extra precautions are required during these warnings such as additional water, designate a fire watch/patrol and tools. If work is being conducted in an area that is not clear of vegetation within 50 feet of work area; then, when fire danger is rated High or greater and 1. There is a predicted Red Flag warning for your area or 2. If winds are predicted to be greater than 10 mph, stop all hotwork activities for the day at 10 am.

6. In the event of an ignition, initiate fire suppression actions in the work area to prevent fire spread to or on federally administered lands. If a fire spreads beyond the capability of workers with the stipulated tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.
7. Call **911** or the **Taos Interagency Fire Dispatch Center (575-758-6208)** immediately of the location and status of any fire.

AND

Notify the respective BLM field office for which the permit or contract was issued immediately of the incident.
Farmington Field Office at 505-564-7600
Taos Field Office at 575-758-8851

26. **Noxious Weeds:** Inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly check for any changes. Invasive species may or may not be listed as a noxious weed but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.)* and field bindweed (*Convolvulus arvensis*).

Russian Knapweed (*Centaurea repens*)	Musk Thistle (*Carduss nutans*)
Bull Thistle (*Cirsium vulgare*)	Canada Thistle (*Cirsium arvense*)
Scotch Thistle (*Onopordum acanthium)*	Hoary Cress (*Cardaria draba*)
Perennial Pepperweed (*Lepdium latiofolfium*)	Halogeton (*Halogeton glomeratus*)
Spotted Knapweed (*Centaurea maculosa*)	Dalmation Toadflax (*Linaria genistifolia*)
Yellow Toadflax (*Linaria vulgaris*)	Camelthorn (*Alhagi pseudalhagi*)
African Rue (*Penganum harmala*)	Salt Cedar (*Tamarix spp.*)
Diffuse Knapweed (*Centaurea diffusa*)	Leafy Spurge (*Euphorbia esula*)

a. Identified weeds will be treated prior to new surface disturbance if determined by the FFO Noxious Weed Coordinator. A Pesticide Use Proposal (PUP) must be submitted to and approved by the FFO Noxious Weed Coordinator prior to application of

pesticide. The FFO Noxious Weeds Coordinator (505-564-7600) can provide assistance in the development of the PUP.

b. Vehicles and equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
c. Construction equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
d. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the FFO Noxious Weed Coordinator.
e. The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Coordinator shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a Pesticide Use Proposal (PUP). The FFO Coordinator can provide assistance developing the Weed Management Plan and/or the Pesticide Use Proposal.
f. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. (Company Name)'s weed-control contractor would contact the BLM-FFO prior to using these chemicals.
g. Noxious/invasive weed treatments must be reported to the FFO Noxious Weed Coordinator. A Pesticide Application Record (PAR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

27. **Bare ground vegetation trim-out:** If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design included in their Surface Use Plan of Operations (SUPO). The design will address vegetation safety concerns of the operator and BLM while minimizing impacts to interim reclamation efforts. The design must include what structures to be treated and buffer distances of trim-out. Pesticide use for vegetation control around anchor structures is not approved. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (i.e., well heads, fences, tanks). Additional distance/areas may be requested and must be approved by the FFO authorized officer. The additional information below must also be provided to the FFO:
    a. Pesticide use for trim out will require a Pesticide Use Proposal (PUP). A PUP is required ***prior*** to any treatment and must be approved by the FFO Noxious Weed Coordinator. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. DJR's weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.

b. A Pesticide Use Report (PUR) or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

28. **Paleontology:** If unanticipated paleontological resources are discovered during ground-disturbing activities, all ground-disturbing activity will immediately cease within 100 feet in all directions of the discovery. The discovery will be immediately reported to the appropriate construction personnel on site (e.g., construction superintendent/foreman, right-of-way inspectors) and other appropriate personnel involved with the project. The on-site personnel will immediately report the discovery to the Bureau of Land Management Paleontology Coordinator and a permitted paleontologist. The agency will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 72 hours after being notified. All ground-disturbing activities within 100 feet of the discovery will not resume until the agency has agreed that activities may resume, within a practicable time frame to allow impacts to the resource to be mitigated or avoided. A full-time monitor will be present for further ground-disturbing activities until it is determined that the likelihood of another discovery is negligible. The proponent will be responsible for the cost of evaluation and any mitigation measures required to protect the paleontological resource. The proponent may not be required to suspend all operations if activities can be adjusted to avoid further impacts to a discovered locality or be continued elsewhere.

Wildlife Resources

29. **Migratory Bird:** The BLM/FFO migratory bird policy requires a bird nest survey between May 15 - July 31 for any projects that would remove 4.0 or more acres or vegetation. The proposed project is estimated to disturb more than four acres of vegetation, a survey will be required if construction occurs within the specified timeframe. The operator would equip all open-top pits, tanks, ponds, and pipes containing hydrocarbons with nets, screens, or other avian exclusion devices to prevent injury or death to migratory birds (NTL-FFO/AUFO-2004-01, IM No. WO-2013-033, Onshore Order #7 III E-3). Exemptions to this stipulation would be made by the BLM/FFO Authorized Officer.

30. **Wintering wildlife closure:** Hilcorp has committed to a December 1 – March 31 restriction on construction, drilling, completion, and workover activity to protect an identified mule deer migration corridor.

31. **Threatened, Endangered or Sensitive Species:** If, in operations the operator/holder discovers any Threatened, Endangered, or Sensitive species, work in the vicinity of the discovery will be suspended and the discovery promptly reported to the BLM-FFO T&E specialist at (505) 564-7600. The BLM-FFO will then specify what action is to be taken. Failure to notify the BLM-FFO about a discovery may result in civil or criminal penalties in accordance with The Endangered Species Act (as amended).

Soil, Air, Water

32. **Land Farming:** No excavation, remediation or closure activities will be authorized without prior approval, on any federal or Indian mineral estate, federal surface, or federal ROW. A Sundry Notice (DOI, BLM Form 3160-5) must be submitted with an explanation of the remediation or closure plan for on-lease actions.

33. **Emission Control Standard:** Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau's guidance.

34. **Waste Disposal:** All fluids (i.e., scrubber cleaners) used during washing of production equipment, including compressors, will be properly disposed of to avoid ground contamination, or hazard to livestock or wildlife.

Cultural Resources

35. **Non-Permitted Disturbance:** Construction, construction maintenance or any other activity outside the areas permitted by the Sundry Notice will require additional approval and may require a new cultural survey and clearance.

36. **Employee Education:** All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

37. **Discovery of Cultural Resources during Monitoring:** If monitoring confirms the presence of previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the BLM Field Manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed.

38. **Discovery of Cultural Resources in the Absence of Monitoring:** If, in its operations, operator/holder discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery the operator will suspend work, and the discovery will be promptly reported to BLM Field Manager. The same procedures to remedy the discovery in above section will be adhered to. Failure to notify the BLM about a discovery may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended, and other applicable laws.

39. **Damage to Sites:** If, in its operations, operator/holder damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding "discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare a BLM approved damage assessment and/or data recovery plan. The operator/holder agrees at his/her expense to implement a mitigation that the agency finds appropriate given the significance of the site, which the agency determines in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property. This mitigation may entail execution of the data recovery plan by a permitted cultural resource consultant and/or alternative mitigation. Damage to cultural resources may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.

See attached Cultural Record of Review for additional cultural stipulations.

BLM Report Number: 2025(IV)038F
USGS Map: Crow Mesa East, NM
Activity Code: 1310
NMCRIS No: 158912

CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT
FARMINGTON FIELD OFFICE

1. Description of Report/Project:

Project Name: Canyon Largo Unit 2407-03F #001H Well Pad, Pipeline, Access Road, and County Road 503 Improvement Project.
Project Sponsor: Hilcorp Energy.
Arch. Firm & Report No.: SWCA Environmental; SWCA Report No. SWCA: 25-636
Location: T24N R7W Sections 3, 4, 8, & 9
Well Footages: 2,591' FSL; 1,795' FWL
Split Estate: No
Project Dimensions: 600 ft x 400 ft – well pad. (700 ft x 500 ft w/ a 5 ft construction zone)
2,700 ft x 30 ft – access road
1,049 ft x 40 ft – pipeline
(5X) 50 ft x 50 ft – low water crossings
82 ft x 36 ft – low water crossing
90 ft x 70 ft – culvert
60 ft x 40 ft - culvert
Sites Located: LA145318/ NM-210-43918 (NRHP: Eligible; Update; Avoided).
LA207166 / NM-210-50019 (NRHP: Eligible; Avoided; No Further Work)
LA207167/ NM-210-50020 (NRHP: Not Determined; Avoided; No Further Work).
Determination: No Adverse Effect to Historic Properties.

2. Field Check: No
3. Cultural ACEC: No.
4. Sensitive Cultural Area: No.
5. Recommendation: *PROCEE TH ACT O* X *ST P LAT O S ATTACHE* : X
6. Reviewer /Archaeologist: Kim Adams **Date**: 9/9/2025

Report Summary	BLM	Other	Total
Acres Inventoried	38.91	0.00	38.91
Sites Recorded	2	0	2
Prev. Recorded Sites	1	0	1
Sites Avoided	3	0	3
Sites Treated	0	0	0

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.
Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.215.4966 or kadams@blm.gov.

1

CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2025(IV)038F

Project Name: Canyon Largo Unit 2407-03F #001H Well Pad, Pipeline, Access Road, and County Road 503 Improvement Project.
Project Sponsor: Hilcorp Energy.

1. SITE PROTECTION AND EMPLOYEE EDUCATION:
All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

2. ARCHAEOLOGICAL MONITORING IS REQUIRED:
A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.
The monitor will:

Ensure that the site protection barrier is located as indicated on the attached map in the vicinity of LA145318.

Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.

Observe all construction within 100'of LA145318.

Ensure that the road that is bisecting LA145318 is permanently closed. Earthen berms and road closure signage will be placed as indicated on the attached map.

Soil will be placed on top of the current road surface in order to aid in the reclamation of the area. During this work, no new disturbance or ground penetration may occur in this area. Once the soil is brought in this area will be reseeded. The monitor will observe this work in order to ensure that the site is not adversely impacted by these activities.

Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

3. SITE PROTECTION BARRIER:

The temporary site protection barriers will be erected prior to the start of construction. The barriers will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barriers will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.

The barrier will be placed as indicated on the attached maps.

There will be no surface-disturbing activities or vehicle traffic past the barrier.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.215.4966 or kadams@blm.gov.

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2025(IV)038F

Project Name: Canyon Largo Unit 2407-03F #001H Well Pad, Pipeline, Access Road, and County Road 503 Improvement Project.
Project Sponsor: Hilcorp Energy. BARRIER AND ROAD CLOSURE SIGNAGE -

MONITOR ZONE = TEMPORARY FENCE =

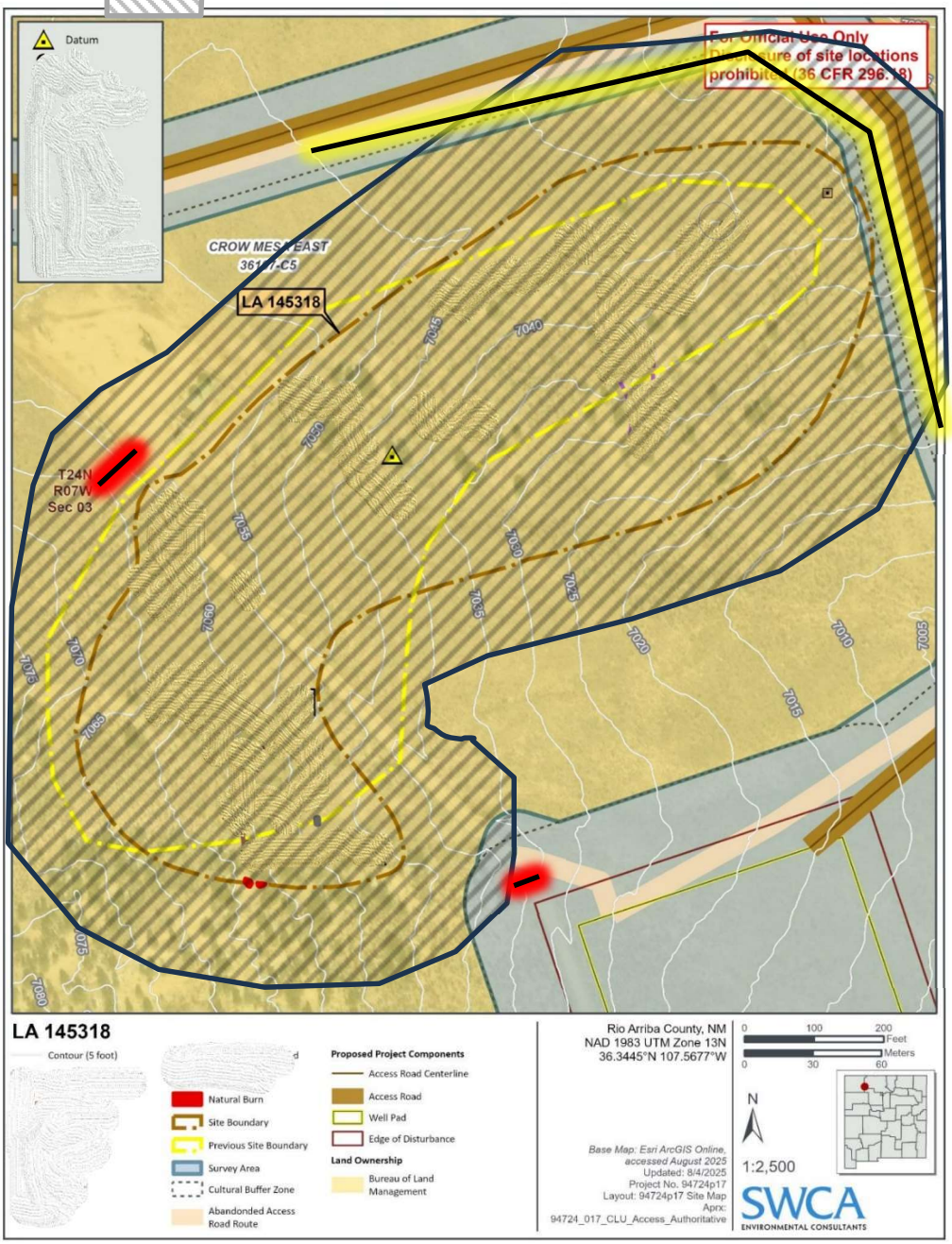


Figure 5-4. LA 145318 site map.

3

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Blvd, Suite A
Farmington, New Mexico 87402

In Reply Refer To:
3162.3-1(NMF0110)

* HILCORP ENERGY COMPANY

#1H CANYON LARGO UNIT 2407 03F

Lease: NMSF 0078922 Agreement: NMNM 078383X
SH: Section 3, T. 24 N., R. 7 W.
Rio Arriba County, New Mexico
BH: Section 1, T.24 N., R. 7 W.
Rio Arriba County, New Mexico
***Above Data Required on Well Sign**

GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

A. ☒ Note all surface/drilling conditions of approval attached.

B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated

C. ☐ Test the surface casing to a minimum of _____ psi for 30 minutes.

D. ☐ Test all casing strings below the surface casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield burst) for a minimum of 30 minutes.

E. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, New Mexico State Office, Reservoir Management Group, 301 Dinosaur Trail, Santa Fe, New Mexico 87508.
The effective date of the agreement must be **prior** to any sales.

F. ☐ The use of co-flex hose is authorized contingent upon the following:
1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

I. GENERAL

A. Full compliance with all applicable laws and regulations, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.

B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).

C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.

D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report is filed. The report should be on 8-1/2 x 11 inch paper, and each page should identify the well by; operator's name, well number, location and lease number.

E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).

F. BOP equipment (except the annular preventer) shall be tested utilizing a test plug to full working pressure for 10 minutes. No bleed-off of pressure is acceptable. (See 43 CFR 3172.6(b)(9)(ii)).

G. The operator shall have sufficient weighting materials and lost circulation materials on location in the event of a pressure kick or in the event of lost circulation. (See 43 CFR 3172.8(a)).

H. The flare line(s) discharge shall be located not less than 100 feet from the well head, having straight lines unless turns are targeted with running tees, and shall be positioned downwind of the prevailing wind direction and shall be anchored. The flare system shall have an effective method for ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and to maintain a continuous flare. (See 43 CFR 3172.8(b)(7)).

I. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work, casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a Notice of Intent sundry within three business days. **Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to Virgil Lucero at 505-793-1836.**

J. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.

K. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all times, unless the well is secured with blowout preventers or cement plugs.

L. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

M. **Commingling**: No production (oil, gas, and water) from the subject well should start until Sundry Notices (if necessary) granting variances from applicable regulations as related to commingling and off-lease measurement are approved by this office. (See 43 CFR 3173.14)

II. REPORTING REQUIREMENTS

A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.

B. The following reports shall be filed with the BLM-Authorized Officer online through AFMSS 2 within 30 days after the work is completed.

1. Provide complete information concerning.

   a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.

   b. Intervals tested, perforated (include size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.

   c. Subsequent Report of Abandonment, show the way the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.

2. Well Completion Report will be submitted with 30 days after well has been completed.

   a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.

3. Submit a cement evaluation log if cement is not circulated to surface.

C. Production Startup Notification is required no later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site or resumes production in the case of a well which has been off production for more than 90 days. The operator shall notify the Authorized Officer by letter or Sundry Notice, Form 3160-5, or orally to be followed by a letter or Sundry Notice, of the date on which such production has begun or resumed. CFR 43 3162.4-1(c).

III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results, 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results, and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of * Days, 20 MMCF following its (completion)(recompletion), or flowback has been routed to the production separator, whichever first occurs, without the prior, written approval of the authorized officer in accordance with 43 CFR 3179.81. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the beginning of flowback following completion or recompletion.

V. SAFETY

A. All rig heating stoves are to be of the explosion-proof type.

B. Rig safety lines are to be installed.

C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

VI. CHANGE OF PLANS OR ABANDONMENT

A. Any changes of plans required to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.I.

B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.I. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.

C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

Approval Date: 02/12/2026

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report
02/12/2026

Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: CHERYLENE WESTON **Signed on:** 02/03/2026

Title: Operations/Regulatory Tech - Sr

Street Address: 1111 TRAVIS STREET

City: HOUSTON **State:** TX **Zip:** 77002

Phone: (713)289-2615

Email address: CWESTON@HILCORP.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data
02/12/2026

APD ID: 10400095286
Submission Date: 10/17/2023
Operator Name: HILCORP ENERGY COMPANY
Well Name: CANYON LARGO UNIT 2407 03F
Well Number: 1H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400095286
Tie to previous NOS? N
Submission Date: 10/17/2023
BLM Office: Farmington
User: CHERYLENE WESTON
Title: Operations/Regulatory Tech - Sr
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMSF078922
Lease Acres:
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? YES
Federal or Indian agreement: FEDERAL
Agreement number: NMNM78383X
Agreement name: CANYON LARGO UNIT
Keep application confidential? Y
Permitting Agent? NO
APD Operator: HILCORP ENERGY COMPANY
Operator letter of

Operator Info

Operator Organization Name: HILCORP ENERGY COMPANY
Operator Address: 1111 TRAVIS ST
Zip: 77002
Operator PO Box:
Operator City: HOUSTON
State: TX
Operator Phone: (713)209-2400
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: CANYON LARGO UNIT 2407 03F
Well Number: 1H
Field/Pool or Exploratory? Field and Pool
Field Name: DEVILS FORK GALLUP
Pool Name: DEVILS FORK GALLUP

CONFIDENTIAL

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** N **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** Canyon Largo Unit 2407-03F **Number:** 1H

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: OTHER

Describe sub-type: New Drill

Distance to town: 58 Miles **Distance to nearest well:** 952 FT **Distance to lease line:** 1795 FT

Reservoir well spacing assigned acres Measurement: 2003.2 Acres

Well plat: C102_SIGNED_20250905104410.pdf

Well work start Date: 04/01/2026 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	2591	FSL	1795	FWL	24N	7W	3	Lot 11	36.342087	-107.566002	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMSF078922	7011			Y
KOP Leg #1	2591	FSL	1795	FWL	24N	7W	3	Lot 11	36.342087	-107.566002	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMSF078922	929	16408	6082	Y
PPP Leg #1-1	2376	FNL	2168	FEL	24N	7W	3	Lot 10	36.343449	-107.561595	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMSF078922	929	16408	6082	Y

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-2	2380	FNL	0	FEL	24N	7W	3	Lot 9	36.343449	-107.554236	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMSF078922	929	16408	6082	Y
EXIT Leg #1	2396	FNL	2409	FWL	24N	07W	1	Lot 11	36.343443	-107.528131	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMSF078922	929	16408	6082	Y
BHL Leg #1	2396	FNL	2409	FWL	24N	7W	1	Lot 11	36.343443	-107.528131	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMSF078922	929	16408	6082	Y

CONFIDENTIAL

C-102

Submit Electronically
Via OCD Permitting

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

Revised July 9, 2024

Submittal Type
- ☒ Initial Submittal
- ☐ Amended Report
- ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name
	17610	DEVILS FORK GALLUP (ASSOCIATED)

Property Code	Property Name	Well Number
	CANYON LARGO UNIT 2407-03F	001H

OGRID No.	Operator Name	Ground Level Elevation
372171	HILCORP ENERGY COMPANY	7011'

Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal
Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
K	3	24N	7W		2591' SOUTH	1795' WEST	36.342087 °N	-107.566002 °W	RIO ARRIBA

Bottom Hole Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
F	1	24N	7W	11	2396' NORTH	2409' WEST	36.343443 °N	-107.528131 °W	RIO ARRIBA

Dedicated Acres	Penetrated Spacing Unit	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit	Consolidation Code
2003.20	Entire Section 1, T24N, R7W Entire Section 2, T24N, R7W Entire Section 3, T24N, R7W	Defining		☐ Yes ☒ No	Unit

Order Numbers: R-327

Well setbacks are under Common Ownership: ☒ Yes ☐ No

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
K	3	24N	7W		2591' SOUTH	1795' WEST	36.342087 °N	-107.566002 °W	RIO ARRIBA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
G	3	24N	7W	10	2376' NORTH	2168' EAST	36.343449 °N	-107.561595 °W	RIO ARRIBA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
F	1	24N	7W	11	2396' NORTH	2309' WEST	36.343443 °N	-107.528471 °W	RIO ARRIBA

Unitized Area or Area of Uniform Interest	Spacing Unit Type	Ground Floor Elevation
CANYON LARGO UNIT	☒ Horizontal ☐ Vertical ☐ Directional	7011'

OPERATOR CERTIFICATION

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

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Dawn Nash-Deal — Signature

08/05/2025 — Date

Dawn Nash-Deal — Printed Name

Dnash@hilcorp.com — E-mail Address

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.

JASON C. EDWARDS
NEW MEXICO
15269
8/4/2025
REGISTERED PROFESSIONAL SURVEYOR

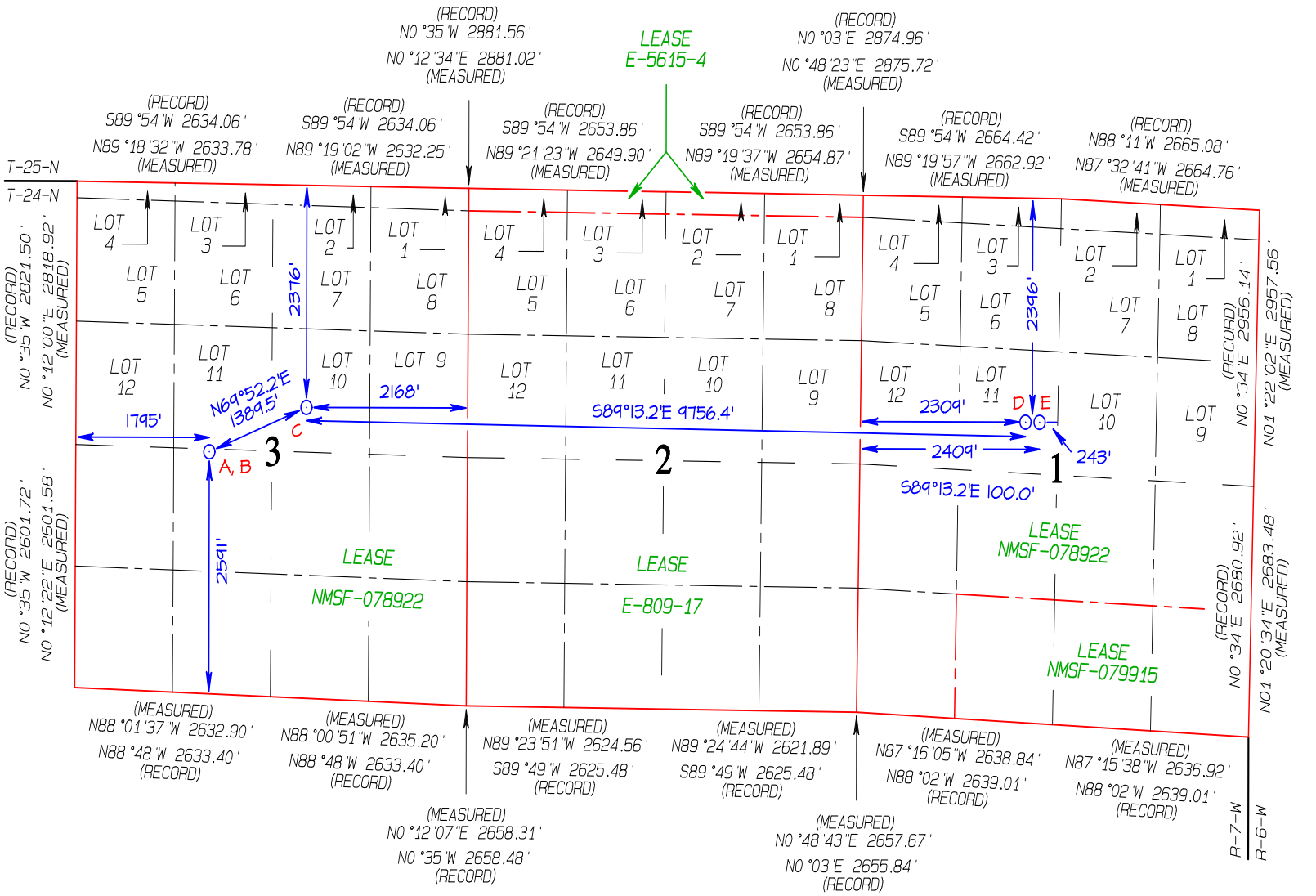
JASON C. EDWARDS

Signature and Seal of Professional Surveyor

Certificate Number	Date of Survey
15269	JUNE 1, 2019

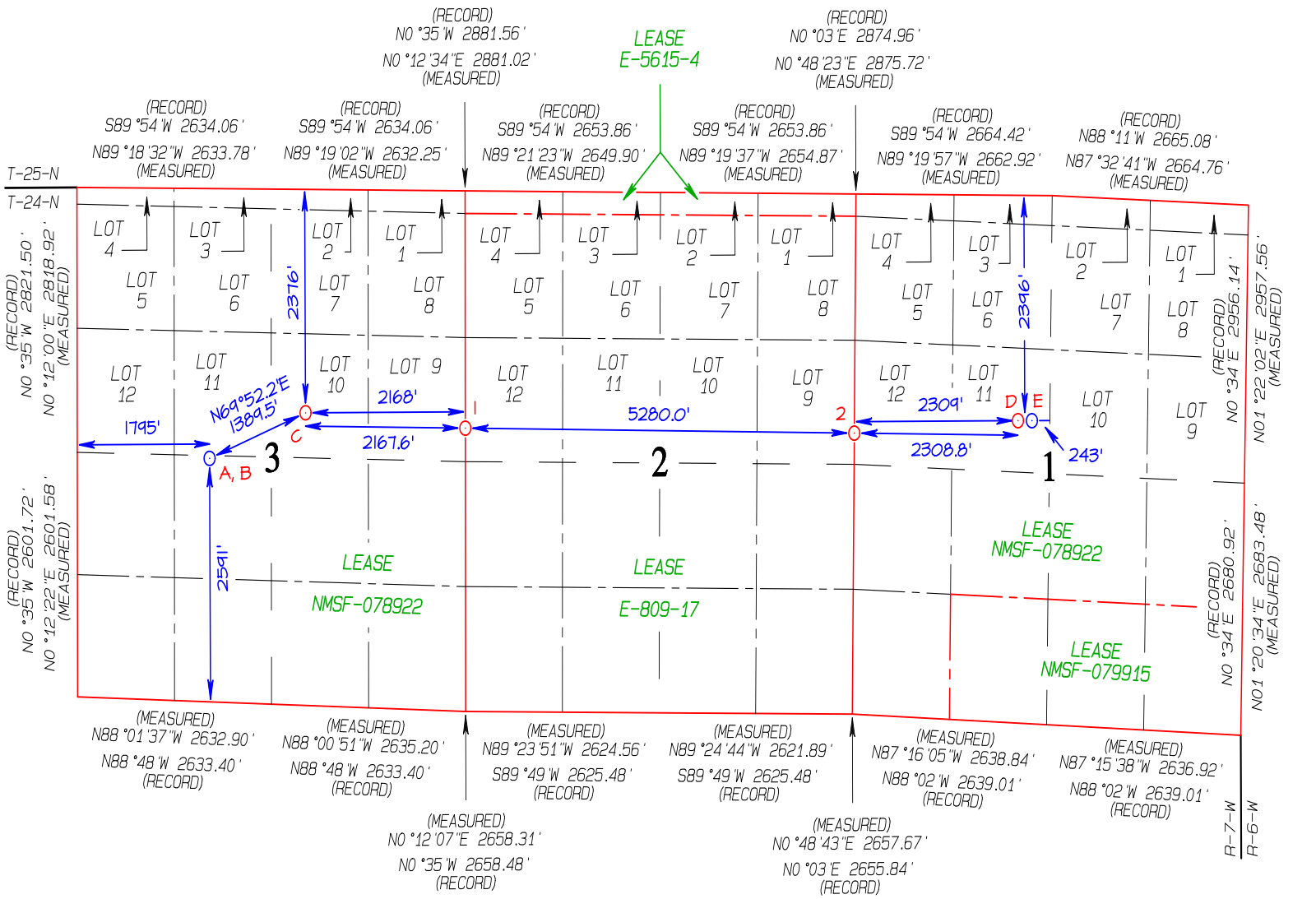
Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

CANYON LARGO UNIT 2407-03F #001H



SURFACE LOCATION (A)	KICK OFF POINT (B)	FIRST TAKE POINT (C)	LAST TAKE POINT (D)	BOTTOM HOLE LOCATION (E)
2591' FSL 1795' FWL	2591' FSL 1795' FWL	2376' FNL 2168' FEL	2396' FNL 2309' FWL	2396' FNL 2409' FWL
SECTION 3, T24N, R7W	SECTION 3, T24N, R7W	SECTION 3, T24N, R7W	SECTION 1, T24N, R7W	SECTION 1, T24N, R7W
LAT 36.342075 °N	LAT 36.342075 °N	LAT 36.343437 °N	LAT 36.343432 °N	LAT 36.343431 °N
LONG -107.565394 °W	LONG -107.565394 °W	LONG -107.560988 °W	LONG -107.527865 °W	LONG -107.527526 °W
DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927
LAT 36.342087 °N	LAT 36.342087 °N	LAT 36.343449 °N	LAT 36.343443 °N	LAT 36.343443 °N
LONG -107.566002 °W	LONG -107.566002 °W	LONG -107.561595 °W	LONG -107.528471 °W	LONG -107.528131 °W
DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983

CANYON LARGO UNIT 2407-03F #001H



SURFACE LOCATION (A)	FIRST TAKE POINT (C)	LEASE X-ING (1)	LEASE X-ING (2)	LAST TAKE POINT (D)	BOTTOM HOLE LOCATION (E)
2591' FSL 1795' FWL	2376' FNL 2168' FEL	2380' FNL 0' FEL	2391' FNL 0' FEL	2396' FNL 2309' FWL	2396' FNL 2409' FWL
SECTION 3, T24N, R7W	SECTION 3, T24N, R7W	SECTION 3, T24N, R7W	SECTION 2, T24N, R7W	SECTION 1, T24N, R7W	SECTION 1, T24N, R7W
LAT 36.342075 °N	LAT 36.343437 °N	LAT 36.343437 °N	LAT 36.343434 °N	LAT 36.343432 °N	LAT 36.343431 °N
LONG -107.565394 °W	LONG -107.560988 °W	LONG -107.553629 °W	LONG -107.535704 °W	LONG -107.527865 °W	LONG -107.527526 °W
DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927	DATUM: NAD1927
LAT 36.342087 °N	LAT 36.343449 °N	LAT 36.343449 °N	LAT 36.343446 °N	LAT 36.343443 °N	LAT 36.343443 °N
LONG -107.566002 °W	LONG -107.561595 °W	LONG -107.554236 °W	LONG -107.536310 °W	LONG -107.528471 °W	LONG -107.528131 °W
DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983	DATUM: NAD1983

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report
02/12/2026

APD ID: 10400095286
Submission Date: 10/17/2023
Operator Name: HILCORP ENERGY COMPANY
Well Name: CANYON LARGO UNIT 2407 03F
Well Number: 1H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
17430341	SAN JOSE	0	0	0	SANDSTONE, SHALE, SILTSTONE	USEABLE WATER	N
17430342	OJO ALAMAO	-1905	1905	1905	SANDSTONE, SHALE	USEABLE WATER	N
17430343	KIRTLAND	-2035	2035	2035	SANDSTONE, SHALE	USEABLE WATER	N
17430344	FRUITLAND	-2191	2191	2191	COAL, SANDSTONE, SHALE	NATURAL GAS	N
17430345	PICTURED CLIFFS	-2552	2552	2552	SANDSTONE, SHALE	USEABLE WATER	N
17430346	LEWIS SHALE	-2646	2646	2646	SHALE	NONE	N
17430347	CLIFFHOUSE	-4064	4064	4105	SANDSTONE	NATURAL GAS	N
17430348	MENEFEE	-4128	4128	4173	COAL, SANDSTONE, SHALE	NATURAL GAS	N
17430349	POINT LOOKOUT	-4841	4841	4927	SANDSTONE, SHALE	NATURAL GAS	N
17430350	GALLUP	-5046	5046	5143	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 5000

Equipment: All required equipment per regulations

Requesting Variance? NO

Variance request:

Testing Procedure: All required equipment per regulations

Choke Diagram Attachment:

See_attached_Technical_Plan_20231016144222.pdf

BOP Diagram Attachment:

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

See_attached_Technical_Plan_20231016144222.pdf

See_attached_Technical_Plan_20231016144304.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	350	0	350	7011	6661	350	J-55	54.5	BUTT	8.8	16.7	DRY	51.8	DRY	55.2
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5362	0	5250	7011	1761	5362	L-80	40	BUTT	1.3	2	DRY	5.1	DRY	5.3
3	PRODUCTION	8.5	5.5	NEW	API	N	0	16408	0	5986	7011	1025	16408	P-110	20	BUTT	3.5	3.4	DRY	2.4	DRY	2.1

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

See_APD_Technical_Plan_20231017131247.pdf

CONFIDENTIAL

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Casing Attachments

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

See_attached_Technical_Plan_20231017135435.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

See_attached_Technical_Plan_20231017135453.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	350	352	1.38	14.6	486	100	Class G Cement	1% CaCl, 0.25 lb/sk Cello Flake, 0.2% CD-2
INTERMEDIATE	Lead		0	5362	304	5.12	9.5	1556	25	ASTM Type IL	FL-24 (0.5%), FL-66 (0.5%), IntegraGuard GW-86 (0.2%), IntegraSeal PHENO (2.0 lb/sk), IntegraSeal POLI (0.25 lb/sk), LW-5E

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											(50.0%), R-3 (0.4%), S-8 Silica Flour (35.0%), XCem-311 (0.3%)
INTERMEDIATE	Tail		4000	5362	248	2.15	12.5	533	25	ASTM Type IL	A-10 (5.0%), A-2 (1.0 lb/sk), IntegraSeal PHENO (1.0 lb/sk), IntegraSeal POLI (0.5 lb/sk), R-7C (0.3%), StaticFree (0.01%), XCem-311 (0.3%)
PRODUCTION	Lead		4000	16408	354	1.57	12	556	25	ASTM Type IL	AEXT-1012 (60.0%), FL-66 (0.3%), GW-86 (0.2%), IntegraSeal PHENO (2.0 lb/sk), IntegraSeal Poli (0.25 lb/sk), KCl (3.0%), R-3 (0.55%), STATIC FREE (0.01 lb/sk), XCem-311 (0.3%)
PRODUCTION	Tail		6100	16408	1941	1.48	14	2873	25	Class G	Fly Ash (20.0%), Bentonite (4.0%), FL-66 (0.3%), GW-86 (0.1%), IntegraSeal PHENO (1.0 lb/sk), IntegraSeal POLI (0.25 lb/sk), R-3 (0.25%), StaticFree (0.01 lb/sk)

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? YES

Description of the equipment for the circulating system in accordance with 43 CFR 3172: Air assist will be used if returns are lost with drilling fluids

Diagram of the equipment for the circulating system in accordance with 43 CFR 3172:

Aerated_Fluid_Layout_20250905104540.pdf

Describe what will be on location to control well or mitigate other conditions: 400 BBL of 10 LB Mud in addition to standard

Describe the mud monitoring system utilized: Pason PVT or equivalent

Circulating Medium Table

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
5362	16408	OIL-BASED MUD	10	12							
0	350	OTHER : Water/Gel	8.3	9.2							
350	5362	LSND/GEL	8.4	10							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

No production test planned

List of open and cased hole logs run in the well:

MUD LOG/GEOLOGICAL LITHOLOGY LOG,MEASUREMENT WHILE DRILLING,GAMMA RAY LOG,CEMENT BOND LOG,DIRECTIONAL SURVEY,

Coring operation description for the well:

No coring operations

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2200 **Anticipated Surface Pressure:** 861

Anticipated Bottom Hole Temperature(F): 150

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations

CONFIDENTIAL

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Canyon_Largo_2407_03F_1H_Plan_3_20250905104632.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Canyon_Largo_2407_03F_1H_Plan_3_AC_Report_20250905104647.pdf

Canyon_Largo_Unit_2407_03F__1H__Drilling_Technical_Plan__Rev_1_20250905104700.pdf

Other Variance request(s)?: N

Other Variance attachment:

CONFIDENTIAL

SEE ATTACHED TECHNICAL PLAN

SEE ATTACHED TECHNICAL PLAN

SEE ATTACHED TECHNICAL PLAN

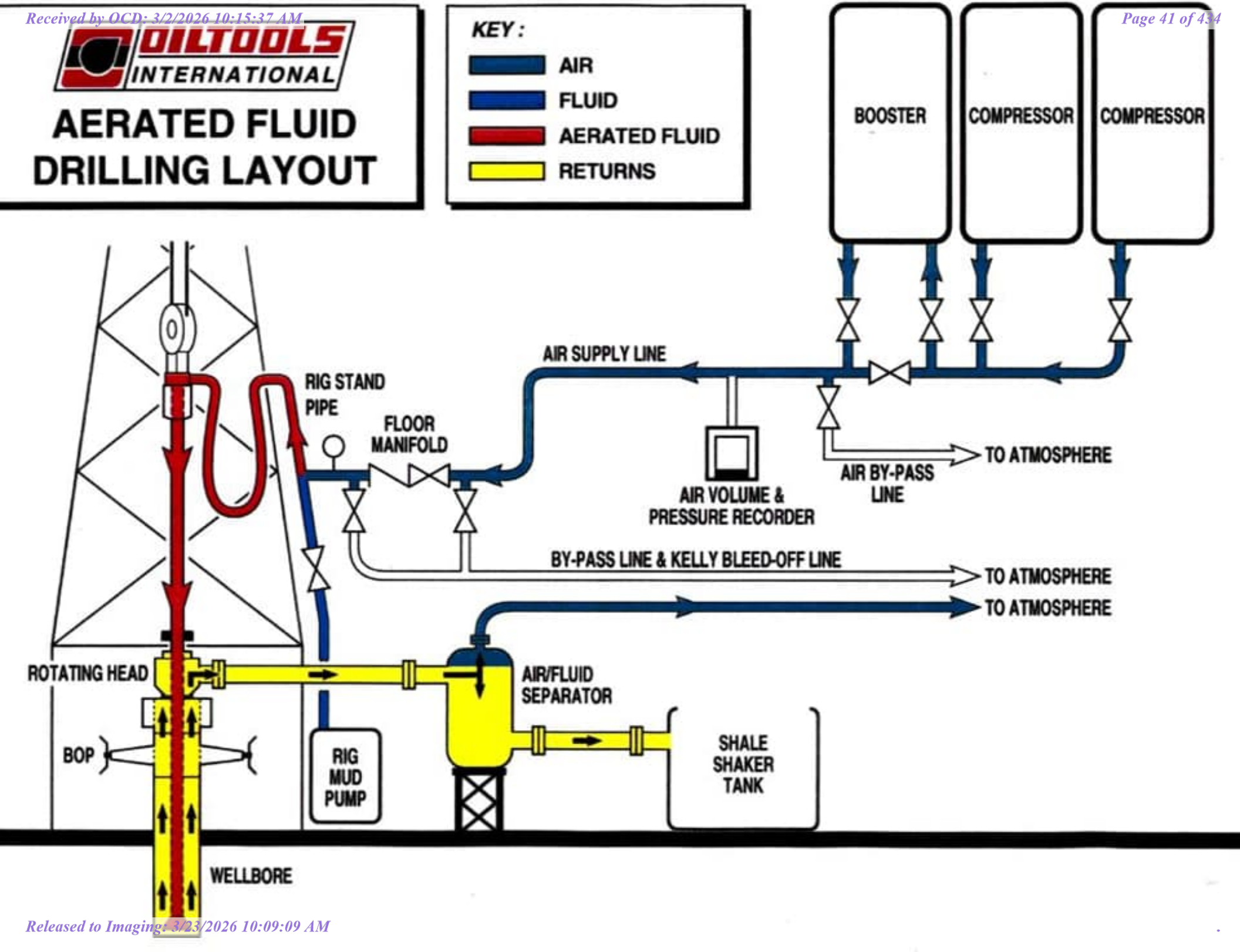
SEE ATTACHED TECHNICAL PLAN

SEE ATTACHED APD TECHNICAL PLAN

Received by OCD: 3/2/2026 10:15:37 AM

OILTOOLS INTERNATIONAL

AERATED FLUID DRILLING LAYOUT



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Received by OCD: 3/23/2026 10:15:37 AM

Hilcorp Energy Company

Company: Hilcorp Energy Corp.
Project: Rio Arriba, NM NAD27
Site: Canyon Largo 2407-03F
Well: Canyon Largo 2407-03F 1H
Wellbore: OH
Design: Plan #3

PROJECT DETAILS: Rio Arriba, 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

Scientific Drilling

Azimuths to True North
Magnetic North: 8.
Magnetic Field
Strength: 49511.7
Dip Angle: 62.
Date: 4/19/2
Model: HD

WELL DETAILS: Canyon Largo 2407-03F 1H

GL 7010' @ 7010.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	1943868.08	578911.37	36.3420750	-107.5653940	G

Plan: Plan #3 (Canyon Largo 2407-03F 1H/OH)

Created By: Janie Collins Date: 8:42, November 14 2019

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LU 1H LP JC	6082.00	495.95	1297.70	1944367.63	580207.69	36.3434373	-107.5609877
LU 1H BHL JC	5986.00	495.95	11152.59	1944394.94	590062.54	36.3434314	-107.5275256

SECTION DETAILS

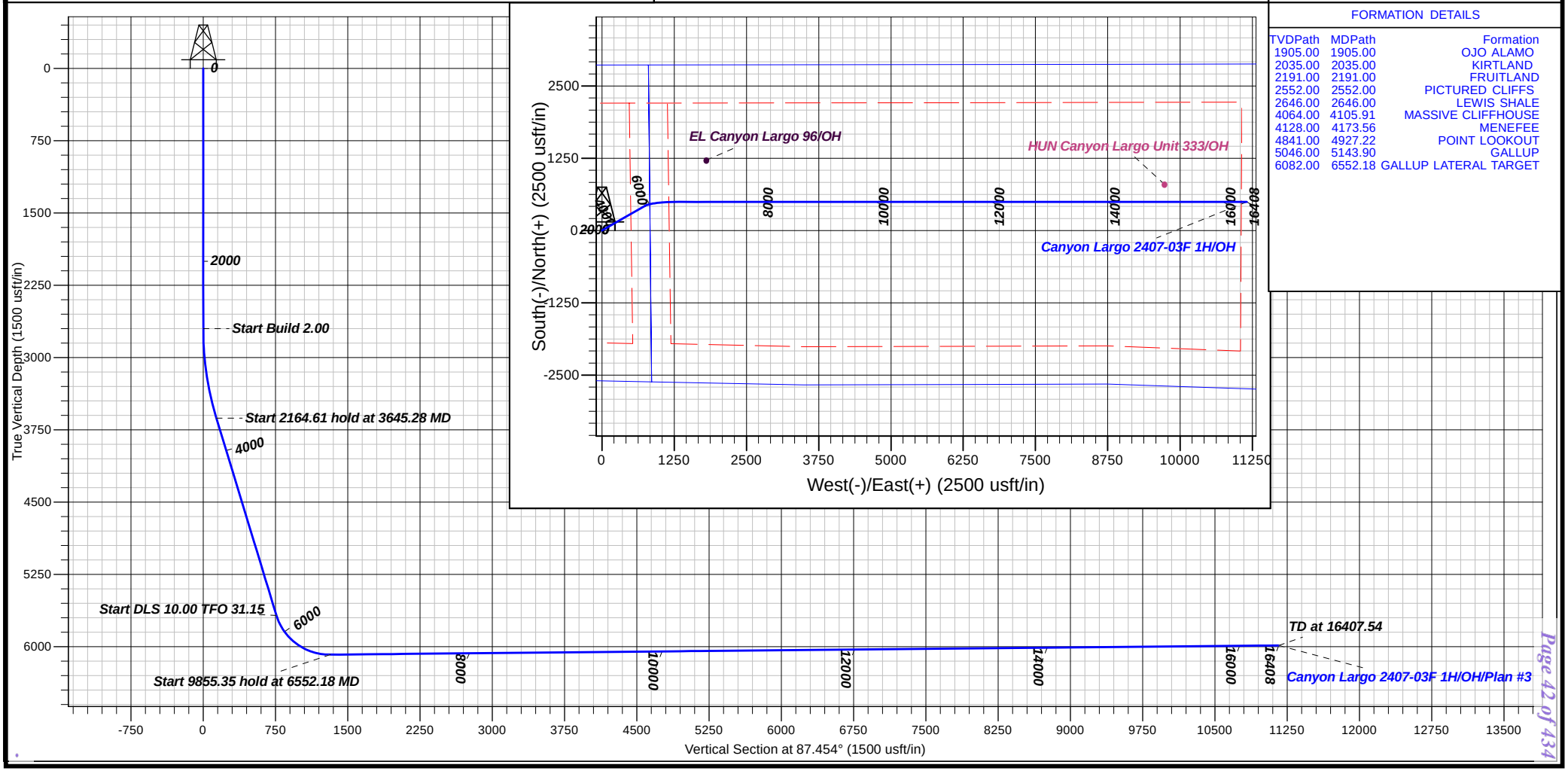
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2700.00	0.00	0.000	2700.00	0.00	0.00	0.00	0.00	0.00	
3645.28	18.91	60.148	3628.22	76.93	134.04	2.00	60.15	137.32	
5809.89	18.91	60.148	5676.06	426.03	742.33	0.00	0.00	760.53	
6552.18	90.56	90.000	6082.00	495.95	1297.70	10.00	31.15	1318.45	CLU 1H LP JC
16407.54	90.56	90.000	5986.00	495.95	11152.59	0.00	0.00	11163.61	CLU 1H BHL JC

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPath	MDPath	Formation
1905.00	1905.00	OJO ALAMO
2035.00	2035.00	KIRTLAND
2191.00	2191.00	FRUITLAND
2552.00	2552.00	PICTURED CLIFFS
2646.00	2646.00	LEWIS SHALE
4064.00	4105.91	MASSIVE CLIFFHOUSE
4128.00	4173.56	MENEFEE
4841.00	4927.22	POINT LOOKOUT
5046.00	5143.90	GALLUP
6082.00	6552.18	GALLUP LATERAL TARGET



Hilcorp Energy Company

Hilcorp Energy Corp.

Rio Arriba, NM NAD27
Canyon Largo 2407-03F
Canyon Largo 2407-03F 1H - Slot G

OH

Plan: Plan #3

Standard Planning Report

14 November, 2019

Scientific Drilling

www.scientificdrilling.com

Hilcorp Energy Company

Scientific Drilling, Intl
Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 7010' @ 7010.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7010' @ 7010.00usft
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Project Rio Arriba, 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 Canyon Largo 2407-03F

Site Position:		**Northing:**	1,944,145.29 usft	**Latitude:**	36.3428380
From:	Map	**Easting:**	578,708.30 usft	**Longitude:**	-107.5660809
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.16 °

Well Canyon Largo 2407-03F 1H - Slot G

Well Position	**+N/-S**	-277.77 usft	**Northing:**	1,943,868.09 usft	**Latitude:**	36.3420750
	+E/-W	202.30 usft	**Easting:**	578,911.37 usft	**Longitude:**	-107.5653940
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	7,010.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/19/2019	8.70	62.90	49,512

Design Plan #3

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	87.454

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	
2,700.00	0.00	0.000	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,645.28	18.91	60.148	3,628.22	76.93	134.04	2.00	2.00	0.00	60.15	
5,809.89	18.91	60.148	5,676.06	426.03	742.33	0.00	0.00	0.00	0.00	
6,552.18	90.56	90.000	6,082.00	495.95	1,297.70	10.00	9.65	4.02	31.15	CLU 1H LP JC
16,407.54	90.56	90.000	5,986.00	495.95	11,152.59	0.00	0.00	0.00	0.00	CLU 1H BHL JC

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Hilcorp Energy Company

Scientific Drilling, Intl
Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 7010' @ 7010.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7010' @ 7010.00usft
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.000	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.000	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.000	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.000	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.000	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.000	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.000	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.000	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.000	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.000	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.000	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.000	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	2.00	60.148	2,799.98	0.87	1.51	1.55	2.00	2.00	0.00
2,900.00	4.00	60.148	2,899.84	3.47	6.05	6.20	2.00	2.00	0.00
3,000.00	6.00	60.148	2,999.45	7.81	13.61	13.94	2.00	2.00	0.00
3,100.00	8.00	60.148	3,098.70	13.88	24.18	24.77	2.00	2.00	0.00
3,200.00	10.00	60.148	3,197.47	21.66	37.75	38.67	2.00	2.00	0.00
3,300.00	12.00	60.148	3,295.62	31.16	54.30	55.63	2.00	2.00	0.00
3,400.00	14.00	60.148	3,393.06	42.36	73.81	75.61	2.00	2.00	0.00
3,500.00	16.00	60.148	3,489.64	55.24	96.25	98.61	2.00	2.00	0.00
3,600.00	18.00	60.148	3,585.27	69.79	121.61	124.59	2.00	2.00	0.00
3,645.28	18.91	60.148	3,628.22	76.93	134.04	137.32	2.00	2.00	0.00
3,700.00	18.91	60.148	3,679.99	85.75	149.42	153.08	0.00	0.00	0.00
3,800.00	18.91	60.148	3,774.59	101.88	177.52	181.87	0.00	0.00	0.00
3,900.00	18.91	60.148	3,869.20	118.01	205.62	210.66	0.00	0.00	0.00
4,000.00	18.91	60.148	3,963.80	134.13	233.72	239.45	0.00	0.00	0.00
4,100.00	18.91	60.148	4,058.41	150.26	261.82	268.24	0.00	0.00	0.00
4,200.00	18.91	60.148	4,153.02	166.39	289.92	297.03	0.00	0.00	0.00
4,300.00	18.91	60.148	4,247.62	182.52	318.03	325.82	0.00	0.00	0.00
4,400.00	18.91	60.148	4,342.23	198.65	346.13	354.61	0.00	0.00	0.00
4,500.00	18.91	60.148	4,436.83	214.77	374.23	383.40	0.00	0.00	0.00
4,600.00	18.91	60.148	4,531.44	230.90	402.33	412.19	0.00	0.00	0.00
4,700.00	18.91	60.148	4,626.04	247.03	430.43	440.98	0.00	0.00	0.00
4,800.00	18.91	60.148	4,720.65	263.16	458.54	469.77	0.00	0.00	0.00
4,900.00	18.91	60.148	4,815.25	279.29	486.64	498.56	0.00	0.00	0.00
5,000.00	18.91	60.148	4,909.86	295.41	514.74	527.35	0.00	0.00	0.00
5,100.00	18.91	60.148	5,004.46	311.54	542.84	556.14	0.00	0.00	0.00
5,200.00	18.91	60.148	5,099.07	327.67	570.94	584.94	0.00	0.00	0.00

Hilcorp Energy Company

Scientific Drilling, Intl

Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 7010' @ 7010.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7010' @ 7010.00usft
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	18.91	60.148	5,193.67	343.80	599.04	613.73	0.00	0.00	0.00
5,400.00	18.91	60.148	5,288.28	359.92	627.15	642.52	0.00	0.00	0.00
5,500.00	18.91	60.148	5,382.89	376.05	655.25	671.31	0.00	0.00	0.00
5,600.00	18.91	60.148	5,477.49	392.18	683.35	700.10	0.00	0.00	0.00
5,700.00	18.91	60.148	5,572.10	408.31	711.45	728.89	0.00	0.00	0.00
5,800.00	18.91	60.148	5,666.70	424.44	739.55	757.68	0.00	0.00	0.00
5,809.89	18.91	60.148	5,676.06	426.03	742.33	760.53	0.00	0.00	0.00
5,900.00	27.01	70.424	5,759.00	440.18	774.34	793.13	10.00	8.99	11.40
6,000.00	36.47	76.612	5,843.96	454.71	824.77	844.16	10.00	9.47	6.19
6,100.00	46.14	80.505	5,919.00	467.57	889.41	909.31	10.00	9.67	3.89
6,200.00	55.91	83.298	5,981.83	478.38	966.29	986.59	10.00	9.76	2.79
6,300.00	65.72	85.507	6,030.55	486.80	1,053.07	1,073.66	10.00	9.81	2.21
6,400.00	75.56	87.396	6,063.66	492.59	1,147.12	1,167.87	10.00	9.84	1.89
6,500.00	85.41	89.124	6,080.17	495.56	1,245.57	1,266.36	10.00	9.85	1.73
6,552.18	90.56	90.000	6,082.00	495.95	1,297.70	1,318.45	10.00	9.86	1.68
6,600.00	90.56	90.000	6,081.53	495.95	1,345.52	1,366.22	0.00	0.00	0.00
6,700.00	90.56	90.000	6,080.56	495.95	1,445.51	1,466.12	0.00	0.00	0.00
6,800.00	90.56	90.000	6,079.59	495.95	1,545.51	1,566.02	0.00	0.00	0.00
6,900.00	90.56	90.000	6,078.61	495.95	1,645.50	1,665.91	0.00	0.00	0.00
7,000.00	90.56	90.000	6,077.64	495.95	1,745.50	1,765.81	0.00	0.00	0.00
7,100.00	90.56	90.000	6,076.66	495.95	1,845.49	1,865.71	0.00	0.00	0.00
7,200.00	90.56	90.000	6,075.69	495.95	1,945.49	1,965.60	0.00	0.00	0.00
7,300.00	90.56	90.000	6,074.72	495.95	2,045.49	2,065.50	0.00	0.00	0.00
7,400.00	90.56	90.000	6,073.74	495.95	2,145.48	2,165.40	0.00	0.00	0.00
7,500.00	90.56	90.000	6,072.77	495.95	2,245.48	2,265.29	0.00	0.00	0.00
7,600.00	90.56	90.000	6,071.79	495.95	2,345.47	2,365.19	0.00	0.00	0.00
7,700.00	90.56	90.000	6,070.82	495.95	2,445.47	2,465.08	0.00	0.00	0.00
7,800.00	90.56	90.000	6,069.85	495.95	2,545.46	2,564.98	0.00	0.00	0.00
7,900.00	90.56	90.000	6,068.87	495.95	2,645.46	2,664.88	0.00	0.00	0.00
8,000.00	90.56	90.000	6,067.90	495.95	2,745.45	2,764.77	0.00	0.00	0.00
8,100.00	90.56	90.000	6,066.92	495.95	2,845.45	2,864.67	0.00	0.00	0.00
8,200.00	90.56	90.000	6,065.95	495.95	2,945.44	2,964.57	0.00	0.00	0.00
8,300.00	90.56	90.000	6,064.97	495.95	3,045.44	3,064.46	0.00	0.00	0.00
8,400.00	90.56	90.000	6,064.00	495.95	3,145.43	3,164.36	0.00	0.00	0.00
8,500.00	90.56	90.000	6,063.03	495.95	3,245.43	3,264.26	0.00	0.00	0.00
8,600.00	90.56	90.000	6,062.05	495.95	3,345.42	3,364.15	0.00	0.00	0.00
8,700.00	90.56	90.000	6,061.08	495.95	3,445.42	3,464.05	0.00	0.00	0.00
8,800.00	90.56	90.000	6,060.10	495.95	3,545.41	3,563.95	0.00	0.00	0.00
8,900.00	90.56	90.000	6,059.13	495.95	3,645.41	3,663.84	0.00	0.00	0.00
9,000.00	90.56	90.000	6,058.16	495.95	3,745.40	3,763.74	0.00	0.00	0.00
9,100.00	90.56	90.000	6,057.18	495.95	3,845.40	3,863.64	0.00	0.00	0.00
9,200.00	90.56	90.000	6,056.21	495.95	3,945.40	3,963.53	0.00	0.00	0.00
9,300.00	90.56	90.000	6,055.23	495.95	4,045.39	4,063.43	0.00	0.00	0.00
9,400.00	90.56	90.000	6,054.26	495.95	4,145.39	4,163.33	0.00	0.00	0.00
9,500.00	90.56	90.000	6,053.29	495.95	4,245.38	4,263.22	0.00	0.00	0.00
9,600.00	90.56	90.000	6,052.31	495.95	4,345.38	4,363.12	0.00	0.00	0.00
9,700.00	90.56	90.000	6,051.34	495.95	4,445.37	4,463.02	0.00	0.00	0.00
9,800.00	90.56	90.000	6,050.36	495.95	4,545.37	4,562.91	0.00	0.00	0.00
9,900.00	90.56	90.000	6,049.39	495.95	4,645.36	4,662.81	0.00	0.00	0.00
10,000.00	90.56	90.000	6,048.42	495.95	4,745.36	4,762.71	0.00	0.00	0.00
10,100.00	90.56	90.000	6,047.44	495.95	4,845.35	4,862.60	0.00	0.00	0.00
10,200.00	90.56	90.000	6,046.47	495.95	4,945.35	4,962.50	0.00	0.00	0.00
10,300.00	90.56	90.000	6,045.49	495.95	5,045.34	5,062.39	0.00	0.00	0.00
10,400.00	90.56	90.000	6,044.52	495.95	5,145.34	5,162.29	0.00	0.00	0.00

Hilcorp Energy Company

Scientific Drilling, Intl
Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 7010' @ 7010.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7010' @ 7010.00usft
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	90.56	90.000	6,043.54	495.95	5,245.33	5,262.19	0.00	0.00	0.00
10,600.00	90.56	90.000	6,042.57	495.95	5,345.33	5,362.08	0.00	0.00	0.00
10,700.00	90.56	90.000	6,041.60	495.95	5,445.32	5,461.98	0.00	0.00	0.00
10,800.00	90.56	90.000	6,040.62	495.95	5,545.32	5,561.88	0.00	0.00	0.00
10,900.00	90.56	90.000	6,039.65	495.95	5,645.31	5,661.77	0.00	0.00	0.00
11,000.00	90.56	90.000	6,038.67	495.95	5,745.31	5,761.67	0.00	0.00	0.00
11,100.00	90.56	90.000	6,037.70	495.95	5,845.31	5,861.57	0.00	0.00	0.00
11,200.00	90.56	90.000	6,036.73	495.95	5,945.30	5,961.46	0.00	0.00	0.00
11,300.00	90.56	90.000	6,035.75	495.95	6,045.30	6,061.36	0.00	0.00	0.00
11,400.00	90.56	90.000	6,034.78	495.95	6,145.29	6,161.26	0.00	0.00	0.00
11,500.00	90.56	90.000	6,033.80	495.95	6,245.29	6,261.15	0.00	0.00	0.00
11,600.00	90.56	90.000	6,032.83	495.95	6,345.28	6,361.05	0.00	0.00	0.00
11,700.00	90.56	90.000	6,031.86	495.95	6,445.28	6,460.95	0.00	0.00	0.00
11,800.00	90.56	90.000	6,030.88	495.95	6,545.27	6,560.84	0.00	0.00	0.00
11,900.00	90.56	90.000	6,029.91	495.95	6,645.27	6,660.74	0.00	0.00	0.00
12,000.00	90.56	90.000	6,028.93	495.95	6,745.26	6,760.64	0.00	0.00	0.00
12,100.00	90.56	90.000	6,027.96	495.95	6,845.26	6,860.53	0.00	0.00	0.00
12,200.00	90.56	90.000	6,026.99	495.95	6,945.25	6,960.43	0.00	0.00	0.00
12,300.00	90.56	90.000	6,026.01	495.95	7,045.25	7,060.33	0.00	0.00	0.00
12,400.00	90.56	90.000	6,025.04	495.95	7,145.24	7,160.22	0.00	0.00	0.00
12,500.00	90.56	90.000	6,024.06	495.95	7,245.24	7,260.12	0.00	0.00	0.00
12,600.00	90.56	90.000	6,023.09	495.95	7,345.23	7,360.01	0.00	0.00	0.00
12,700.00	90.56	90.000	6,022.11	495.95	7,445.23	7,459.91	0.00	0.00	0.00
12,800.00	90.56	90.000	6,021.14	495.95	7,545.22	7,559.81	0.00	0.00	0.00
12,900.00	90.56	90.000	6,020.17	495.95	7,645.22	7,659.70	0.00	0.00	0.00
13,000.00	90.56	90.000	6,019.19	495.95	7,745.21	7,759.60	0.00	0.00	0.00
13,100.00	90.56	90.000	6,018.22	495.95	7,845.21	7,859.50	0.00	0.00	0.00
13,200.00	90.56	90.000	6,017.24	495.95	7,945.21	7,959.39	0.00	0.00	0.00
13,300.00	90.56	90.000	6,016.27	495.95	8,045.20	8,059.29	0.00	0.00	0.00
13,400.00	90.56	90.000	6,015.30	495.95	8,145.20	8,159.19	0.00	0.00	0.00
13,500.00	90.56	90.000	6,014.32	495.95	8,245.19	8,259.08	0.00	0.00	0.00
13,600.00	90.56	90.000	6,013.35	495.95	8,345.19	8,358.98	0.00	0.00	0.00
13,700.00	90.56	90.000	6,012.37	495.95	8,445.18	8,458.88	0.00	0.00	0.00
13,800.00	90.56	90.000	6,011.40	495.95	8,545.18	8,558.77	0.00	0.00	0.00
13,900.00	90.56	90.000	6,010.43	495.95	8,645.17	8,658.67	0.00	0.00	0.00
14,000.00	90.56	90.000	6,009.45	495.95	8,745.17	8,758.57	0.00	0.00	0.00
14,100.00	90.56	90.000	6,008.48	495.95	8,845.16	8,858.46	0.00	0.00	0.00
14,200.00	90.56	90.000	6,007.50	495.95	8,945.16	8,958.36	0.00	0.00	0.00
14,300.00	90.56	90.000	6,006.53	495.95	9,045.15	9,058.26	0.00	0.00	0.00
14,400.00	90.56	90.000	6,005.56	495.95	9,145.15	9,158.15	0.00	0.00	0.00
14,500.00	90.56	90.000	6,004.58	495.95	9,245.14	9,258.05	0.00	0.00	0.00
14,600.00	90.56	90.000	6,003.61	495.95	9,345.14	9,357.95	0.00	0.00	0.00
14,700.00	90.56	90.000	6,002.63	495.95	9,445.13	9,457.84	0.00	0.00	0.00
14,800.00	90.56	90.000	6,001.66	495.95	9,545.13	9,557.74	0.00	0.00	0.00
14,900.00	90.56	90.000	6,000.68	495.95	9,645.12	9,657.64	0.00	0.00	0.00
15,000.00	90.56	90.000	5,999.71	495.95	9,745.12	9,757.53	0.00	0.00	0.00
15,100.00	90.56	90.000	5,998.74	495.95	9,845.12	9,857.43	0.00	0.00	0.00
15,200.00	90.56	90.000	5,997.76	495.95	9,945.11	9,957.32	0.00	0.00	0.00
15,300.00	90.56	90.000	5,996.79	495.95	10,045.11	10,057.22	0.00	0.00	0.00
15,400.00	90.56	90.000	5,995.81	495.95	10,145.10	10,157.12	0.00	0.00	0.00
15,500.00	90.56	90.000	5,994.84	495.95	10,245.10	10,257.01	0.00	0.00	0.00
15,600.00	90.56	90.000	5,993.87	495.95	10,345.09	10,356.91	0.00	0.00	0.00
15,700.00	90.56	90.000	5,992.89	495.95	10,445.09	10,456.81	0.00	0.00	0.00
15,800.00	90.56	90.000	5,991.92	495.95	10,545.08	10,556.70	0.00	0.00	0.00

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Hilcorp Energy Company

Scientific Drilling, Intl
Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Company:	Hilcorp Energy Corp.	**TVD Reference:**	GL 7010' @ 7010.00usft
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7010' @ 7010.00usft
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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)
15,900.00	90.56	90.000	5,990.94	495.95	10,645.08	10,656.60	0.00	0.00	0.00
16,000.00	90.56	90.000	5,989.97	495.95	10,745.07	10,756.50	0.00	0.00	0.00
16,100.00	90.56	90.000	5,989.00	495.95	10,845.07	10,856.39	0.00	0.00	0.00
16,200.00	90.56	90.000	5,988.02	495.95	10,945.06	10,956.29	0.00	0.00	0.00
16,300.00	90.56	90.000	5,987.05	495.95	11,045.06	11,056.19	0.00	0.00	0.00
16,400.00	90.56	90.000	5,986.07	495.95	11,145.05	11,156.08	0.00	0.00	0.00
16,407.54	90.56	90.000	5,986.00	495.95	11,152.59	11,163.61	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
CLU 1H BHL JC - plan hits target center - Point	0.00	0.000	5,986.00	495.95	11,152.59	1,944,394.94	590,062.54	36.3434314	-107.5275256
CLU 1H LP JC - plan hits target center - Point	0.00	0.000	6,082.00	495.95	1,297.70	1,944,367.63	580,207.70	36.3434373	-107.5609877

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,905.00	1,905.00	OJO ALAMO		0.00	0.000
2,035.00	2,035.00	KIRTLAND		0.00	0.000
2,191.00	2,191.00	FRUITLAND		0.00	0.000
2,552.00	2,552.00	PICTURED CLIFFS		0.00	0.000
2,646.00	2,646.00	LEWIS SHALE		0.00	0.000
4,105.91	4,064.00	MASSIVE CLIFFHOUSE		0.00	0.000
4,173.56	4,128.00	MENEFEE		0.00	0.000
4,927.22	4,841.00	POINT LOOKOUT		0.00	0.000
5,143.90	5,046.00	GALLUP		0.00	0.000
6,552.18	6,082.00	GALLUP LATERAL TARGET		0.00	0.000

Hilcorp Energy Company

Hilcorp Energy Corp.

Rio Arriba, NM NAD27
Canyon Largo 2407-03F
Canyon Largo 2407-03F 1H

OH
Plan #3

Anticollision Report

15 October, 2019

Scientific Drilling

www.scientificdrilling.com

Scientific Drilling, Intl

Anticollision Report

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Reference Plan #3

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 20.00usft	**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** 7/15/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	16,407.53	Plan #3 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Canyon Largo 2407-03F						
Canyon Largo 2407-03 3H - OH - Plan #2	1,000.00	1,000.00	49.97	43.16	7.337	CC
Canyon Largo 2407-03 3H - OH - Plan #2	1,020.00	1,019.66	50.04	43.09	7.199	ES
Canyon Largo 2407-03 3H - OH - Plan #2	16,407.54	16,588.04	2,491.25	1,857.21	3.929	SF
Canyon Largo 2407-03 4H - OH - Plan #2	1,000.00	1,000.00	25.15	18.34	3.693	CC
Canyon Largo 2407-03 4H - OH - Plan #2	1,020.00	1,019.87	25.21	18.25	3.625	ES
Canyon Largo 2407-03 4H - OH - Plan #2	16,407.54	16,790.42	1,650.18	1,015.99	2.602	SF
Canyon Largo 2407-03 5H - OH - Plan #2	1,000.00	1,000.00	125.20	118.39	18.382	CC
Canyon Largo 2407-03 5H - OH - Plan #2	1,020.00	1,019.17	125.26	118.31	18.019	ES
Canyon Largo 2407-03 5H - OH - Plan #2	1,340.00	1,324.42	144.40	135.14	15.588	SF
Canyon Largo 2407-03 6H - OH - Plan #2	1,000.00	1,000.00	100.04	93.23	14.688	CC
Canyon Largo 2407-03 6H - OH - Plan #2	1,020.00	1,019.45	100.10	93.14	14.398	ES
Canyon Largo 2407-03 6H - OH - Plan #2	1,320.00	1,310.05	114.43	105.33	12.564	SF
Canyon Largo 2407-03 7H - OH - Plan #2	1,332.13	1,332.88	72.70	63.57	7.956	CC
Canyon Largo 2407-03 7H - OH - Plan #2	1,360.00	1,360.53	72.78	63.45	7.796	ES
Canyon Largo 2407-03 7H - OH - Plan #2	1,500.00	1,498.31	76.65	66.31	7.412	SF
Canyon Largo 2407-03 8H - OH - Plan #2	1,437.62	1,439.34	37.11	27.23	3.759	CC
Canyon Largo 2407-03 8H - OH - Plan #2	1,440.00	1,441.69	37.11	27.22	3.752	ES
Canyon Largo 2407-03 8H - OH - Plan #2	1,480.00	1,481.13	37.72	27.54	3.707	SF
Canyon Largo 2407-03F 2H - OH - Plan #3	2,700.00	2,700.00	24.82	5.82	1.306	Level 3, CC
Canyon Largo 2407-03F 2H - OH - Plan #3	2,720.00	2,719.86	24.88	5.75	1.300	Level 3, ES, SF
EL Canyon Largo 96 - OH - OH	2,640.00	2,596.00	2,176.54	2,115.33	35.562	CC
EL Canyon Largo 96 - OH - OH	2,660.00	2,600.00	2,176.60	2,115.24	35.476	ES
EL Canyon Largo 96 - OH - OH	2,840.00	2,600.00	2,181.94	2,120.19	35.332	SF
HUN Canyon Largo Unit 333 - OH - OH	14,986.53	5,866.12	304.74	-144.55	0.678	Level 1, CC, SF
HUN Canyon Largo Unit 333 - OH - OH	15,000.00	5,865.99	305.04	-144.66	0.678	Level 1, ES

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 usft
Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	160.01	-46.96	17.08	49.97				
20.00	20.00	20.00	20.00	0.04	0.04	160.01	-46.96	17.08	49.97	49.90	0.07	695.430	
40.00	40.00	40.00	40.00	0.07	0.07	160.01	-46.96	17.08	49.97	49.83	0.14	348.200	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
60.00	60.00	60.00	60.00	0.11	0.11	160.01	-46.96	17.08	49.97	49.75	0.22	232.241	
80.00	80.00	80.00	80.00	0.14	0.14	160.01	-46.96	17.08	49.97	49.68	0.29	174.221	
100.00	100.00	100.00	100.00	0.18	0.18	160.01	-46.96	17.08	49.97	49.61	0.36	139.396	
120.00	120.00	120.00	120.00	0.25	0.25	160.01	-46.96	17.08	49.97	49.47	0.50	99.569	
140.00	140.00	140.00	140.00	0.32	0.32	160.01	-46.96	17.08	49.97	49.32	0.65	77.442	
160.00	160.00	160.00	160.00	0.39	0.39	160.01	-46.96	17.08	49.97	49.18	0.79	63.362	
180.00	180.00	180.00	180.00	0.47	0.47	160.01	-46.96	17.08	49.97	49.04	0.93	53.614	
200.00	200.00	200.00	200.00	0.54	0.54	160.01	-46.96	17.08	49.97	48.89	1.08	46.465	
220.00	220.00	220.00	220.00	0.61	0.61	160.01	-46.96	17.08	49.97	48.75	1.22	40.999	
240.00	240.00	240.00	240.00	0.68	0.68	160.01	-46.96	17.08	49.97	48.61	1.36	36.683	
260.00	260.00	260.00	260.00	0.75	0.75	160.01	-46.96	17.08	49.97	48.46	1.51	33.190	
280.00	280.00	280.00	280.00	0.82	0.82	160.01	-46.96	17.08	49.97	48.32	1.65	30.304	
300.00	300.00	300.00	300.00	0.90	0.90	160.01	-46.96	17.08	49.97	48.18	1.79	27.879	
320.00	320.00	320.00	320.00	0.97	0.97	160.01	-46.96	17.08	49.97	48.03	1.94	25.814	
340.00	340.00	340.00	340.00	1.04	1.04	160.01	-46.96	17.08	49.97	47.89	2.08	24.034	
360.00	360.00	360.00	360.00	1.11	1.11	160.01	-46.96	17.08	49.97	47.75	2.22	22.483	
380.00	380.00	380.00	380.00	1.18	1.18	160.01	-46.96	17.08	49.97	47.60	2.37	21.121	
400.00	400.00	400.00	400.00	1.25	1.25	160.01	-46.96	17.08	49.97	47.46	2.51	19.914	
420.00	420.00	420.00	420.00	1.33	1.33	160.01	-46.96	17.08	49.97	47.32	2.65	18.837	
440.00	440.00	440.00	440.00	1.40	1.40	160.01	-46.96	17.08	49.97	47.17	2.80	17.871	
460.00	460.00	460.00	460.00	1.47	1.47	160.01	-46.96	17.08	49.97	47.03	2.94	17.000	
480.00	480.00	480.00	480.00	1.54	1.54	160.01	-46.96	17.08	49.97	46.89	3.08	16.209	
500.00	500.00	500.00	500.00	1.61	1.61	160.01	-46.96	17.08	49.97	46.74	3.23	15.488	
520.00	520.00	520.00	520.00	1.68	1.68	160.01	-46.96	17.08	49.97	46.60	3.37	14.829	
540.00	540.00	540.00	540.00	1.76	1.76	160.01	-46.96	17.08	49.97	46.46	3.51	14.224	
560.00	560.00	560.00	560.00	1.83	1.83	160.01	-46.96	17.08	49.97	46.31	3.66	13.666	
580.00	580.00	580.00	580.00	1.90	1.90	160.01	-46.96	17.08	49.97	46.17	3.80	13.151	
600.00	600.00	600.00	600.00	1.97	1.97	160.01	-46.96	17.08	49.97	46.03	3.94	12.672	
620.00	620.00	620.00	620.00	2.04	2.04	160.01	-46.96	17.08	49.97	45.88	4.09	12.228	
640.00	640.00	640.00	640.00	2.11	2.11	160.01	-46.96	17.08	49.97	45.74	4.23	11.813	
660.00	660.00	660.00	660.00	2.19	2.19	160.01	-46.96	17.08	49.97	45.60	4.37	11.426	
680.00	680.00	680.00	680.00	2.26	2.26	160.01	-46.96	17.08	49.97	45.45	4.52	11.063	
700.00	700.00	700.00	700.00	2.33	2.33	160.01	-46.96	17.08	49.97	45.31	4.66	10.723	
720.00	720.00	720.00	720.00	2.40	2.40	160.01	-46.96	17.08	49.97	45.17	4.80	10.403	
740.00	740.00	740.00	740.00	2.47	2.47	160.01	-46.96	17.08	49.97	45.02	4.95	10.101	
760.00	760.00	760.00	760.00	2.55	2.55	160.01	-46.96	17.08	49.97	44.88	5.09	9.817	
780.00	780.00	780.00	780.00	2.62	2.62	160.01	-46.96	17.08	49.97	44.74	5.23	9.548	
800.00	800.00	800.00	800.00	2.69	2.69	160.01	-46.96	17.08	49.97	44.59	5.38	9.293	
820.00	820.00	820.00	820.00	2.76	2.76	160.01	-46.96	17.08	49.97	44.45	5.52	9.052	
840.00	840.00	840.00	840.00	2.83	2.83	160.01	-46.96	17.08	49.97	44.31	5.66	8.823	
860.00	860.00	860.00	860.00	2.90	2.90	160.01	-46.96	17.08	49.97	44.16	5.81	8.605	
880.00	880.00	880.00	880.00	2.98	2.98	160.01	-46.96	17.08	49.97	44.02	5.95	8.397	
900.00	900.00	900.00	900.00	3.05	3.05	160.01	-46.96	17.08	49.97	43.88	6.09	8.200	
920.00	920.00	920.00	920.00	3.12	3.12	160.01	-46.96	17.08	49.97	43.73	6.24	8.011	
940.00	940.00	940.00	940.00	3.19	3.19	160.01	-46.96	17.08	49.97	43.59	6.38	7.831	
960.00	960.00	960.00	960.00	3.26	3.26	160.01	-46.96	17.08	49.97	43.45	6.52	7.659	
980.00	980.00	980.00	980.00	3.33	3.33	160.01	-46.96	17.08	49.97	43.30	6.67	7.494	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	160.01	-46.96	17.08	49.97	43.16	6.81	7.337	CC
1,020.00	1,020.00	1,019.66	1,019.66	3.48	3.47	160.01	-47.02	17.11	50.04	43.09	6.95	7.199	ES
1,040.00	1,040.00	1,039.31	1,039.31	3.55	3.54	160.00	-47.21	17.19	50.24	43.15	7.09	7.086	
1,060.00	1,060.00	1,058.96	1,058.96	3.62	3.61	159.97	-47.52	17.32	50.59	43.35	7.23	6.995	
1,080.00	1,080.00	1,078.61	1,078.60	3.69	3.67	159.94	-47.95	17.51	51.07	43.69	7.37	6.925	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,100.00	1,100.00	1,098.25	1,098.23	3.76	3.74	159.91	-48.51	17.74	51.68	44.17	7.52	6.876	
1,120.00	1,120.00	1,117.88	1,117.85	3.84	3.81	159.86	-49.19	18.04	52.44	44.78	7.66	6.848	
1,140.00	1,140.00	1,137.50	1,137.45	3.91	3.87	159.81	-49.99	18.38	53.33	45.53	7.80	6.839	
1,160.00	1,160.00	1,157.10	1,157.02	3.98	3.94	159.76	-50.92	18.78	54.35	46.41	7.94	6.846	
1,180.00	1,180.00	1,176.69	1,176.58	4.05	4.00	159.70	-51.97	19.23	55.51	47.43	8.08	6.870	
1,200.00	1,200.00	1,196.27	1,196.12	4.12	4.07	159.63	-53.14	19.73	56.81	48.59	8.22	6.910	
1,220.00	1,220.00	1,215.83	1,215.62	4.19	4.13	159.56	-54.43	20.28	58.25	49.88	8.36	6.964	
1,240.00	1,240.00	1,235.36	1,235.10	4.27	4.20	159.49	-55.84	20.89	59.82	51.31	8.51	7.031	
1,260.00	1,260.00	1,254.88	1,254.54	4.34	4.26	159.42	-57.37	21.55	61.53	52.88	8.65	7.113	
1,280.00	1,280.00	1,274.37	1,273.95	4.41	4.33	159.34	-59.03	22.25	63.37	54.58	8.79	7.207	
1,300.00	1,300.00	1,293.83	1,293.32	4.48	4.39	159.27	-60.80	23.01	65.35	56.41	8.94	7.313	
1,320.00	1,320.00	1,313.27	1,312.64	4.55	4.46	159.19	-62.69	23.82	67.46	58.38	9.08	7.430	
1,340.00	1,340.00	1,332.68	1,331.93	4.62	4.53	159.11	-64.69	24.68	69.71	60.49	9.22	7.558	
1,360.00	1,360.00	1,352.05	1,351.17	4.70	4.59	159.04	-66.82	25.60	72.09	62.73	9.37	7.697	
1,380.00	1,380.00	1,371.40	1,370.36	4.77	4.66	158.97	-69.05	26.56	74.61	65.10	9.51	7.847	
1,400.00	1,400.00	1,390.71	1,389.50	4.84	4.73	158.89	-71.41	27.57	77.26	67.61	9.65	8.006	
1,420.00	1,420.00	1,409.99	1,408.59	4.91	4.79	158.82	-73.88	28.62	80.05	70.25	9.79	8.175	
1,440.00	1,440.00	1,429.23	1,427.62	4.98	4.86	158.75	-76.46	29.73	82.96	73.03	9.93	8.352	
1,460.00	1,460.00	1,448.43	1,446.60	5.05	4.93	158.68	-79.15	30.89	86.01	75.94	10.07	8.538	
1,480.00	1,480.00	1,467.59	1,465.51	5.13	5.00	158.62	-81.95	32.09	89.19	78.98	10.22	8.731	
1,500.00	1,500.00	1,486.70	1,484.37	5.20	5.07	158.55	-84.87	33.34	92.51	82.15	10.36	8.932	
1,520.00	1,520.00	1,505.78	1,503.15	5.27	5.14	158.49	-87.89	34.63	95.95	85.46	10.50	9.140	
1,540.00	1,540.00	1,524.81	1,521.88	5.34	5.21	158.43	-91.02	35.97	99.53	88.89	10.64	9.356	
1,560.00	1,560.00	1,543.79	1,540.53	5.41	5.28	158.38	-94.25	37.36	103.24	92.46	10.78	9.578	
1,580.00	1,580.00	1,562.72	1,559.11	5.48	5.35	158.32	-97.59	38.79	107.08	96.16	10.92	9.808	
1,600.00	1,600.00	1,581.61	1,577.62	5.56	5.42	158.27	-101.03	40.27	111.04	99.99	11.06	10.044	
1,620.00	1,620.00	1,600.00	1,595.62	5.63	5.49	158.22	-104.49	41.75	115.14	103.94	11.20	10.284	
1,640.00	1,640.00	1,619.22	1,614.41	5.70	5.56	158.17	-108.22	43.35	119.36	108.03	11.33	10.534	
1,660.00	1,660.00	1,637.94	1,632.69	5.77	5.64	158.12	-111.97	44.96	123.71	112.25	11.47	10.788	
1,680.00	1,680.00	1,656.62	1,650.88	5.84	5.71	158.08	-115.81	46.61	128.19	116.59	11.60	11.047	
1,700.00	1,700.00	1,675.23	1,669.00	5.91	5.78	158.03	-119.76	48.30	132.80	121.06	11.74	11.312	
1,720.00	1,720.00	1,693.79	1,687.02	5.99	5.86	157.99	-123.79	50.03	137.53	125.66	11.87	11.582	
1,740.00	1,740.00	1,712.28	1,704.97	6.06	5.93	157.95	-127.92	51.80	142.39	130.38	12.01	11.857	
1,760.00	1,760.00	1,730.72	1,722.82	6.13	6.01	157.92	-132.14	53.61	147.37	135.23	12.14	12.137	
1,780.00	1,780.00	1,749.10	1,740.59	6.20	6.09	157.88	-136.46	55.46	152.48	140.20	12.28	12.422	
1,800.00	1,800.00	1,767.41	1,758.26	6.27	6.16	157.85	-140.86	57.35	157.71	145.30	12.41	12.711	
1,820.00	1,820.00	1,785.66	1,775.85	6.34	6.24	157.81	-145.35	59.28	163.07	150.53	12.54	13.006	
1,840.00	1,840.00	1,803.84	1,793.33	6.42	6.32	157.78	-149.93	61.24	168.54	155.87	12.67	13.304	
1,860.00	1,860.00	1,821.96	1,810.73	6.49	6.40	157.75	-154.59	63.24	174.14	161.34	12.80	13.606	
1,880.00	1,880.00	1,840.01	1,828.02	6.56	6.48	157.72	-159.33	65.27	179.86	166.93	12.93	13.912	
1,900.00	1,900.00	1,857.99	1,845.22	6.63	6.56	157.70	-164.16	67.34	185.70	172.64	13.06	14.223	
1,920.00	1,920.00	1,875.90	1,862.32	6.70	6.64	157.67	-169.07	69.45	191.66	178.48	13.18	14.538	
1,940.00	1,940.00	1,893.74	1,879.31	6.78	6.72	157.64	-174.05	71.59	197.74	184.43	13.31	14.857	
1,960.00	1,960.00	1,911.51	1,896.21	6.85	6.80	157.62	-179.11	73.76	203.94	190.50	13.44	15.179	
1,980.00	1,980.00	1,929.21	1,913.00	6.92	6.88	157.60	-184.25	75.96	210.25	196.69	13.56	15.504	
2,000.00	2,000.00	1,946.83	1,929.69	6.99	6.97	157.57	-189.46	78.19	216.68	203.00	13.69	15.833	
2,020.00	2,020.00	1,964.38	1,946.27	7.06	7.05	157.55	-194.74	80.46	223.23	209.42	13.81	16.166	
2,040.00	2,040.00	1,981.86	1,962.75	7.13	7.13	157.53	-200.09	82.75	229.89	215.96	13.93	16.502	
2,060.00	2,060.00	2,000.00	1,979.82	7.21	7.22	157.51	-205.74	85.18	236.67	222.62	14.06	16.837	
2,080.00	2,080.00	2,016.58	1,995.38	7.28	7.31	157.49	-210.99	87.43	243.56	229.39	14.17	17.185	
2,100.00	2,100.00	2,033.83	2,011.53	7.35	7.39	157.47	-216.55	89.81	250.57	236.28	14.29	17.530	
2,120.00	2,120.00	2,050.99	2,027.58	7.42	7.48	157.46	-222.16	92.22	257.69	243.27	14.41	17.879	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,140.00	2,140.00	2,068.08	2,043.51	7.49	7.57	157.44	-227.84	94.65	264.92	250.38	14.53	18.231	
2,160.00	2,160.00	2,085.09	2,059.33	7.56	7.66	157.42	-233.58	97.11	272.26	257.61	14.65	18.587	
2,180.00	2,180.00	2,100.00	2,073.17	7.64	7.73	157.41	-238.68	99.30	279.71	264.97	14.75	18.966	
2,200.00	2,200.00	2,118.87	2,090.64	7.71	7.84	157.39	-245.23	102.11	287.26	272.38	14.88	19.305	
2,220.00	2,220.00	2,135.64	2,106.13	7.78	7.93	157.38	-251.13	104.64	294.93	279.94	15.00	19.668	
2,240.00	2,240.00	2,152.32	2,121.50	7.85	8.02	157.37	-257.10	107.20	302.71	287.60	15.11	20.034	
2,260.00	2,260.00	2,168.93	2,136.76	7.92	8.12	157.35	-263.11	109.78	310.59	295.37	15.22	20.404	
2,280.00	2,280.00	2,185.45	2,151.91	7.99	8.21	157.34	-269.18	112.38	318.58	303.25	15.33	20.776	
2,300.00	2,300.00	2,201.89	2,166.94	8.07	8.30	157.33	-275.29	115.00	326.67	311.23	15.44	21.152	
2,320.00	2,320.00	2,219.40	2,182.92	8.14	8.40	157.31	-281.87	117.83	334.85	319.29	15.57	21.512	
2,340.00	2,340.00	2,237.65	2,199.57	8.21	8.51	157.30	-288.74	120.77	343.04	327.35	15.69	21.857	
2,360.00	2,360.00	2,255.90	2,216.22	8.28	8.61	157.29	-295.60	123.72	351.23	335.40	15.82	22.197	
2,380.00	2,380.00	2,274.15	2,232.87	8.35	8.72	157.28	-302.47	126.66	359.42	343.46	15.95	22.530	
2,400.00	2,400.00	2,292.39	2,249.52	8.42	8.83	157.27	-309.34	129.60	367.60	351.52	16.08	22.858	
2,420.00	2,420.00	2,310.64	2,266.16	8.50	8.94	157.26	-316.20	132.55	375.79	359.58	16.21	23.180	
2,440.00	2,440.00	2,328.89	2,282.81	8.57	9.05	157.25	-323.07	135.49	383.98	367.63	16.34	23.495	
2,460.00	2,460.00	2,347.13	2,299.46	8.64	9.16	157.24	-329.93	138.44	392.16	375.69	16.47	23.806	
2,480.00	2,480.00	2,365.38	2,316.11	8.71	9.27	157.23	-336.80	141.38	400.35	383.75	16.60	24.111	
2,500.00	2,500.00	2,383.63	2,332.76	8.78	9.38	157.22	-343.66	144.33	408.54	391.80	16.74	24.411	
2,520.00	2,520.00	2,401.88	2,349.40	8.85	9.49	157.21	-350.53	147.27	416.73	399.86	16.87	24.707	
2,540.00	2,540.00	2,420.12	2,366.05	8.93	9.61	157.20	-357.39	150.22	424.91	407.91	17.00	24.996	
2,560.00	2,560.00	2,438.37	2,382.70	9.00	9.72	157.19	-364.26	153.16	433.10	415.97	17.13	25.280	
2,580.00	2,580.00	2,456.62	2,399.35	9.07	9.83	157.19	-371.12	156.10	441.29	424.02	17.26	25.560	
2,600.00	2,600.00	2,474.87	2,416.00	9.14	9.95	157.18	-377.99	159.05	449.48	432.08	17.40	25.836	
2,620.00	2,620.00	2,493.11	2,432.64	9.21	10.06	157.17	-384.85	161.99	457.66	440.13	17.53	26.107	
2,640.00	2,640.00	2,511.36	2,449.29	9.28	10.17	157.17	-391.72	164.94	465.85	448.19	17.66	26.373	
2,660.00	2,660.00	2,529.61	2,465.94	9.36	10.29	157.16	-398.58	167.88	474.04	456.24	17.80	26.635	
2,680.00	2,680.00	2,547.85	2,482.59	9.43	10.41	157.15	-405.45	170.83	482.23	464.29	17.93	26.892	
2,700.00	2,700.00	2,566.10	2,499.24	9.50	10.52	157.15	-412.32	173.77	490.41	472.35	18.07	27.145	
2,720.00	2,720.00	2,584.35	2,515.88	9.57	10.64	96.82	-419.18	176.71	498.61	480.41	18.20	27.397	
2,740.00	2,740.00	2,602.58	2,532.52	9.64	10.75	96.66	-426.04	179.66	506.82	488.49	18.33	27.645	
2,760.00	2,760.00	2,620.81	2,549.15	9.71	10.87	96.52	-432.90	182.60	515.04	496.58	18.47	27.889	
2,780.00	2,779.99	2,639.03	2,565.77	9.78	10.99	96.39	-439.75	185.54	523.28	504.68	18.60	28.130	
2,800.00	2,799.98	2,657.24	2,582.39	9.85	11.11	96.28	-446.60	188.48	531.54	512.80	18.74	28.368	
2,820.00	2,819.96	2,675.43	2,598.99	9.92	11.22	96.18	-453.45	191.41	539.81	520.94	18.87	28.605	
2,840.00	2,839.94	2,693.62	2,615.58	9.99	11.34	96.09	-460.29	194.35	548.09	529.09	19.01	28.839	
2,860.00	2,859.92	2,711.79	2,632.16	10.06	11.46	96.02	-467.13	197.28	556.39	537.25	19.14	29.070	
2,880.00	2,879.88	2,729.95	2,648.73	10.13	11.58	95.96	-473.96	200.21	564.71	545.43	19.27	29.298	
2,900.00	2,899.84	2,748.10	2,665.28	10.20	11.70	95.90	-480.79	203.14	573.03	553.63	19.41	29.524	
2,920.00	2,919.78	2,766.22	2,681.82	10.28	11.82	95.86	-487.61	206.06	581.38	561.84	19.54	29.747	
2,940.00	2,939.72	2,784.34	2,698.35	10.35	11.94	95.83	-494.42	208.98	589.74	570.06	19.68	29.968	
2,960.00	2,959.64	2,802.43	2,714.86	10.42	12.05	95.81	-501.23	211.90	598.12	578.30	19.81	30.186	
2,980.00	2,979.55	2,820.51	2,731.35	10.49	12.17	95.80	-508.03	214.82	606.51	586.56	19.95	30.402	
3,000.00	2,999.45	2,838.57	2,747.83	10.56	12.29	95.80	-514.83	217.73	614.93	594.84	20.09	30.615	
3,020.00	3,019.34	2,856.61	2,764.28	10.63	12.41	95.80	-521.61	220.65	623.36	603.14	20.22	30.826	
3,040.00	3,039.20	2,874.62	2,780.72	10.70	12.53	95.82	-528.39	223.55	631.81	611.45	20.36	31.035	
3,060.00	3,059.05	2,892.62	2,797.14	10.77	12.65	95.84	-535.16	226.46	640.28	619.78	20.49	31.242	
3,080.00	3,078.89	2,910.59	2,813.54	10.84	12.77	95.87	-541.93	229.36	648.77	628.13	20.63	31.446	
3,100.00	3,098.70	2,928.54	2,829.92	10.91	12.89	95.91	-548.68	232.25	657.28	636.51	20.77	31.648	
3,120.00	3,118.50	2,946.47	2,846.27	10.98	13.01	95.95	-555.42	235.15	665.81	644.90	20.91	31.848	
3,140.00	3,138.27	2,964.37	2,862.60	11.06	13.13	96.00	-562.16	238.03	674.36	653.32	21.04	32.046	
3,160.00	3,158.03	2,982.24	2,878.91	11.13	13.25	96.05	-568.88	240.92	682.94	661.76	21.18	32.242	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,180.00	3,177.76	3,000.09	2,895.19	11.20	13.37	96.11	-575.60	243.80	691.54	670.22	21.32	32.437	
3,200.00	3,197.47	3,017.91	2,911.45	11.27	13.49	96.18	-582.30	246.67	700.16	678.71	21.46	32.630	
3,220.00	3,217.15	3,035.70	2,927.68	11.34	13.61	96.25	-589.00	249.54	708.82	687.22	21.60	32.820	
3,240.00	3,236.81	3,053.46	2,943.89	11.42	13.73	96.32	-595.68	252.41	717.49	695.76	21.74	33.008	
3,260.00	3,256.44	3,071.20	2,960.07	11.49	13.85	96.40	-602.35	255.27	726.20	704.32	21.88	33.195	
3,280.00	3,276.05	3,088.90	2,976.22	11.56	13.97	96.49	-609.01	258.13	734.93	712.91	22.02	33.381	
3,300.00	3,295.62	3,106.56	2,992.34	11.64	14.09	96.58	-615.66	260.98	743.69	721.53	22.16	33.565	
3,320.00	3,315.17	3,124.20	3,008.42	11.71	14.21	96.67	-622.29	263.82	752.48	730.18	22.30	33.746	
3,340.00	3,334.69	3,141.80	3,024.48	11.78	14.33	96.76	-628.92	266.66	761.30	738.86	22.44	33.925	
3,360.00	3,354.18	3,159.37	3,040.51	11.86	14.45	96.86	-635.53	269.50	770.16	747.57	22.58	34.103	
3,380.00	3,373.63	3,176.90	3,056.51	11.93	14.57	96.96	-642.12	272.33	779.04	756.32	22.73	34.281	
3,400.00	3,393.06	3,194.39	3,072.47	12.01	14.69	97.07	-648.70	275.15	787.96	765.09	22.87	34.457	
3,420.00	3,412.44	3,211.85	3,088.39	12.09	14.81	97.18	-655.27	277.97	796.91	773.90	23.01	34.629	
3,440.00	3,431.80	3,229.27	3,104.29	12.16	14.93	97.29	-661.83	280.78	805.90	782.74	23.16	34.800	
3,460.00	3,451.12	3,246.65	3,120.14	12.24	15.04	97.40	-668.36	283.58	814.92	791.62	23.30	34.970	
3,480.00	3,470.40	3,263.99	3,135.97	12.32	15.16	97.52	-674.89	286.38	823.98	800.54	23.45	35.140	
3,500.00	3,489.64	3,281.29	3,151.75	12.39	15.28	97.63	-681.40	289.17	833.08	809.49	23.59	35.308	
3,520.00	3,508.85	3,298.55	3,167.50	12.47	15.40	97.75	-687.89	291.96	842.22	818.47	23.74	35.472	
3,540.00	3,528.02	3,315.77	3,183.20	12.56	15.52	97.87	-694.37	294.73	851.39	827.50	23.89	35.636	
3,560.00	3,547.14	3,332.94	3,198.87	12.64	15.64	97.99	-700.83	297.51	860.61	836.57	24.04	35.798	
3,580.00	3,566.23	3,350.07	3,214.50	12.72	15.75	98.12	-707.27	300.27	869.87	845.68	24.19	35.960	
3,600.00	3,585.27	3,367.15	3,230.09	12.80	15.87	98.24	-713.70	303.03	879.16	854.83	24.34	36.121	
3,620.00	3,604.27	3,384.19	3,245.63	12.88	15.99	98.37	-720.11	305.78	888.51	864.01	24.49	36.278	
3,640.00	3,623.22	3,401.18	3,261.14	12.96	16.11	98.49	-726.51	308.52	897.89	873.25	24.64	36.435	
3,645.28	3,628.22	3,405.66	3,265.22	12.98	16.14	98.53	-728.19	309.24	900.37	875.69	24.68	36.476	
3,660.00	3,642.15	3,418.14	3,276.61	13.05	16.22	98.77	-732.89	311.25	907.32	882.52	24.80	36.590	
3,680.00	3,661.07	3,435.10	3,292.08	13.13	16.34	99.10	-739.27	313.99	916.77	891.82	24.95	36.743	
3,700.00	3,679.99	3,452.05	3,307.55	13.22	16.46	99.43	-745.65	316.73	926.24	901.14	25.11	36.894	
3,720.00	3,698.91	3,469.01	3,323.02	13.30	16.57	99.75	-752.03	319.46	935.74	910.48	25.26	37.043	
3,740.00	3,717.83	3,485.97	3,338.49	13.39	16.69	100.06	-758.40	322.20	945.27	919.85	25.42	37.189	
3,760.00	3,736.75	3,502.92	3,353.96	13.48	16.81	100.36	-764.78	324.93	954.81	929.24	25.57	37.335	
3,780.00	3,755.67	3,519.88	3,369.43	13.57	16.93	100.66	-771.16	327.67	964.38	938.65	25.73	37.479	
3,800.00	3,774.59	3,536.83	3,384.90	13.65	17.04	100.96	-777.54	330.41	973.97	948.08	25.89	37.623	
3,820.00	3,793.51	3,553.79	3,400.37	13.74	17.16	101.25	-783.92	333.14	983.58	957.54	26.05	37.761	
3,840.00	3,812.44	3,570.75	3,415.84	13.83	17.28	101.53	-790.30	335.88	993.21	967.01	26.21	37.899	
3,860.00	3,831.36	3,587.70	3,431.31	13.92	17.40	101.81	-796.68	338.61	1,002.87	976.50	26.37	38.036	
3,880.00	3,850.28	3,604.66	3,446.78	14.01	17.51	102.08	-803.06	341.35	1,012.54	986.01	26.53	38.171	
3,900.00	3,869.20	3,621.62	3,462.25	14.10	17.63	102.35	-809.44	344.09	1,022.22	995.54	26.69	38.306	
3,920.00	3,888.12	3,638.57	3,477.72	14.20	17.75	102.62	-815.82	346.82	1,031.93	1,005.08	26.85	38.436	
3,940.00	3,907.04	3,655.53	3,493.19	14.29	17.87	102.88	-822.20	349.56	1,041.65	1,014.64	27.01	38.565	
3,960.00	3,925.96	3,672.48	3,508.66	14.38	17.99	103.13	-828.58	352.29	1,051.40	1,024.22	27.17	38.693	
3,980.00	3,944.88	3,689.44	3,524.13	14.47	18.11	103.38	-834.96	355.03	1,061.15	1,033.82	27.34	38.820	
4,000.00	3,963.80	3,706.40	3,539.60	14.56	18.22	103.63	-841.34	357.77	1,070.93	1,043.43	27.50	38.946	
4,020.00	3,982.73	3,723.35	3,555.07	14.66	18.34	103.87	-847.72	360.50	1,080.72	1,053.05	27.66	39.068	
4,040.00	4,001.65	3,740.31	3,570.54	14.75	18.46	104.11	-854.10	363.24	1,090.52	1,062.70	27.83	39.189	
4,060.00	4,020.57	3,757.27	3,586.01	14.85	18.58	104.35	-860.48	365.97	1,100.34	1,072.35	27.99	39.310	
4,080.00	4,039.49	3,774.22	3,601.48	14.94	18.70	104.58	-866.86	368.71	1,110.18	1,082.02	28.16	39.429	
4,100.00	4,058.41	3,791.18	3,616.95	15.04	18.82	104.80	-873.24	371.45	1,120.02	1,091.70	28.32	39.547	
4,120.00	4,077.33	3,808.13	3,632.42	15.13	18.93	105.02	-879.62	374.18	1,129.89	1,101.40	28.49	39.662	
4,140.00	4,096.25	3,825.09	3,647.89	15.23	19.05	105.24	-886.00	376.92	1,139.76	1,111.11	28.65	39.776	
4,160.00	4,115.17	3,842.05	3,663.36	15.33	19.17	105.46	-892.38	379.65	1,149.65	1,120.83	28.82	39.889	
4,180.00	4,134.09	3,859.00	3,678.83	15.42	19.29	105.67	-898.76	382.39	1,159.55	1,130.56	28.99	40.000	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,200.00	4,153.02	3,875.96	3,694.30	15.52	19.41	105.88	-905.14	385.13	1,169.46	1,140.31	29.16	40.112	
4,220.00	4,171.94	3,892.92	3,709.77	15.62	19.53	106.08	-911.52	387.86	1,179.39	1,150.07	29.32	40.220	
4,240.00	4,190.86	3,909.87	3,725.24	15.72	19.65	106.29	-917.89	390.60	1,189.33	1,159.84	29.49	40.327	
4,260.00	4,209.78	3,926.83	3,740.71	15.81	19.77	106.48	-924.27	393.33	1,199.28	1,169.62	29.66	40.433	
4,280.00	4,228.70	3,943.78	3,756.18	15.91	19.89	106.68	-930.65	396.07	1,209.24	1,179.41	29.83	40.538	
4,300.00	4,247.62	3,960.74	3,771.65	16.01	20.00	106.87	-937.03	398.81	1,219.21	1,189.21	30.00	40.642	
4,320.00	4,266.54	3,977.70	3,787.12	16.11	20.12	107.06	-943.41	401.54	1,229.19	1,199.02	30.17	40.744	
4,340.00	4,285.46	3,994.65	3,802.60	16.21	20.24	107.25	-949.79	404.28	1,239.18	1,208.84	30.34	40.844	
4,360.00	4,304.38	4,011.61	3,818.07	16.31	20.36	107.43	-956.17	407.01	1,249.18	1,218.67	30.51	40.944	
4,380.00	4,323.31	4,028.56	3,833.54	16.41	20.48	107.61	-962.55	409.75	1,259.19	1,228.51	30.68	41.043	
4,400.00	4,342.23	4,045.52	3,849.01	16.51	20.60	107.79	-968.93	412.49	1,269.22	1,238.37	30.85	41.141	
4,420.00	4,361.15	4,062.48	3,864.48	16.61	20.72	107.97	-975.31	415.22	1,279.25	1,248.22	31.02	41.237	
4,440.00	4,380.07	4,079.43	3,879.95	16.71	20.84	108.14	-981.69	417.96	1,289.29	1,258.09	31.19	41.332	
4,460.00	4,398.99	4,096.39	3,895.42	16.81	20.96	108.31	-988.07	420.69	1,299.34	1,267.97	31.37	41.426	
4,480.00	4,417.91	4,113.35	3,910.89	16.92	21.08	108.48	-994.45	423.43	1,309.39	1,277.86	31.54	41.519	
4,500.00	4,436.83	4,130.30	3,926.36	17.02	21.20	108.64	-1,000.83	426.17	1,319.46	1,287.75	31.71	41.611	
4,520.00	4,455.75	4,147.26	3,941.83	17.12	21.32	108.81	-1,007.21	428.90	1,329.53	1,297.65	31.88	41.702	
4,540.00	4,474.67	4,164.21	3,957.30	17.22	21.44	108.97	-1,013.59	431.64	1,339.62	1,307.56	32.06	41.791	
4,560.00	4,493.59	4,181.17	3,972.77	17.33	21.56	109.12	-1,019.97	434.37	1,349.71	1,317.48	32.23	41.880	
4,580.00	4,512.52	4,198.13	3,988.24	17.43	21.68	109.28	-1,026.35	437.11	1,359.81	1,327.41	32.40	41.968	
4,600.00	4,531.44	4,215.08	4,003.71	17.53	21.80	109.43	-1,032.73	439.85	1,369.91	1,337.34	32.57	42.055	
4,620.00	4,550.36	4,232.04	4,019.18	17.64	21.92	109.59	-1,039.11	442.58	1,380.03	1,347.28	32.75	42.140	
4,640.00	4,569.28	4,249.00	4,034.65	17.74	22.04	109.74	-1,045.49	445.32	1,390.15	1,357.23	32.92	42.224	
4,660.00	4,588.20	4,265.95	4,050.12	17.84	22.16	109.88	-1,051.87	448.05	1,400.28	1,367.18	33.10	42.308	
4,680.00	4,607.12	4,282.91	4,065.59	17.95	22.28	110.03	-1,058.25	450.79	1,410.41	1,377.14	33.27	42.391	
4,700.00	4,626.04	4,299.86	4,081.06	18.05	22.40	110.17	-1,064.63	453.53	1,420.56	1,387.11	33.45	42.473	
4,720.00	4,644.96	4,316.82	4,096.53	18.16	22.52	110.31	-1,071.01	456.26	1,430.71	1,397.08	33.62	42.554	
4,740.00	4,663.88	4,333.78	4,112.00	18.26	22.64	110.45	-1,077.38	459.00	1,440.86	1,407.06	33.80	42.633	
4,760.00	4,682.81	4,350.73	4,127.47	18.37	22.76	110.59	-1,083.76	461.73	1,451.02	1,417.05	33.97	42.712	
4,780.00	4,701.73	4,367.69	4,142.94	18.47	22.88	110.73	-1,090.14	464.47	1,461.19	1,427.04	34.15	42.791	
4,800.00	4,720.65	4,384.65	4,158.41	18.58	23.00	110.86	-1,096.52	467.21	1,471.37	1,437.04	34.32	42.869	
4,820.00	4,739.57	4,401.60	4,173.88	18.69	23.12	110.99	-1,102.90	469.94	1,481.55	1,447.05	34.50	42.945	
4,840.00	4,758.49	4,418.56	4,189.35	18.79	23.24	111.12	-1,109.28	472.68	1,491.73	1,457.06	34.68	43.020	
4,860.00	4,777.41	4,435.51	4,204.82	18.90	23.36	111.25	-1,115.66	475.41	1,501.93	1,467.07	34.85	43.095	
4,880.00	4,796.33	4,452.47	4,220.29	19.00	23.48	111.38	-1,122.04	478.15	1,512.12	1,477.10	35.03	43.169	
4,900.00	4,815.25	4,469.43	4,235.76	19.11	23.60	111.50	-1,128.42	480.89	1,522.33	1,487.12	35.20	43.243	
4,920.00	4,834.17	4,486.38	4,251.23	19.22	23.72	111.63	-1,134.80	483.62	1,532.54	1,497.16	35.38	43.315	
4,940.00	4,853.10	4,503.34	4,266.70	19.32	23.84	111.75	-1,141.18	486.36	1,542.75	1,507.19	35.56	43.386	
4,960.00	4,872.02	4,520.29	4,282.17	19.43	23.96	111.87	-1,147.56	489.09	1,552.97	1,517.24	35.74	43.457	
4,980.00	4,890.94	4,537.25	4,297.64	19.54	24.08	111.99	-1,153.94	491.83	1,563.20	1,527.28	35.91	43.527	
5,000.00	4,909.86	4,554.21	4,313.11	19.65	24.20	112.10	-1,160.32	494.57	1,573.43	1,537.34	36.09	43.597	
5,020.00	4,928.78	4,571.16	4,328.58	19.75	24.32	112.22	-1,166.70	497.30	1,583.66	1,547.39	36.27	43.665	
5,040.00	4,947.70	4,588.12	4,344.05	19.86	24.44	112.33	-1,173.08	500.04	1,593.90	1,557.45	36.45	43.733	
5,060.00	4,966.62	4,605.08	4,359.52	19.97	24.56	112.45	-1,179.46	502.77	1,604.15	1,567.52	36.62	43.800	
5,080.00	4,985.54	4,622.03	4,374.99	20.08	24.68	112.56	-1,185.84	505.51	1,614.39	1,577.59	36.80	43.867	
5,100.00	5,004.46	4,638.99	4,390.46	20.19	24.80	112.67	-1,192.22	508.25	1,624.65	1,587.67	36.98	43.933	
5,120.00	5,023.39	4,655.94	4,405.93	20.30	24.92	112.78	-1,198.60	510.98	1,634.91	1,597.75	37.16	43.998	
5,140.00	5,042.31	4,672.90	4,421.40	20.41	25.04	112.89	-1,204.98	513.72	1,645.17	1,607.83	37.34	44.062	
5,160.00	5,061.23	4,689.86	4,436.87	20.51	25.16	112.99	-1,211.36	516.45	1,655.44	1,617.92	37.52	44.126	
5,180.00	5,080.15	4,706.81	4,452.34	20.62	25.28	113.10	-1,217.74	519.19	1,665.71	1,628.01	37.69	44.189	
5,200.00	5,099.07	4,723.77	4,467.82	20.73	25.40	113.20	-1,224.12	521.93	1,675.98	1,638.11	37.87	44.252	
5,220.00	5,117.99	4,740.73	4,483.29	20.84	25.52	113.30	-1,230.50	524.66	1,686.26	1,648.21	38.05	44.314	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,240.00	5,136.91	4,757.68	4,498.76	20.95	25.65	113.41	-1,236.87	527.40	1,696.55	1,658.31	38.23	44.375	
5,260.00	5,155.83	4,774.64	4,514.23	21.06	25.77	113.51	-1,243.25	530.13	1,706.83	1,668.42	38.41	44.435	
5,280.00	5,174.75	4,791.59	4,529.70	21.17	25.89	113.60	-1,249.63	532.87	1,717.12	1,678.53	38.59	44.496	
5,300.00	5,193.67	4,808.55	4,545.17	21.28	26.01	113.70	-1,256.01	535.61	1,727.42	1,688.65	38.77	44.555	
5,320.00	5,212.60	4,825.51	4,560.64	21.39	26.13	113.80	-1,262.39	538.34	1,737.72	1,698.77	38.95	44.614	
5,340.00	5,231.52	4,842.46	4,576.11	21.50	26.25	113.89	-1,268.77	541.08	1,748.02	1,708.89	39.13	44.672	
5,360.00	5,250.44	4,859.42	4,591.58	21.61	26.37	113.99	-1,275.15	543.81	1,758.33	1,719.02	39.31	44.729	
5,380.00	5,269.36	4,876.38	4,607.05	21.72	26.49	114.08	-1,281.53	546.55	1,768.64	1,729.15	39.49	44.787	
5,400.00	5,288.28	4,893.33	4,622.52	21.83	26.61	114.17	-1,287.91	549.29	1,778.95	1,739.28	39.67	44.843	
5,420.00	5,307.20	4,910.29	4,637.99	21.94	26.73	114.27	-1,294.29	552.02	1,789.27	1,749.42	39.85	44.899	
5,440.00	5,326.12	4,927.24	4,653.46	22.06	26.85	114.36	-1,300.67	554.76	1,799.59	1,759.56	40.03	44.954	
5,460.00	5,345.04	4,944.20	4,668.93	22.17	26.97	114.45	-1,307.05	557.50	1,809.91	1,769.70	40.21	45.009	
5,480.00	5,363.96	4,961.16	4,684.40	22.28	27.10	114.53	-1,313.43	560.23	1,820.24	1,779.84	40.39	45.064	
5,500.00	5,382.89	4,978.11	4,699.87	22.39	27.22	114.62	-1,319.81	562.97	1,830.57	1,789.99	40.57	45.118	
5,520.00	5,401.81	4,995.07	4,715.34	22.50	27.34	114.71	-1,326.19	565.70	1,840.90	1,800.15	40.75	45.171	
5,540.00	5,420.73	5,012.02	4,730.81	22.61	27.46	114.79	-1,332.57	568.44	1,851.24	1,810.30	40.94	45.224	
5,560.00	5,439.65	5,028.98	4,746.28	22.72	27.58	114.88	-1,338.95	571.18	1,861.57	1,820.46	41.12	45.276	
5,580.00	5,458.57	5,045.94	4,761.75	22.84	27.70	114.96	-1,345.33	573.91	1,871.92	1,830.62	41.30	45.328	
5,600.00	5,477.49	5,062.89	4,777.22	22.95	27.82	115.04	-1,351.71	576.65	1,882.26	1,840.78	41.48	45.379	
5,620.00	5,496.41	5,079.85	4,792.69	23.06	27.94	115.13	-1,358.09	579.38	1,892.61	1,850.95	41.66	45.430	
5,640.00	5,515.33	5,096.81	4,808.16	23.17	28.06	115.21	-1,364.47	582.12	1,902.96	1,861.12	41.84	45.480	
5,660.00	5,534.25	5,113.76	4,823.63	23.28	28.18	115.29	-1,370.85	584.86	1,913.31	1,871.29	42.02	45.530	
5,680.00	5,553.18	5,130.72	4,839.10	23.40	28.31	115.37	-1,377.23	587.59	1,923.67	1,881.47	42.20	45.580	
5,700.00	5,572.10	5,147.67	4,854.57	23.51	28.43	115.44	-1,383.61	590.33	1,934.03	1,891.64	42.39	45.629	
5,720.00	5,591.02	5,164.63	4,870.04	23.62	28.55	115.52	-1,389.99	593.06	1,944.39	1,901.82	42.57	45.677	
5,740.00	5,609.94	5,181.59	4,885.51	23.73	28.67	115.60	-1,396.36	595.80	1,954.75	1,912.00	42.75	45.725	
5,760.00	5,628.86	5,198.54	4,900.98	23.85	28.79	115.67	-1,402.74	598.54	1,965.12	1,922.19	42.93	45.773	
5,780.00	5,647.78	5,215.50	4,916.45	23.96	28.91	115.75	-1,409.12	601.27	1,975.49	1,932.38	43.11	45.820	
5,800.00	5,666.70	5,232.46	4,931.92	24.07	29.03	115.82	-1,415.50	604.01	1,985.86	1,942.57	43.30	45.867	
5,809.89	5,676.06	5,240.84	4,939.57	24.13	29.09	115.86	-1,418.66	605.36	1,990.99	1,947.61	43.39	45.890	
5,820.00	5,685.60	5,249.40	4,947.39	24.19	29.15	113.83	-1,421.88	606.74	1,996.23	1,952.75	43.48	45.910	
5,840.00	5,704.31	5,266.29	4,962.79	24.31	29.27	110.20	-1,428.23	609.47	2,006.55	1,962.88	43.67	45.948	
5,850.00	5,713.58	5,274.70	4,970.47	24.37	29.33	108.56	-1,431.40	610.82	2,011.68	1,967.91	43.77	45.965	
5,860.00	5,722.80	5,283.09	4,978.12	24.43	29.39	107.01	-1,434.56	612.18	2,016.79	1,972.93	43.87	45.976	
5,880.00	5,741.03	5,299.79	4,993.35	24.57	29.51	104.16	-1,440.84	614.87	2,026.97	1,982.90	44.07	45.994	
5,900.00	5,759.00	5,316.35	5,008.46	24.70	29.63	101.60	-1,447.07	617.54	2,037.05	1,992.78	44.28	46.009	
5,920.00	5,776.66	5,332.76	5,023.44	24.85	29.75	99.28	-1,453.24	620.19	2,047.05	2,002.55	44.50	46.006	
5,940.00	5,794.02	5,349.01	5,038.26	25.00	29.87	97.17	-1,459.36	622.81	2,056.95	2,012.23	44.72	45.999	
5,950.00	5,802.57	5,357.07	5,045.61	25.08	29.92	96.19	-1,462.39	624.11	2,061.86	2,017.03	44.83	45.995	
5,960.00	5,811.03	5,365.07	5,052.91	25.16	29.98	95.24	-1,465.40	625.41	2,066.74	2,021.79	44.95	45.982	
5,980.00	5,827.69	5,380.92	5,067.38	25.33	30.09	93.47	-1,471.36	627.96	2,076.42	2,031.23	45.19	45.954	
6,000.00	5,843.96	5,396.54	5,081.63	25.50	30.21	91.83	-1,477.24	630.48	2,085.98	2,040.56	45.42	45.923	
6,020.00	5,859.84	5,411.92	5,095.66	25.69	30.32	90.30	-1,483.03	632.97	2,095.43	2,049.75	45.68	45.872	
6,040.00	5,875.31	5,427.03	5,109.45	25.87	30.42	88.89	-1,488.71	635.40	2,104.74	2,058.81	45.94	45.819	
6,050.00	5,882.88	5,434.49	5,116.25	25.97	30.48	88.22	-1,491.51	636.61	2,109.35	2,063.29	46.06	45.792	
6,060.00	5,890.33	5,441.86	5,122.98	26.07	30.53	87.57	-1,494.29	637.80	2,113.93	2,067.73	46.20	45.755	
6,080.00	5,904.90	5,456.39	5,136.23	26.28	30.64	86.33	-1,499.76	640.14	2,122.99	2,076.51	46.48	45.679	
6,100.00	5,919.00	5,470.60	5,149.20	26.49	30.74	85.17	-1,505.10	642.43	2,131.91	2,085.16	46.75	45.603	
6,120.00	5,932.61	5,484.47	5,161.85	26.72	30.84	84.09	-1,510.32	644.67	2,140.69	2,093.65	47.04	45.505	
6,140.00	5,945.72	5,497.99	5,174.18	26.95	30.93	83.06	-1,515.41	646.85	2,149.34	2,102.00	47.34	45.407	
6,150.00	5,952.07	5,504.61	5,180.23	27.06	30.98	82.57	-1,517.90	647.92	2,153.61	2,106.13	47.48	45.357	
6,160.00	5,958.30	5,511.14	5,186.18	27.19	31.03	82.09	-1,520.35	648.97	2,157.84	2,110.20	47.64	45.297	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,180.00	5,970.34	5,523.90	5,197.83	27.44	31.12	81.18	-1,525.16	651.03	2,166.20	2,118.25	47.95	45.177	
6,200.00	5,981.83	5,536.26	5,209.10	27.69	31.21	80.32	-1,529.81	653.03	2,174.41	2,126.15	48.26	45.057	
6,220.00	5,992.76	5,548.21	5,220.00	27.97	31.29	79.49	-1,534.30	654.96	2,182.47	2,133.88	48.59	44.916	
6,240.00	6,003.11	5,559.72	5,230.51	28.25	31.38	78.72	-1,538.63	656.81	2,190.39	2,141.47	48.92	44.775	
6,250.00	6,008.06	5,565.31	5,235.61	28.38	31.42	78.34	-1,540.74	657.72	2,194.30	2,145.21	49.08	44.706	
6,260.00	6,012.86	5,570.79	5,240.60	28.53	31.45	77.97	-1,542.80	658.60	2,198.16	2,148.90	49.26	44.626	
6,280.00	6,022.01	5,581.40	5,250.28	28.84	31.53	77.27	-1,546.79	660.31	2,205.78	2,156.17	49.61	44.466	
6,300.00	6,030.55	5,591.54	5,259.54	29.14	31.60	76.59	-1,550.60	661.95	2,213.25	2,163.30	49.95	44.309	
6,320.00	6,038.46	5,601.19	5,268.34	29.46	31.67	75.95	-1,554.24	663.51	2,220.56	2,170.25	50.31	44.133	
6,340.00	6,045.73	5,610.35	5,276.70	29.78	31.74	75.33	-1,557.68	664.98	2,227.72	2,177.05	50.68	43.960	
6,350.00	6,049.13	5,614.74	5,280.71	29.95	31.77	75.03	-1,559.33	665.69	2,231.25	2,180.39	50.86	43.874	
6,360.00	6,052.36	5,619.00	5,284.59	30.12	31.80	74.74	-1,560.94	666.38	2,234.73	2,183.69	51.05	43.779	
6,380.00	6,058.34	5,627.14	5,292.02	30.47	31.86	74.17	-1,564.00	667.69	2,241.58	2,190.16	51.42	43.592	
6,400.00	6,063.66	5,634.75	5,298.96	30.81	31.91	73.63	-1,566.86	668.92	2,248.28	2,196.49	51.79	43.409	
6,420.00	6,068.31	5,641.82	5,305.41	31.18	31.96	73.10	-1,569.52	670.06	2,254.82	2,202.64	52.18	43.211	
6,440.00	6,072.29	5,648.35	5,311.36	31.54	32.01	72.60	-1,571.98	671.11	2,261.20	2,208.63	52.56	43.018	
6,450.00	6,074.03	5,651.40	5,314.15	31.73	32.03	72.35	-1,573.13	671.61	2,264.33	2,211.57	52.75	42.922	
6,460.00	6,075.60	5,654.32	5,316.81	31.92	32.05	72.11	-1,574.23	672.08	2,267.42	2,214.46	52.95	42.821	
6,480.00	6,078.23	5,659.73	5,321.75	32.30	32.09	71.64	-1,576.26	672.95	2,273.47	2,220.13	53.34	42.621	
6,500.00	6,080.17	5,664.58	5,326.17	32.68	32.13	71.19	-1,578.09	673.73	2,279.36	2,225.64	53.73	42.425	
6,520.00	6,081.42	5,668.85	5,330.07	33.07	32.16	70.75	-1,579.69	674.42	2,285.08	2,230.96	54.12	42.222	
6,540.00	6,081.99	5,672.55	5,333.45	33.47	32.18	70.33	-1,581.08	675.02	2,290.64	2,236.13	54.51	42.024	
6,552.18	6,082.00	5,674.51	5,335.24	33.71	32.20	70.08	-1,581.82	675.34	2,293.94	2,239.20	54.74	41.906	
6,560.00	6,081.92	5,675.70	5,336.33	33.86	32.21	70.11	-1,582.27	675.53	2,296.05	2,241.15	54.89	41.826	
6,580.00	6,081.73	5,678.75	5,339.11	34.27	32.23	70.19	-1,583.42	676.02	2,301.55	2,246.26	55.29	41.630	
6,600.00	6,081.53	5,681.80	5,341.89	34.67	32.25	70.27	-1,584.57	676.51	2,307.21	2,251.53	55.67	41.441	
6,620.00	6,081.34	5,684.85	5,344.67	35.10	32.27	70.35	-1,585.71	677.01	2,313.02	2,256.94	56.08	41.246	
6,640.00	6,081.14	5,687.90	5,347.45	35.52	32.29	70.43	-1,586.86	677.50	2,318.99	2,262.51	56.48	41.059	
6,660.00	6,080.95	5,690.95	5,350.24	35.94	32.32	70.50	-1,588.01	677.99	2,325.11	2,268.23	56.88	40.880	
6,680.00	6,080.76	5,694.00	5,353.02	36.37	32.34	70.58	-1,589.15	678.48	2,331.38	2,274.11	57.27	40.709	
6,700.00	6,080.56	5,697.05	5,355.80	36.79	32.36	70.66	-1,590.30	678.97	2,337.80	2,280.14	57.66	40.545	
6,720.00	6,080.37	5,700.10	5,358.58	37.24	32.38	70.74	-1,591.45	679.47	2,344.37	2,286.31	58.07	40.373	
6,740.00	6,080.17	5,703.15	5,361.36	37.69	32.40	70.82	-1,592.60	679.96	2,351.09	2,292.62	58.47	40.209	
6,760.00	6,079.98	5,706.20	5,364.15	38.13	32.43	70.89	-1,593.74	680.45	2,357.96	2,299.09	58.87	40.052	
6,780.00	6,079.78	5,709.25	5,366.93	38.58	32.45	70.97	-1,594.89	680.94	2,364.97	2,305.70	59.27	39.902	
6,800.00	6,079.59	5,712.30	5,369.71	39.03	32.47	71.05	-1,596.04	681.43	2,372.13	2,312.46	59.66	39.759	
6,820.00	6,079.39	5,715.35	5,372.49	39.49	32.49	71.13	-1,597.19	681.93	2,379.42	2,319.35	60.07	39.611	
6,840.00	6,079.20	5,718.39	5,375.27	39.96	32.51	71.21	-1,598.33	682.42	2,386.86	2,326.39	60.47	39.470	
6,860.00	6,079.00	5,721.44	5,378.06	40.43	32.53	71.28	-1,599.48	682.91	2,394.44	2,333.57	60.87	39.336	
6,880.00	6,078.81	7,122.16	6,079.00	40.89	48.24	90.00	-1,899.93	1,600.84	2,396.01	2,314.96	81.05	29.563	
6,900.00	6,078.61	7,142.16	6,078.81	41.36	48.60	90.00	-1,900.13	1,620.83	2,396.21	2,314.23	81.98	29.228	
6,920.00	6,078.42	7,162.15	6,078.61	41.84	48.96	90.00	-1,900.34	1,640.83	2,396.42	2,313.48	82.94	28.895	
6,940.00	6,078.22	7,182.15	6,078.41	42.32	49.33	90.00	-1,900.55	1,660.83	2,396.63	2,312.74	83.89	28.569	
6,960.00	6,078.03	7,202.15	6,078.21	42.81	49.70	90.00	-1,900.75	1,680.82	2,396.83	2,311.99	84.84	28.251	
6,980.00	6,077.83	7,222.15	6,078.02	43.29	50.08	90.00	-1,900.96	1,700.82	2,397.04	2,311.23	85.81	27.934	
7,000.00	6,077.64	7,242.15	6,077.82	43.77	50.47	90.00	-1,901.16	1,720.82	2,397.24	2,310.47	86.78	27.625	
7,020.00	6,077.44	7,262.15	6,077.62	44.27	50.86	90.00	-1,901.37	1,740.81	2,397.45	2,309.69	87.76	27.318	
7,040.00	6,077.25	7,282.15	6,077.42	44.76	51.25	90.00	-1,901.58	1,760.81	2,397.66	2,308.91	88.74	27.019	
7,060.00	6,077.05	7,302.15	6,077.22	45.26	51.64	90.00	-1,901.78	1,780.81	2,397.86	2,308.14	89.72	26.725	
7,080.00	6,076.86	7,322.15	6,077.03	45.76	52.04	90.00	-1,901.99	1,800.81	2,398.07	2,307.35	90.72	26.434	
7,100.00	6,076.66	7,342.14	6,076.83	46.25	52.45	90.00	-1,902.19	1,820.80	2,398.27	2,306.56	91.71	26.150	
7,120.00	6,076.47	7,362.14	6,076.63	46.76	52.86	90.00	-1,902.40	1,840.80	2,398.48	2,305.76	92.72	25.868	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,140.00	6,076.27	7,382.14	6,076.43	47.27	53.27	90.00	-1,902.60	1,860.80	2,398.69	2,304.96	93.73	25.593	
7,160.00	6,076.08	7,402.14	6,076.24	47.78	53.68	90.00	-1,902.81	1,880.79	2,398.89	2,304.16	94.73	25.323	
7,180.00	6,075.88	7,422.14	6,076.04	48.28	54.11	90.00	-1,903.02	1,900.79	2,399.10	2,303.35	95.75	25.056	
7,200.00	6,075.69	7,442.14	6,075.84	48.79	54.53	90.00	-1,903.22	1,920.79	2,399.30	2,302.54	96.77	24.794	
7,220.00	6,075.49	7,462.14	6,075.64	49.31	54.96	90.00	-1,903.43	1,940.78	2,399.51	2,301.71	97.79	24.536	
7,240.00	6,075.30	7,482.14	6,075.45	49.83	55.39	90.00	-1,903.63	1,960.78	2,399.71	2,300.89	98.82	24.283	
7,260.00	6,075.11	7,502.14	6,075.25	50.34	55.82	90.00	-1,903.84	1,980.78	2,399.92	2,300.07	99.85	24.035	
7,280.00	6,074.91	7,522.13	6,075.05	50.86	56.26	90.00	-1,904.05	2,000.77	2,400.13	2,299.24	100.89	23.790	
7,300.00	6,074.72	7,542.13	6,074.85	51.38	56.70	90.00	-1,904.25	2,020.77	2,400.33	2,298.41	101.92	23.550	
7,320.00	6,074.52	7,562.13	6,074.66	51.90	57.15	90.00	-1,904.46	2,040.77	2,400.54	2,297.57	102.97	23.313	
7,340.00	6,074.33	7,582.13	6,074.46	52.43	57.59	90.00	-1,904.66	2,060.76	2,400.74	2,296.73	104.01	23.081	
7,360.00	6,074.13	7,602.13	6,074.26	52.96	58.04	90.00	-1,904.87	2,080.76	2,400.95	2,295.89	105.06	22.854	
7,380.00	6,073.94	7,622.13	6,074.06	53.48	58.50	90.00	-1,905.08	2,100.76	2,401.16	2,295.04	106.11	22.629	
7,400.00	6,073.74	7,642.13	6,073.86	54.01	58.96	90.00	-1,905.28	2,120.76	2,401.36	2,294.20	107.16	22.408	
7,420.00	6,073.55	7,662.13	6,073.67	54.54	59.42	90.00	-1,905.49	2,140.75	2,401.57	2,293.34	108.23	22.191	
7,440.00	6,073.35	7,682.13	6,073.47	55.07	59.88	90.00	-1,905.69	2,160.75	2,401.77	2,292.49	109.29	21.977	
7,460.00	6,073.16	7,702.13	6,073.27	55.61	60.34	90.00	-1,905.90	2,180.75	2,401.98	2,291.63	110.35	21.768	
7,480.00	6,072.96	7,722.12	6,073.07	56.14	60.81	90.00	-1,906.11	2,200.74	2,402.19	2,290.77	111.41	21.561	
7,500.00	6,072.77	7,742.12	6,072.88	56.67	61.28	90.00	-1,906.31	2,220.74	2,402.39	2,289.91	112.48	21.358	
7,520.00	6,072.57	7,762.12	6,072.68	57.21	61.75	90.00	-1,906.52	2,240.74	2,402.60	2,289.04	113.55	21.158	
7,540.00	6,072.38	7,782.12	6,072.48	57.75	62.23	90.00	-1,906.72	2,260.73	2,402.80	2,288.18	114.63	20.962	
7,560.00	6,072.18	7,802.12	6,072.28	58.29	62.70	90.00	-1,906.93	2,280.73	2,403.01	2,287.31	115.70	20.769	
7,580.00	6,071.99	7,822.12	6,072.09	58.83	63.18	90.00	-1,907.13	2,300.73	2,403.22	2,286.43	116.78	20.579	
7,600.00	6,071.79	7,842.12	6,071.89	59.37	63.67	90.00	-1,907.34	2,320.72	2,403.42	2,285.56	117.86	20.392	
7,620.00	6,071.60	7,862.12	6,071.69	59.92	64.15	90.00	-1,907.55	2,340.72	2,403.63	2,284.68	118.95	20.208	
7,640.00	6,071.40	7,882.12	6,071.49	60.46	64.64	90.00	-1,907.75	2,360.72	2,403.83	2,283.80	120.03	20.027	
7,660.00	6,071.21	7,902.11	6,071.29	61.01	65.12	90.00	-1,907.96	2,380.72	2,404.04	2,282.92	121.12	19.849	
7,680.00	6,071.01	7,922.11	6,071.10	61.55	65.62	90.00	-1,908.16	2,400.71	2,404.24	2,282.04	122.21	19.673	
7,700.00	6,070.82	7,942.11	6,070.90	62.10	66.11	90.00	-1,908.37	2,420.71	2,404.45	2,281.15	123.30	19.501	
7,720.00	6,070.62	7,962.11	6,070.70	62.65	66.60	90.00	-1,908.58	2,440.71	2,404.66	2,280.26	124.39	19.331	
7,740.00	6,070.43	7,982.11	6,070.50	63.19	67.10	90.00	-1,908.78	2,460.70	2,404.86	2,279.37	125.49	19.164	
7,760.00	6,070.23	8,002.11	6,070.31	63.74	67.60	90.00	-1,908.99	2,480.70	2,405.07	2,278.48	126.58	19.000	
7,780.00	6,070.04	8,022.11	6,070.11	64.29	68.10	90.00	-1,909.19	2,500.70	2,405.27	2,277.59	127.68	18.838	
7,800.00	6,069.85	8,042.11	6,069.91	64.84	68.60	90.00	-1,909.40	2,520.69	2,405.48	2,276.70	128.78	18.678	
7,820.00	6,069.65	8,062.11	6,069.71	65.40	69.10	90.00	-1,909.61	2,540.69	2,405.69	2,275.80	129.89	18.521	
7,840.00	6,069.46	8,082.11	6,069.52	65.95	69.61	90.00	-1,909.81	2,560.69	2,405.89	2,274.90	130.99	18.367	
7,860.00	6,069.26	8,102.10	6,069.32	66.51	70.11	90.00	-1,910.02	2,580.68	2,406.10	2,274.00	132.10	18.215	
7,880.00	6,069.07	8,122.10	6,069.12	67.06	70.62	90.00	-1,910.22	2,600.68	2,406.30	2,273.10	133.21	18.065	
7,900.00	6,068.87	8,142.10	6,068.92	67.61	71.13	90.00	-1,910.43	2,620.68	2,406.51	2,272.20	134.31	17.917	
7,920.00	6,068.68	8,162.10	6,068.73	68.17	71.65	90.00	-1,910.64	2,640.68	2,406.72	2,271.29	135.42	17.772	
7,940.00	6,068.48	8,182.10	6,068.53	68.73	72.16	90.00	-1,910.84	2,660.67	2,406.92	2,270.39	136.54	17.628	
7,960.00	6,068.29	8,202.10	6,068.33	69.29	72.67	90.00	-1,911.05	2,680.67	2,407.13	2,269.48	137.65	17.487	
7,980.00	6,068.09	8,222.10	6,068.13	69.84	73.19	90.00	-1,911.25	2,700.67	2,407.33	2,268.57	138.76	17.348	
8,000.00	6,067.90	8,242.10	6,067.93	70.40	73.71	90.00	-1,911.46	2,720.66	2,407.54	2,267.66	139.88	17.211	
8,020.00	6,067.70	8,262.10	6,067.74	70.96	74.23	90.00	-1,911.66	2,740.66	2,407.75	2,266.75	141.00	17.076	
8,040.00	6,067.51	8,282.09	6,067.54	71.52	74.75	90.00	-1,911.87	2,760.66	2,407.95	2,265.83	142.12	16.943	
8,060.00	6,067.31	8,302.09	6,067.34	72.08	75.27	89.99	-1,912.08	2,780.65	2,408.16	2,264.92	143.24	16.813	
8,080.00	6,067.12	8,322.09	6,067.14	72.64	75.79	89.99	-1,912.28	2,800.65	2,408.36	2,264.01	144.36	16.683	
8,100.00	6,066.92	8,342.09	6,066.95	73.20	76.31	89.99	-1,912.49	2,820.65	2,408.57	2,263.09	145.48	16.556	
8,120.00	6,066.73	8,362.09	6,066.75	73.77	76.84	89.99	-1,912.69	2,840.64	2,408.77	2,262.17	146.60	16.430	
8,140.00	6,066.53	8,382.09	6,066.55	74.33	77.36	89.99	-1,912.90	2,860.64	2,408.98	2,261.25	147.73	16.307	
8,160.00	6,066.34	8,402.09	6,066.35	74.90	77.89	89.99	-1,913.11	2,880.64	2,409.19	2,260.33	148.85	16.185	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,180.00	6,066.14	8,422.09	6,066.16	75.46	78.42	89.99	-1,913.31	2,900.63	2,409.39	2,259.41	149.98	16.065	
8,200.00	6,065.95	8,442.09	6,065.96	76.02	78.95	89.99	-1,913.52	2,920.63	2,409.60	2,258.49	151.11	15.946	
8,220.00	6,065.75	8,462.09	6,065.76	76.59	79.48	89.99	-1,913.72	2,940.63	2,409.80	2,257.57	152.24	15.829	
8,240.00	6,065.56	8,482.08	6,065.56	77.16	80.01	89.99	-1,913.93	2,960.63	2,410.01	2,256.64	153.37	15.714	
8,260.00	6,065.36	8,502.08	6,065.36	77.72	80.55	89.99	-1,914.14	2,980.62	2,410.22	2,255.72	154.50	15.600	
8,280.00	6,065.17	8,522.08	6,065.17	78.29	81.08	89.99	-1,914.34	3,000.62	2,410.42	2,254.79	155.63	15.488	
8,300.00	6,064.97	8,542.08	6,064.97	78.85	81.62	89.99	-1,914.55	3,020.62	2,410.63	2,253.86	156.77	15.377	
8,320.00	6,064.78	8,562.08	6,064.77	79.42	82.15	89.99	-1,914.75	3,040.61	2,410.83	2,252.93	157.90	15.268	
8,340.00	6,064.59	8,582.08	6,064.57	79.99	82.69	89.99	-1,914.96	3,060.61	2,411.04	2,252.00	159.04	15.160	
8,360.00	6,064.39	8,602.08	6,064.38	80.56	83.22	89.99	-1,915.17	3,080.61	2,411.25	2,251.08	160.17	15.054	
8,380.00	6,064.20	8,622.08	6,064.18	81.13	83.76	89.99	-1,915.37	3,100.60	2,411.45	2,250.14	161.31	14.949	
8,400.00	6,064.00	8,642.08	6,063.98	81.70	84.30	89.99	-1,915.58	3,120.60	2,411.66	2,249.21	162.45	14.846	
8,420.00	6,063.81	8,662.07	6,063.78	82.27	84.84	89.99	-1,915.78	3,140.60	2,411.86	2,248.28	163.59	14.744	
8,440.00	6,063.61	8,682.07	6,063.59	82.84	85.39	89.99	-1,915.99	3,160.59	2,412.07	2,247.35	164.72	14.643	
8,460.00	6,063.42	8,702.07	6,063.39	83.41	85.93	89.99	-1,916.19	3,180.59	2,412.28	2,246.41	165.86	14.544	
8,480.00	6,063.22	8,722.07	6,063.19	83.98	86.47	89.99	-1,916.40	3,200.59	2,412.48	2,245.48	167.01	14.446	
8,500.00	6,063.03	8,742.07	6,062.99	84.55	87.01	89.99	-1,916.61	3,220.59	2,412.69	2,244.54	168.15	14.349	
8,520.00	6,062.83	8,762.07	6,062.80	85.12	87.56	89.99	-1,916.81	3,240.58	2,412.89	2,243.60	169.29	14.253	
8,540.00	6,062.64	8,782.07	6,062.60	85.69	88.10	89.99	-1,917.02	3,260.58	2,413.10	2,242.67	170.43	14.159	
8,560.00	6,062.44	8,802.07	6,062.40	86.27	88.65	89.99	-1,917.22	3,280.58	2,413.31	2,241.73	171.58	14.065	
8,580.00	6,062.25	8,822.07	6,062.20	86.84	89.20	89.99	-1,917.43	3,300.57	2,413.51	2,240.79	172.72	13.973	
8,600.00	6,062.05	8,842.06	6,062.00	87.41	89.75	89.99	-1,917.64	3,320.57	2,413.72	2,239.85	173.87	13.882	
8,620.00	6,061.86	8,862.06	6,061.81	87.99	90.29	89.99	-1,917.84	3,340.57	2,413.92	2,238.91	175.01	13.793	
8,640.00	6,061.66	8,882.06	6,061.61	88.56	90.84	89.99	-1,918.05	3,360.56	2,414.13	2,237.97	176.16	13.704	
8,660.00	6,061.47	8,902.06	6,061.41	89.13	91.39	89.99	-1,918.25	3,380.56	2,414.33	2,237.03	177.31	13.617	
8,680.00	6,061.27	8,922.06	6,061.21	89.71	91.94	89.99	-1,918.46	3,400.56	2,414.54	2,236.08	178.46	13.530	
8,700.00	6,061.08	8,942.06	6,061.02	90.28	92.49	89.99	-1,918.67	3,420.55	2,414.75	2,235.14	179.61	13.445	
8,720.00	6,060.88	8,962.06	6,060.82	90.86	93.05	89.99	-1,918.87	3,440.55	2,414.95	2,234.20	180.76	13.360	
8,740.00	6,060.69	8,982.06	6,060.62	91.43	93.60	89.99	-1,919.08	3,460.55	2,415.16	2,233.25	181.91	13.277	
8,760.00	6,060.49	9,002.06	6,060.42	92.01	94.15	89.99	-1,919.28	3,480.54	2,415.36	2,232.31	183.06	13.195	
8,780.00	6,060.30	9,022.06	6,060.23	92.59	94.70	89.99	-1,919.49	3,500.54	2,415.57	2,231.36	184.21	13.113	
8,800.00	6,060.10	9,042.05	6,060.03	93.16	95.26	89.99	-1,919.70	3,520.54	2,415.78	2,230.42	185.36	13.033	
8,820.00	6,059.91	9,062.05	6,059.83	93.74	95.81	89.99	-1,919.90	3,540.54	2,415.98	2,229.47	186.51	12.953	
8,840.00	6,059.71	9,082.05	6,059.63	94.32	96.37	89.99	-1,920.11	3,560.53	2,416.19	2,228.52	187.67	12.875	
8,860.00	6,059.52	9,102.05	6,059.44	94.89	96.92	89.99	-1,920.31	3,580.53	2,416.39	2,227.57	188.82	12.797	
8,880.00	6,059.33	9,122.05	6,059.24	95.47	97.48	89.99	-1,920.52	3,600.53	2,416.60	2,226.63	189.97	12.721	
8,900.00	6,059.13	9,142.05	6,059.04	96.05	98.04	89.99	-1,920.73	3,620.52	2,416.81	2,225.68	191.13	12.645	
8,920.00	6,058.94	9,162.05	6,058.84	96.63	98.59	89.99	-1,920.93	3,640.52	2,417.01	2,224.73	192.28	12.570	
8,940.00	6,058.74	9,182.05	6,058.64	97.20	99.15	89.99	-1,921.14	3,660.52	2,417.22	2,223.78	193.44	12.496	
8,960.00	6,058.55	9,202.05	6,058.45	97.78	99.71	89.99	-1,921.34	3,680.51	2,417.42	2,222.83	194.60	12.423	
8,980.00	6,058.35	9,222.04	6,058.25	98.36	100.27	89.99	-1,921.55	3,700.51	2,417.63	2,221.88	195.75	12.350	
9,000.00	6,058.16	9,242.04	6,058.05	98.94	100.83	89.99	-1,921.75	3,720.51	2,417.84	2,220.93	196.91	12.279	
9,020.00	6,057.96	9,262.04	6,057.85	99.52	101.39	89.99	-1,921.96	3,740.50	2,418.04	2,219.97	198.07	12.208	
9,040.00	6,057.77	9,282.04	6,057.66	100.10	101.95	89.99	-1,922.17	3,760.50	2,418.25	2,219.02	199.23	12.138	
9,060.00	6,057.57	9,302.04	6,057.46	100.68	102.51	89.99	-1,922.37	3,780.50	2,418.45	2,218.07	200.38	12.069	
9,080.00	6,057.38	9,322.04	6,057.26	101.26	103.07	89.99	-1,922.58	3,800.50	2,418.66	2,217.12	201.54	12.001	
9,100.00	6,057.18	9,342.04	6,057.06	101.84	103.63	89.99	-1,922.78	3,820.49	2,418.86	2,216.16	202.70	11.933	
9,120.00	6,056.99	9,362.04	6,056.87	102.42	104.20	89.99	-1,922.99	3,840.49	2,419.07	2,215.21	203.86	11.866	
9,140.00	6,056.79	9,382.04	6,056.67	103.00	104.76	89.99	-1,923.20	3,860.49	2,419.28	2,214.25	205.02	11.800	
9,160.00	6,056.60	9,402.04	6,056.47	103.58	105.32	89.99	-1,923.40	3,880.48	2,419.48	2,213.30	206.18	11.735	
9,180.00	6,056.40	9,422.03	6,056.27	104.16	105.89	89.99	-1,923.61	3,900.48	2,419.69	2,212.34	207.35	11.670	
9,200.00	6,056.21	9,442.03	6,056.07	104.74	106.45	89.99	-1,923.81	3,920.48	2,419.89	2,211.39	208.51	11.606	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,220.00	6,056.01	9,462.03	6,055.88	105.32	107.02	89.99	-1,924.02	3,940.47	2,420.10	2,210.43	209.67	11.542	
9,240.00	6,055.82	9,482.03	6,055.68	105.90	107.58	89.99	-1,924.23	3,960.47	2,420.31	2,209.47	210.83	11.480	
9,260.00	6,055.62	9,502.03	6,055.48	106.49	108.14	89.99	-1,924.43	3,980.47	2,420.51	2,208.52	211.99	11.418	
9,280.00	6,055.43	9,522.03	6,055.28	107.07	108.71	89.99	-1,924.64	4,000.46	2,420.72	2,207.56	213.16	11.356	
9,300.00	6,055.23	9,542.03	6,055.09	107.65	109.28	89.99	-1,924.84	4,020.46	2,420.92	2,206.60	214.32	11.296	
9,320.00	6,055.04	9,562.03	6,054.89	108.23	109.84	89.99	-1,925.05	4,040.46	2,421.13	2,205.64	215.49	11.236	
9,340.00	6,054.84	9,582.03	6,054.69	108.81	110.41	89.99	-1,925.26	4,060.46	2,421.34	2,204.69	216.65	11.176	
9,360.00	6,054.65	9,602.02	6,054.49	109.40	110.98	89.99	-1,925.46	4,080.45	2,421.54	2,203.73	217.81	11.117	
9,380.00	6,054.45	9,622.02	6,054.30	109.98	111.54	89.99	-1,925.67	4,100.45	2,421.75	2,202.77	218.98	11.059	
9,400.00	6,054.26	9,642.02	6,054.10	110.56	112.11	89.99	-1,925.87	4,120.45	2,421.95	2,201.81	220.15	11.002	
9,420.00	6,054.07	9,662.02	6,053.90	111.14	112.68	89.99	-1,926.08	4,140.44	2,422.16	2,200.85	221.31	10.945	
9,440.00	6,053.87	9,682.02	6,053.70	111.73	113.25	89.99	-1,926.28	4,160.44	2,422.37	2,199.89	222.48	10.888	
9,460.00	6,053.68	9,702.02	6,053.51	112.31	113.82	89.99	-1,926.49	4,180.44	2,422.57	2,198.93	223.64	10.832	
9,480.00	6,053.48	9,722.02	6,053.31	112.89	114.39	89.99	-1,926.70	4,200.43	2,422.78	2,197.97	224.81	10.777	
9,500.00	6,053.29	9,742.02	6,053.11	113.48	114.96	89.99	-1,926.90	4,220.43	2,422.98	2,197.01	225.98	10.722	
9,520.00	6,053.09	9,762.02	6,052.91	114.06	115.53	89.99	-1,927.11	4,240.43	2,423.19	2,196.04	227.15	10.668	
9,540.00	6,052.90	9,782.02	6,052.71	114.65	116.10	89.99	-1,927.31	4,260.42	2,423.39	2,195.08	228.31	10.614	
9,560.00	6,052.70	9,802.01	6,052.52	115.23	116.67	89.99	-1,927.52	4,280.42	2,423.60	2,194.12	229.48	10.561	
9,580.00	6,052.51	9,822.01	6,052.32	115.81	117.24	89.99	-1,927.73	4,300.42	2,423.81	2,193.16	230.65	10.509	
9,600.00	6,052.31	9,842.01	6,052.12	116.40	117.81	89.99	-1,927.93	4,320.41	2,424.01	2,192.19	231.82	10.457	
9,620.00	6,052.12	9,862.01	6,051.92	116.98	118.38	89.99	-1,928.14	4,340.41	2,424.22	2,191.23	232.99	10.405	
9,640.00	6,051.92	9,882.01	6,051.73	117.57	118.95	89.99	-1,928.34	4,360.41	2,424.42	2,190.27	234.16	10.354	
9,660.00	6,051.73	9,902.01	6,051.53	118.15	119.52	89.99	-1,928.55	4,380.41	2,424.63	2,189.30	235.33	10.303	
9,680.00	6,051.53	9,922.01	6,051.33	118.74	120.10	89.99	-1,928.76	4,400.40	2,424.84	2,188.34	236.50	10.253	
9,700.00	6,051.34	9,942.01	6,051.13	119.32	120.67	89.99	-1,928.96	4,420.40	2,425.04	2,187.38	237.67	10.204	
9,720.00	6,051.14	9,962.01	6,050.94	119.91	121.24	89.99	-1,929.17	4,440.40	2,425.25	2,186.41	238.84	10.154	
9,740.00	6,050.95	9,982.00	6,050.74	120.49	121.81	89.99	-1,929.37	4,460.39	2,425.45	2,185.45	240.01	10.106	
9,760.00	6,050.75	10,002.00	6,050.54	121.08	122.39	89.99	-1,929.58	4,480.39	2,425.66	2,184.48	241.18	10.058	
9,780.00	6,050.56	10,022.00	6,050.34	121.67	122.96	89.99	-1,929.79	4,500.39	2,425.87	2,183.52	242.35	10.010	
9,800.00	6,050.36	10,042.00	6,050.14	122.25	123.53	89.99	-1,929.99	4,520.38	2,426.07	2,182.55	243.52	9.963	
9,820.00	6,050.17	10,062.00	6,049.95	122.84	124.11	89.99	-1,930.20	4,540.38	2,426.28	2,181.59	244.69	9.916	
9,840.00	6,049.97	10,082.00	6,049.75	123.42	124.68	89.99	-1,930.40	4,560.38	2,426.48	2,180.62	245.86	9.869	
9,860.00	6,049.78	10,102.00	6,049.55	124.01	125.26	89.99	-1,930.61	4,580.37	2,426.69	2,179.65	247.04	9.823	
9,880.00	6,049.58	10,122.00	6,049.35	124.60	125.83	89.99	-1,930.81	4,600.37	2,426.90	2,178.69	248.21	9.778	
9,900.00	6,049.39	10,142.00	6,049.16	125.18	126.41	89.99	-1,931.02	4,620.37	2,427.10	2,177.72	249.38	9.733	
9,920.00	6,049.19	10,162.00	6,048.96	125.77	126.98	89.99	-1,931.23	4,640.37	2,427.31	2,176.75	250.55	9.688	
9,940.00	6,049.00	10,181.99	6,048.76	126.35	127.56	89.99	-1,931.43	4,660.36	2,427.51	2,175.79	251.73	9.643	
9,960.00	6,048.80	10,201.99	6,048.56	126.94	128.13	89.99	-1,931.64	4,680.36	2,427.72	2,174.82	252.90	9.600	
9,980.00	6,048.61	10,221.99	6,048.37	127.53	128.71	89.99	-1,931.84	4,700.36	2,427.93	2,173.85	254.07	9.556	
10,000.00	6,048.42	10,241.99	6,048.17	128.11	129.29	89.99	-1,932.05	4,720.35	2,428.13	2,172.88	255.25	9.513	
10,020.00	6,048.22	10,261.99	6,047.97	128.70	129.86	89.99	-1,932.26	4,740.35	2,428.34	2,171.92	256.42	9.470	
10,040.00	6,048.03	10,281.99	6,047.77	129.29	130.44	89.99	-1,932.46	4,760.35	2,428.54	2,170.95	257.60	9.428	
10,060.00	6,047.83	10,301.99	6,047.58	129.88	131.02	89.99	-1,932.67	4,780.34	2,428.75	2,169.98	258.77	9.386	
10,080.00	6,047.64	10,321.99	6,047.38	130.46	131.59	89.99	-1,932.87	4,800.34	2,428.95	2,169.01	259.94	9.344	
10,100.00	6,047.44	10,341.99	6,047.18	131.05	132.17	89.99	-1,933.08	4,820.34	2,429.16	2,168.04	261.12	9.303	
10,120.00	6,047.25	10,361.98	6,046.98	131.64	132.75	89.99	-1,933.29	4,840.33	2,429.37	2,167.07	262.29	9.262	
10,140.00	6,047.05	10,381.98	6,046.78	132.23	133.33	89.99	-1,933.49	4,860.33	2,429.57	2,166.10	263.47	9.221	
10,160.00	6,046.86	10,401.98	6,046.59	132.81	133.90	89.99	-1,933.70	4,880.33	2,429.78	2,165.13	264.65	9.181	
10,180.00	6,046.66	10,421.98	6,046.39	133.40	134.48	89.99	-1,933.90	4,900.33	2,429.98	2,164.16	265.82	9.141	
10,200.00	6,046.47	10,441.98	6,046.19	133.99	135.06	89.99	-1,934.11	4,920.32	2,430.19	2,163.19	267.00	9.102	
10,220.00	6,046.27	10,461.98	6,045.99	134.58	135.64	89.99	-1,934.32	4,940.32	2,430.40	2,162.22	268.17	9.063	
10,240.00	6,046.08	10,481.98	6,045.80	135.17	136.22	89.99	-1,934.52	4,960.32	2,430.60	2,161.25	269.35	9.024	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,260.00	6,045.88	10,501.98	6,045.60	135.75	136.80	89.99	-1,934.73	4,980.31	2,430.81	2,160.28	270.53	8.986	
10,280.00	6,045.69	10,521.98	6,045.40	136.34	137.37	89.99	-1,934.93	5,000.31	2,431.01	2,159.31	271.70	8.947	
10,300.00	6,045.49	10,541.97	6,045.20	136.93	137.95	89.99	-1,935.14	5,020.31	2,431.22	2,158.34	272.88	8.910	
10,320.00	6,045.30	10,561.97	6,045.01	137.52	138.53	89.99	-1,935.35	5,040.30	2,431.43	2,157.37	274.06	8.872	
10,340.00	6,045.10	10,581.97	6,044.81	138.11	139.11	89.99	-1,935.55	5,060.30	2,431.63	2,156.40	275.23	8.835	
10,360.00	6,044.91	10,601.97	6,044.61	138.70	139.69	89.99	-1,935.76	5,080.30	2,431.84	2,155.43	276.41	8.798	
10,380.00	6,044.71	10,621.97	6,044.41	139.28	140.27	89.99	-1,935.96	5,100.29	2,432.04	2,154.46	277.59	8.761	
10,400.00	6,044.52	10,641.97	6,044.22	139.87	140.85	89.99	-1,936.17	5,120.29	2,432.25	2,153.48	278.77	8.725	
10,420.00	6,044.32	10,661.97	6,044.02	140.46	141.43	89.99	-1,936.37	5,140.29	2,432.46	2,152.51	279.94	8.689	
10,440.00	6,044.13	10,681.97	6,043.82	141.05	142.01	89.99	-1,936.58	5,160.28	2,432.66	2,151.54	281.12	8.653	
10,460.00	6,043.93	10,701.97	6,043.62	141.64	142.59	89.99	-1,936.79	5,180.28	2,432.87	2,150.57	282.30	8.618	
10,480.00	6,043.74	10,738.83	6,043.26	142.23	143.66	89.99	-1,937.10	5,217.14	2,433.06	2,149.19	283.87	8.571	
10,500.00	6,043.54	10,798.86	6,042.66	142.82	145.40	89.99	-1,936.70	5,277.17	2,432.86	2,146.93	285.93	8.508	
10,520.00	6,043.35	10,818.86	6,042.46	143.41	145.98	89.99	-1,936.44	5,297.17	2,432.60	2,145.49	287.11	8.473	
10,540.00	6,043.16	10,838.86	6,042.26	144.00	146.55	89.99	-1,936.18	5,317.16	2,432.34	2,144.05	288.29	8.437	
10,560.00	6,042.96	10,858.86	6,042.06	144.59	147.13	89.99	-1,935.91	5,337.16	2,432.07	2,142.61	289.47	8.402	
10,580.00	6,042.77	10,878.86	6,041.87	145.18	147.71	89.99	-1,935.65	5,357.15	2,431.81	2,141.17	290.64	8.367	
10,600.00	6,042.57	10,898.86	6,041.67	145.77	148.29	89.99	-1,935.39	5,377.15	2,431.55	2,139.73	291.82	8.332	
10,620.00	6,042.38	10,918.85	6,041.47	146.36	148.87	89.99	-1,935.13	5,397.14	2,431.29	2,138.29	293.00	8.298	
10,640.00	6,042.18	10,938.85	6,041.27	146.95	149.45	89.99	-1,934.87	5,417.14	2,431.03	2,136.85	294.18	8.264	
10,660.00	6,041.99	10,958.85	6,041.07	147.54	150.02	89.99	-1,934.60	5,437.14	2,430.76	2,135.41	295.36	8.230	
10,680.00	6,041.79	10,978.85	6,040.87	148.13	150.60	89.99	-1,934.34	5,457.13	2,430.50	2,133.97	296.53	8.196	
10,700.00	6,041.60	10,998.85	6,040.67	148.71	151.18	89.99	-1,934.08	5,477.13	2,430.24	2,132.53	297.71	8.163	
10,720.00	6,041.40	11,018.85	6,040.47	149.30	151.76	89.99	-1,933.82	5,497.12	2,429.98	2,131.09	298.89	8.130	
10,740.00	6,041.21	11,038.84	6,040.27	149.90	152.34	89.99	-1,933.56	5,517.12	2,429.72	2,129.65	300.07	8.097	
10,760.00	6,041.01	11,058.84	6,040.08	150.49	152.92	89.99	-1,933.30	5,537.11	2,429.46	2,128.21	301.25	8.065	
10,780.00	6,040.82	11,078.84	6,039.88	151.08	153.50	89.99	-1,933.03	5,557.11	2,429.19	2,126.77	302.43	8.032	
10,800.00	6,040.62	11,098.84	6,039.68	151.67	154.08	89.99	-1,932.77	5,577.11	2,428.93	2,125.33	303.61	8.000	
10,820.00	6,040.43	11,118.84	6,039.48	152.26	154.66	89.98	-1,932.51	5,597.10	2,428.67	2,123.88	304.79	7.968	
10,840.00	6,040.23	11,138.84	6,039.28	152.85	155.24	89.98	-1,932.25	5,617.10	2,428.41	2,122.44	305.97	7.937	
10,860.00	6,040.04	11,158.83	6,039.08	153.44	155.82	89.98	-1,931.99	5,637.09	2,428.15	2,121.00	307.15	7.906	
10,880.00	6,039.84	11,178.83	6,038.88	154.03	156.40	89.98	-1,931.73	5,657.09	2,427.89	2,119.56	308.32	7.874	
10,900.00	6,039.65	11,198.83	6,038.68	154.62	156.98	89.98	-1,931.46	5,677.08	2,427.62	2,118.12	309.50	7.844	
10,920.00	6,039.45	11,218.83	6,038.48	155.21	157.56	89.98	-1,931.20	5,697.08	2,427.36	2,116.68	310.68	7.813	
10,940.00	6,039.26	11,238.83	6,038.28	155.80	158.14	89.98	-1,930.94	5,717.07	2,427.10	2,115.24	311.86	7.783	
10,960.00	6,039.06	11,258.82	6,038.09	156.39	158.72	89.98	-1,930.68	5,737.07	2,426.84	2,113.79	313.04	7.752	
10,980.00	6,038.87	11,278.82	6,037.89	156.98	159.30	89.98	-1,930.42	5,757.07	2,426.58	2,112.35	314.23	7.722	
11,000.00	6,038.67	11,298.82	6,037.69	157.57	159.88	89.98	-1,930.15	5,777.06	2,426.31	2,110.91	315.41	7.693	
11,020.00	6,038.48	11,318.82	6,037.49	158.16	160.46	89.98	-1,929.89	5,797.06	2,426.05	2,109.47	316.59	7.663	
11,040.00	6,038.28	11,338.82	6,037.29	158.75	161.05	89.98	-1,929.63	5,817.05	2,425.79	2,108.02	317.77	7.634	
11,060.00	6,038.09	11,358.82	6,037.09	159.34	161.63	89.98	-1,929.37	5,837.05	2,425.53	2,106.58	318.95	7.605	
11,080.00	6,037.90	11,378.81	6,036.89	159.94	162.21	89.98	-1,929.11	5,857.04	2,425.27	2,105.14	320.13	7.576	
11,100.00	6,037.70	11,398.81	6,036.69	160.53	162.79	89.98	-1,928.85	5,877.04	2,425.01	2,103.70	321.31	7.547	
11,120.00	6,037.51	11,418.81	6,036.49	161.12	163.37	89.98	-1,928.58	5,897.03	2,424.74	2,102.25	322.49	7.519	
11,140.00	6,037.31	11,438.81	6,036.30	161.71	163.95	89.98	-1,928.32	5,917.03	2,424.48	2,100.81	323.67	7.491	
11,160.00	6,037.12	11,458.81	6,036.10	162.30	164.54	89.98	-1,928.06	5,937.03	2,424.22	2,099.37	324.85	7.463	
11,180.00	6,036.92	11,478.81	6,035.90	162.89	165.12	89.98	-1,927.80	5,957.02	2,423.96	2,097.92	326.03	7.435	
11,200.00	6,036.73	11,498.80	6,035.70	163.48	165.70	89.98	-1,927.54	5,977.02	2,423.70	2,096.48	327.22	7.407	
11,220.00	6,036.53	11,518.80	6,035.50	164.07	166.28	89.98	-1,927.28	5,997.01	2,423.43	2,095.04	328.40	7.380	
11,240.00	6,036.34	11,538.80	6,035.30	164.67	166.87	89.98	-1,927.01	6,017.01	2,423.17	2,093.59	329.58	7.352	
11,260.00	6,036.14	11,558.80	6,035.10	165.26	167.45	89.98	-1,926.75	6,037.00	2,422.91	2,092.15	330.76	7.325	
11,280.00	6,035.95	11,578.80	6,034.90	165.85	168.03	89.98	-1,926.49	6,057.00	2,422.65	2,090.71	331.94	7.298	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,300.00	6,035.75	11,598.80	6,034.70	166.44	168.61	89.98	-1,926.23	6,076.99	2,422.39	2,089.26	333.13	7.272	
11,320.00	6,035.56	11,618.79	6,034.50	167.03	169.20	89.98	-1,925.97	6,096.99	2,422.13	2,087.82	334.31	7.245	
11,340.00	6,035.36	11,638.79	6,034.31	167.62	169.78	89.98	-1,925.70	6,116.99	2,421.86	2,086.37	335.49	7.219	
11,360.00	6,035.17	11,658.79	6,034.11	168.22	170.36	89.98	-1,925.44	6,136.98	2,421.60	2,084.93	336.67	7.193	
11,380.00	6,034.97	11,678.79	6,033.91	168.81	170.95	89.98	-1,925.18	6,156.98	2,421.34	2,083.49	337.85	7.167	
11,400.00	6,034.78	11,698.79	6,033.71	169.40	171.53	89.98	-1,924.92	6,176.97	2,421.08	2,082.04	339.04	7.141	
11,420.00	6,034.58	11,718.79	6,033.51	169.99	172.11	89.98	-1,924.66	6,196.97	2,420.82	2,080.60	340.22	7.115	
11,440.00	6,034.39	11,738.78	6,033.31	170.58	172.70	89.98	-1,924.40	6,216.96	2,420.55	2,079.15	341.40	7.090	
11,460.00	6,034.19	11,758.78	6,033.11	171.18	173.28	89.98	-1,924.13	6,236.96	2,420.29	2,077.71	342.59	7.065	
11,480.00	6,034.00	11,778.78	6,032.91	171.77	173.86	89.98	-1,923.87	6,256.95	2,420.03	2,076.26	343.77	7.040	
11,500.00	6,033.80	11,798.78	6,032.71	172.36	174.45	89.98	-1,923.61	6,276.95	2,419.77	2,074.82	344.95	7.015	
11,520.00	6,033.61	11,818.78	6,032.52	172.95	175.03	89.98	-1,923.35	6,296.95	2,419.51	2,073.37	346.13	6.990	
11,540.00	6,033.41	11,838.78	6,032.32	173.55	175.62	89.98	-1,923.09	6,316.94	2,419.25	2,071.93	347.32	6.966	
11,560.00	6,033.22	11,858.77	6,032.12	174.14	176.20	89.98	-1,922.83	6,336.94	2,418.98	2,070.48	348.50	6.941	
11,580.00	6,033.02	11,878.77	6,031.92	174.73	176.78	89.98	-1,922.56	6,356.93	2,418.72	2,069.04	349.68	6.917	
11,600.00	6,032.83	11,898.77	6,031.72	175.32	177.37	89.98	-1,922.30	6,376.93	2,418.46	2,067.59	350.87	6.893	
11,620.00	6,032.64	11,918.77	6,031.52	175.91	177.95	89.98	-1,922.04	6,396.92	2,418.20	2,066.15	352.05	6.869	
11,640.00	6,032.44	11,938.77	6,031.32	176.51	178.54	89.98	-1,921.78	6,416.92	2,417.94	2,064.70	353.23	6.845	
11,660.00	6,032.25	11,958.77	6,031.12	177.10	179.12	89.98	-1,921.52	6,436.92	2,417.68	2,063.26	354.42	6.822	
11,680.00	6,032.05	11,978.76	6,030.92	177.69	179.71	89.98	-1,921.25	6,456.91	2,417.41	2,061.81	355.60	6.798	
11,700.00	6,031.86	11,998.76	6,030.72	178.28	180.29	89.98	-1,920.99	6,476.91	2,417.15	2,060.37	356.79	6.775	
11,720.00	6,031.66	12,018.76	6,030.53	178.88	180.88	89.98	-1,920.73	6,496.90	2,416.89	2,058.92	357.97	6.752	
11,740.00	6,031.47	12,038.76	6,030.33	179.47	181.46	89.98	-1,920.47	6,516.90	2,416.63	2,057.47	359.15	6.729	
11,760.00	6,031.27	12,058.76	6,030.13	180.06	182.05	89.98	-1,920.21	6,536.89	2,416.37	2,056.03	360.34	6.706	
11,780.00	6,031.08	12,078.75	6,029.93	180.65	182.63	89.98	-1,919.95	6,556.89	2,416.10	2,054.58	361.52	6.683	
11,800.00	6,030.88	12,098.75	6,029.73	181.25	183.22	89.98	-1,919.68	6,576.88	2,415.84	2,053.14	362.71	6.661	
11,820.00	6,030.69	12,118.75	6,029.53	181.84	183.80	89.98	-1,919.42	6,596.88	2,415.58	2,051.69	363.89	6.638	
11,840.00	6,030.49	12,138.75	6,029.33	182.43	184.39	89.98	-1,919.16	6,616.88	2,415.32	2,050.24	365.07	6.616	
11,860.00	6,030.30	12,158.75	6,029.13	183.03	184.97	89.98	-1,918.90	6,636.87	2,415.06	2,048.80	366.26	6.594	
11,880.00	6,030.10	12,178.75	6,028.93	183.62	185.56	89.98	-1,918.64	6,656.87	2,414.80	2,047.35	367.44	6.572	
11,900.00	6,029.91	12,198.74	6,028.74	184.21	186.14	89.98	-1,918.38	6,676.86	2,414.53	2,045.91	368.63	6.550	
11,920.00	6,029.71	12,218.74	6,028.54	184.80	186.73	89.98	-1,918.11	6,696.86	2,414.27	2,044.46	369.81	6.528	
11,940.00	6,029.52	12,238.74	6,028.34	185.40	187.31	89.98	-1,917.85	6,716.85	2,414.01	2,043.01	371.00	6.507	
11,960.00	6,029.32	12,258.74	6,028.14	185.99	187.90	89.98	-1,917.59	6,736.85	2,413.75	2,041.57	372.18	6.485	
11,980.00	6,029.13	12,278.74	6,027.94	186.58	188.49	89.98	-1,917.33	6,756.84	2,413.49	2,040.12	373.37	6.464	
12,000.00	6,028.93	12,298.74	6,027.74	187.18	189.07	89.98	-1,917.07	6,776.84	2,413.22	2,038.67	374.55	6.443	
12,020.00	6,028.74	12,318.73	6,027.54	187.77	189.66	89.98	-1,916.80	6,796.84	2,412.96	2,037.23	375.74	6.422	
12,040.00	6,028.54	12,338.73	6,027.34	188.36	190.24	89.98	-1,916.54	6,816.83	2,412.70	2,035.78	376.92	6.401	
12,060.00	6,028.35	12,358.73	6,027.14	188.96	190.83	89.98	-1,916.28	6,836.83	2,412.44	2,034.33	378.11	6.380	
12,080.00	6,028.15	12,378.73	6,026.94	189.55	191.42	89.98	-1,916.02	6,856.82	2,412.18	2,032.88	379.29	6.360	
12,100.00	6,027.96	12,398.73	6,026.75	190.14	192.00	89.98	-1,915.76	6,876.82	2,411.92	2,031.44	380.48	6.339	
12,120.00	6,027.76	12,418.73	6,026.55	190.74	192.59	89.98	-1,915.50	6,896.81	2,411.65	2,029.99	381.66	6.319	
12,140.00	6,027.57	12,438.72	6,026.35	191.33	193.18	89.98	-1,915.23	6,916.81	2,411.39	2,028.54	382.85	6.299	
12,160.00	6,027.37	12,458.72	6,026.15	191.92	193.76	89.98	-1,914.97	6,936.80	2,411.13	2,027.10	384.03	6.278	
12,180.00	6,027.18	12,478.72	6,025.95	192.52	194.35	89.98	-1,914.71	6,956.80	2,410.87	2,025.65	385.22	6.258	
12,200.00	6,026.99	12,498.72	6,025.75	193.11	194.93	89.98	-1,914.45	6,976.80	2,410.61	2,024.20	386.41	6.239	
12,220.00	6,026.79	12,518.72	6,025.55	193.70	195.52	89.98	-1,914.19	6,996.79	2,410.34	2,022.75	387.59	6.219	
12,240.00	6,026.60	12,538.72	6,025.35	194.30	196.11	89.98	-1,913.93	7,016.79	2,410.08	2,021.31	388.78	6.199	
12,260.00	6,026.40	12,558.71	6,025.15	194.89	196.70	89.98	-1,913.66	7,036.78	2,409.82	2,019.86	389.96	6.180	
12,280.00	6,026.21	12,578.71	6,024.96	195.48	197.28	89.98	-1,913.40	7,056.78	2,409.56	2,018.41	391.15	6.160	
12,300.00	6,026.01	12,598.71	6,024.76	196.08	197.87	89.98	-1,913.14	7,076.77	2,409.30	2,016.96	392.33	6.141	
12,320.00	6,025.82	12,618.71	6,024.56	196.67	198.46	89.98	-1,912.88	7,096.77	2,409.04	2,015.51	393.52	6.122	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,340.00	6,025.62	12,638.71	6,024.36	197.26	199.04	89.98	-1,912.62	7,116.77	2,408.77	2,014.07	394.71	6.103	
12,360.00	6,025.43	12,658.71	6,024.16	197.86	199.63	89.98	-1,912.35	7,136.76	2,408.51	2,012.62	395.89	6.084	
12,380.00	6,025.23	12,678.70	6,023.96	198.45	200.22	89.98	-1,912.09	7,156.76	2,408.25	2,011.17	397.08	6.065	
12,400.00	6,025.04	12,698.70	6,023.76	199.05	200.81	89.98	-1,911.83	7,176.75	2,407.99	2,009.72	398.27	6.046	
12,420.00	6,024.84	12,718.70	6,023.56	199.64	201.39	89.98	-1,911.57	7,196.75	2,407.73	2,008.27	399.45	6.028	
12,440.00	6,024.65	12,738.70	6,023.36	200.23	201.98	89.98	-1,911.31	7,216.74	2,407.46	2,006.83	400.64	6.009	
12,460.00	6,024.45	12,758.70	6,023.16	200.83	202.57	89.98	-1,911.05	7,236.74	2,407.20	2,005.38	401.82	5.991	
12,480.00	6,024.26	12,778.69	6,022.97	201.42	203.16	89.98	-1,910.78	7,256.73	2,406.94	2,003.93	403.01	5.972	
12,500.00	6,024.06	12,798.69	6,022.77	202.02	203.74	89.98	-1,910.52	7,276.73	2,406.68	2,002.48	404.20	5.954	
12,520.00	6,023.87	12,818.69	6,022.57	202.61	204.33	89.98	-1,910.26	7,296.73	2,406.42	2,001.03	405.38	5.936	
12,540.00	6,023.67	12,838.69	6,022.37	203.20	204.92	89.98	-1,910.00	7,316.72	2,406.16	1,999.59	406.57	5.918	
12,560.00	6,023.48	12,858.69	6,022.17	203.80	205.51	89.98	-1,909.74	7,336.72	2,405.89	1,998.14	407.76	5.900	
12,580.00	6,023.28	12,878.69	6,021.97	204.39	206.09	89.98	-1,909.48	7,356.71	2,405.63	1,996.69	408.94	5.883	
12,600.00	6,023.09	12,898.68	6,021.77	204.98	206.68	89.98	-1,909.21	7,376.71	2,405.37	1,995.24	410.13	5.865	
12,620.00	6,022.89	12,918.68	6,021.57	205.58	207.27	89.98	-1,908.95	7,396.70	2,405.11	1,993.79	411.32	5.847	
12,640.00	6,022.70	12,938.68	6,021.37	206.17	207.86	89.98	-1,908.69	7,416.70	2,404.85	1,992.34	412.50	5.830	
12,660.00	6,022.50	12,958.68	6,021.18	206.77	208.45	89.98	-1,908.43	7,436.69	2,404.59	1,990.89	413.69	5.813	
12,680.00	6,022.31	12,978.68	6,020.98	207.36	209.03	89.98	-1,908.17	7,456.69	2,404.32	1,989.44	414.88	5.795	
12,700.00	6,022.11	12,998.68	6,020.78	207.96	209.62	89.98	-1,907.90	7,476.69	2,404.06	1,988.00	416.07	5.778	
12,720.00	6,021.92	13,018.67	6,020.58	208.55	210.21	89.98	-1,907.64	7,496.68	2,403.80	1,986.55	417.25	5.761	
12,740.00	6,021.73	13,038.67	6,020.38	209.14	210.80	89.98	-1,907.38	7,516.68	2,403.54	1,985.10	418.44	5.744	
12,760.00	6,021.53	13,058.67	6,020.18	209.74	211.39	89.98	-1,907.12	7,536.67	2,403.28	1,983.65	419.63	5.727	
12,780.00	6,021.34	13,078.67	6,019.98	210.33	211.98	89.98	-1,906.86	7,556.67	2,403.01	1,982.20	420.81	5.710	
12,800.00	6,021.14	13,098.67	6,019.78	210.93	212.56	89.97	-1,906.60	7,576.66	2,402.75	1,980.75	422.00	5.694	
12,820.00	6,020.95	13,118.67	6,019.58	211.52	213.15	89.97	-1,906.33	7,596.66	2,402.49	1,979.30	423.19	5.677	
12,840.00	6,020.75	13,138.66	6,019.38	212.11	213.74	89.97	-1,906.07	7,616.65	2,402.23	1,977.85	424.38	5.661	
12,860.00	6,020.56	13,158.66	6,019.19	212.71	214.33	89.97	-1,905.81	7,636.65	2,401.97	1,976.40	425.56	5.644	
12,880.00	6,020.36	13,178.66	6,018.99	213.30	214.92	89.97	-1,905.55	7,656.65	2,401.71	1,974.95	426.75	5.628	
12,900.00	6,020.17	13,198.66	6,018.79	213.90	215.51	89.97	-1,905.29	7,676.64	2,401.44	1,973.50	427.94	5.612	
12,920.00	6,019.97	13,218.66	6,018.59	214.49	216.10	89.97	-1,905.03	7,696.64	2,401.18	1,972.06	429.13	5.596	
12,940.00	6,019.78	13,238.66	6,018.39	215.09	216.68	89.97	-1,904.76	7,716.63	2,400.92	1,970.61	430.31	5.579	
12,960.00	6,019.58	13,258.65	6,018.19	215.68	217.27	89.97	-1,904.50	7,736.63	2,400.66	1,969.16	431.50	5.563	
12,980.00	6,019.39	13,278.65	6,017.99	216.28	217.86	89.97	-1,904.24	7,756.62	2,400.40	1,967.71	432.69	5.548	
13,000.00	6,019.19	13,298.65	6,017.79	216.87	218.45	89.97	-1,903.98	7,776.62	2,400.13	1,966.26	433.88	5.532	
13,020.00	6,019.00	13,318.65	6,017.59	217.46	219.04	89.97	-1,903.72	7,796.61	2,399.87	1,964.81	435.07	5.516	
13,040.00	6,018.80	13,338.65	6,017.40	218.06	219.63	89.97	-1,903.45	7,816.61	2,399.61	1,963.36	436.25	5.501	
13,060.00	6,018.61	13,358.65	6,017.20	218.65	220.22	89.97	-1,903.19	7,836.61	2,399.35	1,961.91	437.44	5.485	
13,080.00	6,018.41	13,378.64	6,017.00	219.25	220.81	89.97	-1,902.93	7,856.60	2,399.09	1,960.46	438.63	5.470	
13,100.00	6,018.22	13,398.64	6,016.80	219.84	221.40	89.97	-1,902.67	7,876.60	2,398.83	1,959.01	439.82	5.454	
13,120.00	6,018.02	13,418.64	6,016.60	220.44	221.99	89.97	-1,902.41	7,896.59	2,398.56	1,957.56	441.00	5.439	
13,140.00	6,017.83	13,438.64	6,016.40	221.03	222.58	89.97	-1,902.15	7,916.59	2,398.30	1,956.11	442.19	5.424	
13,160.00	6,017.63	13,458.64	6,016.20	221.63	223.16	89.97	-1,901.88	7,936.58	2,398.04	1,954.66	443.38	5.409	
13,180.00	6,017.44	13,478.63	6,016.00	222.22	223.75	89.97	-1,901.62	7,956.58	2,397.78	1,953.21	444.57	5.393	
13,200.00	6,017.24	13,498.63	6,015.80	222.82	224.34	89.97	-1,901.36	7,976.58	2,397.52	1,951.76	445.76	5.379	
13,220.00	6,017.05	13,518.63	6,015.60	223.41	224.93	89.97	-1,901.10	7,996.57	2,397.25	1,950.31	446.95	5.364	
13,240.00	6,016.85	13,538.63	6,015.41	224.01	225.52	89.97	-1,900.84	8,016.57	2,396.99	1,948.86	448.13	5.349	
13,260.00	6,016.66	13,558.63	6,015.21	224.60	226.11	89.97	-1,900.58	8,036.56	2,396.73	1,947.41	449.32	5.334	
13,280.00	6,016.47	13,578.63	6,015.01	225.20	226.70	89.97	-1,900.31	8,056.56	2,396.47	1,945.96	450.51	5.319	
13,300.00	6,016.27	13,598.62	6,014.81	225.79	227.29	89.97	-1,900.05	8,076.55	2,396.21	1,944.51	451.70	5.305	
13,320.00	6,016.08	13,618.62	6,014.61	226.38	227.88	89.97	-1,899.79	8,096.55	2,395.95	1,943.06	452.89	5.290	
13,340.00	6,015.88	13,638.62	6,014.41	226.98	228.47	89.97	-1,899.53	8,116.54	2,395.68	1,941.61	454.08	5.276	
13,360.00	6,015.69	13,658.62	6,014.21	227.57	229.06	89.97	-1,899.27	8,136.54	2,395.42	1,940.16	455.26	5.262	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,380.00	6,015.49	13,678.62	6,014.01	228.17	229.65	89.97	-1,899.00	8,156.54	2,395.16	1,938.71	456.45	5.247	
13,400.00	6,015.30	13,698.62	6,013.81	228.76	230.24	89.97	-1,898.74	8,176.53	2,394.90	1,937.26	457.64	5.233	
13,420.00	6,015.10	13,718.61	6,013.62	229.36	230.83	89.97	-1,898.48	8,196.53	2,394.64	1,935.81	458.83	5.219	
13,440.00	6,014.91	13,738.61	6,013.42	229.95	231.42	89.97	-1,898.22	8,216.52	2,394.38	1,934.36	460.02	5.205	
13,460.00	6,014.71	13,758.61	6,013.22	230.55	232.01	89.97	-1,897.96	8,236.52	2,394.11	1,932.91	461.21	5.191	
13,480.00	6,014.52	13,778.61	6,013.02	231.14	232.60	89.97	-1,897.70	8,256.51	2,393.85	1,931.45	462.40	5.177	
13,500.00	6,014.32	13,792.86	6,012.88	231.74	233.02	89.97	-1,897.52	8,270.76	2,393.60	1,930.14	463.46	5.165	
13,520.00	6,014.13	13,800.00	6,012.81	232.33	233.23	89.97	-1,897.45	8,277.90	2,393.43	1,929.06	464.37	5.154	
13,532.73	6,014.00	13,800.00	6,012.81	232.71	233.23	89.97	-1,897.45	8,277.90	2,393.40	1,928.56	464.84	5.149	
13,540.00	6,013.93	13,800.00	6,012.81	232.93	233.23	89.97	-1,897.45	8,277.90	2,393.41	1,928.31	465.10	5.146	
13,556.20	6,013.77	13,823.47	6,012.58	233.41	233.93	89.97	-1,897.35	8,301.37	2,393.30	1,927.07	466.24	5.133	
13,560.00	6,013.74	13,825.55	6,012.55	233.52	233.99	89.97	-1,897.35	8,303.45	2,393.31	1,926.88	466.42	5.131	
13,580.00	6,013.54	13,836.44	6,012.45	234.12	234.31	89.97	-1,897.38	8,314.34	2,393.36	1,925.96	467.39	5.121	
13,600.00	6,013.35	13,847.34	6,012.34	234.71	234.63	89.97	-1,897.45	8,325.24	2,393.49	1,925.13	468.36	5.110	
13,620.00	6,013.15	13,858.24	6,012.24	235.31	234.96	89.97	-1,897.56	8,336.13	2,393.69	1,924.37	469.32	5.100	
13,640.00	6,012.96	13,869.13	6,012.13	235.90	235.28	89.97	-1,897.72	8,347.03	2,393.97	1,923.70	470.27	5.091	
13,660.00	6,012.76	13,900.00	6,011.84	236.50	236.20	89.97	-1,898.38	8,377.89	2,394.48	1,922.74	471.75	5.076	
13,680.00	6,012.57	13,900.00	6,011.84	237.09	236.20	89.97	-1,898.38	8,377.89	2,394.79	1,922.39	472.41	5.069	
13,700.00	6,012.37	13,900.00	6,011.84	237.69	236.20	89.97	-1,898.38	8,377.89	2,395.27	1,922.24	473.04	5.064	
13,720.00	6,012.18	13,912.69	6,011.72	238.28	236.57	89.97	-1,898.74	8,390.58	2,395.86	1,921.84	474.01	5.054	
13,740.00	6,011.98	13,925.24	6,011.60	238.88	236.95	89.97	-1,899.16	8,403.12	2,396.52	1,921.53	474.98	5.045	
13,760.00	6,011.79	13,942.17	6,011.45	239.48	237.45	89.97	-1,899.76	8,420.04	2,397.23	1,921.14	476.08	5.035	
13,780.00	6,011.59	13,962.16	6,011.26	240.07	238.05	89.97	-1,900.47	8,440.01	2,397.94	1,920.66	477.27	5.024	
13,800.00	6,011.40	13,982.15	6,011.07	240.67	238.64	89.97	-1,901.18	8,459.98	2,398.65	1,920.18	478.47	5.013	
13,820.00	6,011.21	14,002.14	6,010.89	241.26	239.24	89.97	-1,901.89	8,479.96	2,399.36	1,919.70	479.66	5.002	
13,840.00	6,011.01	14,022.12	6,010.70	241.86	239.83	89.97	-1,902.60	8,499.93	2,400.07	1,919.22	480.85	4.991	
13,860.00	6,010.82	14,042.11	6,010.52	242.45	240.43	89.97	-1,903.31	8,519.91	2,400.78	1,918.74	482.04	4.980	
13,880.00	6,010.62	14,062.10	6,010.33	243.05	241.02	89.97	-1,904.02	8,539.88	2,401.49	1,918.25	483.23	4.970	
13,900.00	6,010.43	14,082.09	6,010.14	243.64	241.62	89.97	-1,904.73	8,559.85	2,402.20	1,917.77	484.42	4.959	
13,920.00	6,010.23	14,102.07	6,009.96	244.24	242.22	89.97	-1,905.44	8,579.83	2,402.91	1,917.29	485.62	4.948	
13,940.00	6,010.04	14,122.06	6,009.77	244.83	242.81	89.97	-1,906.15	8,599.80	2,403.62	1,916.81	486.81	4.938	
13,960.00	6,009.84	14,142.05	6,009.59	245.43	243.41	89.97	-1,906.86	8,619.78	2,404.33	1,916.33	488.00	4.927	
13,980.00	6,009.65	14,162.03	6,009.40	246.02	244.00	89.97	-1,907.57	8,639.75	2,405.04	1,915.85	489.19	4.916	
14,000.00	6,009.45	14,182.02	6,009.21	246.62	244.60	89.97	-1,908.28	8,659.72	2,405.75	1,915.36	490.38	4.906	
14,020.00	6,009.26	14,202.01	6,009.03	247.21	245.19	89.97	-1,908.99	8,679.70	2,406.46	1,914.88	491.58	4.895	
14,040.00	6,009.06	14,222.00	6,008.84	247.81	245.79	89.97	-1,909.70	8,699.67	2,407.17	1,914.40	492.77	4.885	
14,060.00	6,008.87	14,241.98	6,008.66	248.41	246.39	89.98	-1,910.41	8,719.65	2,407.88	1,913.92	493.96	4.875	
14,080.00	6,008.67	14,261.97	6,008.47	249.00	246.98	89.98	-1,911.12	8,739.62	2,408.59	1,913.44	495.15	4.864	
14,100.00	6,008.48	14,281.96	6,008.28	249.60	247.58	89.98	-1,911.83	8,759.59	2,409.30	1,912.96	496.34	4.854	
14,120.00	6,008.28	14,301.95	6,008.10	250.19	248.17	89.98	-1,912.54	8,779.57	2,410.01	1,912.47	497.54	4.844	
14,140.00	6,008.09	14,321.93	6,007.91	250.79	248.77	89.98	-1,913.25	8,799.54	2,410.72	1,911.99	498.73	4.834	
14,160.00	6,007.89	14,341.92	6,007.73	251.38	249.37	89.98	-1,913.96	8,819.51	2,411.43	1,911.51	499.92	4.824	
14,180.00	6,007.70	14,361.91	6,007.54	251.98	249.96	89.98	-1,914.67	8,839.49	2,412.14	1,911.03	501.11	4.814	
14,200.00	6,007.50	14,381.90	6,007.35	252.57	250.56	89.98	-1,915.38	8,859.46	2,412.85	1,910.55	502.31	4.804	
14,220.00	6,007.31	14,401.88	6,007.17	253.17	251.15	89.98	-1,916.09	8,879.44	2,413.56	1,910.06	503.50	4.794	
14,240.00	6,007.11	14,421.87	6,006.98	253.76	251.75	89.98	-1,916.80	8,899.41	2,414.27	1,909.58	504.69	4.784	
14,260.00	6,006.92	14,441.86	6,006.80	254.36	252.35	89.98	-1,917.51	8,919.38	2,414.98	1,909.10	505.88	4.774	
14,280.00	6,006.72	14,461.85	6,006.61	254.96	252.94	89.98	-1,918.22	8,939.36	2,415.69	1,908.62	507.07	4.764	
14,300.00	6,006.53	14,481.83	6,006.42	255.55	253.54	89.98	-1,918.93	8,959.33	2,416.40	1,908.14	508.27	4.754	
14,320.00	6,006.33	14,501.82	6,006.24	256.15	254.13	89.98	-1,919.64	8,979.31	2,417.11	1,907.65	509.46	4.744	
14,340.00	6,006.14	14,521.81	6,006.05	256.74	254.73	89.98	-1,920.35	8,999.28	2,417.82	1,907.17	510.65	4.735	
14,360.00	6,005.94	14,541.80	6,005.87	257.34	255.33	89.98	-1,921.06	9,019.25	2,418.53	1,906.69	511.84	4.725	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,380.00	6,005.75	14,561.78	6,005.68	257.93	255.92	89.98	-1,921.77	9,039.23	2,419.24	1,906.21	513.04	4.716	
14,400.00	6,005.56	14,581.77	6,005.49	258.53	256.52	89.98	-1,922.48	9,059.20	2,419.95	1,905.72	514.23	4.706	
14,420.00	6,005.36	14,601.76	6,005.31	259.13	257.11	89.98	-1,923.19	9,079.18	2,420.66	1,905.24	515.42	4.696	
14,440.00	6,005.17	14,621.74	6,005.12	259.72	257.71	89.98	-1,923.90	9,099.15	2,421.37	1,904.76	516.61	4.687	
14,460.00	6,004.97	14,641.73	6,004.94	260.32	258.31	89.98	-1,924.61	9,119.12	2,422.08	1,904.28	517.81	4.678	
14,480.00	6,004.78	14,661.72	6,004.75	260.91	258.90	89.98	-1,925.32	9,139.10	2,422.79	1,903.80	519.00	4.668	
14,500.00	6,004.58	14,681.71	6,004.56	261.51	259.50	89.98	-1,926.03	9,159.07	2,423.51	1,903.31	520.19	4.659	
14,520.00	6,004.39	14,701.69	6,004.38	262.10	260.10	89.98	-1,926.74	9,179.05	2,424.22	1,902.83	521.38	4.650	
14,540.00	6,004.19	14,721.68	6,004.19	262.70	260.69	89.98	-1,927.45	9,199.02	2,424.93	1,902.35	522.58	4.640	
14,560.00	6,004.00	14,741.67	6,004.01	263.30	261.29	89.98	-1,928.16	9,218.99	2,425.64	1,901.87	523.77	4.631	
14,580.00	6,003.80	14,761.66	6,003.82	263.89	261.88	89.98	-1,928.87	9,238.97	2,426.35	1,901.38	524.96	4.622	
14,600.00	6,003.61	14,781.64	6,003.63	264.49	262.48	89.98	-1,929.58	9,258.94	2,427.06	1,900.90	526.16	4.613	
14,620.00	6,003.41	14,801.63	6,003.45	265.08	263.08	89.98	-1,930.29	9,278.91	2,427.77	1,900.42	527.35	4.604	
14,640.00	6,003.22	14,821.62	6,003.26	265.68	263.67	89.98	-1,931.00	9,298.89	2,428.48	1,899.94	528.54	4.595	
14,660.00	6,003.02	14,841.61	6,003.08	266.27	264.27	89.98	-1,931.71	9,318.86	2,429.19	1,899.45	529.73	4.586	
14,680.00	6,002.83	14,861.59	6,002.89	266.87	264.87	89.98	-1,932.41	9,338.84	2,429.90	1,898.97	530.93	4.577	
14,700.00	6,002.63	14,881.58	6,002.70	267.47	265.46	89.98	-1,933.12	9,358.81	2,430.61	1,898.49	532.12	4.568	
14,720.00	6,002.44	14,901.57	6,002.52	268.06	266.06	89.98	-1,933.83	9,378.78	2,431.32	1,898.00	533.31	4.559	
14,740.00	6,002.24	14,921.56	6,002.33	268.66	266.66	89.98	-1,934.54	9,398.76	2,432.03	1,897.52	534.51	4.550	
14,760.00	6,002.05	14,941.54	6,002.15	269.25	267.25	89.98	-1,935.25	9,418.73	2,432.74	1,897.04	535.70	4.541	
14,780.00	6,001.85	14,961.53	6,001.96	269.85	267.85	89.98	-1,935.96	9,438.71	2,433.45	1,896.56	536.89	4.532	
14,800.00	6,001.66	14,981.52	6,001.77	270.45	268.44	89.98	-1,936.67	9,458.68	2,434.16	1,896.07	538.09	4.524	
14,820.00	6,001.46	15,001.50	6,001.59	271.04	269.04	89.98	-1,937.38	9,478.65	2,434.87	1,895.59	539.28	4.515	
14,840.00	6,001.27	15,021.49	6,001.40	271.64	269.64	89.98	-1,938.09	9,498.63	2,435.58	1,895.11	540.47	4.506	
14,860.00	6,001.07	15,041.48	6,001.22	272.23	270.23	89.98	-1,938.80	9,518.60	2,436.29	1,894.63	541.66	4.498	
14,880.00	6,000.88	15,061.47	6,001.03	272.83	270.83	89.98	-1,939.51	9,538.58	2,437.00	1,894.14	542.86	4.489	
14,900.00	6,000.68	15,081.45	6,000.84	273.43	271.43	89.98	-1,940.22	9,558.55	2,437.71	1,893.66	544.05	4.481	
14,920.00	6,000.49	15,101.44	6,000.66	274.02	272.02	89.98	-1,940.93	9,578.52	2,438.42	1,893.18	545.24	4.472	
14,940.00	6,000.30	15,121.43	6,000.47	274.62	272.62	89.98	-1,941.64	9,598.50	2,439.13	1,892.69	546.44	4.464	
14,960.00	6,000.10	15,141.42	6,000.29	275.21	273.22	89.98	-1,942.35	9,618.47	2,439.84	1,892.21	547.63	4.455	
14,980.00	5,999.91	15,161.40	6,000.10	275.81	273.81	89.98	-1,943.06	9,638.44	2,440.55	1,891.73	548.82	4.447	
15,000.00	5,999.71	15,181.39	5,999.91	276.41	274.41	89.98	-1,943.77	9,658.42	2,441.26	1,891.25	550.02	4.439	
15,020.00	5,999.52	15,201.38	5,999.73	277.00	275.01	89.99	-1,944.48	9,678.39	2,441.97	1,890.76	551.21	4.430	
15,040.00	5,999.32	15,221.37	5,999.54	277.60	275.60	89.99	-1,945.19	9,698.37	2,442.68	1,890.28	552.40	4.422	
15,060.00	5,999.13	15,241.35	5,999.36	278.19	276.20	89.99	-1,945.90	9,718.34	2,443.39	1,889.80	553.60	4.414	
15,080.00	5,998.93	15,261.34	5,999.17	278.79	276.80	89.99	-1,946.61	9,738.31	2,444.10	1,889.31	554.79	4.405	
15,100.00	5,998.74	15,281.33	5,998.98	279.39	277.39	89.99	-1,947.32	9,758.29	2,444.81	1,888.83	555.98	4.397	
15,120.00	5,998.54	15,301.32	5,998.80	279.98	277.99	89.99	-1,948.03	9,778.26	2,445.52	1,888.35	557.18	4.389	
15,140.00	5,998.35	15,321.30	5,998.61	280.58	278.59	89.99	-1,948.74	9,798.24	2,446.23	1,887.86	558.37	4.381	
15,160.00	5,998.15	15,341.29	5,998.43	281.17	279.19	89.99	-1,949.45	9,818.21	2,446.94	1,887.38	559.56	4.373	
15,180.00	5,997.96	15,361.28	5,998.24	281.77	279.78	89.99	-1,950.16	9,838.18	2,447.65	1,886.90	560.76	4.365	
15,200.00	5,997.76	15,381.27	5,998.05	282.37	280.38	89.99	-1,950.87	9,858.16	2,448.36	1,886.41	561.95	4.357	
15,220.00	5,997.57	15,401.25	5,997.87	282.96	280.98	89.99	-1,951.58	9,878.13	2,449.08	1,885.93	563.14	4.349	
15,240.00	5,997.37	15,421.24	5,997.68	283.56	281.57	89.99	-1,952.29	9,898.11	2,449.79	1,885.45	564.34	4.341	
15,260.00	5,997.18	15,441.23	5,997.50	284.16	282.17	89.99	-1,953.00	9,918.08	2,450.50	1,884.96	565.53	4.333	
15,280.00	5,996.98	15,461.21	5,997.31	284.75	282.77	89.99	-1,953.71	9,938.05	2,451.21	1,884.48	566.73	4.325	
15,300.00	5,996.79	15,481.20	5,997.12	285.35	283.36	89.99	-1,954.42	9,958.03	2,451.92	1,884.00	567.92	4.317	
15,320.00	5,996.59	15,501.19	5,996.94	285.94	283.96	89.99	-1,955.13	9,978.00	2,452.63	1,883.51	569.11	4.310	
15,340.00	5,996.40	15,521.18	5,996.75	286.54	284.56	89.99	-1,955.84	9,997.98	2,453.34	1,883.03	570.31	4.302	
15,360.00	5,996.20	15,541.16	5,996.57	287.14	285.15	89.99	-1,956.55	10,017.95	2,454.05	1,882.55	571.50	4.294	
15,380.00	5,996.01	15,561.15	5,996.38	287.73	285.75	89.99	-1,957.26	10,037.92	2,454.76	1,882.06	572.69	4.286	
15,400.00	5,995.81	15,581.14	5,996.19	288.33	286.35	89.99	-1,957.97	10,057.90	2,455.47	1,881.58	573.89	4.279	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 3H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,420.00	5,995.62	15,601.13	5,996.01	288.92	286.94	89.99	-1,958.68	10,077.87	2,456.18	1,881.10	575.08	4.271	
15,440.00	5,995.42	15,621.11	5,995.82	289.52	287.54	89.99	-1,959.39	10,097.84	2,456.89	1,880.61	576.27	4.263	
15,460.00	5,995.23	15,641.10	5,995.64	290.12	288.14	89.99	-1,960.10	10,117.82	2,457.60	1,880.13	577.47	4.256	
15,480.00	5,995.04	15,661.09	5,995.45	290.71	288.74	89.99	-1,960.81	10,137.79	2,458.31	1,879.65	578.66	4.248	
15,500.00	5,994.84	15,681.08	5,995.26	291.31	289.33	89.99	-1,961.52	10,157.77	2,459.02	1,879.16	579.86	4.241	
15,520.00	5,994.65	15,701.06	5,995.08	291.91	289.93	89.99	-1,962.23	10,177.74	2,459.73	1,878.68	581.05	4.233	
15,540.00	5,994.45	15,721.05	5,994.89	292.50	290.53	89.99	-1,962.94	10,197.71	2,460.44	1,878.20	582.24	4.226	
15,560.00	5,994.26	15,741.04	5,994.71	293.10	291.12	89.99	-1,963.65	10,217.69	2,461.15	1,877.71	583.44	4.218	
15,580.00	5,994.06	15,761.03	5,994.52	293.69	291.72	89.99	-1,964.36	10,237.66	2,461.86	1,877.23	584.63	4.211	
15,600.00	5,993.87	15,781.01	5,994.33	294.29	292.32	89.99	-1,965.07	10,257.64	2,462.57	1,876.75	585.82	4.204	
15,620.00	5,993.67	15,801.00	5,994.15	294.89	292.92	89.99	-1,965.78	10,277.61	2,463.28	1,876.26	587.02	4.196	
15,640.00	5,993.48	15,820.99	5,993.96	295.48	293.51	89.99	-1,966.49	10,297.58	2,463.99	1,875.78	588.21	4.189	
15,660.00	5,993.28	15,840.98	5,993.78	296.08	294.11	89.99	-1,967.20	10,317.56	2,464.70	1,875.29	589.41	4.182	
15,680.00	5,993.09	15,860.96	5,993.59	296.68	294.71	89.99	-1,967.91	10,337.53	2,465.41	1,874.81	590.60	4.174	
15,700.00	5,992.89	15,880.95	5,993.40	297.27	295.30	89.99	-1,968.62	10,357.51	2,466.12	1,874.33	591.79	4.167	
15,720.00	5,992.70	15,900.94	5,993.22	297.87	295.90	89.99	-1,969.33	10,377.48	2,466.83	1,873.84	592.99	4.160	
15,740.00	5,992.50	15,920.92	5,993.03	298.47	296.50	89.99	-1,970.04	10,397.45	2,467.54	1,873.36	594.18	4.153	
15,760.00	5,992.31	15,940.91	5,992.85	299.06	297.10	89.99	-1,970.75	10,417.43	2,468.25	1,872.88	595.38	4.146	
15,780.00	5,992.11	15,960.90	5,992.66	299.66	297.69	89.99	-1,971.46	10,437.40	2,468.96	1,872.39	596.57	4.139	
15,800.00	5,991.92	15,980.89	5,992.47	300.25	298.29	89.99	-1,972.17	10,457.38	2,469.67	1,871.91	597.76	4.132	
15,820.00	5,991.72	16,000.87	5,992.29	300.85	298.89	89.99	-1,972.88	10,477.35	2,470.38	1,871.42	598.96	4.124	
15,840.00	5,991.53	16,020.86	5,992.10	301.45	299.48	89.99	-1,973.59	10,497.32	2,471.09	1,870.94	600.15	4.117	
15,860.00	5,991.33	16,040.85	5,991.92	302.04	300.08	89.99	-1,974.30	10,517.30	2,471.80	1,870.46	601.35	4.110	
15,880.00	5,991.14	16,060.84	5,991.73	302.64	300.68	89.99	-1,975.01	10,537.27	2,472.51	1,869.97	602.54	4.103	
15,900.00	5,990.94	16,080.82	5,991.54	303.24	301.28	89.99	-1,975.71	10,557.24	2,473.22	1,869.49	603.73	4.097	
15,920.00	5,990.75	16,100.81	5,991.36	303.83	301.87	89.99	-1,976.42	10,577.22	2,473.93	1,869.01	604.93	4.090	
15,940.00	5,990.55	16,120.80	5,991.17	304.43	302.47	89.99	-1,977.13	10,597.19	2,474.64	1,868.52	606.12	4.083	
15,960.00	5,990.36	16,140.79	5,990.99	305.03	303.07	89.99	-1,977.84	10,617.17	2,475.36	1,868.04	607.32	4.076	
15,980.00	5,990.16	16,160.77	5,990.80	305.62	303.67	89.99	-1,978.55	10,637.14	2,476.07	1,867.55	608.51	4.069	
16,000.00	5,989.97	16,180.76	5,990.61	306.22	304.26	90.00	-1,979.26	10,657.11	2,476.78	1,867.07	609.71	4.062	
16,020.00	5,989.78	16,200.75	5,990.43	306.82	304.86	90.00	-1,979.97	10,677.09	2,477.49	1,866.59	610.90	4.055	
16,040.00	5,989.58	16,220.74	5,990.24	307.41	305.46	90.00	-1,980.68	10,697.06	2,478.20	1,866.10	612.09	4.049	
16,060.00	5,989.39	16,240.72	5,990.06	308.01	306.06	90.00	-1,981.39	10,717.04	2,478.91	1,865.62	613.29	4.042	
16,080.00	5,989.19	16,260.71	5,989.87	308.61	306.65	90.00	-1,982.10	10,737.01	2,479.62	1,865.13	614.48	4.035	
16,100.00	5,989.00	16,280.70	5,989.68	309.20	307.25	90.00	-1,982.81	10,756.98	2,480.33	1,864.65	615.68	4.029	
16,120.00	5,988.80	16,300.68	5,989.50	309.80	307.85	90.00	-1,983.52	10,776.96	2,481.04	1,864.17	616.87	4.022	
16,140.00	5,988.61	16,320.67	5,989.31	310.39	308.45	90.00	-1,984.23	10,796.93	2,481.75	1,863.68	618.07	4.015	
16,160.00	5,988.41	16,340.66	5,989.13	310.99	309.04	90.00	-1,984.94	10,816.91	2,482.46	1,863.20	619.26	4.009	
16,180.00	5,988.22	16,360.65	5,988.94	311.59	309.64	90.00	-1,985.65	10,836.88	2,483.17	1,862.71	620.45	4.002	
16,200.00	5,988.02	16,380.63	5,988.75	312.18	310.24	90.00	-1,986.36	10,856.85	2,483.88	1,862.23	621.65	3.996	
16,220.00	5,987.83	16,400.62	5,988.57	312.78	310.84	90.00	-1,987.07	10,876.83	2,484.59	1,861.75	622.84	3.989	
16,240.00	5,987.63	16,420.61	5,988.38	313.38	311.43	90.00	-1,987.78	10,896.80	2,485.30	1,861.26	624.04	3.983	
16,260.00	5,987.44	16,440.60	5,988.20	313.97	312.03	90.00	-1,988.49	10,916.78	2,486.01	1,860.78	625.23	3.976	
16,280.00	5,987.24	16,460.58	5,988.01	314.57	312.63	90.00	-1,989.20	10,936.75	2,486.72	1,860.29	626.43	3.970	
16,300.00	5,987.05	16,480.57	5,987.82	315.17	313.23	90.00	-1,989.91	10,956.72	2,487.43	1,859.81	627.62	3.963	
16,320.00	5,986.85	16,500.56	5,987.64	315.76	313.82	90.00	-1,990.62	10,976.70	2,488.14	1,859.32	628.82	3.957	
16,340.00	5,986.66	16,520.55	5,987.45	316.36	314.42	90.00	-1,991.33	10,996.67	2,488.85	1,858.84	630.01	3.950	
16,360.00	5,986.46	16,540.53	5,987.27	316.96	315.02	90.00	-1,992.04	11,016.64	2,489.56	1,858.36	631.20	3.944	
16,380.00	5,986.27	16,560.52	5,987.08	317.55	315.62	90.00	-1,992.75	11,036.62	2,490.27	1,857.87	632.40	3.938	
16,400.00	5,986.07	16,580.51	5,986.89	318.15	316.21	90.00	-1,993.46	11,056.59	2,490.98	1,857.39	633.59	3.932	
16,407.54	5,986.00	16,588.04	5,986.82	318.38	316.44	90.00	-1,993.73	11,064.12	2,491.25	1,857.21	634.04	3.929 SF	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-19.85	23.66	-8.54	25.15				
20.00	20.00	20.00	20.00	0.04	0.04	-19.85	23.66	-8.54	25.15	25.08	0.07	350.070	
40.00	40.00	40.00	40.00	0.07	0.07	-19.85	23.66	-8.54	25.15	25.01	0.14	175.279	
60.00	60.00	60.00	60.00	0.11	0.11	-19.85	23.66	-8.54	25.15	24.94	0.22	116.907	
80.00	80.00	80.00	80.00	0.14	0.14	-19.85	23.66	-8.54	25.15	24.87	0.29	87.701	
100.00	100.00	100.00	100.00	0.18	0.18	-19.85	23.66	-8.54	25.15	24.80	0.36	70.170	
120.00	120.00	120.00	120.00	0.25	0.25	-19.85	23.66	-8.54	25.15	24.65	0.50	50.122	
140.00	140.00	140.00	140.00	0.32	0.32	-19.85	23.66	-8.54	25.15	24.51	0.65	38.984	
160.00	160.00	160.00	160.00	0.39	0.39	-19.85	23.66	-8.54	25.15	24.37	0.79	31.896	
180.00	180.00	180.00	180.00	0.47	0.47	-19.85	23.66	-8.54	25.15	24.22	0.93	26.989	
200.00	200.00	200.00	200.00	0.54	0.54	-19.85	23.66	-8.54	25.15	24.08	1.08	23.390	
220.00	220.00	220.00	220.00	0.61	0.61	-19.85	23.66	-8.54	25.15	23.94	1.22	20.638	
240.00	240.00	240.00	240.00	0.68	0.68	-19.85	23.66	-8.54	25.15	23.79	1.36	18.466	
260.00	260.00	260.00	260.00	0.75	0.75	-19.85	23.66	-8.54	25.15	23.65	1.51	16.707	
280.00	280.00	280.00	280.00	0.82	0.82	-19.85	23.66	-8.54	25.15	23.51	1.65	15.254	
300.00	300.00	300.00	300.00	0.90	0.90	-19.85	23.66	-8.54	25.15	23.36	1.79	14.034	
320.00	320.00	320.00	320.00	0.97	0.97	-19.85	23.66	-8.54	25.15	23.22	1.94	12.995	
340.00	340.00	340.00	340.00	1.04	1.04	-19.85	23.66	-8.54	25.15	23.07	2.08	12.098	
360.00	360.00	360.00	360.00	1.11	1.11	-19.85	23.66	-8.54	25.15	22.93	2.22	11.318	
380.00	380.00	380.00	380.00	1.18	1.18	-19.85	23.66	-8.54	25.15	22.79	2.37	10.632	
400.00	400.00	400.00	400.00	1.25	1.25	-19.85	23.66	-8.54	25.15	22.64	2.51	10.024	
420.00	420.00	420.00	420.00	1.33	1.33	-19.85	23.66	-8.54	25.15	22.50	2.65	9.482	
440.00	440.00	440.00	440.00	1.40	1.40	-19.85	23.66	-8.54	25.15	22.36	2.80	8.996	
460.00	460.00	460.00	460.00	1.47	1.47	-19.85	23.66	-8.54	25.15	22.21	2.94	8.557	
480.00	480.00	480.00	480.00	1.54	1.54	-19.85	23.66	-8.54	25.15	22.07	3.08	8.159	
500.00	500.00	500.00	500.00	1.61	1.61	-19.85	23.66	-8.54	25.15	21.93	3.23	7.797	
520.00	520.00	520.00	520.00	1.68	1.68	-19.85	23.66	-8.54	25.15	21.78	3.37	7.465	
540.00	540.00	540.00	540.00	1.76	1.76	-19.85	23.66	-8.54	25.15	21.64	3.51	7.160	
560.00	560.00	560.00	560.00	1.83	1.83	-19.85	23.66	-8.54	25.15	21.50	3.66	6.879	
580.00	580.00	580.00	580.00	1.90	1.90	-19.85	23.66	-8.54	25.15	21.35	3.80	6.620	
600.00	600.00	600.00	600.00	1.97	1.97	-19.85	23.66	-8.54	25.15	21.21	3.94	6.379	
620.00	620.00	620.00	620.00	2.04	2.04	-19.85	23.66	-8.54	25.15	21.07	4.09	6.155	
640.00	640.00	640.00	640.00	2.11	2.11	-19.85	23.66	-8.54	25.15	20.92	4.23	5.947	
660.00	660.00	660.00	660.00	2.19	2.19	-19.85	23.66	-8.54	25.15	20.78	4.37	5.752	
680.00	680.00	680.00	680.00	2.26	2.26	-19.85	23.66	-8.54	25.15	20.64	4.52	5.569	
700.00	700.00	700.00	700.00	2.33	2.33	-19.85	23.66	-8.54	25.15	20.49	4.66	5.398	
720.00	720.00	720.00	720.00	2.40	2.40	-19.85	23.66	-8.54	25.15	20.35	4.80	5.237	
740.00	740.00	740.00	740.00	2.47	2.47	-19.85	23.66	-8.54	25.15	20.21	4.95	5.085	
760.00	760.00	760.00	760.00	2.55	2.55	-19.85	23.66	-8.54	25.15	20.06	5.09	4.942	
780.00	780.00	780.00	780.00	2.62	2.62	-19.85	23.66	-8.54	25.15	19.92	5.23	4.806	
800.00	800.00	800.00	800.00	2.69	2.69	-19.85	23.66	-8.54	25.15	19.78	5.38	4.678	
820.00	820.00	820.00	820.00	2.76	2.76	-19.85	23.66	-8.54	25.15	19.63	5.52	4.557	
840.00	840.00	840.00	840.00	2.83	2.83	-19.85	23.66	-8.54	25.15	19.49	5.66	4.441	
860.00	860.00	860.00	860.00	2.90	2.90	-19.85	23.66	-8.54	25.15	19.35	5.81	4.332	
880.00	880.00	880.00	880.00	2.98	2.98	-19.85	23.66	-8.54	25.15	19.20	5.95	4.227	
900.00	900.00	900.00	900.00	3.05	3.05	-19.85	23.66	-8.54	25.15	19.06	6.09	4.128	
920.00	920.00	920.00	920.00	3.12	3.12	-19.85	23.66	-8.54	25.15	18.92	6.24	4.033	
940.00	940.00	940.00	940.00	3.19	3.19	-19.85	23.66	-8.54	25.15	18.77	6.38	3.942	
960.00	960.00	960.00	960.00	3.26	3.26	-19.85	23.66	-8.54	25.15	18.63	6.52	3.856	
980.00	980.00	980.00	980.00	3.33	3.33	-19.85	23.66	-8.54	25.15	18.49	6.67	3.773	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-19.85	23.66	-8.54	25.15	18.34	6.81	3.693	CC
1,020.00	1,020.00	1,019.87	1,019.87	3.48	3.48	-19.74	23.72	-8.52	25.21	18.25	6.95	3.625	ES

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,040.00	1,040.00	1,039.73	1,039.73	3.55	3.55	-19.44	23.92	-8.44	25.36	18.27	7.10	3.574	
1,060.00	1,060.00	1,059.60	1,059.59	3.62	3.62	-18.94	24.24	-8.32	25.63	18.39	7.24	3.539	
1,080.00	1,080.00	1,079.45	1,079.44	3.69	3.69	-18.26	24.69	-8.14	26.00	18.62	7.39	3.520	
1,100.00	1,100.00	1,099.30	1,099.28	3.76	3.76	-17.41	25.27	-7.92	26.49	18.96	7.53	3.517	
1,120.00	1,120.00	1,119.14	1,119.11	3.84	3.83	-16.41	25.97	-7.65	27.09	19.41	7.68	3.529	
1,140.00	1,140.00	1,138.97	1,138.91	3.91	3.90	-15.29	26.81	-7.33	27.81	19.99	7.82	3.555	
1,160.00	1,160.00	1,158.78	1,158.70	3.98	3.97	-14.07	27.77	-6.96	28.65	20.68	7.97	3.595	
1,180.00	1,180.00	1,178.58	1,178.47	4.05	4.05	-12.77	28.85	-6.54	29.62	21.51	8.12	3.650	
1,200.00	1,200.00	1,198.36	1,198.21	4.12	4.12	-11.42	30.07	-6.07	30.73	22.46	8.26	3.718	
1,220.00	1,220.00	1,218.13	1,217.92	4.19	4.19	-10.04	31.41	-5.56	31.96	23.55	8.41	3.800	
1,240.00	1,240.00	1,237.87	1,237.60	4.27	4.26	-8.64	32.87	-4.99	33.34	24.78	8.56	3.895	
1,260.00	1,260.00	1,257.59	1,257.24	4.34	4.33	-7.25	34.46	-4.38	34.85	26.14	8.71	4.002	
1,280.00	1,280.00	1,277.28	1,276.85	4.41	4.40	-5.88	36.17	-3.72	36.50	27.65	8.86	4.122	
1,300.00	1,300.00	1,296.95	1,296.42	4.48	4.47	-4.54	38.01	-3.02	38.30	29.29	9.00	4.254	
1,320.00	1,320.00	1,316.60	1,315.95	4.55	4.54	-3.24	39.97	-2.26	40.24	31.09	9.15	4.396	
1,340.00	1,340.00	1,336.21	1,335.44	4.62	4.61	-1.99	42.05	-1.46	42.32	33.02	9.30	4.550	
1,360.00	1,360.00	1,355.79	1,354.87	4.70	4.68	-0.80	44.25	-0.61	44.55	35.10	9.45	4.715	
1,380.00	1,380.00	1,375.33	1,374.26	4.77	4.75	0.34	46.57	0.28	46.93	37.33	9.60	4.890	
1,400.00	1,400.00	1,394.84	1,393.59	4.84	4.82	1.42	49.01	1.22	49.45	39.70	9.74	5.075	
1,420.00	1,420.00	1,414.32	1,412.88	4.91	4.90	2.45	51.57	2.20	52.11	42.22	9.89	5.269	
1,440.00	1,440.00	1,433.75	1,432.10	4.98	4.97	3.41	54.25	3.23	54.91	44.88	10.04	5.471	
1,460.00	1,460.00	1,453.15	1,451.26	5.05	5.04	4.32	57.04	4.31	57.86	47.68	10.18	5.682	
1,480.00	1,480.00	1,472.50	1,470.36	5.13	5.11	5.17	59.94	5.43	60.95	50.63	10.33	5.901	
1,500.00	1,500.00	1,491.81	1,489.40	5.20	5.18	5.97	62.96	6.59	64.19	53.71	10.47	6.128	
1,520.00	1,520.00	1,511.08	1,508.37	5.27	5.25	6.72	66.09	7.79	67.56	56.94	10.62	6.362	
1,540.00	1,540.00	1,530.30	1,527.28	5.34	5.32	7.43	69.34	9.04	71.07	60.31	10.76	6.603	
1,560.00	1,560.00	1,549.47	1,546.11	5.41	5.40	8.09	72.69	10.33	74.72	63.81	10.91	6.851	
1,580.00	1,580.00	1,568.59	1,564.86	5.48	5.47	8.71	76.15	11.66	78.51	67.46	11.05	7.105	
1,600.00	1,600.00	1,587.66	1,583.55	5.56	5.54	9.29	79.71	13.04	82.43	71.24	11.19	7.365	
1,620.00	1,620.00	1,606.68	1,602.15	5.63	5.62	9.83	83.39	14.45	86.49	75.16	11.33	7.632	
1,640.00	1,640.00	1,625.64	1,620.68	5.70	5.69	10.34	87.16	15.90	90.68	79.21	11.47	7.903	
1,660.00	1,660.00	1,644.55	1,639.12	5.77	5.76	10.82	91.04	17.40	95.01	83.40	11.61	8.181	
1,680.00	1,680.00	1,663.40	1,657.49	5.84	5.84	11.27	95.03	18.93	99.47	87.72	11.75	8.463	
1,700.00	1,700.00	1,682.19	1,675.76	5.91	5.91	11.69	99.11	20.50	104.07	92.17	11.89	8.751	
1,720.00	1,720.00	1,700.00	1,693.06	5.99	5.98	12.06	103.08	22.03	108.79	96.76	12.03	9.042	
1,740.00	1,740.00	1,719.60	1,712.05	6.06	6.06	12.45	107.56	23.75	113.64	101.48	12.17	9.341	
1,760.00	1,760.00	1,738.20	1,730.06	6.13	6.14	12.80	111.93	25.44	118.63	106.32	12.30	9.642	
1,780.00	1,780.00	1,756.75	1,747.98	6.20	6.22	13.13	116.40	27.15	123.74	111.30	12.44	9.948	
1,800.00	1,800.00	1,775.23	1,765.80	6.27	6.29	13.44	120.95	28.91	128.98	116.40	12.57	10.259	
1,820.00	1,820.00	1,793.65	1,783.53	6.34	6.37	13.73	125.60	30.70	134.34	121.64	12.71	10.574	
1,840.00	1,840.00	1,811.99	1,801.17	6.42	6.45	14.01	130.34	32.52	139.83	127.00	12.84	10.892	
1,860.00	1,860.00	1,830.27	1,818.70	6.49	6.53	14.27	135.16	34.38	145.45	132.48	12.97	11.214	
1,880.00	1,880.00	1,848.49	1,836.13	6.56	6.61	14.52	140.07	36.27	151.19	138.09	13.10	11.540	
1,900.00	1,900.00	1,866.63	1,853.47	6.63	6.69	14.75	145.06	38.19	157.06	143.82	13.23	11.870	
1,920.00	1,920.00	1,884.69	1,870.70	6.70	6.76	14.97	150.14	40.14	163.04	149.68	13.36	12.203	
1,940.00	1,940.00	1,900.00	1,885.27	6.78	6.83	15.15	154.51	41.83	169.17	155.70	13.48	12.553	
1,960.00	1,960.00	1,920.61	1,904.85	6.85	6.93	15.37	160.53	44.14	175.38	161.76	13.62	12.880	
1,980.00	1,980.00	1,938.46	1,921.77	6.92	7.01	15.56	165.84	46.18	181.73	167.99	13.74	13.223	
2,000.00	2,000.00	1,956.24	1,938.58	6.99	7.09	15.74	171.22	48.26	188.20	174.33	13.87	13.570	
2,020.00	2,020.00	1,973.93	1,955.28	7.06	7.17	15.91	176.68	50.36	194.78	180.79	13.99	13.919	
2,040.00	2,040.00	1,991.55	1,971.87	7.13	7.25	16.07	182.21	52.49	201.49	187.37	14.12	14.273	
2,060.00	2,060.00	2,009.10	1,988.36	7.21	7.33	16.22	187.81	54.64	208.31	194.07	14.24	14.628	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,080.00	2,080.00	2,026.56	2,004.73	7.28	7.42	16.37	193.48	56.82	215.24	200.88	14.36	14.987	
2,100.00	2,100.00	2,043.94	2,020.99	7.35	7.50	16.51	199.22	59.03	222.29	207.81	14.48	15.348	
2,120.00	2,120.00	2,061.25	2,037.14	7.42	7.59	16.64	205.02	61.27	229.46	214.86	14.60	15.713	
2,140.00	2,140.00	2,078.47	2,053.18	7.49	7.67	16.76	210.88	63.52	236.74	222.02	14.72	16.080	
2,160.00	2,160.00	2,095.61	2,069.10	7.56	7.76	16.88	216.81	65.80	244.13	229.29	14.84	16.451	
2,180.00	2,180.00	2,112.67	2,084.91	7.64	7.84	17.00	222.80	68.11	251.63	236.67	14.96	16.823	
2,200.00	2,200.00	2,129.65	2,100.60	7.71	7.93	17.11	228.84	70.43	259.24	244.17	15.07	17.198	
2,220.00	2,220.00	2,146.55	2,116.18	7.78	8.02	17.21	234.94	72.78	266.97	251.78	15.19	17.575	
2,240.00	2,240.00	2,163.36	2,131.64	7.85	8.11	17.31	241.09	75.15	274.80	259.50	15.30	17.955	
2,260.00	2,260.00	2,180.08	2,146.99	7.92	8.19	17.41	247.30	77.54	282.74	267.32	15.42	18.339	
2,280.00	2,280.00	2,200.00	2,165.21	7.99	8.30	17.52	254.80	80.43	290.81	275.24	15.56	18.686	
2,300.00	2,300.00	2,213.28	2,177.33	8.07	8.37	17.59	259.87	82.38	298.94	283.30	15.64	19.112	
2,320.00	2,320.00	2,229.75	2,192.33	8.14	8.46	17.67	266.23	84.82	307.20	291.45	15.75	19.501	
2,340.00	2,340.00	2,246.13	2,207.20	8.21	8.55	17.75	272.63	87.29	315.56	299.70	15.86	19.893	
2,360.00	2,360.00	2,262.43	2,221.96	8.28	8.64	17.83	279.08	89.77	324.03	308.06	15.97	20.288	
2,380.00	2,380.00	2,278.64	2,236.61	8.35	8.73	17.91	285.57	92.27	332.60	316.52	16.08	20.685	
2,400.00	2,400.00	2,300.00	2,255.84	8.42	8.85	18.00	294.24	95.61	341.32	325.08	16.24	21.012	
2,420.00	2,420.00	2,310.79	2,265.53	8.50	8.91	18.05	298.68	97.31	350.05	333.76	16.29	21.486	
2,440.00	2,440.00	2,326.74	2,279.82	8.57	9.00	18.11	305.29	99.86	358.93	342.53	16.40	21.889	
2,460.00	2,460.00	2,342.60	2,293.99	8.64	9.10	18.18	311.94	102.42	367.90	351.40	16.50	22.295	
2,480.00	2,480.00	2,358.37	2,308.04	8.71	9.19	18.24	318.62	104.99	376.98	360.37	16.60	22.703	
2,500.00	2,500.00	2,374.63	2,322.49	8.78	9.28	18.30	325.58	107.67	386.15	369.43	16.71	23.103	
2,520.00	2,520.00	2,392.39	2,338.25	8.85	9.39	18.36	333.21	110.61	395.34	378.50	16.84	23.474	
2,540.00	2,540.00	2,410.15	2,354.02	8.93	9.50	18.42	340.83	113.54	404.53	387.56	16.97	23.839	
2,560.00	2,560.00	2,427.90	2,369.79	9.00	9.61	18.48	348.46	116.48	413.73	396.63	17.10	24.197	
2,580.00	2,580.00	2,445.66	2,385.55	9.07	9.71	18.54	356.08	119.41	422.92	405.70	17.23	24.550	
2,600.00	2,600.00	2,463.42	2,401.32	9.14	9.82	18.59	363.71	122.35	432.12	414.76	17.36	24.897	
2,620.00	2,620.00	2,481.18	2,417.08	9.21	9.93	18.64	371.33	125.28	441.32	423.83	17.49	25.239	
2,640.00	2,640.00	2,498.93	2,432.85	9.28	10.04	18.69	378.96	128.21	450.51	432.90	17.61	25.576	
2,660.00	2,660.00	2,516.69	2,448.61	9.36	10.15	18.74	386.58	131.15	459.71	441.96	17.75	25.906	
2,680.00	2,680.00	2,534.45	2,464.38	9.43	10.26	18.78	394.21	134.08	468.91	451.03	17.88	26.231	
2,700.00	2,700.00	2,552.20	2,480.15	9.50	10.37	18.83	401.84	137.02	478.10	460.10	18.01	26.551	
2,720.00	2,720.00	2,569.99	2,495.93	9.57	10.48	-41.15	409.47	139.96	487.25	469.12	18.14	26.865	
2,740.00	2,740.00	2,587.82	2,511.77	9.64	10.60	-40.99	417.13	142.91	496.31	478.04	18.27	27.169	
2,760.00	2,760.00	2,605.70	2,527.64	9.71	10.71	-40.85	424.81	145.86	505.27	486.87	18.40	27.462	
2,780.00	2,779.99	2,623.62	2,543.56	9.78	10.82	-40.72	432.50	148.82	514.14	495.61	18.53	27.745	
2,800.00	2,799.98	2,641.59	2,559.51	9.85	10.94	-40.61	440.22	151.79	522.91	504.25	18.66	28.018	
2,820.00	2,819.96	2,659.61	2,575.51	9.92	11.05	-40.51	447.96	154.77	531.59	512.80	18.80	28.282	
2,840.00	2,839.94	2,677.68	2,591.55	9.99	11.17	-40.42	455.71	157.76	540.17	521.24	18.93	28.536	
2,860.00	2,859.92	2,695.78	2,607.62	10.06	11.28	-40.34	463.49	160.75	548.66	529.60	19.06	28.782	
2,880.00	2,879.88	2,713.93	2,623.74	10.13	11.40	-40.27	471.28	163.75	557.05	537.85	19.20	29.017	
2,900.00	2,899.84	2,732.12	2,639.89	10.20	11.52	-40.21	479.09	166.76	565.34	546.01	19.33	29.244	
2,920.00	2,919.78	2,750.36	2,656.08	10.28	11.64	-40.16	486.92	169.77	573.54	554.07	19.47	29.461	
2,940.00	2,939.72	2,768.63	2,672.30	10.35	11.76	-40.12	494.77	172.79	581.64	562.04	19.60	29.669	
2,960.00	2,959.64	2,786.94	2,688.56	10.42	11.87	-40.09	502.63	175.82	589.65	569.90	19.74	29.868	
2,980.00	2,979.55	2,805.29	2,704.85	10.49	11.99	-40.07	510.51	178.85	597.55	577.67	19.88	30.059	
3,000.00	2,999.45	2,823.68	2,721.18	10.56	12.12	-40.06	518.41	181.89	605.36	585.34	20.02	30.240	
3,020.00	3,019.34	2,842.10	2,737.54	10.63	12.24	-40.06	526.32	184.93	613.08	592.92	20.16	30.413	
3,040.00	3,039.20	2,860.56	2,753.93	10.70	12.36	-40.06	534.25	187.99	620.69	600.39	20.30	30.578	
3,060.00	3,059.05	2,879.06	2,770.35	10.77	12.48	-40.07	542.19	191.04	628.21	607.77	20.44	30.735	
3,080.00	3,078.89	2,897.59	2,786.80	10.84	12.60	-40.09	550.15	194.10	635.63	615.05	20.58	30.885	
3,100.00	3,098.70	2,916.15	2,803.28	10.91	12.73	-40.12	558.12	197.17	642.96	622.24	20.72	31.027	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,120.00	3,118.50	2,934.74	2,819.79	10.98	12.85	-40.15	566.10	200.25	650.19	629.32	20.87	31.160	
3,140.00	3,138.27	2,953.37	2,836.32	11.06	12.97	-40.19	574.10	203.32	657.32	636.31	21.01	31.286	
3,160.00	3,158.03	2,972.02	2,852.89	11.13	13.10	-40.24	582.11	206.41	664.36	643.21	21.15	31.405	
3,180.00	3,177.76	2,990.71	2,869.48	11.20	13.22	-40.30	590.13	209.50	671.30	650.00	21.30	31.518	
3,200.00	3,197.47	3,009.42	2,886.09	11.27	13.35	-40.36	598.17	212.59	678.15	656.70	21.44	31.623	
3,220.00	3,217.15	3,028.16	2,902.73	11.34	13.47	-40.42	606.22	215.69	684.90	663.30	21.59	31.720	
3,240.00	3,236.81	3,046.93	2,919.39	11.42	13.60	-40.49	614.28	218.79	691.55	669.81	21.74	31.811	
3,260.00	3,256.44	3,065.73	2,936.08	11.49	13.73	-40.57	622.35	221.89	698.11	676.22	21.89	31.895	
3,280.00	3,276.05	3,084.54	2,952.79	11.56	13.85	-40.66	630.43	225.00	704.57	682.54	22.04	31.974	
3,300.00	3,295.62	3,103.39	2,969.52	11.64	13.98	-40.75	638.52	228.12	710.94	688.76	22.19	32.046	
3,320.00	3,315.17	3,122.25	2,986.27	11.71	14.11	-40.84	646.62	231.24	717.22	694.88	22.34	32.110	
3,340.00	3,334.69	3,141.14	3,003.04	11.78	14.24	-40.94	654.73	234.36	723.40	700.92	22.49	32.169	
3,360.00	3,354.18	3,160.05	3,019.82	11.86	14.37	-41.05	662.85	237.48	729.49	706.85	22.64	32.221	
3,380.00	3,373.63	3,178.98	3,036.63	11.93	14.49	-41.16	670.98	240.61	735.49	712.70	22.79	32.269	
3,400.00	3,393.06	3,197.93	3,053.45	12.01	14.62	-41.28	679.11	243.74	741.40	718.45	22.95	32.311	
3,420.00	3,412.44	3,216.89	3,070.29	12.09	14.75	-41.40	687.26	246.88	747.21	724.11	23.10	32.345	
3,440.00	3,431.80	3,235.88	3,087.15	12.16	14.88	-41.53	695.41	250.02	752.93	729.67	23.26	32.374	
3,460.00	3,451.12	3,254.88	3,104.02	12.24	15.01	-41.66	703.57	253.16	758.56	735.15	23.41	32.398	
3,480.00	3,470.40	3,273.89	3,120.90	12.32	15.14	-41.80	711.74	256.30	764.10	740.53	23.57	32.417	
3,500.00	3,489.64	3,292.92	3,137.80	12.39	15.27	-41.95	719.91	259.45	769.55	745.82	23.73	32.431	
3,520.00	3,508.85	3,311.97	3,154.71	12.47	15.40	-42.09	728.09	262.59	774.91	751.02	23.89	32.438	
3,540.00	3,528.02	3,331.02	3,171.63	12.56	15.53	-42.25	736.27	265.74	780.19	756.14	24.05	32.440	
3,560.00	3,547.14	3,350.09	3,188.56	12.64	15.67	-42.41	744.46	268.89	785.37	761.16	24.21	32.437	
3,580.00	3,566.23	3,369.17	3,205.50	12.72	15.80	-42.57	752.65	272.05	790.47	766.09	24.37	32.431	
3,600.00	3,585.27	3,388.26	3,222.45	12.80	15.93	-42.74	760.85	275.20	795.48	770.94	24.54	32.420	
3,620.00	3,604.27	3,407.36	3,239.41	12.88	16.06	-42.91	769.05	278.36	800.40	775.70	24.70	32.402	
3,640.00	3,623.22	3,426.47	3,256.37	12.96	16.19	-43.09	777.25	281.52	805.25	780.38	24.87	32.381	
3,645.28	3,628.22	3,431.51	3,260.85	12.98	16.23	-43.13	779.42	282.35	806.51	781.60	24.91	32.375	
3,660.00	3,642.15	3,445.58	3,273.34	13.05	16.32	-43.32	785.46	284.68	810.03	784.99	25.04	32.355	
3,680.00	3,661.07	3,464.70	3,290.31	13.13	16.46	-43.56	793.67	287.84	814.82	789.62	25.20	32.329	
3,700.00	3,679.99	3,483.81	3,307.28	13.22	16.59	-43.80	801.88	291.00	819.63	794.26	25.37	32.303	
3,720.00	3,698.91	3,502.92	3,324.25	13.30	16.72	-44.04	810.08	294.15	824.45	798.91	25.54	32.276	
3,740.00	3,717.83	3,522.04	3,341.22	13.39	16.85	-44.28	818.29	297.31	829.29	803.57	25.72	32.248	
3,760.00	3,736.75	3,541.15	3,358.19	13.48	16.99	-44.51	826.50	300.47	834.14	808.25	25.89	32.221	
3,780.00	3,755.67	3,560.26	3,375.16	13.57	17.12	-44.74	834.71	303.63	839.00	812.94	26.06	32.195	
3,800.00	3,774.59	3,579.38	3,392.13	13.65	17.25	-44.97	842.91	306.79	843.87	817.64	26.23	32.169	
3,820.00	3,793.51	3,598.49	3,409.10	13.74	17.39	-45.20	851.12	309.95	848.76	822.35	26.41	32.141	
3,840.00	3,812.44	3,617.60	3,426.07	13.83	17.52	-45.42	859.33	313.11	853.66	827.08	26.58	32.113	
3,860.00	3,831.36	3,636.72	3,443.04	13.92	17.65	-45.64	867.54	316.27	858.58	831.82	26.76	32.086	
3,880.00	3,850.28	3,655.83	3,460.01	14.01	17.79	-45.86	875.74	319.43	863.50	836.57	26.93	32.059	
3,900.00	3,869.20	3,674.94	3,476.98	14.10	17.92	-46.08	883.95	322.59	868.44	841.33	27.11	32.032	
3,920.00	3,888.12	3,694.06	3,493.95	14.20	18.05	-46.29	892.16	325.74	873.39	846.10	27.29	32.005	
3,940.00	3,907.04	3,713.17	3,510.92	14.29	18.19	-46.50	900.37	328.90	878.35	850.88	27.47	31.977	
3,960.00	3,925.96	3,732.28	3,527.89	14.38	18.32	-46.71	908.57	332.06	883.32	855.68	27.65	31.949	
3,980.00	3,944.88	3,751.40	3,544.86	14.47	18.46	-46.92	916.78	335.22	888.31	860.48	27.83	31.922	
4,000.00	3,963.80	3,770.51	3,561.83	14.56	18.59	-47.12	924.99	338.38	893.30	865.29	28.01	31.895	
4,020.00	3,982.73	3,789.62	3,578.80	14.66	18.72	-47.32	933.20	341.54	898.31	870.12	28.19	31.867	
4,040.00	4,001.65	3,808.74	3,595.77	14.75	18.86	-47.52	941.40	344.70	903.32	874.95	28.37	31.839	
4,060.00	4,020.57	3,827.85	3,612.74	14.85	18.99	-47.72	949.61	347.86	908.35	879.80	28.55	31.811	
4,080.00	4,039.49	3,846.96	3,629.71	14.94	19.13	-47.92	957.82	351.02	913.39	884.65	28.74	31.784	
4,100.00	4,058.41	3,866.08	3,646.68	15.04	19.26	-48.11	966.02	354.18	918.43	889.51	28.92	31.757	
4,120.00	4,077.33	3,885.19	3,663.65	15.13	19.40	-48.30	974.23	357.34	923.49	894.39	29.11	31.729	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,140.00	4,096.25	3,904.30	3,680.62	15.23	19.53	-48.49	982.44	360.49	928.56	899.27	29.29	31.701	
4,160.00	4,115.17	3,923.42	3,697.59	15.33	19.67	-48.68	990.65	363.65	933.64	904.16	29.48	31.674	
4,180.00	4,134.09	3,942.53	3,714.56	15.42	19.80	-48.87	998.85	366.81	938.72	909.06	29.66	31.646	
4,200.00	4,153.02	3,961.64	3,731.53	15.52	19.94	-49.05	1,007.06	369.97	943.82	913.97	29.85	31.619	
4,220.00	4,171.94	3,980.76	3,748.49	15.62	20.07	-49.23	1,015.27	373.13	948.92	918.88	30.04	31.591	
4,240.00	4,190.86	3,999.87	3,765.46	15.72	20.21	-49.41	1,023.48	376.29	954.03	923.81	30.23	31.564	
4,260.00	4,209.78	4,018.98	3,782.43	15.81	20.34	-49.59	1,031.68	379.45	959.16	928.74	30.41	31.536	
4,280.00	4,228.70	4,038.09	3,799.40	15.91	20.48	-49.77	1,039.89	382.61	964.29	933.69	30.60	31.509	
4,300.00	4,247.62	4,057.21	3,816.37	16.01	20.61	-49.94	1,048.10	385.77	969.43	938.64	30.79	31.482	
4,320.00	4,266.54	4,076.32	3,833.34	16.11	20.75	-50.11	1,056.31	388.93	974.58	943.59	30.98	31.454	
4,340.00	4,285.46	4,095.43	3,850.31	16.21	20.88	-50.28	1,064.51	392.08	979.73	948.56	31.17	31.427	
4,360.00	4,304.38	4,114.55	3,867.28	16.31	21.02	-50.45	1,072.72	395.24	984.90	953.53	31.37	31.400	
4,380.00	4,323.31	4,133.66	3,884.25	16.41	21.15	-50.62	1,080.93	398.40	990.07	958.51	31.56	31.373	
4,400.00	4,342.23	4,152.77	3,901.22	16.51	21.29	-50.79	1,089.14	401.56	995.25	963.50	31.75	31.346	
4,420.00	4,361.15	4,171.89	3,918.19	16.61	21.42	-50.95	1,097.34	404.72	1,000.44	968.50	31.94	31.319	
4,440.00	4,380.07	4,191.00	3,935.16	16.71	21.56	-51.11	1,105.55	407.88	1,005.64	973.50	32.14	31.292	
4,460.00	4,398.99	4,210.11	3,952.13	16.81	21.70	-51.27	1,113.76	411.04	1,010.84	978.51	32.33	31.265	
4,480.00	4,417.91	4,229.23	3,969.10	16.92	21.83	-51.43	1,121.97	414.20	1,016.05	983.53	32.53	31.238	
4,500.00	4,436.83	4,248.34	3,986.07	17.02	21.97	-51.59	1,130.17	417.36	1,021.27	988.55	32.72	31.212	
4,520.00	4,455.75	4,267.45	4,003.04	17.12	22.10	-51.74	1,138.38	420.52	1,026.50	993.58	32.92	31.185	
4,540.00	4,474.67	4,286.57	4,020.01	17.22	22.24	-51.90	1,146.59	423.67	1,031.73	998.62	33.11	31.158	
4,560.00	4,493.59	4,305.68	4,036.98	17.33	22.38	-52.05	1,154.80	426.83	1,036.97	1,003.66	33.31	31.132	
4,580.00	4,512.52	4,324.79	4,053.95	17.43	22.51	-52.20	1,163.00	429.99	1,042.22	1,008.72	33.51	31.106	
4,600.00	4,531.44	4,343.91	4,070.92	17.53	22.65	-52.35	1,171.21	433.15	1,047.48	1,013.77	33.70	31.080	
4,620.00	4,550.36	4,363.02	4,087.89	17.64	22.78	-52.50	1,179.42	436.31	1,052.74	1,018.83	33.90	31.053	
4,640.00	4,569.28	4,382.13	4,104.86	17.74	22.92	-52.65	1,187.63	439.47	1,058.00	1,023.90	34.10	31.027	
4,660.00	4,588.20	4,401.25	4,121.83	17.84	23.06	-52.79	1,195.83	442.63	1,063.28	1,028.98	34.30	31.001	
4,680.00	4,607.12	4,420.36	4,138.80	17.95	23.19	-52.94	1,204.04	445.79	1,068.56	1,034.06	34.50	30.975	
4,700.00	4,626.04	4,439.47	4,155.77	18.05	23.33	-53.08	1,212.25	448.95	1,073.85	1,039.15	34.70	30.950	
4,720.00	4,644.96	4,458.59	4,172.74	18.16	23.47	-53.22	1,220.45	452.11	1,079.14	1,044.24	34.90	30.924	
4,740.00	4,663.88	4,477.70	4,189.71	18.26	23.60	-53.36	1,228.66	455.27	1,084.44	1,049.34	35.10	30.898	
4,760.00	4,682.81	4,496.81	4,206.68	18.37	23.74	-53.50	1,236.87	458.42	1,089.74	1,054.44	35.30	30.872	
4,780.00	4,701.73	4,515.93	4,223.65	18.47	23.87	-53.64	1,245.08	461.58	1,095.05	1,059.55	35.50	30.847	
4,800.00	4,720.65	4,535.04	4,240.62	18.58	24.01	-53.77	1,253.28	464.74	1,100.37	1,064.67	35.70	30.822	
4,820.00	4,739.57	4,554.15	4,257.59	18.69	24.15	-53.91	1,261.49	467.90	1,105.69	1,069.79	35.90	30.797	
4,840.00	4,758.49	4,573.27	4,274.56	18.79	24.28	-54.04	1,269.70	471.06	1,111.02	1,074.92	36.11	30.772	
4,860.00	4,777.41	4,592.38	4,291.53	18.90	24.42	-54.17	1,277.91	474.22	1,116.36	1,080.05	36.31	30.747	
4,880.00	4,796.33	4,611.49	4,308.50	19.00	24.56	-54.30	1,286.11	477.38	1,121.70	1,085.19	36.51	30.722	
4,900.00	4,815.25	4,630.60	4,325.47	19.11	24.69	-54.43	1,294.32	480.54	1,127.04	1,090.33	36.71	30.697	
4,920.00	4,834.17	4,649.72	4,342.44	19.22	24.83	-54.56	1,302.53	483.70	1,132.39	1,095.47	36.92	30.673	
4,940.00	4,853.10	4,668.83	4,359.41	19.32	24.97	-54.69	1,310.74	486.86	1,137.75	1,100.63	37.12	30.648	
4,960.00	4,872.02	4,687.94	4,376.38	19.43	25.11	-54.81	1,318.94	490.01	1,143.11	1,105.78	37.33	30.624	
4,980.00	4,890.94	4,707.06	4,393.35	19.54	25.24	-54.94	1,327.15	493.17	1,148.48	1,110.94	37.53	30.600	
5,000.00	4,909.86	4,726.17	4,410.32	19.65	25.38	-55.06	1,335.36	496.33	1,153.85	1,116.11	37.74	30.576	
5,020.00	4,928.78	4,745.28	4,427.29	19.75	25.52	-55.19	1,343.57	499.49	1,159.23	1,121.28	37.94	30.552	
5,040.00	4,947.70	4,764.40	4,444.26	19.86	25.65	-55.31	1,351.77	502.65	1,164.61	1,126.46	38.15	30.528	
5,060.00	4,966.62	4,783.51	4,461.23	19.97	25.79	-55.43	1,359.98	505.81	1,169.99	1,131.64	38.36	30.504	
5,080.00	4,985.54	4,802.62	4,478.20	20.08	25.93	-55.55	1,368.19	508.97	1,175.38	1,136.82	38.56	30.480	
5,100.00	5,004.46	4,821.74	4,495.17	20.19	26.06	-55.67	1,376.40	512.13	1,180.78	1,142.01	38.77	30.457	
5,120.00	5,023.39	4,840.85	4,512.14	20.30	26.20	-55.78	1,384.60	515.29	1,186.18	1,147.20	38.98	30.433	
5,140.00	5,042.31	4,859.96	4,529.11	20.41	26.34	-55.90	1,392.81	518.45	1,191.59	1,152.40	39.18	30.410	
5,160.00	5,061.23	4,879.08	4,546.08	20.51	26.48	-56.01	1,401.02	521.60	1,197.00	1,157.60	39.39	30.387	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,180.00	5,080.15	4,898.19	4,563.05	20.62	26.61	-56.13	1,409.23	524.76	1,202.41	1,162.81	39.60	30.364	
5,200.00	5,099.07	4,917.30	4,580.02	20.73	26.75	-56.24	1,417.43	527.92	1,207.83	1,168.02	39.81	30.341	
5,220.00	5,117.99	4,936.42	4,596.99	20.84	26.89	-56.35	1,425.64	531.08	1,213.25	1,173.24	40.02	30.318	
5,240.00	5,136.91	4,955.53	4,613.96	20.95	27.03	-56.46	1,433.85	534.24	1,218.68	1,178.45	40.23	30.296	
5,260.00	5,155.83	4,974.64	4,630.93	21.06	27.16	-56.57	1,442.05	537.40	1,224.11	1,183.68	40.44	30.273	
5,280.00	5,174.75	4,993.76	4,647.89	21.17	27.30	-56.68	1,450.26	540.56	1,229.55	1,188.90	40.64	30.251	
5,300.00	5,193.67	5,012.87	4,664.86	21.28	27.44	-56.79	1,458.47	543.72	1,234.99	1,194.13	40.85	30.229	
5,320.00	5,212.60	5,031.98	4,681.83	21.39	27.58	-56.90	1,466.68	546.88	1,240.43	1,199.37	41.06	30.207	
5,340.00	5,231.52	5,051.10	4,698.80	21.50	27.71	-57.01	1,474.88	550.04	1,245.88	1,204.61	41.28	30.185	
5,360.00	5,250.44	5,070.21	4,715.77	21.61	27.85	-57.11	1,483.09	553.20	1,251.33	1,209.85	41.49	30.163	
5,380.00	5,269.36	5,089.32	4,732.74	21.72	27.99	-57.22	1,491.30	556.35	1,256.79	1,215.09	41.70	30.141	
5,400.00	5,288.28	5,108.44	4,749.71	21.83	28.13	-57.32	1,499.51	559.51	1,262.25	1,220.34	41.91	30.120	
5,420.00	5,307.20	5,127.55	4,766.68	21.94	28.26	-57.42	1,507.71	562.67	1,267.71	1,225.59	42.12	30.098	
5,440.00	5,326.12	5,146.66	4,783.65	22.06	28.40	-57.52	1,515.92	565.83	1,273.18	1,230.85	42.33	30.076	
5,460.00	5,345.04	5,165.78	4,800.62	22.17	28.54	-57.63	1,524.13	568.99	1,278.65	1,236.11	42.54	30.055	
5,480.00	5,363.96	5,184.89	4,817.59	22.28	28.68	-57.73	1,532.34	572.15	1,284.13	1,241.37	42.76	30.034	
5,500.00	5,382.89	5,204.00	4,834.56	22.39	28.81	-57.82	1,540.54	575.31	1,289.61	1,246.64	42.97	30.013	
5,520.00	5,401.81	5,223.12	4,851.53	22.50	28.95	-57.92	1,548.75	578.47	1,295.09	1,251.91	43.18	29.992	
5,540.00	5,420.73	5,242.23	4,868.50	22.61	29.09	-58.02	1,556.96	581.63	1,300.58	1,257.18	43.39	29.971	
5,560.00	5,439.65	5,261.34	4,885.47	22.72	29.23	-58.12	1,565.17	584.79	1,306.07	1,262.46	43.61	29.951	
5,580.00	5,458.57	5,280.45	4,902.44	22.84	29.37	-58.21	1,573.37	587.94	1,311.56	1,267.74	43.82	29.930	
5,600.00	5,477.49	5,299.57	4,919.41	22.95	29.50	-58.31	1,581.58	591.10	1,317.06	1,273.02	44.03	29.910	
5,620.00	5,496.41	5,318.68	4,936.38	23.06	29.64	-58.40	1,589.79	594.26	1,322.56	1,278.31	44.25	29.890	
5,640.00	5,515.33	5,337.79	4,953.35	23.17	29.78	-58.50	1,598.00	597.42	1,328.06	1,283.60	44.46	29.870	
5,660.00	5,534.25	5,356.91	4,970.32	23.28	29.92	-58.59	1,606.20	600.58	1,333.57	1,288.89	44.68	29.850	
5,680.00	5,553.18	5,376.02	4,987.29	23.40	30.05	-58.68	1,614.41	603.74	1,339.08	1,294.18	44.89	29.830	
5,700.00	5,572.10	5,395.13	5,004.26	23.51	30.19	-58.77	1,622.62	606.90	1,344.59	1,299.48	45.11	29.810	
5,720.00	5,591.02	5,414.25	5,021.23	23.62	30.33	-58.87	1,630.83	610.06	1,350.10	1,304.78	45.32	29.790	
5,740.00	5,609.94	5,433.36	5,038.20	23.73	30.47	-58.96	1,639.03	613.22	1,355.62	1,310.09	45.54	29.771	
5,760.00	5,628.86	5,452.47	5,055.17	23.85	30.61	-59.04	1,647.24	616.38	1,361.15	1,315.40	45.75	29.751	
5,780.00	5,647.78	5,471.59	5,072.14	23.96	30.74	-59.13	1,655.45	619.53	1,366.67	1,320.71	45.97	29.732	
5,800.00	5,666.70	5,490.70	5,089.11	24.07	30.88	-59.22	1,663.66	622.69	1,372.20	1,326.02	46.18	29.713	
5,809.89	5,676.06	5,500.15	5,097.50	24.13	30.95	-59.26	1,667.71	624.26	1,374.93	1,328.65	46.29	29.704	
5,820.00	5,685.60	5,509.80	5,106.07	24.19	31.02	-60.48	1,671.86	625.85	1,377.73	1,331.33	46.40	29.692	
5,840.00	5,704.31	5,528.83	5,122.96	24.31	31.16	-62.54	1,680.03	629.00	1,383.27	1,336.64	46.63	29.667	
5,850.00	5,713.58	5,538.30	5,131.37	24.37	31.23	-63.43	1,684.10	630.56	1,386.04	1,339.30	46.74	29.653	
5,860.00	5,722.80	5,547.74	5,139.76	24.43	31.29	-64.24	1,688.15	632.12	1,388.81	1,341.95	46.86	29.635	
5,880.00	5,741.03	5,566.53	5,156.43	24.57	31.43	-65.65	1,696.22	635.23	1,394.35	1,347.24	47.11	29.596	
5,900.00	5,759.00	5,585.15	5,172.97	24.70	31.56	-66.83	1,704.21	638.31	1,399.90	1,352.53	47.37	29.555	
5,920.00	5,776.66	5,603.60	5,189.35	24.85	31.70	-67.82	1,712.14	641.35	1,405.44	1,357.80	47.64	29.502	
5,940.00	5,794.02	5,621.85	5,205.55	25.00	31.83	-68.66	1,719.97	644.37	1,410.98	1,363.07	47.92	29.447	
5,950.00	5,802.57	5,630.89	5,213.58	25.08	31.90	-69.04	1,723.86	645.86	1,413.76	1,365.70	48.06	29.419	
5,960.00	5,811.03	5,639.88	5,221.56	25.16	31.96	-69.38	1,727.71	647.35	1,416.53	1,368.33	48.20	29.386	
5,980.00	5,827.69	5,657.66	5,237.34	25.33	32.09	-70.00	1,735.35	650.29	1,422.08	1,373.58	48.51	29.317	
6,000.00	5,843.96	5,675.17	5,252.89	25.50	32.22	-70.53	1,742.87	653.18	1,427.64	1,378.83	48.81	29.247	
6,020.00	5,859.84	5,692.39	5,268.18	25.69	32.34	-70.99	1,750.26	656.03	1,433.21	1,384.07	49.14	29.165	
6,040.00	5,875.31	5,709.31	5,283.20	25.87	32.46	-71.39	1,757.53	658.83	1,438.80	1,389.33	49.47	29.082	
6,050.00	5,882.88	5,717.65	5,290.60	25.97	32.52	-71.57	1,761.11	660.20	1,441.60	1,391.96	49.64	29.041	
6,060.00	5,890.33	5,725.90	5,297.93	26.07	32.58	-71.73	1,764.65	661.57	1,444.40	1,394.58	49.82	28.993	
6,080.00	5,904.90	5,742.13	5,312.35	26.28	32.70	-72.02	1,771.62	664.25	1,450.03	1,399.85	50.18	28.898	
6,100.00	5,919.00	5,758.00	5,326.43	26.49	32.81	-72.27	1,778.44	666.87	1,455.69	1,405.15	50.54	28.803	
6,120.00	5,932.61	5,773.48	5,340.18	26.72	32.93	-72.48	1,785.08	669.43	1,461.38	1,410.45	50.93	28.696	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,140.00	5,945.72	5,788.55	5,353.56	26.95	33.04	-72.65	1,791.55	671.92	1,467.11	1,415.79	51.32	28.590	
6,150.00	5,952.07	5,795.92	5,360.11	27.06	33.09	-72.72	1,794.72	673.14	1,469.99	1,418.48	51.51	28.538	
6,160.00	5,958.30	5,803.19	5,366.56	27.19	33.14	-72.78	1,797.84	674.34	1,472.88	1,421.17	51.72	28.479	
6,180.00	5,970.34	5,817.39	5,379.17	27.44	33.24	-72.88	1,803.94	676.69	1,478.71	1,426.57	52.13	28.364	
6,200.00	5,981.83	5,831.13	5,391.36	27.69	33.34	-72.94	1,809.84	678.96	1,484.59	1,432.04	52.55	28.250	
6,220.00	5,992.76	5,844.39	5,403.14	27.97	33.44	-72.97	1,815.53	681.15	1,490.53	1,437.53	52.99	28.126	
6,240.00	6,003.11	5,857.16	5,414.47	28.25	33.53	-72.96	1,821.02	683.26	1,496.53	1,443.10	53.44	28.006	
6,250.00	6,008.06	5,863.35	5,419.97	28.38	33.58	-72.94	1,823.68	684.29	1,499.56	1,445.90	53.66	27.946	
6,260.00	6,012.86	5,869.42	5,425.35	28.53	33.62	-72.91	1,826.28	685.29	1,502.61	1,448.72	53.89	27.882	
6,280.00	6,022.01	5,881.15	5,435.77	28.84	33.71	-72.83	1,831.32	687.23	1,508.76	1,454.40	54.36	27.756	
6,300.00	6,030.55	5,892.34	5,445.71	29.14	33.79	-72.72	1,836.12	689.08	1,514.99	1,460.17	54.82	27.633	
6,320.00	6,038.46	5,902.98	5,455.16	29.46	33.86	-72.57	1,840.69	690.84	1,521.30	1,465.99	55.31	27.504	
6,340.00	6,045.73	5,913.06	5,464.10	29.78	33.94	-72.38	1,845.02	692.50	1,527.70	1,471.90	55.80	27.380	
6,350.00	6,049.13	5,917.88	5,468.38	29.95	33.97	-72.27	1,847.09	693.30	1,530.93	1,474.89	56.04	27.319	
6,360.00	6,052.36	5,922.55	5,472.53	30.12	34.01	-72.15	1,849.10	694.07	1,534.18	1,477.89	56.29	27.255	
6,380.00	6,058.34	5,931.46	5,480.44	30.47	34.07	-71.88	1,852.92	695.54	1,540.75	1,483.97	56.79	27.131	
6,400.00	6,063.66	5,939.77	5,487.82	30.81	34.13	-71.57	1,856.49	696.92	1,547.42	1,490.13	57.29	27.013	
6,420.00	6,068.31	5,947.46	5,494.65	31.18	34.19	-71.22	1,859.79	698.19	1,554.17	1,496.38	57.79	26.892	
6,440.00	6,072.29	5,954.54	5,500.93	31.54	34.24	-70.82	1,862.83	699.36	1,561.02	1,502.72	58.30	26.776	
6,450.00	6,074.03	5,957.85	5,503.87	31.73	34.26	-70.61	1,864.25	699.90	1,564.48	1,505.93	58.55	26.721	
6,460.00	6,075.60	5,960.99	5,506.66	31.92	34.28	-70.39	1,865.60	700.42	1,567.96	1,509.15	58.80	26.664	
6,480.00	6,078.23	5,966.80	5,511.82	32.30	34.33	-69.91	1,868.10	701.38	1,574.98	1,515.67	59.31	26.556	
6,500.00	6,080.17	5,971.97	5,516.41	32.68	34.36	-69.39	1,870.32	702.24	1,582.09	1,522.28	59.81	26.453	
6,520.00	6,081.42	5,976.49	5,520.42	33.07	34.40	-68.82	1,872.26	702.99	1,589.28	1,528.97	60.31	26.353	
6,540.00	6,081.99	5,980.36	5,523.85	33.47	34.42	-68.21	1,873.92	703.62	1,596.55	1,535.75	60.80	26.259	
6,552.18	6,082.00	5,982.39	5,525.66	33.71	34.44	-67.82	1,874.79	703.96	1,601.01	1,539.92	61.10	26.205	
6,560.00	6,081.92	5,983.61	5,526.74	33.86	34.45	-67.87	1,875.32	704.16	1,603.90	1,542.61	61.29	26.170	
6,580.00	6,081.73	5,986.74	5,529.53	34.27	34.47	-67.99	1,876.66	704.68	1,611.44	1,549.66	61.77	26.086	
6,600.00	6,081.53	5,989.88	5,532.31	34.67	34.49	-68.11	1,878.01	705.20	1,619.18	1,556.92	62.25	26.010	
6,620.00	6,081.34	5,993.01	5,535.09	35.10	34.52	-68.22	1,879.35	705.72	1,627.12	1,564.38	62.74	25.934	
6,640.00	6,081.14	5,996.14	5,537.87	35.52	34.54	-68.34	1,880.70	706.23	1,635.26	1,572.04	63.22	25.866	
6,660.00	6,080.95	5,999.27	5,540.65	35.94	34.56	-68.46	1,882.04	706.75	1,643.60	1,579.91	63.69	25.805	
6,680.00	6,080.76	7,062.89	6,080.74	36.37	44.86	-90.00	2,146.20	1,425.52	1,650.24	1,578.31	71.93	22.942	
6,700.00	6,080.56	7,082.89	6,080.54	36.79	45.13	-90.00	2,146.20	1,445.52	1,650.24	1,577.49	72.75	22.683	
6,720.00	6,080.37	7,102.89	6,080.35	37.24	45.41	-90.00	2,146.20	1,465.52	1,650.24	1,576.65	73.60	22.423	
6,740.00	6,080.17	7,122.89	6,080.15	37.69	45.69	-90.00	2,146.20	1,485.52	1,650.24	1,575.78	74.47	22.161	
6,760.00	6,079.98	7,142.89	6,079.95	38.13	45.98	-90.00	2,146.20	1,505.52	1,650.24	1,574.91	75.34	21.905	
6,780.00	6,079.78	7,162.89	6,079.75	38.58	46.28	-90.00	2,146.20	1,525.51	1,650.24	1,574.04	76.20	21.656	
6,800.00	6,079.59	7,182.89	6,079.56	39.03	46.58	-90.00	2,146.20	1,545.51	1,650.24	1,573.17	77.07	21.411	
6,820.00	6,079.39	7,202.89	6,079.36	39.49	46.88	-90.00	2,146.20	1,565.51	1,650.24	1,572.28	77.96	21.167	
6,840.00	6,079.20	7,222.89	6,079.16	39.96	47.19	-90.00	2,146.20	1,585.51	1,650.24	1,571.37	78.87	20.922	
6,860.00	6,079.00	7,242.89	6,078.97	40.43	47.51	-90.00	2,146.20	1,605.51	1,650.24	1,570.46	79.78	20.684	
6,880.00	6,078.81	7,262.89	6,078.77	40.89	47.84	-90.00	2,146.20	1,625.51	1,650.24	1,569.55	80.69	20.450	
6,900.00	6,078.61	7,282.89	6,078.57	41.36	48.17	-90.00	2,146.20	1,645.51	1,650.24	1,568.64	81.60	20.222	
6,920.00	6,078.42	7,302.89	6,078.38	41.84	48.50	-90.00	2,146.20	1,665.51	1,650.24	1,567.71	82.53	19.995	
6,940.00	6,078.22	7,322.89	6,078.18	42.32	48.84	-90.00	2,146.20	1,685.51	1,650.24	1,566.76	83.48	19.769	
6,960.00	6,078.03	7,342.89	6,077.98	42.81	49.19	-90.00	2,146.20	1,705.51	1,650.24	1,565.82	84.42	19.547	
6,980.00	6,077.83	7,362.89	6,077.78	43.29	49.54	-90.00	2,146.20	1,725.51	1,650.24	1,564.87	85.37	19.331	
7,000.00	6,077.64	7,382.89	6,077.59	43.77	49.89	-90.00	2,146.20	1,745.50	1,650.24	1,563.93	86.31	19.119	
7,020.00	6,077.44	7,402.89	6,077.39	44.27	50.25	-90.00	2,146.20	1,765.50	1,650.24	1,562.97	87.27	18.909	
7,040.00	6,077.25	7,422.89	6,077.19	44.76	50.62	-90.00	2,146.20	1,785.50	1,650.24	1,561.99	88.25	18.700	
7,060.00	6,077.05	7,442.89	6,077.00	45.26	50.99	-90.00	2,146.19	1,805.50	1,650.24	1,561.02	89.22	18.496	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,080.00	6,076.86	7,462.89	6,076.80	45.76	51.37	-90.00	2,146.19	1,825.50	1,650.24	1,560.04	90.20	18.296	
7,100.00	6,076.66	7,482.89	6,076.60	46.25	51.75	-90.00	2,146.19	1,845.50	1,650.24	1,559.07	91.17	18.100	
7,120.00	6,076.47	7,502.89	6,076.41	46.76	52.13	-90.00	2,146.19	1,865.50	1,650.24	1,558.08	92.16	17.907	
7,140.00	6,076.27	7,522.89	6,076.21	47.27	52.52	-90.00	2,146.19	1,885.50	1,650.24	1,557.08	93.16	17.714	
7,160.00	6,076.08	7,542.89	6,076.01	47.78	52.92	-90.00	2,146.19	1,905.50	1,650.24	1,556.08	94.16	17.526	
7,180.00	6,075.88	7,562.89	6,075.81	48.28	53.32	-90.00	2,146.19	1,925.50	1,650.24	1,555.08	95.16	17.342	
7,200.00	6,075.69	7,582.89	6,075.62	48.79	53.72	-90.00	2,146.19	1,945.49	1,650.24	1,554.09	96.16	17.162	
7,220.00	6,075.49	7,602.89	6,075.42	49.31	54.12	-90.00	2,146.19	1,965.49	1,650.24	1,553.07	97.17	16.984	
7,240.00	6,075.30	7,622.89	6,075.22	49.83	54.54	-90.00	2,146.19	1,985.49	1,650.24	1,552.05	98.19	16.807	
7,260.00	6,075.11	7,642.89	6,075.03	50.34	54.95	-90.00	2,146.19	2,005.49	1,650.24	1,551.03	99.21	16.634	
7,280.00	6,074.91	7,662.89	6,074.83	50.86	55.37	-90.00	2,146.19	2,025.49	1,650.24	1,550.01	100.23	16.465	
7,300.00	6,074.72	7,682.89	6,074.63	51.38	55.79	-90.00	2,146.19	2,045.49	1,650.24	1,548.99	101.25	16.299	
7,320.00	6,074.52	7,702.89	6,074.44	51.90	56.22	-90.00	2,146.19	2,065.49	1,650.24	1,547.96	102.28	16.135	
7,340.00	6,074.33	7,722.89	6,074.24	52.43	56.65	-90.00	2,146.19	2,085.49	1,650.24	1,546.92	103.32	15.972	
7,360.00	6,074.13	7,742.89	6,074.04	52.96	57.09	-90.00	2,146.19	2,105.49	1,650.24	1,545.88	104.36	15.813	
7,380.00	6,073.94	7,762.89	6,073.85	53.48	57.52	-90.00	2,146.19	2,125.49	1,650.24	1,544.84	105.40	15.657	
7,400.00	6,073.74	7,782.89	6,073.65	54.01	57.96	-90.00	2,146.19	2,145.49	1,650.24	1,543.81	106.44	15.505	
7,420.00	6,073.55	7,802.89	6,073.45	54.54	58.41	-90.00	2,146.19	2,165.48	1,650.24	1,542.76	107.48	15.354	
7,440.00	6,073.35	7,822.89	6,073.26	55.07	58.85	-90.00	2,146.19	2,185.48	1,650.24	1,541.70	108.54	15.204	
7,460.00	6,073.16	7,842.89	6,073.06	55.61	59.30	-90.00	2,146.19	2,205.48	1,650.24	1,540.65	109.59	15.058	
7,480.00	6,072.96	7,862.89	6,072.86	56.14	59.76	-90.00	2,146.19	2,225.48	1,650.24	1,539.59	110.65	14.914	
7,500.00	6,072.77	7,882.89	6,072.67	56.67	60.21	-90.00	2,146.19	2,245.48	1,650.24	1,538.54	111.70	14.774	
7,520.00	6,072.57	7,902.89	6,072.47	57.21	60.67	-90.00	2,146.19	2,265.48	1,650.24	1,537.48	112.76	14.635	
7,540.00	6,072.38	7,922.89	6,072.27	57.75	61.13	-90.00	2,146.19	2,285.48	1,650.24	1,536.41	113.83	14.497	
7,560.00	6,072.18	7,942.89	6,072.08	58.29	61.60	-90.00	2,146.19	2,305.48	1,650.24	1,535.34	114.90	14.362	
7,580.00	6,071.99	7,962.89	6,071.88	58.83	62.07	-90.00	2,146.19	2,325.48	1,650.24	1,534.27	115.97	14.230	
7,600.00	6,071.79	7,982.89	6,071.68	59.37	62.54	-90.00	2,146.19	2,345.48	1,650.24	1,533.20	117.04	14.100	
7,620.00	6,071.60	8,002.89	6,071.49	59.92	63.01	-90.00	2,146.19	2,365.48	1,650.24	1,532.13	118.11	13.972	
7,640.00	6,071.40	8,022.89	6,071.29	60.46	63.48	-90.00	2,146.19	2,385.47	1,650.24	1,531.05	119.19	13.845	
7,660.00	6,071.21	8,042.89	6,071.09	61.01	63.96	-90.00	2,146.19	2,405.47	1,650.24	1,529.97	120.27	13.721	
7,680.00	6,071.01	8,062.89	6,070.90	61.55	64.44	-90.00	2,146.19	2,425.47	1,650.24	1,528.89	121.35	13.599	
7,700.00	6,070.82	8,082.89	6,070.70	62.10	64.92	-90.00	2,146.19	2,445.47	1,650.24	1,527.81	122.43	13.479	
7,720.00	6,070.62	8,102.89	6,070.50	62.65	65.41	-90.00	2,146.19	2,465.47	1,650.24	1,526.72	123.52	13.360	
7,740.00	6,070.43	8,122.89	6,070.31	63.19	65.89	-90.00	2,146.19	2,485.47	1,650.24	1,525.63	124.61	13.243	
7,760.00	6,070.23	8,142.89	6,070.11	63.74	66.38	-90.00	2,146.19	2,505.47	1,650.24	1,524.54	125.70	13.129	
7,780.00	6,070.04	8,162.89	6,069.91	64.29	66.87	-90.00	2,146.19	2,525.47	1,650.24	1,523.45	126.79	13.016	
7,800.00	6,069.85	8,182.89	6,069.72	64.84	67.36	-90.00	2,146.19	2,545.47	1,650.24	1,522.36	127.88	12.905	
7,820.00	6,069.65	8,202.89	6,069.52	65.40	67.86	-90.00	2,146.19	2,565.47	1,650.24	1,521.26	128.97	12.795	
7,840.00	6,069.46	8,222.89	6,069.32	65.95	68.36	-90.00	2,146.19	2,585.46	1,650.24	1,520.16	130.07	12.687	
7,860.00	6,069.26	8,242.89	6,069.13	66.51	68.85	-90.00	2,146.19	2,605.46	1,650.24	1,519.07	131.17	12.581	
7,880.00	6,069.07	8,262.89	6,068.93	67.06	69.35	-90.00	2,146.19	2,625.46	1,650.24	1,517.97	132.27	12.476	
7,900.00	6,068.87	8,282.89	6,068.73	67.61	69.86	-90.00	2,146.19	2,645.46	1,650.24	1,516.87	133.37	12.373	
7,920.00	6,068.68	8,302.89	6,068.54	68.17	70.36	-90.00	2,146.19	2,665.46	1,650.24	1,515.76	134.48	12.272	
7,940.00	6,068.48	8,322.89	6,068.34	68.73	70.87	-90.00	2,146.19	2,685.46	1,650.24	1,514.65	135.58	12.171	
7,960.00	6,068.29	8,342.89	6,068.14	69.29	71.37	-90.00	2,146.19	2,705.46	1,650.24	1,513.55	136.69	12.073	
7,980.00	6,068.09	8,362.89	6,067.95	69.84	71.88	-89.99	2,146.19	2,725.46	1,650.24	1,512.44	137.80	11.976	
8,000.00	6,067.90	8,382.89	6,067.75	70.40	72.39	-89.99	2,146.19	2,745.46	1,650.24	1,511.33	138.91	11.880	
8,020.00	6,067.70	8,402.89	6,067.55	70.96	72.90	-89.99	2,146.19	2,765.46	1,650.24	1,510.22	140.02	11.786	
8,040.00	6,067.51	8,422.89	6,067.36	71.52	73.42	-89.99	2,146.19	2,785.46	1,650.24	1,509.10	141.13	11.693	
8,060.00	6,067.31	8,442.89	6,067.16	72.08	73.93	-89.99	2,146.19	2,805.45	1,650.24	1,507.99	142.25	11.601	
8,080.00	6,067.12	8,462.89	6,066.96	72.64	74.45	-89.99	2,146.19	2,825.45	1,650.24	1,506.88	143.36	11.511	
8,100.00	6,066.92	8,482.89	6,066.77	73.20	74.97	-89.99	2,146.19	2,845.45	1,650.24	1,505.76	144.48	11.422	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,120.00	6,066.73	8,502.89	6,066.57	73.77	75.48	-89.99	2,146.19	2,865.45	1,650.24	1,504.64	145.60	11.334	
8,140.00	6,066.53	8,522.89	6,066.37	74.33	76.00	-89.99	2,146.19	2,885.45	1,650.24	1,503.52	146.72	11.248	
8,160.00	6,066.34	8,542.89	6,066.18	74.90	76.53	-89.99	2,146.19	2,905.45	1,650.24	1,502.40	147.84	11.162	
8,180.00	6,066.14	8,562.89	6,065.98	75.46	77.05	-89.99	2,146.19	2,925.45	1,650.24	1,501.28	148.96	11.078	
8,200.00	6,065.95	8,582.89	6,065.79	76.02	77.57	-89.99	2,146.19	2,945.45	1,650.24	1,500.16	150.08	10.996	
8,220.00	6,065.75	8,602.89	6,065.59	76.59	78.10	-89.99	2,146.19	2,965.45	1,650.24	1,499.03	151.20	10.914	
8,240.00	6,065.56	8,622.89	6,065.39	77.16	78.62	-89.99	2,146.19	2,985.45	1,650.24	1,497.91	152.33	10.833	
8,260.00	6,065.36	8,642.89	6,065.20	77.72	79.15	-89.99	2,146.19	3,005.45	1,650.24	1,496.78	153.46	10.754	
8,280.00	6,065.17	8,662.89	6,065.00	78.29	79.68	-89.99	2,146.19	3,025.44	1,650.24	1,495.65	154.58	10.675	
8,300.00	6,064.97	8,682.89	6,064.80	78.85	80.21	-89.99	2,146.19	3,045.44	1,650.24	1,494.53	155.71	10.598	
8,320.00	6,064.78	8,702.89	6,064.61	79.42	80.74	-89.99	2,146.19	3,065.44	1,650.24	1,493.40	156.84	10.522	
8,340.00	6,064.59	8,722.89	6,064.41	79.99	81.27	-89.99	2,146.19	3,085.44	1,650.24	1,492.27	157.97	10.446	
8,360.00	6,064.39	8,742.89	6,064.21	80.56	81.81	-89.99	2,146.19	3,105.44	1,650.24	1,491.13	159.10	10.372	
8,380.00	6,064.20	8,762.89	6,064.02	81.13	82.34	-89.99	2,146.19	3,125.44	1,650.24	1,490.00	160.24	10.299	
8,400.00	6,064.00	8,782.89	6,063.82	81.70	82.88	-89.99	2,146.19	3,145.44	1,650.24	1,488.87	161.37	10.227	
8,420.00	6,063.81	8,802.89	6,063.63	82.27	83.41	-89.99	2,146.19	3,165.44	1,650.24	1,487.74	162.50	10.155	
8,440.00	6,063.61	8,822.89	6,063.43	82.84	83.95	-89.99	2,146.19	3,185.44	1,650.24	1,486.60	163.64	10.085	
8,460.00	6,063.42	8,842.89	6,063.23	83.41	84.49	-89.99	2,146.19	3,205.44	1,650.24	1,485.46	164.77	10.015	
8,480.00	6,063.22	8,862.89	6,063.04	83.98	85.03	-89.99	2,146.19	3,225.43	1,650.24	1,484.33	165.91	9.947	
8,500.00	6,063.03	8,882.89	6,062.84	84.55	85.57	-89.99	2,146.19	3,245.43	1,650.24	1,483.19	167.05	9.879	
8,520.00	6,062.83	8,902.89	6,062.64	85.12	86.11	-89.99	2,146.19	3,265.43	1,650.24	1,482.05	168.18	9.812	
8,540.00	6,062.64	8,922.89	6,062.45	85.69	86.65	-89.99	2,146.19	3,285.43	1,650.24	1,480.91	169.33	9.746	
8,560.00	6,062.44	8,942.89	6,062.25	86.27	87.19	-89.99	2,146.19	3,305.43	1,650.24	1,479.77	170.47	9.681	
8,580.00	6,062.25	8,962.89	6,062.06	86.84	87.73	-89.99	2,146.19	3,325.43	1,650.24	1,478.63	171.61	9.616	
8,600.00	6,062.05	8,982.89	6,061.86	87.41	88.28	-89.99	2,146.19	3,345.43	1,650.24	1,477.49	172.75	9.553	
8,620.00	6,061.86	9,002.89	6,061.66	87.99	88.82	-89.99	2,146.19	3,365.43	1,650.24	1,476.35	173.89	9.490	
8,640.00	6,061.66	9,022.89	6,061.47	88.56	89.37	-89.99	2,146.19	3,385.43	1,650.24	1,475.20	175.03	9.428	
8,660.00	6,061.47	9,042.89	6,061.27	89.13	89.91	-89.99	2,146.19	3,405.43	1,650.24	1,474.06	176.18	9.367	
8,680.00	6,061.27	9,062.89	6,061.07	89.71	90.46	-89.99	2,146.19	3,425.43	1,650.24	1,472.92	177.32	9.307	
8,700.00	6,061.08	9,082.89	6,060.88	90.28	91.01	-89.99	2,146.19	3,445.42	1,650.24	1,471.77	178.46	9.247	
8,720.00	6,060.88	9,102.89	6,060.68	90.86	91.56	-89.99	2,146.19	3,465.42	1,650.24	1,470.63	179.61	9.188	
8,740.00	6,060.69	9,122.89	6,060.49	91.43	92.11	-89.99	2,146.19	3,485.42	1,650.24	1,469.48	180.76	9.130	
8,760.00	6,060.49	9,142.89	6,060.29	92.01	92.66	-89.99	2,146.19	3,505.42	1,650.24	1,468.33	181.91	9.072	
8,780.00	6,060.30	9,162.89	6,060.09	92.59	93.21	-89.99	2,146.19	3,525.42	1,650.24	1,467.18	183.05	9.015	
8,800.00	6,060.10	9,182.89	6,059.90	93.16	93.76	-89.99	2,146.19	3,545.42	1,650.24	1,466.04	184.20	8.959	
8,820.00	6,059.91	9,202.89	6,059.70	93.74	94.31	-89.99	2,146.19	3,565.42	1,650.24	1,464.89	185.35	8.903	
8,840.00	6,059.71	9,222.89	6,059.51	94.32	94.86	-89.99	2,146.19	3,585.42	1,650.24	1,463.74	186.50	8.848	
8,860.00	6,059.52	9,242.89	6,059.31	94.89	95.41	-89.99	2,146.19	3,605.42	1,650.24	1,462.59	187.65	8.794	
8,880.00	6,059.33	9,262.89	6,059.11	95.47	95.97	-89.99	2,146.19	3,625.42	1,650.24	1,461.43	188.80	8.741	
8,900.00	6,059.13	9,282.89	6,058.92	96.05	96.52	-89.99	2,146.19	3,645.42	1,650.24	1,460.28	189.95	8.688	
8,920.00	6,058.94	9,302.89	6,058.72	96.63	97.08	-89.99	2,146.19	3,665.41	1,650.24	1,459.13	191.10	8.635	
8,940.00	6,058.74	9,322.89	6,058.52	97.20	97.63	-89.99	2,146.19	3,685.41	1,650.24	1,457.98	192.26	8.584	
8,960.00	6,058.55	9,342.89	6,058.33	97.78	98.19	-89.99	2,146.19	3,705.41	1,650.23	1,456.83	193.41	8.532	
8,980.00	6,058.35	9,362.89	6,058.13	98.36	98.74	-89.99	2,146.19	3,725.41	1,650.23	1,455.67	194.56	8.482	
9,000.00	6,058.16	9,382.89	6,057.94	98.94	99.30	-89.99	2,146.19	3,745.41	1,650.23	1,454.52	195.72	8.432	
9,020.00	6,057.96	9,402.89	6,057.74	99.52	99.86	-89.99	2,146.19	3,765.41	1,650.23	1,453.36	196.87	8.382	
9,040.00	6,057.77	9,422.89	6,057.54	100.10	100.42	-89.99	2,146.19	3,785.41	1,650.23	1,452.21	198.03	8.333	
9,060.00	6,057.57	9,442.89	6,057.35	100.68	100.98	-89.99	2,146.19	3,805.41	1,650.23	1,451.05	199.18	8.285	
9,080.00	6,057.38	9,462.89	6,057.15	101.26	101.53	-89.99	2,146.19	3,825.41	1,650.23	1,449.90	200.34	8.237	
9,100.00	6,057.18	9,482.89	6,056.96	101.84	102.09	-89.99	2,146.19	3,845.41	1,650.23	1,448.74	201.49	8.190	
9,120.00	6,056.99	9,502.89	6,056.76	102.42	102.65	-89.99	2,146.19	3,865.41	1,650.23	1,447.58	202.65	8.143	
9,140.00	6,056.79	9,522.89	6,056.56	103.00	103.21	-89.99	2,146.19	3,885.40	1,650.23	1,446.43	203.81	8.097	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,160.00	6,056.60	9,542.89	6,056.37	103.58	103.77	-89.99	2,146.19	3,905.40	1,650.23	1,445.27	204.97	8.051	
9,180.00	6,056.40	9,562.89	6,056.17	104.16	104.34	-89.99	2,146.19	3,925.40	1,650.23	1,444.11	206.13	8.006	
9,200.00	6,056.21	9,582.89	6,055.98	104.74	104.90	-89.99	2,146.19	3,945.40	1,650.23	1,442.95	207.28	7.961	
9,220.00	6,056.01	9,602.89	6,055.78	105.32	105.46	-89.99	2,146.19	3,965.40	1,650.23	1,441.79	208.44	7.917	
9,240.00	6,055.82	9,622.89	6,055.59	105.90	106.02	-89.99	2,146.19	3,985.40	1,650.23	1,440.63	209.60	7.873	
9,260.00	6,055.62	9,642.89	6,055.39	106.49	106.59	-89.99	2,146.19	4,005.40	1,650.23	1,439.47	210.76	7.830	
9,280.00	6,055.43	9,662.89	6,055.19	107.07	107.15	-89.99	2,146.19	4,025.40	1,650.23	1,438.31	211.92	7.787	
9,300.00	6,055.23	9,682.89	6,055.00	107.65	107.71	-89.99	2,146.19	4,045.40	1,650.23	1,437.15	213.08	7.745	
9,320.00	6,055.04	9,702.89	6,054.80	108.23	108.28	-89.99	2,146.19	4,065.40	1,650.23	1,435.99	214.24	7.703	
9,340.00	6,054.84	9,722.89	6,054.61	108.81	108.84	-89.99	2,146.19	4,085.39	1,650.23	1,434.83	215.41	7.661	
9,360.00	6,054.65	9,742.89	6,054.41	109.40	109.41	-89.99	2,146.19	4,105.39	1,650.23	1,433.66	216.57	7.620	
9,380.00	6,054.45	9,762.89	6,054.21	109.98	109.97	-89.99	2,146.19	4,125.39	1,650.23	1,432.50	217.73	7.579	
9,400.00	6,054.26	9,782.89	6,054.02	110.56	110.54	-89.99	2,146.19	4,145.39	1,650.23	1,431.34	218.89	7.539	
9,420.00	6,054.07	9,802.89	6,053.82	111.14	111.10	-89.99	2,146.18	4,165.39	1,650.23	1,430.18	220.06	7.499	
9,440.00	6,053.87	9,822.89	6,053.63	111.73	111.67	-89.99	2,146.18	4,185.39	1,650.23	1,429.01	221.22	7.460	
9,460.00	6,053.68	9,842.89	6,053.43	112.31	112.24	-89.99	2,146.18	4,205.39	1,650.23	1,427.85	222.38	7.421	
9,480.00	6,053.48	9,862.89	6,053.24	112.89	112.81	-89.99	2,146.18	4,225.39	1,650.23	1,426.68	223.55	7.382	
9,500.00	6,053.29	9,882.89	6,053.04	113.48	113.37	-89.99	2,146.18	4,245.39	1,650.23	1,425.52	224.71	7.344	
9,520.00	6,053.09	9,902.89	6,052.84	114.06	113.94	-89.99	2,146.18	4,265.39	1,650.23	1,424.35	225.88	7.306	
9,540.00	6,052.90	9,922.89	6,052.65	114.65	114.51	-89.99	2,146.18	4,285.39	1,650.23	1,423.19	227.04	7.268	
9,560.00	6,052.70	9,942.89	6,052.45	115.23	115.08	-89.99	2,146.18	4,305.38	1,650.23	1,422.02	228.21	7.231	
9,580.00	6,052.51	9,962.89	6,052.26	115.81	115.65	-89.99	2,146.18	4,325.38	1,650.23	1,420.86	229.38	7.194	
9,600.00	6,052.31	9,982.89	6,052.06	116.40	116.22	-89.99	2,146.18	4,345.38	1,650.23	1,419.69	230.54	7.158	
9,620.00	6,052.12	10,002.89	6,051.86	116.98	116.79	-89.99	2,146.18	4,365.38	1,650.23	1,418.52	231.71	7.122	
9,640.00	6,051.92	10,022.89	6,051.67	117.57	117.36	-89.99	2,146.18	4,385.38	1,650.23	1,417.36	232.87	7.086	
9,660.00	6,051.73	10,042.89	6,051.47	118.15	117.93	-89.99	2,146.18	4,405.38	1,650.23	1,416.19	234.04	7.051	
9,680.00	6,051.53	10,062.89	6,051.28	118.74	118.50	-89.99	2,146.18	4,425.38	1,650.23	1,415.02	235.21	7.016	
9,700.00	6,051.34	10,082.89	6,051.08	119.32	119.07	-89.99	2,146.18	4,445.38	1,650.23	1,413.85	236.38	6.981	
9,720.00	6,051.14	10,102.89	6,050.89	119.91	119.64	-89.99	2,146.18	4,465.38	1,650.23	1,412.69	237.54	6.947	
9,740.00	6,050.95	10,122.89	6,050.69	120.49	120.21	-89.99	2,146.18	4,485.38	1,650.23	1,411.52	238.71	6.913	
9,760.00	6,050.75	10,142.89	6,050.50	121.08	120.78	-89.99	2,146.18	4,505.38	1,650.23	1,410.35	239.88	6.879	
9,780.00	6,050.56	10,162.89	6,050.30	121.67	121.35	-89.99	2,146.18	4,525.37	1,650.23	1,409.18	241.05	6.846	
9,800.00	6,050.36	10,182.89	6,050.10	122.25	121.93	-89.99	2,146.18	4,545.37	1,650.23	1,408.01	242.22	6.813	
9,820.00	6,050.17	10,202.89	6,049.91	122.84	122.50	-89.99	2,146.18	4,565.37	1,650.23	1,406.84	243.39	6.780	
9,840.00	6,049.97	10,222.89	6,049.71	123.42	123.07	-89.99	2,146.18	4,585.37	1,650.23	1,405.67	244.56	6.748	
9,860.00	6,049.78	10,242.89	6,049.52	124.01	123.64	-89.99	2,146.18	4,605.37	1,650.23	1,404.50	245.73	6.716	
9,880.00	6,049.58	10,262.89	6,049.32	124.60	124.22	-89.99	2,146.18	4,625.37	1,650.23	1,403.33	246.90	6.684	
9,900.00	6,049.39	10,282.89	6,049.13	125.18	124.79	-89.99	2,146.18	4,645.37	1,650.23	1,402.16	248.07	6.652	
9,920.00	6,049.19	10,302.89	6,048.93	125.77	125.37	-89.99	2,146.18	4,665.37	1,650.23	1,400.99	249.24	6.621	
9,940.00	6,049.00	10,322.89	6,048.73	126.35	125.94	-89.99	2,146.18	4,685.37	1,650.23	1,399.82	250.41	6.590	
9,960.00	6,048.80	10,342.89	6,048.54	126.94	126.51	-89.99	2,146.18	4,705.37	1,650.23	1,398.65	251.58	6.559	
9,980.00	6,048.61	10,362.89	6,048.34	127.53	127.09	-89.99	2,146.18	4,725.36	1,650.23	1,397.48	252.75	6.529	
10,000.00	6,048.42	10,382.89	6,048.15	128.11	127.66	-89.99	2,146.18	4,745.36	1,650.23	1,396.30	253.93	6.499	
10,020.00	6,048.22	10,402.89	6,047.95	128.70	128.24	-89.99	2,146.18	4,765.36	1,650.23	1,395.13	255.10	6.469	
10,040.00	6,048.03	10,422.89	6,047.76	129.29	128.81	-89.99	2,146.18	4,785.36	1,650.23	1,393.96	256.27	6.439	
10,060.00	6,047.83	10,442.89	6,047.56	129.88	129.39	-89.99	2,146.18	4,805.36	1,650.23	1,392.79	257.44	6.410	
10,080.00	6,047.64	10,462.89	6,047.37	130.46	129.96	-89.99	2,146.18	4,825.36	1,650.23	1,391.61	258.61	6.381	
10,100.00	6,047.44	10,482.89	6,047.17	131.05	130.54	-89.99	2,146.18	4,845.36	1,650.23	1,390.44	259.79	6.352	
10,120.00	6,047.25	10,502.89	6,046.97	131.64	131.12	-89.99	2,146.18	4,865.36	1,650.23	1,389.27	260.96	6.324	
10,140.00	6,047.05	10,522.89	6,046.78	132.23	131.69	-89.99	2,146.18	4,885.36	1,650.23	1,388.10	262.13	6.295	
10,160.00	6,046.86	10,542.89	6,046.58	132.81	132.27	-89.99	2,146.18	4,905.36	1,650.23	1,386.92	263.31	6.267	
10,180.00	6,046.66	10,562.89	6,046.39	133.40	132.85	-89.99	2,146.18	4,925.36	1,650.23	1,385.75	264.48	6.239	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	6,046.47	10,582.89	6,046.19	133.99	133.42	-89.99	2,146.18	4,945.35	1,650.23	1,384.57	265.65	6.212	
10,220.00	6,046.27	10,602.89	6,046.00	134.58	134.00	-89.99	2,146.18	4,965.35	1,650.23	1,383.40	266.83	6.185	
10,240.00	6,046.08	10,622.89	6,045.80	135.17	134.58	-89.99	2,146.18	4,985.35	1,650.23	1,382.23	268.00	6.157	
10,260.00	6,045.88	10,642.89	6,045.61	135.75	135.16	-89.99	2,146.18	5,005.35	1,650.23	1,381.05	269.18	6.131	
10,280.00	6,045.69	10,662.89	6,045.41	136.34	135.73	-89.99	2,146.18	5,025.35	1,650.23	1,379.88	270.35	6.104	
10,300.00	6,045.49	10,682.89	6,045.22	136.93	136.31	-89.99	2,146.18	5,045.35	1,650.23	1,378.70	271.53	6.078	
10,320.00	6,045.30	10,702.89	6,045.02	137.52	136.89	-89.99	2,146.18	5,065.35	1,650.23	1,377.53	272.70	6.051	
10,340.00	6,045.10	10,722.89	6,044.83	138.11	137.47	-89.99	2,146.18	5,085.35	1,650.23	1,376.35	273.88	6.025	
10,360.00	6,044.91	10,742.89	6,044.63	138.70	138.05	-89.99	2,146.18	5,105.35	1,650.23	1,375.17	275.05	6.000	
10,380.00	6,044.71	10,762.89	6,044.43	139.28	138.62	-89.99	2,146.18	5,125.35	1,650.23	1,374.00	276.23	5.974	
10,400.00	6,044.52	10,782.89	6,044.24	139.87	139.20	-89.99	2,146.18	5,145.35	1,650.23	1,372.82	277.40	5.949	
10,420.00	6,044.32	10,802.89	6,044.04	140.46	139.78	-89.99	2,146.18	5,165.34	1,650.23	1,371.65	278.58	5.924	
10,440.00	6,044.13	10,822.89	6,043.85	141.05	140.36	-89.99	2,146.18	5,185.34	1,650.23	1,370.47	279.76	5.899	
10,460.00	6,043.93	10,842.89	6,043.65	141.64	140.94	-89.99	2,146.18	5,205.34	1,650.23	1,369.29	280.93	5.874	
10,480.00	6,043.74	10,862.89	6,043.46	142.23	141.52	-89.99	2,146.18	5,225.34	1,650.23	1,368.12	282.11	5.850	
10,500.00	6,043.54	10,882.89	6,043.26	142.82	142.10	-89.99	2,146.18	5,245.34	1,650.23	1,366.94	283.29	5.825	
10,520.00	6,043.35	10,902.90	6,043.07	143.41	142.68	-89.99	2,146.18	5,265.34	1,650.23	1,365.76	284.46	5.801	
10,540.00	6,043.16	10,922.90	6,042.87	144.00	143.26	-89.99	2,146.18	5,285.34	1,650.23	1,364.59	285.64	5.777	
10,560.00	6,042.96	10,942.90	6,042.68	144.59	143.84	-89.99	2,146.18	5,305.34	1,650.23	1,363.41	286.82	5.754	
10,580.00	6,042.77	10,962.90	6,042.48	145.18	144.42	-89.99	2,146.18	5,325.34	1,650.23	1,362.23	288.00	5.730	
10,600.00	6,042.57	10,982.90	6,042.29	145.77	145.00	-89.99	2,146.18	5,345.34	1,650.23	1,361.05	289.17	5.707	
10,620.00	6,042.38	11,002.90	6,042.09	146.36	145.58	-89.99	2,146.18	5,365.34	1,650.23	1,359.88	290.35	5.684	
10,640.00	6,042.18	11,022.90	6,041.90	146.95	146.16	-89.99	2,146.18	5,385.33	1,650.23	1,358.70	291.53	5.661	
10,660.00	6,041.99	11,042.90	6,041.70	147.54	146.74	-89.99	2,146.18	5,405.33	1,650.23	1,357.52	292.71	5.638	
10,680.00	6,041.79	11,062.90	6,041.51	148.13	147.32	-89.99	2,146.18	5,425.33	1,650.23	1,356.34	293.88	5.615	
10,700.00	6,041.60	11,082.90	6,041.31	148.71	147.91	-89.99	2,146.18	5,445.33	1,650.23	1,355.16	295.06	5.593	
10,720.00	6,041.40	11,102.90	6,041.11	149.30	148.49	-89.99	2,146.18	5,465.33	1,650.23	1,353.98	296.24	5.571	
10,740.00	6,041.21	11,122.90	6,040.92	149.90	149.07	-89.99	2,146.18	5,485.33	1,650.23	1,352.81	297.42	5.548	
10,760.00	6,041.01	11,142.90	6,040.72	150.49	149.65	-89.99	2,146.18	5,505.33	1,650.23	1,351.63	298.60	5.527	
10,780.00	6,040.82	11,162.90	6,040.53	151.08	150.23	-89.99	2,146.18	5,525.33	1,650.23	1,350.45	299.78	5.505	
10,800.00	6,040.62	11,182.90	6,040.33	151.67	150.81	-89.99	2,146.18	5,545.33	1,650.23	1,349.27	300.96	5.483	
10,820.00	6,040.43	11,202.90	6,040.14	152.26	151.40	-89.99	2,146.18	5,565.33	1,650.23	1,348.09	302.14	5.462	
10,840.00	6,040.23	11,222.90	6,039.94	152.85	151.98	-89.99	2,146.18	5,585.33	1,650.23	1,346.91	303.32	5.441	
10,860.00	6,040.04	11,242.90	6,039.75	153.44	152.56	-89.99	2,146.18	5,605.32	1,650.23	1,345.73	304.49	5.420	
10,880.00	6,039.84	11,262.90	6,039.55	154.03	153.14	-89.99	2,146.18	5,625.32	1,650.22	1,344.55	305.67	5.399	
10,900.00	6,039.65	11,282.90	6,039.36	154.62	153.73	-89.99	2,146.18	5,645.32	1,650.22	1,343.37	306.85	5.378	
10,920.00	6,039.45	11,302.90	6,039.16	155.21	154.31	-89.99	2,146.18	5,665.32	1,650.22	1,342.19	308.03	5.357	
10,940.00	6,039.26	11,322.90	6,038.97	155.80	154.89	-89.99	2,146.18	5,685.32	1,650.22	1,341.01	309.21	5.337	
10,960.00	6,039.06	11,342.90	6,038.77	156.39	155.47	-89.99	2,146.18	5,705.32	1,650.22	1,339.83	310.39	5.317	
10,980.00	6,038.87	11,362.90	6,038.58	156.98	156.06	-89.99	2,146.18	5,725.32	1,650.22	1,338.65	311.57	5.296	
11,000.00	6,038.67	11,382.90	6,038.38	157.57	156.64	-89.99	2,146.18	5,745.32	1,650.22	1,337.47	312.75	5.276	
11,020.00	6,038.48	11,402.90	6,038.19	158.16	157.22	-89.99	2,146.18	5,765.32	1,650.22	1,336.29	313.93	5.257	
11,040.00	6,038.28	11,422.90	6,037.99	158.75	157.81	-89.99	2,146.18	5,785.32	1,650.22	1,335.11	315.12	5.237	
11,060.00	6,038.09	11,442.90	6,037.80	159.34	158.39	-89.99	2,146.18	5,805.32	1,650.22	1,333.93	316.30	5.217	
11,080.00	6,037.90	11,462.90	6,037.60	159.94	158.98	-89.99	2,146.18	5,825.31	1,650.22	1,332.75	317.48	5.198	
11,100.00	6,037.70	11,482.90	6,037.41	160.53	159.56	-89.99	2,146.18	5,845.31	1,650.22	1,331.57	318.66	5.179	
11,120.00	6,037.51	11,502.90	6,037.21	161.12	160.14	-89.99	2,146.17	5,865.31	1,650.22	1,330.38	319.84	5.160	
11,140.00	6,037.31	11,522.90	6,037.02	161.71	160.73	-89.99	2,146.17	5,885.31	1,650.22	1,329.20	321.02	5.141	
11,160.00	6,037.12	11,542.90	6,036.82	162.30	161.31	-89.99	2,146.17	5,905.31	1,650.22	1,328.02	322.20	5.122	
11,180.00	6,036.92	11,562.90	6,036.63	162.89	161.90	-89.99	2,146.17	5,925.31	1,650.22	1,326.84	323.38	5.103	
11,200.00	6,036.73	11,582.90	6,036.43	163.48	162.48	-89.99	2,146.17	5,945.31	1,650.22	1,325.66	324.56	5.084	
11,220.00	6,036.53	11,602.90	6,036.24	164.07	163.06	-89.99	2,146.17	5,965.31	1,650.22	1,324.48	325.75	5.066	

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

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Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,240.00	6,036.34	11,622.90	6,036.04	164.67	163.65	-89.99	2,146.17	5,985.31	1,650.22	1,323.29	326.93	5.048	
11,260.00	6,036.14	11,642.90	6,035.85	165.26	164.23	-89.99	2,146.17	6,005.31	1,650.22	1,322.11	328.11	5.029	
11,280.00	6,035.95	11,662.90	6,035.65	165.85	164.82	-89.99	2,146.17	6,025.30	1,650.22	1,320.93	329.29	5.011	
11,300.00	6,035.75	11,682.90	6,035.46	166.44	165.40	-89.99	2,146.17	6,045.30	1,650.22	1,319.75	330.47	4.993	
11,320.00	6,035.56	11,702.90	6,035.26	167.03	165.99	-89.99	2,146.17	6,065.30	1,650.22	1,318.57	331.66	4.976	
11,340.00	6,035.36	11,722.90	6,035.07	167.62	166.57	-89.99	2,146.17	6,085.30	1,650.22	1,317.38	332.84	4.958	
11,360.00	6,035.17	11,742.90	6,034.87	168.22	167.16	-89.99	2,146.17	6,105.30	1,650.22	1,316.20	334.02	4.940	
11,380.00	6,034.97	11,762.90	6,034.68	168.81	167.74	-89.99	2,146.17	6,125.30	1,650.22	1,315.02	335.20	4.923	
11,400.00	6,034.78	11,782.90	6,034.48	169.40	168.33	-89.99	2,146.17	6,145.30	1,650.22	1,313.84	336.39	4.906	
11,420.00	6,034.58	11,802.90	6,034.29	169.99	168.91	-89.99	2,146.17	6,165.30	1,650.22	1,312.65	337.57	4.889	
11,440.00	6,034.39	11,822.90	6,034.09	170.58	169.50	-89.99	2,146.17	6,185.30	1,650.22	1,311.47	338.75	4.871	
11,460.00	6,034.19	11,842.90	6,033.90	171.18	170.09	-89.99	2,146.17	6,205.30	1,650.22	1,310.29	339.94	4.855	
11,480.00	6,034.00	11,862.90	6,033.70	171.77	170.67	-89.99	2,146.17	6,225.30	1,650.22	1,309.10	341.12	4.838	
11,500.00	6,033.80	11,882.90	6,033.51	172.36	171.26	-89.99	2,146.17	6,245.29	1,650.22	1,307.92	342.30	4.821	
11,520.00	6,033.61	11,902.90	6,033.32	172.95	171.84	-89.99	2,146.17	6,265.29	1,650.22	1,306.74	343.48	4.804	
11,540.00	6,033.41	11,922.90	6,033.12	173.55	172.43	-89.99	2,146.17	6,285.29	1,650.22	1,305.55	344.67	4.788	
11,560.00	6,033.22	11,942.90	6,032.93	174.14	173.02	-89.99	2,146.17	6,305.29	1,650.22	1,304.37	345.85	4.771	
11,580.00	6,033.02	11,962.90	6,032.73	174.73	173.60	-89.99	2,146.17	6,325.29	1,650.22	1,303.19	347.03	4.755	
11,600.00	6,032.83	11,982.90	6,032.54	175.32	174.19	-89.99	2,146.17	6,345.29	1,650.22	1,302.00	348.22	4.739	
11,620.00	6,032.64	12,002.90	6,032.34	175.91	174.77	-89.99	2,146.17	6,365.29	1,650.22	1,300.82	349.40	4.723	
11,640.00	6,032.44	12,022.90	6,032.15	176.51	175.36	-89.99	2,146.17	6,385.29	1,650.22	1,299.63	350.59	4.707	
11,660.00	6,032.25	12,042.90	6,031.95	177.10	175.95	-89.99	2,146.17	6,405.29	1,650.22	1,298.45	351.77	4.691	
11,680.00	6,032.05	12,062.90	6,031.76	177.69	176.53	-89.99	2,146.17	6,425.29	1,650.22	1,297.27	352.95	4.675	
11,700.00	6,031.86	12,082.90	6,031.56	178.28	177.12	-89.99	2,146.17	6,445.29	1,650.22	1,296.08	354.14	4.660	
11,720.00	6,031.66	12,102.90	6,031.37	178.88	177.71	-89.99	2,146.17	6,465.28	1,650.22	1,294.90	355.32	4.644	
11,740.00	6,031.47	12,122.90	6,031.17	179.47	178.30	-89.99	2,146.17	6,485.28	1,650.22	1,293.71	356.51	4.629	
11,760.00	6,031.27	12,142.90	6,030.98	180.06	178.88	-89.99	2,146.17	6,505.28	1,650.22	1,292.53	357.69	4.614	
11,780.00	6,031.08	12,162.90	6,030.78	180.65	179.47	-89.99	2,146.17	6,525.28	1,650.22	1,291.34	358.88	4.598	
11,800.00	6,030.88	12,182.90	6,030.59	181.25	180.06	-89.99	2,146.17	6,545.28	1,650.22	1,290.16	360.06	4.583	
11,820.00	6,030.69	12,202.90	6,030.39	181.84	180.64	-89.99	2,146.17	6,565.28	1,650.22	1,288.97	361.24	4.568	
11,840.00	6,030.49	12,222.90	6,030.20	182.43	181.23	-89.99	2,146.17	6,585.28	1,650.22	1,287.79	362.43	4.553	
11,860.00	6,030.30	12,242.90	6,030.01	183.03	181.82	-89.99	2,146.17	6,605.28	1,650.22	1,286.61	363.61	4.538	
11,880.00	6,030.10	12,262.90	6,029.81	183.62	182.41	-89.99	2,146.17	6,625.28	1,650.22	1,285.42	364.80	4.524	
11,900.00	6,029.91	12,282.90	6,029.62	184.21	182.99	-89.99	2,146.17	6,645.28	1,650.22	1,284.24	365.98	4.509	
11,920.00	6,029.71	12,302.90	6,029.42	184.80	183.58	-89.99	2,146.17	6,665.28	1,650.22	1,283.05	367.17	4.494	
11,940.00	6,029.52	12,322.90	6,029.23	185.40	184.17	-89.99	2,146.17	6,685.27	1,650.22	1,281.86	368.35	4.480	
11,960.00	6,029.32	12,342.90	6,029.03	185.99	184.76	-89.99	2,146.17	6,705.27	1,650.22	1,280.68	369.54	4.466	
11,980.00	6,029.13	12,362.90	6,028.84	186.58	185.34	-89.99	2,146.17	6,725.27	1,650.22	1,279.49	370.72	4.451	
12,000.00	6,028.93	12,382.90	6,028.64	187.18	185.93	-89.99	2,146.17	6,745.27	1,650.22	1,278.31	371.91	4.437	
12,020.00	6,028.74	12,402.90	6,028.45	187.77	186.52	-89.99	2,146.17	6,765.27	1,650.22	1,277.12	373.09	4.423	
12,040.00	6,028.54	12,422.90	6,028.25	188.36	187.11	-89.99	2,146.17	6,785.27	1,650.22	1,275.94	374.28	4.409	
12,060.00	6,028.35	12,442.90	6,028.06	188.96	187.70	-89.99	2,146.17	6,805.27	1,650.22	1,274.75	375.46	4.395	
12,080.00	6,028.15	12,462.90	6,027.86	189.55	188.28	-89.99	2,146.17	6,825.27	1,650.22	1,273.57	376.65	4.381	
12,100.00	6,027.96	12,482.90	6,027.67	190.14	188.87	-89.99	2,146.17	6,845.27	1,650.22	1,272.38	377.84	4.368	
12,120.00	6,027.76	12,502.90	6,027.48	190.74	189.46	-89.99	2,146.17	6,865.27	1,650.22	1,271.20	379.02	4.354	
12,140.00	6,027.57	12,522.90	6,027.28	191.33	190.05	-89.99	2,146.17	6,885.27	1,650.22	1,270.01	380.21	4.340	
12,160.00	6,027.37	12,542.90	6,027.09	191.92	190.64	-89.99	2,146.17	6,905.26	1,650.22	1,268.82	381.39	4.327	
12,180.00	6,027.18	12,562.90	6,026.89	192.52	191.23	-89.99	2,146.17	6,925.26	1,650.22	1,267.64	382.58	4.313	
12,200.00	6,026.99	12,582.90	6,026.70	193.11	191.81	-89.99	2,146.17	6,945.26	1,650.22	1,266.45	383.77	4.300	
12,220.00	6,026.79	12,602.90	6,026.50	193.70	192.40	-89.99	2,146.17	6,965.26	1,650.22	1,265.26	384.95	4.287	
12,240.00	6,026.60	12,622.90	6,026.31	194.30	192.99	-89.99	2,146.17	6,985.26	1,650.22	1,264.08	386.14	4.274	
12,260.00	6,026.40	12,642.90	6,026.11	194.89	193.58	-89.99	2,146.17	7,005.26	1,650.22	1,262.89	387.32	4.261	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,280.00	6,026.21	12,662.90	6,025.92	195.48	194.17	-89.99	2,146.17	7,025.26	1,650.22	1,261.71	388.51	4.248	
12,300.00	6,026.01	12,682.90	6,025.73	196.08	194.76	-89.99	2,146.17	7,045.26	1,650.22	1,260.52	389.70	4.235	
12,320.00	6,025.82	12,702.90	6,025.53	196.67	195.35	-89.99	2,146.17	7,065.26	1,650.22	1,259.33	390.88	4.222	
12,340.00	6,025.62	12,722.90	6,025.34	197.26	195.94	-89.99	2,146.17	7,085.26	1,650.22	1,258.15	392.07	4.209	
12,360.00	6,025.43	12,742.90	6,025.14	197.86	196.53	-89.99	2,146.17	7,105.26	1,650.22	1,256.96	393.26	4.196	
12,380.00	6,025.23	12,762.90	6,024.95	198.45	197.11	-89.99	2,146.17	7,125.25	1,650.21	1,255.77	394.44	4.184	
12,400.00	6,025.04	12,782.90	6,024.75	199.05	197.70	-89.99	2,146.17	7,145.25	1,650.21	1,254.59	395.63	4.171	
12,420.00	6,024.84	12,802.90	6,024.56	199.64	198.29	-89.99	2,146.17	7,165.25	1,650.21	1,253.40	396.82	4.159	
12,440.00	6,024.65	12,822.90	6,024.36	200.23	198.88	-89.99	2,146.17	7,185.25	1,650.21	1,252.21	398.00	4.146	
12,460.00	6,024.45	12,842.90	6,024.17	200.83	199.47	-89.99	2,146.17	7,205.25	1,650.21	1,251.03	399.19	4.134	
12,480.00	6,024.26	12,862.90	6,023.98	201.42	200.06	-89.99	2,146.17	7,225.25	1,650.21	1,249.84	400.38	4.122	
12,500.00	6,024.06	12,882.90	6,023.78	202.02	200.65	-89.99	2,146.16	7,245.25	1,650.21	1,248.65	401.56	4.109	
12,520.00	6,023.87	12,902.90	6,023.59	202.61	201.24	-89.99	2,146.16	7,265.25	1,650.21	1,247.46	402.75	4.097	
12,540.00	6,023.67	12,922.90	6,023.39	203.20	201.83	-89.99	2,146.16	7,285.25	1,650.21	1,246.28	403.94	4.085	
12,560.00	6,023.48	12,942.90	6,023.20	203.80	202.42	-89.99	2,146.16	7,305.25	1,650.21	1,245.09	405.12	4.073	
12,580.00	6,023.28	12,962.90	6,023.00	204.39	203.01	-89.99	2,146.16	7,325.25	1,650.21	1,243.90	406.31	4.061	
12,600.00	6,023.09	12,982.90	6,022.81	204.98	203.60	-89.99	2,146.16	7,345.24	1,650.21	1,242.71	407.50	4.050	
12,620.00	6,022.89	13,002.90	6,022.62	205.58	204.19	-89.99	2,146.16	7,365.24	1,650.21	1,241.53	408.69	4.038	
12,640.00	6,022.70	13,022.90	6,022.42	206.17	204.78	-89.99	2,146.16	7,385.24	1,650.21	1,240.34	409.87	4.026	
12,660.00	6,022.50	13,042.90	6,022.23	206.77	205.37	-89.99	2,146.16	7,405.24	1,650.21	1,239.15	411.06	4.015	
12,680.00	6,022.31	13,062.90	6,022.03	207.36	205.96	-89.99	2,146.16	7,425.24	1,650.21	1,237.96	412.25	4.003	
12,700.00	6,022.11	13,082.90	6,021.84	207.96	206.55	-89.99	2,146.16	7,445.24	1,650.21	1,236.78	413.44	3.991	
12,720.00	6,021.92	13,102.90	6,021.64	208.55	207.14	-89.99	2,146.16	7,465.24	1,650.21	1,235.59	414.62	3.980	
12,740.00	6,021.73	13,122.90	6,021.45	209.14	207.73	-89.99	2,146.16	7,485.24	1,650.21	1,234.40	415.81	3.969	
12,760.00	6,021.53	13,142.90	6,021.26	209.74	208.32	-89.99	2,146.16	7,505.24	1,650.21	1,233.21	417.00	3.957	
12,780.00	6,021.34	13,162.90	6,021.06	210.33	208.91	-89.99	2,146.16	7,525.24	1,650.21	1,232.03	418.19	3.946	
12,800.00	6,021.14	13,182.90	6,020.87	210.93	209.50	-89.99	2,146.16	7,545.24	1,650.21	1,230.84	419.37	3.935	
12,820.00	6,020.95	13,202.90	6,020.67	211.52	210.09	-89.99	2,146.16	7,565.23	1,650.21	1,229.65	420.56	3.924	
12,840.00	6,020.75	13,222.90	6,020.48	212.11	210.68	-89.99	2,146.16	7,585.23	1,650.21	1,228.46	421.75	3.913	
12,860.00	6,020.56	13,242.90	6,020.29	212.71	211.27	-89.99	2,146.16	7,605.23	1,650.21	1,227.27	422.94	3.902	
12,880.00	6,020.36	13,262.90	6,020.09	213.30	211.86	-89.99	2,146.16	7,625.23	1,650.21	1,226.09	424.13	3.891	
12,900.00	6,020.17	13,282.90	6,019.90	213.90	212.45	-89.99	2,146.16	7,645.23	1,650.21	1,224.90	425.31	3.880	
12,920.00	6,019.97	13,302.90	6,019.70	214.49	213.04	-89.99	2,146.16	7,665.23	1,650.21	1,223.71	426.50	3.869	
12,940.00	6,019.78	13,322.90	6,019.51	215.09	213.63	-89.99	2,146.16	7,685.23	1,650.21	1,222.52	427.69	3.858	
12,960.00	6,019.58	13,342.90	6,019.31	215.68	214.22	-89.99	2,146.16	7,705.23	1,650.21	1,221.33	428.88	3.848	
12,980.00	6,019.39	13,362.90	6,019.12	216.28	214.81	-89.99	2,146.16	7,725.23	1,650.21	1,220.14	430.07	3.837	
13,000.00	6,019.19	13,382.90	6,018.93	216.87	215.40	-89.99	2,146.16	7,745.23	1,650.21	1,218.96	431.25	3.827	
13,020.00	6,019.00	13,402.90	6,018.73	217.46	215.99	-89.99	2,146.16	7,765.23	1,650.21	1,217.77	432.44	3.816	
13,040.00	6,018.80	13,422.90	6,018.54	218.06	216.59	-89.99	2,146.16	7,785.22	1,650.21	1,216.58	433.63	3.806	
13,060.00	6,018.61	13,442.90	6,018.34	218.65	217.18	-89.99	2,146.16	7,805.22	1,650.21	1,215.39	434.82	3.795	
13,080.00	6,018.41	13,462.90	6,018.15	219.25	217.77	-89.99	2,146.16	7,825.22	1,650.21	1,214.20	436.01	3.785	
13,100.00	6,018.22	13,482.90	6,017.96	219.84	218.36	-89.99	2,146.16	7,845.22	1,650.21	1,213.01	437.20	3.775	
13,120.00	6,018.02	13,502.90	6,017.76	220.44	218.95	-89.99	2,146.16	7,865.22	1,650.21	1,211.82	438.38	3.764	
13,140.00	6,017.83	13,522.90	6,017.57	221.03	219.54	-89.99	2,146.16	7,885.22	1,650.21	1,210.64	439.57	3.754	
13,160.00	6,017.63	13,542.90	6,017.37	221.63	220.13	-89.99	2,146.16	7,905.22	1,650.21	1,209.45	440.76	3.744	
13,180.00	6,017.44	13,562.90	6,017.18	222.22	220.72	-89.99	2,146.16	7,925.22	1,650.21	1,208.26	441.95	3.734	
13,200.00	6,017.24	13,582.90	6,016.99	222.82	221.31	-89.99	2,146.16	7,945.22	1,650.21	1,207.07	443.14	3.724	
13,220.00	6,017.05	13,602.90	6,016.79	223.41	221.90	-89.99	2,146.16	7,965.22	1,650.21	1,205.88	444.33	3.714	
13,240.00	6,016.85	13,622.90	6,016.60	224.01	222.50	-89.99	2,146.16	7,985.22	1,650.21	1,204.69	445.52	3.704	
13,260.00	6,016.66	13,642.90	6,016.40	224.60	223.09	-89.99	2,146.16	8,005.21	1,650.21	1,203.50	446.71	3.694	
13,280.00	6,016.47	13,662.90	6,016.21	225.20	223.68	-89.99	2,146.16	8,025.21	1,650.21	1,202.31	447.89	3.684	
13,300.00	6,016.27	13,682.90	6,016.02	225.79	224.27	-89.99	2,146.16	8,045.21	1,650.21	1,201.12	449.08	3.675	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,320.00	6,016.08	13,702.90	6,015.82	226.38	224.86	-89.99	2,146.16	8,065.21	1,650.21	1,199.93	450.27	3.665	
13,340.00	6,015.88	13,722.90	6,015.63	226.98	225.45	-89.99	2,146.16	8,085.21	1,650.21	1,198.75	451.46	3.655	
13,360.00	6,015.69	13,742.90	6,015.43	227.57	226.04	-89.99	2,146.16	8,105.21	1,650.21	1,197.56	452.65	3.646	
13,380.00	6,015.49	13,762.90	6,015.24	228.17	226.64	-89.99	2,146.16	8,125.21	1,650.21	1,196.37	453.84	3.636	
13,400.00	6,015.30	13,782.90	6,015.05	228.76	227.23	-89.99	2,146.16	8,145.21	1,650.21	1,195.18	455.03	3.627	
13,420.00	6,015.10	13,802.90	6,014.85	229.36	227.82	-89.99	2,146.16	8,165.21	1,650.21	1,193.99	456.22	3.617	
13,440.00	6,014.91	13,822.90	6,014.66	229.95	228.41	-89.99	2,146.16	8,185.21	1,650.21	1,192.80	457.41	3.608	
13,460.00	6,014.71	13,842.90	6,014.47	230.55	229.00	-89.99	2,146.16	8,205.21	1,650.21	1,191.61	458.60	3.598	
13,480.00	6,014.52	13,862.90	6,014.27	231.14	229.59	-89.99	2,146.16	8,225.20	1,650.21	1,190.42	459.79	3.589	
13,500.00	6,014.32	13,882.90	6,014.08	231.74	230.19	-89.99	2,146.16	8,245.20	1,650.21	1,189.23	460.98	3.580	
13,520.00	6,014.13	13,902.90	6,013.88	232.33	230.78	-89.99	2,146.16	8,265.20	1,650.21	1,188.04	462.17	3.571	
13,540.00	6,013.93	13,922.90	6,013.69	232.93	231.37	-89.99	2,146.16	8,285.20	1,650.21	1,186.85	463.35	3.561	
13,560.00	6,013.74	13,942.90	6,013.50	233.52	231.96	-89.99	2,146.16	8,305.20	1,650.21	1,185.66	464.54	3.552	
13,580.00	6,013.54	13,962.90	6,013.30	234.12	232.55	-89.99	2,146.16	8,325.20	1,650.21	1,184.47	465.73	3.543	
13,600.00	6,013.35	13,982.90	6,013.11	234.71	233.14	-89.99	2,146.16	8,345.20	1,650.21	1,183.28	466.92	3.534	
13,620.00	6,013.15	14,002.90	6,012.91	235.31	233.74	-89.99	2,146.16	8,365.20	1,650.21	1,182.09	468.11	3.525	
13,640.00	6,012.96	14,022.90	6,012.72	235.90	234.33	-89.99	2,146.16	8,385.20	1,650.21	1,180.90	469.30	3.516	
13,660.00	6,012.76	14,042.90	6,012.53	236.50	234.92	-89.99	2,146.16	8,405.20	1,650.20	1,179.71	470.49	3.507	
13,680.00	6,012.57	14,062.90	6,012.33	237.09	235.51	-89.99	2,146.16	8,425.20	1,650.20	1,178.52	471.68	3.499	
13,700.00	6,012.37	14,082.90	6,012.14	237.69	236.10	-89.99	2,146.15	8,445.19	1,650.20	1,177.33	472.87	3.490	
13,720.00	6,012.18	14,102.90	6,011.95	238.28	236.70	-89.99	2,146.15	8,465.19	1,650.20	1,176.14	474.06	3.481	
13,740.00	6,011.98	14,122.90	6,011.75	238.88	237.29	-89.99	2,146.15	8,485.19	1,650.20	1,174.95	475.25	3.472	
13,760.00	6,011.79	14,142.90	6,011.56	239.48	237.88	-89.99	2,146.15	8,505.19	1,650.20	1,173.76	476.44	3.464	
13,780.00	6,011.59	14,162.90	6,011.36	240.07	238.47	-89.99	2,146.15	8,525.19	1,650.20	1,172.57	477.63	3.455	
13,800.00	6,011.40	14,182.90	6,011.17	240.67	239.06	-89.99	2,146.15	8,545.19	1,650.20	1,171.38	478.82	3.446	
13,820.00	6,011.21	14,202.90	6,010.98	241.26	239.66	-89.99	2,146.15	8,565.19	1,650.20	1,170.19	480.01	3.438	
13,840.00	6,011.01	14,222.90	6,010.78	241.86	240.25	-89.99	2,146.15	8,585.19	1,650.20	1,169.00	481.20	3.429	
13,860.00	6,010.82	14,242.90	6,010.59	242.45	240.84	-89.99	2,146.15	8,605.19	1,650.20	1,167.81	482.39	3.421	
13,880.00	6,010.62	14,262.90	6,010.40	243.05	241.43	-89.99	2,146.15	8,625.19	1,650.20	1,166.62	483.58	3.412	
13,900.00	6,010.43	14,282.90	6,010.20	243.64	242.03	-89.99	2,146.15	8,645.19	1,650.20	1,165.43	484.77	3.404	
13,920.00	6,010.23	14,302.90	6,010.01	244.24	242.62	-89.99	2,146.15	8,665.18	1,650.20	1,164.24	485.96	3.396	
13,940.00	6,010.04	14,322.90	6,009.82	244.83	243.21	-89.99	2,146.15	8,685.18	1,650.20	1,163.05	487.15	3.387	
13,960.00	6,009.84	14,342.90	6,009.62	245.43	243.80	-89.99	2,146.15	8,705.18	1,650.20	1,161.86	488.34	3.379	
13,980.00	6,009.65	14,362.90	6,009.43	246.02	244.40	-89.99	2,146.15	8,725.18	1,650.20	1,160.67	489.53	3.371	
14,000.00	6,009.45	14,382.90	6,009.23	246.62	244.99	-89.99	2,146.15	8,745.18	1,650.20	1,159.48	490.72	3.363	
14,020.00	6,009.26	14,402.90	6,009.04	247.21	245.58	-89.99	2,146.15	8,765.18	1,650.20	1,158.29	491.91	3.355	
14,040.00	6,009.06	14,422.90	6,008.85	247.81	246.17	-89.99	2,146.15	8,785.18	1,650.20	1,157.10	493.10	3.347	
14,060.00	6,008.87	14,442.90	6,008.65	248.41	246.77	-89.99	2,146.15	8,805.18	1,650.20	1,155.91	494.29	3.339	
14,080.00	6,008.67	14,462.90	6,008.46	249.00	247.36	-89.99	2,146.15	8,825.18	1,650.20	1,154.72	495.48	3.330	
14,100.00	6,008.48	14,482.90	6,008.27	249.60	247.95	-89.99	2,146.15	8,845.18	1,650.20	1,153.53	496.67	3.323	
14,120.00	6,008.28	14,502.90	6,008.07	250.19	248.54	-89.99	2,146.15	8,865.18	1,650.20	1,152.34	497.86	3.315	
14,140.00	6,008.09	14,522.90	6,007.88	250.79	249.14	-89.99	2,146.15	8,885.17	1,650.20	1,151.15	499.05	3.307	
14,160.00	6,007.89	14,542.90	6,007.69	251.38	249.73	-89.99	2,146.15	8,905.17	1,650.20	1,149.96	500.24	3.299	
14,180.00	6,007.70	14,562.90	6,007.49	251.98	250.32	-89.99	2,146.15	8,925.17	1,650.20	1,148.76	501.44	3.291	
14,200.00	6,007.50	14,582.90	6,007.30	252.57	250.92	-89.99	2,146.15	8,945.17	1,650.20	1,147.57	502.63	3.283	
14,220.00	6,007.31	14,602.90	6,007.11	253.17	251.51	-89.99	2,146.15	8,965.17	1,650.20	1,146.38	503.82	3.275	
14,240.00	6,007.11	14,622.90	6,006.91	253.76	252.10	-89.99	2,146.15	8,985.17	1,650.20	1,145.19	505.01	3.268	
14,260.00	6,006.92	14,642.90	6,006.72	254.36	252.69	-89.99	2,146.15	9,005.17	1,650.20	1,144.00	506.20	3.260	
14,280.00	6,006.72	14,662.90	6,006.53	254.96	253.29	-89.99	2,146.15	9,025.17	1,650.20	1,142.81	507.39	3.252	
14,300.00	6,006.53	14,682.90	6,006.33	255.55	253.88	-89.99	2,146.15	9,045.17	1,650.20	1,141.62	508.58	3.245	
14,320.00	6,006.33	14,702.90	6,006.14	256.15	254.47	-89.99	2,146.15	9,065.17	1,650.20	1,140.43	509.77	3.237	
14,340.00	6,006.14	14,722.90	6,005.94	256.74	255.07	-89.99	2,146.15	9,085.17	1,650.20	1,139.24	510.96	3.230	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,360.00	6,005.94	14,742.90	6,005.75	257.34	255.66	-89.99	2,146.15	9,105.16	1,650.20	1,138.05	512.15	3.222	
14,380.00	6,005.75	14,762.90	6,005.56	257.93	256.25	-89.99	2,146.15	9,125.16	1,650.20	1,136.86	513.34	3.215	
14,400.00	6,005.56	14,782.90	6,005.36	258.53	256.85	-89.99	2,146.15	9,145.16	1,650.20	1,135.67	514.53	3.207	
14,420.00	6,005.36	14,802.90	6,005.17	259.13	257.44	-89.99	2,146.15	9,165.16	1,650.20	1,134.47	515.72	3.200	
14,440.00	6,005.17	14,822.90	6,004.98	259.72	258.03	-89.99	2,146.15	9,185.16	1,650.20	1,133.28	516.92	3.192	
14,460.00	6,004.97	14,842.90	6,004.78	260.32	258.62	-89.99	2,146.15	9,205.16	1,650.20	1,132.09	518.11	3.185	
14,480.00	6,004.78	14,862.90	6,004.59	260.91	259.22	-89.99	2,146.15	9,225.16	1,650.20	1,130.90	519.30	3.178	
14,500.00	6,004.58	14,882.90	6,004.40	261.51	259.81	-89.99	2,146.15	9,245.16	1,650.20	1,129.71	520.49	3.170	
14,520.00	6,004.39	14,902.90	6,004.20	262.10	260.40	-89.99	2,146.15	9,265.16	1,650.20	1,128.52	521.68	3.163	
14,540.00	6,004.19	14,922.90	6,004.01	262.70	261.00	-89.99	2,146.15	9,285.16	1,650.20	1,127.33	522.87	3.156	
14,560.00	6,004.00	14,942.90	6,003.82	263.30	261.59	-89.99	2,146.15	9,305.16	1,650.20	1,126.14	524.06	3.149	
14,580.00	6,003.80	14,962.90	6,003.62	263.89	262.18	-89.99	2,146.15	9,325.15	1,650.20	1,124.94	525.25	3.142	
14,600.00	6,003.61	14,982.90	6,003.43	264.49	262.78	-89.99	2,146.15	9,345.15	1,650.20	1,123.75	526.44	3.135	
14,620.00	6,003.41	15,002.90	6,003.24	265.08	263.37	-89.99	2,146.15	9,365.15	1,650.20	1,122.56	527.63	3.128	
14,640.00	6,003.22	15,022.90	6,003.04	265.68	263.96	-89.99	2,146.15	9,385.15	1,650.20	1,121.37	528.83	3.120	
14,660.00	6,003.02	15,042.90	6,002.85	266.27	264.56	-89.99	2,146.15	9,405.15	1,650.20	1,120.18	530.02	3.113	
14,680.00	6,002.83	15,062.90	6,002.66	266.87	265.15	-89.99	2,146.15	9,425.15	1,650.20	1,118.99	531.21	3.106	
14,700.00	6,002.63	15,082.90	6,002.46	267.47	265.74	-89.99	2,146.15	9,445.15	1,650.20	1,117.80	532.40	3.100	
14,720.00	6,002.44	15,102.90	6,002.27	268.06	266.34	-89.99	2,146.15	9,465.15	1,650.20	1,116.60	533.59	3.093	
14,740.00	6,002.24	15,122.90	6,002.08	268.66	266.93	-89.99	2,146.15	9,485.15	1,650.20	1,115.41	534.78	3.086	
14,760.00	6,002.05	15,142.90	6,001.88	269.25	267.53	-89.99	2,146.14	9,505.15	1,650.20	1,114.22	535.97	3.079	
14,780.00	6,001.85	15,162.90	6,001.69	269.85	268.12	-89.99	2,146.14	9,525.15	1,650.19	1,113.03	537.16	3.072	
14,800.00	6,001.66	15,182.90	6,001.50	270.45	268.71	-89.99	2,146.14	9,545.14	1,650.19	1,111.84	538.36	3.065	
14,820.00	6,001.46	15,202.90	6,001.31	271.04	269.31	-89.99	2,146.14	9,565.14	1,650.19	1,110.65	539.55	3.058	
14,840.00	6,001.27	15,222.90	6,001.11	271.64	269.90	-89.99	2,146.14	9,585.14	1,650.19	1,109.46	540.74	3.052	
14,860.00	6,001.07	15,242.90	6,000.92	272.23	270.49	-89.99	2,146.14	9,605.14	1,650.19	1,108.26	541.93	3.045	
14,880.00	6,000.88	15,262.90	6,000.73	272.83	271.09	-89.99	2,146.14	9,625.14	1,650.19	1,107.07	543.12	3.038	
14,900.00	6,000.68	15,282.90	6,000.53	273.43	271.68	-89.99	2,146.14	9,645.14	1,650.19	1,105.88	544.31	3.032	
14,920.00	6,000.49	15,302.90	6,000.34	274.02	272.27	-89.99	2,146.14	9,665.14	1,650.19	1,104.69	545.51	3.025	
14,940.00	6,000.30	15,322.90	6,000.15	274.62	272.87	-89.99	2,146.14	9,685.14	1,650.19	1,103.50	546.70	3.018	
14,960.00	6,000.10	15,342.90	5,999.95	275.21	273.46	-89.99	2,146.14	9,705.14	1,650.19	1,102.31	547.89	3.012	
14,980.00	5,999.91	15,362.90	5,999.76	275.81	274.06	-89.99	2,146.14	9,725.14	1,650.19	1,101.11	549.08	3.005	
15,000.00	5,999.71	15,382.90	5,999.57	276.41	274.65	-90.00	2,146.14	9,745.14	1,650.19	1,099.92	550.27	2.999	
15,020.00	5,999.52	15,402.90	5,999.37	277.00	275.24	-90.00	2,146.14	9,765.13	1,650.19	1,098.73	551.46	2.992	
15,040.00	5,999.32	15,422.90	5,999.18	277.60	275.84	-90.00	2,146.14	9,785.13	1,650.19	1,097.54	552.65	2.986	
15,060.00	5,999.13	15,442.90	5,998.99	278.19	276.43	-90.00	2,146.14	9,805.13	1,650.19	1,096.35	553.85	2.980	
15,080.00	5,998.93	15,462.90	5,998.79	278.79	277.02	-90.00	2,146.14	9,825.13	1,650.19	1,095.15	555.04	2.973	
15,100.00	5,998.74	15,482.90	5,998.60	279.39	277.62	-90.00	2,146.14	9,845.13	1,650.19	1,093.96	556.23	2.967	
15,120.00	5,998.54	15,502.90	5,998.41	279.98	278.21	-90.00	2,146.14	9,865.13	1,650.19	1,092.77	557.42	2.960	
15,140.00	5,998.35	15,522.90	5,998.22	280.58	278.81	-90.00	2,146.14	9,885.13	1,650.19	1,091.58	558.61	2.954	
15,160.00	5,998.15	15,542.90	5,998.02	281.17	279.40	-90.00	2,146.14	9,905.13	1,650.19	1,090.39	559.81	2.948	
15,180.00	5,997.96	15,562.90	5,997.83	281.77	279.99	-90.00	2,146.14	9,925.13	1,650.19	1,089.19	561.00	2.942	
15,200.00	5,997.76	15,582.90	5,997.64	282.37	280.59	-90.00	2,146.14	9,945.13	1,650.19	1,088.00	562.19	2.935	
15,220.00	5,997.57	15,602.90	5,997.44	282.96	281.18	-90.00	2,146.14	9,965.13	1,650.19	1,086.81	563.38	2.929	
15,240.00	5,997.37	15,622.90	5,997.25	283.56	281.78	-90.00	2,146.14	9,985.12	1,650.19	1,085.62	564.57	2.923	
15,260.00	5,997.18	15,642.90	5,997.06	284.16	282.37	-90.00	2,146.14	10,005.12	1,650.19	1,084.43	565.76	2.917	
15,280.00	5,996.98	15,662.90	5,996.86	284.75	282.96	-90.00	2,146.14	10,025.12	1,650.19	1,083.23	566.96	2.911	
15,300.00	5,996.79	15,682.90	5,996.67	285.35	283.56	-90.00	2,146.14	10,045.12	1,650.19	1,082.04	568.15	2.905	
15,320.00	5,996.59	15,702.90	5,996.48	285.94	284.15	-90.00	2,146.14	10,065.12	1,650.19	1,080.85	569.34	2.898	
15,340.00	5,996.40	15,722.90	5,996.29	286.54	284.75	-90.00	2,146.14	10,085.12	1,650.19	1,079.66	570.53	2.892	
15,360.00	5,996.20	15,742.90	5,996.09	287.14	285.34	-90.00	2,146.14	10,105.12	1,650.19	1,078.46	571.72	2.886	
15,380.00	5,996.01	15,762.90	5,995.90	287.73	285.93	-90.00	2,146.14	10,125.12	1,650.19	1,077.27	572.92	2.880	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 4H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	5,995.81	15,782.90	5,995.71	288.33	286.53	-90.00	2,146.14	10,145.12	1,650.19	1,076.08	574.11	2.874	
15,420.00	5,995.62	15,802.90	5,995.51	288.92	287.12	-90.00	2,146.14	10,165.12	1,650.19	1,074.89	575.30	2.868	
15,440.00	5,995.42	15,822.90	5,995.32	289.52	287.72	-90.00	2,146.14	10,185.12	1,650.19	1,073.70	576.49	2.862	
15,460.00	5,995.23	15,842.90	5,995.13	290.12	288.31	-90.00	2,146.14	10,205.11	1,650.19	1,072.50	577.68	2.857	
15,480.00	5,995.04	15,862.90	5,994.93	290.71	288.91	-90.00	2,146.14	10,225.11	1,650.19	1,071.31	578.88	2.851	
15,500.00	5,994.84	15,882.90	5,994.74	291.31	289.50	-90.00	2,146.14	10,245.11	1,650.19	1,070.12	580.07	2.845	
15,520.00	5,994.65	15,902.90	5,994.55	291.91	290.09	-90.00	2,146.14	10,265.11	1,650.19	1,068.93	581.26	2.839	
15,540.00	5,994.45	15,922.90	5,994.36	292.50	290.69	-90.00	2,146.14	10,285.11	1,650.19	1,067.73	582.45	2.833	
15,560.00	5,994.26	15,942.90	5,994.16	293.10	291.28	-90.00	2,146.14	10,305.11	1,650.19	1,066.54	583.65	2.827	
15,580.00	5,994.06	15,962.90	5,993.97	293.69	291.88	-90.00	2,146.14	10,325.11	1,650.19	1,065.35	584.84	2.822	
15,600.00	5,993.87	15,982.90	5,993.78	294.29	292.47	-90.00	2,146.14	10,345.11	1,650.19	1,064.16	586.03	2.816	
15,620.00	5,993.67	16,002.90	5,993.58	294.89	293.07	-90.00	2,146.14	10,365.11	1,650.19	1,062.96	587.22	2.810	
15,640.00	5,993.48	16,022.90	5,993.39	295.48	293.66	-90.00	2,146.14	10,385.11	1,650.19	1,061.77	588.41	2.804	
15,660.00	5,993.28	16,042.90	5,993.20	296.08	294.26	-90.00	2,146.14	10,405.11	1,650.19	1,060.58	589.61	2.799	
15,680.00	5,993.09	16,062.90	5,993.01	296.68	294.85	-90.00	2,146.14	10,425.10	1,650.19	1,059.39	590.80	2.793	
15,700.00	5,992.89	16,082.90	5,992.81	297.27	295.44	-90.00	2,146.14	10,445.10	1,650.19	1,058.19	591.99	2.788	
15,720.00	5,992.70	16,102.90	5,992.62	297.87	296.04	-90.00	2,146.14	10,465.10	1,650.19	1,057.00	593.18	2.782	
15,740.00	5,992.50	16,122.90	5,992.43	298.47	296.63	-90.00	2,146.13	10,485.10	1,650.19	1,055.81	594.38	2.776	
15,760.00	5,992.31	16,142.90	5,992.24	299.06	297.23	-90.00	2,146.13	10,505.10	1,650.19	1,054.62	595.57	2.771	
15,780.00	5,992.11	16,162.90	5,992.04	299.66	297.82	-90.00	2,146.13	10,525.10	1,650.19	1,053.42	596.76	2.765	
15,800.00	5,991.92	16,182.90	5,991.85	300.25	298.42	-90.00	2,146.13	10,545.10	1,650.18	1,052.23	597.95	2.760	
15,820.00	5,991.72	16,202.90	5,991.66	300.85	299.01	-90.00	2,146.13	10,565.10	1,650.18	1,051.04	599.15	2.754	
15,840.00	5,991.53	16,222.90	5,991.46	301.45	299.61	-90.00	2,146.13	10,585.10	1,650.18	1,049.85	600.34	2.749	
15,860.00	5,991.33	16,242.90	5,991.27	302.04	300.20	-90.00	2,146.13	10,605.10	1,650.18	1,048.65	601.53	2.743	
15,880.00	5,991.14	16,262.90	5,991.08	302.64	300.79	-90.00	2,146.13	10,625.10	1,650.18	1,047.46	602.72	2.738	
15,900.00	5,990.94	16,282.90	5,990.89	303.24	301.39	-90.00	2,146.13	10,645.09	1,650.18	1,046.27	603.92	2.732	
15,920.00	5,990.75	16,302.90	5,990.69	303.83	301.98	-90.00	2,146.13	10,665.09	1,650.18	1,045.07	605.11	2.727	
15,940.00	5,990.55	16,322.90	5,990.50	304.43	302.58	-90.00	2,146.13	10,685.09	1,650.18	1,043.88	606.30	2.722	
15,960.00	5,990.36	16,342.90	5,990.31	305.03	303.17	-90.00	2,146.13	10,705.09	1,650.18	1,042.69	607.49	2.716	
15,980.00	5,990.16	16,362.90	5,990.12	305.62	303.77	-90.00	2,146.13	10,725.09	1,650.18	1,041.50	608.69	2.711	
16,000.00	5,989.97	16,382.90	5,989.92	306.22	304.36	-90.00	2,146.13	10,745.09	1,650.18	1,040.30	609.88	2.706	
16,020.00	5,989.78	16,402.90	5,989.73	306.82	304.96	-90.00	2,146.13	10,765.09	1,650.18	1,039.11	611.07	2.700	
16,040.00	5,989.58	16,422.90	5,989.54	307.41	305.55	-90.00	2,146.13	10,785.09	1,650.18	1,037.92	612.26	2.695	
16,060.00	5,989.39	16,442.90	5,989.35	308.01	306.15	-90.00	2,146.13	10,805.09	1,650.18	1,036.72	613.46	2.690	
16,080.00	5,989.19	16,462.90	5,989.15	308.61	306.74	-90.00	2,146.13	10,825.09	1,650.18	1,035.53	614.65	2.685	
16,100.00	5,989.00	16,482.90	5,988.96	309.20	307.34	-90.00	2,146.13	10,845.09	1,650.18	1,034.34	615.84	2.680	
16,120.00	5,988.80	16,502.90	5,988.77	309.80	307.93	-90.00	2,146.13	10,865.08	1,650.18	1,033.15	617.04	2.674	
16,140.00	5,988.61	16,522.90	5,988.57	310.39	308.53	-90.00	2,146.13	10,885.08	1,650.18	1,031.95	618.23	2.669	
16,160.00	5,988.41	16,542.90	5,988.38	310.99	309.12	-90.00	2,146.13	10,905.08	1,650.18	1,030.76	619.42	2.664	
16,180.00	5,988.22	16,562.90	5,988.19	311.59	309.72	-90.00	2,146.13	10,925.08	1,650.18	1,029.57	620.61	2.659	
16,200.00	5,988.02	16,582.90	5,988.00	312.18	310.31	-90.00	2,146.13	10,945.08	1,650.18	1,028.37	621.81	2.654	
16,220.00	5,987.83	16,602.90	5,987.80	312.78	310.90	-90.00	2,146.13	10,965.08	1,650.18	1,027.18	623.00	2.649	
16,240.00	5,987.63	16,622.90	5,987.61	313.38	311.50	-90.00	2,146.13	10,985.08	1,650.18	1,025.99	624.19	2.644	
16,260.00	5,987.44	16,642.90	5,987.42	313.97	312.09	-90.00	2,146.13	11,005.08	1,650.18	1,024.80	625.38	2.639	
16,280.00	5,987.24	16,662.90	5,987.23	314.57	312.69	-90.00	2,146.13	11,025.08	1,650.18	1,023.60	626.58	2.634	
16,300.00	5,987.05	16,682.90	5,987.03	315.17	313.28	-90.00	2,146.13	11,045.08	1,650.18	1,022.41	627.77	2.629	
16,320.00	5,986.85	16,702.90	5,986.84	315.76	313.88	-90.00	2,146.13	11,065.08	1,650.18	1,021.22	628.96	2.624	
16,340.00	5,986.66	16,722.90	5,986.65	316.36	314.47	-90.00	2,146.13	11,085.07	1,650.18	1,020.02	630.16	2.619	
16,360.00	5,986.46	16,742.90	5,986.46	316.96	315.07	-90.00	2,146.13	11,105.07	1,650.18	1,018.83	631.35	2.614	
16,380.00	5,986.27	16,762.90	5,986.26	317.55	315.66	-90.00	2,146.13	11,125.07	1,650.18	1,017.64	632.54	2.609	
16,400.00	5,986.07	16,782.90	5,986.07	318.15	316.26	-90.00	2,146.13	11,145.07	1,650.18	1,016.44	633.74	2.604	
16,407.54	5,986.00	16,790.42	5,986.00	318.38	316.48	-90.00	2,146.13	11,152.59	1,650.18	1,015.99	634.18	2.602	SF

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

Hilcorp Energy Company

Scientific Drilling, Intl
Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-20.09	117.58	-43.00	125.20				
20.00	20.00	20.00	20.00	0.04	0.04	-20.09	117.58	-43.00	125.20	125.12	0.07	1,742.360	
40.00	40.00	40.00	40.00	0.07	0.07	-20.09	117.58	-43.00	125.20	125.05	0.14	872.394	
60.00	60.00	60.00	60.00	0.11	0.11	-20.09	117.58	-43.00	125.20	124.98	0.22	581.866	
80.00	80.00	80.00	80.00	0.14	0.14	-20.09	117.58	-43.00	125.20	124.91	0.29	436.501	
100.00	100.00	100.00	100.00	0.18	0.18	-20.09	117.58	-43.00	125.20	124.84	0.36	349.250	
120.00	120.00	120.00	120.00	0.25	0.25	-20.09	117.58	-43.00	125.20	124.69	0.50	249.464	
140.00	140.00	140.00	140.00	0.32	0.32	-20.09	117.58	-43.00	125.20	124.55	0.65	194.028	
160.00	160.00	160.00	160.00	0.39	0.39	-20.09	117.58	-43.00	125.20	124.41	0.79	158.750	
180.00	180.00	180.00	180.00	0.47	0.47	-20.09	117.58	-43.00	125.20	124.26	0.93	134.327	
200.00	200.00	200.00	200.00	0.54	0.54	-20.09	117.58	-43.00	125.20	124.12	1.08	116.417	
220.00	220.00	220.00	220.00	0.61	0.61	-20.09	117.58	-43.00	125.20	123.98	1.22	102.720	
240.00	240.00	240.00	240.00	0.68	0.68	-20.09	117.58	-43.00	125.20	123.83	1.36	91.908	
260.00	260.00	260.00	260.00	0.75	0.75	-20.09	117.58	-43.00	125.20	123.69	1.51	83.155	
280.00	280.00	280.00	280.00	0.82	0.82	-20.09	117.58	-43.00	125.20	123.55	1.65	75.924	
300.00	300.00	300.00	300.00	0.90	0.90	-20.09	117.58	-43.00	125.20	123.40	1.79	69.850	
320.00	320.00	320.00	320.00	0.97	0.97	-20.09	117.58	-43.00	125.20	123.26	1.94	64.676	
340.00	340.00	340.00	340.00	1.04	1.04	-20.09	117.58	-43.00	125.20	123.12	2.08	60.215	
360.00	360.00	360.00	360.00	1.11	1.11	-20.09	117.58	-43.00	125.20	122.97	2.22	56.331	
380.00	380.00	380.00	380.00	1.18	1.18	-20.09	117.58	-43.00	125.20	122.83	2.37	52.917	
400.00	400.00	400.00	400.00	1.25	1.25	-20.09	117.58	-43.00	125.20	122.69	2.51	49.893	
420.00	420.00	420.00	420.00	1.33	1.33	-20.09	117.58	-43.00	125.20	122.54	2.65	47.196	
440.00	440.00	440.00	440.00	1.40	1.40	-20.09	117.58	-43.00	125.20	122.40	2.80	44.776	
460.00	460.00	460.00	460.00	1.47	1.47	-20.09	117.58	-43.00	125.20	122.26	2.94	42.591	
480.00	480.00	480.00	480.00	1.54	1.54	-20.09	117.58	-43.00	125.20	122.11	3.08	40.610	
500.00	500.00	500.00	500.00	1.61	1.61	-20.09	117.58	-43.00	125.20	121.97	3.23	38.806	
520.00	520.00	520.00	520.00	1.68	1.68	-20.09	117.58	-43.00	125.20	121.83	3.37	37.154	
540.00	540.00	540.00	540.00	1.76	1.76	-20.09	117.58	-43.00	125.20	121.68	3.51	35.638	
560.00	560.00	560.00	560.00	1.83	1.83	-20.09	117.58	-43.00	125.20	121.54	3.66	34.240	
580.00	580.00	580.00	580.00	1.90	1.90	-20.09	117.58	-43.00	125.20	121.40	3.80	32.948	
600.00	600.00	600.00	600.00	1.97	1.97	-20.09	117.58	-43.00	125.20	121.25	3.94	31.750	
620.00	620.00	620.00	620.00	2.04	2.04	-20.09	117.58	-43.00	125.20	121.11	4.09	30.636	
640.00	640.00	640.00	640.00	2.11	2.11	-20.09	117.58	-43.00	125.20	120.97	4.23	29.597	
660.00	660.00	660.00	660.00	2.19	2.19	-20.09	117.58	-43.00	125.20	120.82	4.37	28.627	
680.00	680.00	680.00	680.00	2.26	2.26	-20.09	117.58	-43.00	125.20	120.68	4.52	27.718	
700.00	700.00	700.00	700.00	2.33	2.33	-20.09	117.58	-43.00	125.20	120.54	4.66	26.865	
720.00	720.00	720.00	720.00	2.40	2.40	-20.09	117.58	-43.00	125.20	120.39	4.80	26.063	
740.00	740.00	740.00	740.00	2.47	2.47	-20.09	117.58	-43.00	125.20	120.25	4.95	25.308	
760.00	760.00	760.00	760.00	2.55	2.55	-20.09	117.58	-43.00	125.20	120.11	5.09	24.595	
780.00	780.00	780.00	780.00	2.62	2.62	-20.09	117.58	-43.00	125.20	119.96	5.23	23.921	
800.00	800.00	800.00	800.00	2.69	2.69	-20.09	117.58	-43.00	125.20	119.82	5.38	23.283	
820.00	820.00	820.00	820.00	2.76	2.76	-20.09	117.58	-43.00	125.20	119.68	5.52	22.679	
840.00	840.00	840.00	840.00	2.83	2.83	-20.09	117.58	-43.00	125.20	119.53	5.66	22.104	
860.00	860.00	860.00	860.00	2.90	2.90	-20.09	117.58	-43.00	125.20	119.39	5.81	21.559	
880.00	880.00	880.00	880.00	2.98	2.98	-20.09	117.58	-43.00	125.20	119.25	5.95	21.039	
900.00	900.00	900.00	900.00	3.05	3.05	-20.09	117.58	-43.00	125.20	119.10	6.09	20.544	
920.00	920.00	920.00	920.00	3.12	3.12	-20.09	117.58	-43.00	125.20	118.96	6.24	20.072	
940.00	940.00	940.00	940.00	3.19	3.19	-20.09	117.58	-43.00	125.20	118.82	6.38	19.621	
960.00	960.00	960.00	960.00	3.26	3.26	-20.09	117.58	-43.00	125.20	118.67	6.52	19.190	
980.00	980.00	980.00	980.00	3.33	3.33	-20.09	117.58	-43.00	125.20	118.53	6.67	18.777	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-20.09	117.58	-43.00	125.20	118.39	6.81	18.382	CC
1,020.00	1,020.00	1,019.17	1,019.17	3.48	3.47	-20.09	117.64	-43.03	125.26	118.31	6.95	18.019	ES

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,040.00	1,040.00	1,038.33	1,038.33	3.55	3.54	-20.10	117.81	-43.11	125.46	118.37	7.09	17.687	
1,060.00	1,060.00	1,057.49	1,057.49	3.62	3.61	-20.11	118.10	-43.25	125.80	118.56	7.24	17.385	
1,080.00	1,080.00	1,076.64	1,076.64	3.69	3.68	-20.13	118.51	-43.44	126.26	118.88	7.38	17.111	
1,100.00	1,100.00	1,095.79	1,095.78	3.76	3.75	-20.15	119.03	-43.68	126.86	119.34	7.52	16.864	
1,120.00	1,120.00	1,114.93	1,114.90	3.84	3.82	-20.18	119.67	-43.98	127.59	119.93	7.67	16.643	
1,140.00	1,140.00	1,134.06	1,134.01	3.91	3.89	-20.21	120.42	-44.34	128.46	120.65	7.81	16.446	
1,160.00	1,160.00	1,153.18	1,153.11	3.98	3.95	-20.25	121.28	-44.74	129.46	121.50	7.96	16.272	
1,180.00	1,180.00	1,172.28	1,172.18	4.05	4.02	-20.29	122.27	-45.21	130.59	122.49	8.10	16.120	
1,200.00	1,200.00	1,191.37	1,191.23	4.12	4.09	-20.34	123.36	-45.72	131.85	123.61	8.25	15.990	
1,220.00	1,220.00	1,210.44	1,210.25	4.19	4.16	-20.38	124.57	-46.29	133.25	124.86	8.39	15.880	
1,240.00	1,240.00	1,229.50	1,229.25	4.27	4.23	-20.44	125.89	-46.91	134.78	126.24	8.54	15.788	
1,260.00	1,260.00	1,248.53	1,248.22	4.34	4.30	-20.49	127.33	-47.59	136.44	127.76	8.68	15.715	
1,280.00	1,280.00	1,267.54	1,267.15	4.41	4.37	-20.55	128.88	-48.32	138.23	129.41	8.83	15.659	
1,300.00	1,300.00	1,286.53	1,286.05	4.48	4.43	-20.61	130.53	-49.10	140.16	131.18	8.97	15.620	
1,320.00	1,320.00	1,305.49	1,304.91	4.55	4.50	-20.68	132.30	-49.93	142.21	133.10	9.12	15.597	
1,340.00	1,340.00	1,324.42	1,323.73	4.62	4.57	-20.74	134.18	-50.81	144.40	135.14	9.26	15.588	SF
1,360.00	1,360.00	1,343.33	1,342.51	4.70	4.64	-20.81	136.17	-51.75	146.72	137.31	9.41	15.594	
1,380.00	1,380.00	1,362.21	1,361.24	4.77	4.71	-20.88	138.27	-52.74	149.17	139.62	9.55	15.615	
1,400.00	1,400.00	1,381.05	1,379.93	4.84	4.78	-20.95	140.48	-53.78	151.75	142.05	9.70	15.650	
1,420.00	1,420.00	1,400.00	1,398.70	4.91	4.84	-21.02	142.81	-54.87	154.46	144.62	9.84	15.698	
1,440.00	1,440.00	1,418.64	1,417.15	4.98	4.91	-21.09	145.21	-56.00	157.30	147.32	9.98	15.757	
1,460.00	1,460.00	1,437.38	1,435.68	5.05	4.98	-21.16	147.73	-57.19	160.27	150.14	10.13	15.827	
1,480.00	1,480.00	1,456.09	1,454.16	5.13	5.05	-21.24	150.36	-58.43	163.37	153.10	10.27	15.909	
1,500.00	1,500.00	1,474.75	1,472.58	5.20	5.12	-21.31	153.09	-59.71	166.60	156.19	10.41	16.002	
1,520.00	1,520.00	1,493.37	1,490.94	5.27	5.19	-21.38	155.92	-61.05	169.95	159.40	10.55	16.105	
1,540.00	1,540.00	1,511.96	1,509.23	5.34	5.26	-21.45	158.86	-62.43	173.44	162.74	10.69	16.218	
1,560.00	1,560.00	1,530.49	1,527.47	5.41	5.33	-21.53	161.89	-63.86	177.05	166.21	10.83	16.341	
1,580.00	1,580.00	1,548.99	1,545.63	5.48	5.40	-21.60	165.03	-65.33	180.79	169.81	10.97	16.473	
1,600.00	1,600.00	1,567.43	1,563.73	5.56	5.47	-21.67	168.26	-66.85	184.65	173.54	11.11	16.614	
1,620.00	1,620.00	1,585.83	1,581.76	5.63	5.54	-21.74	171.59	-68.42	188.64	177.39	11.25	16.764	
1,640.00	1,640.00	1,604.18	1,599.72	5.70	5.61	-21.81	175.01	-70.03	192.76	181.37	11.39	16.922	
1,660.00	1,660.00	1,622.48	1,617.60	5.77	5.69	-21.88	178.53	-71.69	197.00	185.47	11.53	17.088	
1,680.00	1,680.00	1,640.73	1,635.41	5.84	5.76	-21.94	182.14	-73.39	201.37	189.70	11.67	17.261	
1,700.00	1,700.00	1,658.93	1,653.14	5.91	5.83	-22.01	185.84	-75.13	205.86	194.06	11.80	17.443	
1,720.00	1,720.00	1,677.07	1,670.79	5.99	5.90	-22.08	189.64	-76.91	210.48	198.54	11.94	17.631	
1,740.00	1,740.00	1,695.16	1,688.36	6.06	5.97	-22.14	193.52	-78.74	215.21	203.14	12.07	17.827	
1,760.00	1,760.00	1,713.19	1,705.85	6.13	6.05	-22.20	197.49	-80.61	220.07	207.87	12.21	18.029	
1,780.00	1,780.00	1,731.16	1,723.25	6.20	6.12	-22.27	201.54	-82.52	225.06	212.72	12.34	18.238	
1,800.00	1,800.00	1,749.08	1,740.57	6.27	6.20	-22.33	205.69	-84.47	230.16	217.69	12.47	18.453	
1,820.00	1,820.00	1,766.93	1,757.81	6.34	6.27	-22.39	209.91	-86.46	235.38	222.78	12.60	18.675	
1,840.00	1,840.00	1,784.73	1,774.95	6.42	6.35	-22.44	214.22	-88.48	240.73	227.99	12.74	18.903	
1,860.00	1,860.00	1,800.00	1,789.64	6.49	6.41	-22.49	217.99	-90.26	246.21	233.35	12.86	19.147	
1,880.00	1,880.00	1,820.13	1,808.97	6.56	6.50	-22.56	223.07	-92.65	251.78	238.78	12.99	19.375	
1,900.00	1,900.00	1,837.73	1,825.85	6.63	6.58	-22.61	227.62	-94.79	257.48	244.35	13.12	19.619	
1,920.00	1,920.00	1,855.27	1,842.63	6.70	6.66	-22.66	232.24	-96.97	263.29	250.04	13.25	19.869	
1,940.00	1,940.00	1,872.75	1,859.31	6.78	6.73	-22.71	236.94	-99.18	269.23	255.85	13.38	20.124	
1,960.00	1,960.00	1,890.16	1,875.90	6.85	6.81	-22.76	241.71	-101.42	275.28	261.78	13.50	20.385	
1,980.00	1,980.00	1,907.50	1,892.40	6.92	6.89	-22.81	246.55	-103.70	281.45	267.82	13.63	20.650	
2,000.00	2,000.00	1,924.77	1,908.79	6.99	6.97	-22.86	251.46	-106.01	287.73	273.98	13.75	20.919	
2,020.00	2,020.00	1,941.97	1,925.09	7.06	7.05	-22.91	256.44	-108.36	294.13	280.25	13.88	21.193	
2,040.00	2,040.00	1,959.10	1,941.29	7.13	7.13	-22.95	261.49	-110.73	300.64	286.64	14.00	21.472	
2,060.00	2,060.00	1,976.16	1,957.38	7.21	7.21	-23.00	266.61	-113.14	307.26	293.14	14.12	21.756	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,080.00	2,080.00	1,993.15	1,973.38	7.28	7.29	-23.04	271.79	-115.58	314.00	299.75	14.24	22.045	
2,100.00	2,100.00	2,010.07	1,989.27	7.35	7.38	-23.08	277.03	-118.05	320.85	306.48	14.36	22.337	
2,120.00	2,120.00	2,026.91	2,005.06	7.42	7.46	-23.12	282.34	-120.54	327.80	313.32	14.48	22.632	
2,140.00	2,140.00	2,043.68	2,020.75	7.49	7.55	-23.16	287.70	-123.07	334.87	320.27	14.60	22.932	
2,160.00	2,160.00	2,060.38	2,036.33	7.56	7.63	-23.20	293.12	-125.62	342.05	327.33	14.72	23.237	
2,180.00	2,180.00	2,077.00	2,051.81	7.64	7.71	-23.24	298.60	-128.20	349.33	334.50	14.84	23.545	
2,200.00	2,200.00	2,093.54	2,067.18	7.71	7.80	-23.27	304.14	-130.81	356.73	341.77	14.95	23.858	
2,220.00	2,220.00	2,110.01	2,082.44	7.78	7.88	-23.31	309.73	-133.44	364.23	349.16	15.07	24.174	
2,240.00	2,240.00	2,126.40	2,097.60	7.85	7.97	-23.34	315.37	-136.09	371.83	356.65	15.18	24.492	
2,260.00	2,260.00	2,142.72	2,112.65	7.92	8.06	-23.38	321.07	-138.77	379.54	364.25	15.30	24.815	
2,280.00	2,280.00	2,158.95	2,127.60	7.99	8.15	-23.41	326.81	-141.48	387.36	371.95	15.41	25.141	
2,300.00	2,300.00	2,175.11	2,142.43	8.07	8.24	-23.44	332.60	-144.20	395.28	379.76	15.52	25.472	
2,320.00	2,320.00	2,191.19	2,157.16	8.14	8.32	-23.47	338.44	-146.95	403.30	387.68	15.63	25.806	
2,340.00	2,340.00	2,207.19	2,171.78	8.21	8.41	-23.50	344.33	-149.72	411.43	395.69	15.74	26.142	
2,360.00	2,360.00	2,223.11	2,186.28	8.28	8.51	-23.53	350.25	-152.51	419.66	403.81	15.85	26.481	
2,380.00	2,380.00	2,238.94	2,200.68	8.35	8.60	-23.56	356.22	-155.32	427.99	412.03	15.96	26.823	
2,400.00	2,400.00	2,254.70	2,214.97	8.42	8.69	-23.59	362.24	-158.15	436.42	420.36	16.06	27.169	
2,420.00	2,420.00	2,270.38	2,229.15	8.50	8.78	-23.61	368.29	-161.00	444.95	428.78	16.17	27.519	
2,440.00	2,440.00	2,285.98	2,243.22	8.57	8.87	-23.64	374.38	-163.86	453.58	437.30	16.27	27.872	
2,460.00	2,460.00	2,300.00	2,255.84	8.64	8.96	-23.66	379.91	-166.47	462.30	445.94	16.36	28.254	
2,480.00	2,480.00	2,316.93	2,271.03	8.71	9.06	-23.69	386.67	-169.65	471.12	454.64	16.48	28.586	
2,500.00	2,500.00	2,332.28	2,284.77	8.78	9.15	-23.71	392.86	-172.56	480.04	463.46	16.58	28.947	
2,520.00	2,520.00	2,347.55	2,298.40	8.85	9.25	-23.74	399.09	-175.50	489.06	472.37	16.69	29.311	
2,540.00	2,540.00	2,364.52	2,313.51	8.93	9.36	-23.76	406.07	-178.78	498.15	481.34	16.80	29.644	
2,560.00	2,560.00	2,382.33	2,329.38	9.00	9.47	-23.79	413.40	-182.23	507.24	490.31	16.93	29.956	
2,580.00	2,580.00	2,400.14	2,345.24	9.07	9.58	-23.81	420.73	-185.68	516.33	499.27	17.06	30.264	
2,600.00	2,600.00	2,417.95	2,361.11	9.14	9.70	-23.84	428.06	-189.13	525.42	508.23	17.19	30.565	
2,620.00	2,620.00	2,435.76	2,376.97	9.21	9.81	-23.86	435.38	-192.58	534.52	517.20	17.32	30.861	
2,640.00	2,640.00	2,453.58	2,392.83	9.28	9.93	-23.88	442.71	-196.03	543.61	526.16	17.45	31.153	
2,660.00	2,660.00	2,471.39	2,408.70	9.36	10.05	-23.90	450.04	-199.48	552.71	535.13	17.58	31.440	
2,680.00	2,680.00	2,489.20	2,424.56	9.43	10.16	-23.93	457.37	-202.93	561.80	544.09	17.71	31.723	
2,700.00	2,700.00	2,507.01	2,440.42	9.50	10.28	-23.95	464.70	-206.38	570.89	553.05	17.84	32.000	
2,720.00	2,720.00	2,524.83	2,456.29	9.57	10.40	-83.92	472.03	-209.83	579.98	562.01	17.97	32.273	
2,740.00	2,740.00	2,542.65	2,472.16	9.64	10.52	-83.76	479.36	-213.28	589.05	570.95	18.10	32.542	
2,760.00	2,760.00	2,560.47	2,488.03	9.71	10.64	-83.61	486.70	-216.73	598.12	579.88	18.23	32.805	
2,780.00	2,779.99	2,578.29	2,503.91	9.78	10.76	-83.48	494.03	-220.18	607.16	588.80	18.36	33.064	
2,800.00	2,799.98	2,596.12	2,519.78	9.85	10.87	-83.36	501.37	-223.63	616.20	597.70	18.49	33.319	
2,820.00	2,819.96	2,613.95	2,535.66	9.92	11.00	-83.25	508.70	-227.09	625.22	606.59	18.63	33.568	
2,840.00	2,839.94	2,631.77	2,551.54	9.99	11.12	-83.15	516.04	-230.54	634.23	615.47	18.76	33.813	
2,860.00	2,859.92	2,649.60	2,567.41	10.06	11.24	-83.07	523.37	-233.99	643.22	624.33	18.89	34.054	
2,880.00	2,879.88	2,667.42	2,583.29	10.13	11.36	-82.99	530.71	-237.44	652.20	633.18	19.02	34.291	
2,900.00	2,899.84	2,685.25	2,599.16	10.20	11.48	-82.93	538.04	-240.89	661.17	642.02	19.15	34.523	
2,920.00	2,919.78	2,703.06	2,615.03	10.28	11.61	-82.88	545.37	-244.34	670.13	650.85	19.28	34.751	
2,940.00	2,939.72	2,720.88	2,630.90	10.35	11.73	-82.83	552.70	-247.79	679.08	659.66	19.42	34.973	
2,960.00	2,959.64	2,738.69	2,646.76	10.42	11.85	-82.79	560.03	-251.24	688.01	668.46	19.55	35.192	
2,980.00	2,979.55	2,756.49	2,662.61	10.49	11.98	-82.77	567.36	-254.69	696.93	677.25	19.68	35.407	
3,000.00	2,999.45	2,774.29	2,678.46	10.56	12.10	-82.75	574.68	-258.14	705.85	686.03	19.82	35.619	
3,020.00	3,019.34	2,792.07	2,694.30	10.63	12.23	-82.74	582.00	-261.58	714.75	694.80	19.95	35.826	
3,040.00	3,039.20	2,809.85	2,710.14	10.70	12.35	-82.73	589.31	-265.02	723.64	703.56	20.08	36.029	
3,060.00	3,059.05	2,827.62	2,725.96	10.77	12.48	-82.74	596.62	-268.47	732.53	712.31	20.22	36.228	
3,080.00	3,078.89	2,845.38	2,741.78	10.84	12.60	-82.75	603.93	-271.91	741.40	721.05	20.35	36.424	
3,100.00	3,098.70	2,863.13	2,757.58	10.91	12.73	-82.77	611.23	-275.34	750.27	729.78	20.49	36.616	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,120.00	3,118.50	2,880.86	2,773.38	10.98	12.85	-82.79	618.53	-278.78	759.14	738.51	20.63	36.805	
3,140.00	3,138.27	2,898.58	2,789.16	11.06	12.98	-82.82	625.82	-282.21	767.99	747.23	20.76	36.991	
3,160.00	3,158.03	2,916.29	2,804.93	11.13	13.10	-82.86	633.11	-285.64	776.84	755.94	20.90	37.172	
3,180.00	3,177.76	2,933.99	2,820.69	11.20	13.23	-82.90	640.39	-289.07	785.69	764.65	21.04	37.351	
3,200.00	3,197.47	2,951.66	2,836.43	11.27	13.36	-82.95	647.66	-292.49	794.53	773.36	21.17	37.526	
3,220.00	3,217.15	2,969.32	2,852.16	11.34	13.48	-83.00	654.93	-295.91	803.37	782.06	21.31	37.698	
3,240.00	3,236.81	2,986.97	2,867.88	11.42	13.61	-83.06	662.19	-299.33	812.20	790.75	21.45	37.867	
3,260.00	3,256.44	3,004.59	2,883.57	11.49	13.74	-83.12	669.44	-302.74	821.04	799.45	21.59	38.033	
3,280.00	3,276.05	3,022.20	2,899.25	11.56	13.86	-83.19	676.69	-306.15	829.87	808.14	21.73	38.196	
3,300.00	3,295.62	3,039.79	2,914.92	11.64	13.99	-83.26	683.92	-309.55	838.70	816.84	21.87	38.356	
3,320.00	3,315.17	3,057.35	2,930.56	11.71	14.12	-83.34	691.15	-312.96	847.54	825.53	22.01	38.512	
3,340.00	3,334.69	3,074.90	2,946.19	11.78	14.24	-83.42	698.37	-316.35	856.37	834.23	22.15	38.665	
3,360.00	3,354.18	3,092.42	2,961.79	11.86	14.37	-83.50	705.58	-319.75	865.21	842.92	22.29	38.817	
3,380.00	3,373.63	3,109.92	2,977.37	11.93	14.50	-83.59	712.78	-323.14	874.06	851.62	22.43	38.965	
3,400.00	3,393.06	3,127.39	2,992.94	12.01	14.62	-83.68	719.97	-326.52	882.90	860.33	22.57	39.111	
3,420.00	3,412.44	3,144.84	3,008.48	12.09	14.75	-83.77	727.15	-329.90	891.75	869.03	22.72	39.252	
3,440.00	3,431.80	3,162.26	3,023.99	12.16	14.88	-83.87	734.32	-333.27	900.61	877.75	22.86	39.391	
3,460.00	3,451.12	3,179.66	3,039.49	12.24	15.01	-83.97	741.48	-336.64	909.48	886.47	23.01	39.528	
3,480.00	3,470.40	3,197.02	3,054.95	12.32	15.13	-84.07	748.62	-340.01	918.35	895.19	23.15	39.663	
3,500.00	3,489.64	3,214.36	3,070.40	12.39	15.26	-84.18	755.76	-343.36	927.23	903.93	23.30	39.796	
3,520.00	3,508.85	3,231.67	3,085.81	12.47	15.39	-84.29	762.88	-346.72	936.12	912.67	23.45	39.922	
3,540.00	3,528.02	3,248.96	3,101.20	12.56	15.51	-84.40	769.99	-350.06	945.02	921.43	23.60	40.048	
3,560.00	3,547.14	3,266.20	3,116.57	12.64	15.64	-84.51	777.09	-353.40	953.94	930.19	23.75	40.171	
3,580.00	3,566.23	3,283.42	3,131.90	12.72	15.77	-84.63	784.17	-356.74	962.86	938.97	23.90	40.293	
3,600.00	3,585.27	3,300.61	3,147.21	12.80	15.89	-84.75	791.25	-360.07	971.80	947.76	24.05	40.413	
3,620.00	3,604.27	3,317.76	3,162.48	12.88	16.02	-84.87	798.30	-363.39	980.76	956.56	24.20	40.528	
3,640.00	3,623.22	3,334.87	3,177.72	12.96	16.15	-84.99	805.35	-366.70	989.73	965.38	24.35	40.641	
3,645.28	3,628.22	3,339.38	3,181.74	12.98	16.18	-85.02	807.20	-367.58	992.10	967.70	24.39	40.671	
3,660.00	3,642.15	3,351.97	3,192.95	13.05	16.27	-85.25	812.38	-370.01	998.72	974.21	24.51	40.752	
3,680.00	3,661.07	3,369.06	3,208.17	13.13	16.40	-85.57	819.41	-373.32	1,007.73	983.07	24.66	40.861	
3,700.00	3,679.99	3,386.15	3,223.39	13.22	16.53	-85.88	826.44	-376.63	1,016.78	991.96	24.82	40.969	
3,720.00	3,698.91	3,403.24	3,238.61	13.30	16.65	-86.19	833.47	-379.94	1,025.84	1,000.87	24.98	41.073	
3,740.00	3,717.83	3,420.33	3,253.83	13.39	16.78	-86.49	840.51	-383.25	1,034.94	1,009.80	25.13	41.176	
3,760.00	3,736.75	3,437.42	3,269.05	13.48	16.91	-86.79	847.54	-386.56	1,044.05	1,018.76	25.29	41.278	
3,780.00	3,755.67	3,454.51	3,284.27	13.57	17.03	-87.08	854.57	-389.87	1,053.19	1,027.74	25.45	41.379	
3,800.00	3,774.59	3,471.60	3,299.49	13.65	17.16	-87.36	861.60	-393.18	1,062.36	1,036.74	25.61	41.479	
3,820.00	3,793.51	3,488.69	3,314.71	13.74	17.29	-87.65	868.64	-396.49	1,071.54	1,045.77	25.77	41.575	
3,840.00	3,812.44	3,505.78	3,329.93	13.83	17.42	-87.92	875.67	-399.80	1,080.75	1,054.81	25.94	41.671	
3,860.00	3,831.36	3,522.87	3,345.15	13.92	17.54	-88.20	882.70	-403.11	1,089.98	1,063.88	26.10	41.765	
3,880.00	3,850.28	3,539.96	3,360.37	14.01	17.67	-88.47	889.73	-406.42	1,099.23	1,072.97	26.26	41.858	
3,900.00	3,869.20	3,557.05	3,375.59	14.10	17.80	-88.73	896.76	-409.73	1,108.50	1,082.07	26.42	41.950	
3,920.00	3,888.12	3,574.14	3,390.81	14.20	17.93	-88.99	903.80	-413.04	1,117.79	1,091.20	26.59	42.039	
3,940.00	3,907.04	3,591.23	3,406.03	14.29	18.05	-89.25	910.83	-416.35	1,127.09	1,100.34	26.75	42.128	
3,960.00	3,925.96	3,608.32	3,421.25	14.38	18.18	-89.50	917.86	-419.66	1,136.42	1,109.50	26.92	42.215	
3,980.00	3,944.88	3,625.41	3,436.48	14.47	18.31	-89.75	924.89	-422.97	1,145.77	1,118.68	27.09	42.301	
4,000.00	3,963.80	3,642.50	3,451.70	14.56	18.44	-90.00	931.92	-426.28	1,155.13	1,127.88	27.25	42.386	
4,020.00	3,982.73	3,659.59	3,466.92	14.66	18.57	-90.24	938.96	-429.59	1,164.51	1,137.09	27.42	42.468	
4,040.00	4,001.65	3,676.68	3,482.14	14.75	18.70	-90.48	945.99	-432.90	1,173.91	1,146.32	27.59	42.549	
4,060.00	4,020.57	3,693.77	3,497.36	14.85	18.82	-90.71	953.02	-436.21	1,183.32	1,155.56	27.76	42.630	
4,080.00	4,039.49	3,710.86	3,512.58	14.94	18.95	-90.94	960.05	-439.52	1,192.75	1,164.82	27.93	42.710	
4,100.00	4,058.41	3,727.95	3,527.80	15.04	19.08	-91.17	967.08	-442.83	1,202.20	1,174.10	28.10	42.788	
4,120.00	4,077.33	3,745.04	3,543.02	15.13	19.21	-91.39	974.12	-446.14	1,211.66	1,183.39	28.27	42.864	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,140.00	4,096.25	3,762.13	3,558.24	15.23	19.34	-91.61	981.15	-449.45	1,221.14	1,192.70	28.44	42.939	
4,160.00	4,115.17	3,779.22	3,573.46	15.33	19.47	-91.83	988.18	-452.76	1,230.63	1,202.02	28.61	43.014	
4,180.00	4,134.09	3,796.31	3,588.68	15.42	19.60	-92.05	995.21	-456.07	1,240.13	1,211.35	28.78	43.087	
4,200.00	4,153.02	3,813.40	3,603.90	15.52	19.73	-92.26	1,002.25	-459.38	1,249.65	1,220.70	28.95	43.160	
4,220.00	4,171.94	3,830.49	3,619.12	15.62	19.85	-92.47	1,009.28	-462.69	1,259.19	1,230.06	29.13	43.230	
4,240.00	4,190.86	3,847.58	3,634.34	15.72	19.98	-92.67	1,016.31	-466.00	1,268.73	1,239.43	29.30	43.300	
4,260.00	4,209.78	3,864.67	3,649.56	15.81	20.11	-92.87	1,023.34	-469.30	1,278.29	1,248.82	29.48	43.369	
4,280.00	4,228.70	3,881.76	3,664.78	15.91	20.24	-93.07	1,030.37	-472.61	1,287.87	1,258.22	29.65	43.437	
4,300.00	4,247.62	3,898.85	3,680.00	16.01	20.37	-93.27	1,037.41	-475.92	1,297.45	1,267.63	29.82	43.504	
4,320.00	4,266.54	3,915.94	3,695.22	16.11	20.50	-93.47	1,044.44	-479.23	1,307.05	1,277.05	30.00	43.569	
4,340.00	4,285.46	3,933.03	3,710.44	16.21	20.63	-93.66	1,051.47	-482.54	1,316.66	1,286.48	30.18	43.634	
4,360.00	4,304.38	3,950.12	3,725.67	16.31	20.76	-93.85	1,058.50	-485.85	1,326.28	1,295.93	30.35	43.698	
4,380.00	4,323.31	3,967.21	3,740.89	16.41	20.89	-94.03	1,065.53	-489.16	1,335.91	1,305.39	30.53	43.761	
4,400.00	4,342.23	3,984.30	3,756.11	16.51	21.02	-94.22	1,072.57	-492.47	1,345.56	1,314.85	30.70	43.823	
4,420.00	4,361.15	4,001.39	3,771.33	16.61	21.15	-94.40	1,079.60	-495.78	1,355.21	1,324.33	30.88	43.884	
4,440.00	4,380.07	4,018.48	3,786.55	16.71	21.28	-94.58	1,086.63	-499.09	1,364.88	1,333.82	31.06	43.944	
4,460.00	4,398.99	4,035.57	3,801.77	16.81	21.41	-94.75	1,093.66	-502.40	1,374.56	1,343.32	31.24	44.003	
4,480.00	4,417.91	4,052.66	3,816.99	16.92	21.54	-94.93	1,100.70	-505.71	1,384.24	1,352.83	31.42	44.061	
4,500.00	4,436.83	4,069.75	3,832.21	17.02	21.67	-95.10	1,107.73	-509.02	1,393.94	1,362.34	31.59	44.119	
4,520.00	4,455.75	4,086.84	3,847.43	17.12	21.80	-95.27	1,114.76	-512.33	1,403.65	1,371.87	31.77	44.176	
4,540.00	4,474.67	4,103.93	3,862.65	17.22	21.93	-95.44	1,121.79	-515.64	1,413.36	1,381.41	31.95	44.231	
4,560.00	4,493.59	4,121.02	3,877.87	17.33	22.06	-95.60	1,128.82	-518.95	1,423.09	1,390.96	32.13	44.286	
4,580.00	4,512.52	4,138.11	3,893.09	17.43	22.19	-95.76	1,135.86	-522.26	1,432.82	1,400.51	32.31	44.341	
4,600.00	4,531.44	4,155.20	3,908.31	17.53	22.32	-95.92	1,142.89	-525.57	1,442.57	1,410.07	32.49	44.394	
4,620.00	4,550.36	4,172.29	3,923.53	17.64	22.45	-96.08	1,149.92	-528.88	1,452.32	1,419.65	32.68	44.447	
4,640.00	4,569.28	4,189.38	3,938.75	17.74	22.58	-96.24	1,156.95	-532.19	1,462.08	1,429.23	32.86	44.499	
4,660.00	4,588.20	4,206.47	3,953.97	17.84	22.71	-96.39	1,163.98	-535.50	1,471.86	1,438.82	33.04	44.550	
4,680.00	4,607.12	4,223.56	3,969.19	17.95	22.84	-96.55	1,171.02	-538.81	1,481.63	1,448.41	33.22	44.601	
4,700.00	4,626.04	4,240.65	3,984.41	18.05	22.97	-96.70	1,178.05	-542.12	1,491.42	1,458.02	33.40	44.651	
4,720.00	4,644.96	4,257.74	3,999.64	18.16	23.10	-96.85	1,185.08	-545.43	1,501.22	1,467.63	33.58	44.699	
4,740.00	4,663.88	4,274.83	4,014.86	18.26	23.23	-96.99	1,192.11	-548.74	1,511.02	1,477.25	33.77	44.748	
4,760.00	4,682.81	4,291.92	4,030.08	18.37	23.36	-97.14	1,199.14	-552.05	1,520.83	1,486.88	33.95	44.796	
4,780.00	4,701.73	4,309.01	4,045.30	18.47	23.49	-97.28	1,206.18	-555.36	1,530.65	1,496.52	34.13	44.843	
4,800.00	4,720.65	4,326.10	4,060.52	18.58	23.63	-97.42	1,213.21	-558.67	1,540.48	1,506.16	34.32	44.890	
4,820.00	4,739.57	4,343.19	4,075.74	18.69	23.76	-97.56	1,220.24	-561.98	1,550.31	1,515.81	34.50	44.935	
4,840.00	4,758.49	4,360.28	4,090.96	18.79	23.89	-97.70	1,227.27	-565.29	1,560.15	1,525.47	34.69	44.980	
4,860.00	4,777.41	4,377.37	4,106.18	18.90	24.02	-97.84	1,234.31	-568.60	1,570.00	1,535.13	34.87	45.025	
4,880.00	4,796.33	4,394.46	4,121.40	19.00	24.15	-97.97	1,241.34	-571.91	1,579.86	1,544.80	35.05	45.069	
4,900.00	4,815.25	4,411.55	4,136.62	19.11	24.28	-98.11	1,248.37	-575.22	1,589.72	1,554.48	35.24	45.113	
4,920.00	4,834.17	4,428.64	4,151.84	19.22	24.41	-98.24	1,255.40	-578.53	1,599.59	1,564.16	35.42	45.155	
4,940.00	4,853.10	4,445.73	4,167.06	19.32	24.54	-98.37	1,262.43	-581.84	1,609.46	1,573.85	35.61	45.197	
4,960.00	4,872.02	4,462.82	4,182.28	19.43	24.67	-98.50	1,269.47	-585.15	1,619.34	1,583.55	35.80	45.239	
4,980.00	4,890.94	4,479.91	4,197.50	19.54	24.80	-98.63	1,276.50	-588.45	1,629.23	1,593.25	35.98	45.281	
5,000.00	4,909.86	4,497.00	4,212.72	19.65	24.93	-98.75	1,283.53	-591.76	1,639.12	1,602.96	36.17	45.322	
5,020.00	4,928.78	4,514.09	4,227.94	19.75	25.07	-98.88	1,290.56	-595.07	1,649.02	1,612.67	36.35	45.361	
5,040.00	4,947.70	4,531.18	4,243.16	19.86	25.20	-99.00	1,297.59	-598.38	1,658.93	1,622.39	36.54	45.401	
5,060.00	4,966.62	4,548.27	4,258.38	19.97	25.33	-99.12	1,304.63	-601.69	1,668.84	1,632.11	36.73	45.440	
5,080.00	4,985.54	4,565.36	4,273.61	20.08	25.46	-99.24	1,311.66	-605.00	1,678.76	1,641.84	36.91	45.479	
5,100.00	5,004.46	4,582.45	4,288.83	20.19	25.59	-99.36	1,318.69	-608.31	1,688.68	1,651.58	37.10	45.517	
5,120.00	5,023.39	4,599.54	4,304.05	20.30	25.72	-99.48	1,325.72	-611.62	1,698.61	1,661.32	37.29	45.555	
5,140.00	5,042.31	4,616.63	4,319.27	20.41	25.85	-99.59	1,332.76	-614.93	1,708.54	1,671.07	37.48	45.591	
5,160.00	5,061.23	4,633.72	4,334.49	20.51	25.99	-99.71	1,339.79	-618.24	1,718.48	1,680.82	37.66	45.628	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,180.00	5,080.15	4,650.81	4,349.71	20.62	26.12	-99.82	1,346.82	-621.55	1,728.43	1,690.58	37.85	45.664	
5,200.00	5,099.07	4,667.90	4,364.93	20.73	26.25	-99.93	1,353.85	-624.86	1,738.38	1,700.34	38.04	45.700	
5,220.00	5,117.99	4,684.99	4,380.15	20.84	26.38	-100.04	1,360.88	-628.17	1,748.33	1,710.11	38.23	45.736	
5,240.00	5,136.91	4,702.08	4,395.37	20.95	26.51	-100.15	1,367.92	-631.48	1,758.29	1,719.88	38.42	45.770	
5,260.00	5,155.83	4,719.17	4,410.59	21.06	26.64	-100.26	1,374.95	-634.79	1,768.26	1,729.66	38.60	45.805	
5,280.00	5,174.75	4,736.26	4,425.81	21.17	26.77	-100.37	1,381.98	-638.10	1,778.23	1,739.44	38.79	45.839	
5,300.00	5,193.67	4,753.35	4,441.03	21.28	26.91	-100.47	1,389.01	-641.41	1,788.20	1,749.22	38.98	45.873	
5,320.00	5,212.60	4,770.44	4,456.25	21.39	27.04	-100.58	1,396.04	-644.72	1,798.18	1,759.01	39.17	45.906	
5,340.00	5,231.52	4,787.53	4,471.47	21.50	27.17	-100.68	1,403.08	-648.03	1,808.17	1,768.81	39.36	45.939	
5,360.00	5,250.44	4,804.62	4,486.69	21.61	27.30	-100.79	1,410.11	-651.34	1,818.16	1,778.61	39.55	45.971	
5,380.00	5,269.36	4,821.71	4,501.91	21.72	27.43	-100.89	1,417.14	-654.65	1,828.15	1,788.41	39.74	46.003	
5,400.00	5,288.28	4,838.80	4,517.13	21.83	27.56	-100.99	1,424.17	-657.96	1,838.15	1,798.22	39.93	46.035	
5,420.00	5,307.20	4,855.89	4,532.35	21.94	27.70	-101.09	1,431.20	-661.27	1,848.15	1,808.03	40.12	46.066	
5,440.00	5,326.12	4,872.98	4,547.57	22.06	27.83	-101.19	1,438.24	-664.58	1,858.16	1,817.85	40.31	46.097	
5,460.00	5,345.04	4,890.07	4,562.80	22.17	27.96	-101.28	1,445.27	-667.89	1,868.17	1,827.67	40.50	46.128	
5,480.00	5,363.96	4,907.16	4,578.02	22.28	28.09	-101.38	1,452.30	-671.20	1,878.18	1,837.49	40.69	46.158	
5,500.00	5,382.89	4,924.25	4,593.24	22.39	28.22	-101.48	1,459.33	-674.51	1,888.20	1,847.32	40.88	46.188	
5,520.00	5,401.81	4,941.34	4,608.46	22.50	28.36	-101.57	1,466.37	-677.82	1,898.22	1,857.15	41.07	46.217	
5,540.00	5,420.73	4,958.43	4,623.68	22.61	28.49	-101.66	1,473.40	-681.13	1,908.25	1,866.98	41.26	46.246	
5,560.00	5,439.65	4,975.52	4,638.90	22.72	28.62	-101.76	1,480.43	-684.44	1,918.28	1,876.82	41.45	46.275	
5,580.00	5,458.57	4,992.61	4,654.12	22.84	28.75	-101.85	1,487.46	-687.75	1,928.31	1,886.67	41.64	46.304	
5,600.00	5,477.49	5,009.70	4,669.34	22.95	28.88	-101.94	1,494.49	-691.06	1,938.35	1,896.51	41.84	46.332	
5,620.00	5,496.41	5,026.79	4,684.56	23.06	29.02	-102.03	1,501.53	-694.37	1,948.39	1,906.36	42.03	46.360	
5,640.00	5,515.33	5,043.88	4,699.78	23.17	29.15	-102.12	1,508.56	-697.68	1,958.44	1,916.22	42.22	46.387	
5,660.00	5,534.25	5,060.97	4,715.00	23.28	29.28	-102.21	1,515.59	-700.99	1,968.48	1,926.07	42.41	46.415	
5,680.00	5,553.18	5,078.06	4,730.22	23.40	29.41	-102.29	1,522.62	-704.30	1,978.54	1,935.93	42.60	46.442	
5,700.00	5,572.10	5,095.15	4,745.44	23.51	29.54	-102.38	1,529.65	-707.61	1,988.59	1,945.80	42.79	46.469	
5,720.00	5,591.02	5,112.24	4,760.66	23.62	29.68	-102.46	1,536.69	-710.91	1,998.65	1,955.66	42.99	46.495	
5,740.00	5,609.94	5,129.33	4,775.88	23.73	29.81	-102.55	1,543.72	-714.22	2,008.71	1,965.53	43.18	46.521	
5,760.00	5,628.86	5,146.42	4,791.10	23.85	29.94	-102.63	1,550.75	-717.53	2,018.78	1,975.41	43.37	46.547	
5,780.00	5,647.78	5,163.51	4,806.32	23.96	30.07	-102.72	1,557.78	-720.84	2,028.85	1,985.28	43.56	46.572	
5,800.00	5,666.70	5,180.60	4,821.54	24.07	30.20	-102.80	1,564.82	-724.15	2,038.92	1,995.16	43.76	46.597	
5,809.89	5,676.06	5,189.05	4,829.07	24.13	30.27	-102.84	1,568.29	-725.79	2,043.90	2,000.05	43.85	46.610	
5,820.00	5,685.60	5,197.65	4,836.73	24.19	30.34	-103.91	1,571.83	-727.46	2,049.05	2,005.10	43.95	46.622	
5,840.00	5,704.31	5,214.41	4,851.66	24.31	30.47	-105.63	1,578.73	-730.70	2,059.54	2,015.39	44.15	46.651	
5,850.00	5,713.58	5,222.66	4,859.01	24.37	30.53	-106.32	1,582.12	-732.30	2,064.94	2,020.70	44.25	46.670	
5,860.00	5,722.80	5,230.83	4,866.28	24.43	30.59	-106.91	1,585.48	-733.88	2,070.44	2,026.09	44.35	46.686	
5,880.00	5,741.03	5,246.88	4,880.57	24.57	30.72	-107.83	1,592.09	-736.99	2,081.74	2,037.18	44.55	46.726	
5,900.00	5,759.00	5,262.54	4,894.52	24.70	30.84	-108.43	1,598.53	-740.02	2,093.41	2,048.66	44.75	46.775	
5,920.00	5,776.66	5,277.80	4,908.11	24.85	30.96	-108.77	1,604.81	-742.98	2,105.46	2,060.50	44.96	46.825	
5,940.00	5,794.02	5,292.64	4,921.32	25.00	31.07	-108.88	1,610.91	-745.85	2,117.87	2,072.70	45.17	46.883	
5,950.00	5,802.57	5,299.89	4,927.78	25.08	31.13	-108.85	1,613.90	-747.26	2,124.20	2,078.93	45.28	46.915	
5,960.00	5,811.03	5,307.03	4,934.14	25.16	31.18	-108.78	1,616.84	-748.64	2,130.62	2,085.24	45.38	46.946	
5,980.00	5,827.69	5,320.97	4,946.55	25.33	31.29	-108.48	1,622.57	-751.34	2,143.71	2,098.12	45.60	47.013	
6,000.00	5,843.96	5,334.43	4,958.54	25.50	31.40	-108.02	1,628.11	-753.94	2,157.13	2,111.32	45.81	47.088	
6,020.00	5,859.84	5,347.39	4,970.09	25.69	31.50	-107.38	1,633.45	-756.46	2,170.85	2,124.82	46.03	47.163	
6,040.00	5,875.31	5,359.85	4,981.19	25.87	31.59	-106.59	1,638.57	-758.87	2,184.86	2,138.62	46.25	47.245	
6,050.00	5,882.88	5,365.89	4,986.56	25.97	31.64	-106.14	1,641.05	-760.04	2,191.98	2,145.63	46.35	47.289	
6,060.00	5,890.33	5,371.79	4,991.82	26.07	31.69	-105.65	1,643.48	-761.18	2,199.16	2,152.70	46.46	47.332	
6,080.00	5,904.90	5,383.18	5,001.97	26.28	31.77	-104.55	1,648.17	-763.39	2,213.73	2,167.04	46.68	47.422	
6,100.00	5,919.00	5,394.03	5,011.63	26.49	31.86	-103.31	1,652.64	-765.49	2,228.54	2,181.65	46.90	47.519	
6,120.00	5,932.61	5,404.31	5,020.78	26.72	31.94	-101.93	1,656.87	-767.48	2,243.60	2,196.48	47.12	47.615	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,140.00	5,945.72	5,414.01	5,029.42	26.95	32.01	-100.40	1,660.86	-769.36	2,258.88	2,211.54	47.34	47.719	
6,150.00	5,952.07	5,418.65	5,033.55	27.06	32.05	-99.59	1,662.76	-770.25	2,266.60	2,219.15	47.45	47.773	
6,160.00	5,958.30	5,423.13	5,037.54	27.19	32.08	-98.74	1,664.61	-771.12	2,274.37	2,226.81	47.56	47.826	
6,180.00	5,970.34	5,431.64	5,045.12	27.44	32.15	-96.93	1,668.11	-772.77	2,290.04	2,242.27	47.77	47.935	
6,200.00	5,981.83	5,439.55	5,052.16	27.69	32.21	-94.99	1,671.36	-774.30	2,305.90	2,257.91	47.99	48.051	
6,220.00	5,992.76	5,446.83	5,058.65	27.97	32.27	-92.91	1,674.36	-775.71	2,321.91	2,273.71	48.21	48.167	
6,240.00	6,003.11	5,453.48	5,064.57	28.25	32.32	-90.71	1,677.10	-777.00	2,338.07	2,289.65	48.42	48.289	
6,250.00	6,008.06	5,456.57	5,067.32	28.38	32.34	-89.56	1,678.37	-777.60	2,346.19	2,297.67	48.52	48.352	
6,260.00	6,012.86	5,459.50	5,069.93	28.53	32.37	-88.38	1,679.57	-778.17	2,354.35	2,305.72	48.63	48.413	
6,280.00	6,022.01	5,464.87	5,074.72	28.84	32.41	-85.95	1,681.78	-779.21	2,370.74	2,321.90	48.84	48.541	
6,300.00	6,030.55	5,469.59	5,078.92	29.14	32.44	-83.41	1,683.73	-780.12	2,387.22	2,338.17	49.05	48.674	
6,320.00	6,038.46	5,473.65	5,082.54	29.46	32.48	-80.78	1,685.40	-780.91	2,403.77	2,354.52	49.25	48.808	
6,340.00	6,045.73	5,477.05	5,085.57	29.78	32.50	-78.08	1,686.80	-781.57	2,420.38	2,370.93	49.45	48.946	
6,350.00	6,049.13	5,478.50	5,086.86	29.95	32.51	-76.71	1,687.39	-781.85	2,428.70	2,379.15	49.55	49.017	
6,360.00	6,052.36	5,479.79	5,088.00	30.12	32.52	-75.32	1,687.92	-782.10	2,437.02	2,387.38	49.65	49.088	
6,380.00	6,058.34	5,481.85	5,089.84	30.47	32.54	-72.52	1,688.77	-782.50	2,453.68	2,403.84	49.84	49.233	
6,400.00	6,063.66	5,483.25	5,091.08	30.81	32.55	-69.70	1,689.35	-782.77	2,470.34	2,420.32	50.02	49.383	
6,420.00	6,068.31	5,483.97	5,091.72	31.18	32.56	-66.88	1,689.64	-782.90	2,486.98	2,436.77	50.21	49.535	
6,440.00	6,072.29	5,484.01	5,091.76	31.54	32.56	-64.07	1,689.66	-782.91	2,503.58	2,453.20	50.38	49.690	
6,450.00	6,074.03	5,483.78	5,091.56	31.73	32.55	-62.68	1,689.57	-782.87	2,511.86	2,461.39	50.47	49.770	
6,460.00	6,075.60	5,483.38	5,091.20	31.92	32.55	-61.30	1,689.40	-782.79	2,520.12	2,469.57	50.55	49.850	
6,480.00	6,078.23	5,482.08	5,090.04	32.30	32.54	-58.57	1,688.87	-782.54	2,536.59	2,485.87	50.72	50.013	
6,500.00	6,080.17	5,480.10	5,088.28	32.68	32.53	-55.91	1,688.05	-782.16	2,552.95	2,502.08	50.88	50.178	
6,520.00	6,081.42	5,477.46	5,085.93	33.07	32.50	-53.32	1,686.96	-781.64	2,569.20	2,518.17	51.03	50.349	
6,540.00	6,081.99	5,474.15	5,082.98	33.47	32.48	-50.81	1,685.60	-781.00	2,585.32	2,534.14	51.17	50.522	
6,552.18	6,082.00	5,471.80	5,080.89	33.71	32.46	-49.33	1,684.64	-780.55	2,595.06	2,543.80	51.26	50.629	
6,560.00	6,081.92	5,470.22	5,079.48	33.86	32.45	-49.28	1,683.99	-780.24	2,601.29	2,549.98	51.31	50.697	
6,580.00	6,081.73	5,466.18	5,075.88	34.27	32.42	-49.14	1,682.32	-779.46	2,617.28	2,565.83	51.45	50.874	
6,600.00	6,081.53	5,462.13	5,072.27	34.67	32.39	-49.00	1,680.66	-778.68	2,633.31	2,581.73	51.58	51.054	
6,620.00	6,081.34	5,458.08	5,068.67	35.10	32.35	-48.86	1,678.99	-777.89	2,649.39	2,597.68	51.71	51.231	
6,640.00	6,081.14	5,454.04	5,065.07	35.52	32.32	-48.72	1,677.33	-777.11	2,665.52	2,613.67	51.85	51.411	
6,660.00	6,080.95	5,449.99	5,061.46	35.94	32.29	-48.58	1,675.66	-776.32	2,681.70	2,629.72	51.98	51.594	
6,680.00	6,080.76	5,445.94	5,057.86	36.37	32.26	-48.44	1,674.00	-775.54	2,697.92	2,645.81	52.11	51.778	
6,700.00	6,080.56	5,441.90	5,054.26	36.79	32.23	-48.31	1,672.33	-774.76	2,714.18	2,661.95	52.23	51.965	
6,720.00	6,080.37	5,437.85	5,050.65	37.24	32.20	-48.17	1,670.67	-773.97	2,730.49	2,678.13	52.36	52.150	
6,740.00	6,080.17	5,433.80	5,047.05	37.69	32.17	-48.03	1,669.00	-773.19	2,746.84	2,694.35	52.48	52.337	
6,760.00	6,079.98	5,429.76	5,043.44	38.13	32.13	-47.89	1,667.34	-772.41	2,763.23	2,710.62	52.61	52.527	
6,780.00	6,079.78	5,425.71	5,039.84	38.58	32.10	-47.76	1,665.67	-771.62	2,779.66	2,726.94	52.73	52.718	
6,800.00	6,079.59	5,421.66	5,036.24	39.03	32.07	-47.62	1,664.01	-770.84	2,796.14	2,743.29	52.84	52.912	
6,820.00	6,079.39	5,417.62	5,032.63	39.49	32.04	-47.48	1,662.34	-770.05	2,812.65	2,759.69	52.96	53.105	
6,840.00	6,079.20	5,413.57	5,029.03	39.96	32.01	-47.35	1,660.68	-769.27	2,829.21	2,776.13	53.08	53.300	
6,860.00	6,079.00	5,409.52	5,025.42	40.43	31.98	-47.21	1,659.01	-768.49	2,845.80	2,792.60	53.20	53.497	
6,880.00	6,078.81	5,405.48	5,021.82	40.89	31.95	-47.07	1,657.35	-767.70	2,862.43	2,809.12	53.31	53.696	
6,900.00	6,078.61	5,401.43	5,018.22	41.36	31.92	-46.94	1,655.68	-766.92	2,879.10	2,825.68	53.42	53.897	
6,920.00	6,078.42	5,397.38	5,014.61	41.84	31.88	-46.80	1,654.02	-766.14	2,895.80	2,842.27	53.53	54.097	
6,940.00	6,078.22	5,393.34	5,011.01	42.32	31.85	-46.67	1,652.35	-765.35	2,912.54	2,858.90	53.64	54.299	
6,960.00	6,078.03	5,389.29	5,007.40	42.81	31.82	-46.53	1,650.69	-764.57	2,929.32	2,875.57	53.75	54.504	
6,980.00	6,077.83	5,385.24	5,003.80	43.29	31.79	-46.40	1,649.02	-763.79	2,946.13	2,892.28	53.85	54.710	
7,000.00	6,077.64	5,381.20	5,000.20	43.77	31.76	-46.26	1,647.35	-763.00	2,962.97	2,909.02	53.95	54.918	
7,020.00	6,077.44	5,377.15	4,996.59	44.27	31.73	-46.13	1,645.69	-762.22	2,979.85	2,925.79	54.06	55.126	
7,040.00	6,077.25	5,373.10	4,992.99	44.76	31.70	-45.99	1,644.02	-761.43	2,996.76	2,942.60	54.16	55.336	
7,060.00	6,077.05	5,369.06	4,989.38	45.26	31.66	-45.86	1,642.36	-760.65	3,013.70	2,959.44	54.25	55.547	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,080.00	6,076.86	5,365.01	4,985.78	45.76	31.63	-45.72	1,640.69	-759.87	3,030.67	2,976.32	54.35	55.761	
7,100.00	6,076.66	5,360.96	4,982.18	46.25	31.60	-45.59	1,639.03	-759.08	3,047.68	2,993.23	54.45	55.976	
7,120.00	6,076.47	5,356.92	4,978.57	46.76	31.57	-45.46	1,637.36	-758.30	3,064.72	3,010.18	54.54	56.191	
7,140.00	6,076.27	5,352.87	4,974.97	47.27	31.54	-45.32	1,635.70	-757.52	3,081.78	3,027.15	54.63	56.408	
7,160.00	6,076.08	5,348.82	4,971.36	47.78	31.51	-45.19	1,634.03	-756.73	3,098.88	3,044.16	54.72	56.627	
7,180.00	6,075.88	5,344.78	4,967.76	48.28	31.48	-45.06	1,632.37	-755.95	3,116.01	3,061.19	54.81	56.847	
7,200.00	6,075.69	5,340.73	4,964.16	48.79	31.44	-44.92	1,630.70	-755.16	3,133.16	3,078.26	54.90	57.069	
7,220.00	6,075.49	5,336.68	4,960.55	49.31	31.41	-44.79	1,629.04	-754.38	3,150.35	3,095.36	54.99	57.292	
7,240.00	6,075.30	5,332.64	4,956.95	49.83	31.38	-44.66	1,627.37	-753.60	3,167.56	3,112.48	55.07	57.516	
7,260.00	6,075.11	5,328.59	4,953.34	50.34	31.35	-44.53	1,625.71	-752.81	3,184.80	3,129.64	55.16	57.742	
7,280.00	6,074.91	5,324.54	4,949.74	50.86	31.32	-44.39	1,624.04	-752.03	3,202.06	3,146.82	55.24	57.969	
7,300.00	6,074.72	5,320.50	4,946.14	51.38	31.29	-44.26	1,622.38	-751.25	3,219.35	3,164.04	55.32	58.198	
7,320.00	6,074.52	5,316.45	4,942.53	51.90	31.26	-44.13	1,620.71	-750.46	3,236.67	3,181.27	55.40	58.427	
7,340.00	6,074.33	5,312.40	4,938.93	52.43	31.23	-44.00	1,619.05	-749.68	3,254.02	3,198.54	55.47	58.658	
7,360.00	6,074.13	5,308.36	4,935.32	52.96	31.19	-43.87	1,617.38	-748.90	3,271.38	3,215.83	55.55	58.890	
7,380.00	6,073.94	5,304.31	4,931.72	53.48	31.16	-43.74	1,615.72	-748.11	3,288.78	3,233.15	55.62	59.124	
7,400.00	6,073.74	5,300.26	4,928.12	54.01	31.13	-43.61	1,614.05	-747.33	3,306.20	3,250.50	55.70	59.360	
7,420.00	6,073.55	5,296.22	4,924.51	54.54	31.10	-43.48	1,612.39	-746.54	3,323.64	3,267.87	55.77	59.596	
7,440.00	6,073.35	5,292.17	4,920.91	55.07	31.07	-43.35	1,610.72	-745.76	3,341.11	3,285.27	55.84	59.833	
7,460.00	6,073.16	5,288.12	4,917.31	55.61	31.04	-43.22	1,609.06	-744.98	3,358.60	3,302.69	55.91	60.072	
7,480.00	6,072.96	5,284.08	4,913.70	56.14	31.01	-43.09	1,607.39	-744.19	3,376.11	3,320.13	55.98	60.312	
7,500.00	6,072.77	5,280.03	4,910.10	56.67	30.97	-42.96	1,605.73	-743.41	3,393.65	3,337.60	56.04	60.554	
7,520.00	6,072.57	5,275.98	4,906.49	57.21	30.94	-42.83	1,604.06	-742.63	3,411.21	3,355.10	56.11	60.796	
7,540.00	6,072.38	5,271.94	4,902.89	57.75	30.91	-42.70	1,602.40	-741.84	3,428.79	3,372.61	56.17	61.040	
7,560.00	6,072.18	5,267.89	4,899.29	58.29	30.88	-42.57	1,600.73	-741.06	3,446.39	3,390.15	56.24	61.285	
7,580.00	6,071.99	5,263.84	4,895.68	58.83	30.85	-42.45	1,599.07	-740.28	3,464.01	3,407.71	56.30	61.532	
7,600.00	6,071.79	5,259.80	4,892.08	59.37	30.82	-42.32	1,597.40	-739.49	3,481.65	3,425.30	56.36	61.780	
7,620.00	6,071.60	5,255.75	4,888.47	59.92	30.79	-42.19	1,595.74	-738.71	3,499.32	3,442.90	56.41	62.028	
7,640.00	6,071.40	5,251.70	4,884.87	60.46	30.76	-42.06	1,594.07	-737.92	3,517.00	3,460.53	56.47	62.278	
7,660.00	6,071.21	5,247.66	4,881.27	61.01	30.72	-41.94	1,592.41	-737.14	3,534.71	3,478.18	56.53	62.529	
7,680.00	6,071.01	5,243.61	4,877.66	61.55	30.69	-41.81	1,590.74	-736.36	3,552.43	3,495.85	56.58	62.782	
7,700.00	6,070.82	5,239.57	4,874.06	62.10	30.66	-41.68	1,589.08	-735.57	3,570.18	3,513.54	56.64	63.036	
7,720.00	6,070.62	5,235.52	4,870.45	62.65	30.63	-41.55	1,587.41	-734.79	3,587.94	3,531.25	56.69	63.290	
7,740.00	6,070.43	5,231.47	4,866.85	63.19	30.60	-41.43	1,585.75	-734.01	3,605.72	3,548.98	56.74	63.546	
7,760.00	6,070.23	5,227.43	4,863.25	63.74	30.57	-41.30	1,584.08	-733.22	3,623.52	3,566.73	56.79	63.803	
7,780.00	6,070.04	5,223.38	4,859.64	64.29	30.54	-41.18	1,582.42	-732.44	3,641.34	3,584.50	56.84	64.061	
7,800.00	6,069.85	5,219.33	4,856.04	64.84	30.50	-41.05	1,580.75	-731.65	3,659.18	3,602.29	56.89	64.321	
7,820.00	6,069.65	5,215.29	4,852.43	65.40	30.47	-40.93	1,579.09	-730.87	3,677.04	3,620.10	56.94	64.581	
7,840.00	6,069.46	5,211.24	4,848.83	65.95	30.44	-40.80	1,577.42	-730.09	3,694.91	3,637.93	56.98	64.843	
7,860.00	6,069.26	5,207.19	4,845.23	66.51	30.41	-40.68	1,575.76	-729.30	3,712.80	3,655.77	57.03	65.106	
7,880.00	6,069.07	5,203.15	4,841.62	67.06	30.38	-40.55	1,574.09	-728.52	3,730.71	3,673.63	57.07	65.370	
7,900.00	6,068.87	5,199.10	4,838.02	67.61	30.35	-40.43	1,572.43	-727.74	3,748.63	3,691.52	57.11	65.635	
7,920.00	6,068.68	5,195.05	4,834.41	68.17	30.32	-40.30	1,570.76	-726.95	3,766.57	3,709.41	57.16	65.901	
7,940.00	6,068.48	5,191.01	4,830.81	68.73	30.29	-40.18	1,569.10	-726.17	3,784.53	3,727.33	57.20	66.168	
7,960.00	6,068.29	5,186.96	4,827.21	69.29	30.25	-40.06	1,567.43	-725.39	3,802.50	3,745.26	57.24	66.436	
7,980.00	6,068.09	5,182.91	4,823.60	69.84	30.22	-39.93	1,565.77	-724.60	3,820.49	3,763.21	57.27	66.705	
8,000.00	6,067.90	5,178.87	4,820.00	70.40	30.19	-39.81	1,564.10	-723.82	3,838.49	3,781.18	57.31	66.976	
8,020.00	6,067.70	5,174.82	4,816.39	70.96	30.16	-39.69	1,562.44	-723.03	3,856.51	3,799.16	57.35	67.247	
8,040.00	6,067.51	5,170.77	4,812.79	71.52	30.13	-39.56	1,560.77	-722.25	3,874.55	3,817.16	57.38	67.520	
8,060.00	6,067.31	5,166.73	4,809.19	72.08	30.10	-39.44	1,559.11	-721.47	3,892.60	3,835.18	57.42	67.793	
8,080.00	6,067.12	5,162.68	4,805.58	72.64	30.07	-39.32	1,557.44	-720.68	3,910.66	3,853.21	57.45	68.068	
8,100.00	6,066.92	5,158.63	4,801.98	73.20	30.03	-39.20	1,555.78	-719.90	3,928.74	3,871.26	57.49	68.344	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,120.00	6,066.73	5,154.59	4,798.38	73.77	30.00	-39.08	1,554.11	-719.12	3,946.83	3,889.32	57.52	68.620	
8,140.00	6,066.53	5,150.54	4,794.77	74.33	29.97	-38.95	1,552.45	-718.33	3,964.94	3,907.39	57.55	68.898	
8,160.00	6,066.34	5,146.49	4,791.17	74.90	29.94	-38.83	1,550.78	-717.55	3,983.06	3,925.49	57.58	69.177	
8,180.00	6,066.14	5,142.45	4,787.56	75.46	29.91	-38.71	1,549.12	-716.76	4,001.20	3,943.59	57.61	69.456	
8,200.00	6,065.95	5,138.40	4,783.96	76.02	29.88	-38.59	1,547.45	-715.98	4,019.35	3,961.71	57.64	69.737	
8,220.00	6,065.75	5,134.35	4,780.36	76.59	29.85	-38.47	1,545.79	-715.20	4,037.51	3,979.85	57.66	70.019	
8,240.00	6,065.56	5,130.31	4,776.75	77.16	29.82	-38.35	1,544.12	-714.41	4,055.69	3,998.00	57.69	70.302	
8,260.00	6,065.36	5,126.26	4,773.15	77.72	29.78	-38.23	1,542.46	-713.63	4,073.88	4,016.16	57.72	70.586	
8,280.00	6,065.17	5,122.21	4,769.54	78.29	29.75	-38.11	1,540.79	-712.85	4,092.08	4,034.34	57.74	70.870	
8,300.00	6,064.97	5,118.17	4,765.94	78.85	29.72	-37.99	1,539.12	-712.06	4,110.29	4,052.53	57.76	71.156	
8,320.00	6,064.78	5,114.12	4,762.34	79.42	29.69	-37.87	1,537.46	-711.28	4,128.52	4,070.73	57.79	71.443	
8,340.00	6,064.59	5,110.07	4,758.73	79.99	29.66	-37.75	1,535.79	-710.50	4,146.76	4,088.95	57.81	71.731	
8,360.00	6,064.39	5,106.03	4,755.13	80.56	29.63	-37.64	1,534.13	-709.71	4,165.01	4,107.18	57.83	72.019	
8,380.00	6,064.20	5,101.98	4,751.52	81.13	29.60	-37.52	1,532.46	-708.93	4,183.28	4,125.42	57.85	72.309	
8,400.00	6,064.00	5,097.93	4,747.92	81.70	29.57	-37.40	1,530.80	-708.14	4,201.55	4,143.68	57.87	72.600	
8,420.00	6,063.81	5,093.89	4,744.32	82.27	29.53	-37.28	1,529.13	-707.36	4,219.84	4,161.95	57.89	72.891	
8,440.00	6,063.61	5,089.84	4,740.71	82.84	29.50	-37.16	1,527.47	-706.58	4,238.14	4,180.23	57.91	73.184	
8,460.00	6,063.42	5,085.79	4,737.11	83.41	29.47	-37.05	1,525.80	-705.79	4,256.45	4,198.52	57.93	73.477	
8,480.00	6,063.22	5,081.75	4,733.50	83.98	29.44	-36.93	1,524.14	-705.01	4,274.77	4,216.82	57.95	73.772	
8,500.00	6,063.03	5,077.70	4,729.90	84.55	29.41	-36.81	1,522.47	-704.23	4,293.10	4,235.14	57.96	74.067	
8,520.00	6,062.83	5,073.65	4,726.30	85.12	29.38	-36.70	1,520.81	-703.44	4,311.45	4,253.47	57.98	74.363	
8,540.00	6,062.64	5,069.61	4,722.69	85.69	29.35	-36.58	1,519.14	-702.66	4,329.80	4,271.81	57.99	74.660	
8,560.00	6,062.44	5,065.56	4,719.09	86.27	29.32	-36.46	1,517.48	-701.87	4,348.17	4,290.16	58.01	74.958	
8,580.00	6,062.25	5,061.51	4,715.48	86.84	29.28	-36.35	1,515.81	-701.09	4,366.54	4,308.52	58.02	75.258	
8,600.00	6,062.05	5,057.47	4,711.88	87.41	29.25	-36.23	1,514.15	-700.31	4,384.93	4,326.90	58.03	75.558	
8,620.00	6,061.86	5,053.42	4,708.28	87.99	29.22	-36.12	1,512.48	-699.52	4,403.33	4,345.28	58.05	75.858	
8,640.00	6,061.66	5,049.37	4,704.67	88.56	29.19	-36.00	1,510.82	-698.74	4,421.74	4,363.68	58.06	76.160	
8,660.00	6,061.47	5,045.33	4,701.07	89.13	29.16	-35.89	1,509.15	-697.96	4,440.15	4,382.08	58.07	76.463	
8,680.00	6,061.27	5,041.28	4,697.46	89.71	29.13	-35.77	1,507.49	-697.17	4,458.58	4,400.50	58.08	76.767	
8,700.00	6,061.08	5,037.23	4,693.86	90.28	29.10	-35.66	1,505.82	-696.39	4,477.02	4,418.93	58.09	77.071	
8,720.00	6,060.88	5,033.19	4,690.26	90.86	29.07	-35.55	1,504.16	-695.61	4,495.47	4,437.37	58.10	77.377	
8,740.00	6,060.69	5,029.14	4,686.65	91.43	29.03	-35.43	1,502.49	-694.82	4,513.92	4,455.82	58.11	77.683	
8,760.00	6,060.49	5,025.09	4,683.05	92.01	29.00	-35.32	1,500.83	-694.04	4,532.39	4,474.27	58.11	77.990	
8,780.00	6,060.30	5,021.05	4,679.45	92.59	28.97	-35.20	1,499.16	-693.25	4,550.86	4,492.74	58.12	78.298	
8,800.00	6,060.10	5,017.00	4,675.84	93.16	28.94	-35.09	1,497.50	-692.47	4,569.35	4,511.22	58.13	78.607	
8,820.00	6,059.91	5,012.96	4,672.24	93.74	28.91	-34.98	1,495.83	-691.69	4,587.84	4,529.71	58.13	78.917	
8,840.00	6,059.71	5,008.91	4,668.63	94.32	28.88	-34.87	1,494.17	-690.90	4,606.35	4,548.20	58.14	79.228	
8,860.00	6,059.52	5,004.86	4,665.03	94.89	28.85	-34.75	1,492.50	-690.12	4,624.86	4,566.71	58.15	79.540	
8,880.00	6,059.33	5,000.82	4,661.43	95.47	28.81	-34.64	1,490.84	-689.34	4,643.38	4,585.23	58.15	79.852	
8,900.00	6,059.13	4,996.77	4,657.82	96.05	28.78	-34.53	1,489.17	-688.55	4,661.91	4,603.75	58.15	80.166	
8,920.00	6,058.94	4,992.72	4,654.22	96.63	28.75	-34.42	1,487.51	-687.77	4,680.44	4,622.29	58.16	80.480	
8,940.00	6,058.74	4,988.68	4,650.61	97.20	28.72	-34.31	1,485.84	-686.98	4,698.99	4,640.83	58.16	80.795	
8,960.00	6,058.55	4,984.63	4,647.01	97.78	28.69	-34.20	1,484.18	-686.20	4,717.55	4,659.38	58.16	81.111	
8,980.00	6,058.35	4,980.58	4,643.41	98.36	28.66	-34.09	1,482.51	-685.42	4,736.11	4,677.95	58.16	81.428	
9,000.00	6,058.16	4,976.54	4,639.80	98.94	28.63	-33.98	1,480.85	-684.63	4,754.68	4,696.52	58.16	81.745	
9,020.00	6,057.96	4,972.49	4,636.20	99.52	28.60	-33.87	1,479.18	-683.85	4,773.26	4,715.09	58.17	82.064	
9,040.00	6,057.77	4,968.44	4,632.59	100.10	28.56	-33.76	1,477.52	-683.07	4,791.85	4,733.68	58.17	82.383	
9,060.00	6,057.57	4,964.40	4,628.99	100.68	28.53	-33.65	1,475.85	-682.28	4,810.44	4,752.28	58.17	82.703	
9,080.00	6,057.38	4,960.35	4,625.39	101.26	28.50	-33.54	1,474.19	-681.50	4,829.05	4,770.88	58.16	83.024	
9,100.00	6,057.18	4,956.30	4,621.78	101.84	28.47	-33.43	1,472.52	-680.72	4,847.66	4,789.49	58.16	83.346	
9,120.00	6,056.99	4,952.26	4,618.18	102.42	28.44	-33.32	1,470.86	-679.93	4,866.28	4,808.11	58.16	83.669	
9,140.00	6,056.79	4,948.21	4,614.57	103.00	28.41	-33.21	1,469.19	-679.15	4,884.90	4,826.74	58.16	83.993	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,160.00	6,056.60	4,944.16	4,610.97	103.58	28.38	-33.10	1,467.53	-678.36	4,903.54	4,845.38	58.16	84.317	
9,180.00	6,056.40	4,940.12	4,607.37	104.16	28.35	-33.00	1,465.86	-677.58	4,922.18	4,864.02	58.15	84.642	
9,200.00	6,056.21	4,936.07	4,603.76	104.74	28.31	-32.89	1,464.20	-676.80	4,940.83	4,882.68	58.15	84.968	
9,220.00	6,056.01	4,932.02	4,600.16	105.32	28.28	-32.78	1,462.53	-676.01	4,959.48	4,901.34	58.14	85.295	
9,240.00	6,055.82	4,927.98	4,596.55	105.90	28.25	-32.67	1,460.87	-675.23	4,978.14	4,920.00	58.14	85.623	
9,260.00	6,055.62	4,923.93	4,592.95	106.49	28.22	-32.57	1,459.20	-674.45	4,996.81	4,938.68	58.14	85.952	
9,280.00	6,055.43	4,919.88	4,589.35	107.07	28.19	-32.46	1,457.54	-673.66	5,015.49	4,957.36	58.13	86.281	
9,300.00	6,055.23	4,915.84	4,585.74	107.65	28.16	-32.35	1,455.87	-672.88	5,034.17	4,976.05	58.12	86.611	
9,320.00	6,055.04	4,911.79	4,582.14	108.23	28.13	-32.25	1,454.21	-672.09	5,052.86	4,994.75	58.12	86.942	
9,340.00	6,054.84	4,907.74	4,578.53	108.81	28.10	-32.14	1,452.54	-671.31	5,071.56	5,013.45	58.11	87.274	
9,360.00	6,054.65	4,903.70	4,574.93	109.40	28.07	-32.03	1,450.88	-670.53	5,090.27	5,032.16	58.10	87.607	
9,380.00	6,054.45	4,899.65	4,571.33	109.98	28.03	-31.93	1,449.21	-669.74	5,108.98	5,050.88	58.10	87.940	
9,400.00	6,054.26	4,895.60	4,567.72	110.56	28.00	-31.82	1,447.55	-668.96	5,127.69	5,069.61	58.09	88.275	
9,420.00	6,054.07	4,891.56	4,564.12	111.14	27.97	-31.72	1,445.88	-668.18	5,146.42	5,088.34	58.08	88.610	
9,440.00	6,053.87	4,887.51	4,560.52	111.73	27.94	-31.61	1,444.22	-667.39	5,165.15	5,107.08	58.07	88.945	
9,460.00	6,053.68	4,883.46	4,556.91	112.31	27.91	-31.51	1,442.55	-666.61	5,183.88	5,125.82	58.06	89.282	
9,480.00	6,053.48	4,879.42	4,553.31	112.89	27.88	-31.40	1,440.89	-665.83	5,202.63	5,144.57	58.05	89.620	
9,500.00	6,053.29	4,875.37	4,549.70	113.48	27.85	-31.30	1,439.22	-665.04	5,221.38	5,163.33	58.04	89.958	
9,520.00	6,053.09	4,871.32	4,546.10	114.06	27.82	-31.20	1,437.56	-664.26	5,240.13	5,182.10	58.03	90.297	
9,540.00	6,052.90	4,867.28	4,542.50	114.65	27.78	-31.09	1,435.89	-663.47	5,258.89	5,200.87	58.02	90.637	
9,560.00	6,052.70	4,863.23	4,538.89	115.23	27.75	-30.99	1,434.23	-662.69	5,277.66	5,219.65	58.01	90.977	
9,580.00	6,052.51	4,859.18	4,535.29	115.81	27.72	-30.89	1,432.56	-661.91	5,296.43	5,238.43	58.00	91.319	
9,600.00	6,052.31	4,855.14	4,531.68	116.40	27.69	-30.78	1,430.90	-661.12	5,315.21	5,257.22	57.99	91.661	
9,620.00	6,052.12	4,851.09	4,528.08	116.98	27.66	-30.68	1,429.23	-660.34	5,334.00	5,276.02	57.98	92.004	
9,640.00	6,051.92	4,847.04	4,524.48	117.57	27.63	-30.58	1,427.56	-659.56	5,352.79	5,294.82	57.96	92.348	
9,660.00	6,051.73	4,843.00	4,520.87	118.15	27.60	-30.48	1,425.90	-658.77	5,371.58	5,313.63	57.95	92.692	
9,680.00	6,051.53	4,838.95	4,517.27	118.74	27.57	-30.38	1,424.23	-657.99	5,390.38	5,332.45	57.94	93.038	
9,700.00	6,051.34	4,834.90	4,513.66	119.32	27.53	-30.27	1,422.57	-657.20	5,409.19	5,351.27	57.92	93.384	
9,720.00	6,051.14	4,830.86	4,510.06	119.91	27.50	-30.17	1,420.90	-656.42	5,428.00	5,370.09	57.91	93.731	
9,740.00	6,050.95	4,826.81	4,506.46	120.49	27.47	-30.07	1,419.24	-655.64	5,446.82	5,388.93	57.90	94.079	
9,760.00	6,050.75	4,822.76	4,502.85	121.08	27.44	-29.97	1,417.57	-654.85	5,465.65	5,407.76	57.88	94.427	
9,780.00	6,050.56	4,818.72	4,499.25	121.67	27.41	-29.87	1,415.91	-654.07	5,484.47	5,426.61	57.87	94.777	
9,800.00	6,050.36	4,814.67	4,495.64	122.25	27.38	-29.77	1,414.24	-653.29	5,503.31	5,445.46	57.85	95.127	
9,820.00	6,050.17	4,810.62	4,492.04	122.84	27.35	-29.67	1,412.58	-652.50	5,522.15	5,464.31	57.84	95.477	
9,840.00	6,049.97	4,806.58	4,488.44	123.42	27.32	-29.57	1,410.91	-651.72	5,540.99	5,483.17	57.82	95.829	
9,860.00	6,049.78	4,802.53	4,484.83	124.01	27.28	-29.47	1,409.25	-650.94	5,559.84	5,502.04	57.81	96.182	
9,880.00	6,049.58	4,798.48	4,481.23	124.60	27.25	-29.37	1,407.58	-650.15	5,578.70	5,520.91	57.79	96.535	
9,900.00	6,049.39	4,794.44	4,477.62	125.18	27.22	-29.27	1,405.92	-649.37	5,597.56	5,539.78	57.77	96.889	
9,920.00	6,049.19	4,790.39	4,474.02	125.77	27.19	-29.18	1,404.25	-648.58	5,616.42	5,558.67	57.76	97.243	
9,940.00	6,049.00	4,786.35	4,470.42	126.35	27.16	-29.08	1,402.59	-647.80	5,635.29	5,577.55	57.74	97.599	
9,960.00	6,048.80	4,782.30	4,466.81	126.94	27.13	-28.98	1,400.92	-647.02	5,654.17	5,596.44	57.72	97.955	
9,980.00	6,048.61	4,778.25	4,463.21	127.53	27.10	-28.88	1,399.26	-646.23	5,673.05	5,615.34	57.70	98.312	
10,000.00	6,048.42	4,774.21	4,459.60	128.11	27.07	-28.78	1,397.59	-645.45	5,691.93	5,634.24	57.69	98.669	
10,020.00	6,048.22	4,770.16	4,456.00	128.70	27.04	-28.69	1,395.93	-644.67	5,710.82	5,653.15	57.67	99.028	
10,040.00	6,048.03	4,766.11	4,452.40	129.29	27.00	-28.59	1,394.26	-643.88	5,729.71	5,672.06	57.65	99.387	
10,060.00	6,047.83	4,762.07	4,448.79	129.88	26.97	-28.49	1,392.60	-643.10	5,748.61	5,690.98	57.63	99.747	
10,080.00	6,047.64	4,758.02	4,445.19	130.46	26.94	-28.39	1,390.93	-642.31	5,767.51	5,709.90	57.61	100.108	
10,100.00	6,047.44	4,753.97	4,441.59	131.05	26.91	-28.30	1,389.27	-641.53	5,786.42	5,728.83	57.59	100.469	
10,120.00	6,047.25	4,749.93	4,437.98	131.64	26.88	-28.20	1,387.60	-640.75	5,805.33	5,747.76	57.57	100.832	
10,140.00	6,047.05	4,745.88	4,434.38	132.23	26.85	-28.11	1,385.94	-639.96	5,824.25	5,766.70	57.55	101.195	
10,160.00	6,046.86	4,741.83	4,430.77	132.81	26.82	-28.01	1,384.27	-639.18	5,843.17	5,785.64	57.54	101.558	
10,180.00	6,046.66	4,737.79	4,427.17	133.40	26.79	-27.91	1,382.61	-638.40	5,862.10	5,804.58	57.52	101.923	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	6,046.47	4,733.74	4,423.57	133.99	26.76	-27.82	1,380.94	-637.61	5,881.03	5,823.53	57.49	102.288	
10,220.00	6,046.27	4,729.69	4,419.96	134.58	26.72	-27.72	1,379.28	-636.83	5,899.96	5,842.49	57.47	102.654	
10,240.00	6,046.08	4,725.65	4,416.36	135.17	26.69	-27.63	1,377.61	-636.05	5,918.90	5,861.44	57.45	103.021	
10,260.00	6,045.88	4,721.60	4,412.75	135.75	26.66	-27.53	1,375.95	-635.26	5,937.84	5,880.41	57.43	103.388	
10,280.00	6,045.69	4,717.55	4,409.15	136.34	26.63	-27.44	1,374.28	-634.48	5,956.79	5,899.38	57.41	103.757	
10,300.00	6,045.49	4,713.51	4,405.55	136.93	26.60	-27.35	1,372.62	-633.69	5,975.74	5,918.35	57.39	104.126	
10,320.00	6,045.30	4,709.46	4,401.94	137.52	26.57	-27.25	1,370.95	-632.91	5,994.69	5,937.32	57.37	104.495	
10,340.00	6,045.10	4,705.41	4,398.34	138.11	26.54	-27.16	1,369.29	-632.13	6,013.65	5,956.30	57.35	104.866	
10,360.00	6,044.91	4,701.37	4,394.73	138.70	26.51	-27.06	1,367.62	-631.34	6,032.61	5,975.29	57.32	105.237	
10,380.00	6,044.71	4,697.32	4,391.13	139.28	26.47	-26.97	1,365.96	-630.56	6,051.58	5,994.28	57.30	105.609	
10,400.00	6,044.52	4,693.27	4,387.53	139.87	26.44	-26.88	1,364.29	-629.78	6,070.55	6,013.27	57.28	105.982	
10,420.00	6,044.32	4,689.23	4,383.92	140.46	26.41	-26.79	1,362.63	-628.99	6,089.53	6,032.27	57.26	106.355	
10,440.00	6,044.13	4,685.18	4,380.32	141.05	26.38	-26.69	1,360.96	-628.21	6,108.50	6,051.27	57.23	106.729	
10,460.00	6,043.93	4,681.13	4,376.71	141.64	26.35	-26.60	1,359.30	-627.42	6,127.49	6,070.28	57.21	107.104	
10,480.00	6,043.74	4,677.09	4,373.11	142.23	26.32	-26.51	1,357.63	-626.64	6,146.47	6,089.28	57.19	107.480	
10,500.00	6,043.54	4,673.04	4,369.51	142.82	26.29	-26.42	1,355.97	-625.86	6,165.46	6,108.30	57.16	107.856	
10,520.00	6,043.35	4,668.99	4,365.90	143.41	26.26	-26.33	1,354.30	-625.07	6,184.45	6,127.31	57.14	108.233	
10,540.00	6,043.16	4,664.95	4,362.30	144.00	26.23	-26.23	1,352.64	-624.29	6,203.45	6,146.34	57.12	108.611	
10,560.00	6,042.96	4,660.90	4,358.69	144.59	26.19	-26.14	1,350.97	-623.51	6,222.45	6,165.36	57.09	108.989	
10,580.00	6,042.77	4,656.85	4,355.09	145.18	26.16	-26.05	1,349.31	-622.72	6,241.46	6,184.39	57.07	109.369	
10,600.00	6,042.57	4,652.81	4,351.49	145.77	26.13	-25.96	1,347.64	-621.94	6,260.47	6,203.42	57.04	109.749	
10,620.00	6,042.38	4,648.76	4,347.88	146.36	26.10	-25.87	1,345.98	-621.16	6,279.48	6,222.46	57.02	110.129	
10,640.00	6,042.18	4,644.71	4,344.28	146.95	26.07	-25.78	1,344.31	-620.37	6,298.49	6,241.50	56.99	110.511	
10,660.00	6,041.99	4,640.67	4,340.67	147.54	26.04	-25.69	1,342.65	-619.59	6,317.51	6,260.54	56.97	110.893	
10,680.00	6,041.79	4,636.62	4,337.07	148.13	26.01	-25.60	1,340.98	-618.80	6,336.53	6,279.59	56.94	111.276	
10,700.00	6,041.60	4,632.57	4,333.47	148.71	25.98	-25.51	1,339.32	-618.02	6,355.56	6,298.64	56.92	111.659	
10,720.00	6,041.40	4,628.53	4,329.86	149.30	25.95	-25.42	1,337.65	-617.24	6,374.59	6,317.69	56.89	112.044	
10,740.00	6,041.21	4,624.48	4,326.26	149.90	25.91	-25.33	1,335.99	-616.45	6,393.62	6,336.75	56.87	112.429	
10,760.00	6,041.01	4,620.43	4,322.65	150.49	25.88	-25.25	1,334.32	-615.67	6,412.65	6,355.81	56.84	112.814	
10,780.00	6,040.82	4,616.39	4,319.05	151.08	25.85	-25.16	1,332.66	-614.89	6,431.69	6,374.88	56.82	113.201	
10,800.00	6,040.62	4,612.34	4,315.45	151.67	25.82	-25.07	1,330.99	-614.10	6,450.74	6,393.95	56.79	113.588	
10,820.00	6,040.43	4,608.29	4,311.84	152.26	25.79	-24.98	1,329.33	-613.32	6,469.78	6,413.02	56.76	113.976	
10,840.00	6,040.23	4,604.25	4,308.24	152.85	25.76	-24.89	1,327.66	-612.53	6,488.83	6,432.09	56.74	114.365	
10,860.00	6,040.04	4,600.20	4,304.64	153.44	25.73	-24.81	1,326.00	-611.75	6,507.88	6,451.17	56.71	114.754	
10,880.00	6,039.84	4,596.15	4,301.03	154.03	25.70	-24.72	1,324.33	-610.97	6,526.94	6,470.25	56.69	115.144	
10,900.00	6,039.65	4,592.11	4,297.43	154.62	25.67	-24.63	1,322.67	-610.18	6,545.99	6,489.34	56.66	115.535	
10,920.00	6,039.45	4,588.06	4,293.82	155.21	25.63	-24.54	1,321.00	-609.40	6,565.06	6,508.42	56.63	115.926	
10,940.00	6,039.26	4,584.01	4,290.22	155.80	25.60	-24.46	1,319.34	-608.62	6,584.12	6,527.52	56.60	116.318	
10,960.00	6,039.06	4,579.97	4,286.62	156.39	25.57	-24.37	1,317.67	-607.83	6,603.19	6,546.61	56.58	116.711	
10,980.00	6,038.87	4,575.92	4,283.01	156.98	25.54	-24.29	1,316.00	-607.05	6,622.26	6,565.71	56.55	117.105	
11,000.00	6,038.67	4,571.88	4,279.41	157.57	25.51	-24.20	1,314.34	-606.27	6,641.33	6,584.81	56.52	117.499	
11,020.00	6,038.48	4,567.83	4,275.80	158.16	25.48	-24.11	1,312.67	-605.48	6,660.41	6,603.91	56.50	117.894	
11,040.00	6,038.28	4,563.78	4,272.20	158.75	25.45	-24.03	1,311.01	-604.70	6,679.49	6,623.02	56.47	118.289	
11,060.00	6,038.09	4,559.74	4,268.60	159.34	25.42	-23.94	1,309.34	-603.91	6,698.57	6,642.13	56.44	118.686	
11,080.00	6,037.90	4,555.69	4,264.99	159.94	25.39	-23.86	1,307.68	-603.13	6,717.65	6,661.24	56.41	119.083	
11,100.00	6,037.70	4,551.64	4,261.39	160.53	25.35	-23.77	1,306.01	-602.35	6,736.74	6,680.36	56.38	119.481	
11,120.00	6,037.51	4,547.60	4,257.78	161.12	25.32	-23.69	1,304.35	-601.56	6,755.83	6,699.48	56.36	119.879	
11,140.00	6,037.31	4,543.55	4,254.18	161.71	25.29	-23.60	1,302.68	-600.78	6,774.93	6,718.60	56.33	120.278	
11,160.00	6,037.12	4,539.50	4,250.58	162.30	25.26	-23.52	1,301.02	-600.00	6,794.02	6,737.73	56.30	120.678	
11,180.00	6,036.92	4,535.46	4,246.97	162.89	25.23	-23.44	1,299.35	-599.21	6,813.12	6,756.85	56.27	121.079	
11,200.00	6,036.73	4,531.41	4,243.37	163.48	25.20	-23.35	1,297.69	-598.43	6,832.23	6,775.98	56.24	121.480	
11,220.00	6,036.53	4,527.36	4,239.76	164.07	25.17	-23.27	1,296.02	-597.64	6,851.33	6,795.12	56.21	121.882	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,240.00	6,036.34	4,523.32	4,236.16	164.67	25.14	-23.18	1,294.36	-596.86	6,870.44	6,814.25	56.18	122.285	
11,260.00	6,036.14	4,519.27	4,232.56	165.26	25.11	-23.10	1,292.69	-596.08	6,889.55	6,833.39	56.16	122.688	
11,280.00	6,035.95	4,515.22	4,228.95	165.85	25.07	-23.02	1,291.03	-595.29	6,908.66	6,852.53	56.13	123.092	
11,300.00	6,035.75	4,511.18	4,225.35	166.44	25.04	-22.94	1,289.36	-594.51	6,927.78	6,871.68	56.10	123.497	
11,320.00	6,035.56	4,507.13	4,221.74	167.03	25.01	-22.85	1,287.70	-593.73	6,946.89	6,890.83	56.07	123.902	
11,340.00	6,035.36	4,503.08	4,218.14	167.62	24.98	-22.77	1,286.03	-592.94	6,966.02	6,909.98	56.04	124.308	
11,360.00	6,035.17	4,499.04	4,214.54	168.22	24.95	-22.69	1,284.37	-592.16	6,985.14	6,929.13	56.01	124.715	
11,380.00	6,034.97	4,494.99	4,210.93	168.81	24.92	-22.61	1,282.70	-591.38	7,004.26	6,948.29	55.98	125.123	
11,400.00	6,034.78	4,490.94	4,207.33	169.40	24.89	-22.53	1,281.04	-590.59	7,023.39	6,967.44	55.95	125.531	
11,420.00	6,034.58	4,486.90	4,203.72	169.99	24.86	-22.44	1,279.37	-589.81	7,042.52	6,986.60	55.92	125.940	
11,440.00	6,034.39	4,482.85	4,200.12	170.58	24.83	-22.36	1,277.71	-589.02	7,061.66	7,005.77	55.89	126.349	
11,460.00	6,034.19	4,478.80	4,196.52	171.18	24.80	-22.28	1,276.04	-588.24	7,080.79	7,024.93	55.86	126.759	
11,480.00	6,034.00	4,474.76	4,192.91	171.77	24.76	-22.20	1,274.38	-587.46	7,099.93	7,044.10	55.83	127.170	
11,500.00	6,033.80	4,470.71	4,189.31	172.36	24.73	-22.12	1,272.71	-586.67	7,119.07	7,063.27	55.80	127.582	
11,520.00	6,033.61	4,466.66	4,185.71	172.95	24.70	-22.04	1,271.05	-585.89	7,138.22	7,082.45	55.77	127.994	
11,540.00	6,033.41	4,462.62	4,182.10	173.55	24.67	-21.96	1,269.38	-585.11	7,157.36	7,101.62	55.74	128.407	
11,560.00	6,033.22	4,458.57	4,178.50	174.14	24.64	-21.88	1,267.72	-584.32	7,176.51	7,120.80	55.71	128.820	
11,580.00	6,033.02	4,454.52	4,174.89	174.73	24.61	-21.80	1,266.05	-583.54	7,195.66	7,139.98	55.68	129.234	
11,600.00	6,032.83	4,450.48	4,171.29	175.32	24.58	-21.72	1,264.39	-582.75	7,214.81	7,159.16	55.65	129.649	
11,620.00	6,032.64	4,446.43	4,167.69	175.91	24.55	-21.64	1,262.72	-581.97	7,233.97	7,178.35	55.62	130.065	
11,640.00	6,032.44	4,442.38	4,164.08	176.51	24.52	-21.56	1,261.06	-581.19	7,253.12	7,197.54	55.59	130.481	
11,660.00	6,032.25	4,438.34	4,160.48	177.10	24.49	-21.48	1,259.39	-580.40	7,272.28	7,216.73	55.56	130.898	
11,680.00	6,032.05	4,434.29	4,156.87	177.69	24.45	-21.40	1,257.73	-579.62	7,291.45	7,235.92	55.53	131.316	
11,700.00	6,031.86	4,430.24	4,153.27	178.28	24.42	-21.33	1,256.06	-578.84	7,310.61	7,255.11	55.50	131.734	
11,720.00	6,031.66	4,426.20	4,149.67	178.88	24.39	-21.25	1,254.40	-578.05	7,329.78	7,274.31	55.46	132.153	
11,740.00	6,031.47	4,422.15	4,146.06	179.47	24.36	-21.17	1,252.73	-577.27	7,348.95	7,293.51	55.43	132.573	
11,760.00	6,031.27	4,418.10	4,142.46	180.06	24.33	-21.09	1,251.07	-576.49	7,368.12	7,312.71	55.40	132.993	
11,780.00	6,031.08	4,414.06	4,138.85	180.65	24.30	-21.01	1,249.40	-575.70	7,387.29	7,331.92	55.37	133.414	
11,800.00	6,030.88	4,410.01	4,135.25	181.25	24.27	-20.94	1,247.74	-574.92	7,406.46	7,351.12	55.34	133.836	
11,820.00	6,030.69	4,405.96	4,131.65	181.84	24.24	-20.86	1,246.07	-574.13	7,425.64	7,370.33	55.31	134.258	
11,840.00	6,030.49	4,401.92	4,128.04	182.43	24.21	-20.78	1,244.41	-573.35	7,444.82	7,389.54	55.28	134.681	
11,860.00	6,030.30	4,397.87	4,124.44	183.03	24.17	-20.71	1,242.74	-572.57	7,464.00	7,408.76	55.25	135.105	
11,880.00	6,030.10	4,393.82	4,120.83	183.62	24.14	-20.63	1,241.08	-571.78	7,483.19	7,427.97	55.21	135.529	
11,900.00	6,029.91	4,389.78	4,117.23	184.21	24.11	-20.55	1,239.41	-571.00	7,502.37	7,447.19	55.18	135.954	
11,920.00	6,029.71	4,385.73	4,113.63	184.80	24.08	-20.48	1,237.75	-570.22	7,521.56	7,466.41	55.15	136.379	
11,940.00	6,029.52	4,381.68	4,110.02	185.40	24.05	-20.40	1,236.08	-569.43	7,540.75	7,485.63	55.12	136.805	
11,960.00	6,029.32	4,377.64	4,106.42	185.99	24.02	-20.32	1,234.42	-568.65	7,559.94	7,504.85	55.09	137.232	
11,980.00	6,029.13	4,373.59	4,102.81	186.58	23.99	-20.25	1,232.75	-567.86	7,579.13	7,524.08	55.06	137.660	
12,000.00	6,028.93	4,369.54	4,099.21	187.18	23.96	-20.17	1,231.09	-567.08	7,598.33	7,543.30	55.03	138.088	
12,020.00	6,028.74	4,365.50	4,095.61	187.77	23.93	-20.10	1,229.42	-566.30	7,617.53	7,562.53	54.99	138.516	
12,040.00	6,028.54	4,361.45	4,092.00	188.36	23.90	-20.02	1,227.76	-565.51	7,636.73	7,581.77	54.96	138.946	
12,060.00	6,028.35	4,357.40	4,088.40	188.96	23.87	-19.95	1,226.09	-564.73	7,655.93	7,601.00	54.93	139.376	
12,080.00	6,028.15	4,353.36	4,084.79	189.55	23.83	-19.87	1,224.43	-563.95	7,675.13	7,620.24	54.90	139.807	
12,100.00	6,027.96	4,349.31	4,081.19	190.14	23.80	-19.80	1,222.76	-563.16	7,694.34	7,639.47	54.87	140.238	
12,120.00	6,027.76	4,345.27	4,077.59	190.74	23.77	-19.73	1,221.10	-562.38	7,713.55	7,658.71	54.83	140.670	
12,140.00	6,027.57	4,341.22	4,073.98	191.33	23.74	-19.65	1,219.43	-561.60	7,732.76	7,677.95	54.80	141.103	
12,160.00	6,027.37	4,337.17	4,070.38	191.92	23.71	-19.58	1,217.77	-560.81	7,751.97	7,697.20	54.77	141.536	
12,180.00	6,027.18	4,333.13	4,066.78	192.52	23.68	-19.50	1,216.10	-560.03	7,771.18	7,716.44	54.74	141.970	
12,200.00	6,026.99	4,329.08	4,063.17	193.11	23.65	-19.43	1,214.44	-559.24	7,790.40	7,735.69	54.71	142.405	
12,220.00	6,026.79	4,325.03	4,059.57	193.70	23.62	-19.36	1,212.77	-558.46	7,809.61	7,754.94	54.67	142.840	
12,240.00	6,026.60	4,320.99	4,055.96	194.30	23.59	-19.28	1,211.11	-557.68	7,828.83	7,774.19	54.64	143.276	
12,260.00	6,026.40	4,316.94	4,052.36	194.89	23.56	-19.21	1,209.44	-556.89	7,848.05	7,793.44	54.61	143.712	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,280.00	6,026.21	4,312.89	4,048.76	195.48	23.52	-19.14	1,207.77	-556.11	7,867.27	7,812.70	54.58	144.149	
12,300.00	6,026.01	4,308.85	4,045.15	196.08	23.49	-19.07	1,206.11	-555.33	7,886.50	7,831.95	54.54	144.587	
12,320.00	6,025.82	4,304.80	4,041.55	196.67	23.46	-18.99	1,204.44	-554.54	7,905.72	7,851.21	54.51	145.026	
12,340.00	6,025.62	4,300.75	4,037.94	197.26	23.43	-18.92	1,202.78	-553.76	7,924.95	7,870.47	54.48	145.465	
12,360.00	6,025.43	4,296.71	4,034.34	197.86	23.40	-18.85	1,201.11	-552.98	7,944.18	7,889.73	54.45	145.904	
12,380.00	6,025.23	4,292.66	4,030.74	198.45	23.37	-18.78	1,199.45	-552.19	7,963.41	7,909.00	54.42	146.344	
12,400.00	6,025.04	4,288.61	4,027.13	199.05	23.34	-18.71	1,197.78	-551.41	7,982.65	7,928.26	54.38	146.785	
12,420.00	6,024.84	4,284.57	4,023.53	199.64	23.31	-18.63	1,196.12	-550.62	8,001.88	7,947.53	54.35	147.227	
12,440.00	6,024.65	4,280.52	4,019.92	200.23	23.28	-18.56	1,194.45	-549.84	8,021.12	7,966.80	54.32	147.669	
12,460.00	6,024.45	4,276.47	4,016.32	200.83	23.25	-18.49	1,192.79	-549.06	8,040.35	7,986.07	54.29	148.111	
12,480.00	6,024.26	4,272.43	4,012.72	201.42	23.21	-18.42	1,191.12	-548.27	8,059.59	8,005.34	54.25	148.555	
12,500.00	6,024.06	4,268.38	4,009.11	202.02	23.18	-18.35	1,189.46	-547.49	8,078.84	8,024.62	54.22	148.999	
12,520.00	6,023.87	4,264.33	4,005.51	202.61	23.15	-18.28	1,187.79	-546.71	8,098.08	8,043.89	54.19	149.443	
12,540.00	6,023.67	4,260.29	4,001.90	203.20	23.12	-18.21	1,186.13	-545.92	8,117.32	8,063.17	54.16	149.888	
12,560.00	6,023.48	4,256.24	3,998.30	203.80	23.09	-18.14	1,184.46	-545.14	8,136.57	8,082.45	54.12	150.334	
12,580.00	6,023.28	4,252.19	3,994.70	204.39	23.06	-18.07	1,182.80	-544.35	8,155.82	8,101.73	54.09	150.780	
12,600.00	6,023.09	4,248.15	3,991.09	204.98	23.03	-18.00	1,181.13	-543.57	8,175.07	8,121.01	54.06	151.228	
12,620.00	6,022.89	4,244.10	3,987.49	205.58	23.00	-17.93	1,179.47	-542.79	8,194.32	8,140.29	54.03	151.675	
12,640.00	6,022.70	4,240.05	3,983.88	206.17	22.97	-17.86	1,177.80	-542.00	8,213.57	8,159.58	53.99	152.123	
12,660.00	6,022.50	4,236.01	3,980.28	206.77	22.94	-17.79	1,176.14	-541.22	8,232.83	8,178.87	53.96	152.572	
12,680.00	6,022.31	4,231.96	3,976.68	207.36	22.91	-17.72	1,174.47	-540.44	8,252.08	8,198.15	53.93	153.022	
12,700.00	6,022.11	4,227.91	3,973.07	207.96	22.87	-17.65	1,172.81	-539.65	8,271.34	8,217.44	53.89	153.472	
12,720.00	6,021.92	4,223.87	3,969.47	208.55	22.84	-17.59	1,171.14	-538.87	8,290.60	8,236.74	53.86	153.922	
12,740.00	6,021.73	4,219.82	3,965.86	209.14	22.81	-17.52	1,169.48	-538.09	8,309.86	8,256.03	53.83	154.373	
12,760.00	6,021.53	4,215.77	3,962.26	209.74	22.78	-17.45	1,167.81	-537.30	8,329.12	8,275.32	53.80	154.825	
12,780.00	6,021.34	4,211.73	3,958.66	210.33	22.75	-17.38	1,166.15	-536.52	8,348.38	8,294.62	53.76	155.278	
12,800.00	6,021.14	4,207.68	3,955.05	210.93	22.72	-17.31	1,164.48	-535.73	8,367.65	8,313.92	53.73	155.731	
12,820.00	6,020.95	4,203.63	3,951.45	211.52	22.69	-17.25	1,162.82	-534.95	8,386.92	8,333.22	53.70	156.185	
12,840.00	6,020.75	4,199.59	3,947.85	212.11	22.66	-17.18	1,161.15	-534.17	8,406.18	8,352.52	53.67	156.639	
12,860.00	6,020.56	4,195.54	3,944.24	212.71	22.63	-17.11	1,159.49	-533.38	8,425.45	8,371.82	53.63	157.093	
12,880.00	6,020.36	4,191.49	3,940.64	213.30	22.60	-17.04	1,157.82	-532.60	8,444.72	8,391.12	53.60	157.549	
12,900.00	6,020.17	4,187.45	3,937.03	213.90	22.57	-16.98	1,156.16	-531.82	8,464.00	8,410.43	53.57	158.005	
12,920.00	6,019.97	4,183.40	3,933.43	214.49	22.54	-16.91	1,154.49	-531.03	8,483.27	8,429.73	53.54	158.461	
12,940.00	6,019.78	4,179.35	3,929.83	215.09	22.50	-16.84	1,152.83	-530.25	8,502.54	8,449.04	53.50	158.918	
12,960.00	6,019.58	4,175.31	3,926.22	215.68	22.47	-16.78	1,151.16	-529.46	8,521.82	8,468.35	53.47	159.376	
12,980.00	6,019.39	4,171.26	3,922.62	216.28	22.44	-16.71	1,149.50	-528.68	8,541.10	8,487.66	53.44	159.834	
13,000.00	6,019.19	4,167.21	3,919.01	216.87	22.41	-16.64	1,147.83	-527.90	8,560.38	8,506.97	53.40	160.293	
13,020.00	6,019.00	4,163.17	3,915.41	217.46	22.38	-16.58	1,146.17	-527.11	8,579.66	8,526.29	53.37	160.752	
13,040.00	6,018.80	4,159.12	3,911.81	218.06	22.35	-16.51	1,144.50	-526.33	8,598.94	8,545.60	53.34	161.212	
13,060.00	6,018.61	4,155.07	3,908.20	218.65	22.32	-16.45	1,142.84	-525.55	8,618.23	8,564.92	53.31	161.672	
13,080.00	6,018.41	4,151.03	3,904.60	219.25	22.29	-16.38	1,141.17	-524.76	8,637.51	8,584.24	53.27	162.133	
13,100.00	6,018.22	4,146.98	3,900.99	219.84	22.26	-16.31	1,139.51	-523.98	8,656.80	8,603.56	53.24	162.595	
13,120.00	6,018.02	4,142.93	3,897.39	220.44	22.23	-16.25	1,137.84	-523.20	8,676.08	8,622.88	53.21	163.057	
13,140.00	6,017.83	4,138.89	3,893.79	221.03	22.20	-16.18	1,136.18	-522.41	8,695.37	8,642.20	53.18	163.520	
13,160.00	6,017.63	4,134.84	3,890.18	221.63	22.16	-16.12	1,134.51	-521.63	8,714.66	8,661.52	53.14	163.983	
13,180.00	6,017.44	4,130.79	3,886.58	222.22	22.13	-16.06	1,132.85	-520.84	8,733.96	8,680.84	53.11	164.447	
13,200.00	6,017.24	4,126.75	3,882.97	222.82	22.10	-15.99	1,131.18	-520.06	8,753.25	8,700.17	53.08	164.912	
13,220.00	6,017.05	4,122.70	3,879.37	223.41	22.07	-15.93	1,129.52	-519.28	8,772.54	8,719.50	53.05	165.377	
13,240.00	6,016.85	4,118.66	3,875.77	224.01	22.04	-15.86	1,127.85	-518.49	8,791.84	8,738.82	53.01	165.842	
13,260.00	6,016.66	4,114.61	3,872.16	224.60	22.01	-15.80	1,126.19	-517.71	8,811.13	8,758.15	52.98	166.308	
13,280.00	6,016.47	4,110.56	3,868.56	225.20	21.98	-15.73	1,124.52	-516.93	8,830.43	8,777.48	52.95	166.775	
13,300.00	6,016.27	4,106.52	3,864.95	225.79	21.95	-15.67	1,122.86	-516.14	8,849.73	8,796.82	52.92	167.243	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,320.00	6,016.08	4,102.47	3,861.35	226.38	21.92	-15.61	1,121.19	-515.36	8,869.03	8,816.15	52.88	167.710	
13,340.00	6,015.88	4,098.42	3,857.75	226.98	21.89	-15.54	1,119.53	-514.57	8,888.33	8,835.48	52.85	168.178	
13,360.00	6,015.69	4,094.38	3,854.14	227.57	21.86	-15.48	1,117.86	-513.79	8,907.64	8,854.82	52.82	168.647	
13,380.00	6,015.49	4,090.33	3,850.54	228.17	21.83	-15.42	1,116.20	-513.01	8,926.94	8,874.16	52.79	169.116	
13,400.00	6,015.30	4,086.28	3,846.93	228.76	21.80	-15.36	1,114.53	-512.22	8,946.25	8,893.49	52.75	169.586	
13,420.00	6,015.10	4,082.24	3,843.33	229.36	21.76	-15.29	1,112.87	-511.44	8,965.55	8,912.83	52.72	170.057	
13,440.00	6,014.91	4,078.19	3,839.73	229.95	21.73	-15.23	1,111.20	-510.66	8,984.86	8,932.17	52.69	170.527	
13,460.00	6,014.71	4,074.14	3,836.12	230.55	21.70	-15.17	1,109.54	-509.87	9,004.17	8,951.52	52.66	170.999	
13,480.00	6,014.52	4,070.10	3,832.52	231.14	21.67	-15.11	1,107.87	-509.09	9,023.48	8,970.86	52.62	171.471	
13,500.00	6,014.32	4,066.05	3,828.92	231.74	21.64	-15.04	1,106.21	-508.31	9,042.79	8,990.20	52.59	171.943	
13,520.00	6,014.13	4,062.00	3,825.31	232.33	21.61	-14.98	1,104.54	-507.52	9,062.11	9,009.55	52.56	172.416	
13,540.00	6,013.93	4,057.96	3,821.71	232.93	21.58	-14.92	1,102.88	-506.74	9,081.42	9,028.89	52.53	172.890	
13,560.00	6,013.74	4,053.91	3,818.10	233.52	21.55	-14.86	1,101.21	-505.95	9,100.74	9,048.24	52.50	173.364	
13,580.00	6,013.54	4,049.86	3,814.50	234.12	21.52	-14.80	1,099.55	-505.17	9,120.05	9,067.59	52.46	173.838	
13,600.00	6,013.35	4,045.82	3,810.90	234.71	21.49	-14.74	1,097.88	-504.39	9,139.37	9,086.94	52.43	174.314	
13,620.00	6,013.15	4,041.77	3,807.29	235.31	21.46	-14.67	1,096.21	-503.60	9,158.69	9,106.29	52.40	174.789	
13,640.00	6,012.96	4,037.72	3,803.69	235.90	21.43	-14.61	1,094.55	-502.82	9,178.01	9,125.64	52.37	175.265	
13,660.00	6,012.76	4,033.68	3,800.08	236.50	21.40	-14.55	1,092.88	-502.04	9,197.33	9,144.99	52.33	175.742	
13,680.00	6,012.57	4,029.63	3,796.48	237.09	21.36	-14.49	1,091.22	-501.25	9,216.65	9,164.35	52.30	176.219	
13,700.00	6,012.37	4,025.58	3,792.88	237.69	21.33	-14.43	1,089.55	-500.47	9,235.97	9,183.70	52.27	176.697	
13,720.00	6,012.18	4,021.54	3,789.27	238.28	21.30	-14.37	1,087.89	-499.68	9,255.30	9,203.06	52.24	177.175	
13,740.00	6,011.98	4,017.49	3,785.67	238.88	21.27	-14.31	1,086.22	-498.90	9,274.62	9,222.42	52.21	177.654	
13,760.00	6,011.79	4,013.44	3,782.06	239.48	21.24	-14.25	1,084.56	-498.12	9,293.95	9,241.77	52.17	178.133	
13,780.00	6,011.59	4,009.40	3,778.46	240.07	21.21	-14.19	1,082.89	-497.33	9,313.28	9,261.13	52.14	178.613	
13,800.00	6,011.40	4,005.35	3,774.86	240.67	21.18	-14.13	1,081.23	-496.55	9,332.60	9,280.49	52.11	179.093	
13,820.00	6,011.21	4,001.30	3,771.25	241.26	21.15	-14.07	1,079.56	-495.77	9,351.93	9,299.86	52.08	179.573	
13,840.00	6,011.01	3,997.26	3,767.65	241.86	21.12	-14.01	1,077.90	-494.98	9,371.26	9,319.22	52.05	180.054	
13,860.00	6,010.82	3,993.21	3,764.04	242.45	21.09	-13.95	1,076.23	-494.20	9,390.60	9,338.58	52.02	180.536	
13,880.00	6,010.62	3,989.16	3,760.44	243.05	21.06	-13.90	1,074.57	-493.42	9,409.93	9,357.95	51.98	181.018	
13,900.00	6,010.43	3,985.12	3,756.84	243.64	21.03	-13.84	1,072.90	-492.63	9,429.26	9,377.31	51.95	181.500	
13,920.00	6,010.23	3,981.07	3,753.23	244.24	21.00	-13.78	1,071.24	-491.85	9,448.60	9,396.68	51.92	181.983	
13,940.00	6,010.04	3,977.02	3,749.63	244.83	20.96	-13.72	1,069.57	-491.06	9,467.93	9,416.05	51.89	182.466	
13,960.00	6,009.84	3,972.98	3,746.02	245.43	20.93	-13.66	1,067.91	-490.28	9,487.27	9,435.41	51.86	182.950	
13,980.00	6,009.65	3,968.93	3,742.42	246.02	20.90	-13.60	1,066.24	-489.50	9,506.61	9,454.78	51.83	183.435	
14,000.00	6,009.45	3,964.88	3,738.82	246.62	20.87	-13.54	1,064.58	-488.71	9,525.95	9,474.15	51.79	183.920	
14,020.00	6,009.26	3,960.84	3,735.21	247.21	20.84	-13.49	1,062.91	-487.93	9,545.29	9,493.52	51.76	184.405	
14,040.00	6,009.06	3,956.79	3,731.61	247.81	20.81	-13.43	1,061.25	-487.15	9,564.63	9,512.90	51.73	184.890	
14,060.00	6,008.87	3,952.74	3,728.00	248.41	20.78	-13.37	1,059.58	-486.36	9,583.97	9,532.27	51.70	185.377	
14,080.00	6,008.67	3,948.70	3,724.40	249.00	20.75	-13.31	1,057.92	-485.58	9,603.31	9,551.64	51.67	185.863	
14,100.00	6,008.48	3,944.65	3,720.80	249.60	20.72	-13.26	1,056.25	-484.79	9,622.66	9,571.02	51.64	186.351	
14,120.00	6,008.28	3,940.60	3,717.19	250.19	20.69	-13.20	1,054.59	-484.01	9,642.00	9,590.40	51.61	186.838	
14,140.00	6,008.09	3,936.56	3,713.59	250.79	20.66	-13.14	1,052.92	-483.23	9,661.35	9,609.77	51.57	187.326	
14,160.00	6,007.89	3,932.51	3,709.98	251.38	20.63	-13.08	1,051.26	-482.44	9,680.69	9,629.15	51.54	187.815	
14,180.00	6,007.70	3,928.46	3,706.38	251.98	20.60	-13.03	1,049.59	-481.66	9,700.04	9,648.53	51.51	188.304	
14,200.00	6,007.50	3,924.42	3,702.78	252.57	20.57	-12.97	1,047.93	-480.88	9,719.39	9,667.91	51.48	188.793	
14,220.00	6,007.31	3,920.37	3,699.17	253.17	20.54	-12.91	1,046.26	-480.09	9,738.74	9,687.29	51.45	189.283	
14,240.00	6,007.11	3,916.32	3,695.57	253.76	20.50	-12.86	1,044.60	-479.31	9,758.09	9,706.67	51.42	189.773	
14,260.00	6,006.92	3,912.28	3,691.97	254.36	20.47	-12.80	1,042.93	-478.53	9,777.44	9,726.05	51.39	190.264	
14,280.00	6,006.72	3,908.23	3,688.36	254.96	20.44	-12.75	1,041.27	-477.74	9,796.80	9,745.44	51.36	190.756	
14,300.00	6,006.53	3,904.18	3,684.76	255.55	20.41	-12.69	1,039.60	-476.96	9,816.15	9,764.82	51.33	191.247	
14,320.00	6,006.33	3,900.14	3,681.15	256.15	20.38	-12.63	1,037.94	-476.17	9,835.50	9,784.21	51.30	191.739	
14,340.00	6,006.14	3,896.09	3,677.55	256.74	20.35	-12.58	1,036.27	-475.39	9,854.86	9,803.59	51.27	192.232	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,360.00	6,005.94	3,892.05	3,673.95	257.34	20.32	-12.52	1,034.61	-474.61	9,874.22	9,822.98	51.23	192.724	
14,380.00	6,005.75	3,888.00	3,670.34	257.93	20.29	-12.47	1,032.94	-473.82	9,893.57	9,842.37	51.20	193.217	
14,400.00	6,005.56	3,883.95	3,666.74	258.53	20.26	-12.41	1,031.28	-473.04	9,912.93	9,861.76	51.17	193.711	
14,420.00	6,005.36	3,879.91	3,663.13	259.13	20.23	-12.36	1,029.61	-472.26	9,932.29	9,881.15	51.14	194.205	
14,440.00	6,005.17	3,875.86	3,659.53	259.72	20.20	-12.30	1,027.95	-471.47	9,951.65	9,900.54	51.11	194.699	
14,460.00	6,004.97	3,871.81	3,655.93	260.32	20.17	-12.25	1,026.28	-470.69	9,971.01	9,919.93	51.08	195.194	
14,480.00	6,004.78	3,867.77	3,652.32	260.91	20.14	-12.19	1,024.62	-469.90	9,990.37	9,939.32	51.05	195.689	
14,500.00	6,004.58	3,863.72	3,648.72	261.51	20.11	-12.14	1,022.95	-469.12	10,009.73	9,958.71	51.02	196.185	
14,520.00	6,004.39	3,859.67	3,645.11	262.10	20.08	-12.08	1,021.29	-468.34	10,029.10	9,978.11	50.99	196.681	
14,540.00	6,004.19	3,855.63	3,641.51	262.70	20.04	-12.03	1,019.62	-467.55	10,048.46	9,997.50	50.96	197.177	
14,560.00	6,004.00	3,851.58	3,637.91	263.30	20.01	-11.97	1,017.96	-466.77	10,067.83	10,016.89	50.93	197.674	
14,580.00	6,003.80	3,847.53	3,634.30	263.89	19.98	-11.92	1,016.29	-465.99	10,087.19	10,036.29	50.90	198.171	
14,600.00	6,003.61	3,843.49	3,630.70	264.49	19.95	-11.87	1,014.63	-465.20	10,106.56	10,055.69	50.87	198.669	
14,620.00	6,003.41	3,839.44	3,627.09	265.08	19.92	-11.81	1,012.96	-464.42	10,125.93	10,075.08	50.84	199.167	
14,640.00	6,003.22	3,835.39	3,623.49	265.68	19.89	-11.76	1,011.30	-463.64	10,145.29	10,094.48	50.81	199.665	
14,660.00	6,003.02	3,831.35	3,619.89	266.27	19.86	-11.71	1,009.63	-462.85	10,164.66	10,113.88	50.78	200.164	
14,680.00	6,002.83	3,827.30	3,616.28	266.87	19.83	-11.65	1,007.97	-462.07	10,184.03	10,133.28	50.75	200.663	
14,700.00	6,002.63	3,823.25	3,612.68	267.47	19.80	-11.60	1,006.30	-461.28	10,203.40	10,152.68	50.72	201.163	
14,720.00	6,002.44	3,819.21	3,609.07	268.06	19.77	-11.55	1,004.64	-460.50	10,222.78	10,172.08	50.69	201.662	
14,740.00	6,002.24	3,815.16	3,605.47	268.66	19.74	-11.49	1,002.97	-459.72	10,242.15	10,191.49	50.66	202.163	
14,760.00	6,002.05	3,811.11	3,601.87	269.25	19.71	-11.44	1,001.31	-458.93	10,261.52	10,210.89	50.63	202.663	
14,780.00	6,001.85	3,807.07	3,598.26	269.85	19.68	-11.39	999.64	-458.15	10,280.90	10,230.29	50.60	203.165	
14,800.00	6,001.66	3,803.02	3,594.66	270.45	19.65	-11.34	997.98	-457.37	10,300.27	10,249.70	50.57	203.666	
14,820.00	6,001.46	3,798.97	3,591.05	271.04	19.62	-11.28	996.31	-456.58	10,319.65	10,269.10	50.54	204.168	
14,840.00	6,001.27	3,794.93	3,587.45	271.64	19.59	-11.23	994.65	-455.80	10,339.02	10,288.51	50.52	204.669	
14,860.00	6,001.07	3,790.88	3,583.85	272.23	19.56	-11.18	992.98	-455.01	10,358.40	10,307.91	50.49	205.171	
14,880.00	6,000.88	3,786.83	3,580.24	272.83	19.53	-11.13	991.32	-454.23	10,377.78	10,327.32	50.46	205.674	
14,900.00	6,000.68	3,782.79	3,576.64	273.43	19.49	-11.07	989.65	-453.45	10,397.16	10,346.73	50.43	206.177	
14,920.00	6,000.49	3,778.74	3,573.04	274.02	19.46	-11.02	987.99	-452.66	10,416.54	10,366.14	50.40	206.680	
14,940.00	6,000.30	3,774.69	3,569.43	274.62	19.43	-10.97	986.32	-451.88	10,435.92	10,385.55	50.37	207.184	
14,960.00	6,000.10	3,770.65	3,565.83	275.21	19.40	-10.92	984.65	-451.10	10,455.30	10,404.96	50.34	207.687	
14,980.00	5,999.91	3,766.60	3,562.22	275.81	19.37	-10.87	982.99	-450.31	10,474.68	10,424.37	50.31	208.192	
15,000.00	5,999.71	3,762.55	3,558.62	276.41	19.34	-10.82	981.32	-449.53	10,494.06	10,443.78	50.28	208.696	
15,020.00	5,999.52	3,758.51	3,555.02	277.00	19.31	-10.77	979.66	-448.75	10,513.45	10,463.19	50.26	209.201	
15,040.00	5,999.32	3,754.46	3,551.41	277.60	19.28	-10.71	977.99	-447.96	10,532.83	10,482.61	50.23	209.706	
15,060.00	5,999.13	3,750.41	3,547.81	278.19	19.25	-10.66	976.33	-447.18	10,552.22	10,502.02	50.20	210.212	
15,080.00	5,998.93	3,746.37	3,544.20	278.79	19.22	-10.61	974.66	-446.39	10,571.60	10,521.43	50.17	210.718	
15,100.00	5,998.74	3,742.32	3,540.60	279.39	19.19	-10.56	973.00	-445.61	10,590.99	10,540.85	50.14	211.224	
15,120.00	5,998.54	3,738.27	3,537.00	279.98	19.16	-10.51	971.33	-444.83	10,610.38	10,560.26	50.11	211.731	
15,140.00	5,998.35	3,734.23	3,533.39	280.58	19.13	-10.46	969.67	-444.04	10,629.76	10,579.68	50.08	212.237	
15,160.00	5,998.15	3,730.18	3,529.79	281.17	19.10	-10.41	968.00	-443.26	10,649.15	10,599.10	50.06	212.744	
15,180.00	5,997.96	3,726.13	3,526.18	281.77	19.07	-10.36	966.34	-442.48	10,668.54	10,618.51	50.03	213.252	
15,200.00	5,997.76	3,722.09	3,522.58	282.37	19.04	-10.31	964.67	-441.69	10,687.93	10,637.93	50.00	213.760	
15,220.00	5,997.57	3,718.04	3,518.98	282.96	19.01	-10.26	963.01	-440.91	10,707.32	10,657.35	49.97	214.268	
15,240.00	5,997.37	3,713.99	3,515.37	283.56	18.98	-10.21	961.34	-440.12	10,726.72	10,676.77	49.94	214.776	
15,260.00	5,997.18	3,709.95	3,511.77	284.16	18.95	-10.16	959.68	-439.34	10,746.11	10,696.19	49.92	215.285	
15,280.00	5,996.98	3,705.90	3,508.16	284.75	18.92	-10.11	958.01	-438.56	10,765.50	10,715.61	49.89	215.794	
15,300.00	5,996.79	3,701.85	3,504.56	285.35	18.88	-10.06	956.35	-437.77	10,784.89	10,735.03	49.86	216.303	
15,320.00	5,996.59	3,697.81	3,500.96	285.94	18.85	-10.01	954.68	-436.99	10,804.29	10,754.46	49.83	216.813	
15,340.00	5,996.40	3,693.76	3,497.35	286.54	18.82	-9.97	953.02	-436.21	10,823.68	10,773.88	49.80	217.322	
15,360.00	5,996.20	3,689.71	3,493.75	287.14	18.79	-9.92	951.35	-435.42	10,843.08	10,793.30	49.78	217.831	
15,380.00	5,996.01	3,685.67	3,490.14	287.73	18.76	-9.87	949.69	-434.64	10,862.48	10,812.73	49.75	218.341	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 5H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	5,995.81	3,681.62	3,486.54	288.33	18.73	-9.82	948.02	-433.86	10,881.87	10,832.15	49.72	218.852	
15,420.00	5,995.62	3,677.57	3,482.94	288.92	18.70	-9.77	946.36	-433.07	10,901.27	10,851.57	49.70	219.362	
15,440.00	5,995.42	3,673.53	3,479.33	289.52	18.67	-9.72	944.69	-432.29	10,920.67	10,871.00	49.67	219.873	
15,460.00	5,995.23	3,669.48	3,475.73	290.12	18.64	-9.67	943.03	-431.50	10,940.07	10,890.43	49.64	220.384	
15,480.00	5,995.04	3,665.44	3,472.12	290.71	18.61	-9.62	941.36	-430.72	10,959.47	10,909.85	49.61	220.895	
15,500.00	5,994.84	3,661.39	3,468.52	291.31	18.58	-9.58	939.70	-429.94	10,978.87	10,929.28	49.59	221.407	
15,520.00	5,994.65	3,657.34	3,464.92	291.91	18.55	-9.53	938.03	-429.15	10,998.27	10,948.71	49.56	221.918	
15,540.00	5,994.45	3,653.30	3,461.31	292.50	18.52	-9.48	936.37	-428.37	11,017.67	10,968.14	49.53	222.430	
15,560.00	5,994.26	3,649.25	3,457.71	293.10	18.49	-9.43	934.70	-427.59	11,037.07	10,987.57	49.51	222.942	
15,580.00	5,994.06	3,645.20	3,454.11	293.69	18.46	-9.38	933.04	-426.80	11,056.48	11,007.00	49.48	223.455	
15,600.00	5,993.87	3,641.16	3,450.50	294.29	18.43	-9.34	931.37	-426.02	11,075.88	11,026.43	49.45	223.968	
15,620.00	5,993.67	3,637.11	3,446.90	294.89	18.40	-9.29	929.71	-425.23	11,095.28	11,045.86	49.43	224.481	
15,640.00	5,993.48	3,633.06	3,443.29	295.48	18.37	-9.24	928.04	-424.45	11,114.69	11,065.29	49.40	224.994	
15,660.00	5,993.28	3,629.02	3,439.69	296.08	18.34	-9.20	926.38	-423.67	11,134.09	11,084.72	49.37	225.507	
15,680.00	5,993.09	3,624.97	3,436.09	296.68	18.31	-9.15	924.71	-422.88	11,153.50	11,104.15	49.35	226.021	
15,700.00	5,992.89	3,620.92	3,432.48	297.27	18.28	-9.10	923.05	-422.10	11,172.91	11,123.59	49.32	226.535	
15,720.00	5,992.70	3,616.88	3,428.88	297.87	18.25	-9.05	921.38	-421.32	11,192.32	11,143.02	49.29	227.049	
15,740.00	5,992.50	3,612.83	3,425.27	298.47	18.22	-9.01	919.72	-420.53	11,211.72	11,162.45	49.27	227.563	
15,760.00	5,992.31	3,608.78	3,421.67	299.06	18.19	-8.96	918.05	-419.75	11,231.13	11,181.89	49.24	228.078	
15,780.00	5,992.11	3,604.74	3,418.07	299.66	18.16	-8.91	916.39	-418.97	11,250.54	11,201.33	49.22	228.593	
15,800.00	5,991.92	3,600.69	3,414.46	300.25	18.13	-8.87	914.72	-418.18	11,269.95	11,220.76	49.19	229.108	
15,820.00	5,991.72	3,596.64	3,410.86	300.85	18.09	-8.82	913.06	-417.40	11,289.36	11,240.20	49.16	229.623	
15,840.00	5,991.53	3,592.60	3,407.25	301.45	18.06	-8.78	911.39	-416.61	11,308.77	11,259.63	49.14	230.137	
15,860.00	5,991.33	3,588.55	3,403.65	302.04	18.03	-8.73	909.73	-415.83	11,328.19	11,279.07	49.11	230.652	
15,880.00	5,991.14	3,584.50	3,400.05	302.64	18.00	-8.68	908.06	-415.05	11,347.60	11,298.51	49.09	231.168	
15,900.00	5,990.94	3,580.46	3,396.44	303.24	17.97	-8.64	906.40	-414.26	11,367.01	11,317.95	49.06	231.683	
15,920.00	5,990.75	3,576.41	3,392.84	303.83	17.94	-8.59	904.73	-413.48	11,386.42	11,337.39	49.04	232.198	
15,940.00	5,990.55	3,572.36	3,389.23	304.43	17.91	-8.55	903.07	-412.70	11,405.84	11,356.83	49.01	232.714	
15,960.00	5,990.36	3,568.32	3,385.63	305.03	17.88	-8.50	901.40	-411.91	11,425.25	11,376.27	48.99	233.230	
15,980.00	5,990.16	3,564.27	3,382.03	305.62	17.85	-8.45	899.74	-411.13	11,444.67	11,395.71	48.96	233.746	
16,000.00	5,989.97	3,560.22	3,378.42	306.22	17.82	-8.41	898.07	-410.34	11,464.08	11,415.15	48.94	234.263	
16,020.00	5,989.78	3,556.18	3,374.82	306.82	17.79	-8.36	896.41	-409.56	11,483.50	11,434.59	48.91	234.779	
16,040.00	5,989.58	3,552.13	3,371.21	307.41	17.76	-8.32	894.74	-408.78	11,502.92	11,454.03	48.89	235.295	
16,060.00	5,989.39	3,548.08	3,367.61	308.01	17.73	-8.27	893.08	-407.99	11,522.34	11,473.47	48.86	235.812	
16,080.00	5,989.19	3,544.04	3,364.01	308.61	17.70	-8.23	891.41	-407.21	11,541.75	11,492.92	48.84	236.329	
16,100.00	5,989.00	3,539.99	3,360.40	309.20	17.67	-8.18	889.75	-406.43	11,561.17	11,512.36	48.81	236.846	
16,120.00	5,988.80	3,535.94	3,356.80	309.80	17.64	-8.14	888.08	-405.64	11,580.59	11,531.80	48.79	237.363	
16,140.00	5,988.61	3,531.90	3,353.19	310.39	17.61	-8.09	886.42	-404.86	11,600.01	11,551.25	48.76	237.880	
16,160.00	5,988.41	3,527.85	3,349.59	310.99	17.58	-8.05	884.75	-404.08	11,619.43	11,570.69	48.74	238.398	
16,180.00	5,988.22	3,523.80	3,345.99	311.59	17.55	-8.01	883.09	-403.29	11,638.85	11,590.14	48.72	238.916	
16,200.00	5,988.02	3,519.76	3,342.38	312.18	17.52	-7.96	881.42	-402.51	11,658.27	11,609.58	48.69	239.434	
16,220.00	5,987.83	3,515.71	3,338.78	312.78	17.49	-7.92	879.76	-401.72	11,677.70	11,629.03	48.67	239.951	
16,240.00	5,987.63	3,511.66	3,335.18	313.38	17.46	-7.87	878.09	-400.94	11,697.12	11,648.48	48.64	240.469	
16,260.00	5,987.44	3,507.62	3,331.57	313.97	17.43	-7.83	876.43	-400.16	11,716.54	11,667.92	48.62	240.987	
16,280.00	5,987.24	3,503.57	3,327.97	314.57	17.40	-7.79	874.76	-399.37	11,735.97	11,687.37	48.59	241.506	
16,300.00	5,987.05	3,499.52	3,324.36	315.17	17.37	-7.74	873.09	-398.59	11,755.39	11,706.82	48.57	242.024	
16,320.00	5,986.85	3,495.48	3,320.76	315.76	17.34	-7.70	871.43	-397.81	11,774.82	11,726.27	48.55	242.542	
16,340.00	5,986.66	3,491.43	3,317.16	316.36	17.31	-7.65	869.76	-397.02	11,794.24	11,745.72	48.52	243.060	
16,360.00	5,986.46	3,487.38	3,313.55	316.96	17.28	-7.61	868.10	-396.24	11,813.67	11,765.17	48.50	243.578	
16,380.00	5,986.27	3,483.34	3,309.95	317.55	17.25	-7.57	866.43	-395.45	11,833.09	11,784.62	48.48	244.096	
16,400.00	5,986.07	3,479.29	3,306.34	318.15	17.22	-7.53	864.77	-394.67	11,852.52	11,804.07	48.45	244.614	
16,407.54	5,986.00	3,477.77	3,304.99	318.38	17.21	-7.51	864.14	-394.38	11,859.84	11,811.39	48.45	244.809	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-20.15	93.92	-34.46	100.04				
20.00	20.00	20.00	20.00	0.04	0.04	-20.15	93.92	-34.46	100.04	99.97	0.07	1,392.293	
40.00	40.00	40.00	40.00	0.07	0.07	-20.15	93.92	-34.46	100.04	99.90	0.14	697.117	
60.00	60.00	60.00	60.00	0.11	0.11	-20.15	93.92	-34.46	100.04	99.83	0.22	464.961	
80.00	80.00	80.00	80.00	0.14	0.14	-20.15	93.92	-34.46	100.04	99.76	0.29	348.802	
100.00	100.00	100.00	100.00	0.18	0.18	-20.15	93.92	-34.46	100.04	99.68	0.36	279.080	
120.00	120.00	120.00	120.00	0.25	0.25	-20.15	93.92	-34.46	100.04	99.54	0.50	199.343	
140.00	140.00	140.00	140.00	0.32	0.32	-20.15	93.92	-34.46	100.04	99.40	0.65	155.045	
160.00	160.00	160.00	160.00	0.39	0.39	-20.15	93.92	-34.46	100.04	99.25	0.79	126.855	
180.00	180.00	180.00	180.00	0.47	0.47	-20.15	93.92	-34.46	100.04	99.11	0.93	107.339	
200.00	200.00	200.00	200.00	0.54	0.54	-20.15	93.92	-34.46	100.04	98.97	1.08	93.027	
220.00	220.00	220.00	220.00	0.61	0.61	-20.15	93.92	-34.46	100.04	98.82	1.22	82.082	
240.00	240.00	240.00	240.00	0.68	0.68	-20.15	93.92	-34.46	100.04	98.68	1.36	73.442	
260.00	260.00	260.00	260.00	0.75	0.75	-20.15	93.92	-34.46	100.04	98.54	1.51	66.448	
280.00	280.00	280.00	280.00	0.82	0.82	-20.15	93.92	-34.46	100.04	98.39	1.65	60.670	
300.00	300.00	300.00	300.00	0.90	0.90	-20.15	93.92	-34.46	100.04	98.25	1.79	55.816	
320.00	320.00	320.00	320.00	0.97	0.97	-20.15	93.92	-34.46	100.04	98.11	1.94	51.682	
340.00	340.00	340.00	340.00	1.04	1.04	-20.15	93.92	-34.46	100.04	97.96	2.08	48.117	
360.00	360.00	360.00	360.00	1.11	1.11	-20.15	93.92	-34.46	100.04	97.82	2.22	45.013	
380.00	380.00	380.00	380.00	1.18	1.18	-20.15	93.92	-34.46	100.04	97.68	2.37	42.285	
400.00	400.00	400.00	400.00	1.25	1.25	-20.15	93.92	-34.46	100.04	97.53	2.51	39.869	
420.00	420.00	420.00	420.00	1.33	1.33	-20.15	93.92	-34.46	100.04	97.39	2.65	37.714	
440.00	440.00	440.00	440.00	1.40	1.40	-20.15	93.92	-34.46	100.04	97.25	2.80	35.780	
460.00	460.00	460.00	460.00	1.47	1.47	-20.15	93.92	-34.46	100.04	97.10	2.94	34.034	
480.00	480.00	480.00	480.00	1.54	1.54	-20.15	93.92	-34.46	100.04	96.96	3.08	32.451	
500.00	500.00	500.00	500.00	1.61	1.61	-20.15	93.92	-34.46	100.04	96.82	3.23	31.009	
520.00	520.00	520.00	520.00	1.68	1.68	-20.15	93.92	-34.46	100.04	96.67	3.37	29.689	
540.00	540.00	540.00	540.00	1.76	1.76	-20.15	93.92	-34.46	100.04	96.53	3.51	28.478	
560.00	560.00	560.00	560.00	1.83	1.83	-20.15	93.92	-34.46	100.04	96.39	3.66	27.361	
580.00	580.00	580.00	580.00	1.90	1.90	-20.15	93.92	-34.46	100.04	96.24	3.80	26.328	
600.00	600.00	600.00	600.00	1.97	1.97	-20.15	93.92	-34.46	100.04	96.10	3.94	25.371	
620.00	620.00	620.00	620.00	2.04	2.04	-20.15	93.92	-34.46	100.04	95.96	4.09	24.481	
640.00	640.00	640.00	640.00	2.11	2.11	-20.15	93.92	-34.46	100.04	95.81	4.23	23.651	
660.00	660.00	660.00	660.00	2.19	2.19	-20.15	93.92	-34.46	100.04	95.67	4.37	22.875	
680.00	680.00	680.00	680.00	2.26	2.26	-20.15	93.92	-34.46	100.04	95.53	4.52	22.149	
700.00	700.00	700.00	700.00	2.33	2.33	-20.15	93.92	-34.46	100.04	95.38	4.66	21.468	
720.00	720.00	720.00	720.00	2.40	2.40	-20.15	93.92	-34.46	100.04	95.24	4.80	20.827	
740.00	740.00	740.00	740.00	2.47	2.47	-20.15	93.92	-34.46	100.04	95.10	4.95	20.223	
760.00	760.00	760.00	760.00	2.55	2.55	-20.15	93.92	-34.46	100.04	94.95	5.09	19.654	
780.00	780.00	780.00	780.00	2.62	2.62	-20.15	93.92	-34.46	100.04	94.81	5.23	19.115	
800.00	800.00	800.00	800.00	2.69	2.69	-20.15	93.92	-34.46	100.04	94.67	5.38	18.605	
820.00	820.00	820.00	820.00	2.76	2.76	-20.15	93.92	-34.46	100.04	94.52	5.52	18.122	
840.00	840.00	840.00	840.00	2.83	2.83	-20.15	93.92	-34.46	100.04	94.38	5.66	17.663	
860.00	860.00	860.00	860.00	2.90	2.90	-20.15	93.92	-34.46	100.04	94.24	5.81	17.227	
880.00	880.00	880.00	880.00	2.98	2.98	-20.15	93.92	-34.46	100.04	94.09	5.95	16.812	
900.00	900.00	900.00	900.00	3.05	3.05	-20.15	93.92	-34.46	100.04	93.95	6.09	16.416	
920.00	920.00	920.00	920.00	3.12	3.12	-20.15	93.92	-34.46	100.04	93.80	6.24	16.039	
940.00	940.00	940.00	940.00	3.19	3.19	-20.15	93.92	-34.46	100.04	93.66	6.38	15.679	
960.00	960.00	960.00	960.00	3.26	3.26	-20.15	93.92	-34.46	100.04	93.52	6.52	15.334	
980.00	980.00	980.00	980.00	3.33	3.33	-20.15	93.92	-34.46	100.04	93.37	6.67	15.004	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-20.15	93.92	-34.46	100.04	93.23	6.81	14.688	CC
1,020.00	1,020.00	1,019.45	1,019.45	3.48	3.47	-20.17	93.96	-34.52	100.10	93.14	6.95	14.398	ES

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,040.00	1,040.00	1,038.91	1,038.90	3.55	3.54	-20.24	94.07	-34.68	100.26	93.17	7.09	14.134	
1,060.00	1,060.00	1,058.35	1,058.35	3.62	3.61	-20.35	94.25	-34.96	100.53	93.30	7.24	13.894	
1,080.00	1,080.00	1,077.80	1,077.79	3.69	3.68	-20.51	94.50	-35.34	100.92	93.54	7.38	13.677	
1,100.00	1,100.00	1,097.23	1,097.22	3.76	3.75	-20.70	94.83	-35.84	101.41	93.89	7.52	13.483	
1,120.00	1,120.00	1,116.66	1,116.63	3.84	3.82	-20.94	95.22	-36.44	102.02	94.35	7.66	13.310	
1,140.00	1,140.00	1,136.08	1,136.03	3.91	3.89	-21.22	95.69	-37.16	102.73	94.93	7.81	13.157	
1,160.00	1,160.00	1,155.48	1,155.40	3.98	3.96	-21.54	96.24	-37.99	103.56	95.61	7.95	13.024	
1,180.00	1,180.00	1,174.87	1,174.76	4.05	4.03	-21.89	96.85	-38.92	104.51	96.41	8.10	12.910	
1,200.00	1,200.00	1,194.24	1,194.10	4.12	4.09	-22.28	97.53	-39.96	105.57	97.33	8.24	12.813	
1,220.00	1,220.00	1,213.60	1,213.40	4.19	4.16	-22.70	98.29	-41.11	106.75	98.36	8.38	12.733	
1,240.00	1,240.00	1,232.94	1,232.68	4.27	4.23	-23.15	99.12	-42.37	108.04	99.51	8.53	12.668	
1,260.00	1,260.00	1,252.25	1,251.93	4.34	4.30	-23.62	100.01	-43.74	109.46	100.78	8.67	12.620	
1,280.00	1,280.00	1,271.54	1,271.14	4.41	4.37	-24.12	100.98	-45.21	110.99	102.18	8.82	12.587	
1,300.00	1,300.00	1,290.81	1,290.31	4.48	4.44	-24.64	102.02	-46.79	112.65	103.69	8.96	12.569	
1,320.00	1,320.00	1,310.05	1,309.45	4.55	4.51	-25.17	103.12	-48.47	114.43	105.33	9.11	12.564	SF
1,340.00	1,340.00	1,329.26	1,328.54	4.62	4.58	-25.73	104.30	-50.26	116.34	107.09	9.25	12.572	
1,360.00	1,360.00	1,348.45	1,347.59	4.70	4.65	-26.29	105.54	-52.15	118.37	108.98	9.40	12.594	
1,380.00	1,380.00	1,367.60	1,366.59	4.77	4.72	-26.87	106.85	-54.14	120.54	110.99	9.54	12.630	
1,400.00	1,400.00	1,386.72	1,385.54	4.84	4.79	-27.46	108.23	-56.24	122.82	113.14	9.69	12.678	
1,420.00	1,420.00	1,405.80	1,404.45	4.91	4.86	-28.05	109.68	-58.44	125.24	115.41	9.83	12.738	
1,440.00	1,440.00	1,424.85	1,423.29	4.98	4.93	-28.65	111.19	-60.74	127.79	117.82	9.98	12.809	
1,460.00	1,460.00	1,443.86	1,442.09	5.05	5.00	-29.25	112.76	-63.14	130.47	120.35	10.12	12.891	
1,480.00	1,480.00	1,462.83	1,460.82	5.13	5.07	-29.84	114.40	-65.64	133.28	123.02	10.26	12.985	
1,500.00	1,500.00	1,481.76	1,479.49	5.20	5.14	-30.44	116.11	-68.24	136.23	125.82	10.41	13.088	
1,520.00	1,520.00	1,500.00	1,497.47	5.27	5.21	-31.02	117.82	-70.83	139.31	128.75	10.55	13.199	
1,540.00	1,540.00	1,519.49	1,516.65	5.34	5.28	-31.62	119.71	-73.72	142.52	131.82	10.69	13.326	
1,560.00	1,560.00	1,538.29	1,535.13	5.41	5.35	-32.21	121.61	-76.60	145.86	135.02	10.84	13.459	
1,580.00	1,580.00	1,557.04	1,553.54	5.48	5.43	-32.78	123.56	-79.58	149.34	138.36	10.98	13.601	
1,600.00	1,600.00	1,575.75	1,571.88	5.56	5.50	-33.35	125.58	-82.65	152.95	141.83	11.12	13.753	
1,620.00	1,620.00	1,594.40	1,590.15	5.63	5.57	-33.91	127.66	-85.81	156.69	145.43	11.26	13.914	
1,640.00	1,640.00	1,613.00	1,608.34	5.70	5.65	-34.46	129.80	-89.06	160.57	149.17	11.40	14.083	
1,660.00	1,660.00	1,631.56	1,626.45	5.77	5.72	-35.00	131.99	-92.41	164.58	153.04	11.54	14.260	
1,680.00	1,680.00	1,650.05	1,644.49	5.84	5.80	-35.52	134.24	-95.83	168.72	157.04	11.68	14.445	
1,700.00	1,700.00	1,668.49	1,662.44	5.91	5.87	-36.04	136.55	-99.35	173.00	161.18	11.82	14.638	
1,720.00	1,720.00	1,687.49	1,680.91	5.99	5.95	-36.56	138.99	-103.06	177.39	165.43	11.96	14.837	
1,740.00	1,740.00	1,706.93	1,699.82	6.06	6.03	-37.06	141.48	-106.86	181.80	169.71	12.09	15.034	
1,760.00	1,760.00	1,726.38	1,718.72	6.13	6.11	-37.54	143.98	-110.66	186.23	174.00	12.23	15.227	
1,780.00	1,780.00	1,745.82	1,737.63	6.20	6.19	-38.00	146.48	-114.46	190.67	178.30	12.37	15.416	
1,800.00	1,800.00	1,765.27	1,756.53	6.27	6.27	-38.44	148.98	-118.26	195.12	182.61	12.51	15.603	
1,820.00	1,820.00	1,784.71	1,775.44	6.34	6.35	-38.86	151.48	-122.06	199.58	186.93	12.64	15.786	
1,840.00	1,840.00	1,804.16	1,794.34	6.42	6.44	-39.26	153.97	-125.87	204.05	191.27	12.78	15.966	
1,860.00	1,860.00	1,823.60	1,813.25	6.49	6.52	-39.65	156.47	-129.67	208.53	195.61	12.92	16.142	
1,880.00	1,880.00	1,843.05	1,832.15	6.56	6.60	-40.02	158.97	-133.47	213.01	199.96	13.06	16.315	
1,900.00	1,900.00	1,862.49	1,851.06	6.63	6.69	-40.37	161.47	-137.27	217.51	204.32	13.19	16.485	
1,920.00	1,920.00	1,881.94	1,869.97	6.70	6.77	-40.71	163.97	-141.07	222.01	208.68	13.33	16.652	
1,940.00	1,940.00	1,901.38	1,888.87	6.78	6.86	-41.03	166.46	-144.88	226.52	213.05	13.47	16.816	
1,960.00	1,960.00	1,920.83	1,907.78	6.85	6.94	-41.35	168.96	-148.68	231.04	217.43	13.61	16.976	
1,980.00	1,980.00	1,940.27	1,926.68	6.92	7.03	-41.65	171.46	-152.48	235.57	221.82	13.75	17.134	
2,000.00	2,000.00	1,959.72	1,945.59	6.99	7.11	-41.94	173.96	-156.28	240.10	226.21	13.89	17.289	
2,020.00	2,020.00	1,979.16	1,964.49	7.06	7.20	-42.22	176.46	-160.08	244.63	230.61	14.03	17.441	
2,040.00	2,040.00	1,998.61	1,983.40	7.13	7.28	-42.48	178.95	-163.89	249.17	235.01	14.16	17.591	
2,060.00	2,060.00	2,018.05	2,002.30	7.21	7.37	-42.74	181.45	-167.69	253.72	239.41	14.30	17.737	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,080.00	2,080.00	2,037.50	2,021.21	7.28	7.46	-42.99	183.95	-171.49	258.27	243.82	14.44	17.881	
2,100.00	2,100.00	2,056.94	2,040.11	7.35	7.55	-43.23	186.45	-175.29	262.82	248.24	14.58	18.022	
2,120.00	2,120.00	2,076.39	2,059.02	7.42	7.63	-43.47	188.94	-179.09	267.38	252.66	14.72	18.161	
2,140.00	2,140.00	2,095.83	2,077.92	7.49	7.72	-43.69	191.44	-182.90	271.95	257.08	14.86	18.298	
2,160.00	2,160.00	2,115.28	2,096.83	7.56	7.81	-43.91	193.94	-186.70	276.51	261.51	15.00	18.432	
2,180.00	2,180.00	2,134.72	2,115.74	7.64	7.90	-44.12	196.44	-190.50	281.08	265.94	15.14	18.563	
2,200.00	2,200.00	2,154.17	2,134.64	7.71	7.98	-44.32	198.94	-194.30	285.66	270.38	15.28	18.693	
2,220.00	2,220.00	2,173.61	2,153.55	7.78	8.07	-44.52	201.43	-198.10	290.24	274.81	15.42	18.820	
2,240.00	2,240.00	2,193.06	2,172.45	7.85	8.16	-44.71	203.93	-201.91	294.82	279.26	15.56	18.945	
2,260.00	2,260.00	2,212.50	2,191.36	7.92	8.25	-44.90	206.43	-205.71	299.40	283.70	15.70	19.068	
2,280.00	2,280.00	2,231.95	2,210.26	7.99	8.34	-45.08	208.93	-209.51	303.99	288.14	15.84	19.188	
2,300.00	2,300.00	2,251.39	2,229.17	8.07	8.43	-45.25	211.43	-213.31	308.58	292.59	15.98	19.307	
2,320.00	2,320.00	2,270.84	2,248.07	8.14	8.52	-45.42	213.92	-217.11	313.17	297.05	16.12	19.423	
2,340.00	2,340.00	2,290.28	2,266.98	8.21	8.61	-45.59	216.42	-220.92	317.76	301.50	16.26	19.538	
2,360.00	2,360.00	2,309.73	2,285.88	8.28	8.70	-45.75	218.92	-224.72	322.36	305.96	16.40	19.650	
2,380.00	2,380.00	2,329.17	2,304.79	8.35	8.79	-45.90	221.42	-228.52	326.96	310.41	16.55	19.761	
2,400.00	2,400.00	2,348.62	2,323.69	8.42	8.88	-46.06	223.91	-232.32	331.56	314.88	16.69	19.870	
2,420.00	2,420.00	2,368.06	2,342.60	8.50	8.97	-46.20	226.41	-236.12	336.17	319.34	16.83	19.977	
2,440.00	2,440.00	2,387.51	2,361.51	8.57	9.06	-46.35	228.91	-239.93	340.77	323.80	16.97	20.082	
2,460.00	2,460.00	2,406.95	2,380.41	8.64	9.15	-46.49	231.41	-243.73	345.38	328.27	17.11	20.186	
2,480.00	2,480.00	2,426.40	2,399.32	8.71	9.24	-46.62	233.91	-247.53	349.99	332.74	17.25	20.288	
2,500.00	2,500.00	2,445.84	2,418.22	8.78	9.33	-46.75	236.40	-251.33	354.60	337.21	17.39	20.388	
2,520.00	2,520.00	2,465.29	2,437.13	8.85	9.42	-46.88	238.90	-255.13	359.21	341.68	17.53	20.487	
2,540.00	2,540.00	2,484.73	2,456.03	8.93	9.51	-47.01	241.40	-258.94	363.83	346.15	17.68	20.584	
2,560.00	2,560.00	2,504.18	2,474.94	9.00	9.60	-47.13	243.90	-262.74	368.45	350.63	17.82	20.680	
2,580.00	2,580.00	2,523.62	2,493.84	9.07	9.69	-47.25	246.40	-266.54	373.06	355.11	17.96	20.773	
2,600.00	2,600.00	2,543.07	2,512.75	9.14	9.78	-47.37	248.89	-270.34	377.68	359.58	18.10	20.866	
2,620.00	2,620.00	2,562.51	2,531.65	9.21	9.88	-47.48	251.39	-274.14	382.30	364.06	18.24	20.957	
2,640.00	2,640.00	2,581.96	2,550.56	9.28	9.97	-47.59	253.89	-277.94	386.93	368.54	18.38	21.047	
2,660.00	2,660.00	2,601.40	2,569.46	9.36	10.06	-47.70	256.39	-281.75	391.55	373.03	18.53	21.135	
2,680.00	2,680.00	2,620.85	2,588.37	9.43	10.15	-47.80	258.89	-285.55	396.18	377.51	18.67	21.222	
2,700.00	2,700.00	2,640.29	2,607.28	9.50	10.24	-47.91	261.38	-289.35	400.80	381.99	18.81	21.308	
2,720.00	2,720.00	2,659.73	2,626.17	9.57	10.33	-108.07	263.88	-293.15	405.45	386.50	18.95	21.394	
2,740.00	2,740.00	2,679.15	2,645.06	9.64	10.43	-108.11	266.37	-296.95	410.14	391.05	19.09	21.482	
2,760.00	2,760.00	2,698.56	2,663.92	9.71	10.52	-108.16	268.87	-300.74	414.88	395.65	19.23	21.571	
2,780.00	2,779.99	2,717.94	2,682.77	9.78	10.61	-108.23	271.36	-304.53	419.66	400.29	19.37	21.661	
2,800.00	2,799.98	2,737.31	2,701.60	9.85	10.70	-108.30	273.85	-308.32	424.49	404.97	19.52	21.752	
2,820.00	2,819.96	2,756.66	2,720.42	9.92	10.79	-108.40	276.33	-312.10	429.36	409.71	19.65	21.845	
2,840.00	2,839.94	2,775.99	2,739.21	9.99	10.89	-108.50	278.81	-315.88	434.29	414.49	19.79	21.940	
2,860.00	2,859.92	2,795.30	2,757.98	10.06	10.98	-108.62	281.29	-319.66	439.26	419.32	19.93	22.036	
2,880.00	2,879.88	2,814.58	2,776.73	10.13	11.07	-108.74	283.77	-323.43	444.27	424.20	20.07	22.133	
2,900.00	2,899.84	2,833.85	2,795.46	10.20	11.16	-108.88	286.25	-327.20	449.34	429.13	20.21	22.231	
2,920.00	2,919.78	2,853.08	2,814.16	10.28	11.25	-109.03	288.72	-330.96	454.46	434.11	20.35	22.331	
2,940.00	2,939.72	2,872.30	2,832.84	10.35	11.35	-109.19	291.19	-334.71	459.64	439.15	20.49	22.432	
2,960.00	2,959.64	2,891.48	2,851.50	10.42	11.44	-109.36	293.65	-338.46	464.86	444.24	20.63	22.535	
2,980.00	2,979.55	2,910.64	2,870.13	10.49	11.53	-109.54	296.11	-342.21	470.15	449.38	20.77	22.639	
3,000.00	2,999.45	2,929.77	2,888.73	10.56	11.62	-109.73	298.57	-345.95	475.48	454.58	20.91	22.745	
3,020.00	3,019.34	2,948.88	2,907.30	10.63	11.71	-109.93	301.02	-349.69	480.88	459.84	21.04	22.851	
3,040.00	3,039.20	2,967.95	2,925.84	10.70	11.80	-110.13	303.47	-353.42	486.33	465.15	21.18	22.960	
3,060.00	3,059.05	2,986.99	2,944.36	10.77	11.90	-110.34	305.92	-357.14	491.85	470.53	21.32	23.070	
3,080.00	3,078.89	3,006.00	2,962.84	10.84	11.99	-110.56	308.36	-360.86	497.42	475.97	21.46	23.182	
3,100.00	3,098.70	3,024.98	2,981.29	10.91	12.08	-110.78	310.80	-364.57	503.06	481.47	21.60	23.295	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,120.00	3,118.50	3,043.93	2,999.71	10.98	12.17	-111.02	313.23	-368.27	508.77	487.03	21.73	23.409	
3,140.00	3,138.27	3,062.84	3,018.10	11.06	12.26	-111.25	315.66	-371.97	514.53	492.66	21.87	23.525	
3,160.00	3,158.03	3,081.71	3,036.45	11.13	12.35	-111.49	318.09	-375.66	520.37	498.36	22.01	23.643	
3,180.00	3,177.76	3,100.55	3,054.76	11.20	12.44	-111.74	320.51	-379.34	526.27	504.12	22.15	23.763	
3,200.00	3,197.47	3,119.35	3,073.04	11.27	12.53	-111.99	322.92	-383.02	532.24	509.96	22.28	23.884	
3,220.00	3,217.15	3,138.12	3,091.29	11.34	12.62	-112.25	325.33	-386.69	538.29	515.86	22.42	24.006	
3,240.00	3,236.81	3,156.84	3,109.49	11.42	12.71	-112.51	327.74	-390.35	544.40	521.84	22.56	24.131	
3,260.00	3,256.44	3,175.53	3,127.66	11.49	12.80	-112.77	330.14	-394.00	550.59	527.89	22.70	24.257	
3,280.00	3,276.05	3,194.17	3,145.78	11.56	12.89	-113.04	332.53	-397.65	556.85	534.02	22.84	24.385	
3,300.00	3,295.62	3,212.77	3,163.87	11.64	12.98	-113.31	334.92	-401.28	563.19	540.22	22.97	24.515	
3,320.00	3,315.17	3,231.33	3,181.91	11.71	13.07	-113.58	337.31	-404.91	569.61	546.49	23.11	24.645	
3,340.00	3,334.69	3,249.85	3,199.92	11.78	13.16	-113.86	339.69	-408.53	576.10	552.85	23.25	24.778	
3,360.00	3,354.18	3,268.32	3,217.87	11.86	13.25	-114.13	342.06	-412.14	582.68	559.29	23.39	24.913	
3,380.00	3,373.63	3,286.74	3,235.79	11.93	13.34	-114.41	344.43	-415.75	589.33	565.81	23.53	25.050	
3,400.00	3,393.06	3,305.12	3,253.66	12.01	13.43	-114.69	346.79	-419.34	596.07	572.41	23.66	25.188	
3,420.00	3,412.44	3,323.46	3,271.48	12.09	13.52	-114.97	349.14	-422.93	602.89	579.09	23.80	25.327	
3,440.00	3,431.80	3,341.74	3,289.26	12.16	13.61	-115.26	351.49	-426.50	609.80	585.86	23.94	25.469	
3,460.00	3,451.12	3,359.98	3,306.99	12.24	13.70	-115.54	353.83	-430.07	616.79	592.71	24.08	25.612	
3,480.00	3,470.40	3,378.16	3,324.67	12.32	13.79	-115.82	356.17	-433.62	623.87	599.65	24.22	25.758	
3,500.00	3,489.64	3,396.30	3,342.30	12.39	13.87	-116.11	358.50	-437.17	631.04	606.68	24.36	25.905	
3,520.00	3,508.85	3,414.38	3,359.88	12.47	13.96	-116.39	360.82	-440.70	638.30	613.80	24.50	26.053	
3,540.00	3,528.02	3,432.41	3,377.41	12.56	14.05	-116.68	363.14	-444.23	645.64	621.00	24.64	26.203	
3,560.00	3,547.14	3,450.39	3,394.89	12.64	14.14	-116.96	365.45	-447.74	653.08	628.30	24.78	26.355	
3,580.00	3,566.23	3,468.31	3,412.32	12.72	14.22	-117.24	367.75	-451.25	660.61	635.69	24.92	26.509	
3,600.00	3,585.27	3,486.18	3,429.69	12.80	14.31	-117.52	370.04	-454.74	668.23	643.17	25.06	26.665	
3,620.00	3,604.27	3,503.99	3,447.01	12.88	14.40	-117.81	372.33	-458.22	675.95	650.75	25.20	26.821	
3,640.00	3,623.22	3,521.75	3,464.27	12.96	14.48	-118.09	374.61	-461.70	683.76	658.42	25.34	26.980	
3,645.28	3,628.22	3,526.42	3,468.82	12.98	14.51	-118.16	375.21	-462.61	685.84	660.46	25.38	27.022	
3,660.00	3,642.15	3,539.46	3,481.49	13.05	14.57	-118.47	376.89	-465.16	691.65	666.17	25.48	27.140	
3,680.00	3,661.07	3,557.17	3,498.71	13.13	14.66	-118.89	379.16	-468.62	699.58	673.95	25.63	27.299	
3,700.00	3,679.99	3,574.88	3,515.93	13.22	14.74	-119.30	381.44	-472.09	707.54	681.77	25.77	27.457	
3,720.00	3,698.91	3,592.60	3,533.15	13.30	14.83	-119.71	383.71	-475.55	715.53	689.62	25.91	27.614	
3,740.00	3,717.83	3,610.31	3,550.37	13.39	14.92	-120.10	385.99	-479.01	723.55	697.50	26.05	27.771	
3,760.00	3,736.75	3,628.02	3,567.59	13.48	15.00	-120.48	388.27	-482.47	731.61	705.41	26.20	27.926	
3,780.00	3,755.67	3,645.73	3,584.81	13.57	15.09	-120.86	390.54	-485.94	739.69	713.35	26.34	28.081	
3,800.00	3,774.59	3,663.44	3,602.03	13.65	15.18	-121.23	392.82	-489.40	747.80	721.31	26.48	28.236	
3,820.00	3,793.51	3,681.15	3,619.25	13.74	15.26	-121.59	395.09	-492.86	755.93	729.31	26.63	28.388	
3,840.00	3,812.44	3,698.86	3,636.47	13.83	15.35	-121.95	397.37	-496.33	764.10	737.32	26.77	28.539	
3,860.00	3,831.36	3,716.58	3,653.69	13.92	15.43	-122.30	399.64	-499.79	772.29	745.37	26.92	28.690	
3,880.00	3,850.28	3,734.29	3,670.91	14.01	15.52	-122.64	401.92	-503.25	780.50	753.44	27.06	28.840	
3,900.00	3,869.20	3,752.00	3,688.13	14.10	15.61	-122.97	404.19	-506.72	788.74	761.53	27.21	28.989	
3,920.00	3,888.12	3,769.71	3,705.35	14.20	15.69	-123.30	406.47	-510.18	797.00	769.64	27.35	29.136	
3,940.00	3,907.04	3,787.42	3,722.57	14.29	15.78	-123.62	408.74	-513.64	805.28	777.78	27.50	29.282	
3,960.00	3,925.96	3,805.13	3,739.79	14.38	15.87	-123.94	411.02	-517.10	813.59	785.94	27.65	29.427	
3,980.00	3,944.88	3,822.85	3,757.01	14.47	15.95	-124.25	413.29	-520.57	821.91	794.12	27.79	29.572	
4,000.00	3,963.80	3,840.56	3,774.23	14.56	16.04	-124.55	415.57	-524.03	830.26	802.32	27.94	29.716	
4,020.00	3,982.73	3,858.27	3,791.45	14.66	16.13	-124.85	417.84	-527.49	838.62	810.54	28.09	29.858	
4,040.00	4,001.65	3,875.98	3,808.67	14.75	16.21	-125.14	420.12	-530.96	847.01	818.78	28.23	29.999	
4,060.00	4,020.57	3,893.69	3,825.89	14.85	16.30	-125.43	422.39	-534.42	855.41	827.03	28.38	30.139	
4,080.00	4,039.49	3,911.40	3,843.11	14.94	16.39	-125.71	424.67	-537.88	863.84	835.31	28.53	30.278	
4,100.00	4,058.41	3,929.11	3,860.33	15.04	16.48	-125.98	426.94	-541.35	872.28	843.60	28.68	30.417	
4,120.00	4,077.33	3,946.83	3,877.55	15.13	16.56	-126.26	429.22	-544.81	880.73	851.91	28.83	30.553	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,140.00	4,096.25	3,964.54	3,894.77	15.23	16.65	-126.52	431.49	-548.27	889.21	860.23	28.97	30.689	
4,160.00	4,115.17	3,982.25	3,911.99	15.33	16.74	-126.78	433.77	-551.73	897.70	868.57	29.12	30.824	
4,180.00	4,134.09	3,999.96	3,929.21	15.42	16.82	-127.04	436.04	-555.20	906.20	876.93	29.27	30.958	
4,200.00	4,153.02	4,017.67	3,946.43	15.52	16.91	-127.29	438.32	-558.66	914.72	885.30	29.42	31.092	
4,220.00	4,171.94	4,035.38	3,963.65	15.62	17.00	-127.54	440.59	-562.12	923.26	893.69	29.57	31.223	
4,240.00	4,190.86	4,053.09	3,980.87	15.72	17.08	-127.78	442.87	-565.59	931.81	902.09	29.72	31.354	
4,260.00	4,209.78	4,070.81	3,998.09	15.81	17.17	-128.02	445.14	-569.05	940.37	910.50	29.87	31.483	
4,280.00	4,228.70	4,088.52	4,015.31	15.91	17.26	-128.26	447.42	-572.51	948.95	918.93	30.02	31.612	
4,300.00	4,247.62	4,106.23	4,032.53	16.01	17.34	-128.49	449.70	-575.98	957.54	927.37	30.17	31.741	
4,320.00	4,266.54	4,123.94	4,049.75	16.11	17.43	-128.71	451.97	-579.44	966.15	935.83	30.32	31.867	
4,340.00	4,285.46	4,141.65	4,066.97	16.21	17.52	-128.94	454.25	-582.90	974.76	944.29	30.47	31.993	
4,360.00	4,304.38	4,159.36	4,084.19	16.31	17.61	-129.16	456.52	-586.36	983.39	952.77	30.62	32.117	
4,380.00	4,323.31	4,177.07	4,101.41	16.41	17.69	-129.37	458.80	-589.83	992.03	961.26	30.77	32.241	
4,400.00	4,342.23	4,194.79	4,118.63	16.51	17.78	-129.58	461.07	-593.29	1,000.68	969.77	30.92	32.365	
4,420.00	4,361.15	4,212.50	4,135.85	16.61	17.87	-129.79	463.35	-596.75	1,009.35	978.28	31.07	32.486	
4,440.00	4,380.07	4,230.21	4,153.07	16.71	17.95	-130.00	465.62	-600.22	1,018.02	986.80	31.22	32.607	
4,460.00	4,398.99	4,247.92	4,170.29	16.81	18.04	-130.20	467.90	-603.68	1,026.71	995.34	31.37	32.727	
4,480.00	4,417.91	4,265.63	4,187.51	16.92	18.13	-130.40	470.17	-607.14	1,035.40	1,003.88	31.52	32.846	
4,500.00	4,436.83	4,283.34	4,204.73	17.02	18.22	-130.59	472.45	-610.61	1,044.11	1,012.44	31.67	32.965	
4,520.00	4,455.75	4,301.05	4,221.95	17.12	18.30	-130.78	474.72	-614.07	1,052.83	1,021.00	31.83	33.081	
4,540.00	4,474.67	4,318.77	4,239.17	17.22	18.39	-130.97	477.00	-617.53	1,061.55	1,029.58	31.98	33.197	
4,560.00	4,493.59	4,336.48	4,256.39	17.33	18.48	-131.16	479.27	-620.99	1,070.29	1,038.16	32.13	33.313	
4,580.00	4,512.52	4,354.19	4,273.61	17.43	18.56	-131.34	481.55	-624.46	1,079.03	1,046.75	32.28	33.427	
4,600.00	4,531.44	4,371.90	4,290.83	17.53	18.65	-131.52	483.82	-627.92	1,087.79	1,055.36	32.43	33.541	
4,620.00	4,550.36	4,389.61	4,308.05	17.64	18.74	-131.70	486.10	-631.38	1,096.55	1,063.97	32.58	33.653	
4,640.00	4,569.28	4,407.32	4,325.27	17.74	18.83	-131.87	488.37	-634.85	1,105.32	1,072.58	32.74	33.765	
4,660.00	4,588.20	4,425.03	4,342.49	17.84	18.91	-132.05	490.65	-638.31	1,114.10	1,081.21	32.89	33.876	
4,680.00	4,607.12	4,442.75	4,359.71	17.95	19.00	-132.22	492.92	-641.77	1,122.89	1,089.85	33.04	33.986	
4,700.00	4,626.04	4,460.46	4,376.93	18.05	19.09	-132.38	495.20	-645.24	1,131.68	1,098.49	33.19	34.095	
4,720.00	4,644.96	4,478.17	4,394.15	18.16	19.18	-132.55	497.47	-648.70	1,140.49	1,107.14	33.34	34.203	
4,740.00	4,663.88	4,495.88	4,411.37	18.26	19.26	-132.71	499.75	-652.16	1,149.30	1,115.80	33.50	34.310	
4,760.00	4,682.81	4,513.59	4,428.59	18.37	19.35	-132.87	502.02	-655.62	1,158.12	1,124.47	33.65	34.417	
4,780.00	4,701.73	4,531.30	4,445.81	18.47	19.44	-133.03	504.30	-659.09	1,166.94	1,133.14	33.80	34.523	
4,800.00	4,720.65	4,549.01	4,463.03	18.58	19.52	-133.18	506.57	-662.55	1,175.78	1,141.82	33.95	34.628	
4,820.00	4,739.57	4,566.73	4,480.25	18.69	19.61	-133.33	508.85	-666.01	1,184.62	1,150.51	34.11	34.731	
4,840.00	4,758.49	4,584.44	4,497.47	18.79	19.70	-133.48	511.13	-669.48	1,193.46	1,159.20	34.26	34.834	
4,860.00	4,777.41	4,602.15	4,514.69	18.90	19.79	-133.63	513.40	-672.94	1,202.32	1,167.90	34.41	34.937	
4,880.00	4,796.33	4,619.86	4,531.91	19.00	19.87	-133.78	515.68	-676.40	1,211.18	1,176.61	34.57	35.039	
4,900.00	4,815.25	4,637.57	4,549.13	19.11	19.96	-133.92	517.95	-679.87	1,220.05	1,185.33	34.72	35.140	
4,920.00	4,834.17	4,655.28	4,566.35	19.22	20.05	-134.06	520.23	-683.33	1,228.92	1,194.04	34.87	35.239	
4,940.00	4,853.10	4,673.00	4,583.57	19.32	20.14	-134.20	522.50	-686.79	1,237.80	1,202.77	35.03	35.338	
4,960.00	4,872.02	4,690.71	4,600.79	19.43	20.22	-134.34	524.78	-690.25	1,246.68	1,211.50	35.18	35.437	
4,980.00	4,890.94	4,708.42	4,618.01	19.54	20.31	-134.48	527.05	-693.72	1,255.57	1,220.24	35.33	35.535	
5,000.00	4,909.86	4,726.13	4,635.23	19.65	20.40	-134.61	529.33	-697.18	1,264.47	1,228.98	35.49	35.632	
5,020.00	4,928.78	4,743.84	4,652.45	19.75	20.49	-134.74	531.60	-700.64	1,273.37	1,237.73	35.64	35.728	
5,040.00	4,947.70	4,761.55	4,669.67	19.86	20.57	-134.88	533.88	-704.11	1,282.28	1,246.49	35.79	35.823	
5,060.00	4,966.62	4,779.26	4,686.89	19.97	20.66	-135.00	536.15	-707.57	1,291.19	1,255.24	35.95	35.918	
5,080.00	4,985.54	4,796.98	4,704.11	20.08	20.75	-135.13	538.43	-711.03	1,300.11	1,264.01	36.10	36.012	
5,100.00	5,004.46	4,814.69	4,721.33	20.19	20.84	-135.26	540.70	-714.50	1,309.04	1,272.78	36.26	36.105	
5,120.00	5,023.39	4,832.40	4,738.55	20.30	20.92	-135.38	542.98	-717.96	1,317.96	1,281.55	36.41	36.198	
5,140.00	5,042.31	4,850.11	4,755.77	20.41	21.01	-135.50	545.25	-721.42	1,326.90	1,290.33	36.56	36.289	
5,160.00	5,061.23	4,867.82	4,772.99	20.51	21.10	-135.62	547.53	-724.88	1,335.84	1,299.12	36.72	36.381	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,180.00	5,080.15	4,885.53	4,790.21	20.62	21.19	-135.74	549.80	-728.35	1,344.78	1,307.91	36.87	36.471	
5,200.00	5,099.07	4,903.24	4,807.43	20.73	21.27	-135.86	552.08	-731.81	1,353.73	1,316.70	37.03	36.561	
5,220.00	5,117.99	4,920.96	4,824.65	20.84	21.36	-135.98	554.35	-735.27	1,362.68	1,325.50	37.18	36.650	
5,240.00	5,136.91	4,938.67	4,841.87	20.95	21.45	-136.09	556.63	-738.74	1,371.64	1,334.30	37.34	36.738	
5,260.00	5,155.83	4,956.38	4,859.09	21.06	21.54	-136.20	558.90	-742.20	1,380.60	1,343.11	37.49	36.826	
5,280.00	5,174.75	4,974.09	4,876.31	21.17	21.63	-136.31	561.18	-745.66	1,389.56	1,351.92	37.64	36.913	
5,300.00	5,193.67	4,991.80	4,893.53	21.28	21.71	-136.42	563.45	-749.13	1,398.53	1,360.74	37.80	37.000	
5,320.00	5,212.60	5,009.51	4,910.75	21.39	21.80	-136.53	565.73	-752.59	1,407.51	1,369.56	37.95	37.085	
5,340.00	5,231.52	5,027.22	4,927.97	21.50	21.89	-136.64	568.01	-756.05	1,416.49	1,378.38	38.11	37.170	
5,360.00	5,250.44	5,044.94	4,945.19	21.61	21.98	-136.75	570.28	-759.51	1,425.47	1,387.21	38.26	37.255	
5,380.00	5,269.36	5,062.65	4,962.41	21.72	22.06	-136.85	572.56	-762.98	1,434.45	1,396.04	38.42	37.339	
5,400.00	5,288.28	5,080.36	4,979.63	21.83	22.15	-136.96	574.83	-766.44	1,443.44	1,404.87	38.57	37.422	
5,420.00	5,307.20	5,098.07	4,996.85	21.94	22.24	-137.06	577.11	-769.90	1,452.44	1,413.71	38.73	37.505	
5,440.00	5,326.12	5,115.78	5,014.07	22.06	22.33	-137.16	579.38	-773.37	1,461.44	1,422.55	38.88	37.586	
5,460.00	5,345.04	5,133.49	5,031.29	22.17	22.41	-137.26	581.66	-776.83	1,470.44	1,431.40	39.04	37.668	
5,480.00	5,363.96	5,151.20	5,048.51	22.28	22.50	-137.36	583.93	-780.29	1,479.44	1,440.25	39.19	37.749	
5,500.00	5,382.89	5,168.92	5,065.73	22.39	22.59	-137.45	586.21	-783.76	1,488.45	1,449.10	39.35	37.829	
5,520.00	5,401.81	5,186.63	5,082.95	22.50	22.68	-137.55	588.48	-787.22	1,497.46	1,457.96	39.50	37.908	
5,540.00	5,420.73	5,204.34	5,100.17	22.61	22.77	-137.65	590.76	-790.68	1,506.48	1,466.82	39.66	37.987	
5,560.00	5,439.65	5,222.05	5,117.39	22.72	22.85	-137.74	593.03	-794.14	1,515.49	1,475.68	39.81	38.066	
5,580.00	5,458.57	5,239.76	5,134.61	22.84	22.94	-137.83	595.31	-797.61	1,524.52	1,484.55	39.97	38.144	
5,600.00	5,477.49	5,257.47	5,151.83	22.95	23.03	-137.92	597.58	-801.07	1,533.54	1,493.42	40.12	38.221	
5,620.00	5,496.41	5,275.18	5,169.05	23.06	23.12	-138.02	599.86	-804.53	1,542.57	1,502.29	40.28	38.298	
5,640.00	5,515.33	5,292.90	5,186.27	23.17	23.20	-138.10	602.13	-808.00	1,551.60	1,511.17	40.43	38.374	
5,660.00	5,534.25	5,310.61	5,203.49	23.28	23.29	-138.19	604.41	-811.46	1,560.63	1,520.04	40.59	38.450	
5,680.00	5,553.18	5,328.32	5,220.71	23.40	23.38	-138.28	606.68	-814.92	1,569.67	1,528.93	40.74	38.525	
5,700.00	5,572.10	5,346.03	5,237.93	23.51	23.47	-138.37	608.96	-818.39	1,578.71	1,537.81	40.90	38.599	
5,720.00	5,591.02	5,363.74	5,255.15	23.62	23.55	-138.45	611.23	-821.85	1,587.75	1,546.70	41.06	38.673	
5,740.00	5,609.94	5,381.45	5,272.37	23.73	23.64	-138.54	613.51	-825.31	1,596.80	1,555.59	41.21	38.747	
5,760.00	5,628.86	5,399.16	5,289.59	23.85	23.73	-138.62	615.78	-828.77	1,605.85	1,564.48	41.37	38.820	
5,780.00	5,647.78	5,416.88	5,306.81	23.96	23.82	-138.71	618.06	-832.24	1,614.90	1,573.38	41.52	38.892	
5,800.00	5,666.70	5,434.59	5,324.03	24.07	23.91	-138.79	620.33	-835.70	1,623.95	1,582.27	41.68	38.964	
5,809.89	5,676.06	5,443.34	5,332.54	24.13	23.95	-138.83	621.46	-837.41	1,628.43	1,586.68	41.76	38.999	
5,820.00	5,685.60	5,452.26	5,341.21	24.19	23.99	-140.24	622.60	-839.16	1,633.09	1,591.25	41.83	39.037	
5,840.00	5,704.31	5,469.63	5,358.10	24.31	24.08	-142.65	624.84	-842.55	1,642.76	1,600.77	41.99	39.122	
5,850.00	5,713.58	5,478.19	5,366.42	24.37	24.12	-143.70	625.94	-844.23	1,647.82	1,605.75	42.07	39.170	
5,860.00	5,722.80	5,486.65	5,374.65	24.43	24.16	-144.66	627.02	-845.88	1,653.03	1,610.88	42.15	39.221	
5,880.00	5,741.03	5,503.29	5,390.83	24.57	24.25	-146.33	629.16	-849.13	1,663.88	1,621.58	42.30	39.334	
5,900.00	5,759.00	5,519.54	5,406.63	24.70	24.33	-147.73	631.25	-852.31	1,675.31	1,632.85	42.45	39.462	
5,920.00	5,776.66	5,535.37	5,422.02	24.85	24.41	-148.91	633.28	-855.41	1,687.29	1,644.69	42.60	39.604	
5,940.00	5,794.02	5,550.77	5,436.99	25.00	24.48	-149.88	635.26	-858.42	1,699.83	1,657.07	42.75	39.760	
5,950.00	5,802.57	5,558.30	5,444.30	25.08	24.52	-150.31	636.23	-859.89	1,706.29	1,663.47	42.83	39.842	
5,960.00	5,811.03	5,565.71	5,451.51	25.16	24.56	-150.69	637.18	-861.34	1,712.89	1,669.99	42.90	39.930	
5,980.00	5,827.69	5,580.18	5,465.58	25.33	24.63	-151.35	639.04	-864.17	1,726.46	1,683.43	43.04	40.113	
6,000.00	5,843.96	5,594.16	5,479.17	25.50	24.70	-151.88	640.83	-866.90	1,740.54	1,697.36	43.18	40.309	
6,020.00	5,859.84	5,607.63	5,492.27	25.69	24.76	-152.28	642.56	-869.53	1,755.09	1,711.78	43.31	40.520	
6,040.00	5,875.31	5,620.58	5,504.86	25.87	24.83	-152.57	644.23	-872.07	1,770.11	1,726.67	43.45	40.742	
6,050.00	5,882.88	5,626.85	5,510.96	25.97	24.86	-152.67	645.03	-873.29	1,777.79	1,734.28	43.51	40.858	
6,060.00	5,890.33	5,632.99	5,516.92	26.07	24.89	-152.75	645.82	-874.49	1,785.58	1,742.00	43.57	40.978	
6,080.00	5,904.90	5,644.84	5,528.45	26.28	24.95	-152.81	647.34	-876.81	1,801.47	1,757.77	43.70	41.227	
6,100.00	5,919.00	5,656.13	5,539.42	26.49	25.01	-152.77	648.79	-879.02	1,817.77	1,773.95	43.82	41.485	
6,120.00	5,932.61	5,666.83	5,549.83	26.72	25.06	-152.60	650.17	-881.11	1,834.45	1,790.52	43.93	41.759	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,140.00	5,945.72	5,676.94	5,559.66	26.95	25.11	-152.31	651.47	-883.09	1,851.50	1,807.46	44.04	42.042	
6,150.00	5,952.07	5,681.77	5,564.35	27.06	25.13	-152.11	652.09	-884.03	1,860.16	1,816.06	44.09	42.187	
6,160.00	5,958.30	5,686.44	5,568.89	27.19	25.16	-151.88	652.69	-884.94	1,868.90	1,824.76	44.14	42.337	
6,180.00	5,970.34	5,695.32	5,577.53	27.44	25.20	-151.29	653.83	-886.68	1,886.62	1,842.38	44.24	42.644	
6,200.00	5,981.83	5,703.57	5,585.55	27.69	25.24	-150.51	654.89	-888.29	1,904.65	1,860.31	44.34	42.959	
6,220.00	5,992.76	5,711.18	5,592.95	27.97	25.28	-149.52	655.87	-889.78	1,922.95	1,878.53	44.42	43.288	
6,240.00	6,003.11	5,718.14	5,599.71	28.25	25.31	-148.26	656.76	-891.14	1,941.52	1,897.02	44.51	43.625	
6,250.00	6,008.06	5,721.38	5,602.86	28.38	25.33	-147.51	657.17	-891.77	1,950.89	1,906.35	44.55	43.796	
6,260.00	6,012.86	5,724.44	5,605.84	28.53	25.34	-146.66	657.57	-892.37	1,960.32	1,915.74	44.58	43.972	
6,280.00	6,022.01	5,730.08	5,611.32	28.84	25.37	-144.62	658.29	-893.48	1,979.34	1,934.69	44.65	44.330	
6,300.00	6,030.55	5,735.05	5,616.15	29.14	25.40	-142.01	658.93	-894.45	1,998.55	1,953.83	44.72	44.694	
6,320.00	6,038.46	5,739.33	5,620.32	29.46	25.42	-138.62	659.48	-895.29	2,017.92	1,973.15	44.77	45.071	
6,340.00	6,045.73	5,742.93	5,623.82	29.78	25.44	-134.13	659.94	-895.99	2,037.43	1,992.61	44.82	45.454	
6,350.00	6,049.13	5,744.48	5,625.32	29.95	25.44	-131.34	660.14	-896.29	2,047.24	2,002.39	44.85	45.647	
6,360.00	6,052.36	5,745.85	5,626.65	30.12	25.45	-128.08	660.32	-896.56	2,057.07	2,012.20	44.87	45.845	
6,380.00	6,058.34	5,748.07	5,628.81	30.47	25.46	-119.83	660.60	-896.99	2,076.80	2,031.89	44.91	46.245	
6,400.00	6,063.66	5,749.59	5,630.29	30.81	25.47	-108.58	660.80	-897.29	2,096.60	2,051.65	44.94	46.650	
6,420.00	6,068.31	5,750.43	5,631.10	31.18	25.47	-93.92	660.91	-897.45	2,116.44	2,071.47	44.97	47.066	
6,440.00	6,072.29	5,750.56	5,631.23	31.54	25.47	-76.82	660.92	-897.48	2,136.31	2,091.32	44.99	47.485	
6,450.00	6,074.03	5,750.36	5,631.04	31.73	25.47	-68.19	660.90	-897.44	2,146.24	2,101.25	45.00	47.696	
6,460.00	6,075.60	5,749.99	5,630.68	31.92	25.47	-60.00	660.85	-897.37	2,156.18	2,111.17	45.00	47.911	
6,480.00	6,078.23	5,748.73	5,629.46	32.30	25.46	-45.91	660.69	-897.12	2,176.01	2,131.00	45.01	48.344	
6,500.00	6,080.17	5,746.78	5,627.55	32.68	25.46	-35.20	660.44	-896.74	2,195.80	2,150.79	45.02	48.779	
6,520.00	6,081.42	5,744.13	5,624.98	33.07	25.44	-27.32	660.10	-896.22	2,215.52	2,170.51	45.01	49.223	
6,540.00	6,081.99	5,740.79	5,621.73	33.47	25.43	-21.48	659.67	-895.57	2,235.13	2,190.13	45.00	49.668	
6,552.18	6,082.00	5,738.42	5,619.43	33.71	25.41	-18.66	659.36	-895.11	2,247.02	2,202.02	44.99	49.939	
6,560.00	6,081.92	5,736.81	5,617.87	33.86	25.41	-18.58	659.16	-894.79	2,254.63	2,209.64	44.99	50.115	
6,580.00	6,081.73	5,732.71	5,613.88	34.27	25.39	-18.39	658.63	-893.99	2,274.11	2,229.14	44.97	50.565	
6,600.00	6,081.53	5,728.61	5,609.90	34.67	25.37	-18.19	658.10	-893.19	2,293.59	2,248.63	44.96	51.015	
6,620.00	6,081.34	5,724.52	5,605.91	35.10	25.34	-18.00	657.58	-892.39	2,313.07	2,268.13	44.94	51.465	
6,640.00	6,081.14	5,720.42	5,601.92	35.52	25.32	-17.81	657.05	-891.59	2,332.55	2,287.62	44.93	51.915	
6,660.00	6,080.95	5,716.32	5,597.94	35.94	25.30	-17.63	656.52	-890.79	2,352.04	2,307.12	44.92	52.366	
6,680.00	6,080.76	5,712.22	5,593.95	36.37	25.28	-17.44	656.00	-889.98	2,371.52	2,326.62	44.90	52.817	
6,700.00	6,080.56	5,708.12	5,589.97	36.79	25.26	-17.26	655.47	-889.18	2,391.01	2,346.13	44.89	53.269	
6,720.00	6,080.37	5,704.02	5,585.98	37.24	25.24	-17.08	654.94	-888.38	2,410.50	2,365.63	44.87	53.722	
6,740.00	6,080.17	5,699.92	5,582.00	37.69	25.22	-16.91	654.42	-887.58	2,429.99	2,385.13	44.85	54.175	
6,760.00	6,079.98	5,695.82	5,578.01	38.13	25.20	-16.74	653.89	-886.78	2,449.48	2,404.64	44.84	54.628	
6,780.00	6,079.78	5,691.72	5,574.02	38.58	25.18	-16.56	653.36	-885.98	2,468.97	2,424.15	44.82	55.082	
6,800.00	6,079.59	5,687.62	5,570.04	39.03	25.16	-16.40	652.84	-885.17	2,488.47	2,443.66	44.81	55.536	
6,820.00	6,079.39	5,683.52	5,566.05	39.49	25.14	-16.23	652.31	-884.37	2,507.96	2,463.17	44.79	55.991	
6,840.00	6,079.20	5,679.42	5,562.07	39.96	25.12	-16.06	651.79	-883.57	2,527.46	2,482.68	44.78	56.447	
6,860.00	6,079.00	5,675.32	5,558.08	40.43	25.10	-15.90	651.26	-882.77	2,546.96	2,502.20	44.76	56.902	
6,880.00	6,078.81	5,671.22	5,554.09	40.89	25.08	-15.74	650.73	-881.97	2,566.46	2,521.71	44.74	57.359	
6,900.00	6,078.61	5,667.12	5,550.11	41.36	25.06	-15.58	650.21	-881.17	2,585.96	2,541.23	44.73	57.816	
6,920.00	6,078.42	5,663.02	5,546.12	41.84	25.04	-15.43	649.68	-880.36	2,605.46	2,560.75	44.71	58.273	
6,940.00	6,078.22	5,658.92	5,542.14	42.32	25.02	-15.27	649.15	-879.56	2,624.96	2,580.27	44.69	58.731	
6,960.00	6,078.03	5,654.82	5,538.15	42.81	25.00	-15.12	648.63	-878.76	2,644.46	2,599.79	44.68	59.189	
6,980.00	6,077.83	5,650.72	5,534.16	43.29	24.98	-14.97	648.10	-877.96	2,663.97	2,619.31	44.66	59.648	
7,000.00	6,077.64	5,646.62	5,530.18	43.77	24.96	-14.82	647.57	-877.16	2,683.47	2,638.83	44.64	60.107	
7,020.00	6,077.44	5,642.52	5,526.19	44.27	24.94	-14.67	647.05	-876.36	2,702.98	2,658.35	44.63	60.567	
7,040.00	6,077.25	5,638.42	5,522.21	44.76	24.92	-14.53	646.52	-875.56	2,722.49	2,677.88	44.61	61.027	
7,060.00	6,077.05	5,634.32	5,518.22	45.26	24.90	-14.39	645.99	-874.75	2,742.00	2,697.40	44.59	61.488	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,080.00	6,076.86	5,630.22	5,514.23	45.76	24.88	-14.25	645.47	-873.95	2,761.51	2,716.93	44.58	61.949	
7,100.00	6,076.66	5,626.12	5,510.25	46.25	24.86	-14.11	644.94	-873.15	2,781.02	2,736.46	44.56	62.411	
7,120.00	6,076.47	5,622.02	5,506.26	46.76	24.84	-13.97	644.41	-872.35	2,800.53	2,755.99	44.54	62.872	
7,140.00	6,076.27	5,617.92	5,502.28	47.27	24.82	-13.83	643.89	-871.55	2,820.04	2,775.51	44.53	63.335	
7,160.00	6,076.08	5,613.82	5,498.29	47.78	24.80	-13.70	643.36	-870.75	2,839.55	2,795.04	44.51	63.798	
7,180.00	6,075.88	5,609.72	5,494.30	48.28	24.77	-13.56	642.83	-869.94	2,859.07	2,814.58	44.49	64.262	
7,200.00	6,075.69	5,605.62	5,490.32	48.79	24.75	-13.43	642.31	-869.14	2,878.58	2,834.11	44.47	64.726	
7,220.00	6,075.49	5,601.52	5,486.33	49.31	24.73	-13.30	641.78	-868.34	2,898.10	2,853.64	44.46	65.190	
7,240.00	6,075.30	5,597.42	5,482.35	49.83	24.71	-13.17	641.25	-867.54	2,917.61	2,873.18	44.44	65.655	
7,260.00	6,075.11	5,593.33	5,478.36	50.34	24.69	-13.05	640.73	-866.74	2,937.13	2,892.71	44.42	66.120	
7,280.00	6,074.91	5,589.23	5,474.38	50.86	24.67	-12.92	640.20	-865.94	2,956.65	2,912.25	44.40	66.586	
7,300.00	6,074.72	5,585.13	5,470.39	51.38	24.65	-12.80	639.67	-865.13	2,976.17	2,931.78	44.39	67.052	
7,320.00	6,074.52	5,581.03	5,466.40	51.90	24.63	-12.68	639.15	-864.33	2,995.69	2,951.32	44.37	67.519	
7,340.00	6,074.33	5,576.93	5,462.42	52.43	24.61	-12.56	638.62	-863.53	3,015.21	2,970.86	44.35	67.986	
7,360.00	6,074.13	5,572.83	5,458.43	52.96	24.59	-12.44	638.09	-862.73	3,034.73	2,990.40	44.33	68.454	
7,380.00	6,073.94	5,568.73	5,454.45	53.48	24.57	-12.32	637.57	-861.93	3,054.25	3,009.93	44.31	68.922	
7,400.00	6,073.74	5,564.63	5,450.46	54.01	24.55	-12.20	637.04	-861.13	3,073.77	3,029.47	44.30	69.390	
7,420.00	6,073.55	5,560.53	5,446.47	54.54	24.53	-12.08	636.51	-860.32	3,093.29	3,049.02	44.28	69.859	
7,440.00	6,073.35	5,556.43	5,442.49	55.07	24.51	-11.97	635.99	-859.52	3,112.82	3,068.56	44.26	70.329	
7,460.00	6,073.16	5,552.33	5,438.50	55.61	24.49	-11.86	635.46	-858.72	3,132.34	3,088.10	44.24	70.798	
7,480.00	6,072.96	5,548.23	5,434.52	56.14	24.47	-11.75	634.93	-857.92	3,151.87	3,107.64	44.23	71.269	
7,500.00	6,072.77	5,544.13	5,430.53	56.67	24.45	-11.63	634.41	-857.12	3,171.39	3,127.19	44.21	71.740	
7,520.00	6,072.57	5,540.03	5,426.54	57.21	24.43	-11.53	633.88	-856.32	3,190.92	3,146.73	44.19	72.211	
7,540.00	6,072.38	5,535.93	5,422.56	57.75	24.41	-11.42	633.35	-855.52	3,210.45	3,166.27	44.17	72.682	
7,560.00	6,072.18	5,531.83	5,418.57	58.29	24.39	-11.31	632.83	-854.71	3,229.97	3,185.82	44.15	73.154	
7,580.00	6,071.99	5,527.73	5,414.59	58.83	24.37	-11.20	632.30	-853.91	3,249.50	3,205.37	44.13	73.627	
7,600.00	6,071.79	5,523.63	5,410.60	59.37	24.35	-11.10	631.77	-853.11	3,269.03	3,224.91	44.12	74.100	
7,620.00	6,071.60	5,519.53	5,406.61	59.92	24.33	-11.00	631.25	-852.31	3,288.56	3,244.46	44.10	74.573	
7,640.00	6,071.40	5,515.43	5,402.63	60.46	24.31	-10.89	630.72	-851.51	3,308.09	3,264.01	44.08	75.047	
7,660.00	6,071.21	5,511.33	5,398.64	61.01	24.29	-10.79	630.19	-850.71	3,327.62	3,283.55	44.06	75.521	
7,680.00	6,071.01	5,507.23	5,394.66	61.55	24.27	-10.69	629.67	-849.90	3,347.15	3,303.10	44.04	75.996	
7,700.00	6,070.82	5,503.13	5,390.67	62.10	24.25	-10.59	629.14	-849.10	3,366.68	3,322.65	44.03	76.471	
7,720.00	6,070.62	5,499.03	5,386.68	62.65	24.23	-10.49	628.61	-848.30	3,386.21	3,342.20	44.01	76.946	
7,740.00	6,070.43	5,494.93	5,382.70	63.19	24.21	-10.40	628.09	-847.50	3,405.74	3,361.75	43.99	77.422	
7,760.00	6,070.23	5,490.83	5,378.71	63.74	24.19	-10.30	627.56	-846.70	3,425.28	3,381.30	43.97	77.898	
7,780.00	6,070.04	5,486.73	5,374.73	64.29	24.16	-10.21	627.03	-845.90	3,444.81	3,400.86	43.95	78.375	
7,800.00	6,069.85	5,482.63	5,370.74	64.84	24.14	-10.11	626.51	-845.09	3,464.34	3,420.41	43.93	78.852	
7,820.00	6,069.65	5,478.53	5,366.76	65.40	24.12	-10.02	625.98	-844.29	3,483.88	3,439.96	43.92	79.329	
7,840.00	6,069.46	5,474.43	5,362.77	65.95	24.10	-9.93	625.45	-843.49	3,503.41	3,459.51	43.90	79.807	
7,860.00	6,069.26	5,470.33	5,358.78	66.51	24.08	-9.83	624.93	-842.69	3,522.95	3,479.06	43.88	80.285	
7,880.00	6,069.07	5,466.23	5,354.80	67.06	24.06	-9.74	624.40	-841.89	3,542.48	3,498.62	43.86	80.764	
7,900.00	6,068.87	5,462.13	5,350.81	67.61	24.04	-9.65	623.87	-841.09	3,562.02	3,518.17	43.84	81.244	
7,920.00	6,068.68	5,458.04	5,346.83	68.17	24.02	-9.57	623.35	-840.29	3,581.55	3,537.73	43.83	81.723	
7,940.00	6,068.48	5,453.94	5,342.84	68.73	24.00	-9.48	622.82	-839.48	3,601.09	3,557.28	43.81	82.203	
7,960.00	6,068.29	5,449.84	5,338.85	69.29	23.98	-9.39	622.29	-838.68	3,620.63	3,576.84	43.79	82.683	
7,980.00	6,068.09	5,445.74	5,334.87	69.84	23.96	-9.30	621.77	-837.88	3,640.16	3,596.39	43.77	83.164	
8,000.00	6,067.90	5,441.64	5,330.88	70.40	23.94	-9.22	621.24	-837.08	3,659.70	3,615.95	43.75	83.645	
8,020.00	6,067.70	5,437.54	5,326.90	70.96	23.92	-9.14	620.71	-836.28	3,679.24	3,635.51	43.73	84.126	
8,040.00	6,067.51	5,433.44	5,322.91	71.52	23.90	-9.05	620.19	-835.48	3,698.78	3,655.06	43.72	84.608	
8,060.00	6,067.31	5,429.34	5,318.92	72.08	23.88	-8.97	619.66	-834.67	3,718.32	3,674.62	43.70	85.090	
8,080.00	6,067.12	5,425.24	5,314.94	72.64	23.86	-8.89	619.13	-833.87	3,737.86	3,694.18	43.68	85.573	
8,100.00	6,066.92	5,421.14	5,310.95	73.20	23.84	-8.81	618.61	-833.07	3,757.40	3,713.73	43.66	86.056	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,120.00	6,066.73	5,417.04	5,306.97	73.77	23.82	-8.73	618.08	-832.27	3,776.94	3,733.29	43.64	86.539	
8,140.00	6,066.53	5,412.94	5,302.98	74.33	23.80	-8.65	617.55	-831.47	3,796.48	3,752.85	43.63	87.023	
8,160.00	6,066.34	5,408.84	5,298.99	74.90	23.78	-8.57	617.03	-830.67	3,816.02	3,772.41	43.61	87.507	
8,180.00	6,066.14	5,404.74	5,295.01	75.46	23.76	-8.49	616.50	-829.86	3,835.56	3,791.97	43.59	87.992	
8,200.00	6,065.95	5,400.64	5,291.02	76.02	23.74	-8.41	615.97	-829.06	3,855.10	3,811.53	43.57	88.477	
8,220.00	6,065.75	5,396.54	5,287.04	76.59	23.72	-8.33	615.45	-828.26	3,874.64	3,831.09	43.55	88.962	
8,240.00	6,065.56	5,392.44	5,283.05	77.16	23.70	-8.26	614.92	-827.46	3,894.19	3,850.65	43.54	89.447	
8,260.00	6,065.36	5,388.34	5,279.07	77.72	23.68	-8.18	614.39	-826.66	3,913.73	3,870.21	43.52	89.933	
8,280.00	6,065.17	5,384.24	5,275.08	78.29	23.66	-8.11	613.87	-825.86	3,933.27	3,889.77	43.50	90.419	
8,300.00	6,064.97	5,380.14	5,271.09	78.85	23.64	-8.04	613.34	-825.06	3,952.81	3,909.33	43.48	90.906	
8,320.00	6,064.78	5,376.04	5,267.11	79.42	23.62	-7.96	612.81	-824.25	3,972.36	3,928.89	43.46	91.393	
8,340.00	6,064.59	5,371.94	5,263.12	79.99	23.60	-7.89	612.29	-823.45	3,991.90	3,948.46	43.45	91.880	
8,360.00	6,064.39	5,367.84	5,259.14	80.56	23.58	-7.82	611.76	-822.65	4,011.45	3,968.02	43.43	92.368	
8,380.00	6,064.20	5,363.74	5,255.15	81.13	23.55	-7.75	611.23	-821.85	4,030.99	3,987.58	43.41	92.856	
8,400.00	6,064.00	5,359.64	5,251.16	81.70	23.53	-7.68	610.71	-821.05	4,050.54	4,007.14	43.39	93.345	
8,420.00	6,063.81	5,355.54	5,247.18	82.27	23.51	-7.61	610.18	-820.25	4,070.08	4,026.71	43.38	93.833	
8,440.00	6,063.61	5,351.44	5,243.19	82.84	23.49	-7.54	609.65	-819.44	4,089.63	4,046.27	43.36	94.322	
8,460.00	6,063.42	5,347.34	5,239.21	83.41	23.47	-7.47	609.13	-818.64	4,109.17	4,065.83	43.34	94.812	
8,480.00	6,063.22	5,343.24	5,235.22	83.98	23.45	-7.40	608.60	-817.84	4,128.72	4,085.40	43.32	95.301	
8,500.00	6,063.03	5,339.14	5,231.23	84.55	23.43	-7.33	608.07	-817.04	4,148.26	4,104.96	43.31	95.792	
8,520.00	6,062.83	5,335.04	5,227.25	85.12	23.41	-7.27	607.55	-816.24	4,167.81	4,124.52	43.29	96.282	
8,540.00	6,062.64	5,330.94	5,223.26	85.69	23.39	-7.20	607.02	-815.44	4,187.36	4,144.09	43.27	96.773	
8,560.00	6,062.44	5,326.84	5,219.28	86.27	23.37	-7.13	606.49	-814.63	4,206.90	4,163.65	43.25	97.264	
8,580.00	6,062.25	5,322.75	5,215.29	86.84	23.35	-7.07	605.97	-813.83	4,226.45	4,183.22	43.24	97.755	
8,600.00	6,062.05	5,318.65	5,211.30	87.41	23.33	-7.00	605.44	-813.03	4,246.00	4,202.78	43.22	98.247	
8,620.00	6,061.86	5,314.55	5,207.32	87.99	23.31	-6.94	604.91	-812.23	4,265.55	4,222.35	43.20	98.739	
8,640.00	6,061.66	5,310.45	5,203.33	88.56	23.29	-6.88	604.39	-811.43	4,285.09	4,241.91	43.18	99.231	
8,660.00	6,061.47	5,306.35	5,199.35	89.13	23.27	-6.81	603.86	-810.63	4,304.64	4,261.48	43.17	99.724	
8,680.00	6,061.27	5,302.25	5,195.36	89.71	23.25	-6.75	603.33	-809.83	4,324.19	4,281.04	43.15	100.217	
8,700.00	6,061.08	5,298.15	5,191.37	90.28	23.23	-6.69	602.81	-809.02	4,343.74	4,300.61	43.13	100.710	
8,720.00	6,060.88	5,294.05	5,187.39	90.86	23.21	-6.63	602.28	-808.22	4,363.29	4,320.18	43.11	101.203	
8,740.00	6,060.69	5,289.95	5,183.40	91.43	23.19	-6.57	601.75	-807.42	4,382.84	4,339.74	43.10	101.697	
8,760.00	6,060.49	5,285.85	5,179.42	92.01	23.17	-6.51	601.23	-806.62	4,402.39	4,359.31	43.08	102.191	
8,780.00	6,060.30	5,281.75	5,175.43	92.59	23.15	-6.45	600.70	-805.82	4,421.94	4,378.88	43.06	102.686	
8,800.00	6,060.10	5,277.65	5,171.45	93.16	23.13	-6.39	600.17	-805.02	4,441.49	4,398.44	43.05	103.181	
8,820.00	6,059.91	5,273.55	5,167.46	93.74	23.11	-6.33	599.65	-804.21	4,461.04	4,418.01	43.03	103.675	
8,840.00	6,059.71	5,269.45	5,163.47	94.32	23.09	-6.27	599.12	-803.41	4,480.59	4,437.58	43.01	104.171	
8,860.00	6,059.52	5,265.35	5,159.49	94.89	23.07	-6.21	598.59	-802.61	4,500.14	4,457.14	43.00	104.666	
8,880.00	6,059.33	5,261.25	5,155.50	95.47	23.05	-6.15	598.07	-801.81	4,519.69	4,476.71	42.98	105.162	
8,900.00	6,059.13	5,257.15	5,151.52	96.05	23.03	-6.10	597.54	-801.01	4,539.24	4,496.28	42.96	105.659	
8,920.00	6,058.94	5,253.05	5,147.53	96.63	23.01	-6.04	597.01	-800.21	4,558.79	4,515.85	42.94	106.155	
8,940.00	6,058.74	5,248.95	5,143.54	97.20	22.99	-5.99	596.49	-799.40	4,578.34	4,535.42	42.93	106.651	
8,960.00	6,058.55	5,244.85	5,139.56	97.78	22.97	-5.93	595.96	-798.60	4,597.90	4,554.98	42.91	107.148	
8,980.00	6,058.35	5,240.75	5,135.57	98.36	22.95	-5.87	595.43	-797.80	4,617.45	4,574.55	42.89	107.646	
9,000.00	6,058.16	5,236.65	5,131.59	98.94	22.93	-5.82	594.91	-797.00	4,637.00	4,594.12	42.88	108.143	
9,020.00	6,057.96	5,232.55	5,127.60	99.52	22.90	-5.77	594.38	-796.20	4,656.55	4,613.69	42.86	108.641	
9,040.00	6,057.77	5,228.45	5,123.61	100.10	22.88	-5.71	593.85	-795.40	4,676.10	4,633.26	42.85	109.139	
9,060.00	6,057.57	5,224.35	5,119.63	100.68	22.86	-5.66	593.33	-794.59	4,695.66	4,652.83	42.83	109.637	
9,080.00	6,057.38	5,220.25	5,115.64	101.26	22.84	-5.61	592.80	-793.79	4,715.21	4,672.40	42.81	110.136	
9,100.00	6,057.18	5,216.15	5,111.66	101.84	22.82	-5.55	592.27	-792.99	4,734.76	4,691.97	42.80	110.635	
9,120.00	6,056.99	5,212.05	5,107.67	102.42	22.80	-5.50	591.75	-792.19	4,754.32	4,711.54	42.78	111.134	
9,140.00	6,056.79	5,207.95	5,103.68	103.00	22.78	-5.45	591.22	-791.39	4,773.87	4,731.10	42.76	111.633	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,160.00	6,056.60	5,203.85	5,099.70	103.58	22.76	-5.40	590.69	-790.59	4,793.42	4,750.67	42.75	112.132	
9,180.00	6,056.40	5,199.75	5,095.71	104.16	22.74	-5.35	590.17	-789.79	4,812.98	4,770.24	42.73	112.632	
9,200.00	6,056.21	5,195.65	5,091.73	104.74	22.72	-5.30	589.64	-788.98	4,832.53	4,789.81	42.72	113.132	
9,220.00	6,056.01	5,191.56	5,087.74	105.32	22.70	-5.25	589.11	-788.18	4,852.08	4,809.38	42.70	113.632	
9,240.00	6,055.82	5,187.46	5,083.75	105.90	22.68	-5.20	588.59	-787.38	4,871.64	4,828.95	42.68	114.133	
9,260.00	6,055.62	5,183.36	5,079.77	106.49	22.66	-5.15	588.06	-786.58	4,891.19	4,848.52	42.67	114.633	
9,280.00	6,055.43	5,179.26	5,075.78	107.07	22.64	-5.10	587.53	-785.78	4,910.75	4,868.10	42.65	115.135	
9,300.00	6,055.23	5,175.16	5,071.80	107.65	22.62	-5.05	587.01	-784.98	4,930.30	4,887.67	42.64	115.636	
9,320.00	6,055.04	5,171.06	5,067.81	108.23	22.60	-5.00	586.48	-784.17	4,949.86	4,907.24	42.62	116.137	
9,340.00	6,054.84	5,166.96	5,063.83	108.81	22.58	-4.95	585.95	-783.37	4,969.41	4,926.81	42.61	116.639	
9,360.00	6,054.65	5,162.86	5,059.84	109.40	22.56	-4.91	585.43	-782.57	4,988.97	4,946.38	42.59	117.140	
9,380.00	6,054.45	5,158.76	5,055.85	109.98	22.54	-4.86	584.90	-781.77	5,008.52	4,965.95	42.57	117.643	
9,400.00	6,054.26	5,154.66	5,051.87	110.56	22.52	-4.81	584.38	-780.97	5,028.08	4,985.52	42.56	118.145	
9,420.00	6,054.07	5,150.56	5,047.88	111.14	22.50	-4.77	583.85	-780.17	5,047.63	5,005.09	42.54	118.647	
9,440.00	6,053.87	5,146.46	5,043.90	111.73	22.48	-4.72	583.32	-779.36	5,067.19	5,024.66	42.53	119.150	
9,460.00	6,053.68	5,142.36	5,039.91	112.31	22.46	-4.67	582.80	-778.56	5,086.75	5,044.23	42.51	119.653	
9,480.00	6,053.48	5,138.26	5,035.92	112.89	22.44	-4.63	582.27	-777.76	5,106.30	5,063.80	42.50	120.156	
9,500.00	6,053.29	5,134.16	5,031.94	113.48	22.42	-4.58	581.74	-776.96	5,125.86	5,083.38	42.48	120.659	
9,520.00	6,053.09	5,130.06	5,027.95	114.06	22.40	-4.54	581.22	-776.16	5,145.41	5,102.95	42.47	121.163	
9,540.00	6,052.90	5,125.96	5,023.97	114.65	22.38	-4.49	580.69	-775.36	5,164.97	5,122.52	42.45	121.666	
9,560.00	6,052.70	5,121.86	5,019.98	115.23	22.36	-4.45	580.16	-774.56	5,184.53	5,142.09	42.44	122.170	
9,580.00	6,052.51	5,117.76	5,015.99	115.81	22.34	-4.41	579.64	-773.75	5,204.08	5,161.66	42.42	122.674	
9,600.00	6,052.31	5,113.66	5,012.01	116.40	22.32	-4.36	579.11	-772.95	5,223.64	5,181.23	42.41	123.179	
9,620.00	6,052.12	5,109.56	5,008.02	116.98	22.30	-4.32	578.58	-772.15	5,243.20	5,200.81	42.39	123.683	
9,640.00	6,051.92	5,105.46	5,004.04	117.57	22.28	-4.28	578.06	-771.35	5,262.76	5,220.38	42.38	124.187	
9,660.00	6,051.73	5,101.36	5,000.05	118.15	22.26	-4.23	577.53	-770.55	5,282.31	5,239.95	42.36	124.692	
9,680.00	6,051.53	5,097.26	4,996.06	118.74	22.23	-4.19	577.00	-769.75	5,301.87	5,259.52	42.35	125.197	
9,700.00	6,051.34	5,093.16	4,992.08	119.32	22.21	-4.15	576.48	-768.94	5,321.43	5,279.09	42.33	125.702	
9,720.00	6,051.14	5,089.06	4,988.09	119.91	22.19	-4.11	575.95	-768.14	5,340.99	5,298.67	42.32	126.207	
9,740.00	6,050.95	5,084.96	4,984.11	120.49	22.17	-4.07	575.42	-767.34	5,360.54	5,318.24	42.30	126.712	
9,760.00	6,050.75	5,080.86	4,980.12	121.08	22.15	-4.02	574.90	-766.54	5,380.10	5,337.81	42.29	127.218	
9,780.00	6,050.56	5,076.76	4,976.13	121.67	22.13	-3.98	574.37	-765.74	5,399.66	5,357.38	42.28	127.724	
9,800.00	6,050.36	5,072.66	4,972.15	122.25	22.11	-3.94	573.84	-764.94	5,419.22	5,376.96	42.26	128.230	
9,820.00	6,050.17	5,068.56	4,968.16	122.84	22.09	-3.90	573.32	-764.13	5,438.78	5,396.53	42.25	128.736	
9,840.00	6,049.97	5,064.46	4,964.18	123.42	22.07	-3.86	572.79	-763.33	5,458.34	5,416.10	42.23	129.242	
9,860.00	6,049.78	5,060.36	4,960.19	124.01	22.05	-3.82	572.26	-762.53	5,477.89	5,435.67	42.22	129.748	
9,880.00	6,049.58	5,056.27	4,956.21	124.60	22.03	-3.78	571.74	-761.73	5,497.45	5,455.25	42.21	130.254	
9,900.00	6,049.39	5,052.17	4,952.22	125.18	22.01	-3.74	571.21	-760.93	5,517.01	5,474.82	42.19	130.761	
9,920.00	6,049.19	5,048.07	4,948.23	125.77	21.99	-3.71	570.68	-760.13	5,536.57	5,494.39	42.18	131.268	
9,940.00	6,049.00	5,043.97	4,944.25	126.35	21.97	-3.67	570.16	-759.33	5,556.13	5,513.97	42.16	131.774	
9,960.00	6,048.80	5,039.87	4,940.26	126.94	21.95	-3.63	569.63	-758.52	5,575.69	5,533.54	42.15	132.281	
9,980.00	6,048.61	5,035.77	4,936.28	127.53	21.93	-3.59	569.10	-757.72	5,595.25	5,553.11	42.14	132.789	
10,000.00	6,048.42	5,031.67	4,932.29	128.11	21.91	-3.55	568.58	-756.92	5,614.81	5,572.69	42.12	133.296	
10,020.00	6,048.22	5,027.57	4,928.30	128.70	21.89	-3.52	568.05	-756.12	5,634.37	5,592.26	42.11	133.803	
10,040.00	6,048.03	5,023.47	4,924.32	129.29	21.87	-3.48	567.52	-755.32	5,653.93	5,611.83	42.10	134.311	
10,060.00	6,047.83	5,019.37	4,920.33	129.88	21.85	-3.44	567.00	-754.52	5,673.49	5,631.40	42.08	134.818	
10,080.00	6,047.64	5,015.27	4,916.35	130.46	21.83	-3.40	566.47	-753.71	5,693.05	5,650.98	42.07	135.326	
10,100.00	6,047.44	5,011.17	4,912.36	131.05	21.81	-3.37	565.94	-752.91	5,712.61	5,670.55	42.06	135.834	
10,120.00	6,047.25	5,007.07	4,908.37	131.64	21.79	-3.33	565.42	-752.11	5,732.17	5,690.12	42.04	136.342	
10,140.00	6,047.05	5,002.97	4,904.39	132.23	21.77	-3.29	564.89	-751.31	5,751.73	5,709.70	42.03	136.849	
10,160.00	6,046.86	4,998.87	4,900.40	132.81	21.75	-3.26	564.36	-750.51	5,771.29	5,729.27	42.02	137.358	
10,180.00	6,046.66	4,994.77	4,896.42	133.40	21.73	-3.22	563.84	-749.71	5,790.85	5,748.84	42.00	137.866	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	6,046.47	4,990.67	4,892.43	133.99	21.71	-3.19	563.31	-748.90	5,810.41	5,768.42	41.99	138.375	
10,220.00	6,046.27	4,986.57	4,888.44	134.58	21.69	-3.15	562.78	-748.10	5,829.97	5,787.99	41.98	138.883	
10,240.00	6,046.08	4,982.47	4,884.46	135.17	21.67	-3.12	562.26	-747.30	5,849.53	5,807.56	41.96	139.391	
10,260.00	6,045.88	4,978.37	4,880.47	135.75	21.65	-3.08	561.73	-746.50	5,869.09	5,827.14	41.95	139.899	
10,280.00	6,045.69	4,974.27	4,876.49	136.34	21.63	-3.05	561.20	-745.70	5,888.65	5,846.71	41.94	140.408	
10,300.00	6,045.49	4,970.17	4,872.50	136.93	21.61	-3.01	560.68	-744.90	5,908.21	5,866.29	41.93	140.917	
10,320.00	6,045.30	4,966.07	4,868.51	137.52	21.59	-2.98	560.15	-744.10	5,927.77	5,885.86	41.91	141.426	
10,340.00	6,045.10	4,961.97	4,864.53	138.11	21.57	-2.95	559.62	-743.29	5,947.33	5,905.43	41.90	141.934	
10,360.00	6,044.91	4,957.87	4,860.54	138.70	21.54	-2.91	559.10	-742.49	5,966.90	5,925.01	41.89	142.443	
10,380.00	6,044.71	4,953.77	4,856.56	139.28	21.52	-2.88	558.57	-741.69	5,986.46	5,944.58	41.88	142.952	
10,400.00	6,044.52	4,949.67	4,852.57	139.87	21.50	-2.85	558.04	-740.89	6,006.02	5,964.15	41.86	143.462	
10,420.00	6,044.32	4,945.57	4,848.59	140.46	21.48	-2.81	557.52	-740.09	6,025.58	5,983.73	41.85	143.971	
10,440.00	6,044.13	4,941.47	4,844.60	141.05	21.46	-2.78	556.99	-739.29	6,045.14	6,003.30	41.84	144.480	
10,460.00	6,043.93	4,937.37	4,840.61	141.64	21.44	-2.75	556.46	-738.48	6,064.70	6,022.88	41.83	144.989	
10,480.00	6,043.74	4,933.27	4,836.63	142.23	21.42	-2.71	555.94	-737.68	6,084.27	6,042.45	41.82	145.498	
10,500.00	6,043.54	4,929.17	4,832.64	142.82	21.40	-2.68	555.41	-736.88	6,103.83	6,062.02	41.80	146.008	
10,520.00	6,043.35	4,925.08	4,828.66	143.41	21.38	-2.65	554.88	-736.08	6,123.39	6,081.60	41.79	146.517	
10,540.00	6,043.16	4,920.98	4,824.67	144.00	21.36	-2.62	554.36	-735.28	6,142.95	6,101.17	41.78	147.026	
10,560.00	6,042.96	4,916.88	4,820.68	144.59	21.34	-2.59	553.83	-734.48	6,162.51	6,120.74	41.77	147.536	
10,580.00	6,042.77	4,912.78	4,816.70	145.18	21.32	-2.56	553.30	-733.67	6,182.08	6,140.32	41.76	148.045	
10,600.00	6,042.57	4,908.68	4,812.71	145.77	21.30	-2.52	552.78	-732.87	6,201.64	6,159.89	41.75	148.555	
10,620.00	6,042.38	4,904.58	4,808.73	146.36	21.28	-2.49	552.25	-732.07	6,221.20	6,179.47	41.73	149.065	
10,640.00	6,042.18	4,900.48	4,804.74	146.95	21.26	-2.46	551.72	-731.27	6,240.76	6,199.04	41.72	149.574	
10,660.00	6,041.99	4,896.38	4,800.75	147.54	21.24	-2.43	551.20	-730.47	6,260.33	6,218.61	41.71	150.084	
10,680.00	6,041.79	4,892.28	4,796.77	148.13	21.22	-2.40	550.67	-729.67	6,279.89	6,238.19	41.70	150.593	
10,700.00	6,041.60	4,888.18	4,792.78	148.71	21.20	-2.37	550.14	-728.86	6,299.45	6,257.76	41.69	151.103	
10,720.00	6,041.40	4,884.08	4,788.80	149.30	21.18	-2.34	549.62	-728.06	6,319.01	6,277.34	41.68	151.613	
10,740.00	6,041.21	4,879.98	4,784.81	149.90	21.16	-2.31	549.09	-727.26	6,338.58	6,296.91	41.67	152.122	
10,760.00	6,041.01	4,875.88	4,780.82	150.49	21.14	-2.28	548.56	-726.46	6,358.14	6,316.48	41.66	152.632	
10,780.00	6,040.82	4,871.78	4,776.84	151.08	21.12	-2.25	548.04	-725.66	6,377.70	6,336.06	41.65	153.142	
10,800.00	6,040.62	4,867.68	4,772.85	151.67	21.10	-2.22	547.51	-724.86	6,397.27	6,355.63	41.63	153.652	
10,820.00	6,040.43	4,863.58	4,768.87	152.26	21.08	-2.19	546.98	-724.06	6,416.83	6,375.20	41.62	154.161	
10,840.00	6,040.23	4,859.48	4,764.88	152.85	21.06	-2.16	546.46	-723.25	6,436.39	6,394.78	41.61	154.671	
10,860.00	6,040.04	4,855.38	4,760.89	153.44	21.04	-2.13	545.93	-722.45	6,455.96	6,414.35	41.60	155.180	
10,880.00	6,039.84	4,851.28	4,756.91	154.03	21.02	-2.11	545.40	-721.65	6,475.52	6,433.93	41.59	155.690	
10,900.00	6,039.65	4,847.18	4,752.92	154.62	21.00	-2.08	544.88	-720.85	6,495.08	6,453.50	41.58	156.200	
10,920.00	6,039.45	4,843.08	4,748.94	155.21	20.98	-2.05	544.35	-720.05	6,514.65	6,473.07	41.57	156.709	
10,940.00	6,039.26	4,838.98	4,744.95	155.80	20.96	-2.02	543.82	-719.25	6,534.21	6,492.65	41.56	157.219	
10,960.00	6,039.06	4,834.88	4,740.97	156.39	20.94	-1.99	543.30	-718.44	6,553.77	6,512.22	41.55	157.728	
10,980.00	6,038.87	4,830.78	4,736.98	156.98	20.92	-1.96	542.77	-717.64	6,573.34	6,531.80	41.54	158.238	
11,000.00	6,038.67	4,826.68	4,732.99	157.57	20.90	-1.94	542.24	-716.84	6,592.90	6,551.37	41.53	158.748	
11,020.00	6,038.48	4,822.58	4,729.01	158.16	20.88	-1.91	541.72	-716.04	6,612.46	6,570.94	41.52	159.257	
11,040.00	6,038.28	4,818.48	4,725.02	158.75	20.86	-1.88	541.19	-715.24	6,632.03	6,590.52	41.51	159.767	
11,060.00	6,038.09	4,814.38	4,721.04	159.34	20.84	-1.85	540.66	-714.44	6,651.59	6,610.09	41.50	160.276	
11,080.00	6,037.90	4,810.28	4,717.05	159.94	20.82	-1.83	540.14	-713.63	6,671.16	6,629.67	41.49	160.786	
11,100.00	6,037.70	4,806.18	4,713.06	160.53	20.79	-1.80	539.61	-712.83	6,690.72	6,649.24	41.48	161.295	
11,120.00	6,037.51	4,802.08	4,709.08	161.12	20.77	-1.77	539.08	-712.03	6,710.29	6,668.81	41.47	161.804	
11,140.00	6,037.31	4,797.98	4,705.09	161.71	20.75	-1.75	538.56	-711.23	6,729.85	6,688.39	41.46	162.314	
11,160.00	6,037.12	4,793.88	4,701.11	162.30	20.73	-1.72	538.03	-710.43	6,749.41	6,707.96	41.45	162.823	
11,180.00	6,036.92	4,789.79	4,697.12	162.89	20.71	-1.69	537.50	-709.63	6,768.98	6,727.54	41.44	163.332	
11,200.00	6,036.73	4,785.69	4,693.13	163.48	20.69	-1.67	536.98	-708.83	6,788.54	6,747.11	41.43	163.842	
11,220.00	6,036.53	4,781.59	4,689.15	164.07	20.67	-1.64	536.45	-708.02	6,808.11	6,766.68	41.42	164.350	

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,240.00	6,036.34	4,777.49	4,685.16	164.67	20.65	-1.62	535.92	-707.22	6,827.67	6,786.26	41.42	164.859	
11,260.00	6,036.14	4,773.39	4,681.18	165.26	20.63	-1.59	535.40	-706.42	6,847.24	6,805.83	41.41	165.368	
11,280.00	6,035.95	4,769.29	4,677.19	165.85	20.61	-1.57	534.87	-705.62	6,866.80	6,825.40	41.40	165.877	
11,300.00	6,035.75	4,765.19	4,673.20	166.44	20.59	-1.54	534.34	-704.82	6,886.37	6,844.98	41.39	166.386	
11,320.00	6,035.56	4,761.09	4,669.22	167.03	20.57	-1.51	533.82	-704.02	6,905.93	6,864.55	41.38	166.895	
11,340.00	6,035.36	4,756.99	4,665.23	167.62	20.55	-1.49	533.29	-703.21	6,925.50	6,884.13	41.37	167.403	
11,360.00	6,035.17	4,752.89	4,661.25	168.22	20.53	-1.46	532.76	-702.41	6,945.06	6,903.70	41.36	167.912	
11,380.00	6,034.97	4,748.79	4,657.26	168.81	20.51	-1.44	532.24	-701.61	6,964.63	6,923.27	41.35	168.420	
11,400.00	6,034.78	4,744.69	4,653.27	169.40	20.49	-1.41	531.71	-700.81	6,984.19	6,942.85	41.34	168.929	
11,420.00	6,034.58	4,740.59	4,649.29	169.99	20.47	-1.39	531.18	-700.01	7,003.76	6,962.42	41.34	169.437	
11,440.00	6,034.39	4,736.49	4,645.30	170.58	20.45	-1.37	530.66	-699.21	7,023.32	6,981.99	41.33	169.945	
11,460.00	6,034.19	4,732.39	4,641.32	171.18	20.43	-1.34	530.13	-698.40	7,042.89	7,001.57	41.32	170.453	
11,480.00	6,034.00	4,728.29	4,637.33	171.77	20.41	-1.32	529.60	-697.60	7,062.45	7,021.14	41.31	170.962	
11,500.00	6,033.80	4,724.19	4,633.35	172.36	20.39	-1.29	529.08	-696.80	7,082.02	7,040.72	41.30	171.470	
11,520.00	6,033.61	4,720.09	4,629.36	172.95	20.37	-1.27	528.55	-696.00	7,101.58	7,060.29	41.29	171.977	
11,540.00	6,033.41	4,715.99	4,625.37	173.55	20.35	-1.24	528.02	-695.20	7,121.15	7,079.86	41.29	172.485	
11,560.00	6,033.22	4,711.89	4,621.39	174.14	20.33	-1.22	527.50	-694.40	7,140.71	7,099.44	41.28	172.993	
11,580.00	6,033.02	4,707.79	4,617.40	174.73	20.31	-1.20	526.97	-693.60	7,160.28	7,119.01	41.27	173.500	
11,600.00	6,032.83	4,703.69	4,613.42	175.32	20.29	-1.17	526.44	-692.79	7,179.84	7,138.58	41.26	174.008	
11,620.00	6,032.64	4,699.59	4,609.43	175.91	20.27	-1.15	525.92	-691.99	7,199.41	7,158.16	41.25	174.515	
11,640.00	6,032.44	4,695.49	4,605.44	176.51	20.25	-1.13	525.39	-691.19	7,218.98	7,177.73	41.25	175.022	
11,660.00	6,032.25	4,691.39	4,601.46	177.10	20.23	-1.10	524.86	-690.39	7,238.54	7,197.30	41.24	175.529	
11,680.00	6,032.05	4,687.29	4,597.47	177.69	20.21	-1.08	524.34	-689.59	7,258.11	7,216.88	41.23	176.036	
11,700.00	6,031.86	4,683.19	4,593.49	178.28	20.19	-1.06	523.81	-688.79	7,277.67	7,236.45	41.22	176.543	
11,720.00	6,031.66	4,679.09	4,589.50	178.88	20.17	-1.04	523.28	-687.98	7,297.24	7,256.02	41.22	177.049	
11,740.00	6,031.47	4,674.99	4,585.51	179.47	20.15	-1.01	522.76	-687.18	7,316.81	7,275.60	41.21	177.556	
11,760.00	6,031.27	4,670.89	4,581.53	180.06	20.13	-0.99	522.23	-686.38	7,336.37	7,295.17	41.20	178.062	
11,780.00	6,031.08	4,666.79	4,577.54	180.65	20.11	-0.97	521.70	-685.58	7,355.94	7,314.74	41.19	178.569	
11,800.00	6,030.88	4,662.69	4,573.56	181.25	20.09	-0.95	521.18	-684.78	7,375.50	7,334.32	41.19	179.075	
11,820.00	6,030.69	4,658.59	4,569.57	181.84	20.07	-0.92	520.65	-683.98	7,395.07	7,353.89	41.18	179.581	
11,840.00	6,030.49	4,654.50	4,565.58	182.43	20.05	-0.90	520.12	-683.17	7,414.64	7,373.46	41.17	180.086	
11,860.00	6,030.30	4,650.40	4,561.60	183.03	20.03	-0.88	519.60	-682.37	7,434.20	7,393.04	41.17	180.592	
11,880.00	6,030.10	4,646.30	4,557.61	183.62	20.01	-0.86	519.07	-681.57	7,453.77	7,412.61	41.16	181.098	
11,900.00	6,029.91	4,642.20	4,553.63	184.21	19.98	-0.84	518.54	-680.77	7,473.33	7,432.18	41.15	181.603	
11,920.00	6,029.71	4,638.10	4,549.64	184.80	19.96	-0.81	518.02	-679.97	7,492.90	7,451.76	41.15	182.108	
11,940.00	6,029.52	4,634.00	4,545.65	185.40	19.94	-0.79	517.49	-679.17	7,512.47	7,471.33	41.14	182.613	
11,960.00	6,029.32	4,629.90	4,541.67	185.99	19.92	-0.77	516.96	-678.37	7,532.03	7,490.90	41.13	183.118	
11,980.00	6,029.13	4,625.80	4,537.68	186.58	19.90	-0.75	516.44	-677.56	7,551.60	7,510.48	41.13	183.623	
12,000.00	6,028.93	4,621.70	4,533.70	187.18	19.88	-0.73	515.91	-676.76	7,571.17	7,530.05	41.12	184.128	
12,020.00	6,028.74	4,617.60	4,529.71	187.77	19.86	-0.71	515.39	-675.96	7,590.73	7,549.62	41.11	184.632	
12,040.00	6,028.54	4,613.50	4,525.73	188.36	19.84	-0.69	514.86	-675.16	7,610.30	7,569.19	41.11	185.136	
12,060.00	6,028.35	4,609.40	4,521.74	188.96	19.82	-0.67	514.33	-674.36	7,629.87	7,588.77	41.10	185.640	
12,080.00	6,028.15	4,605.30	4,517.75	189.55	19.80	-0.65	513.81	-673.56	7,649.43	7,608.34	41.09	186.144	
12,100.00	6,027.96	4,601.20	4,513.77	190.14	19.78	-0.63	513.28	-672.75	7,669.00	7,627.91	41.09	186.648	
12,120.00	6,027.76	4,597.10	4,509.78	190.74	19.76	-0.60	512.75	-671.95	7,688.57	7,647.49	41.08	187.151	
12,140.00	6,027.57	4,593.00	4,505.80	191.33	19.74	-0.58	512.23	-671.15	7,708.13	7,667.06	41.08	187.654	
12,160.00	6,027.37	4,588.90	4,501.81	191.92	19.72	-0.56	511.70	-670.35	7,727.70	7,686.63	41.07	188.157	
12,180.00	6,027.18	4,584.80	4,497.82	192.52	19.70	-0.54	511.17	-669.55	7,747.27	7,706.20	41.06	188.660	
12,200.00	6,026.99	4,580.70	4,493.84	193.11	19.68	-0.52	510.65	-668.75	7,766.84	7,725.78	41.06	189.163	
12,220.00	6,026.79	4,576.60	4,489.85	193.70	19.66	-0.50	510.12	-667.94	7,786.40	7,745.35	41.05	189.665	
12,240.00	6,026.60	4,572.50	4,485.87	194.30	19.64	-0.48	509.59	-667.14	7,805.97	7,764.92	41.05	190.167	
12,260.00	6,026.40	4,568.40	4,481.88	194.89	19.62	-0.46	509.07	-666.34	7,825.54	7,784.49	41.04	190.670	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,280.00	6,026.21	4,564.30	4,477.89	195.48	19.60	-0.44	508.54	-665.54	7,845.10	7,804.07	41.04	191.172	
12,300.00	6,026.01	4,560.20	4,473.91	196.08	19.58	-0.42	508.01	-664.74	7,864.67	7,823.64	41.03	191.674	
12,320.00	6,025.82	4,556.10	4,469.92	196.67	19.56	-0.41	507.49	-663.94	7,884.24	7,843.21	41.03	192.175	
12,340.00	6,025.62	4,552.00	4,465.94	197.26	19.54	-0.39	506.96	-663.13	7,903.81	7,862.78	41.02	192.676	
12,360.00	6,025.43	4,547.90	4,461.95	197.86	19.52	-0.37	506.43	-662.33	7,923.37	7,882.36	41.02	193.177	
12,380.00	6,025.23	4,543.80	4,457.96	198.45	19.50	-0.35	505.91	-661.53	7,942.94	7,901.93	41.01	193.678	
12,400.00	6,025.04	4,539.70	4,453.98	199.05	19.48	-0.33	505.38	-660.73	7,962.51	7,921.50	41.01	194.179	
12,420.00	6,024.84	4,535.60	4,449.99	199.64	19.46	-0.31	504.85	-659.93	7,982.08	7,941.07	41.00	194.679	
12,440.00	6,024.65	4,531.50	4,446.01	200.23	19.44	-0.29	504.33	-659.13	8,001.64	7,960.65	41.00	195.179	
12,460.00	6,024.45	4,527.40	4,442.02	200.83	19.42	-0.27	503.80	-658.33	8,021.21	7,980.22	40.99	195.679	
12,480.00	6,024.26	4,523.31	4,438.03	201.42	19.40	-0.25	503.27	-657.52	8,040.78	7,999.79	40.99	196.179	
12,500.00	6,024.06	4,519.21	4,434.05	202.02	19.38	-0.23	502.75	-656.72	8,060.35	8,019.36	40.98	196.679	
12,520.00	6,023.87	4,515.11	4,430.06	202.61	19.36	-0.21	502.22	-655.92	8,079.91	8,038.94	40.98	197.177	
12,540.00	6,023.67	4,511.01	4,426.08	203.20	19.34	-0.20	501.69	-655.12	8,099.48	8,058.51	40.97	197.676	
12,560.00	6,023.48	4,506.91	4,422.09	203.80	19.32	-0.18	501.17	-654.32	8,119.05	8,078.08	40.97	198.175	
12,580.00	6,023.28	4,502.81	4,418.11	204.39	19.30	-0.16	500.64	-653.52	8,138.62	8,097.65	40.96	198.674	
12,600.00	6,023.09	4,498.71	4,414.12	204.98	19.28	-0.14	500.11	-652.71	8,158.18	8,117.22	40.96	199.172	
12,620.00	6,022.89	4,494.61	4,410.13	205.58	19.26	-0.12	499.59	-651.91	8,177.75	8,136.80	40.96	199.670	
12,640.00	6,022.70	4,490.51	4,406.15	206.17	19.24	-0.10	499.06	-651.11	8,197.32	8,156.37	40.95	200.167	
12,660.00	6,022.50	4,486.41	4,402.16	206.77	19.22	-0.09	498.53	-650.31	8,216.89	8,175.94	40.95	200.665	
12,680.00	6,022.31	4,482.31	4,398.18	207.36	19.20	-0.07	498.01	-649.51	8,236.46	8,195.51	40.94	201.162	
12,700.00	6,022.11	4,478.21	4,394.19	207.96	19.18	-0.05	497.48	-648.71	8,256.02	8,215.08	40.94	201.660	
12,720.00	6,021.92	4,474.11	4,390.20	208.55	19.16	-0.03	496.95	-647.90	8,275.59	8,234.66	40.94	202.156	
12,740.00	6,021.73	4,470.01	4,386.22	209.14	19.14	-0.02	496.43	-647.10	8,295.16	8,254.23	40.93	202.652	
12,760.00	6,021.53	4,465.91	4,382.23	209.74	19.12	0.00	495.90	-646.30	8,314.73	8,273.80	40.93	203.148	
12,780.00	6,021.34	4,461.81	4,378.25	210.33	19.09	0.02	495.37	-645.50	8,334.30	8,293.37	40.93	203.644	
12,800.00	6,021.14	4,457.71	4,374.26	210.93	19.07	0.04	494.85	-644.70	8,353.86	8,312.94	40.92	204.141	
12,820.00	6,020.95	4,453.61	4,370.27	211.52	19.05	0.05	494.32	-643.90	8,373.43	8,332.51	40.92	204.636	
12,840.00	6,020.75	4,449.51	4,366.29	212.11	19.03	0.07	493.79	-643.10	8,393.00	8,352.09	40.92	205.130	
12,860.00	6,020.56	4,445.41	4,362.30	212.71	19.01	0.09	493.27	-642.29	8,412.57	8,371.66	40.91	205.625	
12,880.00	6,020.36	4,441.31	4,358.32	213.30	18.99	0.11	492.74	-641.49	8,432.14	8,391.23	40.91	206.120	
12,900.00	6,020.17	4,437.21	4,354.33	213.90	18.97	0.12	492.21	-640.69	8,451.71	8,410.80	40.91	206.615	
12,920.00	6,019.97	4,433.11	4,350.34	214.49	18.95	0.14	491.69	-639.89	8,471.27	8,430.37	40.90	207.108	
12,940.00	6,019.78	4,429.01	4,346.36	215.09	18.93	0.16	491.16	-639.09	8,490.84	8,449.94	40.90	207.602	
12,960.00	6,019.58	4,424.91	4,342.37	215.68	18.91	0.17	490.63	-638.29	8,510.41	8,469.51	40.90	208.095	
12,980.00	6,019.39	4,420.81	4,338.39	216.28	18.89	0.19	490.11	-637.48	8,529.98	8,489.09	40.89	208.589	
13,000.00	6,019.19	4,416.71	4,334.40	216.87	18.87	0.21	489.58	-636.68	8,549.55	8,508.66	40.89	209.082	
13,020.00	6,019.00	4,412.61	4,330.41	217.46	18.85	0.22	489.05	-635.88	8,569.12	8,528.23	40.89	209.574	
13,040.00	6,018.80	4,408.51	4,326.43	218.06	18.83	0.24	488.53	-635.08	8,588.69	8,547.80	40.89	210.066	
13,060.00	6,018.61	4,404.41	4,322.44	218.65	18.81	0.26	488.00	-634.28	8,608.25	8,567.37	40.88	210.558	
13,080.00	6,018.41	4,400.31	4,318.46	219.25	18.79	0.27	487.47	-633.48	8,627.82	8,586.94	40.88	211.050	
13,100.00	6,018.22	4,396.21	4,314.47	219.84	18.77	0.29	486.95	-632.67	8,647.39	8,606.51	40.88	211.542	
13,120.00	6,018.02	4,392.11	4,310.49	220.44	18.75	0.31	486.42	-631.87	8,666.96	8,626.08	40.88	212.032	
13,140.00	6,017.83	4,388.02	4,306.50	221.03	18.73	0.32	485.89	-631.07	8,686.53	8,645.65	40.87	212.523	
13,160.00	6,017.63	4,383.92	4,302.51	221.63	18.71	0.34	485.37	-630.27	8,706.10	8,665.23	40.87	213.013	
13,180.00	6,017.44	4,379.82	4,298.53	222.22	18.69	0.35	484.84	-629.47	8,725.67	8,684.80	40.87	213.503	
13,200.00	6,017.24	4,375.72	4,294.54	222.82	18.67	0.37	484.31	-628.67	8,745.23	8,704.37	40.87	213.993	
13,220.00	6,017.05	4,371.62	4,290.56	223.41	18.65	0.39	483.79	-627.87	8,764.80	8,723.94	40.86	214.483	
13,240.00	6,016.85	4,367.52	4,286.57	224.01	18.63	0.40	483.26	-627.06	8,784.37	8,743.51	40.86	214.971	
13,260.00	6,016.66	4,363.42	4,282.58	224.60	18.61	0.42	482.73	-626.26	8,803.94	8,763.08	40.86	215.460	
13,280.00	6,016.47	4,359.32	4,278.60	225.20	18.59	0.43	482.21	-625.46	8,823.51	8,782.65	40.86	215.949	
13,300.00	6,016.27	4,355.22	4,274.61	225.79	18.57	0.45	481.68	-624.66	8,843.08	8,802.22	40.86	216.438	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,320.00	6,016.08	4,351.12	4,270.63	226.38	18.55	0.46	481.15	-623.86	8,862.65	8,821.79	40.86	216.925	
13,340.00	6,015.88	4,347.02	4,266.64	226.98	18.53	0.48	480.63	-623.06	8,882.22	8,841.36	40.85	217.412	
13,360.00	6,015.69	4,342.92	4,262.65	227.57	18.51	0.49	480.10	-622.25	8,901.79	8,860.93	40.85	217.899	
13,380.00	6,015.49	4,338.82	4,258.67	228.17	18.49	0.51	479.57	-621.45	8,921.35	8,880.50	40.85	218.387	
13,400.00	6,015.30	4,334.72	4,254.68	228.76	18.47	0.52	479.05	-620.65	8,940.92	8,900.07	40.85	218.874	
13,420.00	6,015.10	4,330.62	4,250.70	229.36	18.45	0.54	478.52	-619.85	8,960.49	8,919.64	40.85	219.359	
13,440.00	6,014.91	4,326.52	4,246.71	229.95	18.43	0.56	477.99	-619.05	8,980.06	8,939.21	40.85	219.845	
13,460.00	6,014.71	4,322.42	4,242.72	230.55	18.41	0.57	477.47	-618.25	8,999.63	8,958.79	40.85	220.330	
13,480.00	6,014.52	4,318.32	4,238.74	231.14	18.39	0.59	476.94	-617.44	9,019.20	8,978.36	40.84	220.816	
13,500.00	6,014.32	4,314.22	4,234.75	231.74	18.37	0.60	476.41	-616.64	9,038.77	8,997.93	40.84	221.301	
13,520.00	6,014.13	4,310.12	4,230.77	232.33	18.35	0.61	475.89	-615.84	9,058.34	9,017.50	40.84	221.785	
13,540.00	6,013.93	4,306.02	4,226.78	232.93	18.33	0.63	475.36	-615.04	9,077.91	9,037.07	40.84	222.269	
13,560.00	6,013.74	4,301.92	4,222.79	233.52	18.31	0.64	474.83	-614.24	9,097.48	9,056.64	40.84	222.753	
13,580.00	6,013.54	4,297.82	4,218.81	234.12	18.29	0.66	474.31	-613.44	9,117.05	9,076.21	40.84	223.237	
13,600.00	6,013.35	4,293.72	4,214.82	234.71	18.27	0.67	473.78	-612.64	9,136.62	9,095.78	40.84	223.720	
13,620.00	6,013.15	4,289.62	4,210.84	235.31	18.25	0.69	473.25	-611.83	9,156.19	9,115.35	40.84	224.202	
13,640.00	6,012.96	4,285.52	4,206.85	235.90	18.23	0.70	472.73	-611.03	9,175.75	9,134.92	40.84	224.684	
13,660.00	6,012.76	4,281.42	4,202.87	236.50	18.21	0.72	472.20	-610.23	9,195.32	9,154.49	40.84	225.166	
13,680.00	6,012.57	4,277.32	4,198.88	237.09	18.19	0.73	471.67	-609.43	9,214.89	9,174.06	40.84	225.648	
13,700.00	6,012.37	4,273.22	4,194.89	237.69	18.17	0.75	471.15	-608.63	9,234.46	9,193.63	40.84	226.130	
13,720.00	6,012.18	4,269.12	4,190.91	238.28	18.15	0.76	470.62	-607.83	9,254.03	9,213.20	40.84	226.610	
13,740.00	6,011.98	4,265.02	4,186.92	238.88	18.13	0.77	470.09	-607.02	9,273.60	9,232.77	40.84	227.091	
13,760.00	6,011.79	4,260.92	4,182.94	239.48	18.11	0.79	469.57	-606.22	9,293.17	9,252.34	40.84	227.571	
13,780.00	6,011.59	4,256.83	4,178.95	240.07	18.09	0.80	469.04	-605.42	9,312.74	9,271.90	40.84	228.051	
13,800.00	6,011.40	4,252.73	4,174.96	240.67	18.07	0.82	468.51	-604.62	9,332.31	9,291.47	40.84	228.530	
13,820.00	6,011.21	4,248.63	4,170.98	241.26	18.04	0.83	467.99	-603.82	9,351.88	9,311.04	40.84	229.009	
13,840.00	6,011.01	4,244.53	4,166.99	241.86	18.02	0.84	467.46	-603.02	9,371.45	9,330.61	40.84	229.488	
13,860.00	6,010.82	4,240.43	4,163.01	242.45	18.00	0.86	466.93	-602.21	9,391.02	9,350.18	40.84	229.966	
13,880.00	6,010.62	4,236.33	4,159.02	243.05	17.98	0.87	466.41	-601.41	9,410.59	9,369.75	40.84	230.444	
13,900.00	6,010.43	4,232.23	4,155.03	243.64	17.96	0.89	465.88	-600.61	9,430.16	9,389.32	40.84	230.922	
13,920.00	6,010.23	4,228.13	4,151.05	244.24	17.94	0.90	465.35	-599.81	9,449.73	9,408.89	40.84	231.399	
13,940.00	6,010.04	4,224.03	4,147.06	244.83	17.92	0.91	464.83	-599.01	9,469.30	9,428.46	40.84	231.875	
13,960.00	6,009.84	4,219.93	4,143.08	245.43	17.90	0.93	464.30	-598.21	9,488.87	9,448.03	40.84	232.352	
13,980.00	6,009.65	4,215.83	4,139.09	246.02	17.88	0.94	463.77	-597.40	9,508.44	9,467.60	40.84	232.828	
14,000.00	6,009.45	4,211.73	4,135.10	246.62	17.86	0.95	463.25	-596.60	9,528.01	9,487.17	40.84	233.304	
14,020.00	6,009.26	4,207.63	4,131.12	247.21	17.84	0.97	462.72	-595.80	9,547.58	9,506.74	40.84	233.779	
14,040.00	6,009.06	4,203.53	4,127.13	247.81	17.82	0.98	462.19	-595.00	9,567.15	9,526.31	40.84	234.253	
14,060.00	6,008.87	4,199.43	4,123.15	248.41	17.80	0.99	461.67	-594.20	9,586.72	9,545.88	40.84	234.728	
14,080.00	6,008.67	4,195.33	4,119.16	249.00	17.78	1.01	461.14	-593.40	9,606.29	9,565.44	40.84	235.202	
14,100.00	6,008.48	4,191.23	4,115.18	249.60	17.76	1.02	460.61	-592.60	9,625.86	9,585.01	40.84	235.676	
14,120.00	6,008.28	4,187.13	4,111.19	250.19	17.74	1.03	460.09	-591.79	9,645.43	9,604.58	40.84	236.149	
14,140.00	6,008.09	4,183.03	4,107.20	250.79	17.72	1.05	459.56	-590.99	9,665.00	9,624.15	40.85	236.621	
14,160.00	6,007.89	4,178.93	4,103.22	251.38	17.70	1.06	459.03	-590.19	9,684.57	9,643.72	40.85	237.094	
14,180.00	6,007.70	4,174.83	4,099.23	251.98	17.68	1.07	458.51	-589.39	9,704.14	9,663.29	40.85	237.566	
14,200.00	6,007.50	4,170.73	4,095.25	252.57	17.66	1.08	457.98	-588.59	9,723.71	9,682.86	40.85	238.038	
14,220.00	6,007.31	4,166.63	4,091.26	253.17	17.64	1.10	457.45	-587.79	9,743.28	9,702.43	40.85	238.508	
14,240.00	6,007.11	4,162.53	4,087.27	253.76	17.62	1.11	456.93	-586.98	9,762.85	9,721.99	40.85	238.979	
14,260.00	6,006.92	4,158.43	4,083.29	254.36	17.60	1.12	456.40	-586.18	9,782.42	9,741.56	40.85	239.449	
14,280.00	6,006.72	4,154.33	4,079.30	254.96	17.58	1.14	455.87	-585.38	9,801.99	9,761.13	40.86	239.920	
14,300.00	6,006.53	4,150.23	4,075.32	255.55	17.56	1.15	455.35	-584.58	9,821.56	9,780.70	40.86	240.389	
14,320.00	6,006.33	4,146.13	4,071.33	256.15	17.54	1.16	454.82	-583.78	9,841.13	9,800.27	40.86	240.858	
14,340.00	6,006.14	4,142.03	4,067.34	256.74	17.52	1.17	454.29	-582.98	9,860.70	9,819.84	40.86	241.327	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,360.00	6,005.94	4,137.93	4,063.36	257.34	17.50	1.19	453.77	-582.17	9,880.27	9,839.41	40.86	241.795	
14,380.00	6,005.75	4,133.83	4,059.37	257.93	17.48	1.20	453.24	-581.37	9,899.84	9,858.97	40.86	242.263	
14,400.00	6,005.56	4,129.73	4,055.39	258.53	17.46	1.21	452.71	-580.57	9,919.41	9,878.54	40.87	242.731	
14,420.00	6,005.36	4,125.63	4,051.40	259.13	17.44	1.22	452.19	-579.77	9,938.98	9,898.11	40.87	243.198	
14,440.00	6,005.17	4,121.54	4,047.41	259.72	17.42	1.24	451.66	-578.97	9,958.55	9,917.68	40.87	243.664	
14,460.00	6,004.97	4,117.44	4,043.43	260.32	17.40	1.25	451.13	-578.17	9,978.12	9,937.25	40.87	244.130	
14,480.00	6,004.78	4,113.34	4,039.44	260.91	17.38	1.26	450.61	-577.37	9,997.69	9,956.82	40.87	244.596	
14,500.00	6,004.58	4,109.24	4,035.46	261.51	17.36	1.27	450.08	-576.56	10,017.26	9,976.38	40.88	245.062	
14,520.00	6,004.39	4,105.14	4,031.47	262.10	17.34	1.28	449.55	-575.76	10,036.83	9,995.95	40.88	245.526	
14,540.00	6,004.19	4,101.04	4,027.48	262.70	17.32	1.30	449.03	-574.96	10,056.40	10,015.52	40.88	245.991	
14,560.00	6,004.00	4,096.94	4,023.50	263.30	17.30	1.31	448.50	-574.16	10,075.97	10,035.09	40.88	246.455	
14,580.00	6,003.80	4,092.84	4,019.51	263.89	17.28	1.32	447.98	-573.36	10,095.54	10,054.66	40.89	246.918	
14,600.00	6,003.61	4,088.74	4,015.53	264.49	17.26	1.33	447.45	-572.56	10,115.11	10,074.22	40.89	247.382	
14,620.00	6,003.41	4,084.64	4,011.54	265.08	17.24	1.34	446.92	-571.75	10,134.68	10,093.79	40.89	247.844	
14,640.00	6,003.22	4,080.54	4,007.56	265.68	17.22	1.36	446.40	-570.95	10,154.25	10,113.36	40.89	248.306	
14,660.00	6,003.02	4,076.44	4,003.57	266.27	17.20	1.37	445.87	-570.15	10,173.82	10,132.93	40.90	248.768	
14,680.00	6,002.83	4,072.34	3,999.58	266.87	17.18	1.38	445.34	-569.35	10,193.39	10,152.49	40.90	249.230	
14,700.00	6,002.63	4,068.24	3,995.60	267.47	17.16	1.39	444.82	-568.55	10,212.96	10,172.06	40.90	249.691	
14,720.00	6,002.44	4,064.14	3,991.61	268.06	17.14	1.40	444.29	-567.75	10,232.53	10,191.63	40.91	250.151	
14,740.00	6,002.24	4,060.04	3,987.63	268.66	17.12	1.42	443.76	-566.94	10,252.11	10,211.20	40.91	250.611	
14,760.00	6,002.05	4,055.94	3,983.64	269.25	17.10	1.43	443.24	-566.14	10,271.68	10,230.76	40.91	251.071	
14,780.00	6,001.85	4,051.84	3,979.65	269.85	17.08	1.44	442.71	-565.34	10,291.25	10,250.33	40.91	251.530	
14,800.00	6,001.66	4,047.74	3,975.67	270.45	17.06	1.45	442.18	-564.54	10,310.82	10,269.90	40.92	251.989	
14,820.00	6,001.46	4,043.64	3,971.68	271.04	17.04	1.46	441.66	-563.74	10,330.39	10,289.47	40.92	252.447	
14,840.00	6,001.27	4,039.54	3,967.70	271.64	17.02	1.47	441.13	-562.94	10,349.96	10,309.03	40.92	252.905	
14,860.00	6,001.07	4,035.44	3,963.71	272.23	17.00	1.48	440.60	-562.14	10,369.53	10,328.60	40.93	253.362	
14,880.00	6,000.88	4,031.34	3,959.72	272.83	16.98	1.50	440.08	-561.33	10,389.10	10,348.17	40.93	253.819	
14,900.00	6,000.68	4,027.24	3,955.74	273.43	16.96	1.51	439.55	-560.53	10,408.67	10,367.74	40.93	254.276	
14,920.00	6,000.49	4,023.14	3,951.75	274.02	16.94	1.52	439.02	-559.73	10,428.24	10,387.30	40.94	254.732	
14,940.00	6,000.30	4,019.04	3,947.77	274.62	16.92	1.53	438.50	-558.93	10,447.81	10,406.87	40.94	255.187	
14,960.00	6,000.10	4,014.94	3,943.78	275.21	16.90	1.54	437.97	-558.13	10,467.38	10,426.44	40.95	255.642	
14,980.00	5,999.91	4,010.84	3,939.79	275.81	16.88	1.55	437.44	-557.33	10,486.95	10,446.00	40.95	256.097	
15,000.00	5,999.71	4,006.74	3,935.81	276.41	16.86	1.56	436.92	-556.52	10,506.52	10,465.57	40.95	256.552	
15,020.00	5,999.52	4,002.64	3,931.82	277.00	16.84	1.57	436.39	-555.72	10,526.10	10,485.14	40.96	257.005	
15,040.00	5,999.32	3,998.54	3,927.84	277.60	16.82	1.58	435.86	-554.92	10,545.67	10,504.71	40.96	257.458	
15,060.00	5,999.13	3,994.44	3,923.85	278.19	16.80	1.60	435.34	-554.12	10,565.24	10,524.27	40.96	257.911	
15,080.00	5,998.93	3,990.34	3,919.86	278.79	16.78	1.61	434.81	-553.32	10,584.81	10,543.84	40.97	258.364	
15,100.00	5,998.74	3,986.25	3,915.88	279.39	16.76	1.62	434.28	-552.52	10,604.38	10,563.41	40.97	258.816	
15,120.00	5,998.54	3,982.15	3,911.89	279.98	16.74	1.63	433.76	-551.71	10,623.95	10,582.97	40.98	259.267	
15,140.00	5,998.35	3,978.05	3,907.91	280.58	16.72	1.64	433.23	-550.91	10,643.52	10,602.54	40.98	259.718	
15,160.00	5,998.15	3,973.95	3,903.92	281.17	16.70	1.65	432.70	-550.11	10,663.09	10,622.11	40.99	260.168	
15,180.00	5,997.96	3,969.85	3,899.94	281.77	16.68	1.66	432.18	-549.31	10,682.66	10,641.67	40.99	260.618	
15,200.00	5,997.76	3,965.75	3,895.95	282.37	16.66	1.67	431.65	-548.51	10,702.23	10,661.24	40.99	261.068	
15,220.00	5,997.57	3,961.65	3,891.96	282.96	16.63	1.68	431.12	-547.71	10,721.80	10,680.81	41.00	261.517	
15,240.00	5,997.37	3,957.55	3,887.98	283.56	16.61	1.69	430.60	-546.90	10,741.37	10,700.37	41.00	261.965	
15,260.00	5,997.18	3,953.45	3,883.99	284.16	16.59	1.70	430.07	-546.10	10,760.95	10,719.94	41.01	262.413	
15,280.00	5,996.98	3,949.35	3,880.01	284.75	16.57	1.71	429.54	-545.30	10,780.52	10,739.50	41.01	262.861	
15,300.00	5,996.79	3,945.25	3,876.02	285.35	16.55	1.72	429.02	-544.50	10,800.09	10,759.07	41.02	263.309	
15,320.00	5,996.59	3,941.15	3,872.03	285.94	16.53	1.73	428.49	-543.70	10,819.66	10,778.64	41.02	263.755	
15,340.00	5,996.40	3,937.05	3,868.05	286.54	16.51	1.74	427.96	-542.90	10,839.23	10,798.20	41.03	264.201	
15,360.00	5,996.20	3,932.95	3,864.06	287.14	16.49	1.76	427.44	-542.10	10,858.80	10,817.77	41.03	264.647	
15,380.00	5,996.01	3,928.85	3,860.08	287.73	16.47	1.77	426.91	-541.29	10,878.37	10,837.34	41.04	265.092	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 6H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	5,995.81	3,924.75	3,856.09	288.33	16.45	1.78	426.38	-540.49	10,897.94	10,856.90	41.04	265.538	
15,420.00	5,995.62	3,920.65	3,852.10	288.92	16.43	1.79	425.86	-539.69	10,917.51	10,876.47	41.05	265.981	
15,440.00	5,995.42	3,916.55	3,848.12	289.52	16.41	1.80	425.33	-538.89	10,937.09	10,896.03	41.05	266.425	
15,460.00	5,995.23	3,912.45	3,844.13	290.12	16.39	1.81	424.80	-538.09	10,956.66	10,915.60	41.06	266.869	
15,480.00	5,995.04	3,908.35	3,840.15	290.71	16.37	1.82	424.28	-537.29	10,976.23	10,935.17	41.06	267.312	
15,500.00	5,994.84	3,904.25	3,836.16	291.31	16.35	1.83	423.75	-536.48	10,995.80	10,954.73	41.07	267.754	
15,520.00	5,994.65	3,900.15	3,832.17	291.91	16.33	1.84	423.22	-535.68	11,015.37	10,974.30	41.07	268.196	
15,540.00	5,994.45	3,896.05	3,828.19	292.50	16.31	1.85	422.70	-534.88	11,034.94	10,993.86	41.08	268.637	
15,560.00	5,994.26	3,891.95	3,824.20	293.10	16.29	1.86	422.17	-534.08	11,054.51	11,013.43	41.08	269.078	
15,580.00	5,994.06	3,887.85	3,820.22	293.69	16.27	1.87	421.64	-533.28	11,074.08	11,033.00	41.09	269.519	
15,600.00	5,993.87	3,883.75	3,816.23	294.29	16.25	1.88	421.12	-532.48	11,093.66	11,052.56	41.09	269.959	
15,620.00	5,993.67	3,879.65	3,812.24	294.89	16.23	1.89	420.59	-531.67	11,113.23	11,072.13	41.10	270.398	
15,640.00	5,993.48	3,875.55	3,808.26	295.48	16.21	1.90	420.06	-530.87	11,132.80	11,091.69	41.11	270.837	
15,660.00	5,993.28	3,871.45	3,804.27	296.08	16.19	1.91	419.54	-530.07	11,152.37	11,111.26	41.11	271.275	
15,680.00	5,993.09	3,867.35	3,800.29	296.68	16.17	1.92	419.01	-529.27	11,171.94	11,130.82	41.12	271.713	
15,700.00	5,992.89	3,863.25	3,796.30	297.27	16.15	1.93	418.48	-528.47	11,191.51	11,150.39	41.12	272.151	
15,720.00	5,992.70	3,859.15	3,792.32	297.87	16.13	1.94	417.96	-527.67	11,211.08	11,169.95	41.13	272.588	
15,740.00	5,992.50	3,855.06	3,788.33	298.47	16.11	1.95	417.43	-526.87	11,230.65	11,189.52	41.13	273.024	
15,760.00	5,992.31	3,850.96	3,784.34	299.06	16.09	1.96	416.90	-526.06	11,250.23	11,209.09	41.14	273.460	
15,780.00	5,992.11	3,846.86	3,780.36	299.66	16.07	1.97	416.38	-525.26	11,269.80	11,228.65	41.15	273.896	
15,800.00	5,991.92	3,842.76	3,776.37	300.25	16.05	1.97	415.85	-524.46	11,289.37	11,248.22	41.15	274.331	
15,820.00	5,991.72	3,838.66	3,772.39	300.85	16.03	1.98	415.32	-523.66	11,308.94	11,267.78	41.16	274.766	
15,840.00	5,991.53	3,834.56	3,768.40	301.45	16.01	1.99	414.80	-522.86	11,328.51	11,287.35	41.16	275.199	
15,860.00	5,991.33	3,830.46	3,764.41	302.04	15.99	2.00	414.27	-522.06	11,348.08	11,306.91	41.17	275.633	
15,880.00	5,991.14	3,826.36	3,760.43	302.64	15.97	2.01	413.74	-521.25	11,367.65	11,326.48	41.18	276.066	
15,900.00	5,990.94	3,822.26	3,756.44	303.24	15.95	2.02	413.22	-520.45	11,387.23	11,346.04	41.18	276.499	
15,920.00	5,990.75	3,818.16	3,752.46	303.83	15.93	2.03	412.69	-519.65	11,406.80	11,365.61	41.19	276.931	
15,940.00	5,990.55	3,814.06	3,748.47	304.43	15.91	2.04	412.16	-518.85	11,426.37	11,385.17	41.20	277.362	
15,960.00	5,990.36	3,809.96	3,744.48	305.03	15.89	2.05	411.64	-518.05	11,445.94	11,404.74	41.20	277.793	
15,980.00	5,990.16	3,805.86	3,740.50	305.62	15.87	2.06	411.11	-517.25	11,465.51	11,424.30	41.21	278.224	
16,000.00	5,989.97	3,801.76	3,736.51	306.22	15.85	2.07	410.58	-516.44	11,485.08	11,443.87	41.22	278.655	
16,020.00	5,989.78	3,797.66	3,732.53	306.82	15.83	2.08	410.06	-515.64	11,504.65	11,463.43	41.22	279.084	
16,040.00	5,989.58	3,793.56	3,728.54	307.41	15.81	2.09	409.53	-514.84	11,524.23	11,483.00	41.23	279.513	
16,060.00	5,989.39	3,789.46	3,724.55	308.01	15.79	2.10	409.00	-514.04	11,543.80	11,502.56	41.24	279.941	
16,080.00	5,989.19	3,785.36	3,720.57	308.61	15.77	2.11	408.48	-513.24	11,563.37	11,522.13	41.24	280.369	
16,100.00	5,989.00	3,781.26	3,716.58	309.20	15.75	2.12	407.95	-512.44	11,582.94	11,541.69	41.25	280.797	
16,120.00	5,988.80	3,777.16	3,712.60	309.80	15.73	2.12	407.42	-511.64	11,602.51	11,561.26	41.26	281.224	
16,140.00	5,988.61	3,773.06	3,708.61	310.39	15.71	2.13	406.90	-510.83	11,622.08	11,580.82	41.26	281.650	
16,160.00	5,988.41	3,768.96	3,704.62	310.99	15.69	2.14	406.37	-510.03	11,641.66	11,600.38	41.27	282.076	
16,180.00	5,988.22	3,764.86	3,700.64	311.59	15.67	2.15	405.84	-509.23	11,661.23	11,619.95	41.28	282.502	
16,200.00	5,988.02	3,760.76	3,696.65	312.18	15.65	2.16	405.32	-508.43	11,680.80	11,639.51	41.29	282.927	
16,220.00	5,987.83	3,756.66	3,692.67	312.78	15.63	2.17	404.79	-507.63	11,700.37	11,659.08	41.29	283.351	
16,240.00	5,987.63	3,752.56	3,688.68	313.38	15.61	2.18	404.26	-506.83	11,719.94	11,678.64	41.30	283.775	
16,260.00	5,987.44	3,748.46	3,684.70	313.97	15.59	2.19	403.74	-506.02	11,739.51	11,698.21	41.31	284.199	
16,280.00	5,987.24	3,744.36	3,680.71	314.57	15.57	2.20	403.21	-505.22	11,759.09	11,717.77	41.31	284.622	
16,300.00	5,987.05	3,740.26	3,676.72	315.17	15.55	2.20	402.68	-504.42	11,778.66	11,737.34	41.32	285.045	
16,320.00	5,986.85	3,736.16	3,672.74	315.76	15.53	2.21	402.16	-503.62	11,798.23	11,756.90	41.33	285.466	
16,340.00	5,986.66	3,732.06	3,668.75	316.36	15.51	2.22	401.63	-502.82	11,817.80	11,776.46	41.34	285.888	
16,360.00	5,986.46	3,727.96	3,664.77	316.96	15.49	2.23	401.10	-502.02	11,837.37	11,796.03	41.34	286.308	
16,380.00	5,986.27	3,723.86	3,660.78	317.55	15.47	2.24	400.58	-501.21	11,856.94	11,815.59	41.35	286.729	
16,400.00	5,986.07	3,719.77	3,656.79	318.15	15.45	2.25	400.05	-500.41	11,876.52	11,835.16	41.36	287.149	
16,407.54	5,986.00	3,718.22	3,655.29	318.38	15.44	2.25	399.85	-500.11	11,883.89	11,842.53	41.36	287.308	

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

Hilcorp Energy Company

Scientific Drilling, Intl
Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
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Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-20.15	70.62	-25.92	75.23				
20.00	20.00	20.00	20.00	0.04	0.04	-20.15	70.62	-25.92	75.23	75.15	0.07	1,046.931	
40.00	40.00	40.00	40.00	0.07	0.07	-20.15	70.62	-25.92	75.23	75.08	0.14	524.195	
60.00	60.00	60.00	60.00	0.11	0.11	-20.15	70.62	-25.92	75.23	75.01	0.22	349.626	
80.00	80.00	80.00	80.00	0.14	0.14	-20.15	70.62	-25.92	75.23	74.94	0.29	262.280	
100.00	100.00	100.00	100.00	0.18	0.18	-20.15	70.62	-25.92	75.23	74.87	0.36	209.854	
120.00	120.00	120.00	120.00	0.25	0.25	-20.15	70.62	-25.92	75.23	74.72	0.50	149.895	
140.00	140.00	140.00	140.00	0.32	0.32	-20.15	70.62	-25.92	75.23	74.58	0.65	116.585	
160.00	160.00	160.00	160.00	0.39	0.39	-20.15	70.62	-25.92	75.23	74.44	0.79	95.388	
180.00	180.00	180.00	180.00	0.47	0.47	-20.15	70.62	-25.92	75.23	74.29	0.93	80.713	
200.00	200.00	200.00	200.00	0.54	0.54	-20.15	70.62	-25.92	75.23	74.15	1.08	69.951	
220.00	220.00	220.00	220.00	0.61	0.61	-20.15	70.62	-25.92	75.23	74.01	1.22	61.722	
240.00	240.00	240.00	240.00	0.68	0.68	-20.15	70.62	-25.92	75.23	73.86	1.36	55.225	
260.00	260.00	260.00	260.00	0.75	0.75	-20.15	70.62	-25.92	75.23	73.72	1.51	49.965	
280.00	280.00	280.00	280.00	0.82	0.82	-20.15	70.62	-25.92	75.23	73.58	1.65	45.620	
300.00	300.00	300.00	300.00	0.90	0.90	-20.15	70.62	-25.92	75.23	73.43	1.79	41.971	
320.00	320.00	320.00	320.00	0.97	0.97	-20.15	70.62	-25.92	75.23	73.29	1.94	38.862	
340.00	340.00	340.00	340.00	1.04	1.04	-20.15	70.62	-25.92	75.23	73.15	2.08	36.182	
360.00	360.00	360.00	360.00	1.11	1.11	-20.15	70.62	-25.92	75.23	73.00	2.22	33.847	
380.00	380.00	380.00	380.00	1.18	1.18	-20.15	70.62	-25.92	75.23	72.86	2.37	31.796	
400.00	400.00	400.00	400.00	1.25	1.25	-20.15	70.62	-25.92	75.23	72.72	2.51	29.979	
420.00	420.00	420.00	420.00	1.33	1.33	-20.15	70.62	-25.92	75.23	72.57	2.65	28.359	
440.00	440.00	440.00	440.00	1.40	1.40	-20.15	70.62	-25.92	75.23	72.43	2.80	26.904	
460.00	460.00	460.00	460.00	1.47	1.47	-20.15	70.62	-25.92	75.23	72.29	2.94	25.592	
480.00	480.00	480.00	480.00	1.54	1.54	-20.15	70.62	-25.92	75.23	72.14	3.08	24.402	
500.00	500.00	500.00	500.00	1.61	1.61	-20.15	70.62	-25.92	75.23	72.00	3.23	23.317	
520.00	520.00	520.00	520.00	1.68	1.68	-20.15	70.62	-25.92	75.23	71.86	3.37	22.325	
540.00	540.00	540.00	540.00	1.76	1.76	-20.15	70.62	-25.92	75.23	71.71	3.51	21.414	
560.00	560.00	560.00	560.00	1.83	1.83	-20.15	70.62	-25.92	75.23	71.57	3.66	20.574	
580.00	580.00	580.00	580.00	1.90	1.90	-20.15	70.62	-25.92	75.23	71.43	3.80	19.798	
600.00	600.00	600.00	600.00	1.97	1.97	-20.15	70.62	-25.92	75.23	71.28	3.94	19.078	
620.00	620.00	620.00	620.00	2.04	2.04	-20.15	70.62	-25.92	75.23	71.14	4.09	18.408	
640.00	640.00	640.00	640.00	2.11	2.11	-20.15	70.62	-25.92	75.23	71.00	4.23	17.784	
660.00	660.00	660.00	660.00	2.19	2.19	-20.15	70.62	-25.92	75.23	70.85	4.37	17.201	
680.00	680.00	680.00	680.00	2.26	2.26	-20.15	70.62	-25.92	75.23	70.71	4.52	16.655	
700.00	700.00	700.00	700.00	2.33	2.33	-20.15	70.62	-25.92	75.23	70.57	4.66	16.143	
720.00	720.00	720.00	720.00	2.40	2.40	-20.15	70.62	-25.92	75.23	70.42	4.80	15.661	
740.00	740.00	740.00	740.00	2.47	2.47	-20.15	70.62	-25.92	75.23	70.28	4.95	15.207	
760.00	760.00	760.00	760.00	2.55	2.55	-20.15	70.62	-25.92	75.23	70.14	5.09	14.778	
780.00	780.00	780.00	780.00	2.62	2.62	-20.15	70.62	-25.92	75.23	69.99	5.23	14.374	
800.00	800.00	800.00	800.00	2.69	2.69	-20.15	70.62	-25.92	75.23	69.85	5.38	13.990	
820.00	820.00	820.00	820.00	2.76	2.76	-20.15	70.62	-25.92	75.23	69.71	5.52	13.627	
840.00	840.00	840.00	840.00	2.83	2.83	-20.15	70.62	-25.92	75.23	69.56	5.66	13.282	
860.00	860.00	860.00	860.00	2.90	2.90	-20.15	70.62	-25.92	75.23	69.42	5.81	12.954	
880.00	880.00	880.00	880.00	2.98	2.98	-20.15	70.62	-25.92	75.23	69.28	5.95	12.642	
900.00	900.00	900.00	900.00	3.05	3.05	-20.15	70.62	-25.92	75.23	69.13	6.09	12.344	
920.00	920.00	920.00	920.00	3.12	3.12	-20.15	70.62	-25.92	75.23	68.99	6.24	12.061	
940.00	940.00	940.00	940.00	3.19	3.19	-20.15	70.62	-25.92	75.23	68.85	6.38	11.790	
960.00	960.00	960.00	960.00	3.26	3.26	-20.15	70.62	-25.92	75.23	68.70	6.52	11.530	
980.00	980.00	980.00	980.00	3.33	3.33	-20.15	70.62	-25.92	75.23	68.56	6.67	11.282	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-20.15	70.62	-25.92	75.23	68.42	6.81	11.045	
1,020.00	1,020.00	1,020.14	1,020.14	3.48	3.47	-20.21	70.58	-25.98	75.21	68.26	6.95	10.818	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,040.00	1,040.00	1,040.27	1,040.27	3.55	3.54	-20.36	70.46	-26.15	75.15	68.06	7.09	10.595	
1,060.00	1,060.00	1,060.40	1,060.39	3.62	3.61	-20.62	70.25	-26.44	75.07	67.83	7.23	10.376	
1,080.00	1,080.00	1,080.52	1,080.51	3.69	3.68	-20.99	69.97	-26.85	74.95	67.57	7.38	10.161	
1,100.00	1,100.00	1,100.64	1,100.62	3.76	3.75	-21.46	69.61	-27.37	74.79	67.28	7.52	9.950	
1,120.00	1,120.00	1,120.74	1,120.71	3.84	3.82	-22.04	69.16	-28.00	74.62	66.96	7.66	9.746	
1,140.00	1,140.00	1,140.84	1,140.78	3.91	3.89	-22.73	68.63	-28.75	74.42	66.62	7.80	9.546	
1,160.00	1,160.00	1,160.92	1,160.83	3.98	3.96	-23.53	68.03	-29.62	74.20	66.26	7.93	9.351	
1,180.00	1,180.00	1,180.98	1,180.86	4.05	4.02	-24.44	67.34	-30.60	73.97	65.90	8.07	9.162	
1,200.00	1,200.00	1,201.03	1,200.86	4.12	4.09	-25.46	66.57	-31.69	73.74	65.52	8.21	8.978	
1,220.00	1,220.00	1,221.05	1,220.83	4.19	4.16	-26.59	65.73	-32.90	73.51	65.15	8.35	8.800	
1,240.00	1,240.00	1,241.06	1,240.77	4.27	4.23	-27.84	64.80	-34.22	73.29	64.79	8.49	8.629	
1,260.00	1,260.00	1,261.04	1,260.68	4.34	4.30	-29.20	63.80	-35.65	73.09	64.45	8.63	8.466	
1,280.00	1,280.00	1,281.00	1,280.55	4.41	4.36	-30.67	62.71	-37.19	72.92	64.14	8.77	8.312	
1,300.00	1,300.00	1,300.93	1,300.37	4.48	4.43	-32.26	61.56	-38.85	72.79	63.88	8.91	8.168	
1,320.00	1,320.00	1,320.82	1,320.15	4.55	4.50	-33.95	60.32	-40.61	72.72	63.66	9.05	8.032	
1,332.13	1,332.13	1,332.88	1,332.13	4.60	4.54	-35.04	59.53	-41.74	72.70	63.57	9.14	7.956	CC
1,340.00	1,340.00	1,340.69	1,339.89	4.62	4.57	-35.76	59.00	-42.49	72.71	63.52	9.19	7.908	
1,360.00	1,360.00	1,360.53	1,359.58	4.70	4.64	-37.66	57.61	-44.47	72.78	63.45	9.34	7.796	ES
1,380.00	1,380.00	1,380.33	1,379.21	4.77	4.71	-39.67	56.15	-46.56	72.95	63.47	9.48	7.697	
1,400.00	1,400.00	1,400.00	1,398.70	4.84	4.78	-41.75	54.61	-48.75	73.22	63.60	9.62	7.612	
1,420.00	1,420.00	1,419.82	1,418.32	4.91	4.85	-43.94	52.99	-51.06	73.61	63.85	9.76	7.540	
1,440.00	1,440.00	1,439.51	1,437.78	4.98	4.92	-46.18	51.30	-53.47	74.14	64.23	9.91	7.483	
1,460.00	1,460.00	1,459.15	1,457.19	5.05	4.99	-48.49	49.54	-55.98	74.81	64.76	10.05	7.443	
1,480.00	1,480.00	1,478.75	1,476.53	5.13	5.07	-50.85	47.71	-58.60	75.64	65.45	10.20	7.419	
1,500.00	1,500.00	1,498.31	1,495.80	5.20	5.14	-53.24	45.80	-61.32	76.65	66.31	10.34	7.412	SF
1,520.00	1,520.00	1,517.82	1,515.00	5.27	5.21	-55.65	43.83	-64.13	77.84	67.35	10.49	7.422	
1,540.00	1,540.00	1,537.28	1,534.13	5.34	5.28	-58.07	41.78	-67.05	79.22	68.59	10.63	7.449	
1,560.00	1,560.00	1,556.69	1,553.19	5.41	5.36	-60.49	39.67	-70.07	80.80	70.02	10.78	7.494	
1,580.00	1,580.00	1,576.05	1,572.17	5.48	5.43	-62.88	37.48	-73.18	82.59	71.67	10.93	7.558	
1,600.00	1,600.00	1,595.35	1,591.08	5.56	5.50	-65.24	35.23	-76.39	84.60	73.52	11.08	7.638	
1,620.00	1,620.00	1,614.60	1,609.90	5.63	5.58	-67.56	32.92	-79.69	86.81	75.59	11.22	7.736	
1,640.00	1,640.00	1,633.80	1,628.64	5.70	5.66	-69.82	30.54	-83.09	89.25	77.88	11.37	7.850	
1,660.00	1,660.00	1,652.94	1,647.30	5.77	5.73	-72.03	28.09	-86.58	91.91	80.39	11.52	7.980	
1,680.00	1,680.00	1,672.01	1,665.87	5.84	5.81	-74.16	25.58	-90.16	94.78	83.12	11.66	8.127	
1,700.00	1,700.00	1,691.03	1,684.35	5.91	5.89	-76.22	23.01	-93.83	97.87	86.06	11.81	8.289	
1,720.00	1,720.00	1,710.03	1,702.78	5.99	5.96	-78.21	20.37	-97.60	101.18	89.23	11.95	8.467	
1,740.00	1,740.00	1,729.42	1,721.58	6.06	6.04	-80.14	17.64	-101.48	104.64	92.55	12.09	8.653	
1,760.00	1,760.00	1,748.81	1,740.38	6.13	6.13	-81.94	14.92	-105.37	108.21	95.98	12.23	8.845	
1,780.00	1,780.00	1,768.20	1,759.19	6.20	6.21	-83.63	12.19	-109.25	111.89	99.51	12.38	9.041	
1,800.00	1,800.00	1,787.59	1,777.99	6.27	6.29	-85.22	9.47	-113.14	115.65	103.13	12.52	9.240	
1,820.00	1,820.00	1,806.99	1,796.79	6.34	6.37	-86.70	6.74	-117.03	119.50	106.84	12.66	9.442	
1,840.00	1,840.00	1,826.38	1,815.59	6.42	6.45	-88.10	4.02	-120.91	123.42	110.62	12.80	9.645	
1,860.00	1,860.00	1,845.77	1,834.39	6.49	6.54	-89.41	1.29	-124.80	127.40	114.47	12.94	9.849	
1,880.00	1,880.00	1,865.16	1,853.20	6.56	6.62	-90.64	-1.43	-128.68	131.45	118.38	13.07	10.054	
1,900.00	1,900.00	1,884.55	1,872.00	6.63	6.71	-91.80	-4.16	-132.57	135.56	122.35	13.21	10.260	
1,920.00	1,920.00	1,903.94	1,890.80	6.70	6.79	-92.89	-6.88	-136.46	139.71	126.36	13.35	10.465	
1,940.00	1,940.00	1,923.34	1,909.60	6.78	6.88	-93.91	-9.60	-140.34	143.92	130.43	13.49	10.669	
1,960.00	1,960.00	1,942.73	1,928.40	6.85	6.96	-94.89	-12.33	-144.23	148.16	134.53	13.63	10.872	
1,980.00	1,980.00	1,962.12	1,947.21	6.92	7.05	-95.80	-15.05	-148.11	152.45	138.68	13.77	11.074	
2,000.00	2,000.00	1,981.51	1,966.01	6.99	7.13	-96.67	-17.78	-152.00	156.77	142.86	13.90	11.274	
2,020.00	2,020.00	2,000.90	1,984.81	7.06	7.22	-97.49	-20.50	-155.89	161.12	147.08	14.04	11.474	
2,040.00	2,040.00	2,020.30	2,003.61	7.13	7.31	-98.27	-23.23	-159.77	165.50	151.32	14.18	11.671	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,060.00	2,060.00	2,039.69	2,022.41	7.21	7.40	-99.01	-25.95	-163.66	169.91	155.59	14.32	11.866	
2,080.00	2,080.00	2,059.08	2,041.22	7.28	7.48	-99.71	-28.68	-167.54	174.35	159.89	14.46	12.059	
2,100.00	2,100.00	2,078.47	2,060.02	7.35	7.57	-100.38	-31.40	-171.43	178.81	164.21	14.60	12.251	
2,120.00	2,120.00	2,097.86	2,078.82	7.42	7.66	-101.01	-34.13	-175.32	183.29	168.56	14.73	12.440	
2,140.00	2,140.00	2,117.25	2,097.62	7.49	7.75	-101.62	-36.85	-179.20	187.80	172.92	14.87	12.627	
2,160.00	2,160.00	2,136.65	2,116.43	7.56	7.84	-102.20	-39.57	-183.09	192.32	177.31	15.01	12.812	
2,180.00	2,180.00	2,156.04	2,135.23	7.64	7.93	-102.75	-42.30	-186.97	196.86	181.71	15.15	12.994	
2,200.00	2,200.00	2,175.43	2,154.03	7.71	8.01	-103.27	-45.02	-190.86	201.41	186.13	15.29	13.175	
2,220.00	2,220.00	2,194.82	2,172.83	7.78	8.10	-103.78	-47.75	-194.75	205.99	190.56	15.43	13.353	
2,240.00	2,240.00	2,214.21	2,191.63	7.85	8.19	-104.26	-50.47	-198.63	210.57	195.01	15.57	13.528	
2,260.00	2,260.00	2,233.60	2,210.44	7.92	8.28	-104.72	-53.20	-202.52	215.17	199.47	15.70	13.701	
2,280.00	2,280.00	2,253.00	2,229.24	7.99	8.37	-105.16	-55.92	-206.40	219.79	203.94	15.84	13.872	
2,300.00	2,300.00	2,272.39	2,248.04	8.07	8.46	-105.58	-58.65	-210.29	224.41	208.43	15.98	14.041	
2,320.00	2,320.00	2,291.78	2,266.84	8.14	8.55	-105.99	-61.37	-214.18	229.05	212.93	16.12	14.207	
2,340.00	2,340.00	2,311.17	2,285.64	8.21	8.65	-106.38	-64.10	-218.06	233.70	217.43	16.26	14.371	
2,360.00	2,360.00	2,330.56	2,304.45	8.28	8.74	-106.76	-66.82	-221.95	238.35	221.95	16.40	14.533	
2,380.00	2,380.00	2,349.96	2,323.25	8.35	8.83	-107.12	-69.54	-225.83	243.02	226.48	16.54	14.692	
2,400.00	2,400.00	2,369.35	2,342.05	8.42	8.92	-107.46	-72.27	-229.72	247.69	231.01	16.68	14.850	
2,420.00	2,420.00	2,388.74	2,360.85	8.50	9.01	-107.80	-74.99	-233.61	252.38	235.56	16.82	15.005	
2,440.00	2,440.00	2,408.13	2,379.65	8.57	9.10	-108.12	-77.72	-237.49	257.07	240.11	16.96	15.158	
2,460.00	2,460.00	2,427.52	2,398.46	8.64	9.19	-108.43	-80.44	-241.38	261.77	244.67	17.10	15.308	
2,480.00	2,480.00	2,446.91	2,417.26	8.71	9.29	-108.73	-83.17	-245.26	266.47	249.23	17.24	15.457	
2,500.00	2,500.00	2,466.31	2,436.06	8.78	9.38	-109.02	-85.89	-249.15	271.18	253.80	17.38	15.603	
2,520.00	2,520.00	2,485.70	2,454.86	8.85	9.47	-109.30	-88.62	-253.04	275.90	258.38	17.52	15.748	
2,540.00	2,540.00	2,505.09	2,473.66	8.93	9.56	-109.57	-91.34	-256.92	280.63	262.97	17.66	15.890	
2,560.00	2,560.00	2,524.48	2,492.47	9.00	9.66	-109.83	-94.07	-260.81	285.36	267.56	17.80	16.030	
2,580.00	2,580.00	2,543.87	2,511.27	9.07	9.75	-110.09	-96.79	-264.69	290.09	272.15	17.94	16.169	
2,600.00	2,600.00	2,563.27	2,530.07	9.14	9.84	-110.33	-99.51	-268.58	294.84	276.75	18.08	16.305	
2,620.00	2,620.00	2,582.66	2,548.87	9.21	9.93	-110.57	-102.24	-272.47	299.58	281.36	18.22	16.440	
2,640.00	2,640.00	2,602.05	2,567.67	9.28	10.03	-110.80	-104.96	-276.35	304.33	285.97	18.36	16.573	
2,660.00	2,660.00	2,621.44	2,586.48	9.36	10.12	-111.02	-107.69	-280.24	309.09	290.58	18.50	16.703	
2,680.00	2,680.00	2,640.83	2,605.28	9.43	10.21	-111.24	-110.41	-284.12	313.85	295.20	18.65	16.832	
2,700.00	2,700.00	2,660.22	2,624.08	9.50	10.31	-111.45	-113.14	-288.01	318.61	299.82	18.79	16.959	
2,720.00	2,720.00	2,679.60	2,642.87	9.57	10.40	-171.79	-115.86	-291.89	323.45	304.52	18.93	17.089	
2,740.00	2,740.00	2,698.94	2,661.62	9.64	10.50	-171.97	-118.58	-295.77	328.42	309.35	19.07	17.224	
2,760.00	2,760.00	2,718.24	2,680.33	9.71	10.59	-172.16	-121.29	-299.64	333.53	314.32	19.21	17.365	
2,780.00	2,779.99	2,737.51	2,699.02	9.78	10.68	-172.34	-124.00	-303.50	338.78	319.43	19.35	17.510	
2,800.00	2,799.98	2,756.74	2,717.66	9.85	10.78	-172.52	-126.70	-307.35	344.16	324.67	19.49	17.661	
2,820.00	2,819.96	2,775.93	2,736.27	9.92	10.87	-172.70	-129.39	-311.20	349.68	330.06	19.63	17.817	
2,840.00	2,839.94	2,795.08	2,754.83	9.99	10.96	-172.87	-132.08	-315.03	355.34	335.57	19.76	17.978	
2,860.00	2,859.92	2,814.19	2,773.36	10.06	11.05	-173.04	-134.77	-318.86	361.13	341.23	19.90	18.144	
2,880.00	2,879.88	2,833.26	2,791.85	10.13	11.15	-173.21	-137.45	-322.68	367.06	347.02	20.04	18.315	
2,900.00	2,899.84	2,852.28	2,810.30	10.20	11.24	-173.37	-140.12	-326.50	373.13	352.95	20.18	18.489	
2,920.00	2,919.78	2,871.27	2,828.70	10.28	11.33	-173.53	-142.79	-330.30	379.33	359.01	20.32	18.669	
2,940.00	2,939.72	2,890.20	2,847.07	10.35	11.43	-173.69	-145.45	-334.10	385.67	365.21	20.46	18.853	
2,960.00	2,959.64	2,909.10	2,865.39	10.42	11.52	-173.85	-148.10	-337.88	392.14	371.54	20.59	19.042	
2,980.00	2,979.55	2,927.94	2,883.66	10.49	11.61	-174.00	-150.75	-341.66	398.74	378.01	20.73	19.234	
3,000.00	2,999.45	2,946.74	2,901.89	10.56	11.70	-174.14	-153.39	-345.43	405.48	384.61	20.87	19.431	
3,020.00	3,019.34	2,965.50	2,920.07	10.63	11.79	-174.29	-156.03	-349.18	412.35	391.35	21.00	19.632	
3,040.00	3,039.20	2,984.20	2,938.20	10.70	11.89	-174.43	-158.66	-352.93	419.36	398.22	21.14	19.837	
3,060.00	3,059.05	3,002.85	2,956.29	10.77	11.98	-174.57	-161.28	-356.67	426.49	405.22	21.28	20.046	
3,080.00	3,078.89	3,021.45	2,974.33	10.84	12.07	-174.70	-163.89	-360.40	433.76	412.35	21.41	20.258	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,100.00	3,098.70	3,040.01	2,992.31	10.91	12.16	-174.84	-166.50	-364.11	441.17	419.62	21.55	20.475	
3,120.00	3,118.50	3,058.50	3,010.25	10.98	12.25	-174.96	-169.10	-367.82	448.70	427.02	21.68	20.695	
3,140.00	3,138.27	3,076.95	3,028.13	11.06	12.34	-175.09	-171.69	-371.52	456.36	434.55	21.82	20.918	
3,160.00	3,158.03	3,095.34	3,045.96	11.13	12.43	-175.21	-174.27	-375.20	464.16	442.21	21.95	21.145	
3,180.00	3,177.76	3,113.67	3,063.74	11.20	12.52	-175.33	-176.85	-378.88	472.08	450.00	22.08	21.376	
3,200.00	3,197.47	3,131.95	3,081.46	11.27	12.61	-175.45	-179.42	-382.54	480.14	457.92	22.22	21.610	
3,220.00	3,217.15	3,150.17	3,099.13	11.34	12.70	-175.56	-181.98	-386.19	488.32	465.97	22.35	21.847	
3,240.00	3,236.81	3,168.34	3,116.74	11.42	12.79	-175.68	-184.53	-389.83	496.63	474.15	22.48	22.088	
3,260.00	3,256.44	3,186.44	3,134.30	11.49	12.88	-175.78	-187.07	-393.46	505.07	482.46	22.62	22.331	
3,280.00	3,276.05	3,204.49	3,151.79	11.56	12.97	-175.89	-189.61	-397.08	513.64	490.89	22.75	22.578	
3,300.00	3,295.62	3,222.47	3,169.23	11.64	13.06	-175.99	-192.13	-400.68	522.34	499.46	22.88	22.828	
3,320.00	3,315.17	3,240.40	3,186.61	11.71	13.15	-176.10	-194.65	-404.27	531.16	508.15	23.01	23.081	
3,340.00	3,334.69	3,258.26	3,203.93	11.78	13.24	-176.19	-197.16	-407.85	540.11	516.97	23.14	23.337	
3,360.00	3,354.18	3,276.06	3,221.19	11.86	13.33	-176.29	-199.66	-411.42	549.19	525.91	23.27	23.596	
3,380.00	3,373.63	3,293.79	3,238.38	11.93	13.41	-176.38	-202.15	-414.97	558.39	534.98	23.40	23.858	
3,400.00	3,393.06	3,311.46	3,255.51	12.01	13.50	-176.47	-204.64	-418.51	567.72	544.18	23.53	24.123	
3,420.00	3,412.44	3,329.06	3,272.58	12.09	13.59	-176.56	-207.11	-422.04	577.17	553.50	23.66	24.390	
3,440.00	3,431.80	3,346.60	3,289.58	12.16	13.68	-176.65	-209.57	-425.55	586.74	562.95	23.79	24.660	
3,460.00	3,451.12	3,364.07	3,306.52	12.24	13.76	-176.73	-212.03	-429.05	596.44	572.52	23.92	24.932	
3,480.00	3,470.40	3,381.47	3,323.39	12.32	13.85	-176.81	-214.47	-432.54	606.26	582.21	24.05	25.208	
3,500.00	3,489.64	3,398.80	3,340.20	12.39	13.93	-176.89	-216.91	-436.02	616.20	592.02	24.18	25.486	
3,520.00	3,508.85	3,416.07	3,356.94	12.47	14.02	-176.97	-219.33	-439.47	626.27	601.96	24.31	25.766	
3,540.00	3,528.02	3,433.26	3,373.60	12.56	14.11	-177.05	-221.75	-442.92	636.46	612.02	24.43	26.049	
3,560.00	3,547.14	3,450.38	3,390.20	12.64	14.19	-177.12	-224.15	-446.35	646.76	622.20	24.56	26.335	
3,580.00	3,566.23	3,467.42	3,406.73	12.72	14.28	-177.19	-226.55	-449.77	657.19	632.50	24.69	26.623	
3,600.00	3,585.27	3,484.40	3,423.19	12.80	14.36	-177.27	-228.93	-453.17	667.74	642.93	24.81	26.913	
3,620.00	3,604.27	3,501.29	3,439.57	12.88	14.44	-177.33	-231.31	-456.55	678.40	653.47	24.94	27.205	
3,640.00	3,623.22	3,518.12	3,455.89	12.96	14.53	-177.40	-233.67	-459.92	689.19	664.13	25.06	27.499	
3,645.28	3,628.22	3,522.54	3,460.18	12.98	14.55	-177.42	-234.29	-460.81	692.05	666.96	25.10	27.577	
3,660.00	3,642.15	3,534.89	3,472.14	13.05	14.61	-177.47	-236.03	-463.29	700.06	674.87	25.19	27.794	
3,680.00	3,661.07	3,551.65	3,488.40	13.13	14.70	-177.55	-238.38	-466.64	710.94	685.63	25.31	28.088	
3,700.00	3,679.99	3,568.42	3,504.66	13.22	14.78	-177.62	-240.74	-470.00	721.82	696.38	25.43	28.379	
3,720.00	3,698.91	3,585.19	3,520.91	13.30	14.86	-177.69	-243.09	-473.36	732.70	707.14	25.56	28.666	
3,740.00	3,717.83	3,601.95	3,537.17	13.39	14.95	-177.76	-245.45	-476.72	743.57	717.89	25.68	28.951	
3,760.00	3,736.75	3,618.72	3,553.43	13.48	15.03	-177.82	-247.81	-480.08	754.45	728.65	25.81	29.234	
3,780.00	3,755.67	3,635.48	3,569.68	13.57	15.11	-177.89	-250.16	-483.44	765.33	739.40	25.93	29.514	
3,800.00	3,774.59	3,652.25	3,585.94	13.65	15.20	-177.95	-252.52	-486.80	776.22	750.16	26.05	29.792	
3,820.00	3,793.51	3,669.02	3,602.19	13.74	15.28	-178.01	-254.87	-490.16	787.10	760.92	26.18	30.065	
3,840.00	3,812.44	3,685.78	3,618.45	13.83	15.37	-178.07	-257.23	-493.52	797.98	771.68	26.30	30.336	
3,860.00	3,831.36	3,702.55	3,634.71	13.92	15.45	-178.13	-259.58	-496.88	808.86	782.43	26.43	30.604	
3,880.00	3,850.28	3,719.32	3,650.96	14.01	15.53	-178.18	-261.94	-500.24	819.75	793.19	26.55	30.871	
3,900.00	3,869.20	3,736.08	3,667.22	14.10	15.62	-178.24	-264.30	-503.60	830.63	803.95	26.68	31.135	
3,920.00	3,888.12	3,752.85	3,683.48	14.20	15.70	-178.29	-266.65	-506.96	841.52	814.71	26.80	31.395	
3,940.00	3,907.04	3,769.61	3,699.73	14.29	15.79	-178.34	-269.01	-510.32	852.40	825.47	26.93	31.652	
3,960.00	3,925.96	3,786.38	3,715.99	14.38	15.87	-178.39	-271.36	-513.68	863.29	836.23	27.06	31.908	
3,980.00	3,944.88	3,803.15	3,732.25	14.47	15.95	-178.44	-273.72	-517.04	874.17	846.99	27.18	32.161	
4,000.00	3,963.80	3,819.91	3,748.50	14.56	16.04	-178.49	-276.07	-520.40	885.06	857.75	27.31	32.413	
4,020.00	3,982.73	3,836.68	3,764.76	14.66	16.12	-178.53	-278.43	-523.76	895.95	868.51	27.43	32.660	
4,040.00	4,001.65	3,853.44	3,781.01	14.75	16.21	-178.58	-280.78	-527.12	906.83	879.27	27.56	32.905	
4,060.00	4,020.57	3,870.21	3,797.27	14.85	16.29	-178.62	-283.14	-530.48	917.72	890.04	27.69	33.148	
4,080.00	4,039.49	3,886.98	3,813.53	14.94	16.37	-178.67	-285.50	-533.84	928.61	900.80	27.81	33.390	
4,100.00	4,058.41	3,903.74	3,829.78	15.04	16.46	-178.71	-287.85	-537.20	939.50	911.56	27.94	33.629	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,120.00	4,077.33	3,920.51	3,846.04	15.13	16.54	-178.75	-290.21	-540.56	950.39	922.32	28.06	33.865	
4,140.00	4,096.25	3,937.28	3,862.30	15.23	16.63	-178.79	-292.56	-543.92	961.27	933.08	28.19	34.099	
4,160.00	4,115.17	3,954.04	3,878.55	15.33	16.71	-178.83	-294.92	-547.28	972.16	943.85	28.32	34.330	
4,180.00	4,134.09	3,970.81	3,894.81	15.42	16.80	-178.87	-297.27	-550.64	983.05	954.61	28.44	34.560	
4,200.00	4,153.02	3,987.57	3,911.06	15.52	16.88	-178.91	-299.63	-554.00	993.94	965.37	28.57	34.789	
4,220.00	4,171.94	4,004.34	3,927.32	15.62	16.96	-178.95	-301.99	-557.36	1,004.83	976.14	28.70	35.013	
4,240.00	4,190.86	4,021.11	3,943.58	15.72	17.05	-178.98	-304.34	-560.72	1,015.73	986.90	28.83	35.236	
4,260.00	4,209.78	4,037.87	3,959.83	15.81	17.13	-179.02	-306.70	-564.08	1,026.62	997.66	28.95	35.457	
4,280.00	4,228.70	4,054.64	3,976.09	15.91	17.22	-179.05	-309.05	-567.44	1,037.51	1,008.43	29.08	35.677	
4,300.00	4,247.62	4,071.41	3,992.35	16.01	17.30	-179.09	-311.41	-570.80	1,048.40	1,019.19	29.21	35.894	
4,320.00	4,266.54	4,088.17	4,008.60	16.11	17.39	-179.12	-313.76	-574.16	1,059.29	1,029.95	29.34	36.109	
4,340.00	4,285.46	4,104.94	4,024.86	16.21	17.47	-179.15	-316.12	-577.52	1,070.18	1,040.72	29.46	36.321	
4,360.00	4,304.38	4,121.70	4,041.12	16.31	17.55	-179.18	-318.48	-580.88	1,081.07	1,051.48	29.59	36.532	
4,380.00	4,323.31	4,138.47	4,057.37	16.41	17.64	-179.21	-320.83	-584.24	1,091.97	1,062.25	29.72	36.742	
4,400.00	4,342.23	4,155.24	4,073.63	16.51	17.72	-179.25	-323.19	-587.60	1,102.86	1,073.01	29.85	36.949	
4,420.00	4,361.15	4,172.00	4,089.88	16.61	17.81	-179.28	-325.54	-590.96	1,113.75	1,083.78	29.98	37.154	
4,440.00	4,380.07	4,188.77	4,106.14	16.71	17.89	-179.31	-327.90	-594.32	1,124.65	1,094.54	30.11	37.357	
4,460.00	4,398.99	4,205.54	4,122.40	16.81	17.98	-179.33	-330.25	-597.68	1,135.54	1,105.31	30.23	37.559	
4,480.00	4,417.91	4,222.30	4,138.65	16.92	18.06	-179.36	-332.61	-601.04	1,146.43	1,116.07	30.36	37.759	
4,500.00	4,436.83	4,239.07	4,154.91	17.02	18.15	-179.39	-334.96	-604.40	1,157.33	1,126.84	30.49	37.957	
4,520.00	4,455.75	4,255.83	4,171.17	17.12	18.23	-179.42	-337.32	-607.76	1,168.22	1,137.60	30.62	38.153	
4,540.00	4,474.67	4,272.60	4,187.42	17.22	18.31	-179.44	-339.68	-611.12	1,179.11	1,148.37	30.75	38.347	
4,560.00	4,493.59	4,289.37	4,203.68	17.33	18.40	-179.47	-342.03	-614.48	1,190.01	1,159.13	30.88	38.540	
4,580.00	4,512.52	4,306.13	4,219.93	17.43	18.48	-179.50	-344.39	-617.84	1,200.90	1,169.90	31.01	38.731	
4,600.00	4,531.44	4,322.90	4,236.19	17.53	18.57	-179.52	-346.74	-621.20	1,211.80	1,180.66	31.14	38.921	
4,620.00	4,550.36	4,339.66	4,252.45	17.64	18.65	-179.55	-349.10	-624.56	1,222.69	1,191.43	31.26	39.108	
4,640.00	4,569.28	4,356.43	4,268.70	17.74	18.74	-179.57	-351.45	-627.92	1,233.59	1,202.19	31.39	39.294	
4,660.00	4,588.20	4,373.20	4,284.96	17.84	18.82	-179.60	-353.81	-631.28	1,244.48	1,212.96	31.52	39.478	
4,680.00	4,607.12	4,389.96	4,301.22	17.95	18.91	-179.62	-356.17	-634.64	1,255.38	1,223.73	31.65	39.661	
4,700.00	4,626.04	4,406.73	4,317.47	18.05	18.99	-179.64	-358.52	-638.00	1,266.27	1,234.49	31.78	39.842	
4,720.00	4,644.96	4,423.50	4,333.73	18.16	19.08	-179.67	-360.88	-641.36	1,277.17	1,245.26	31.91	40.021	
4,740.00	4,663.88	4,440.26	4,349.99	18.26	19.16	-179.69	-363.23	-644.72	1,288.06	1,256.02	32.04	40.199	
4,760.00	4,682.81	4,457.03	4,366.24	18.37	19.25	-179.71	-365.59	-648.08	1,298.96	1,266.79	32.17	40.376	
4,780.00	4,701.73	4,473.79	4,382.50	18.47	19.33	-179.73	-367.94	-651.44	1,309.86	1,277.56	32.30	40.551	
4,800.00	4,720.65	4,490.56	4,398.75	18.58	19.41	-179.75	-370.30	-654.80	1,320.75	1,288.32	32.43	40.725	
4,820.00	4,739.57	4,507.33	4,415.01	18.69	19.50	-179.77	-372.66	-658.15	1,331.65	1,299.09	32.56	40.896	
4,840.00	4,758.49	4,524.09	4,431.27	18.79	19.58	-179.80	-375.01	-661.51	1,342.55	1,309.85	32.69	41.066	
4,860.00	4,777.41	4,540.86	4,447.52	18.90	19.67	-179.82	-377.37	-664.87	1,353.44	1,320.62	32.82	41.235	
4,880.00	4,796.33	4,557.63	4,463.78	19.00	19.75	-179.84	-379.72	-668.23	1,364.34	1,331.39	32.95	41.403	
4,900.00	4,815.25	4,574.39	4,480.04	19.11	19.84	-179.86	-382.08	-671.59	1,375.24	1,342.15	33.08	41.570	
4,920.00	4,834.17	4,591.16	4,496.29	19.22	19.92	-179.87	-384.43	-674.95	1,386.13	1,352.92	33.21	41.734	
4,940.00	4,853.10	4,607.92	4,512.55	19.32	20.01	-179.89	-386.79	-678.31	1,397.03	1,363.68	33.34	41.897	
4,960.00	4,872.02	4,624.69	4,528.81	19.43	20.09	-179.91	-389.15	-681.67	1,407.93	1,374.45	33.47	42.059	
4,980.00	4,890.94	4,641.46	4,545.06	19.54	20.18	-179.93	-391.50	-685.03	1,418.82	1,385.22	33.61	42.220	
5,000.00	4,909.86	4,658.22	4,561.32	19.65	20.26	-179.95	-393.86	-688.39	1,429.72	1,395.98	33.74	42.380	
5,020.00	4,928.78	4,674.99	4,577.57	19.75	20.35	-179.97	-396.21	-691.75	1,440.62	1,406.75	33.87	42.538	
5,040.00	4,947.70	4,691.76	4,593.83	19.86	20.43	-179.99	-398.57	-695.11	1,451.52	1,417.52	34.00	42.694	
5,060.00	4,966.62	4,708.52	4,610.09	19.97	20.52	180.00	-400.92	-698.47	1,462.41	1,428.28	34.13	42.850	
5,080.00	4,985.54	4,725.29	4,626.34	20.08	20.60	179.98	-403.28	-701.83	1,473.31	1,439.05	34.26	43.004	
5,100.00	5,004.46	4,742.05	4,642.60	20.19	20.69	179.96	-405.63	-705.19	1,484.21	1,449.82	34.39	43.157	
5,120.00	5,023.39	4,758.82	4,658.86	20.30	20.77	179.95	-407.99	-708.55	1,495.11	1,460.58	34.52	43.309	
5,140.00	5,042.31	4,775.59	4,675.11	20.41	20.86	179.93	-410.35	-711.91	1,506.00	1,471.35	34.65	43.459	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,160.00	5,061.23	4,792.35	4,691.37	20.51	20.94	179.91	-412.70	-715.27	1,516.90	1,482.12	34.78	43.608	
5,180.00	5,080.15	4,809.12	4,707.62	20.62	21.03	179.90	-415.06	-718.63	1,527.80	1,492.88	34.92	43.756	
5,200.00	5,099.07	4,825.88	4,723.88	20.73	21.11	179.88	-417.41	-721.99	1,538.70	1,503.65	35.05	43.903	
5,220.00	5,117.99	4,842.65	4,740.14	20.84	21.20	179.87	-419.77	-725.35	1,549.60	1,514.42	35.18	44.049	
5,240.00	5,136.91	4,859.42	4,756.39	20.95	21.28	179.85	-422.12	-728.71	1,560.49	1,525.18	35.31	44.193	
5,260.00	5,155.83	4,876.18	4,772.65	21.06	21.37	179.84	-424.48	-732.07	1,571.39	1,535.95	35.44	44.336	
5,280.00	5,174.75	4,892.95	4,788.91	21.17	21.45	179.82	-426.84	-735.43	1,582.29	1,546.72	35.57	44.479	
5,300.00	5,193.67	4,909.72	4,805.16	21.28	21.54	179.81	-429.19	-738.79	1,593.19	1,557.48	35.71	44.620	
5,320.00	5,212.60	4,926.48	4,821.42	21.39	21.62	179.79	-431.55	-742.15	1,604.09	1,568.25	35.84	44.760	
5,340.00	5,231.52	4,943.25	4,837.68	21.50	21.71	179.78	-433.90	-745.51	1,614.99	1,579.02	35.97	44.898	
5,360.00	5,250.44	4,960.01	4,853.93	21.61	21.79	179.76	-436.26	-748.87	1,625.89	1,589.78	36.10	45.036	
5,380.00	5,269.36	4,976.78	4,870.19	21.72	21.88	179.75	-438.61	-752.23	1,636.78	1,600.55	36.23	45.173	
5,400.00	5,288.28	4,993.55	4,886.44	21.83	21.96	179.74	-440.97	-755.59	1,647.68	1,611.32	36.37	45.309	
5,420.00	5,307.20	5,010.31	4,902.70	21.94	22.05	179.72	-443.33	-758.95	1,658.58	1,622.08	36.50	45.443	
5,440.00	5,326.12	5,027.08	4,918.96	22.06	22.13	179.71	-445.68	-762.31	1,669.48	1,632.85	36.63	45.577	
5,460.00	5,345.04	5,043.85	4,935.21	22.17	22.22	179.70	-448.04	-765.67	1,680.38	1,643.62	36.76	45.709	
5,480.00	5,363.96	5,060.61	4,951.47	22.28	22.30	179.68	-450.39	-769.03	1,691.28	1,654.38	36.89	45.841	
5,500.00	5,382.89	5,077.38	4,967.73	22.39	22.39	179.67	-452.75	-772.39	1,702.18	1,665.15	37.03	45.971	
5,520.00	5,401.81	5,094.14	4,983.98	22.50	22.47	179.66	-455.10	-775.75	1,713.08	1,675.92	37.16	46.101	
5,540.00	5,420.73	5,110.91	5,000.24	22.61	22.56	179.65	-457.46	-779.11	1,723.98	1,686.69	37.29	46.229	
5,560.00	5,439.65	5,127.68	5,016.49	22.72	22.64	179.63	-459.81	-782.47	1,734.88	1,697.45	37.42	46.357	
5,580.00	5,458.57	5,144.44	5,032.75	22.84	22.73	179.62	-462.17	-785.83	1,745.78	1,708.22	37.56	46.483	
5,600.00	5,477.49	5,161.21	5,049.01	22.95	22.81	179.61	-464.53	-789.19	1,756.68	1,718.99	37.69	46.609	
5,620.00	5,496.41	5,177.98	5,065.26	23.06	22.90	179.60	-466.88	-792.55	1,767.58	1,729.75	37.82	46.734	
5,640.00	5,515.33	5,194.74	5,081.52	23.17	22.98	179.58	-469.24	-795.91	1,778.47	1,740.52	37.96	46.857	
5,660.00	5,534.25	5,211.51	5,097.78	23.28	23.07	179.57	-471.59	-799.27	1,789.37	1,751.29	38.09	46.980	
5,680.00	5,553.18	5,228.27	5,114.03	23.40	23.15	179.56	-473.95	-802.63	1,800.27	1,762.05	38.22	47.102	
5,700.00	5,572.10	5,245.04	5,130.29	23.51	23.24	179.55	-476.30	-805.99	1,811.17	1,772.82	38.35	47.223	
5,720.00	5,591.02	5,261.81	5,146.55	23.62	23.32	179.54	-478.66	-809.35	1,822.07	1,783.59	38.49	47.343	
5,740.00	5,609.94	5,278.57	5,162.80	23.73	23.41	179.53	-481.02	-812.71	1,832.97	1,794.35	38.62	47.462	
5,760.00	5,628.86	5,295.34	5,179.06	23.85	23.49	179.52	-483.37	-816.07	1,843.87	1,805.12	38.75	47.580	
5,780.00	5,647.78	5,312.10	5,195.31	23.96	23.58	179.51	-485.73	-819.43	1,854.77	1,815.89	38.89	47.698	
5,800.00	5,666.70	5,328.87	5,211.57	24.07	23.67	179.50	-488.08	-822.79	1,865.67	1,826.65	39.02	47.815	
5,809.89	5,676.06	5,337.16	5,219.61	24.13	23.71	179.49	-489.25	-824.45	1,871.06	1,831.98	39.08	47.872	
5,820.00	5,685.60	5,345.60	5,227.79	24.19	23.75	177.68	-490.43	-826.14	1,876.64	1,837.48	39.15	47.931	
5,840.00	5,704.31	5,362.03	5,243.72	24.31	23.83	174.41	-492.74	-829.43	1,888.03	1,848.74	39.29	48.059	
5,850.00	5,713.58	5,370.12	5,251.57	24.37	23.87	172.91	-493.88	-831.05	1,893.91	1,854.56	39.35	48.128	
5,860.00	5,722.80	5,378.12	5,259.32	24.43	23.92	171.49	-495.00	-832.66	1,899.90	1,860.48	39.42	48.200	
5,880.00	5,741.03	5,393.84	5,274.56	24.57	24.00	168.83	-497.21	-835.81	1,912.24	1,872.69	39.55	48.353	
5,900.00	5,759.00	5,409.17	5,289.43	24.70	24.07	166.37	-499.37	-838.88	1,925.02	1,885.34	39.68	48.518	
5,920.00	5,776.66	5,424.10	5,303.91	24.85	24.15	164.05	-501.46	-841.87	1,938.24	1,898.44	39.80	48.698	
5,940.00	5,794.02	5,438.61	5,317.97	25.00	24.22	161.83	-503.50	-844.78	1,951.87	1,911.95	39.92	48.889	
5,950.00	5,802.57	5,445.70	5,324.84	25.08	24.26	160.75	-504.50	-846.20	1,958.84	1,918.86	39.99	48.989	
5,960.00	5,811.03	5,452.67	5,331.61	25.16	24.29	159.68	-505.48	-847.60	1,965.91	1,925.87	40.04	49.093	
5,980.00	5,827.69	5,466.28	5,344.80	25.33	24.36	157.56	-507.39	-850.32	1,980.34	1,940.18	40.16	49.311	
6,000.00	5,843.96	5,479.41	5,357.53	25.50	24.43	155.45	-509.23	-852.95	1,995.14	1,954.86	40.27	49.538	
6,020.00	5,859.84	5,492.05	5,369.79	25.69	24.49	153.33	-511.01	-855.49	2,010.29	1,969.90	40.38	49.780	
6,040.00	5,875.31	5,504.19	5,381.56	25.87	24.56	151.17	-512.71	-857.92	2,025.78	1,985.29	40.49	50.032	
6,050.00	5,882.88	5,510.06	5,387.25	25.97	24.59	150.06	-513.54	-859.10	2,033.64	1,993.10	40.54	50.162	
6,060.00	5,890.33	5,515.80	5,392.82	26.07	24.62	148.94	-514.35	-860.25	2,041.59	2,000.99	40.59	50.296	
6,080.00	5,904.90	5,526.88	5,403.56	26.28	24.67	146.64	-515.90	-862.47	2,057.70	2,017.01	40.69	50.571	
6,100.00	5,919.00	5,537.41	5,413.77	26.49	24.73	144.23	-517.38	-864.58	2,074.10	2,033.31	40.78	50.855	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,120.00	5,932.61	5,547.38	5,423.43	26.72	24.78	141.70	-518.78	-866.57	2,090.76	2,049.89	40.87	51.152	
6,140.00	5,945.72	5,556.77	5,432.54	26.95	24.82	139.03	-520.10	-868.46	2,107.67	2,066.71	40.96	51.457	
6,150.00	5,952.07	5,561.25	5,436.88	27.06	24.85	137.64	-520.73	-869.35	2,116.22	2,075.22	41.00	51.613	
6,160.00	5,958.30	5,565.58	5,441.08	27.19	24.87	136.20	-521.34	-870.22	2,124.82	2,083.77	41.04	51.772	
6,180.00	5,970.34	5,573.80	5,449.05	27.44	24.91	133.20	-522.49	-871.87	2,142.17	2,101.05	41.12	52.097	
6,200.00	5,981.83	5,581.40	5,456.42	27.69	24.95	129.99	-523.56	-873.39	2,159.72	2,118.52	41.19	52.429	
6,220.00	5,992.76	5,588.40	5,463.20	27.97	24.98	126.58	-524.55	-874.79	2,177.44	2,136.17	41.26	52.771	
6,240.00	6,003.11	5,594.77	5,469.38	28.25	25.02	122.95	-525.44	-876.07	2,195.31	2,153.98	41.33	53.121	
6,250.00	6,008.06	5,597.72	5,472.24	28.38	25.03	121.06	-525.86	-876.66	2,204.30	2,162.94	41.36	53.298	
6,260.00	6,012.86	5,600.50	5,474.94	28.53	25.05	119.11	-526.25	-877.22	2,213.31	2,171.93	41.39	53.478	
6,280.00	6,022.01	5,605.60	5,479.89	28.84	25.07	115.05	-526.96	-878.24	2,231.43	2,189.99	41.44	53.842	
6,300.00	6,030.55	5,610.06	5,484.21	29.14	25.10	110.81	-527.59	-879.13	2,249.64	2,208.15	41.50	54.213	
6,320.00	6,038.46	5,613.87	5,487.90	29.46	25.11	106.39	-528.12	-879.90	2,267.93	2,226.38	41.55	54.590	
6,340.00	6,045.73	5,617.02	5,490.95	29.78	25.13	101.85	-528.57	-880.53	2,286.26	2,244.67	41.59	54.972	
6,350.00	6,049.13	5,618.35	5,492.24	29.95	25.14	99.55	-528.75	-880.79	2,295.45	2,253.84	41.61	55.165	
6,360.00	6,052.36	5,619.51	5,493.37	30.12	25.14	97.24	-528.92	-881.03	2,304.63	2,263.00	41.63	55.360	
6,380.00	6,058.34	5,621.34	5,495.15	30.47	25.15	92.60	-529.17	-881.39	2,323.01	2,281.34	41.67	55.752	
6,400.00	6,063.66	5,622.51	5,496.28	30.81	25.16	88.00	-529.34	-881.63	2,341.38	2,299.68	41.70	56.148	
6,420.00	6,068.31	5,623.01	5,496.76	31.18	25.16	83.49	-529.41	-881.73	2,359.72	2,317.99	41.73	56.547	
6,440.00	6,072.29	5,622.85	5,496.61	31.54	25.16	79.13	-529.39	-881.70	2,378.01	2,336.25	41.76	56.951	
6,450.00	6,074.03	5,622.51	5,496.28	31.73	25.16	77.02	-529.34	-881.63	2,387.12	2,345.36	41.77	57.153	
6,460.00	6,075.60	5,622.02	5,495.80	31.92	25.16	74.96	-529.27	-881.53	2,396.22	2,354.44	41.78	57.356	
6,480.00	6,078.23	5,620.52	5,494.35	32.30	25.15	71.01	-529.06	-881.23	2,414.34	2,372.54	41.80	57.763	
6,500.00	6,080.17	5,618.37	5,492.26	32.68	25.14	67.30	-528.76	-880.80	2,432.35	2,390.53	41.81	58.172	
6,520.00	6,081.42	5,615.55	5,489.53	33.07	25.12	63.85	-528.36	-880.23	2,450.21	2,408.39	41.83	58.580	
6,540.00	6,081.99	5,612.08	5,486.16	33.47	25.11	60.65	-527.87	-879.54	2,467.93	2,426.09	41.84	58.990	
6,552.18	6,082.00	5,609.64	5,483.80	33.71	25.09	58.82	-527.53	-879.05	2,478.63	2,436.79	41.84	59.241	
6,560.00	6,081.92	5,608.00	5,482.21	33.86	25.08	58.75	-527.30	-878.72	2,485.48	2,443.64	41.84	59.399	
6,580.00	6,081.73	5,603.80	5,478.14	34.27	25.06	58.57	-526.71	-877.88	2,503.02	2,461.17	41.85	59.805	
6,600.00	6,081.53	5,599.61	5,474.07	34.67	25.04	58.39	-526.12	-877.04	2,520.60	2,478.74	41.86	60.214	
6,620.00	6,081.34	5,595.41	5,470.01	35.10	25.02	58.21	-525.53	-876.20	2,538.20	2,496.32	41.88	60.612	
6,640.00	6,081.14	5,591.22	5,465.94	35.52	25.00	58.03	-524.94	-875.36	2,555.83	2,513.94	41.89	61.013	
6,660.00	6,080.95	5,587.02	5,461.87	35.94	24.98	57.85	-524.35	-874.52	2,573.49	2,531.58	41.90	61.415	
6,680.00	6,080.76	5,582.82	5,457.80	36.37	24.96	57.67	-523.76	-873.68	2,591.17	2,549.26	41.91	61.820	
6,700.00	6,080.56	5,578.63	5,453.73	36.79	24.94	57.49	-523.17	-872.84	2,608.88	2,566.96	41.93	62.227	
6,720.00	6,080.37	5,574.43	5,449.66	37.24	24.91	57.32	-522.58	-871.99	2,626.62	2,584.68	41.94	62.622	
6,740.00	6,080.17	5,570.23	5,445.59	37.69	24.89	57.14	-521.99	-871.15	2,644.39	2,602.42	41.96	63.020	
6,760.00	6,079.98	5,566.04	5,441.52	38.13	24.87	56.96	-521.40	-870.31	2,662.17	2,620.20	41.98	63.419	
6,780.00	6,079.78	5,561.84	5,437.45	38.58	24.85	56.79	-520.81	-869.47	2,679.99	2,638.00	41.99	63.821	
6,800.00	6,079.59	5,557.64	5,433.39	39.03	24.83	56.61	-520.23	-868.63	2,697.83	2,655.82	42.01	64.225	
6,820.00	6,079.39	5,553.45	5,429.32	39.49	24.81	56.44	-519.64	-867.79	2,715.69	2,673.66	42.03	64.618	
6,840.00	6,079.20	5,549.25	5,425.25	39.96	24.79	56.27	-519.05	-866.95	2,733.57	2,691.53	42.05	65.014	
6,860.00	6,079.00	5,545.05	5,421.18	40.43	24.76	56.09	-518.46	-866.11	2,751.48	2,709.41	42.06	65.411	
6,880.00	6,078.81	5,540.86	5,417.11	40.89	24.74	55.92	-517.87	-865.27	2,769.41	2,727.33	42.08	65.810	
6,900.00	6,078.61	5,536.66	5,413.04	41.36	24.72	55.75	-517.28	-864.43	2,787.36	2,745.26	42.10	66.212	
6,920.00	6,078.42	5,532.46	5,408.97	41.84	24.70	55.57	-516.69	-863.58	2,805.33	2,763.21	42.12	66.604	
6,940.00	6,078.22	5,528.27	5,404.90	42.32	24.68	55.40	-516.10	-862.74	2,823.33	2,781.18	42.14	66.998	
6,960.00	6,078.03	5,524.07	5,400.83	42.81	24.66	55.23	-515.51	-861.90	2,841.34	2,799.18	42.16	67.394	
6,980.00	6,077.83	5,519.87	5,396.77	43.29	24.64	55.06	-514.92	-861.06	2,859.37	2,817.20	42.18	67.792	
7,000.00	6,077.64	5,515.68	5,392.70	43.77	24.61	54.89	-514.33	-860.22	2,877.43	2,835.23	42.20	68.191	
7,020.00	6,077.44	5,511.48	5,388.63	44.27	24.59	54.72	-513.74	-859.38	2,895.50	2,853.28	42.22	68.583	
7,040.00	6,077.25	5,507.28	5,384.56	44.76	24.57	54.55	-513.15	-858.54	2,913.60	2,871.36	42.24	68.977	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,060.00	6,077.05	5,503.09	5,380.49	45.26	24.55	54.38	-512.56	-857.70	2,931.71	2,889.45	42.26	69.372	
7,080.00	6,076.86	5,498.89	5,376.42	45.76	24.53	54.22	-511.97	-856.86	2,949.84	2,907.56	42.28	69.769	
7,100.00	6,076.66	5,494.69	5,372.35	46.25	24.51	54.05	-511.38	-856.02	2,967.99	2,925.69	42.30	70.167	
7,120.00	6,076.47	5,490.50	5,368.28	46.76	24.49	53.88	-510.79	-855.18	2,986.15	2,943.83	42.32	70.559	
7,140.00	6,076.27	5,486.30	5,364.21	47.27	24.47	53.71	-510.20	-854.33	3,004.34	2,961.99	42.34	70.953	
7,160.00	6,076.08	5,482.10	5,360.14	47.78	24.44	53.55	-509.61	-853.49	3,022.54	2,980.17	42.36	71.348	
7,180.00	6,075.88	5,477.91	5,356.08	48.28	24.42	53.38	-509.02	-852.65	3,040.75	2,998.37	42.38	71.744	
7,200.00	6,075.69	5,473.71	5,352.01	48.79	24.40	53.22	-508.43	-851.81	3,058.99	3,016.59	42.40	72.142	
7,220.00	6,075.49	5,469.52	5,347.94	49.31	24.38	53.05	-507.84	-850.97	3,077.24	3,034.81	42.42	72.534	
7,240.00	6,075.30	5,465.32	5,343.87	49.83	24.36	52.89	-507.25	-850.13	3,095.50	3,053.06	42.45	72.928	
7,260.00	6,075.11	5,461.12	5,339.80	50.34	24.34	52.73	-506.66	-849.29	3,113.79	3,071.32	42.47	73.323	
7,280.00	6,074.91	5,456.93	5,335.73	50.86	24.32	52.56	-506.07	-848.45	3,132.08	3,089.60	42.49	73.720	
7,300.00	6,074.72	5,452.73	5,331.66	51.38	24.29	52.40	-505.48	-847.61	3,150.39	3,107.89	42.51	74.118	
7,320.00	6,074.52	5,448.53	5,327.59	51.90	24.27	52.24	-504.90	-846.77	3,168.72	3,126.19	42.53	74.511	
7,340.00	6,074.33	5,444.34	5,323.52	52.43	24.25	52.08	-504.31	-845.92	3,187.06	3,144.52	42.55	74.905	
7,360.00	6,074.13	5,440.14	5,319.46	52.96	24.23	51.92	-503.72	-845.08	3,205.42	3,162.85	42.57	75.301	
7,380.00	6,073.94	5,435.94	5,315.39	53.48	24.21	51.76	-503.13	-844.24	3,223.79	3,181.20	42.59	75.698	
7,400.00	6,073.74	5,431.75	5,311.32	54.01	24.19	51.60	-502.54	-843.40	3,242.17	3,199.57	42.61	76.097	
7,420.00	6,073.55	5,427.55	5,307.25	54.54	24.17	51.44	-501.95	-842.56	3,260.57	3,217.94	42.63	76.490	
7,440.00	6,073.35	5,423.35	5,303.18	55.07	24.15	51.28	-501.36	-841.72	3,278.98	3,236.33	42.65	76.886	
7,460.00	6,073.16	5,419.16	5,299.11	55.61	24.12	51.12	-500.77	-840.88	3,297.41	3,254.74	42.67	77.282	
7,480.00	6,072.96	5,414.96	5,295.04	56.14	24.10	50.96	-500.18	-840.04	3,315.84	3,273.16	42.69	77.680	
7,500.00	6,072.77	5,410.76	5,290.97	56.67	24.08	50.80	-499.59	-839.20	3,334.29	3,291.59	42.70	78.079	
7,520.00	6,072.57	5,406.57	5,286.90	57.21	24.06	50.65	-499.00	-838.36	3,352.76	3,310.03	42.72	78.475	
7,540.00	6,072.38	5,402.37	5,282.83	57.75	24.04	50.49	-498.41	-837.52	3,371.23	3,328.49	42.74	78.871	
7,560.00	6,072.18	5,398.17	5,278.77	58.29	24.02	50.34	-497.82	-836.67	3,389.72	3,346.95	42.76	79.269	
7,580.00	6,071.99	5,393.98	5,274.70	58.83	24.00	50.18	-497.23	-835.83	3,408.22	3,365.44	42.78	79.668	
7,600.00	6,071.79	5,389.78	5,270.63	59.37	23.97	50.03	-496.64	-834.99	3,426.73	3,383.93	42.80	80.068	
7,620.00	6,071.60	5,385.58	5,266.56	59.92	23.95	49.87	-496.05	-834.15	3,445.25	3,402.43	42.82	80.464	
7,640.00	6,071.40	5,381.39	5,262.49	60.46	23.93	49.72	-495.46	-833.31	3,463.78	3,420.95	42.84	80.862	
7,660.00	6,071.21	5,377.19	5,258.42	61.01	23.91	49.57	-494.87	-832.47	3,482.33	3,439.47	42.85	81.261	
7,680.00	6,071.01	5,372.99	5,254.35	61.55	23.89	49.41	-494.28	-831.63	3,500.88	3,458.01	42.87	81.661	
7,700.00	6,070.82	5,368.80	5,250.28	62.10	23.87	49.26	-493.69	-830.79	3,519.45	3,476.56	42.89	82.062	
7,720.00	6,070.62	5,364.60	5,246.21	62.65	23.85	49.11	-493.10	-829.95	3,538.03	3,495.12	42.91	82.460	
7,740.00	6,070.43	5,360.40	5,242.15	63.19	23.83	48.96	-492.51	-829.11	3,556.61	3,513.69	42.92	82.860	
7,760.00	6,070.23	5,356.21	5,238.08	63.74	23.80	48.81	-491.92	-828.26	3,575.21	3,532.27	42.94	83.260	
7,780.00	6,070.04	5,352.01	5,234.01	64.29	23.78	48.66	-491.33	-827.42	3,593.82	3,550.86	42.96	83.662	
7,800.00	6,069.85	5,347.82	5,229.94	64.84	23.76	48.51	-490.74	-826.58	3,612.44	3,569.46	42.97	84.064	
7,820.00	6,069.65	5,343.62	5,225.87	65.40	23.74	48.36	-490.15	-825.74	3,631.06	3,588.07	42.99	84.464	
7,840.00	6,069.46	5,339.42	5,221.80	65.95	23.72	48.21	-489.56	-824.90	3,649.70	3,606.70	43.01	84.865	
7,860.00	6,069.26	5,335.23	5,217.73	66.51	23.70	48.06	-488.98	-824.06	3,668.35	3,625.33	43.02	85.267	
7,880.00	6,069.07	5,331.03	5,213.66	67.06	23.68	47.91	-488.39	-823.22	3,687.01	3,643.97	43.04	85.670	
7,900.00	6,068.87	5,326.83	5,209.59	67.61	23.65	47.77	-487.80	-822.38	3,705.67	3,662.62	43.05	86.074	
7,920.00	6,068.68	5,322.64	5,205.53	68.17	23.63	47.62	-487.21	-821.54	3,724.35	3,681.28	43.07	86.475	
7,940.00	6,068.48	5,318.44	5,201.46	68.73	23.61	47.48	-486.62	-820.70	3,743.03	3,699.95	43.08	86.878	
7,960.00	6,068.29	5,314.24	5,197.39	69.29	23.59	47.33	-486.03	-819.85	3,761.72	3,718.62	43.10	87.281	
7,980.00	6,068.09	5,310.05	5,193.32	69.84	23.57	47.18	-485.44	-819.01	3,780.42	3,737.31	43.11	87.686	
8,000.00	6,067.90	5,305.85	5,189.25	70.40	23.55	47.04	-484.85	-818.17	3,799.13	3,756.01	43.13	88.092	
8,020.00	6,067.70	5,301.65	5,185.18	70.96	23.53	46.90	-484.26	-817.33	3,817.85	3,774.71	43.14	88.495	
8,040.00	6,067.51	5,297.46	5,181.11	71.52	23.51	46.75	-483.67	-816.49	3,836.58	3,793.42	43.16	88.899	
8,060.00	6,067.31	5,293.26	5,177.04	72.08	23.48	46.61	-483.08	-815.65	3,855.31	3,812.14	43.17	89.304	
8,080.00	6,067.12	5,289.06	5,172.97	72.64	23.46	46.47	-482.49	-814.81	3,874.06	3,830.87	43.18	89.710	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,100.00	6,066.92	5,284.87	5,168.90	73.20	23.44	46.33	-481.90	-813.97	3,892.81	3,849.61	43.20	90.118	
8,120.00	6,066.73	5,280.67	5,164.84	73.77	23.42	46.18	-481.31	-813.13	3,911.57	3,868.36	43.21	90.523	
8,140.00	6,066.53	5,276.47	5,160.77	74.33	23.40	46.04	-480.72	-812.29	3,930.33	3,887.11	43.22	90.929	
8,160.00	6,066.34	5,272.28	5,156.70	74.90	23.38	45.90	-480.13	-811.45	3,949.11	3,905.87	43.24	91.336	
8,180.00	6,066.14	5,268.08	5,152.63	75.46	23.36	45.76	-479.54	-810.60	3,967.89	3,924.64	43.25	91.744	
8,200.00	6,065.95	5,263.88	5,148.56	76.02	23.33	45.62	-478.95	-809.76	3,986.68	3,943.42	43.26	92.153	
8,220.00	6,065.75	5,259.69	5,144.49	76.59	23.31	45.48	-478.36	-808.92	4,005.48	3,962.20	43.27	92.560	
8,240.00	6,065.56	5,255.49	5,140.42	77.16	23.29	45.35	-477.77	-808.08	4,024.28	3,980.99	43.29	92.967	
8,260.00	6,065.36	5,251.29	5,136.35	77.72	23.27	45.21	-477.18	-807.24	4,043.09	3,999.79	43.30	93.376	
8,280.00	6,065.17	5,247.10	5,132.28	78.29	23.25	45.07	-476.59	-806.40	4,061.91	4,018.60	43.31	93.786	
8,300.00	6,064.97	5,242.90	5,128.22	78.85	23.23	44.93	-476.00	-805.56	4,080.73	4,037.41	43.32	94.197	
8,320.00	6,064.78	5,238.70	5,124.15	79.42	23.21	44.80	-475.41	-804.72	4,099.57	4,056.23	43.33	94.605	
8,340.00	6,064.59	5,234.51	5,120.08	79.99	23.19	44.66	-474.82	-803.88	4,118.40	4,075.06	43.34	95.015	
8,360.00	6,064.39	5,230.31	5,116.01	80.56	23.16	44.53	-474.23	-803.04	4,137.25	4,093.89	43.36	95.425	
8,380.00	6,064.20	5,226.11	5,111.94	81.13	23.14	44.39	-473.65	-802.19	4,156.10	4,112.74	43.37	95.837	
8,400.00	6,064.00	5,221.92	5,107.87	81.70	23.12	44.26	-473.06	-801.35	4,174.96	4,131.58	43.38	96.250	
8,420.00	6,063.81	5,217.72	5,103.80	82.27	23.10	44.12	-472.47	-800.51	4,193.82	4,150.44	43.39	96.660	
8,440.00	6,063.61	5,213.53	5,099.73	82.84	23.08	43.99	-471.88	-799.67	4,212.70	4,169.30	43.40	97.072	
8,460.00	6,063.42	5,209.33	5,095.66	83.41	23.06	43.85	-471.29	-798.83	4,231.57	4,188.16	43.41	97.484	
8,480.00	6,063.22	5,205.13	5,091.60	83.98	23.04	43.72	-470.70	-797.99	4,250.46	4,207.04	43.42	97.897	
8,500.00	6,063.03	5,200.94	5,087.53	84.55	23.01	43.59	-470.11	-797.15	4,269.34	4,225.92	43.43	98.312	
8,520.00	6,062.83	5,196.74	5,083.46	85.12	22.99	43.46	-469.52	-796.31	4,288.24	4,244.80	43.44	98.724	
8,540.00	6,062.64	5,192.54	5,079.39	85.69	22.97	43.33	-468.93	-795.47	4,307.14	4,263.69	43.45	99.137	
8,560.00	6,062.44	5,188.35	5,075.32	86.27	22.95	43.20	-468.34	-794.63	4,326.05	4,282.59	43.46	99.551	
8,580.00	6,062.25	5,184.15	5,071.25	86.84	22.93	43.07	-467.75	-793.79	4,344.96	4,301.50	43.46	99.966	
8,600.00	6,062.05	5,179.95	5,067.18	87.41	22.91	42.94	-467.16	-792.94	4,363.88	4,320.41	43.47	100.382	
8,620.00	6,061.86	5,175.76	5,063.11	87.99	22.89	42.81	-466.57	-792.10	4,382.80	4,339.32	43.48	100.797	
8,640.00	6,061.66	5,171.56	5,059.04	88.56	22.87	42.68	-465.98	-791.26	4,401.73	4,358.24	43.49	101.212	
8,660.00	6,061.47	5,167.36	5,054.97	89.13	22.84	42.55	-465.39	-790.42	4,420.67	4,377.17	43.50	101.628	
8,680.00	6,061.27	5,163.17	5,050.91	89.71	22.82	42.42	-464.80	-789.58	4,439.61	4,396.10	43.51	102.045	
8,700.00	6,061.08	5,158.97	5,046.84	90.28	22.80	42.29	-464.21	-788.74	4,458.55	4,415.04	43.51	102.462	
8,720.00	6,060.88	5,154.77	5,042.77	90.86	22.78	42.17	-463.62	-787.90	4,477.50	4,433.98	43.52	102.878	
8,740.00	6,060.69	5,150.58	5,038.70	91.43	22.76	42.04	-463.03	-787.06	4,496.46	4,452.93	43.53	103.295	
8,760.00	6,060.49	5,146.38	5,034.63	92.01	22.74	41.91	-462.44	-786.22	4,515.42	4,471.88	43.54	103.713	
8,780.00	6,060.30	5,142.18	5,030.56	92.59	22.72	41.79	-461.85	-785.38	4,534.39	4,490.84	43.54	104.132	
8,800.00	6,060.10	5,137.99	5,026.49	93.16	22.70	41.66	-461.26	-784.53	4,553.36	4,509.81	43.55	104.551	
8,820.00	6,059.91	5,133.79	5,022.42	93.74	22.67	41.54	-460.67	-783.69	4,572.33	4,528.78	43.56	104.969	
8,840.00	6,059.71	5,129.59	5,018.35	94.32	22.65	41.41	-460.08	-782.85	4,591.32	4,547.75	43.57	105.388	
8,860.00	6,059.52	5,125.40	5,014.29	94.89	22.63	41.29	-459.49	-782.01	4,610.30	4,566.73	43.57	105.807	
8,880.00	6,059.33	5,121.20	5,010.22	95.47	22.61	41.17	-458.90	-781.17	4,629.29	4,585.71	43.58	106.228	
8,900.00	6,059.13	5,117.00	5,006.15	96.05	22.59	41.04	-458.32	-780.33	4,648.29	4,604.70	43.58	106.649	
8,920.00	6,058.94	5,112.81	5,002.08	96.63	22.57	40.92	-457.73	-779.49	4,667.29	4,623.69	43.59	107.069	
8,940.00	6,058.74	5,108.61	4,998.01	97.20	22.55	40.80	-457.14	-778.65	4,686.29	4,642.69	43.60	107.489	
8,960.00	6,058.55	5,104.41	4,993.94	97.78	22.52	40.68	-456.55	-777.81	4,705.30	4,661.70	43.60	107.911	
8,980.00	6,058.35	5,100.22	4,989.87	98.36	22.50	40.56	-455.96	-776.97	4,724.31	4,680.70	43.61	108.333	
9,000.00	6,058.16	5,096.02	4,985.80	98.94	22.48	40.44	-455.37	-776.13	4,743.33	4,699.72	43.61	108.756	
9,020.00	6,057.96	5,091.83	4,981.73	99.52	22.46	40.32	-454.78	-775.28	4,762.35	4,718.73	43.62	109.177	
9,040.00	6,057.77	5,087.63	4,977.67	100.10	22.44	40.20	-454.19	-774.44	4,781.38	4,737.75	43.63	109.599	
9,060.00	6,057.57	5,083.43	4,973.60	100.68	22.42	40.08	-453.60	-773.60	4,800.41	4,756.78	43.63	110.022	
9,080.00	6,057.38	5,079.24	4,969.53	101.26	22.40	39.96	-453.01	-772.76	4,819.44	4,775.81	43.64	110.446	
9,100.00	6,057.18	5,075.04	4,965.46	101.84	22.38	39.84	-452.42	-771.92	4,838.48	4,794.84	43.64	110.871	
9,120.00	6,056.99	5,070.84	4,961.39	102.42	22.35	39.72	-451.83	-771.08	4,857.53	4,813.88	43.65	111.294	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,140.00	6,056.79	5,066.65	4,957.32	103.00	22.33	39.60	-451.24	-770.24	4,876.57	4,832.92	43.65	111.718	
9,160.00	6,056.60	5,062.45	4,953.25	103.58	22.31	39.49	-450.65	-769.40	4,895.62	4,851.97	43.66	112.142	
9,180.00	6,056.40	5,058.25	4,949.18	104.16	22.29	39.37	-450.06	-768.56	4,914.68	4,871.02	43.66	112.568	
9,200.00	6,056.21	5,054.06	4,945.11	104.74	22.27	39.25	-449.47	-767.72	4,933.74	4,890.07	43.66	112.994	
9,220.00	6,056.01	5,049.86	4,941.04	105.32	22.25	39.14	-448.88	-766.87	4,952.80	4,909.13	43.67	113.419	
9,240.00	6,055.82	5,045.66	4,936.98	105.90	22.23	39.02	-448.29	-766.03	4,971.87	4,928.19	43.67	113.844	
9,260.00	6,055.62	5,041.47	4,932.91	106.49	22.21	38.91	-447.70	-765.19	4,990.94	4,947.26	43.68	114.271	
9,280.00	6,055.43	5,037.27	4,928.84	107.07	22.18	38.79	-447.11	-764.35	5,010.01	4,966.33	43.68	114.698	
9,300.00	6,055.23	5,033.07	4,924.77	107.65	22.16	38.68	-446.52	-763.51	5,029.09	4,985.41	43.68	115.126	
9,320.00	6,055.04	5,028.88	4,920.70	108.23	22.14	38.57	-445.93	-762.67	5,048.17	5,004.48	43.69	115.552	
9,340.00	6,054.84	5,024.68	4,916.63	108.81	22.12	38.45	-445.34	-761.83	5,067.26	5,023.56	43.69	115.979	
9,360.00	6,054.65	5,020.48	4,912.56	109.40	22.10	38.34	-444.75	-760.99	5,086.34	5,042.65	43.69	116.407	
9,380.00	6,054.45	5,016.29	4,908.49	109.98	22.08	38.23	-444.16	-760.15	5,105.44	5,061.74	43.70	116.836	
9,400.00	6,054.26	5,012.09	4,904.42	110.56	22.06	38.12	-443.57	-759.31	5,124.53	5,080.83	43.70	117.266	
9,420.00	6,054.07	5,007.89	4,900.36	111.14	22.04	38.00	-442.99	-758.46	5,143.63	5,099.93	43.70	117.694	
9,440.00	6,053.87	5,003.70	4,896.29	111.73	22.01	37.89	-442.40	-757.62	5,162.73	5,119.03	43.71	118.123	
9,460.00	6,053.68	4,999.50	4,892.22	112.31	21.99	37.78	-441.81	-756.78	5,181.84	5,138.13	43.71	118.552	
9,480.00	6,053.48	4,995.30	4,888.15	112.89	21.97	37.67	-441.22	-755.94	5,200.95	5,157.24	43.71	118.982	
9,500.00	6,053.29	4,991.11	4,884.08	113.48	21.95	37.56	-440.63	-755.10	5,220.06	5,176.35	43.71	119.413	
9,520.00	6,053.09	4,986.91	4,880.01	114.06	21.93	37.45	-440.04	-754.26	5,239.18	5,195.46	43.72	119.843	
9,540.00	6,052.90	4,982.71	4,875.94	114.65	21.91	37.34	-439.45	-753.42	5,258.30	5,214.58	43.72	120.273	
9,560.00	6,052.70	4,978.52	4,871.87	115.23	21.89	37.23	-438.86	-752.58	5,277.42	5,233.70	43.72	120.704	
9,580.00	6,052.51	4,974.32	4,867.80	115.81	21.86	37.13	-438.27	-751.74	5,296.54	5,252.82	43.72	121.136	
9,600.00	6,052.31	4,970.13	4,863.73	116.40	21.84	37.02	-437.68	-750.90	5,315.67	5,271.95	43.73	121.569	
9,620.00	6,052.12	4,965.93	4,859.67	116.98	21.82	36.91	-437.09	-750.06	5,334.80	5,291.08	43.73	122.000	
9,640.00	6,051.92	4,961.73	4,855.60	117.57	21.80	36.80	-436.50	-749.21	5,353.94	5,310.21	43.73	122.432	
9,660.00	6,051.73	4,957.54	4,851.53	118.15	21.78	36.70	-435.91	-748.37	5,373.08	5,329.34	43.73	122.864	
9,680.00	6,051.53	4,953.34	4,847.46	118.74	21.76	36.59	-435.32	-747.53	5,392.22	5,348.48	43.73	123.298	
9,700.00	6,051.34	4,949.14	4,843.39	119.32	21.74	36.48	-434.73	-746.69	5,411.36	5,367.63	43.73	123.731	
9,720.00	6,051.14	4,944.95	4,839.32	119.91	21.72	36.38	-434.14	-745.85	5,430.51	5,386.77	43.74	124.164	
9,740.00	6,050.95	4,940.75	4,835.25	120.49	21.69	36.27	-433.55	-745.01	5,449.66	5,405.92	43.74	124.597	
9,760.00	6,050.75	4,936.55	4,831.18	121.08	21.67	36.17	-432.96	-744.17	5,468.81	5,425.07	43.74	125.032	
9,780.00	6,050.56	4,932.36	4,827.11	121.67	21.65	36.06	-432.37	-743.33	5,487.96	5,444.22	43.74	125.466	
9,800.00	6,050.36	4,928.16	4,823.05	122.25	21.63	35.96	-431.78	-742.49	5,507.12	5,463.38	43.74	125.902	
9,820.00	6,050.17	4,923.96	4,818.98	122.84	21.61	35.86	-431.19	-741.65	5,526.28	5,482.54	43.74	126.336	
9,840.00	6,049.97	4,919.77	4,814.91	123.42	21.59	35.75	-430.60	-740.80	5,545.45	5,501.70	43.74	126.770	
9,860.00	6,049.78	4,915.57	4,810.84	124.01	21.57	35.65	-430.01	-739.96	5,564.61	5,520.87	43.74	127.206	
9,880.00	6,049.58	4,911.37	4,806.77	124.60	21.55	35.55	-429.42	-739.12	5,583.78	5,540.04	43.75	127.642	
9,900.00	6,049.39	4,907.18	4,802.70	125.18	21.52	35.45	-428.83	-738.28	5,602.95	5,559.21	43.75	128.079	
9,920.00	6,049.19	4,902.98	4,798.63	125.77	21.50	35.34	-428.24	-737.44	5,622.13	5,578.38	43.75	128.514	
9,940.00	6,049.00	4,898.78	4,794.56	126.35	21.48	35.24	-427.66	-736.60	5,641.30	5,597.56	43.75	128.950	
9,960.00	6,048.80	4,894.59	4,790.49	126.94	21.46	35.14	-427.07	-735.76	5,660.48	5,616.74	43.75	129.387	
9,980.00	6,048.61	4,890.39	4,786.43	127.53	21.44	35.04	-426.48	-734.92	5,679.67	5,635.92	43.75	129.825	
10,000.00	6,048.42	4,886.19	4,782.36	128.11	21.42	34.94	-425.89	-734.08	5,698.85	5,655.10	43.75	130.263	
10,020.00	6,048.22	4,882.00	4,778.29	128.70	21.40	34.84	-425.30	-733.24	5,718.04	5,674.29	43.75	130.700	
10,040.00	6,048.03	4,877.80	4,774.22	129.29	21.38	34.74	-424.71	-732.40	5,737.23	5,693.48	43.75	131.137	
10,060.00	6,047.83	4,873.60	4,770.15	129.88	21.35	34.64	-424.12	-731.55	5,756.42	5,712.67	43.75	131.575	
10,080.00	6,047.64	4,869.41	4,766.08	130.46	21.33	34.54	-423.53	-730.71	5,775.61	5,731.86	43.75	132.014	
10,100.00	6,047.44	4,865.21	4,762.01	131.05	21.31	34.45	-422.94	-729.87	5,794.81	5,751.06	43.75	132.453	
10,120.00	6,047.25	4,861.01	4,757.94	131.64	21.29	34.35	-422.35	-729.03	5,814.01	5,770.26	43.75	132.891	
10,140.00	6,047.05	4,856.82	4,753.87	132.23	21.27	34.25	-421.76	-728.19	5,833.21	5,789.46	43.75	133.330	
10,160.00	6,046.86	4,852.62	4,749.80	132.81	21.25	34.15	-421.17	-727.35	5,852.41	5,808.66	43.75	133.770	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,180.00	6,046.66	4,848.43	4,745.74	133.40	21.23	34.06	-420.58	-726.51	5,871.62	5,827.87	43.75	134.210	
10,200.00	6,046.47	4,844.23	4,741.67	133.99	21.21	33.96	-419.99	-725.67	5,890.83	5,847.08	43.75	134.650	
10,220.00	6,046.27	4,840.03	4,737.60	134.58	21.18	33.86	-419.40	-724.83	5,910.04	5,866.29	43.75	135.090	
10,240.00	6,046.08	4,835.84	4,733.53	135.17	21.16	33.77	-418.81	-723.99	5,929.25	5,885.50	43.75	135.530	
10,260.00	6,045.88	4,831.64	4,729.46	135.75	21.14	33.67	-418.22	-723.14	5,948.47	5,904.72	43.75	135.970	
10,280.00	6,045.69	4,827.44	4,725.39	136.34	21.12	33.58	-417.63	-722.30	5,967.69	5,923.94	43.75	136.411	
10,300.00	6,045.49	4,823.25	4,721.32	136.93	21.10	33.48	-417.04	-721.46	5,986.91	5,943.16	43.75	136.853	
10,320.00	6,045.30	4,819.05	4,717.25	137.52	21.08	33.39	-416.45	-720.62	6,006.13	5,962.38	43.75	137.294	
10,340.00	6,045.10	4,814.85	4,713.18	138.11	21.06	33.29	-415.86	-719.78	6,025.35	5,981.61	43.75	137.735	
10,360.00	6,044.91	4,810.66	4,709.12	138.70	21.03	33.20	-415.27	-718.94	6,044.58	6,000.83	43.75	138.177	
10,380.00	6,044.71	4,806.46	4,705.05	139.28	21.01	33.11	-414.68	-718.10	6,063.81	6,020.06	43.74	138.619	
10,400.00	6,044.52	4,802.26	4,700.98	139.87	20.99	33.01	-414.09	-717.26	6,083.04	6,039.29	43.74	139.062	
10,420.00	6,044.32	4,798.07	4,696.91	140.46	20.97	32.92	-413.50	-716.42	6,102.27	6,058.53	43.74	139.504	
10,440.00	6,044.13	4,793.87	4,692.84	141.05	20.95	32.83	-412.91	-715.58	6,121.50	6,077.76	43.74	139.946	
10,460.00	6,043.93	4,789.67	4,688.77	141.64	20.93	32.74	-412.33	-714.74	6,140.74	6,097.00	43.74	140.389	
10,480.00	6,043.74	4,785.48	4,684.70	142.23	20.91	32.65	-411.74	-713.89	6,159.98	6,116.24	43.74	140.833	
10,500.00	6,043.54	4,781.28	4,680.63	142.82	20.89	32.55	-411.15	-713.05	6,179.22	6,135.48	43.74	141.277	
10,520.00	6,043.35	4,777.08	4,676.56	143.41	20.86	32.46	-410.56	-712.21	6,198.46	6,154.72	43.74	141.720	
10,540.00	6,043.16	4,772.89	4,672.50	144.00	20.84	32.37	-409.97	-711.37	6,217.70	6,173.97	43.74	142.163	
10,560.00	6,042.96	4,768.69	4,668.43	144.59	20.82	32.28	-409.38	-710.53	6,236.95	6,193.21	43.74	142.607	
10,580.00	6,042.77	4,764.49	4,664.36	145.18	20.80	32.19	-408.79	-709.69	6,256.20	6,212.46	43.73	143.051	
10,600.00	6,042.57	4,760.30	4,660.29	145.77	20.78	32.10	-408.20	-708.85	6,275.45	6,231.72	43.73	143.497	
10,620.00	6,042.38	4,756.10	4,656.22	146.36	20.76	32.01	-407.61	-708.01	6,294.70	6,250.97	43.73	143.940	
10,640.00	6,042.18	4,751.90	4,652.15	146.95	20.74	31.92	-407.02	-707.17	6,313.95	6,270.22	43.73	144.385	
10,660.00	6,041.99	4,747.71	4,648.08	147.54	20.72	31.84	-406.43	-706.33	6,333.21	6,289.48	43.73	144.830	
10,680.00	6,041.79	4,743.51	4,644.01	148.13	20.69	31.75	-405.84	-705.48	6,352.47	6,308.74	43.73	145.276	
10,700.00	6,041.60	4,739.31	4,639.94	148.71	20.67	31.66	-405.25	-704.64	6,371.73	6,328.00	43.73	145.722	
10,720.00	6,041.40	4,735.12	4,635.87	149.30	20.65	31.57	-404.66	-703.80	6,390.99	6,347.26	43.72	146.167	
10,740.00	6,041.21	4,730.92	4,631.81	149.90	20.63	31.48	-404.07	-702.96	6,410.25	6,366.53	43.72	146.612	
10,760.00	6,041.01	4,726.72	4,627.74	150.49	20.61	31.40	-403.48	-702.12	6,429.51	6,385.79	43.72	147.058	
10,780.00	6,040.82	4,722.53	4,623.67	151.08	20.59	31.31	-402.89	-701.28	6,448.78	6,405.06	43.72	147.505	
10,800.00	6,040.62	4,718.33	4,619.60	151.67	20.57	31.22	-402.30	-700.44	6,468.05	6,424.33	43.72	147.952	
10,820.00	6,040.43	4,714.14	4,615.53	152.26	20.55	31.14	-401.71	-699.60	6,487.32	6,443.60	43.72	148.398	
10,840.00	6,040.23	4,709.94	4,611.46	152.85	20.52	31.05	-401.12	-698.76	6,506.59	6,462.88	43.71	148.844	
10,860.00	6,040.04	4,705.74	4,607.39	153.44	20.50	30.97	-400.53	-697.92	6,525.86	6,482.15	43.71	149.291	
10,880.00	6,039.84	4,701.55	4,603.32	154.03	20.48	30.88	-399.94	-697.07	6,545.14	6,501.43	43.71	149.738	
10,900.00	6,039.65	4,697.35	4,599.25	154.62	20.46	30.80	-399.35	-696.23	6,564.42	6,520.71	43.71	150.186	
10,920.00	6,039.45	4,693.15	4,595.19	155.21	20.44	30.71	-398.76	-695.39	6,583.69	6,539.99	43.71	150.633	
10,940.00	6,039.26	4,688.96	4,591.12	155.80	20.42	30.63	-398.17	-694.55	6,602.97	6,559.27	43.71	151.080	
10,960.00	6,039.06	4,684.76	4,587.05	156.39	20.40	30.54	-397.58	-693.71	6,622.25	6,578.55	43.70	151.528	
10,980.00	6,038.87	4,680.56	4,582.98	156.98	20.38	30.46	-397.00	-692.87	6,641.54	6,597.84	43.70	151.977	
11,000.00	6,038.67	4,676.37	4,578.91	157.57	20.35	30.38	-396.41	-692.03	6,660.82	6,617.12	43.70	152.425	
11,020.00	6,038.48	4,672.17	4,574.84	158.16	20.33	30.29	-395.82	-691.19	6,680.11	6,636.41	43.70	152.873	
11,040.00	6,038.28	4,667.97	4,570.77	158.75	20.31	30.21	-395.23	-690.35	6,699.40	6,655.70	43.70	153.321	
11,060.00	6,038.09	4,663.78	4,566.70	159.34	20.29	30.13	-394.64	-689.51	6,718.68	6,674.99	43.69	153.770	
11,080.00	6,037.90	4,659.58	4,562.63	159.94	20.27	30.05	-394.05	-688.67	6,737.98	6,694.28	43.69	154.219	
11,100.00	6,037.70	4,655.38	4,558.56	160.53	20.25	29.96	-393.46	-687.82	6,757.27	6,713.58	43.69	154.668	
11,120.00	6,037.51	4,651.19	4,554.50	161.12	20.23	29.88	-392.87	-686.98	6,776.56	6,732.87	43.69	155.117	
11,140.00	6,037.31	4,646.99	4,550.43	161.71	20.21	29.80	-392.28	-686.14	6,795.86	6,752.17	43.68	155.566	
11,160.00	6,037.12	4,642.79	4,546.36	162.30	20.18	29.72	-391.69	-685.30	6,815.15	6,771.47	43.68	156.015	
11,180.00	6,036.92	4,638.60	4,542.29	162.89	20.16	29.64	-391.10	-684.46	6,834.45	6,790.77	43.68	156.465	
11,200.00	6,036.73	4,634.40	4,538.22	163.48	20.14	29.56	-390.51	-683.62	6,853.75	6,810.07	43.68	156.915	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,220.00	6,036.53	4,630.20	4,534.15	164.07	20.12	29.48	-389.92	-682.78	6,873.05	6,829.38	43.68	157.365	
11,240.00	6,036.34	4,626.01	4,530.08	164.67	20.10	29.40	-389.33	-681.94	6,892.36	6,848.68	43.67	157.814	
11,260.00	6,036.14	4,621.81	4,526.01	165.26	20.08	29.32	-388.74	-681.10	6,911.66	6,867.99	43.67	158.265	
11,280.00	6,035.95	4,617.61	4,521.94	165.85	20.06	29.24	-388.15	-680.26	6,930.96	6,887.30	43.67	158.715	
11,300.00	6,035.75	4,613.42	4,517.88	166.44	20.04	29.16	-387.56	-679.41	6,950.27	6,906.60	43.67	159.166	
11,320.00	6,035.56	4,609.22	4,513.81	167.03	20.01	29.08	-386.97	-678.57	6,969.58	6,925.92	43.66	159.616	
11,340.00	6,035.36	4,605.02	4,509.74	167.62	19.99	29.01	-386.38	-677.73	6,988.89	6,945.23	43.66	160.067	
11,360.00	6,035.17	4,600.83	4,505.67	168.22	19.97	28.93	-385.79	-676.89	7,008.20	6,964.54	43.66	160.517	
11,380.00	6,034.97	4,596.63	4,501.60	168.81	19.95	28.85	-385.20	-676.05	7,027.51	6,983.85	43.66	160.969	
11,400.00	6,034.78	4,592.44	4,497.53	169.40	19.93	28.77	-384.61	-675.21	7,046.83	7,003.17	43.66	161.420	
11,420.00	6,034.58	4,588.24	4,493.46	169.99	19.91	28.69	-384.02	-674.37	7,066.14	7,022.49	43.65	161.871	
11,440.00	6,034.39	4,584.04	4,489.39	170.58	19.89	28.62	-383.43	-673.53	7,085.46	7,041.81	43.65	162.322	
11,460.00	6,034.19	4,579.85	4,485.32	171.18	19.87	28.54	-382.84	-672.69	7,104.77	7,061.13	43.65	162.773	
11,480.00	6,034.00	4,575.65	4,481.26	171.77	19.85	28.46	-382.25	-671.85	7,124.09	7,080.45	43.65	163.225	
11,500.00	6,033.80	4,571.45	4,477.19	172.36	19.82	28.39	-381.67	-671.01	7,143.41	7,099.77	43.64	163.677	
11,520.00	6,033.61	4,567.26	4,473.12	172.95	19.80	28.31	-381.08	-670.16	7,162.73	7,119.09	43.64	164.129	
11,540.00	6,033.41	4,563.06	4,469.05	173.55	19.78	28.24	-380.49	-669.32	7,182.06	7,138.42	43.64	164.580	
11,560.00	6,033.22	4,558.86	4,464.98	174.14	19.76	28.16	-379.90	-668.48	7,201.38	7,157.75	43.64	165.032	
11,580.00	6,033.02	4,554.67	4,460.91	174.73	19.74	28.09	-379.31	-667.64	7,220.71	7,177.07	43.63	165.485	
11,600.00	6,032.83	4,550.47	4,456.84	175.32	19.72	28.01	-378.72	-666.80	7,240.03	7,196.40	43.63	165.937	
11,620.00	6,032.64	4,546.27	4,452.77	175.91	19.70	27.94	-378.13	-665.96	7,259.36	7,215.73	43.63	166.389	
11,640.00	6,032.44	4,542.08	4,448.70	176.51	19.68	27.86	-377.54	-665.12	7,278.69	7,235.06	43.63	166.841	
11,660.00	6,032.25	4,537.88	4,444.63	177.10	19.65	27.79	-376.95	-664.28	7,298.02	7,254.40	43.62	167.294	
11,680.00	6,032.05	4,533.68	4,440.57	177.69	19.63	27.71	-376.36	-663.44	7,317.35	7,273.73	43.62	167.747	
11,700.00	6,031.86	4,529.49	4,436.50	178.28	19.61	27.64	-375.77	-662.60	7,336.68	7,293.06	43.62	168.200	
11,720.00	6,031.66	4,525.29	4,432.43	178.88	19.59	27.57	-375.18	-661.75	7,356.02	7,312.40	43.62	168.652	
11,740.00	6,031.47	4,521.09	4,428.36	179.47	19.57	27.50	-374.59	-660.91	7,375.35	7,331.74	43.61	169.105	
11,760.00	6,031.27	4,516.90	4,424.29	180.06	19.55	27.42	-374.00	-660.07	7,394.69	7,351.08	43.61	169.558	
11,780.00	6,031.08	4,512.70	4,420.22	180.65	19.53	27.35	-373.41	-659.23	7,414.02	7,370.41	43.61	170.011	
11,800.00	6,030.88	4,508.50	4,416.15	181.25	19.51	27.28	-372.82	-658.39	7,433.36	7,389.76	43.61	170.465	
11,820.00	6,030.69	4,504.31	4,412.08	181.84	19.48	27.21	-372.23	-657.55	7,452.70	7,409.10	43.60	170.918	
11,840.00	6,030.49	4,500.11	4,408.01	182.43	19.46	27.13	-371.64	-656.71	7,472.04	7,428.44	43.60	171.371	
11,860.00	6,030.30	4,495.91	4,403.95	183.03	19.44	27.06	-371.05	-655.87	7,491.38	7,447.78	43.60	171.824	
11,880.00	6,030.10	4,491.72	4,399.88	183.62	19.42	26.99	-370.46	-655.03	7,510.73	7,467.13	43.60	172.278	
11,900.00	6,029.91	4,487.52	4,395.81	184.21	19.40	26.92	-369.87	-654.19	7,530.07	7,486.48	43.59	172.732	
11,920.00	6,029.71	4,483.32	4,391.74	184.80	19.38	26.85	-369.28	-653.35	7,549.41	7,505.82	43.59	173.185	
11,940.00	6,029.52	4,479.13	4,387.67	185.40	19.36	26.78	-368.69	-652.50	7,568.76	7,525.17	43.59	173.639	
11,960.00	6,029.32	4,474.93	4,383.60	185.99	19.34	26.71	-368.10	-651.66	7,588.11	7,544.52	43.59	174.093	
11,980.00	6,029.13	4,470.74	4,379.53	186.58	19.31	26.64	-367.51	-650.82	7,607.46	7,563.87	43.58	174.547	
12,000.00	6,028.93	4,466.54	4,375.46	187.18	19.29	26.57	-366.92	-649.98	7,626.80	7,583.22	43.58	175.001	
12,020.00	6,028.74	4,462.34	4,371.39	187.77	19.27	26.50	-366.34	-649.14	7,646.15	7,602.58	43.58	175.455	
12,040.00	6,028.54	4,458.15	4,367.33	188.36	19.25	26.43	-365.75	-648.30	7,665.51	7,621.93	43.58	175.908	
12,060.00	6,028.35	4,453.95	4,363.26	188.96	19.23	26.36	-365.16	-647.46	7,684.86	7,641.28	43.57	176.363	
12,080.00	6,028.15	4,449.75	4,359.19	189.55	19.21	26.29	-364.57	-646.62	7,704.21	7,660.64	43.57	176.817	
12,100.00	6,027.96	4,445.56	4,355.12	190.14	19.19	26.22	-363.98	-645.78	7,723.57	7,680.00	43.57	177.272	
12,120.00	6,027.76	4,441.36	4,351.05	190.74	19.17	26.16	-363.39	-644.94	7,742.92	7,699.35	43.57	177.725	
12,140.00	6,027.57	4,437.16	4,346.98	191.33	19.15	26.09	-362.80	-644.09	7,762.28	7,718.71	43.56	178.180	
12,160.00	6,027.37	4,432.97	4,342.91	191.92	19.12	26.02	-362.21	-643.25	7,781.63	7,738.07	43.56	178.634	
12,180.00	6,027.18	4,428.77	4,338.84	192.52	19.10	25.95	-361.62	-642.41	7,800.99	7,757.43	43.56	179.089	
12,200.00	6,026.99	4,424.57	4,334.77	193.11	19.08	25.89	-361.03	-641.57	7,820.35	7,776.79	43.56	179.544	
12,220.00	6,026.79	4,420.38	4,330.70	193.70	19.06	25.82	-360.44	-640.73	7,839.71	7,796.16	43.55	179.998	
12,240.00	6,026.60	4,416.18	4,326.64	194.30	19.04	25.75	-359.85	-639.89	7,859.07	7,815.52	43.55	180.452	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,260.00	6,026.40	4,411.98	4,322.57	194.89	19.02	25.68	-359.26	-639.05	7,878.44	7,834.89	43.55	180.907	
12,280.00	6,026.21	4,407.79	4,318.50	195.48	19.00	25.62	-358.67	-638.21	7,897.80	7,854.25	43.55	181.362	
12,300.00	6,026.01	4,403.59	4,314.43	196.08	18.98	25.55	-358.08	-637.37	7,917.16	7,873.62	43.54	181.817	
12,320.00	6,025.82	4,399.39	4,310.36	196.67	18.95	25.49	-357.49	-636.53	7,936.53	7,892.98	43.54	182.271	
12,340.00	6,025.62	4,395.20	4,306.29	197.26	18.93	25.42	-356.90	-635.68	7,955.89	7,912.35	43.54	182.725	
12,360.00	6,025.43	4,391.00	4,302.22	197.86	18.91	25.35	-356.31	-634.84	7,975.26	7,931.72	43.54	183.180	
12,380.00	6,025.23	4,386.80	4,298.15	198.45	18.89	25.29	-355.72	-634.00	7,994.63	7,951.09	43.54	183.635	
12,400.00	6,025.04	4,382.61	4,294.08	199.05	18.87	25.22	-355.13	-633.16	8,014.00	7,970.46	43.53	184.090	
12,420.00	6,024.84	4,378.41	4,290.02	199.64	18.85	25.16	-354.54	-632.32	8,033.37	7,989.83	43.53	184.545	
12,440.00	6,024.65	4,374.21	4,285.95	200.23	18.83	25.10	-353.95	-631.48	8,052.74	8,009.21	43.53	184.999	
12,460.00	6,024.45	4,370.02	4,281.88	200.83	18.81	25.03	-353.36	-630.64	8,072.11	8,028.58	43.53	185.454	
12,480.00	6,024.26	4,365.82	4,277.81	201.42	18.78	24.97	-352.77	-629.80	8,091.48	8,047.96	43.52	185.909	
12,500.00	6,024.06	4,361.62	4,273.74	202.02	18.76	24.90	-352.18	-628.96	8,110.85	8,067.33	43.52	186.365	
12,520.00	6,023.87	4,357.43	4,269.67	202.61	18.74	24.84	-351.59	-628.12	8,130.23	8,086.71	43.52	186.819	
12,540.00	6,023.67	4,353.23	4,265.60	203.20	18.72	24.78	-351.01	-627.28	8,149.60	8,106.08	43.52	187.274	
12,560.00	6,023.48	4,349.04	4,261.53	203.80	18.70	24.71	-350.42	-626.43	8,168.98	8,125.46	43.51	187.729	
12,580.00	6,023.28	4,344.84	4,257.46	204.39	18.68	24.65	-349.83	-625.59	8,188.35	8,144.84	43.51	188.184	
12,600.00	6,023.09	4,340.64	4,253.40	204.98	18.66	24.59	-349.24	-624.75	8,207.73	8,164.22	43.51	188.639	
12,620.00	6,022.89	4,336.45	4,249.33	205.58	18.64	24.52	-348.65	-623.91	8,227.11	8,183.60	43.51	189.094	
12,640.00	6,022.70	4,332.25	4,245.26	206.17	18.62	24.46	-348.06	-623.07	8,246.49	8,202.98	43.51	189.548	
12,660.00	6,022.50	4,328.05	4,241.19	206.77	18.59	24.40	-347.47	-622.23	8,265.87	8,222.36	43.50	190.003	
12,680.00	6,022.31	4,323.86	4,237.12	207.36	18.57	24.34	-346.88	-621.39	8,285.25	8,241.75	43.50	190.459	
12,700.00	6,022.11	4,319.66	4,233.05	207.96	18.55	24.27	-346.29	-620.55	8,304.63	8,261.13	43.50	190.914	
12,720.00	6,021.92	4,315.46	4,228.98	208.55	18.53	24.21	-345.70	-619.71	8,324.01	8,280.51	43.50	191.369	
12,740.00	6,021.73	4,311.27	4,224.91	209.14	18.51	24.15	-345.11	-618.87	8,343.40	8,299.90	43.50	191.823	
12,760.00	6,021.53	4,307.07	4,220.84	209.74	18.49	24.09	-344.52	-618.02	8,362.78	8,319.29	43.49	192.278	
12,780.00	6,021.34	4,302.87	4,216.77	210.33	18.47	24.03	-343.93	-617.18	8,382.16	8,338.67	43.49	192.733	
12,800.00	6,021.14	4,298.68	4,212.71	210.93	18.45	23.97	-343.34	-616.34	8,401.55	8,358.06	43.49	193.189	
12,820.00	6,020.95	4,294.48	4,208.64	211.52	18.42	23.91	-342.75	-615.50	8,420.94	8,377.45	43.49	193.643	
12,840.00	6,020.75	4,290.28	4,204.57	212.11	18.40	23.85	-342.16	-614.66	8,440.32	8,396.84	43.48	194.098	
12,860.00	6,020.56	4,286.09	4,200.50	212.71	18.38	23.79	-341.57	-613.82	8,459.71	8,416.23	43.48	194.552	
12,880.00	6,020.36	4,281.89	4,196.43	213.30	18.36	23.73	-340.98	-612.98	8,479.10	8,435.62	43.48	195.007	
12,900.00	6,020.17	4,277.69	4,192.36	213.90	18.34	23.67	-340.39	-612.14	8,498.49	8,455.01	43.48	195.463	
12,920.00	6,019.97	4,273.50	4,188.29	214.49	18.32	23.61	-339.80	-611.30	8,517.88	8,474.40	43.48	195.917	
12,940.00	6,019.78	4,269.30	4,184.22	215.09	18.30	23.55	-339.21	-610.46	8,537.27	8,493.79	43.48	196.371	
12,960.00	6,019.58	4,265.10	4,180.15	215.68	18.28	23.49	-338.62	-609.62	8,556.66	8,513.19	43.47	196.826	
12,980.00	6,019.39	4,260.91	4,176.09	216.28	18.26	23.43	-338.03	-608.77	8,576.05	8,532.58	43.47	197.281	
13,000.00	6,019.19	4,256.71	4,172.02	216.87	18.23	23.37	-337.44	-607.93	8,595.45	8,551.98	43.47	197.736	
13,020.00	6,019.00	4,252.51	4,167.95	217.46	18.21	23.31	-336.85	-607.09	8,614.84	8,571.37	43.47	198.190	
13,040.00	6,018.80	4,248.32	4,163.88	218.06	18.19	23.25	-336.26	-606.25	8,634.23	8,590.77	43.47	198.644	
13,060.00	6,018.61	4,244.12	4,159.81	218.65	18.17	23.20	-335.68	-605.41	8,653.63	8,610.17	43.46	199.099	
13,080.00	6,018.41	4,239.92	4,155.74	219.25	18.15	23.14	-335.09	-604.57	8,673.03	8,629.56	43.46	199.554	
13,100.00	6,018.22	4,235.73	4,151.67	219.84	18.13	23.08	-334.50	-603.73	8,692.42	8,648.96	43.46	200.009	
13,120.00	6,018.02	4,231.53	4,147.60	220.44	18.11	23.02	-333.91	-602.89	8,711.82	8,668.36	43.46	200.462	
13,140.00	6,017.83	4,227.33	4,143.53	221.03	18.09	22.97	-333.32	-602.05	8,731.22	8,687.76	43.46	200.916	
13,160.00	6,017.63	4,223.14	4,139.46	221.63	18.07	22.91	-332.73	-601.21	8,750.62	8,707.16	43.46	201.371	
13,180.00	6,017.44	4,218.94	4,135.40	222.22	18.04	22.85	-332.14	-600.36	8,770.02	8,726.56	43.45	201.825	
13,200.00	6,017.24	4,214.75	4,131.33	222.82	18.02	22.79	-331.55	-599.52	8,789.42	8,745.96	43.45	202.280	
13,220.00	6,017.05	4,210.55	4,127.26	223.41	18.00	22.74	-330.96	-598.68	8,808.82	8,765.37	43.45	202.734	
13,240.00	6,016.85	4,206.35	4,123.19	224.01	17.98	22.68	-330.37	-597.84	8,828.22	8,784.77	43.45	203.187	
13,260.00	6,016.66	4,202.16	4,119.12	224.60	17.96	22.63	-329.78	-597.00	8,847.62	8,804.17	43.45	203.641	
13,280.00	6,016.47	4,197.96	4,115.05	225.20	17.94	22.57	-329.19	-596.16	8,867.02	8,823.58	43.45	204.096	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,300.00	6,016.27	4,193.76	4,110.98	225.79	17.92	22.51	-328.60	-595.32	8,886.43	8,842.98	43.44	204.550	
13,320.00	6,016.08	4,189.57	4,106.91	226.38	17.90	22.46	-328.01	-594.48	8,905.83	8,862.39	43.44	205.003	
13,340.00	6,015.88	4,185.37	4,102.84	226.98	17.87	22.40	-327.42	-593.64	8,925.24	8,881.80	43.44	205.457	
13,360.00	6,015.69	4,181.17	4,098.78	227.57	17.85	22.35	-326.83	-592.80	8,944.64	8,901.20	43.44	205.910	
13,380.00	6,015.49	4,176.98	4,094.71	228.17	17.83	22.29	-326.24	-591.96	8,964.05	8,920.61	43.44	206.364	
13,400.00	6,015.30	4,172.78	4,090.64	228.76	17.81	22.24	-325.65	-591.11	8,983.45	8,940.02	43.44	206.818	
13,420.00	6,015.10	4,168.58	4,086.57	229.36	17.79	22.18	-325.06	-590.27	9,002.86	8,959.43	43.44	207.271	
13,440.00	6,014.91	4,164.39	4,082.50	229.95	17.77	22.13	-324.47	-589.43	9,022.27	8,978.84	43.43	207.724	
13,460.00	6,014.71	4,160.19	4,078.43	230.55	17.75	22.07	-323.88	-588.59	9,041.68	8,998.25	43.43	208.177	
13,480.00	6,014.52	4,155.99	4,074.36	231.14	17.73	22.02	-323.29	-587.75	9,061.09	9,017.66	43.43	208.631	
13,500.00	6,014.32	4,151.80	4,070.29	231.74	17.71	21.96	-322.70	-586.91	9,080.50	9,037.07	43.43	209.084	
13,520.00	6,014.13	4,147.60	4,066.22	232.33	17.68	21.91	-322.11	-586.07	9,099.91	9,056.48	43.43	209.537	
13,540.00	6,013.93	4,143.40	4,062.16	232.93	17.66	21.86	-321.52	-585.23	9,119.32	9,075.89	43.43	209.989	
13,560.00	6,013.74	4,139.21	4,058.09	233.52	17.64	21.80	-320.93	-584.39	9,138.73	9,095.31	43.43	210.442	
13,580.00	6,013.54	4,135.01	4,054.02	234.12	17.62	21.75	-320.34	-583.55	9,158.14	9,114.72	43.43	210.895	
13,600.00	6,013.35	4,130.81	4,049.95	234.71	17.60	21.70	-319.76	-582.70	9,177.56	9,134.13	43.42	211.348	
13,620.00	6,013.15	4,126.62	4,045.88	235.31	17.58	21.64	-319.17	-581.86	9,196.97	9,153.55	43.42	211.801	
13,640.00	6,012.96	4,122.42	4,041.81	235.90	17.56	21.59	-318.58	-581.02	9,216.38	9,172.96	43.42	212.253	
13,660.00	6,012.76	4,118.22	4,037.74	236.50	17.54	21.54	-317.99	-580.18	9,235.80	9,192.38	43.42	212.705	
13,680.00	6,012.57	4,114.03	4,033.67	237.09	17.52	21.48	-317.40	-579.34	9,255.22	9,211.80	43.42	213.158	
13,700.00	6,012.37	4,109.83	4,029.60	237.69	17.49	21.43	-316.81	-578.50	9,274.63	9,231.21	43.42	213.610	
13,720.00	6,012.18	4,105.63	4,025.53	238.28	17.47	21.38	-316.22	-577.66	9,294.05	9,250.63	43.42	214.062	
13,740.00	6,011.98	4,101.44	4,021.47	238.88	17.45	21.33	-315.63	-576.82	9,313.46	9,270.05	43.42	214.514	
13,760.00	6,011.79	4,097.24	4,017.40	239.48	17.43	21.28	-315.04	-575.98	9,332.88	9,289.47	43.42	214.966	
13,780.00	6,011.59	4,093.05	4,013.33	240.07	17.41	21.22	-314.45	-575.14	9,352.30	9,308.89	43.41	215.418	
13,800.00	6,011.40	4,088.85	4,009.26	240.67	17.39	21.17	-313.86	-574.29	9,371.72	9,328.31	43.41	215.870	
13,820.00	6,011.21	4,084.65	4,005.19	241.26	17.37	21.12	-313.27	-573.45	9,391.14	9,347.73	43.41	216.321	
13,840.00	6,011.01	4,080.46	4,001.12	241.86	17.35	21.07	-312.68	-572.61	9,410.56	9,367.15	43.41	216.772	
13,860.00	6,010.82	4,076.26	3,997.05	242.45	17.33	21.02	-312.09	-571.77	9,429.98	9,386.57	43.41	217.223	
13,880.00	6,010.62	4,072.06	3,992.98	243.05	17.30	20.97	-311.50	-570.93	9,449.40	9,405.99	43.41	217.674	
13,900.00	6,010.43	4,067.87	3,988.91	243.64	17.28	20.92	-310.91	-570.09	9,468.82	9,425.41	43.41	218.126	
13,920.00	6,010.23	4,063.67	3,984.85	244.24	17.26	20.87	-310.32	-569.25	9,488.24	9,444.84	43.41	218.576	
13,940.00	6,010.04	4,059.47	3,980.78	244.83	17.24	20.82	-309.73	-568.41	9,507.67	9,464.26	43.41	219.027	
13,960.00	6,009.84	4,055.28	3,976.71	245.43	17.22	20.76	-309.14	-567.57	9,527.09	9,483.68	43.41	219.478	
13,980.00	6,009.65	4,051.08	3,972.64	246.02	17.20	20.71	-308.55	-566.73	9,546.51	9,503.11	43.41	219.928	
14,000.00	6,009.45	4,046.88	3,968.57	246.62	17.18	20.66	-307.96	-565.89	9,565.94	9,522.53	43.41	220.379	
14,020.00	6,009.26	4,042.69	3,964.50	247.21	17.16	20.61	-307.37	-565.04	9,585.36	9,541.96	43.41	220.829	
14,040.00	6,009.06	4,038.49	3,960.43	247.81	17.14	20.57	-306.78	-564.20	9,604.79	9,561.38	43.41	221.279	
14,060.00	6,008.87	4,034.29	3,956.36	248.41	17.11	20.52	-306.19	-563.36	9,624.21	9,580.81	43.41	221.729	
14,080.00	6,008.67	4,030.10	3,952.29	249.00	17.09	20.47	-305.60	-562.52	9,643.64	9,600.24	43.40	222.179	
14,100.00	6,008.48	4,025.90	3,948.23	249.60	17.07	20.42	-305.01	-561.68	9,663.07	9,619.66	43.40	222.629	
14,120.00	6,008.28	4,021.70	3,944.16	250.19	17.05	20.37	-304.43	-560.84	9,682.50	9,639.09	43.40	223.078	
14,140.00	6,008.09	4,017.51	3,940.09	250.79	17.03	20.32	-303.84	-560.00	9,701.92	9,658.52	43.40	223.528	
14,160.00	6,007.89	4,013.31	3,936.02	251.38	17.01	20.27	-303.25	-559.16	9,721.35	9,677.95	43.40	223.977	
14,180.00	6,007.70	4,009.11	3,931.95	251.98	16.99	20.22	-302.66	-558.32	9,740.78	9,697.38	43.40	224.427	
14,200.00	6,007.50	4,004.92	3,927.88	252.57	16.97	20.17	-302.07	-557.48	9,760.21	9,716.81	43.40	224.876	
14,220.00	6,007.31	4,000.72	3,923.81	253.17	16.95	20.12	-301.48	-556.63	9,779.64	9,736.24	43.40	225.324	
14,240.00	6,007.11	3,996.52	3,919.74	253.76	16.92	20.08	-300.89	-555.79	9,799.07	9,755.67	43.40	225.773	
14,260.00	6,006.92	3,992.33	3,915.67	254.36	16.90	20.03	-300.30	-554.95	9,818.50	9,775.10	43.40	226.221	
14,280.00	6,006.72	3,988.13	3,911.60	254.96	16.88	19.98	-299.71	-554.11	9,837.93	9,794.53	43.40	226.670	
14,300.00	6,006.53	3,983.93	3,907.54	255.55	16.86	19.93	-299.12	-553.27	9,857.37	9,813.96	43.40	227.119	
14,320.00	6,006.33	3,979.74	3,903.47	256.15	16.84	19.89	-298.53	-552.43	9,876.80	9,833.40	43.40	227.566	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,340.00	6,006.14	3,975.54	3,899.40	256.74	16.82	19.84	-297.94	-551.59	9,896.23	9,852.83	43.40	228.014	
14,360.00	6,005.94	3,971.35	3,895.33	257.34	16.80	19.79	-297.35	-550.75	9,915.66	9,872.26	43.40	228.462	
14,380.00	6,005.75	3,967.15	3,891.26	257.93	16.78	19.74	-296.76	-549.91	9,935.10	9,891.70	43.40	228.910	
14,400.00	6,005.56	3,962.95	3,887.19	258.53	16.76	19.70	-296.17	-549.07	9,954.53	9,911.13	43.40	229.358	
14,420.00	6,005.36	3,958.76	3,883.12	259.13	16.73	19.65	-295.58	-548.23	9,973.97	9,930.57	43.40	229.804	
14,440.00	6,005.17	3,954.56	3,879.05	259.72	16.71	19.60	-294.99	-547.38	9,993.40	9,950.00	43.40	230.251	
14,460.00	6,004.97	3,950.36	3,874.98	260.32	16.69	19.56	-294.40	-546.54	10,012.84	9,969.44	43.40	230.698	
14,480.00	6,004.78	3,946.17	3,870.92	260.91	16.67	19.51	-293.81	-545.70	10,032.27	9,988.87	43.40	231.145	
14,500.00	6,004.58	3,941.97	3,866.85	261.51	16.65	19.46	-293.22	-544.86	10,051.71	10,008.31	43.40	231.592	
14,520.00	6,004.39	3,937.77	3,862.78	262.10	16.63	19.42	-292.63	-544.02	10,071.15	10,027.75	43.40	232.038	
14,540.00	6,004.19	3,933.58	3,858.71	262.70	16.61	19.37	-292.04	-543.18	10,090.59	10,047.18	43.40	232.484	
14,560.00	6,004.00	3,929.38	3,854.64	263.30	16.59	19.33	-291.45	-542.34	10,110.02	10,066.62	43.40	232.930	
14,580.00	6,003.80	3,925.18	3,850.57	263.89	16.57	19.28	-290.86	-541.50	10,129.46	10,086.06	43.40	233.377	
14,600.00	6,003.61	3,920.99	3,846.50	264.49	16.54	19.24	-290.27	-540.66	10,148.90	10,105.50	43.40	233.823	
14,620.00	6,003.41	3,916.79	3,842.43	265.08	16.52	19.19	-289.68	-539.82	10,168.34	10,124.94	43.40	234.268	
14,640.00	6,003.22	3,912.59	3,838.36	265.68	16.50	19.14	-289.10	-538.97	10,187.78	10,144.38	43.41	234.713	
14,660.00	6,003.02	3,908.40	3,834.30	266.27	16.48	19.10	-288.51	-538.13	10,207.22	10,163.82	43.41	235.158	
14,680.00	6,002.83	3,904.20	3,830.23	266.87	16.46	19.05	-287.92	-537.29	10,226.66	10,183.26	43.41	235.603	
14,700.00	6,002.63	3,900.00	3,826.16	267.47	16.44	19.01	-287.33	-536.45	10,246.10	10,202.70	43.41	236.049	
14,720.00	6,002.44	3,895.81	3,822.09	268.06	16.42	18.96	-286.74	-535.61	10,265.54	10,222.14	43.41	236.493	
14,740.00	6,002.24	3,891.61	3,818.02	268.66	16.40	18.92	-286.15	-534.77	10,284.99	10,241.58	43.41	236.937	
14,760.00	6,002.05	3,887.41	3,813.95	269.25	16.38	18.88	-285.56	-533.93	10,304.43	10,261.02	43.41	237.381	
14,780.00	6,001.85	3,883.22	3,809.88	269.85	16.36	18.83	-284.97	-533.09	10,323.87	10,280.46	43.41	237.825	
14,800.00	6,001.66	3,879.02	3,805.81	270.45	16.33	18.79	-284.38	-532.25	10,343.32	10,299.91	43.41	238.270	
14,820.00	6,001.46	3,874.82	3,801.74	271.04	16.31	18.74	-283.79	-531.41	10,362.76	10,319.35	43.41	238.713	
14,840.00	6,001.27	3,870.63	3,797.67	271.64	16.29	18.70	-283.20	-530.57	10,382.20	10,338.79	43.41	239.156	
14,860.00	6,001.07	3,866.43	3,793.61	272.23	16.27	18.66	-282.61	-529.72	10,401.65	10,358.24	43.41	239.599	
14,880.00	6,000.88	3,862.23	3,789.54	272.83	16.25	18.61	-282.02	-528.88	10,421.09	10,377.68	43.41	240.042	
14,900.00	6,000.68	3,858.04	3,785.47	273.43	16.23	18.57	-281.43	-528.04	10,440.54	10,397.12	43.41	240.486	
14,920.00	6,000.49	3,853.84	3,781.40	274.02	16.21	18.52	-280.84	-527.20	10,459.98	10,416.57	43.42	240.928	
14,940.00	6,000.30	3,849.65	3,777.33	274.62	16.19	18.48	-280.25	-526.36	10,479.43	10,436.01	43.42	241.370	
14,960.00	6,000.10	3,845.45	3,773.26	275.21	16.17	18.44	-279.66	-525.52	10,498.88	10,455.46	43.42	241.812	
14,980.00	5,999.91	3,841.25	3,769.19	275.81	16.14	18.40	-279.07	-524.68	10,518.32	10,474.91	43.42	242.254	
15,000.00	5,999.71	3,837.06	3,765.12	276.41	16.12	18.35	-278.48	-523.84	10,537.77	10,494.35	43.42	242.696	
15,020.00	5,999.52	3,832.86	3,761.05	277.00	16.10	18.31	-277.89	-523.00	10,557.22	10,513.80	43.42	243.138	
15,040.00	5,999.32	3,828.66	3,756.99	277.60	16.08	18.27	-277.30	-522.16	10,576.67	10,533.24	43.42	243.579	
15,060.00	5,999.13	3,824.47	3,752.92	278.19	16.06	18.22	-276.71	-521.31	10,596.12	10,552.69	43.42	244.020	
15,080.00	5,998.93	3,820.27	3,748.85	278.79	16.04	18.18	-276.12	-520.47	10,615.56	10,572.14	43.42	244.461	
15,100.00	5,998.74	3,816.07	3,744.78	279.39	16.02	18.14	-275.53	-519.63	10,635.01	10,591.59	43.43	244.902	
15,120.00	5,998.54	3,811.88	3,740.71	279.98	16.00	18.10	-274.94	-518.79	10,654.46	10,611.04	43.43	245.342	
15,140.00	5,998.35	3,807.68	3,736.64	280.58	15.98	18.06	-274.35	-517.95	10,673.91	10,630.49	43.43	245.782	
15,160.00	5,998.15	3,803.48	3,732.57	281.17	15.96	18.01	-273.77	-517.11	10,693.36	10,649.93	43.43	246.222	
15,180.00	5,997.96	3,799.29	3,728.50	281.77	15.93	17.97	-273.18	-516.27	10,712.81	10,669.38	43.43	246.662	
15,200.00	5,997.76	3,795.09	3,724.43	282.37	15.91	17.93	-272.59	-515.43	10,732.27	10,688.83	43.43	247.102	
15,220.00	5,997.57	3,790.89	3,720.36	282.96	15.89	17.89	-272.00	-514.59	10,751.72	10,708.28	43.43	247.541	
15,240.00	5,997.37	3,786.70	3,716.30	283.56	15.87	17.85	-271.41	-513.75	10,771.17	10,727.73	43.44	247.980	
15,260.00	5,997.18	3,782.50	3,712.23	284.16	15.85	17.81	-270.82	-512.91	10,790.62	10,747.18	43.44	248.419	
15,280.00	5,996.98	3,778.30	3,708.16	284.75	15.83	17.77	-270.23	-512.06	10,810.07	10,766.64	43.44	248.857	
15,300.00	5,996.79	3,774.11	3,704.09	285.35	15.81	17.72	-269.64	-511.22	10,829.53	10,786.09	43.44	249.296	
15,320.00	5,996.59	3,769.91	3,700.02	285.94	15.79	17.68	-269.05	-510.38	10,848.98	10,805.54	43.44	249.734	
15,340.00	5,996.40	3,765.71	3,695.95	286.54	15.77	17.64	-268.46	-509.54	10,868.44	10,824.99	43.44	250.171	
15,360.00	5,996.20	3,761.52	3,691.88	287.14	15.75	17.60	-267.87	-508.70	10,887.89	10,844.44	43.45	250.609	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,380.00	5,996.01	3,757.32	3,687.81	287.73	15.72	17.56	-267.28	-507.86	10,907.34	10,863.90	43.45	251.047	
15,400.00	5,995.81	3,753.12	3,683.74	288.33	15.70	17.52	-266.69	-507.02	10,926.80	10,883.35	43.45	251.484	
15,420.00	5,995.62	3,748.93	3,679.68	288.92	15.68	17.48	-266.10	-506.18	10,946.25	10,902.80	43.45	251.921	
15,440.00	5,995.42	3,744.73	3,675.61	289.52	15.66	17.44	-265.51	-505.34	10,965.71	10,922.26	43.45	252.357	
15,460.00	5,995.23	3,740.53	3,671.54	290.12	15.64	17.40	-264.92	-504.50	10,985.17	10,941.71	43.46	252.794	
15,480.00	5,995.04	3,736.34	3,667.47	290.71	15.62	17.36	-264.33	-503.65	11,004.62	10,961.17	43.46	253.230	
15,500.00	5,994.84	3,732.14	3,663.40	291.31	15.60	17.32	-263.74	-502.81	11,024.08	10,980.62	43.46	253.667	
15,520.00	5,994.65	3,727.94	3,659.33	291.91	15.58	17.28	-263.15	-501.97	11,043.54	11,000.07	43.46	254.102	
15,540.00	5,994.45	3,723.75	3,655.26	292.50	15.56	17.24	-262.56	-501.13	11,062.99	11,019.53	43.46	254.537	
15,560.00	5,994.26	3,719.55	3,651.19	293.10	15.53	17.20	-261.97	-500.29	11,082.45	11,038.99	43.47	254.972	
15,580.00	5,994.06	3,715.36	3,647.12	293.69	15.51	17.16	-261.38	-499.45	11,101.91	11,058.44	43.47	255.407	
15,600.00	5,993.87	3,711.16	3,643.06	294.29	15.49	17.12	-260.79	-498.61	11,121.37	11,077.90	43.47	255.843	
15,620.00	5,993.67	3,706.96	3,638.99	294.89	15.47	17.08	-260.20	-497.77	11,140.83	11,097.35	43.47	256.277	
15,640.00	5,993.48	3,702.77	3,634.92	295.48	15.45	17.04	-259.61	-496.93	11,160.29	11,116.81	43.47	256.711	
15,660.00	5,993.28	3,698.57	3,630.85	296.08	15.43	17.01	-259.02	-496.09	11,179.74	11,136.27	43.48	257.145	
15,680.00	5,993.09	3,694.37	3,626.78	296.68	15.41	16.97	-258.44	-495.24	11,199.20	11,155.73	43.48	257.578	
15,700.00	5,992.89	3,690.18	3,622.71	297.27	15.39	16.93	-257.85	-494.40	11,218.66	11,175.18	43.48	258.012	
15,720.00	5,992.70	3,685.98	3,618.64	297.87	15.37	16.89	-257.26	-493.56	11,238.12	11,194.64	43.48	258.445	
15,740.00	5,992.50	3,681.78	3,614.57	298.47	15.35	16.85	-256.67	-492.72	11,257.59	11,214.10	43.49	258.877	
15,760.00	5,992.31	3,677.59	3,610.50	299.06	15.33	16.81	-256.08	-491.88	11,277.05	11,233.56	43.49	259.310	
15,780.00	5,992.11	3,673.39	3,606.43	299.66	15.30	16.77	-255.49	-491.04	11,296.51	11,253.02	43.49	259.742	
15,800.00	5,991.92	3,669.19	3,602.37	300.25	15.28	16.74	-254.90	-490.20	11,315.97	11,272.48	43.49	260.175	
15,820.00	5,991.72	3,665.00	3,598.30	300.85	15.26	16.70	-254.31	-489.36	11,335.43	11,291.94	43.50	260.606	
15,840.00	5,991.53	3,660.80	3,594.23	301.45	15.24	16.66	-253.72	-488.52	11,354.89	11,311.39	43.50	261.037	
15,860.00	5,991.33	3,656.60	3,590.16	302.04	15.22	16.62	-253.13	-487.68	11,374.36	11,330.85	43.50	261.468	
15,880.00	5,991.14	3,652.41	3,586.09	302.64	15.20	16.58	-252.54	-486.84	11,393.82	11,350.31	43.50	261.899	
15,900.00	5,990.94	3,648.21	3,582.02	303.24	15.18	16.55	-251.95	-485.99	11,413.28	11,369.78	43.51	262.330	
15,920.00	5,990.75	3,644.01	3,577.95	303.83	15.16	16.51	-251.36	-485.15	11,432.75	11,389.24	43.51	262.760	
15,940.00	5,990.55	3,639.82	3,573.88	304.43	15.14	16.47	-250.77	-484.31	11,452.21	11,408.70	43.51	263.190	
15,960.00	5,990.36	3,635.62	3,569.81	305.03	15.12	16.44	-250.18	-483.47	11,471.67	11,428.16	43.52	263.620	
15,980.00	5,990.16	3,631.42	3,565.75	305.62	15.09	16.40	-249.59	-482.63	11,491.14	11,447.62	43.52	264.050	
16,000.00	5,989.97	3,627.23	3,561.68	306.22	15.07	16.36	-249.00	-481.79	11,510.60	11,467.08	43.52	264.479	
16,020.00	5,989.78	3,623.03	3,557.61	306.82	15.05	16.32	-248.41	-480.95	11,530.07	11,486.54	43.52	264.908	
16,040.00	5,989.58	3,618.83	3,553.54	307.41	15.03	16.29	-247.82	-480.11	11,549.53	11,506.01	43.53	265.337	
16,060.00	5,989.39	3,614.64	3,549.47	308.01	15.01	16.25	-247.23	-479.27	11,569.00	11,525.47	43.53	265.765	
16,080.00	5,989.19	3,610.44	3,545.40	308.61	14.99	16.21	-246.64	-478.43	11,588.47	11,544.93	43.53	266.193	
16,100.00	5,989.00	3,606.24	3,541.33	309.20	14.97	16.18	-246.05	-477.58	11,607.93	11,564.40	43.54	266.622	
16,120.00	5,988.80	3,602.05	3,537.26	309.80	14.95	16.14	-245.46	-476.74	11,627.40	11,583.86	43.54	267.049	
16,140.00	5,988.61	3,597.85	3,533.19	310.39	14.93	16.10	-244.87	-475.90	11,646.87	11,603.32	43.54	267.476	
16,160.00	5,988.41	3,593.66	3,529.13	310.99	14.91	16.07	-244.28	-475.06	11,666.33	11,622.79	43.55	267.903	
16,180.00	5,988.22	3,589.46	3,525.06	311.59	14.88	16.03	-243.69	-474.22	11,685.80	11,642.25	43.55	268.329	
16,200.00	5,988.02	3,585.26	3,520.99	312.18	14.86	16.00	-243.11	-473.38	11,705.27	11,661.71	43.55	268.756	
16,220.00	5,987.83	3,581.07	3,516.92	312.78	14.84	15.96	-242.52	-472.54	11,724.74	11,681.18	43.56	269.182	
16,240.00	5,987.63	3,576.87	3,512.85	313.38	14.82	15.92	-241.93	-471.70	11,744.20	11,700.64	43.56	269.607	
16,260.00	5,987.44	3,572.67	3,508.78	313.97	14.80	15.89	-241.34	-470.86	11,763.67	11,720.11	43.56	270.032	
16,280.00	5,987.24	3,568.48	3,504.71	314.57	14.78	15.85	-240.75	-470.02	11,783.14	11,739.57	43.57	270.458	
16,300.00	5,987.05	3,564.28	3,500.64	315.17	14.76	15.82	-240.16	-469.18	11,802.61	11,759.04	43.57	270.883	
16,320.00	5,986.85	3,560.08	3,496.57	315.76	14.74	15.78	-239.57	-468.33	11,822.08	11,778.51	43.57	271.307	
16,340.00	5,986.66	3,555.89	3,492.50	316.36	14.72	15.75	-238.98	-467.49	11,841.55	11,797.97	43.58	271.731	
16,360.00	5,986.46	3,551.69	3,488.44	316.96	14.70	15.71	-238.39	-466.65	11,861.02	11,817.44	43.58	272.155	
16,380.00	5,986.27	3,547.49	3,484.37	317.55	14.68	15.68	-237.80	-465.81	11,880.49	11,836.91	43.59	272.579	
16,400.00	5,986.07	3,543.30	3,480.30	318.15	14.65	15.64	-237.21	-464.97	11,899.96	11,856.37	43.59	273.002	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 7H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,407.54	5,986.00	3,541.72	3,478.76	318.38	14.65	15.63	-236.99	-464.65	11,907.30	11,863.71	43.59	273.162	

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-20.31	46.96	-17.38	50.07				
20.00	20.00	20.00	20.00	0.04	0.04	-20.31	46.96	-17.38	50.07	50.00	0.07	696.869	
40.00	40.00	40.00	40.00	0.07	0.07	-20.31	46.96	-17.38	50.07	49.93	0.14	348.920	
60.00	60.00	60.00	60.00	0.11	0.11	-20.31	46.96	-17.38	50.07	49.86	0.22	232.721	
80.00	80.00	80.00	80.00	0.14	0.14	-20.31	46.96	-17.38	50.07	49.79	0.29	174.582	
100.00	100.00	100.00	100.00	0.18	0.18	-20.31	46.96	-17.38	50.07	49.71	0.36	139.685	
120.00	120.00	120.00	120.00	0.25	0.25	-20.31	46.96	-17.38	50.07	49.57	0.50	99.775	
140.00	140.00	140.00	140.00	0.32	0.32	-20.31	46.96	-17.38	50.07	49.43	0.65	77.603	
160.00	160.00	160.00	160.00	0.39	0.39	-20.31	46.96	-17.38	50.07	49.28	0.79	63.493	
180.00	180.00	180.00	180.00	0.47	0.47	-20.31	46.96	-17.38	50.07	49.14	0.93	53.725	
200.00	200.00	200.00	200.00	0.54	0.54	-20.31	46.96	-17.38	50.07	49.00	1.08	46.562	
220.00	220.00	220.00	220.00	0.61	0.61	-20.31	46.96	-17.38	50.07	48.85	1.22	41.084	
240.00	240.00	240.00	240.00	0.68	0.68	-20.31	46.96	-17.38	50.07	48.71	1.36	36.759	
260.00	260.00	260.00	260.00	0.75	0.75	-20.31	46.96	-17.38	50.07	48.57	1.51	33.258	
280.00	280.00	280.00	280.00	0.82	0.82	-20.31	46.96	-17.38	50.07	48.42	1.65	30.366	
300.00	300.00	300.00	300.00	0.90	0.90	-20.31	46.96	-17.38	50.07	48.28	1.79	27.937	
320.00	320.00	320.00	320.00	0.97	0.97	-20.31	46.96	-17.38	50.07	48.14	1.94	25.868	
340.00	340.00	340.00	340.00	1.04	1.04	-20.31	46.96	-17.38	50.07	47.99	2.08	24.084	
360.00	360.00	360.00	360.00	1.11	1.11	-20.31	46.96	-17.38	50.07	47.85	2.22	22.530	
380.00	380.00	380.00	380.00	1.18	1.18	-20.31	46.96	-17.38	50.07	47.71	2.37	21.164	
400.00	400.00	400.00	400.00	1.25	1.25	-20.31	46.96	-17.38	50.07	47.56	2.51	19.955	
420.00	420.00	420.00	420.00	1.33	1.33	-20.31	46.96	-17.38	50.07	47.42	2.65	18.876	
440.00	440.00	440.00	440.00	1.40	1.40	-20.31	46.96	-17.38	50.07	47.28	2.80	17.908	
460.00	460.00	460.00	460.00	1.47	1.47	-20.31	46.96	-17.38	50.07	47.13	2.94	17.035	
480.00	480.00	480.00	480.00	1.54	1.54	-20.31	46.96	-17.38	50.07	46.99	3.08	16.242	
500.00	500.00	500.00	500.00	1.61	1.61	-20.31	46.96	-17.38	50.07	46.85	3.23	15.521	
520.00	520.00	520.00	520.00	1.68	1.68	-20.31	46.96	-17.38	50.07	46.70	3.37	14.860	
540.00	540.00	540.00	540.00	1.76	1.76	-20.31	46.96	-17.38	50.07	46.56	3.51	14.254	
560.00	560.00	560.00	560.00	1.83	1.83	-20.31	46.96	-17.38	50.07	46.42	3.66	13.695	
580.00	580.00	580.00	580.00	1.90	1.90	-20.31	46.96	-17.38	50.07	46.27	3.80	13.178	
600.00	600.00	600.00	600.00	1.97	1.97	-20.31	46.96	-17.38	50.07	46.13	3.94	12.699	
620.00	620.00	620.00	620.00	2.04	2.04	-20.31	46.96	-17.38	50.07	45.99	4.09	12.253	
640.00	640.00	640.00	640.00	2.11	2.11	-20.31	46.96	-17.38	50.07	45.84	4.23	11.838	
660.00	660.00	660.00	660.00	2.19	2.19	-20.31	46.96	-17.38	50.07	45.70	4.37	11.450	
680.00	680.00	680.00	680.00	2.26	2.26	-20.31	46.96	-17.38	50.07	45.56	4.52	11.086	
700.00	700.00	700.00	700.00	2.33	2.33	-20.31	46.96	-17.38	50.07	45.41	4.66	10.745	
720.00	720.00	720.00	720.00	2.40	2.40	-20.31	46.96	-17.38	50.07	45.27	4.80	10.424	
740.00	740.00	740.00	740.00	2.47	2.47	-20.31	46.96	-17.38	50.07	45.13	4.95	10.122	
760.00	760.00	760.00	760.00	2.55	2.55	-20.31	46.96	-17.38	50.07	44.98	5.09	9.837	
780.00	780.00	780.00	780.00	2.62	2.62	-20.31	46.96	-17.38	50.07	44.84	5.23	9.567	
800.00	800.00	800.00	800.00	2.69	2.69	-20.31	46.96	-17.38	50.07	44.70	5.38	9.312	
820.00	820.00	820.00	820.00	2.76	2.76	-20.31	46.96	-17.38	50.07	44.55	5.52	9.070	
840.00	840.00	840.00	840.00	2.83	2.83	-20.31	46.96	-17.38	50.07	44.41	5.66	8.841	
860.00	860.00	860.00	860.00	2.90	2.90	-20.31	46.96	-17.38	50.07	44.27	5.81	8.623	
880.00	880.00	880.00	880.00	2.98	2.98	-20.31	46.96	-17.38	50.07	44.12	5.95	8.415	
900.00	900.00	900.00	900.00	3.05	3.05	-20.31	46.96	-17.38	50.07	43.98	6.09	8.217	
920.00	920.00	920.00	920.00	3.12	3.12	-20.31	46.96	-17.38	50.07	43.84	6.24	8.028	
940.00	940.00	940.00	940.00	3.19	3.19	-20.31	46.96	-17.38	50.07	43.69	6.38	7.847	
960.00	960.00	960.00	960.00	3.26	3.26	-20.31	46.96	-17.38	50.07	43.55	6.52	7.675	
980.00	980.00	980.00	980.00	3.33	3.33	-20.31	46.96	-17.38	50.07	43.41	6.67	7.510	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-20.31	46.96	-17.38	50.07	43.26	6.81	7.352	
1,020.00	1,020.00	1,020.24	1,020.24	3.48	3.47	-20.37	46.90	-17.41	50.03	43.07	6.95	7.196	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,040.00	1,040.00	1,040.47	1,040.47	3.55	3.54	-20.55	46.71	-17.51	49.88	42.79	7.09	7.032	
1,060.00	1,060.00	1,060.70	1,060.70	3.62	3.61	-20.86	46.39	-17.68	49.65	42.41	7.24	6.862	
1,080.00	1,080.00	1,080.93	1,080.92	3.69	3.68	-21.29	45.95	-17.91	49.32	41.94	7.38	6.685	
1,100.00	1,100.00	1,101.15	1,101.12	3.76	3.75	-21.86	45.38	-18.20	48.91	41.39	7.52	6.503	
1,120.00	1,120.00	1,121.35	1,121.32	3.84	3.82	-22.57	44.68	-18.57	48.40	40.74	7.66	6.319	
1,140.00	1,140.00	1,141.55	1,141.49	3.91	3.89	-23.42	43.86	-18.99	47.82	40.02	7.80	6.131	
1,160.00	1,160.00	1,161.73	1,161.64	3.98	3.95	-24.42	42.91	-19.49	47.16	39.22	7.94	5.939	
1,180.00	1,180.00	1,181.89	1,181.77	4.05	4.02	-25.60	41.84	-20.05	46.43	38.35	8.08	5.746	
1,200.00	1,200.00	1,202.04	1,201.87	4.12	4.09	-26.96	40.64	-20.67	45.64	37.42	8.22	5.552	
1,220.00	1,220.00	1,222.17	1,221.94	4.19	4.15	-28.51	39.32	-21.36	44.79	36.43	8.36	5.358	
1,240.00	1,240.00	1,242.27	1,241.98	4.27	4.22	-30.27	37.88	-22.11	43.90	35.41	8.50	5.166	
1,260.00	1,260.00	1,262.35	1,261.99	4.34	4.29	-32.26	36.31	-22.92	42.99	34.35	8.64	4.977	
1,280.00	1,280.00	1,282.41	1,281.95	4.41	4.36	-34.51	34.62	-23.80	42.06	33.29	8.78	4.792	
1,300.00	1,300.00	1,302.43	1,301.87	4.48	4.42	-37.02	32.81	-24.75	41.14	32.23	8.92	4.615	
1,320.00	1,320.00	1,322.43	1,321.75	4.55	4.49	-39.82	30.88	-25.75	40.25	31.20	9.05	4.446	
1,340.00	1,340.00	1,342.40	1,341.58	4.62	4.56	-42.93	28.83	-26.82	39.41	30.22	9.19	4.287	
1,360.00	1,360.00	1,362.33	1,361.37	4.70	4.63	-46.35	26.66	-27.95	38.65	29.32	9.33	4.143	
1,380.00	1,380.00	1,382.23	1,381.10	4.77	4.70	-50.09	24.38	-29.14	38.01	28.54	9.47	4.014	
1,400.00	1,400.00	1,402.09	1,400.77	4.84	4.77	-54.13	21.97	-30.39	37.51	27.90	9.61	3.905	
1,420.00	1,420.00	1,421.91	1,420.39	4.91	4.84	-58.47	19.45	-31.70	37.20	27.45	9.75	3.816	
1,437.62	1,437.62	1,439.34	1,437.62	4.97	4.90	-62.49	17.14	-32.91	37.11	27.23	9.87	3.759	CC
1,440.00	1,440.00	1,441.69	1,439.94	4.98	4.91	-63.05	16.82	-33.08	37.11	27.22	9.89	3.752	ES
1,460.00	1,460.00	1,461.43	1,459.44	5.05	4.98	-67.82	14.07	-34.51	37.27	27.24	10.03	3.715	
1,480.00	1,480.00	1,481.13	1,478.87	5.13	5.05	-72.70	11.21	-36.00	37.72	27.54	10.18	3.707	SF
1,500.00	1,500.00	1,500.77	1,498.23	5.20	5.12	-77.62	8.24	-37.54	38.48	28.16	10.32	3.728	
1,520.00	1,520.00	1,520.38	1,517.52	5.27	5.19	-82.50	5.16	-39.15	39.57	29.10	10.47	3.779	
1,540.00	1,540.00	1,539.93	1,536.74	5.34	5.26	-87.24	1.97	-40.81	40.99	30.37	10.62	3.860	
1,560.00	1,560.00	1,559.43	1,555.88	5.41	5.34	-91.79	-1.33	-42.53	42.75	31.98	10.77	3.970	
1,580.00	1,580.00	1,578.88	1,574.95	5.48	5.41	-96.10	-4.74	-44.30	44.84	33.92	10.92	4.107	
1,600.00	1,600.00	1,598.27	1,593.93	5.56	5.48	-100.14	-8.25	-46.13	47.25	36.19	11.07	4.270	
1,620.00	1,620.00	1,617.61	1,612.84	5.63	5.56	-103.88	-11.86	-48.01	49.97	38.75	11.22	4.456	
1,640.00	1,640.00	1,636.90	1,631.66	5.70	5.63	-107.32	-15.57	-49.95	52.98	41.61	11.36	4.662	
1,660.00	1,660.00	1,656.12	1,650.40	5.77	5.71	-110.47	-19.39	-51.93	56.26	44.75	11.51	4.888	
1,680.00	1,680.00	1,675.28	1,669.05	5.84	5.78	-113.35	-23.30	-53.97	59.80	48.15	11.65	5.132	
1,700.00	1,700.00	1,694.39	1,687.61	5.91	5.86	-115.98	-27.32	-56.06	63.58	51.79	11.80	5.390	
1,720.00	1,720.00	1,713.43	1,706.08	5.99	5.94	-118.37	-31.42	-58.20	67.59	55.65	11.94	5.662	
1,740.00	1,740.00	1,732.40	1,724.45	6.06	6.01	-120.54	-35.63	-60.39	71.82	59.74	12.08	5.946	
1,760.00	1,760.00	1,751.31	1,742.73	6.13	6.09	-122.52	-39.92	-62.62	76.25	64.03	12.22	6.241	
1,780.00	1,780.00	1,770.16	1,760.91	6.20	6.17	-124.32	-44.31	-64.91	80.87	68.52	12.35	6.546	
1,800.00	1,800.00	1,788.93	1,779.00	6.27	6.25	-125.96	-48.78	-67.24	85.69	73.19	12.49	6.860	
1,820.00	1,820.00	1,807.64	1,796.98	6.34	6.33	-127.46	-53.35	-69.62	90.68	78.05	12.63	7.182	
1,840.00	1,840.00	1,826.27	1,814.87	6.42	6.41	-128.84	-58.00	-72.04	95.84	83.08	12.76	7.510	
1,860.00	1,860.00	1,844.84	1,832.65	6.49	6.49	-130.10	-62.73	-74.50	101.16	88.27	12.89	7.846	
1,880.00	1,880.00	1,863.33	1,850.32	6.56	6.57	-131.25	-67.55	-77.01	106.65	93.63	13.03	8.188	
1,900.00	1,900.00	1,881.75	1,867.89	6.63	6.66	-132.32	-72.45	-79.56	112.29	99.14	13.16	8.536	
1,920.00	1,920.00	1,900.00	1,885.27	6.70	6.74	-133.30	-77.40	-82.14	118.09	104.80	13.28	8.889	
1,940.00	1,940.00	1,918.36	1,902.71	6.78	6.82	-134.21	-82.48	-84.79	124.03	110.61	13.41	9.246	
1,960.00	1,960.00	1,936.55	1,919.95	6.85	6.91	-135.05	-87.61	-87.46	130.11	116.57	13.54	9.608	
1,980.00	1,980.00	1,954.66	1,937.09	6.92	6.99	-135.83	-92.82	-90.17	136.34	122.67	13.67	9.974	
2,000.00	2,000.00	1,972.69	1,954.11	6.99	7.08	-136.55	-98.10	-92.92	142.70	128.91	13.79	10.345	
2,020.00	2,020.00	1,990.64	1,971.02	7.06	7.16	-137.23	-103.45	-95.71	149.20	135.28	13.92	10.719	
2,040.00	2,040.00	2,008.51	1,987.81	7.13	7.25	-137.85	-108.87	-98.53	155.83	141.79	14.04	11.097	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,060.00	2,060.00	2,026.31	2,004.49	7.21	7.34	-138.44	-114.35	-101.39	162.60	148.43	14.17	11.478	
2,080.00	2,080.00	2,044.01	2,021.06	7.28	7.43	-138.99	-119.91	-104.28	169.49	155.20	14.29	11.862	
2,100.00	2,100.00	2,061.64	2,037.51	7.35	7.52	-139.50	-125.52	-107.20	176.51	162.10	14.41	12.250	
2,120.00	2,120.00	2,079.18	2,053.84	7.42	7.61	-139.98	-131.20	-110.16	183.65	169.12	14.53	12.641	
2,140.00	2,140.00	2,096.64	2,070.05	7.49	7.70	-140.43	-136.94	-113.15	190.92	176.27	14.65	13.035	
2,160.00	2,160.00	2,114.01	2,086.14	7.56	7.79	-140.86	-142.74	-116.17	198.31	183.54	14.77	13.431	
2,180.00	2,180.00	2,131.29	2,102.12	7.64	7.88	-141.26	-148.60	-119.22	205.81	190.93	14.88	13.829	
2,200.00	2,200.00	2,148.49	2,117.97	7.71	7.97	-141.64	-154.51	-122.30	213.44	198.44	15.00	14.230	
2,220.00	2,220.00	2,165.60	2,133.71	7.78	8.07	-141.99	-160.47	-125.40	221.19	206.07	15.11	14.634	
2,240.00	2,240.00	2,182.63	2,149.32	7.85	8.16	-142.33	-166.49	-128.54	229.05	213.82	15.23	15.041	
2,260.00	2,260.00	2,200.00	2,165.21	7.92	8.25	-142.66	-172.71	-131.78	237.02	221.68	15.34	15.446	
2,280.00	2,280.00	2,216.41	2,180.19	7.99	8.35	-142.95	-178.67	-134.88	245.11	229.66	15.45	15.861	
2,300.00	2,300.00	2,233.17	2,195.44	8.07	8.44	-143.24	-184.83	-138.09	253.31	237.74	15.57	16.274	
2,320.00	2,320.00	2,249.84	2,210.57	8.14	8.54	-143.51	-191.04	-141.32	261.62	245.94	15.68	16.690	
2,340.00	2,340.00	2,266.42	2,225.57	8.21	8.64	-143.77	-197.29	-144.58	270.04	254.26	15.78	17.108	
2,360.00	2,360.00	2,283.08	2,240.62	8.28	8.73	-144.01	-203.66	-147.89	278.57	262.67	15.89	17.526	
2,380.00	2,380.00	2,301.12	2,256.88	8.35	8.84	-144.27	-210.57	-151.49	287.14	271.12	16.02	17.922	
2,400.00	2,400.00	2,319.15	2,273.14	8.42	8.95	-144.51	-217.49	-155.10	295.72	279.57	16.15	18.311	
2,420.00	2,420.00	2,337.19	2,289.40	8.50	9.06	-144.73	-224.40	-158.70	304.30	288.02	16.28	18.693	
2,440.00	2,440.00	2,355.22	2,305.66	8.57	9.17	-144.95	-231.32	-162.30	312.89	296.48	16.41	19.070	
2,460.00	2,460.00	2,373.25	2,321.92	8.64	9.28	-145.15	-238.24	-165.90	321.48	304.94	16.54	19.441	
2,480.00	2,480.00	2,391.29	2,338.18	8.71	9.39	-145.34	-245.15	-169.50	330.07	313.40	16.66	19.807	
2,500.00	2,500.00	2,409.32	2,354.44	8.78	9.50	-145.52	-252.07	-173.11	338.66	321.87	16.79	20.166	
2,520.00	2,520.00	2,427.35	2,370.70	8.85	9.61	-145.69	-258.99	-176.71	347.26	330.34	16.92	20.519	
2,540.00	2,540.00	2,445.39	2,386.96	8.93	9.72	-145.86	-265.90	-180.31	355.86	338.81	17.05	20.866	
2,560.00	2,560.00	2,463.42	2,403.22	9.00	9.83	-146.02	-272.82	-183.91	364.46	347.28	17.19	21.208	
2,580.00	2,580.00	2,481.45	2,419.48	9.07	9.95	-146.17	-279.74	-187.51	373.07	355.75	17.32	21.545	
2,600.00	2,600.00	2,499.49	2,435.74	9.14	10.06	-146.31	-286.65	-191.11	381.67	364.23	17.45	21.877	
2,620.00	2,620.00	2,517.52	2,452.00	9.21	10.17	-146.44	-293.57	-194.72	390.28	372.70	17.58	22.202	
2,640.00	2,640.00	2,535.55	2,468.26	9.28	10.29	-146.58	-300.48	-198.32	398.89	381.18	17.71	22.522	
2,660.00	2,660.00	2,553.59	2,484.52	9.36	10.40	-146.70	-307.40	-201.92	407.50	389.66	17.84	22.838	
2,680.00	2,680.00	2,571.62	2,500.78	9.43	10.52	-146.82	-314.32	-205.52	416.12	398.14	17.98	23.149	
2,700.00	2,700.00	2,589.65	2,517.04	9.50	10.63	-146.94	-321.23	-209.12	424.73	406.62	18.11	23.456	
2,720.00	2,720.00	2,607.66	2,533.28	9.57	10.75	152.72	-328.14	-212.72	433.40	415.16	18.24	23.761	
2,740.00	2,740.00	2,625.62	2,549.47	9.64	10.86	152.54	-335.03	-216.31	442.19	423.81	18.37	24.067	
2,760.00	2,760.00	2,643.52	2,565.61	9.71	10.98	152.37	-341.89	-219.88	451.08	432.58	18.51	24.376	
2,780.00	2,779.99	2,661.37	2,581.71	9.78	11.10	152.21	-348.74	-223.45	460.09	441.45	18.64	24.685	
2,800.00	2,799.98	2,679.17	2,597.75	9.85	11.21	152.05	-355.56	-227.00	469.21	450.44	18.77	24.996	
2,820.00	2,819.96	2,696.91	2,613.75	9.92	11.33	151.91	-362.37	-230.54	478.44	459.54	18.90	25.311	
2,840.00	2,839.94	2,714.59	2,629.70	9.99	11.44	151.78	-369.15	-234.08	487.78	468.74	19.03	25.626	
2,860.00	2,859.92	2,732.22	2,645.59	10.06	11.56	151.65	-375.91	-237.60	497.22	478.06	19.17	25.942	
2,880.00	2,879.88	2,749.79	2,661.43	10.13	11.67	151.53	-382.65	-241.11	506.78	487.48	19.30	26.259	
2,900.00	2,899.84	2,767.30	2,677.22	10.20	11.79	151.42	-389.37	-244.60	516.44	497.01	19.43	26.578	
2,920.00	2,919.78	2,784.75	2,692.96	10.28	11.90	151.31	-396.06	-248.09	526.21	506.65	19.56	26.899	
2,940.00	2,939.72	2,802.14	2,708.64	10.35	12.02	151.22	-402.73	-251.56	536.08	516.39	19.69	27.222	
2,960.00	2,959.64	2,819.47	2,724.27	10.42	12.13	151.12	-409.37	-255.02	546.07	526.24	19.82	27.545	
2,980.00	2,979.55	2,836.74	2,739.84	10.49	12.25	151.03	-416.00	-258.47	556.15	536.20	19.96	27.870	
3,000.00	2,999.45	2,853.95	2,755.35	10.56	12.36	150.95	-422.60	-261.91	566.35	546.26	20.09	28.196	
3,020.00	3,019.34	2,871.09	2,770.81	10.63	12.48	150.87	-429.17	-265.33	576.65	556.43	20.22	28.524	
3,040.00	3,039.20	2,888.17	2,786.20	10.70	12.59	150.80	-435.72	-268.74	587.05	566.70	20.35	28.853	
3,060.00	3,059.05	2,905.18	2,801.54	10.77	12.70	150.73	-442.24	-272.14	597.56	577.08	20.48	29.183	
3,080.00	3,078.89	2,922.12	2,816.82	10.84	12.82	150.67	-448.74	-275.53	608.17	587.56	20.61	29.514	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,100.00	3,098.70	2,939.00	2,832.04	10.91	12.93	150.61	-455.22	-278.90	618.88	598.15	20.74	29.847	
3,120.00	3,118.50	2,955.81	2,847.20	10.98	13.05	150.55	-461.66	-282.25	629.70	608.83	20.86	30.181	
3,140.00	3,138.27	2,972.55	2,862.29	11.06	13.16	150.49	-468.08	-285.60	640.62	619.63	20.99	30.516	
3,160.00	3,158.03	2,989.23	2,877.33	11.13	13.27	150.44	-474.48	-288.93	651.64	630.52	21.12	30.852	
3,180.00	3,177.76	3,005.83	2,892.30	11.20	13.38	150.39	-480.85	-292.24	662.77	641.52	21.25	31.190	
3,200.00	3,197.47	3,022.36	2,907.20	11.27	13.49	150.34	-487.19	-295.55	673.99	652.62	21.38	31.528	
3,220.00	3,217.15	3,038.82	2,922.04	11.34	13.61	150.30	-493.50	-298.83	685.32	663.82	21.51	31.867	
3,240.00	3,236.81	3,055.20	2,936.82	11.42	13.72	150.25	-499.78	-302.11	696.75	675.12	21.63	32.208	
3,260.00	3,256.44	3,071.52	2,951.52	11.49	13.83	150.21	-506.04	-305.36	708.28	686.52	21.76	32.550	
3,280.00	3,276.05	3,087.75	2,966.17	11.56	13.94	150.17	-512.27	-308.61	719.91	698.02	21.89	32.893	
3,300.00	3,295.62	3,103.92	2,980.74	11.64	14.05	150.13	-518.47	-311.84	731.64	709.62	22.01	33.237	
3,320.00	3,315.17	3,120.00	2,995.25	11.71	14.16	150.10	-524.64	-315.05	743.47	721.33	22.14	33.581	
3,340.00	3,334.69	3,136.01	3,009.68	11.78	14.27	150.06	-530.78	-318.25	755.39	733.13	22.27	33.927	
3,360.00	3,354.18	3,151.95	3,024.05	11.86	14.38	150.02	-536.89	-321.43	767.42	745.03	22.39	34.274	
3,380.00	3,373.63	3,167.80	3,038.34	11.93	14.49	149.99	-542.97	-324.60	779.55	757.03	22.52	34.622	
3,400.00	3,393.06	3,183.58	3,052.57	12.01	14.59	149.95	-549.02	-327.75	791.77	769.13	22.64	34.972	
3,420.00	3,412.44	3,199.27	3,066.72	12.09	14.70	149.92	-555.04	-330.88	804.09	781.33	22.76	35.322	
3,440.00	3,431.80	3,214.89	3,080.80	12.16	14.81	149.89	-561.03	-334.00	816.51	793.62	22.89	35.672	
3,460.00	3,451.12	3,230.42	3,094.81	12.24	14.92	149.85	-566.98	-337.10	829.02	806.01	23.01	36.024	
3,480.00	3,470.40	3,245.88	3,108.74	12.32	15.02	149.82	-572.91	-340.19	841.64	818.50	23.14	36.377	
3,500.00	3,489.64	3,261.25	3,122.60	12.39	15.13	149.79	-578.81	-343.26	854.34	831.08	23.26	36.731	
3,520.00	3,508.85	3,276.53	3,136.38	12.47	15.23	149.75	-584.67	-346.31	867.15	843.77	23.38	37.085	
3,540.00	3,528.02	3,291.73	3,150.09	12.56	15.34	149.72	-590.50	-349.35	880.05	856.54	23.50	37.441	
3,560.00	3,547.14	3,306.85	3,163.72	12.64	15.44	149.68	-596.29	-352.37	893.04	869.41	23.63	37.797	
3,580.00	3,566.23	3,321.88	3,177.27	12.72	15.55	149.65	-602.06	-355.37	906.13	882.38	23.75	38.155	
3,600.00	3,585.27	3,336.82	3,190.75	12.80	15.65	149.61	-607.79	-358.35	919.31	895.44	23.87	38.514	
3,620.00	3,604.27	3,351.68	3,204.14	12.88	15.75	149.58	-613.49	-361.32	932.59	908.59	23.99	38.872	
3,640.00	3,623.22	3,366.45	3,217.46	12.96	15.86	149.54	-619.15	-364.27	945.95	921.84	24.11	39.231	
3,645.28	3,628.22	3,370.33	3,220.96	12.98	15.88	149.53	-620.64	-365.05	949.50	925.35	24.14	39.325	
3,660.00	3,642.15	3,381.15	3,230.72	13.05	15.96	149.63	-624.79	-367.21	959.39	935.16	24.23	39.590	
3,680.00	3,661.07	3,395.85	3,243.97	13.13	16.06	149.78	-630.43	-370.14	972.84	948.48	24.35	39.948	
3,700.00	3,679.99	3,410.55	3,257.23	13.22	16.16	149.91	-636.07	-373.08	986.28	961.81	24.47	40.302	
3,720.00	3,698.91	3,425.26	3,270.48	13.30	16.26	150.05	-641.71	-376.02	999.73	975.14	24.59	40.651	
3,740.00	3,717.83	3,439.96	3,283.74	13.39	16.37	150.18	-647.35	-378.95	1,013.19	988.47	24.71	40.997	
3,760.00	3,736.75	3,454.66	3,296.99	13.48	16.47	150.30	-652.98	-381.89	1,026.64	1,001.81	24.83	41.340	
3,780.00	3,755.67	3,469.36	3,310.25	13.57	16.57	150.43	-658.62	-384.82	1,040.10	1,015.15	24.95	41.681	
3,800.00	3,774.59	3,484.06	3,323.50	13.65	16.67	150.55	-664.26	-387.76	1,053.56	1,028.49	25.07	42.020	
3,820.00	3,793.51	3,498.76	3,336.76	13.74	16.77	150.66	-669.90	-390.70	1,067.02	1,041.83	25.19	42.351	
3,840.00	3,812.44	3,513.46	3,350.02	13.83	16.88	150.78	-675.54	-393.63	1,080.49	1,055.17	25.32	42.680	
3,860.00	3,831.36	3,528.16	3,363.27	13.92	16.98	150.89	-681.17	-396.57	1,093.96	1,068.52	25.44	43.006	
3,880.00	3,850.28	3,542.86	3,376.53	14.01	17.08	151.00	-686.81	-399.51	1,107.43	1,081.87	25.56	43.329	
3,900.00	3,869.20	3,557.56	3,389.78	14.10	17.19	151.11	-692.45	-402.44	1,120.90	1,095.22	25.68	43.650	
3,920.00	3,888.12	3,572.27	3,403.04	14.20	17.29	151.21	-698.09	-405.38	1,134.38	1,108.57	25.80	43.965	
3,940.00	3,907.04	3,586.97	3,416.29	14.29	17.39	151.31	-703.73	-408.31	1,147.85	1,121.93	25.92	44.277	
3,960.00	3,925.96	3,601.67	3,429.55	14.38	17.49	151.41	-709.37	-411.25	1,161.33	1,135.29	26.05	44.587	
3,980.00	3,944.88	3,616.37	3,442.80	14.47	17.60	151.51	-715.00	-414.19	1,174.81	1,148.64	26.17	44.894	
4,000.00	3,963.80	3,631.07	3,456.06	14.56	17.70	151.60	-720.64	-417.12	1,188.30	1,162.00	26.29	45.199	
4,020.00	3,982.73	3,645.77	3,469.32	14.66	17.80	151.70	-726.28	-420.06	1,201.78	1,175.37	26.41	45.498	
4,040.00	4,001.65	3,660.47	3,482.57	14.75	17.91	151.79	-731.92	-422.99	1,215.27	1,188.73	26.54	45.795	
4,060.00	4,020.57	3,675.17	3,495.83	14.85	18.01	151.87	-737.56	-425.93	1,228.75	1,202.09	26.66	46.089	
4,080.00	4,039.49	3,689.87	3,509.08	14.94	18.11	151.96	-743.20	-428.87	1,242.24	1,215.46	26.78	46.381	
4,100.00	4,058.41	3,704.58	3,522.34	15.04	18.22	152.05	-748.83	-431.80	1,255.73	1,228.83	26.91	46.671	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,120.00	4,077.33	3,719.28	3,535.59	15.13	18.32	152.13	-754.47	-434.74	1,269.22	1,242.19	27.03	46.955	
4,140.00	4,096.25	3,733.98	3,548.85	15.23	18.42	152.21	-760.11	-437.68	1,282.72	1,255.56	27.15	47.237	
4,160.00	4,115.17	3,748.68	3,562.10	15.33	18.53	152.29	-765.75	-440.61	1,296.21	1,268.93	27.28	47.517	
4,180.00	4,134.09	3,763.38	3,575.36	15.42	18.63	152.37	-771.39	-443.55	1,309.71	1,282.31	27.40	47.795	
4,200.00	4,153.02	3,778.08	3,588.62	15.52	18.73	152.44	-777.02	-446.48	1,323.21	1,295.68	27.53	48.071	
4,220.00	4,171.94	3,792.78	3,601.87	15.62	18.84	152.52	-782.66	-449.42	1,336.71	1,309.05	27.65	48.341	
4,240.00	4,190.86	3,807.48	3,615.13	15.72	18.94	152.59	-788.30	-452.36	1,350.21	1,322.43	27.78	48.610	
4,260.00	4,209.78	3,822.18	3,628.38	15.81	19.04	152.67	-793.94	-455.29	1,363.71	1,335.81	27.90	48.876	
4,280.00	4,228.70	3,836.88	3,641.64	15.91	19.15	152.74	-799.58	-458.23	1,377.21	1,349.18	28.03	49.140	
4,300.00	4,247.62	3,851.59	3,654.89	16.01	19.25	152.80	-805.22	-461.17	1,390.71	1,362.56	28.15	49.403	
4,320.00	4,266.54	3,866.29	3,668.15	16.11	19.36	152.87	-810.85	-464.10	1,404.22	1,375.94	28.28	49.660	
4,340.00	4,285.46	3,880.99	3,681.40	16.21	19.46	152.94	-816.49	-467.04	1,417.72	1,389.32	28.40	49.916	
4,360.00	4,304.38	3,895.69	3,694.66	16.31	19.56	153.00	-822.13	-469.97	1,431.23	1,402.70	28.53	50.170	
4,380.00	4,323.31	3,910.39	3,707.92	16.41	19.67	153.07	-827.77	-472.91	1,444.74	1,416.09	28.65	50.422	
4,400.00	4,342.23	3,925.09	3,721.17	16.51	19.77	153.13	-833.41	-475.85	1,458.25	1,429.47	28.78	50.671	
4,420.00	4,361.15	3,939.79	3,734.43	16.61	19.88	153.19	-839.04	-478.78	1,471.76	1,442.85	28.91	50.917	
4,440.00	4,380.07	3,954.49	3,747.68	16.71	19.98	153.25	-844.68	-481.72	1,485.27	1,456.24	29.03	51.160	
4,460.00	4,398.99	3,969.19	3,760.94	16.81	20.08	153.31	-850.32	-484.65	1,498.78	1,469.62	29.16	51.402	
4,480.00	4,417.91	3,983.89	3,774.19	16.92	20.19	153.37	-855.96	-487.59	1,512.29	1,483.01	29.28	51.642	
4,500.00	4,436.83	3,998.60	3,787.45	17.02	20.29	153.43	-861.60	-490.53	1,525.80	1,496.39	29.41	51.881	
4,520.00	4,455.75	4,013.30	3,800.70	17.12	20.40	153.49	-867.24	-493.46	1,539.32	1,509.78	29.54	52.114	
4,540.00	4,474.67	4,028.00	3,813.96	17.22	20.50	153.54	-872.87	-496.40	1,552.83	1,523.17	29.66	52.347	
4,560.00	4,493.59	4,042.70	3,827.22	17.33	20.61	153.60	-878.51	-499.34	1,566.35	1,536.56	29.79	52.577	
4,580.00	4,512.52	4,057.40	3,840.47	17.43	20.71	153.65	-884.15	-502.27	1,579.87	1,549.95	29.92	52.806	
4,600.00	4,531.44	4,072.10	3,853.73	17.53	20.81	153.70	-889.79	-505.21	1,593.38	1,563.34	30.04	53.033	
4,620.00	4,550.36	4,086.80	3,866.98	17.64	20.92	153.76	-895.43	-508.14	1,606.90	1,576.73	30.17	53.257	
4,640.00	4,569.28	4,101.50	3,880.24	17.74	21.02	153.81	-901.07	-511.08	1,620.42	1,590.12	30.30	53.479	
4,660.00	4,588.20	4,116.20	3,893.49	17.84	21.13	153.86	-906.70	-514.02	1,633.94	1,603.51	30.43	53.698	
4,680.00	4,607.12	4,130.91	3,906.75	17.95	21.23	153.91	-912.34	-516.95	1,647.46	1,616.90	30.56	53.917	
4,700.00	4,626.04	4,145.61	3,920.00	18.05	21.34	153.95	-917.98	-519.89	1,660.98	1,630.30	30.68	54.134	
4,720.00	4,644.96	4,160.31	3,933.26	18.16	21.44	154.00	-923.62	-522.83	1,674.50	1,643.69	30.81	54.347	
4,740.00	4,663.88	4,175.01	3,946.52	18.26	21.55	154.05	-929.26	-525.76	1,688.02	1,657.08	30.94	54.559	
4,760.00	4,682.81	4,189.71	3,959.77	18.37	21.65	154.10	-934.89	-528.70	1,701.54	1,670.48	31.07	54.769	
4,780.00	4,701.73	4,204.41	3,973.03	18.47	21.75	154.14	-940.53	-531.63	1,715.07	1,683.87	31.20	54.978	
4,800.00	4,720.65	4,219.11	3,986.28	18.58	21.86	154.19	-946.17	-534.57	1,728.59	1,697.27	31.32	55.185	
4,820.00	4,739.57	4,233.81	3,999.54	18.69	21.96	154.23	-951.81	-537.51	1,742.12	1,710.66	31.45	55.388	
4,840.00	4,758.49	4,248.51	4,012.79	18.79	22.07	154.27	-957.45	-540.44	1,755.64	1,724.06	31.58	55.591	
4,860.00	4,777.41	4,263.21	4,026.05	18.90	22.17	154.32	-963.09	-543.38	1,769.17	1,737.45	31.71	55.791	
4,880.00	4,796.33	4,277.92	4,039.30	19.00	22.28	154.36	-968.72	-546.32	1,782.69	1,750.85	31.84	55.991	
4,900.00	4,815.25	4,292.62	4,052.56	19.11	22.38	154.40	-974.36	-549.25	1,796.22	1,764.25	31.97	56.189	
4,920.00	4,834.17	4,307.32	4,065.82	19.22	22.49	154.44	-980.00	-552.19	1,809.74	1,777.65	32.10	56.384	
4,940.00	4,853.10	4,322.02	4,079.07	19.32	22.59	154.48	-985.64	-555.12	1,823.27	1,791.05	32.23	56.577	
4,960.00	4,872.02	4,336.72	4,092.33	19.43	22.70	154.52	-991.28	-558.06	1,836.80	1,804.44	32.36	56.769	
4,980.00	4,890.94	4,351.42	4,105.58	19.54	22.80	154.56	-996.91	-561.00	1,850.33	1,817.84	32.48	56.960	
5,000.00	4,909.86	4,366.12	4,118.84	19.65	22.91	154.60	-1,002.55	-563.93	1,863.86	1,831.24	32.61	57.149	
5,020.00	4,928.78	4,380.82	4,132.09	19.75	23.01	154.64	-1,008.19	-566.87	1,877.39	1,844.64	32.74	57.336	
5,040.00	4,947.70	4,395.52	4,145.35	19.86	23.12	154.67	-1,013.83	-569.80	1,890.92	1,858.04	32.87	57.521	
5,060.00	4,966.62	4,410.23	4,158.60	19.97	23.22	154.71	-1,019.47	-572.74	1,904.45	1,871.44	33.00	57.705	
5,080.00	4,985.54	4,424.93	4,171.86	20.08	23.33	154.75	-1,025.11	-575.68	1,917.98	1,884.84	33.13	57.887	
5,100.00	5,004.46	4,439.63	4,185.12	20.19	23.43	154.78	-1,030.74	-578.61	1,931.51	1,898.24	33.26	58.069	
5,120.00	5,023.39	4,454.33	4,198.37	20.30	23.54	154.82	-1,036.38	-581.55	1,945.04	1,911.65	33.39	58.247	
5,140.00	5,042.31	4,469.03	4,211.63	20.41	23.64	154.85	-1,042.02	-584.49	1,958.57	1,925.05	33.52	58.424	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,160.00	5,061.23	4,483.73	4,224.88	20.51	23.75	154.89	-1,047.66	-587.42	1,972.10	1,938.45	33.65	58.601	
5,180.00	5,080.15	4,498.43	4,238.14	20.62	23.85	154.92	-1,053.30	-590.36	1,985.64	1,951.85	33.78	58.776	
5,200.00	5,099.07	4,513.13	4,251.39	20.73	23.96	154.96	-1,058.94	-593.29	1,999.17	1,965.25	33.91	58.949	
5,220.00	5,117.99	4,527.83	4,264.65	20.84	24.06	154.99	-1,064.57	-596.23	2,012.70	1,978.66	34.04	59.120	
5,240.00	5,136.91	4,542.53	4,277.90	20.95	24.17	155.02	-1,070.21	-599.17	2,026.23	1,992.06	34.18	59.290	
5,260.00	5,155.83	4,557.24	4,291.16	21.06	24.27	155.05	-1,075.85	-602.10	2,039.77	2,005.46	34.31	59.459	
5,280.00	5,174.75	4,571.94	4,304.42	21.17	24.38	155.09	-1,081.49	-605.04	2,053.30	2,018.87	34.44	59.626	
5,300.00	5,193.67	4,586.64	4,317.67	21.28	24.49	155.12	-1,087.13	-607.98	2,066.84	2,032.27	34.57	59.793	
5,320.00	5,212.60	4,601.34	4,330.93	21.39	24.59	155.15	-1,092.76	-610.91	2,080.37	2,045.68	34.70	59.957	
5,340.00	5,231.52	4,616.04	4,344.18	21.50	24.70	155.18	-1,098.40	-613.85	2,093.91	2,059.08	34.83	60.119	
5,360.00	5,250.44	4,630.74	4,357.44	21.61	24.80	155.21	-1,104.04	-616.78	2,107.44	2,072.48	34.96	60.281	
5,380.00	5,269.36	4,645.44	4,370.69	21.72	24.91	155.24	-1,109.68	-619.72	2,120.98	2,085.89	35.09	60.442	
5,400.00	5,288.28	4,660.14	4,383.95	21.83	25.01	155.27	-1,115.32	-622.66	2,134.52	2,099.29	35.22	60.601	
5,420.00	5,307.20	4,674.84	4,397.20	21.94	25.12	155.30	-1,120.96	-625.59	2,148.05	2,112.70	35.35	60.759	
5,440.00	5,326.12	4,689.54	4,410.46	22.06	25.22	155.33	-1,126.59	-628.53	2,161.59	2,126.10	35.49	60.915	
5,460.00	5,345.04	4,704.25	4,423.72	22.17	25.33	155.35	-1,132.23	-631.47	2,175.13	2,139.51	35.62	61.070	
5,480.00	5,363.96	4,718.95	4,436.97	22.28	25.43	155.38	-1,137.87	-634.40	2,188.66	2,152.92	35.75	61.224	
5,500.00	5,382.89	4,733.65	4,450.23	22.39	25.54	155.41	-1,143.51	-637.34	2,202.20	2,166.32	35.88	61.378	
5,520.00	5,401.81	4,748.35	4,463.48	22.50	25.65	155.44	-1,149.15	-640.27	2,215.74	2,179.73	36.01	61.529	
5,540.00	5,420.73	4,763.05	4,476.74	22.61	25.75	155.46	-1,154.79	-643.21	2,229.28	2,193.13	36.14	61.679	
5,560.00	5,439.65	4,777.75	4,489.99	22.72	25.86	155.49	-1,160.42	-646.15	2,242.82	2,206.54	36.28	61.828	
5,580.00	5,458.57	4,792.45	4,503.25	22.84	25.96	155.52	-1,166.06	-649.08	2,256.36	2,219.95	36.41	61.976	
5,600.00	5,477.49	4,807.15	4,516.50	22.95	26.07	155.54	-1,171.70	-652.02	2,269.89	2,233.36	36.54	62.123	
5,620.00	5,496.41	4,821.85	4,529.76	23.06	26.17	155.57	-1,177.34	-654.95	2,283.43	2,246.76	36.67	62.268	
5,640.00	5,515.33	4,836.56	4,543.02	23.17	26.28	155.59	-1,182.98	-657.89	2,296.97	2,260.17	36.80	62.412	
5,660.00	5,534.25	4,851.26	4,556.27	23.28	26.38	155.62	-1,188.61	-660.83	2,310.51	2,273.58	36.94	62.555	
5,680.00	5,553.18	4,865.96	4,569.53	23.40	26.49	155.64	-1,194.25	-663.76	2,324.05	2,286.99	37.07	62.697	
5,700.00	5,572.10	4,880.66	4,582.78	23.51	26.60	155.67	-1,199.89	-666.70	2,337.59	2,300.39	37.20	62.839	
5,720.00	5,591.02	4,895.36	4,596.04	23.62	26.70	155.69	-1,205.53	-669.64	2,351.13	2,313.80	37.33	62.978	
5,740.00	5,609.94	4,910.06	4,609.29	23.73	26.81	155.72	-1,211.17	-672.57	2,364.68	2,327.21	37.47	63.117	
5,760.00	5,628.86	4,924.76	4,622.55	23.85	26.91	155.74	-1,216.81	-675.51	2,378.22	2,340.62	37.60	63.254	
5,780.00	5,647.78	4,939.46	4,635.80	23.96	27.02	155.76	-1,222.44	-678.44	2,391.76	2,354.03	37.73	63.391	
5,800.00	5,666.70	4,954.16	4,649.06	24.07	27.12	155.79	-1,228.08	-681.38	2,405.30	2,367.44	37.86	63.526	
5,809.89	5,676.06	4,961.43	4,655.61	24.13	27.18	155.80	-1,230.87	-682.83	2,411.99	2,374.07	37.93	63.593	
5,820.00	5,685.60	4,968.83	4,662.28	24.19	27.23	153.58	-1,233.71	-684.31	2,418.88	2,380.88	38.00	63.660	
5,840.00	5,704.31	4,983.22	4,675.26	24.31	27.33	149.49	-1,239.23	-687.18	2,432.70	2,394.57	38.13	63.799	
5,850.00	5,713.58	4,990.30	4,681.64	24.37	27.38	147.57	-1,241.94	-688.60	2,439.72	2,401.52	38.20	63.872	
5,860.00	5,722.80	4,997.29	4,687.95	24.43	27.43	145.72	-1,244.62	-689.99	2,446.80	2,408.53	38.26	63.944	
5,880.00	5,741.03	5,011.02	4,700.33	24.57	27.53	142.20	-1,249.89	-692.74	2,461.15	2,422.75	38.40	64.093	
5,900.00	5,759.00	5,024.40	4,712.39	24.70	27.63	138.86	-1,255.02	-695.41	2,475.73	2,437.20	38.53	64.250	
5,920.00	5,776.66	5,037.40	4,724.11	24.85	27.72	135.65	-1,260.00	-698.00	2,490.53	2,451.87	38.67	64.409	
5,940.00	5,794.02	5,050.01	4,735.48	25.00	27.81	132.53	-1,264.84	-700.52	2,505.54	2,466.74	38.80	64.576	
5,950.00	5,802.57	5,056.17	4,741.03	25.08	27.86	131.00	-1,267.20	-701.75	2,513.12	2,474.25	38.87	64.662	
5,960.00	5,811.03	5,062.22	4,746.49	25.16	27.90	129.48	-1,269.52	-702.96	2,520.74	2,481.81	38.93	64.748	
5,980.00	5,827.69	5,074.01	4,757.12	25.33	27.99	126.48	-1,274.05	-705.32	2,536.11	2,497.05	39.06	64.923	
6,000.00	5,843.96	5,085.37	4,767.36	25.50	28.07	123.51	-1,278.40	-707.59	2,551.64	2,512.45	39.19	65.106	
6,020.00	5,859.84	5,096.27	4,777.20	25.69	28.15	120.55	-1,282.59	-709.76	2,567.31	2,527.99	39.32	65.288	
6,040.00	5,875.31	5,106.72	4,786.62	25.87	28.22	117.60	-1,286.59	-711.85	2,583.10	2,543.65	39.45	65.477	
6,050.00	5,882.88	5,111.77	4,791.17	25.97	28.26	116.13	-1,288.53	-712.86	2,591.04	2,551.53	39.51	65.574	
6,060.00	5,890.33	5,116.70	4,795.61	26.07	28.29	114.66	-1,290.42	-713.84	2,599.01	2,559.43	39.58	65.668	
6,080.00	5,904.90	5,126.19	4,804.17	26.28	28.36	111.72	-1,294.06	-715.74	2,615.01	2,575.30	39.70	65.861	
6,100.00	5,919.00	5,135.18	4,812.28	26.49	28.43	108.78	-1,297.51	-717.54	2,631.09	2,591.26	39.83	66.060	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,120.00	5,932.61	5,143.67	4,819.93	26.72	28.49	105.85	-1,300.76	-719.23	2,647.23	2,607.27	39.96	66.255	
6,140.00	5,945.72	5,151.64	4,827.12	26.95	28.55	102.92	-1,303.82	-720.82	2,663.42	2,623.34	40.08	66.456	
6,150.00	5,952.07	5,155.42	4,830.53	27.06	28.57	101.46	-1,305.27	-721.58	2,671.52	2,631.38	40.14	66.558	
6,160.00	5,958.30	5,159.08	4,833.82	27.19	28.60	100.01	-1,306.67	-722.31	2,679.64	2,639.43	40.20	66.655	
6,180.00	5,970.34	5,165.98	4,840.05	27.44	28.65	97.12	-1,309.32	-723.69	2,695.87	2,655.55	40.32	66.855	
6,200.00	5,981.83	5,172.34	4,845.78	27.69	28.70	94.26	-1,311.76	-724.96	2,712.11	2,671.66	40.44	67.059	
6,220.00	5,992.76	5,178.14	4,851.01	27.97	28.74	91.45	-1,313.98	-726.11	2,728.32	2,687.76	40.57	67.254	
6,240.00	6,003.11	5,183.38	4,855.74	28.25	28.78	88.67	-1,315.99	-727.16	2,744.51	2,703.82	40.69	67.454	
6,250.00	6,008.06	5,185.79	4,857.92	28.38	28.79	87.31	-1,316.92	-727.64	2,752.59	2,711.84	40.75	67.555	
6,260.00	6,012.86	5,188.06	4,859.96	28.53	28.81	85.96	-1,317.79	-728.10	2,760.65	2,719.84	40.81	67.650	
6,280.00	6,022.01	5,192.17	4,863.66	28.84	28.84	83.30	-1,319.36	-728.92	2,776.73	2,735.80	40.93	67.843	
6,300.00	6,030.55	5,195.69	4,866.84	29.14	28.86	80.72	-1,320.72	-729.62	2,792.73	2,751.68	41.05	68.040	
6,320.00	6,038.46	5,198.64	4,869.50	29.46	28.89	78.21	-1,321.85	-730.21	2,808.63	2,767.46	41.17	68.224	
6,340.00	6,045.73	5,201.00	4,871.63	29.78	28.90	75.78	-1,322.75	-730.68	2,824.42	2,783.13	41.29	68.412	
6,350.00	6,049.13	5,201.96	4,872.49	29.95	28.91	74.60	-1,323.12	-730.87	2,832.27	2,790.93	41.34	68.507	
6,360.00	6,052.36	5,202.78	4,873.23	30.12	28.92	73.44	-1,323.43	-731.04	2,840.09	2,798.68	41.40	68.594	
6,380.00	6,058.34	5,203.96	4,874.29	30.47	28.92	71.19	-1,323.88	-731.27	2,855.61	2,814.09	41.52	68.770	
6,400.00	6,063.66	5,204.55	4,874.83	30.81	28.93	69.03	-1,324.11	-731.39	2,870.98	2,829.34	41.64	68.950	
6,420.00	6,068.31	5,204.55	4,874.83	31.18	28.93	66.97	-1,324.11	-731.39	2,886.17	2,844.41	41.76	69.114	
6,440.00	6,072.29	5,203.96	4,874.29	31.54	28.92	65.00	-1,323.88	-731.27	2,901.17	2,859.30	41.88	69.281	
6,450.00	6,074.03	5,203.44	4,873.82	31.73	28.92	64.05	-1,323.68	-731.17	2,908.60	2,866.67	41.93	69.366	
6,460.00	6,075.60	5,202.77	4,873.22	31.92	28.92	63.12	-1,323.43	-731.03	2,915.97	2,873.98	41.99	69.442	
6,480.00	6,078.23	5,201.00	4,871.62	32.30	28.90	61.34	-1,322.75	-730.68	2,930.55	2,888.44	42.11	69.596	
6,500.00	6,080.17	5,198.63	4,869.49	32.68	28.89	59.64	-1,321.84	-730.21	2,944.89	2,902.67	42.22	69.753	
6,520.00	6,081.42	5,195.68	4,866.83	33.07	28.86	58.04	-1,320.71	-729.62	2,958.98	2,916.65	42.34	69.894	
6,540.00	6,081.99	5,192.15	4,863.65	33.47	28.84	56.53	-1,319.36	-728.91	2,972.81	2,930.36	42.45	70.037	
6,552.18	6,082.00	5,189.72	4,861.46	33.71	28.82	55.65	-1,318.42	-728.43	2,981.09	2,938.58	42.51	70.125	
6,560.00	6,081.92	5,188.09	4,859.99	33.86	28.81	55.60	-1,317.80	-728.10	2,986.38	2,943.82	42.56	70.175	
6,580.00	6,081.73	5,183.92	4,856.23	34.27	28.78	55.50	-1,316.20	-727.27	2,999.95	2,957.28	42.67	70.305	
6,600.00	6,081.53	5,179.75	4,852.47	34.67	28.75	55.40	-1,314.60	-726.44	3,013.59	2,970.81	42.78	70.440	
6,620.00	6,081.34	5,175.58	4,848.71	35.10	28.72	55.29	-1,313.00	-725.60	3,027.29	2,984.38	42.91	70.554	
6,640.00	6,081.14	5,171.41	4,844.95	35.52	28.69	55.19	-1,311.40	-724.77	3,041.06	2,998.03	43.03	70.673	
6,660.00	6,080.95	5,167.24	4,841.19	35.94	28.66	55.08	-1,309.80	-723.94	3,054.89	3,011.74	43.15	70.796	
6,680.00	6,080.76	5,163.07	4,837.43	36.37	28.63	54.98	-1,308.20	-723.10	3,068.78	3,025.51	43.27	70.925	
6,700.00	6,080.56	5,158.90	4,833.67	36.79	28.60	54.88	-1,306.60	-722.27	3,082.73	3,039.35	43.38	71.059	
6,720.00	6,080.37	5,154.73	4,829.91	37.24	28.57	54.77	-1,305.00	-721.44	3,096.75	3,053.24	43.51	71.169	
6,740.00	6,080.17	5,150.56	4,826.15	37.69	28.54	54.67	-1,303.41	-720.61	3,110.82	3,067.18	43.64	71.285	
6,760.00	6,079.98	5,146.39	4,822.39	38.13	28.51	54.57	-1,301.81	-719.77	3,124.96	3,081.19	43.76	71.406	
6,780.00	6,079.78	5,142.22	4,818.63	38.58	28.48	54.46	-1,300.21	-718.94	3,139.15	3,095.26	43.89	71.531	
6,800.00	6,079.59	5,138.05	4,814.87	39.03	28.45	54.36	-1,298.61	-718.11	3,153.40	3,109.39	44.00	71.660	
6,820.00	6,079.39	5,133.88	4,811.11	39.49	28.42	54.26	-1,297.01	-717.27	3,167.71	3,123.57	44.14	71.772	
6,840.00	6,079.20	5,129.71	4,807.35	39.96	28.39	54.15	-1,295.41	-716.44	3,182.07	3,137.80	44.26	71.888	
6,860.00	6,079.00	5,125.54	4,803.59	40.43	28.36	54.05	-1,293.81	-715.61	3,196.48	3,152.09	44.39	72.009	
6,880.00	6,078.81	5,121.37	4,799.83	40.89	28.33	53.95	-1,292.21	-714.78	3,210.96	3,166.44	44.51	72.134	
6,900.00	6,078.61	5,117.20	4,796.07	41.36	28.30	53.84	-1,290.61	-713.94	3,225.48	3,180.85	44.63	72.264	
6,920.00	6,078.42	5,113.03	4,792.31	41.84	28.27	53.74	-1,289.01	-713.11	3,240.06	3,195.29	44.77	72.379	
6,940.00	6,078.22	5,108.86	4,788.55	42.32	28.24	53.64	-1,287.41	-712.28	3,254.69	3,209.80	44.89	72.498	
6,960.00	6,078.03	5,104.69	4,784.79	42.81	28.21	53.54	-1,285.81	-711.44	3,269.37	3,224.35	45.02	72.622	
6,980.00	6,077.83	5,100.52	4,781.03	43.29	28.18	53.43	-1,284.21	-710.61	3,284.10	3,238.96	45.14	72.750	
7,000.00	6,077.64	5,096.35	4,777.27	43.77	28.15	53.33	-1,282.61	-709.78	3,298.89	3,253.62	45.26	72.882	
7,020.00	6,077.44	5,092.18	4,773.51	44.27	28.12	53.23	-1,281.01	-708.95	3,313.72	3,268.33	45.39	73.003	
7,040.00	6,077.25	5,088.01	4,769.75	44.76	28.09	53.13	-1,279.42	-708.11	3,328.60	3,283.08	45.52	73.127	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,060.00	6,077.05	5,083.84	4,765.99	45.26	28.06	53.02	-1,277.82	-707.28	3,343.53	3,297.89	45.64	73.256	
7,080.00	6,076.86	5,079.67	4,762.23	45.76	28.03	52.92	-1,276.22	-706.45	3,358.51	3,312.75	45.76	73.389	
7,100.00	6,076.66	5,075.50	4,758.47	46.25	28.00	52.82	-1,274.62	-705.61	3,373.53	3,327.65	45.88	73.525	
7,120.00	6,076.47	5,071.33	4,754.71	46.76	27.97	52.72	-1,273.02	-704.78	3,388.60	3,342.60	46.01	73.653	
7,140.00	6,076.27	5,067.16	4,750.95	47.27	27.94	52.62	-1,271.42	-703.95	3,403.72	3,357.59	46.13	73.784	
7,160.00	6,076.08	5,062.99	4,747.19	47.78	27.91	52.51	-1,269.82	-703.12	3,418.88	3,372.63	46.25	73.919	
7,180.00	6,075.88	5,058.82	4,743.43	48.28	27.88	52.41	-1,268.22	-702.28	3,434.09	3,387.72	46.37	74.058	
7,200.00	6,075.69	5,054.65	4,739.67	48.79	27.85	52.31	-1,266.62	-701.45	3,449.34	3,402.85	46.49	74.201	
7,220.00	6,075.49	5,050.48	4,735.91	49.31	27.82	52.21	-1,265.02	-700.62	3,464.63	3,418.02	46.61	74.336	
7,240.00	6,075.30	5,046.31	4,732.15	49.83	27.79	52.11	-1,263.42	-699.78	3,479.96	3,433.24	46.73	74.475	
7,260.00	6,075.11	5,042.14	4,728.39	50.34	27.76	52.01	-1,261.82	-698.95	3,495.34	3,448.50	46.84	74.617	
7,280.00	6,074.91	5,037.97	4,724.63	50.86	27.73	51.91	-1,260.22	-698.12	3,510.76	3,463.80	46.96	74.763	
7,300.00	6,074.72	5,033.80	4,720.87	51.38	27.70	51.80	-1,258.62	-697.29	3,526.22	3,479.15	47.07	74.913	
7,320.00	6,074.52	5,029.63	4,717.11	51.90	27.67	51.70	-1,257.03	-696.45	3,541.72	3,494.54	47.19	75.056	
7,340.00	6,074.33	5,025.46	4,713.35	52.43	27.64	51.60	-1,255.43	-695.62	3,557.26	3,509.96	47.30	75.203	
7,360.00	6,074.13	5,021.29	4,709.59	52.96	27.61	51.50	-1,253.83	-694.79	3,572.85	3,525.43	47.41	75.353	
7,380.00	6,073.94	5,017.12	4,705.83	53.48	27.58	51.40	-1,252.23	-693.95	3,588.46	3,540.94	47.52	75.507	
7,400.00	6,073.74	5,012.95	4,702.07	54.01	27.55	51.30	-1,250.63	-693.12	3,604.12	3,556.49	47.63	75.664	
7,420.00	6,073.55	5,008.78	4,698.31	54.54	27.52	51.20	-1,249.03	-692.29	3,619.82	3,572.07	47.74	75.816	
7,440.00	6,073.35	5,004.61	4,694.55	55.07	27.49	51.10	-1,247.43	-691.46	3,635.55	3,587.70	47.85	75.972	
7,460.00	6,073.16	5,000.44	4,690.79	55.61	27.46	51.00	-1,245.83	-690.62	3,651.32	3,603.36	47.96	76.130	
7,480.00	6,072.96	4,996.27	4,687.03	56.14	27.43	50.90	-1,244.23	-689.79	3,667.13	3,619.06	48.07	76.292	
7,500.00	6,072.77	4,992.10	4,683.27	56.67	27.40	50.80	-1,242.63	-688.96	3,682.97	3,634.80	48.17	76.457	
7,520.00	6,072.57	4,987.93	4,679.51	57.21	27.37	50.70	-1,241.03	-688.12	3,698.85	3,650.57	48.28	76.617	
7,540.00	6,072.38	4,983.76	4,675.75	57.75	27.34	50.60	-1,239.43	-687.29	3,714.77	3,666.38	48.38	76.781	
7,560.00	6,072.18	4,979.59	4,671.99	58.29	27.31	50.50	-1,237.83	-686.46	3,730.71	3,682.23	48.48	76.948	
7,580.00	6,071.99	4,975.42	4,668.23	58.83	27.28	50.40	-1,236.23	-685.63	3,746.70	3,698.11	48.58	77.118	
7,600.00	6,071.79	4,971.25	4,664.47	59.37	27.25	50.30	-1,234.63	-684.79	3,762.71	3,714.03	48.68	77.291	
7,620.00	6,071.60	4,967.08	4,660.71	59.92	27.22	50.20	-1,233.04	-683.96	3,778.76	3,729.98	48.78	77.460	
7,640.00	6,071.40	4,962.91	4,656.95	60.46	27.19	50.10	-1,231.44	-683.13	3,794.85	3,745.96	48.88	77.632	
7,660.00	6,071.21	4,958.74	4,653.19	61.01	27.16	50.00	-1,229.84	-682.29	3,810.96	3,761.98	48.98	77.808	
7,680.00	6,071.01	4,954.57	4,649.43	61.55	27.13	49.90	-1,228.24	-681.46	3,827.11	3,778.03	49.07	77.986	
7,700.00	6,070.82	4,950.40	4,645.67	62.10	27.10	49.80	-1,226.64	-680.63	3,843.29	3,794.12	49.17	78.167	
7,720.00	6,070.62	4,946.23	4,641.91	62.65	27.07	49.70	-1,225.04	-679.80	3,859.50	3,810.23	49.26	78.345	
7,740.00	6,070.43	4,942.06	4,638.15	63.19	27.04	49.61	-1,223.44	-678.96	3,875.74	3,826.38	49.36	78.525	
7,760.00	6,070.23	4,937.89	4,634.39	63.74	27.01	49.51	-1,221.84	-678.13	3,892.01	3,842.56	49.45	78.709	
7,780.00	6,070.04	4,933.72	4,630.63	64.29	26.98	49.41	-1,220.24	-677.30	3,908.31	3,858.77	49.54	78.895	
7,800.00	6,069.85	4,929.55	4,626.87	64.84	26.95	49.31	-1,218.64	-676.46	3,924.64	3,875.02	49.63	79.084	
7,820.00	6,069.65	4,925.38	4,623.11	65.40	26.92	49.21	-1,217.04	-675.63	3,941.01	3,891.29	49.72	79.270	
7,840.00	6,069.46	4,921.21	4,619.35	65.95	26.89	49.11	-1,215.44	-674.80	3,957.40	3,907.59	49.80	79.459	
7,860.00	6,069.26	4,917.04	4,615.59	66.51	26.86	49.01	-1,213.84	-673.97	3,973.81	3,923.92	49.89	79.651	
7,880.00	6,069.07	4,912.87	4,611.83	67.06	26.83	48.92	-1,212.24	-673.13	3,990.26	3,940.29	49.98	79.845	
7,900.00	6,068.87	4,908.70	4,608.07	67.61	26.80	48.82	-1,210.65	-672.30	4,006.74	3,956.68	50.06	80.042	
7,920.00	6,068.68	4,904.53	4,604.31	68.17	26.77	48.72	-1,209.05	-671.47	4,023.24	3,973.10	50.14	80.236	
7,940.00	6,068.48	4,900.36	4,600.55	68.73	26.74	48.62	-1,207.45	-670.63	4,039.77	3,989.54	50.23	80.433	
7,960.00	6,068.29	4,896.19	4,596.79	69.29	26.71	48.52	-1,205.85	-669.80	4,056.33	4,006.02	50.31	80.633	
7,980.00	6,068.09	4,892.02	4,593.03	69.84	26.68	48.43	-1,204.25	-668.97	4,072.91	4,022.52	50.39	80.835	
8,000.00	6,067.90	4,887.85	4,589.27	70.40	26.65	48.33	-1,202.65	-668.14	4,089.52	4,039.06	50.46	81.039	
8,020.00	6,067.70	4,883.68	4,585.51	70.96	26.62	48.23	-1,201.05	-667.30	4,106.16	4,055.61	50.54	81.242	
8,040.00	6,067.51	4,879.51	4,581.75	71.52	26.59	48.14	-1,199.45	-666.47	4,122.82	4,072.20	50.62	81.446	
8,060.00	6,067.31	4,875.34	4,577.99	72.08	26.56	48.04	-1,197.85	-665.64	4,139.51	4,088.81	50.70	81.654	
8,080.00	6,067.12	4,871.17	4,574.23	72.64	26.53	47.94	-1,196.25	-664.80	4,156.22	4,105.45	50.77	81.863	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,100.00	6,066.92	4,867.00	4,570.47	73.20	26.50	47.84	-1,194.65	-663.97	4,172.95	4,122.11	50.84	82.075	
8,120.00	6,066.73	4,862.83	4,566.71	73.77	26.47	47.75	-1,193.05	-663.14	4,189.72	4,138.80	50.92	82.285	
8,140.00	6,066.53	4,858.66	4,562.95	74.33	26.44	47.65	-1,191.45	-662.31	4,206.50	4,155.51	50.99	82.498	
8,160.00	6,066.34	4,854.49	4,559.19	74.90	26.41	47.55	-1,189.85	-661.47	4,223.31	4,172.25	51.06	82.712	
8,180.00	6,066.14	4,850.32	4,555.43	75.46	26.38	47.46	-1,188.25	-660.64	4,240.14	4,189.01	51.13	82.929	
8,200.00	6,065.95	4,846.15	4,551.67	76.02	26.35	47.36	-1,186.66	-659.81	4,257.00	4,205.80	51.20	83.148	
8,220.00	6,065.75	4,841.98	4,547.91	76.59	26.32	47.27	-1,185.06	-658.97	4,273.88	4,222.61	51.27	83.366	
8,240.00	6,065.56	4,837.81	4,544.15	77.16	26.29	47.17	-1,183.46	-658.14	4,290.78	4,239.45	51.33	83.586	
8,260.00	6,065.36	4,833.64	4,540.39	77.72	26.26	47.07	-1,181.86	-657.31	4,307.71	4,256.31	51.40	83.808	
8,280.00	6,065.17	4,829.47	4,536.63	78.29	26.23	46.98	-1,180.26	-656.48	4,324.65	4,273.19	51.46	84.032	
8,300.00	6,064.97	4,825.30	4,532.87	78.85	26.20	46.88	-1,178.66	-655.64	4,341.62	4,290.09	51.53	84.258	
8,320.00	6,064.78	4,821.13	4,529.11	79.42	26.17	46.79	-1,177.06	-654.81	4,358.61	4,307.02	51.59	84.483	
8,340.00	6,064.59	4,816.96	4,525.35	79.99	26.14	46.69	-1,175.46	-653.98	4,375.62	4,323.97	51.65	84.710	
8,360.00	6,064.39	4,812.79	4,521.59	80.56	26.11	46.59	-1,173.86	-653.14	4,392.66	4,340.94	51.72	84.939	
8,380.00	6,064.20	4,808.62	4,517.83	81.13	26.08	46.50	-1,172.26	-652.31	4,409.71	4,357.94	51.78	85.170	
8,400.00	6,064.00	4,804.45	4,514.07	81.70	26.05	46.40	-1,170.66	-651.48	4,426.79	4,374.95	51.83	85.403	
8,420.00	6,063.81	4,800.28	4,510.31	82.27	26.02	46.31	-1,169.06	-650.65	4,443.88	4,391.99	51.89	85.635	
8,440.00	6,063.61	4,796.11	4,506.55	82.84	25.99	46.21	-1,167.46	-649.81	4,461.00	4,409.05	51.95	85.869	
8,460.00	6,063.42	4,791.94	4,502.79	83.41	25.96	46.12	-1,165.86	-648.98	4,478.13	4,426.13	52.01	86.104	
8,480.00	6,063.22	4,787.77	4,499.03	83.98	25.93	46.03	-1,164.27	-648.15	4,495.29	4,443.23	52.06	86.342	
8,500.00	6,063.03	4,783.60	4,495.27	84.55	25.90	45.93	-1,162.67	-647.31	4,512.46	4,460.35	52.12	86.582	
8,520.00	6,062.83	4,779.43	4,491.51	85.12	25.87	45.84	-1,161.07	-646.48	4,529.66	4,477.49	52.17	86.820	
8,540.00	6,062.64	4,775.26	4,487.75	85.69	25.84	45.74	-1,159.47	-645.65	4,546.87	4,494.65	52.23	87.061	
8,560.00	6,062.44	4,771.09	4,483.99	86.27	25.81	45.65	-1,157.87	-644.82	4,564.10	4,511.83	52.28	87.303	
8,580.00	6,062.25	4,766.92	4,480.23	86.84	25.78	45.55	-1,156.27	-643.98	4,581.36	4,529.03	52.33	87.547	
8,600.00	6,062.05	4,762.75	4,476.47	87.41	25.75	45.46	-1,154.67	-643.15	4,598.63	4,546.25	52.38	87.793	
8,620.00	6,061.86	4,758.58	4,472.71	87.99	25.72	45.37	-1,153.07	-642.32	4,615.91	4,563.48	52.43	88.038	
8,640.00	6,061.66	4,754.41	4,468.95	88.56	25.69	45.27	-1,151.47	-641.48	4,633.22	4,580.74	52.48	88.285	
8,660.00	6,061.47	4,750.24	4,465.19	89.13	25.66	45.18	-1,149.87	-640.65	4,650.54	4,598.01	52.53	88.534	
8,680.00	6,061.27	4,746.07	4,461.43	89.71	25.63	45.08	-1,148.27	-639.82	4,667.88	4,615.31	52.58	88.785	
8,700.00	6,061.08	4,741.90	4,457.67	90.28	25.60	44.99	-1,146.67	-638.99	4,685.24	4,632.62	52.62	89.037	
8,720.00	6,060.88	4,737.73	4,453.91	90.86	25.57	44.90	-1,145.07	-638.15	4,702.62	4,649.95	52.67	89.288	
8,740.00	6,060.69	4,733.56	4,450.15	91.43	25.54	44.81	-1,143.47	-637.32	4,720.01	4,667.30	52.71	89.542	
8,760.00	6,060.49	4,729.39	4,446.39	92.01	25.51	44.71	-1,141.87	-636.49	4,737.42	4,684.67	52.76	89.796	
8,780.00	6,060.30	4,725.22	4,442.63	92.59	25.48	44.62	-1,140.28	-635.65	4,754.85	4,702.05	52.80	90.053	
8,800.00	6,060.10	4,721.05	4,438.87	93.16	25.45	44.53	-1,138.68	-634.82	4,772.29	4,719.45	52.84	90.311	
8,820.00	6,059.91	4,716.88	4,435.11	93.74	25.42	44.43	-1,137.08	-633.99	4,789.75	4,736.87	52.89	90.569	
8,840.00	6,059.71	4,712.71	4,431.35	94.32	25.39	44.34	-1,135.48	-633.16	4,807.23	4,754.30	52.93	90.828	
8,860.00	6,059.52	4,708.54	4,427.59	94.89	25.36	44.25	-1,133.88	-632.32	4,824.72	4,771.76	52.97	91.089	
8,880.00	6,059.33	4,704.37	4,423.83	95.47	25.33	44.16	-1,132.28	-631.49	4,842.23	4,789.22	53.01	91.352	
8,900.00	6,059.13	4,700.20	4,420.07	96.05	25.30	44.06	-1,130.68	-630.66	4,859.75	4,806.71	53.04	91.616	
8,920.00	6,058.94	4,696.03	4,416.31	96.63	25.27	43.97	-1,129.08	-629.82	4,877.29	4,824.21	53.08	91.879	
8,940.00	6,058.74	4,691.86	4,412.55	97.20	25.24	43.88	-1,127.48	-628.99	4,894.85	4,841.73	53.12	92.145	
8,960.00	6,058.55	4,687.69	4,408.79	97.78	25.21	43.79	-1,125.88	-628.16	4,912.42	4,859.26	53.16	92.411	
8,980.00	6,058.35	4,683.52	4,405.03	98.36	25.18	43.70	-1,124.28	-627.33	4,930.00	4,876.81	53.19	92.680	
9,000.00	6,058.16	4,679.35	4,401.27	98.94	25.15	43.61	-1,122.68	-626.49	4,947.60	4,894.37	53.23	92.949	
9,020.00	6,057.96	4,675.18	4,397.51	99.52	25.12	43.51	-1,121.08	-625.66	4,965.21	4,911.95	53.26	93.219	
9,040.00	6,057.77	4,671.01	4,393.75	100.10	25.09	43.42	-1,119.48	-624.83	4,982.84	4,929.54	53.30	93.489	
9,060.00	6,057.57	4,666.84	4,389.99	100.68	25.06	43.33	-1,117.89	-623.99	5,000.49	4,947.15	53.33	93.762	
9,080.00	6,057.38	4,662.67	4,386.23	101.26	25.03	43.24	-1,116.29	-623.16	5,018.14	4,964.78	53.36	94.036	
9,100.00	6,057.18	4,658.50	4,382.47	101.84	25.00	43.15	-1,114.69	-622.33	5,035.81	4,982.42	53.40	94.311	
9,120.00	6,056.99	4,654.33	4,378.71	102.42	24.97	43.06	-1,113.09	-621.50	5,053.50	5,000.07	53.43	94.586	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,140.00	6,056.79	4,650.16	4,374.95	103.00	24.94	42.97	-1,111.49	-620.66	5,071.20	5,017.74	53.46	94.862	
9,160.00	6,056.60	4,645.99	4,371.19	103.58	24.91	42.88	-1,109.89	-619.83	5,088.91	5,035.42	53.49	95.140	
9,180.00	6,056.40	4,641.82	4,367.43	104.16	24.88	42.79	-1,108.29	-619.00	5,106.64	5,053.12	53.52	95.420	
9,200.00	6,056.21	4,637.65	4,363.67	104.74	24.85	42.70	-1,106.69	-618.16	5,124.38	5,070.83	53.55	95.700	
9,220.00	6,056.01	4,633.48	4,359.91	105.32	24.82	42.61	-1,105.09	-617.33	5,142.13	5,088.55	53.57	95.981	
9,240.00	6,055.82	4,629.31	4,356.15	105.90	24.79	42.52	-1,103.49	-616.50	5,159.89	5,106.29	53.60	96.262	
9,260.00	6,055.62	4,625.14	4,352.39	106.49	24.76	42.43	-1,101.89	-615.67	5,177.67	5,124.04	53.63	96.546	
9,280.00	6,055.43	4,620.97	4,348.63	107.07	24.73	42.34	-1,100.29	-614.83	5,195.46	5,141.81	53.66	96.830	
9,300.00	6,055.23	4,616.80	4,344.87	107.65	24.70	42.25	-1,098.69	-614.00	5,213.27	5,159.59	53.68	97.116	
9,320.00	6,055.04	4,612.63	4,341.11	108.23	24.67	42.16	-1,097.09	-613.17	5,231.08	5,177.38	53.71	97.402	
9,340.00	6,054.84	4,608.46	4,337.35	108.81	24.64	42.07	-1,095.50	-612.33	5,248.91	5,195.18	53.73	97.689	
9,360.00	6,054.65	4,604.29	4,333.59	109.40	24.61	41.98	-1,093.90	-611.50	5,266.76	5,213.00	53.75	97.978	
9,380.00	6,054.45	4,600.12	4,329.83	109.98	24.58	41.89	-1,092.30	-610.67	5,284.61	5,230.83	53.78	98.267	
9,400.00	6,054.26	4,595.95	4,326.07	110.56	24.55	41.80	-1,090.70	-609.83	5,302.47	5,248.67	53.80	98.558	
9,420.00	6,054.07	4,591.78	4,322.31	111.14	24.52	41.71	-1,089.10	-609.00	5,320.35	5,266.53	53.82	98.849	
9,440.00	6,053.87	4,587.61	4,318.55	111.73	24.49	41.62	-1,087.50	-608.17	5,338.24	5,284.40	53.84	99.141	
9,460.00	6,053.68	4,583.44	4,314.79	112.31	24.46	41.54	-1,085.90	-607.34	5,356.14	5,302.28	53.87	99.435	
9,480.00	6,053.48	4,579.27	4,311.03	112.89	24.43	41.45	-1,084.30	-606.50	5,374.05	5,320.17	53.89	99.730	
9,500.00	6,053.29	4,575.10	4,307.27	113.48	24.40	41.36	-1,082.70	-605.67	5,391.98	5,338.07	53.91	100.026	
9,520.00	6,053.09	4,570.93	4,303.51	114.06	24.37	41.27	-1,081.10	-604.84	5,409.91	5,355.99	53.93	100.322	
9,540.00	6,052.90	4,566.76	4,299.75	114.65	24.34	41.18	-1,079.50	-604.00	5,427.86	5,373.92	53.94	100.619	
9,560.00	6,052.70	4,562.59	4,295.99	115.23	24.31	41.10	-1,077.90	-603.17	5,445.82	5,391.85	53.96	100.917	
9,580.00	6,052.51	4,558.42	4,292.23	115.81	24.28	41.01	-1,076.30	-602.34	5,463.79	5,409.81	53.98	101.217	
9,600.00	6,052.31	4,554.25	4,288.47	116.40	24.25	40.92	-1,074.70	-601.51	5,481.77	5,427.77	54.00	101.518	
9,620.00	6,052.12	4,550.08	4,284.71	116.98	24.22	40.83	-1,073.10	-600.67	5,499.76	5,445.74	54.02	101.819	
9,640.00	6,051.92	4,545.91	4,280.95	117.57	24.19	40.74	-1,071.51	-599.84	5,517.76	5,463.73	54.03	102.121	
9,660.00	6,051.73	4,541.74	4,277.19	118.15	24.16	40.66	-1,069.91	-599.01	5,535.77	5,481.72	54.05	102.424	
9,680.00	6,051.53	4,537.57	4,273.43	118.74	24.13	40.57	-1,068.31	-598.17	5,553.79	5,499.73	54.06	102.729	
9,700.00	6,051.34	4,533.40	4,269.67	119.32	24.10	40.48	-1,066.71	-597.34	5,571.82	5,517.75	54.08	103.035	
9,720.00	6,051.14	4,529.23	4,265.91	119.91	24.07	40.40	-1,065.11	-596.51	5,589.87	5,535.77	54.09	103.340	
9,740.00	6,050.95	4,525.06	4,262.15	120.49	24.04	40.31	-1,063.51	-595.68	5,607.92	5,553.81	54.11	103.647	
9,760.00	6,050.75	4,520.89	4,258.39	121.08	24.01	40.22	-1,061.91	-594.84	5,625.98	5,571.86	54.12	103.955	
9,780.00	6,050.56	4,516.72	4,254.63	121.67	23.98	40.14	-1,060.31	-594.01	5,644.06	5,589.92	54.13	104.265	
9,800.00	6,050.36	4,512.55	4,250.87	122.25	23.95	40.05	-1,058.71	-593.18	5,662.14	5,607.99	54.14	104.575	
9,820.00	6,050.17	4,508.38	4,247.11	122.84	23.93	39.96	-1,057.11	-592.34	5,680.23	5,626.07	54.16	104.885	
9,840.00	6,049.97	4,504.21	4,243.35	123.42	23.90	39.88	-1,055.51	-591.51	5,698.33	5,644.16	54.17	105.197	
9,860.00	6,049.78	4,500.04	4,239.59	124.01	23.87	39.79	-1,053.91	-590.68	5,716.44	5,662.27	54.18	105.510	
9,880.00	6,049.58	4,495.87	4,235.83	124.60	23.84	39.71	-1,052.31	-589.85	5,734.57	5,680.38	54.19	105.824	
9,900.00	6,049.39	4,491.70	4,232.07	125.18	23.81	39.62	-1,050.71	-589.01	5,752.70	5,698.50	54.20	106.139	
9,920.00	6,049.19	4,487.53	4,228.31	125.77	23.78	39.54	-1,049.12	-588.18	5,770.84	5,716.63	54.21	106.454	
9,940.00	6,049.00	4,483.36	4,224.55	126.35	23.75	39.45	-1,047.52	-587.35	5,788.99	5,734.77	54.22	106.770	
9,960.00	6,048.80	4,479.19	4,220.79	126.94	23.72	39.36	-1,045.92	-586.51	5,807.15	5,752.92	54.23	107.087	
9,980.00	6,048.61	4,475.02	4,217.03	127.53	23.69	39.28	-1,044.32	-585.68	5,825.31	5,771.08	54.24	107.405	
10,000.00	6,048.42	4,470.85	4,213.27	128.11	23.66	39.19	-1,042.72	-584.85	5,843.49	5,789.25	54.24	107.725	
10,020.00	6,048.22	4,466.68	4,209.51	128.70	23.63	39.11	-1,041.12	-584.02	5,861.68	5,807.42	54.25	108.044	
10,040.00	6,048.03	4,462.51	4,205.75	129.29	23.60	39.02	-1,039.52	-583.18	5,879.87	5,825.61	54.26	108.365	
10,060.00	6,047.83	4,458.34	4,201.99	129.88	23.57	38.94	-1,037.92	-582.35	5,898.07	5,843.81	54.27	108.687	
10,080.00	6,047.64	4,454.17	4,198.23	130.46	23.54	38.86	-1,036.32	-581.52	5,916.29	5,862.01	54.27	109.010	
10,100.00	6,047.44	4,450.00	4,194.47	131.05	23.51	38.77	-1,034.72	-580.68	5,934.51	5,880.23	54.28	109.334	
10,120.00	6,047.25	4,445.83	4,190.71	131.64	23.48	38.69	-1,033.12	-579.85	5,952.73	5,898.45	54.28	109.657	
10,140.00	6,047.05	4,441.66	4,186.95	132.23	23.45	38.60	-1,031.52	-579.02	5,970.97	5,916.68	54.29	109.982	
10,160.00	6,046.86	4,437.49	4,183.19	132.81	23.42	38.52	-1,029.92	-578.19	5,989.22	5,934.92	54.30	110.309	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,180.00	6,046.66	4,433.32	4,179.43	133.40	23.39	38.44	-1,028.32	-577.35	6,007.47	5,953.17	54.30	110.636	
10,200.00	6,046.47	4,429.15	4,175.67	133.99	23.36	38.35	-1,026.72	-576.52	6,025.73	5,971.43	54.30	110.964	
10,220.00	6,046.27	4,424.98	4,171.91	134.58	23.33	38.27	-1,025.13	-575.69	6,044.00	5,989.70	54.31	111.292	
10,240.00	6,046.08	4,420.81	4,168.15	135.17	23.30	38.18	-1,023.53	-574.85	6,062.28	6,007.97	54.31	111.622	
10,260.00	6,045.88	4,416.64	4,164.39	135.75	23.27	38.10	-1,021.93	-574.02	6,080.57	6,026.25	54.31	111.952	
10,280.00	6,045.69	4,412.47	4,160.63	136.34	23.24	38.02	-1,020.33	-573.19	6,098.86	6,044.55	54.32	112.284	
10,300.00	6,045.49	4,408.30	4,156.87	136.93	23.21	37.93	-1,018.73	-572.36	6,117.17	6,062.85	54.32	112.617	
10,320.00	6,045.30	4,404.13	4,153.11	137.52	23.18	37.85	-1,017.13	-571.52	6,135.48	6,081.15	54.32	112.949	
10,340.00	6,045.10	4,399.96	4,149.35	138.11	23.15	37.77	-1,015.53	-570.69	6,153.79	6,099.47	54.32	113.283	
10,360.00	6,044.91	4,395.79	4,145.59	138.70	23.12	37.69	-1,013.93	-569.86	6,172.12	6,117.79	54.32	113.617	
10,380.00	6,044.71	4,391.62	4,141.83	139.28	23.09	37.60	-1,012.33	-569.02	6,190.45	6,136.13	54.32	113.953	
10,400.00	6,044.52	4,387.45	4,138.07	139.87	23.06	37.52	-1,010.73	-568.19	6,208.79	6,154.47	54.32	114.290	
10,420.00	6,044.32	4,383.28	4,134.31	140.46	23.03	37.44	-1,009.13	-567.36	6,227.14	6,172.81	54.33	114.627	
10,440.00	6,044.13	4,379.11	4,130.55	141.05	23.00	37.36	-1,007.53	-566.53	6,245.49	6,191.17	54.33	114.964	
10,460.00	6,043.93	4,374.94	4,126.79	141.64	22.97	37.28	-1,005.93	-565.69	6,263.86	6,209.53	54.33	115.303	
10,480.00	6,043.74	4,370.77	4,123.03	142.23	22.94	37.19	-1,004.33	-564.86	6,282.23	6,227.90	54.32	115.643	
10,500.00	6,043.54	4,366.60	4,119.27	142.82	22.91	37.11	-1,002.74	-564.03	6,300.60	6,246.28	54.32	115.984	
10,520.00	6,043.35	4,362.43	4,115.51	143.41	22.88	37.03	-1,001.14	-563.19	6,318.99	6,264.66	54.32	116.325	
10,540.00	6,043.16	4,358.26	4,111.75	144.00	22.85	36.95	-999.54	-562.36	6,337.38	6,283.06	54.32	116.667	
10,560.00	6,042.96	4,354.09	4,107.99	144.59	22.82	36.87	-997.94	-561.53	6,355.77	6,301.46	54.32	117.010	
10,580.00	6,042.77	4,349.92	4,104.23	145.18	22.79	36.79	-996.34	-560.70	6,374.18	6,319.86	54.32	117.354	
10,600.00	6,042.57	4,345.75	4,100.47	145.77	22.76	36.71	-994.74	-559.86	6,392.59	6,338.28	54.31	117.699	
10,620.00	6,042.38	4,341.58	4,096.71	146.36	22.73	36.62	-993.14	-559.03	6,411.01	6,356.70	54.31	118.044	
10,640.00	6,042.18	4,337.41	4,092.95	146.95	22.70	36.54	-991.54	-558.20	6,429.43	6,375.13	54.31	118.390	
10,660.00	6,041.99	4,333.24	4,089.19	147.54	22.67	36.46	-989.94	-557.36	6,447.87	6,393.56	54.30	118.737	
10,680.00	6,041.79	4,329.07	4,085.43	148.13	22.64	36.38	-988.34	-556.53	6,466.30	6,412.00	54.30	119.085	
10,700.00	6,041.60	4,324.90	4,081.67	148.71	22.61	36.30	-986.74	-555.70	6,484.75	6,430.45	54.30	119.434	
10,720.00	6,041.40	4,320.73	4,077.91	149.30	22.58	36.22	-985.14	-554.87	6,503.20	6,448.91	54.29	119.783	
10,740.00	6,041.21	4,316.56	4,074.15	149.90	22.55	36.14	-983.54	-554.03	6,521.66	6,467.37	54.29	120.133	
10,760.00	6,041.01	4,312.39	4,070.39	150.49	22.52	36.06	-981.94	-553.20	6,540.12	6,485.84	54.28	120.484	
10,780.00	6,040.82	4,308.22	4,066.63	151.08	22.49	35.98	-980.34	-552.37	6,558.59	6,504.32	54.28	120.836	
10,800.00	6,040.62	4,304.05	4,062.87	151.67	22.46	35.90	-978.75	-551.53	6,577.07	6,522.80	54.27	121.189	
10,820.00	6,040.43	4,299.88	4,059.11	152.26	22.44	35.82	-977.15	-550.70	6,595.56	6,541.29	54.27	121.542	
10,840.00	6,040.23	4,295.71	4,055.35	152.85	22.41	35.74	-975.55	-549.87	6,614.04	6,559.79	54.26	121.896	
10,860.00	6,040.04	4,291.54	4,051.59	153.44	22.38	35.66	-973.95	-549.04	6,632.54	6,578.29	54.25	122.251	
10,880.00	6,039.84	4,287.37	4,047.83	154.03	22.35	35.58	-972.35	-548.20	6,651.04	6,596.80	54.25	122.607	
10,900.00	6,039.65	4,283.20	4,044.07	154.62	22.32	35.51	-970.75	-547.37	6,669.55	6,615.31	54.24	122.964	
10,920.00	6,039.45	4,279.03	4,040.31	155.21	22.29	35.43	-969.15	-546.54	6,688.06	6,633.83	54.23	123.320	
10,940.00	6,039.26	4,274.86	4,036.55	155.80	22.26	35.35	-967.55	-545.70	6,706.58	6,652.36	54.23	123.678	
10,960.00	6,039.06	4,270.69	4,032.79	156.39	22.23	35.27	-965.95	-544.87	6,725.11	6,670.89	54.22	124.037	
10,980.00	6,038.87	4,266.52	4,029.03	156.98	22.20	35.19	-964.35	-544.04	6,743.64	6,689.43	54.21	124.397	
11,000.00	6,038.67	4,262.35	4,025.27	157.57	22.17	35.11	-962.75	-543.21	6,762.18	6,707.98	54.20	124.757	
11,020.00	6,038.48	4,258.18	4,021.51	158.16	22.14	35.03	-961.15	-542.37	6,780.72	6,726.53	54.19	125.118	
11,040.00	6,038.28	4,254.01	4,017.75	158.75	22.11	34.96	-959.55	-541.54	6,799.27	6,745.08	54.19	125.480	
11,060.00	6,038.09	4,249.84	4,013.99	159.34	22.08	34.88	-957.95	-540.71	6,817.82	6,763.65	54.18	125.842	
11,080.00	6,037.90	4,245.67	4,010.23	159.94	22.05	34.80	-956.36	-539.87	6,836.38	6,782.22	54.17	126.206	
11,100.00	6,037.70	4,241.50	4,006.47	160.53	22.02	34.72	-954.76	-539.04	6,854.95	6,800.79	54.16	126.571	
11,120.00	6,037.51	4,237.33	4,002.71	161.12	21.99	34.65	-953.16	-538.21	6,873.52	6,819.37	54.15	126.935	
11,140.00	6,037.31	4,233.16	3,998.95	161.71	21.96	34.57	-951.56	-537.38	6,892.10	6,837.96	54.14	127.301	
11,160.00	6,037.12	4,228.99	3,995.19	162.30	21.93	34.49	-949.96	-536.54	6,910.68	6,856.55	54.13	127.667	
11,180.00	6,036.92	4,224.82	3,991.43	162.89	21.90	34.41	-948.36	-535.71	6,929.27	6,875.15	54.12	128.034	
11,200.00	6,036.73	4,220.65	3,987.67	163.48	21.87	34.34	-946.76	-534.88	6,947.86	6,893.75	54.11	128.403	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,220.00	6,036.53	4,216.48	3,983.91	164.07	21.84	34.26	-945.16	-534.04	6,966.46	6,912.36	54.10	128.771	
11,240.00	6,036.34	4,212.31	3,980.15	164.67	21.81	34.18	-943.56	-533.21	6,985.06	6,930.97	54.09	129.140	
11,260.00	6,036.14	4,208.14	3,976.39	165.26	21.78	34.11	-941.96	-532.38	7,003.67	6,949.59	54.08	129.510	
11,280.00	6,035.95	4,203.97	3,972.63	165.85	21.75	34.03	-940.36	-531.55	7,022.28	6,968.22	54.07	129.882	
11,300.00	6,035.75	4,199.80	3,968.87	166.44	21.72	33.95	-938.76	-530.71	7,040.90	6,986.85	54.06	130.254	
11,320.00	6,035.56	4,195.63	3,965.11	167.03	21.69	33.88	-937.16	-529.88	7,059.53	7,005.48	54.04	130.625	
11,340.00	6,035.36	4,191.46	3,961.35	167.62	21.66	33.80	-935.56	-529.05	7,078.16	7,024.12	54.03	130.998	
11,360.00	6,035.17	4,187.29	3,957.59	168.22	21.63	33.72	-933.96	-528.21	7,096.79	7,042.77	54.02	131.372	
11,380.00	6,034.97	4,183.12	3,953.83	168.81	21.60	33.65	-932.37	-527.38	7,115.43	7,061.42	54.01	131.747	
11,400.00	6,034.78	4,178.95	3,950.07	169.40	21.57	33.57	-930.77	-526.55	7,134.07	7,080.08	54.00	132.122	
11,420.00	6,034.58	4,174.78	3,946.31	169.99	21.54	33.50	-929.17	-525.72	7,152.72	7,098.74	53.98	132.498	
11,440.00	6,034.39	4,170.61	3,942.55	170.58	21.51	33.42	-927.57	-524.88	7,171.37	7,117.40	53.97	132.874	
11,460.00	6,034.19	4,166.44	3,938.79	171.18	21.48	33.35	-925.97	-524.05	7,190.03	7,136.07	53.96	133.252	
11,480.00	6,034.00	4,162.27	3,935.03	171.77	21.46	33.27	-924.37	-523.22	7,208.70	7,154.75	53.95	133.630	
11,500.00	6,033.80	4,158.10	3,931.27	172.36	21.43	33.20	-922.77	-522.38	7,227.36	7,173.43	53.93	134.009	
11,520.00	6,033.61	4,153.93	3,927.51	172.95	21.40	33.12	-921.17	-521.55	7,246.04	7,192.12	53.92	134.389	
11,540.00	6,033.41	4,149.76	3,923.75	173.55	21.37	33.05	-919.57	-520.72	7,264.71	7,210.81	53.91	134.769	
11,560.00	6,033.22	4,145.59	3,919.99	174.14	21.34	32.97	-917.97	-519.89	7,283.40	7,229.50	53.89	135.150	
11,580.00	6,033.02	4,141.42	3,916.23	174.73	21.31	32.90	-916.37	-519.05	7,302.08	7,248.21	53.88	135.532	
11,600.00	6,032.83	4,137.25	3,912.47	175.32	21.28	32.82	-914.77	-518.22	7,320.77	7,266.91	53.86	135.915	
11,620.00	6,032.64	4,133.08	3,908.71	175.91	21.25	32.75	-913.17	-517.39	7,339.47	7,285.62	53.85	136.297	
11,640.00	6,032.44	4,128.91	3,904.95	176.51	21.22	32.67	-911.57	-516.55	7,358.17	7,304.34	53.83	136.681	
11,660.00	6,032.25	4,124.74	3,901.19	177.10	21.19	32.60	-909.98	-515.72	7,376.87	7,323.05	53.82	137.066	
11,680.00	6,032.05	4,120.57	3,897.43	177.69	21.16	32.53	-908.38	-514.89	7,395.58	7,341.78	53.81	137.451	
11,700.00	6,031.86	4,116.40	3,893.67	178.28	21.13	32.45	-906.78	-514.06	7,414.30	7,360.51	53.79	137.838	
11,720.00	6,031.66	4,112.23	3,889.91	178.88	21.10	32.38	-905.18	-513.22	7,433.01	7,379.24	53.78	138.224	
11,740.00	6,031.47	4,108.06	3,886.15	179.47	21.07	32.31	-903.58	-512.39	7,451.74	7,397.98	53.76	138.611	
11,760.00	6,031.27	4,103.89	3,882.39	180.06	21.04	32.23	-901.98	-511.56	7,470.46	7,416.72	53.74	139.000	
11,780.00	6,031.08	4,099.72	3,878.63	180.65	21.01	32.16	-900.38	-510.72	7,489.19	7,435.47	53.73	139.389	
11,800.00	6,030.88	4,095.55	3,874.87	181.25	20.98	32.09	-898.78	-509.89	7,507.93	7,454.22	53.71	139.778	
11,820.00	6,030.69	4,091.38	3,871.11	181.84	20.95	32.01	-897.18	-509.06	7,526.67	7,472.97	53.70	140.168	
11,840.00	6,030.49	4,087.21	3,867.35	182.43	20.92	31.94	-895.58	-508.23	7,545.41	7,491.73	53.68	140.559	
11,860.00	6,030.30	4,083.04	3,863.59	183.03	20.89	31.87	-893.98	-507.39	7,564.16	7,510.49	53.67	140.950	
11,880.00	6,030.10	4,078.86	3,859.83	183.62	20.86	31.79	-892.38	-506.56	7,582.91	7,529.26	53.65	141.343	
11,900.00	6,029.91	4,074.69	3,856.07	184.21	20.83	31.72	-890.78	-505.73	7,601.67	7,548.03	53.63	141.736	
11,920.00	6,029.71	4,070.52	3,852.31	184.80	20.80	31.65	-889.18	-504.89	7,620.43	7,566.81	53.62	142.129	
11,940.00	6,029.52	4,066.35	3,848.55	185.40	20.77	31.58	-887.58	-504.06	7,639.19	7,585.59	53.60	142.523	
11,960.00	6,029.32	4,062.18	3,844.79	185.99	20.74	31.51	-885.99	-503.23	7,657.96	7,604.37	53.58	142.918	
11,980.00	6,029.13	4,058.01	3,841.03	186.58	20.71	31.43	-884.39	-502.39	7,676.73	7,623.16	53.57	143.314	
12,000.00	6,028.93	4,053.84	3,837.27	187.18	20.68	31.36	-882.79	-501.56	7,695.50	7,641.96	53.55	143.711	
12,020.00	6,028.74	4,049.67	3,833.51	187.77	20.65	31.29	-881.19	-500.73	7,714.28	7,660.75	53.53	144.107	
12,040.00	6,028.54	4,045.50	3,829.75	188.36	20.63	31.22	-879.59	-499.90	7,733.07	7,679.55	53.51	144.505	
12,060.00	6,028.35	4,041.33	3,825.99	188.96	20.60	31.15	-877.99	-499.06	7,751.85	7,698.36	53.50	144.903	
12,080.00	6,028.15	4,037.16	3,822.23	189.55	20.57	31.08	-876.39	-498.23	7,770.65	7,717.17	53.48	145.302	
12,100.00	6,027.96	4,032.99	3,818.47	190.14	20.54	31.00	-874.79	-497.40	7,789.44	7,735.98	53.46	145.702	
12,120.00	6,027.76	4,028.82	3,814.71	190.74	20.51	30.93	-873.19	-496.56	7,808.24	7,754.80	53.44	146.103	
12,140.00	6,027.57	4,024.65	3,810.95	191.33	20.48	30.86	-871.59	-495.73	7,827.04	7,773.62	53.43	146.503	
12,160.00	6,027.37	4,020.48	3,807.19	191.92	20.45	30.79	-869.99	-494.90	7,845.85	7,792.44	53.41	146.905	
12,180.00	6,027.18	4,016.31	3,803.43	192.52	20.42	30.72	-868.39	-494.07	7,864.66	7,811.27	53.39	147.308	
12,200.00	6,026.99	4,012.14	3,799.67	193.11	20.39	30.65	-866.79	-493.23	7,883.47	7,830.10	53.37	147.711	
12,220.00	6,026.79	4,007.97	3,795.91	193.70	20.36	30.58	-865.19	-492.40	7,902.29	7,848.93	53.35	148.115	
12,240.00	6,026.60	4,003.80	3,792.15	194.30	20.33	30.51	-863.60	-491.57	7,921.11	7,867.77	53.33	148.519	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,260.00	6,026.40	3,999.63	3,788.39	194.89	20.30	30.44	-862.00	-490.73	7,939.93	7,886.62	53.32	148.924	
12,280.00	6,026.21	3,995.46	3,784.63	195.48	20.27	30.37	-860.40	-489.90	7,958.76	7,905.46	53.30	149.330	
12,300.00	6,026.01	3,991.29	3,780.87	196.08	20.24	30.30	-858.80	-489.07	7,977.59	7,924.31	53.28	149.736	
12,320.00	6,025.82	3,987.12	3,777.11	196.67	20.21	30.23	-857.20	-488.24	7,996.43	7,943.17	53.26	150.143	
12,340.00	6,025.62	3,982.95	3,773.35	197.26	20.18	30.16	-855.60	-487.40	8,015.26	7,962.02	53.24	150.550	
12,360.00	6,025.43	3,978.78	3,769.59	197.86	20.15	30.09	-854.00	-486.57	8,034.11	7,980.88	53.22	150.958	
12,380.00	6,025.23	3,974.61	3,765.83	198.45	20.12	30.02	-852.40	-485.74	8,052.95	7,999.75	53.20	151.367	
12,400.00	6,025.04	3,970.44	3,762.07	199.05	20.09	29.95	-850.80	-484.90	8,071.80	8,018.62	53.18	151.777	
12,420.00	6,024.84	3,966.27	3,758.31	199.64	20.06	29.88	-849.20	-484.07	8,090.65	8,037.49	53.16	152.187	
12,440.00	6,024.65	3,962.10	3,754.55	200.23	20.03	29.81	-847.60	-483.24	8,109.51	8,056.36	53.14	152.598	
12,460.00	6,024.45	3,957.93	3,750.79	200.83	20.00	29.74	-846.00	-482.41	8,128.36	8,075.24	53.12	153.009	
12,480.00	6,024.26	3,953.76	3,747.03	201.42	19.98	29.68	-844.40	-481.57	8,147.23	8,094.12	53.10	153.422	
12,500.00	6,024.06	3,949.59	3,743.27	202.02	19.95	29.61	-842.80	-480.74	8,166.09	8,113.01	53.08	153.835	
12,520.00	6,023.87	3,945.42	3,739.51	202.61	19.92	29.54	-841.21	-479.91	8,184.96	8,131.90	53.06	154.248	
12,540.00	6,023.67	3,941.25	3,735.75	203.20	19.89	29.47	-839.61	-479.07	8,203.83	8,150.79	53.04	154.662	
12,560.00	6,023.48	3,937.08	3,731.99	203.80	19.86	29.40	-838.01	-478.24	8,222.71	8,169.68	53.02	155.076	
12,580.00	6,023.28	3,932.91	3,728.23	204.39	19.83	29.33	-836.41	-477.41	8,241.58	8,188.58	53.00	155.492	
12,600.00	6,023.09	3,928.74	3,724.47	204.98	19.80	29.27	-834.81	-476.58	8,260.47	8,207.48	52.98	155.908	
12,620.00	6,022.89	3,924.57	3,720.71	205.58	19.77	29.20	-833.21	-475.74	8,279.35	8,226.39	52.96	156.324	
12,640.00	6,022.70	3,920.40	3,716.95	206.17	19.74	29.13	-831.61	-474.91	8,298.24	8,245.30	52.94	156.741	
12,660.00	6,022.50	3,916.23	3,713.19	206.77	19.71	29.06	-830.01	-474.08	8,317.13	8,264.21	52.92	157.159	
12,680.00	6,022.31	3,912.06	3,709.43	207.36	19.68	28.99	-828.41	-473.24	8,336.02	8,283.12	52.90	157.578	
12,700.00	6,022.11	3,907.89	3,705.67	207.96	19.65	28.93	-826.81	-472.41	8,354.92	8,302.04	52.88	157.998	
12,720.00	6,021.92	3,903.72	3,701.91	208.55	19.62	28.86	-825.21	-471.58	8,373.82	8,320.96	52.86	158.417	
12,740.00	6,021.73	3,899.55	3,698.15	209.14	19.59	28.79	-823.61	-470.75	8,392.72	8,339.88	52.84	158.837	
12,760.00	6,021.53	3,895.38	3,694.39	209.74	19.56	28.73	-822.01	-469.91	8,411.63	8,358.81	52.82	159.258	
12,780.00	6,021.34	3,891.21	3,690.63	210.33	19.53	28.66	-820.41	-469.08	8,430.54	8,377.74	52.80	159.680	
12,800.00	6,021.14	3,887.04	3,686.87	210.93	19.50	28.59	-818.81	-468.25	8,449.45	8,396.67	52.78	160.102	
12,820.00	6,020.95	3,882.87	3,683.11	211.52	19.47	28.53	-817.22	-467.41	8,468.36	8,415.61	52.75	160.524	
12,840.00	6,020.75	3,878.70	3,679.35	212.11	19.44	28.46	-815.62	-466.58	8,487.28	8,434.55	52.73	160.947	
12,860.00	6,020.56	3,874.53	3,675.59	212.71	19.41	28.39	-814.02	-465.75	8,506.20	8,453.49	52.71	161.371	
12,880.00	6,020.36	3,870.36	3,671.83	213.30	19.39	28.33	-812.42	-464.92	8,525.13	8,472.43	52.69	161.796	
12,900.00	6,020.17	3,866.19	3,668.07	213.90	19.36	28.26	-810.82	-464.08	8,544.05	8,491.38	52.67	162.221	
12,920.00	6,019.97	3,862.02	3,664.31	214.49	19.33	28.19	-809.22	-463.25	8,562.98	8,510.33	52.65	162.647	
12,940.00	6,019.78	3,857.85	3,660.55	215.09	19.30	28.13	-807.62	-462.42	8,581.91	8,529.29	52.63	163.073	
12,960.00	6,019.58	3,853.68	3,656.79	215.68	19.27	28.06	-806.02	-461.58	8,600.85	8,548.24	52.60	163.500	
12,980.00	6,019.39	3,849.51	3,653.03	216.28	19.24	28.00	-804.42	-460.75	8,619.79	8,567.20	52.58	163.928	
13,000.00	6,019.19	3,845.34	3,649.27	216.87	19.21	27.93	-802.82	-459.92	8,638.73	8,586.16	52.56	164.356	
13,020.00	6,019.00	3,841.17	3,645.51	217.46	19.18	27.87	-801.22	-459.09	8,657.67	8,605.13	52.54	164.785	
13,040.00	6,018.80	3,837.00	3,641.75	218.06	19.15	27.80	-799.62	-458.25	8,676.61	8,624.10	52.52	165.214	
13,060.00	6,018.61	3,832.83	3,637.99	218.65	19.12	27.74	-798.02	-457.42	8,695.56	8,643.07	52.50	165.644	
13,080.00	6,018.41	3,828.66	3,634.23	219.25	19.09	27.67	-796.42	-456.59	8,714.51	8,662.04	52.47	166.074	
13,100.00	6,018.22	3,824.49	3,630.47	219.84	19.06	27.61	-794.83	-455.75	8,733.47	8,681.02	52.45	166.506	
13,120.00	6,018.02	3,820.32	3,626.71	220.44	19.03	27.54	-793.23	-454.92	8,752.43	8,700.00	52.43	166.937	
13,140.00	6,017.83	3,816.15	3,622.95	221.03	19.00	27.48	-791.63	-454.09	8,771.39	8,718.98	52.41	167.370	
13,160.00	6,017.63	3,811.98	3,619.19	221.63	18.97	27.41	-790.03	-453.26	8,790.35	8,737.96	52.39	167.803	
13,180.00	6,017.44	3,807.81	3,615.43	222.22	18.94	27.35	-788.43	-452.42	8,809.31	8,756.95	52.36	168.236	
13,200.00	6,017.24	3,803.64	3,611.67	222.82	18.91	27.28	-786.83	-451.59	8,828.28	8,775.94	52.34	168.671	
13,220.00	6,017.05	3,799.47	3,607.91	223.41	18.88	27.22	-785.23	-450.76	8,847.25	8,794.93	52.32	169.105	
13,240.00	6,016.85	3,795.30	3,604.15	224.01	18.86	27.15	-783.63	-449.92	8,866.22	8,813.93	52.30	169.540	
13,260.00	6,016.66	3,791.13	3,600.39	224.60	18.83	27.09	-782.03	-449.09	8,885.20	8,832.92	52.27	169.976	
13,280.00	6,016.47	3,786.96	3,596.63	225.20	18.80	27.03	-780.43	-448.26	8,904.17	8,851.92	52.25	170.412	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,300.00	6,016.27	3,782.79	3,592.87	225.79	18.77	26.96	-778.83	-447.43	8,923.15	8,870.93	52.23	170.849	
13,320.00	6,016.08	3,778.62	3,589.11	226.38	18.74	26.90	-777.23	-446.59	8,942.14	8,889.93	52.21	171.286	
13,340.00	6,015.88	3,774.45	3,585.35	226.98	18.71	26.83	-775.63	-445.76	8,961.12	8,908.94	52.18	171.724	
13,360.00	6,015.69	3,770.28	3,581.59	227.57	18.68	26.77	-774.03	-444.93	8,980.11	8,927.95	52.16	172.162	
13,380.00	6,015.49	3,766.11	3,577.83	228.17	18.65	26.71	-772.43	-444.09	8,999.10	8,946.96	52.14	172.602	
13,400.00	6,015.30	3,761.94	3,574.07	228.76	18.62	26.64	-770.84	-443.26	9,018.09	8,965.98	52.12	173.042	
13,420.00	6,015.10	3,757.77	3,570.31	229.36	18.59	26.58	-769.24	-442.43	9,037.09	8,984.99	52.09	173.482	
13,440.00	6,014.91	3,753.60	3,566.55	229.95	18.56	26.52	-767.64	-441.60	9,056.08	9,004.01	52.07	173.922	
13,460.00	6,014.71	3,749.43	3,562.79	230.55	18.53	26.46	-766.04	-440.76	9,075.08	9,023.03	52.05	174.364	
13,480.00	6,014.52	3,745.26	3,559.03	231.14	18.50	26.39	-764.44	-439.93	9,094.08	9,042.06	52.02	174.806	
13,500.00	6,014.32	3,741.09	3,555.27	231.74	18.47	26.33	-762.84	-439.10	9,113.09	9,061.09	52.00	175.248	
13,520.00	6,014.13	3,736.92	3,551.51	232.33	18.44	26.27	-761.24	-438.26	9,132.09	9,080.12	51.98	175.691	
13,540.00	6,013.93	3,732.75	3,547.75	232.93	18.41	26.21	-759.64	-437.43	9,151.10	9,099.15	51.96	176.135	
13,560.00	6,013.74	3,728.58	3,543.99	233.52	18.39	26.14	-758.04	-436.60	9,170.11	9,118.18	51.93	176.579	
13,580.00	6,013.54	3,724.41	3,540.23	234.12	18.36	26.08	-756.44	-435.77	9,189.13	9,137.22	51.91	177.024	
13,600.00	6,013.35	3,720.24	3,536.47	234.71	18.33	26.02	-754.84	-434.93	9,208.14	9,156.26	51.89	177.469	
13,620.00	6,013.15	3,716.07	3,532.71	235.31	18.30	25.96	-753.24	-434.10	9,227.16	9,175.30	51.86	177.915	
13,640.00	6,012.96	3,711.90	3,528.95	235.90	18.27	25.90	-751.64	-433.27	9,246.18	9,194.34	51.84	178.361	
13,660.00	6,012.76	3,707.73	3,525.19	236.50	18.24	25.83	-750.04	-432.43	9,265.21	9,213.39	51.82	178.808	
13,680.00	6,012.57	3,703.56	3,521.43	237.09	18.21	25.77	-748.45	-431.60	9,284.23	9,232.44	51.79	179.256	
13,700.00	6,012.37	3,699.39	3,517.67	237.69	18.18	25.71	-746.85	-430.77	9,303.26	9,251.49	51.77	179.704	
13,720.00	6,012.18	3,695.22	3,513.91	238.28	18.15	25.65	-745.25	-429.94	9,322.29	9,270.54	51.75	180.152	
13,740.00	6,011.98	3,691.05	3,510.15	238.88	18.12	25.59	-743.65	-429.10	9,341.32	9,289.59	51.72	180.600	
13,760.00	6,011.79	3,686.88	3,506.39	239.48	18.09	25.53	-742.05	-428.27	9,360.35	9,308.65	51.70	181.050	
13,780.00	6,011.59	3,682.71	3,502.63	240.07	18.06	25.47	-740.45	-427.44	9,379.39	9,327.71	51.68	181.500	
13,800.00	6,011.40	3,678.54	3,498.87	240.67	18.03	25.41	-738.85	-426.60	9,398.43	9,346.77	51.65	181.951	
13,820.00	6,011.21	3,674.37	3,495.11	241.26	18.00	25.35	-737.25	-425.77	9,417.47	9,365.84	51.63	182.401	
13,840.00	6,011.01	3,670.20	3,491.35	241.86	17.98	25.28	-735.65	-424.94	9,436.51	9,384.90	51.61	182.852	
13,860.00	6,010.82	3,666.03	3,487.59	242.45	17.95	25.22	-734.05	-424.11	9,455.55	9,403.97	51.58	183.304	
13,880.00	6,010.62	3,661.86	3,483.83	243.05	17.92	25.16	-732.45	-423.27	9,474.60	9,423.04	51.56	183.757	
13,900.00	6,010.43	3,657.69	3,480.07	243.64	17.89	25.10	-730.85	-422.44	9,493.65	9,442.11	51.54	184.210	
13,920.00	6,010.23	3,653.52	3,476.31	244.24	17.86	25.04	-729.25	-421.61	9,512.70	9,461.19	51.51	184.664	
13,940.00	6,010.04	3,649.35	3,472.55	244.83	17.83	24.98	-727.65	-420.77	9,531.75	9,480.26	51.49	185.118	
13,960.00	6,009.84	3,645.18	3,468.79	245.43	17.80	24.92	-726.05	-419.94	9,550.81	9,499.34	51.47	185.572	
13,980.00	6,009.65	3,641.01	3,465.03	246.02	17.77	24.86	-724.46	-419.11	9,569.86	9,518.42	51.44	186.027	
14,000.00	6,009.45	3,636.84	3,461.27	246.62	17.74	24.80	-722.86	-418.28	9,588.92	9,537.50	51.42	186.483	
14,020.00	6,009.26	3,632.67	3,457.51	247.21	17.71	24.74	-721.26	-417.44	9,607.98	9,556.59	51.40	186.939	
14,040.00	6,009.06	3,628.50	3,453.75	247.81	17.68	24.68	-719.66	-416.61	9,627.05	9,575.67	51.37	187.396	
14,060.00	6,008.87	3,624.33	3,449.99	248.41	17.65	24.62	-718.06	-415.78	9,646.11	9,594.76	51.35	187.853	
14,080.00	6,008.67	3,620.16	3,446.23	249.00	17.62	24.57	-716.46	-414.94	9,665.18	9,613.85	51.33	188.311	
14,100.00	6,008.48	3,615.99	3,442.47	249.60	17.59	24.51	-714.86	-414.11	9,684.25	9,632.94	51.30	188.769	
14,120.00	6,008.28	3,611.82	3,438.71	250.19	17.57	24.45	-713.26	-413.28	9,703.32	9,652.04	51.28	189.228	
14,140.00	6,008.09	3,607.65	3,434.95	250.79	17.54	24.39	-711.66	-412.45	9,722.39	9,671.14	51.25	189.687	
14,160.00	6,007.89	3,603.48	3,431.19	251.38	17.51	24.33	-710.06	-411.61	9,741.46	9,690.23	51.23	190.146	
14,180.00	6,007.70	3,599.31	3,427.43	251.98	17.48	24.27	-708.46	-410.78	9,760.54	9,709.33	51.21	190.607	
14,200.00	6,007.50	3,595.14	3,423.67	252.57	17.45	24.21	-706.86	-409.95	9,779.62	9,728.44	51.18	191.067	
14,220.00	6,007.31	3,590.97	3,419.91	253.17	17.42	24.15	-705.26	-409.11	9,798.70	9,747.54	51.16	191.528	
14,240.00	6,007.11	3,586.80	3,416.15	253.76	17.39	24.10	-703.66	-408.28	9,817.78	9,766.65	51.14	191.989	
14,260.00	6,006.92	3,582.63	3,412.39	254.36	17.36	24.04	-702.07	-407.45	9,836.87	9,785.75	51.11	192.451	
14,280.00	6,006.72	3,578.46	3,408.63	254.96	17.33	23.98	-700.47	-406.62	9,855.95	9,804.86	51.09	192.913	
14,300.00	6,006.53	3,574.29	3,404.87	255.55	17.30	23.92	-698.87	-405.78	9,875.04	9,823.97	51.07	193.376	
14,320.00	6,006.33	3,570.12	3,401.11	256.15	17.27	23.86	-697.27	-404.95	9,894.13	9,843.09	51.04	193.839	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,340.00	6,006.14	3,565.95	3,397.35	256.74	17.24	23.81	-695.67	-404.12	9,913.22	9,862.20	51.02	194.302	
14,360.00	6,005.94	3,561.78	3,393.59	257.34	17.22	23.75	-694.07	-403.28	9,932.32	9,881.32	51.00	194.767	
14,380.00	6,005.75	3,557.61	3,389.83	257.93	17.19	23.69	-692.47	-402.45	9,951.41	9,900.44	50.97	195.231	
14,400.00	6,005.56	3,553.44	3,386.07	258.53	17.16	23.63	-690.87	-401.62	9,970.51	9,919.56	50.95	195.697	
14,420.00	6,005.36	3,549.27	3,382.31	259.13	17.13	23.57	-689.27	-400.79	9,989.61	9,938.68	50.93	196.162	
14,440.00	6,005.17	3,545.10	3,378.55	259.72	17.10	23.52	-687.67	-399.95	10,008.71	9,957.81	50.90	196.628	
14,460.00	6,004.97	3,540.93	3,374.79	260.32	17.07	23.46	-686.07	-399.12	10,027.81	9,976.93	50.88	197.095	
14,480.00	6,004.78	3,536.76	3,371.03	260.91	17.04	23.40	-684.47	-398.29	10,046.91	9,996.06	50.85	197.562	
14,500.00	6,004.58	3,532.59	3,367.27	261.51	17.01	23.35	-682.87	-397.45	10,066.02	10,015.19	50.83	198.030	
14,520.00	6,004.39	3,528.42	3,363.51	262.10	16.98	23.29	-681.27	-396.62	10,085.13	10,034.32	50.81	198.497	
14,540.00	6,004.19	3,524.25	3,359.75	262.70	16.95	23.23	-679.67	-395.79	10,104.24	10,053.45	50.78	198.965	
14,560.00	6,004.00	3,520.08	3,355.99	263.30	16.92	23.18	-678.08	-394.96	10,123.35	10,072.59	50.76	199.434	
14,580.00	6,003.80	3,515.91	3,352.23	263.89	16.89	23.12	-676.48	-394.12	10,142.46	10,091.72	50.74	199.904	
14,600.00	6,003.61	3,511.74	3,348.47	264.49	16.87	23.06	-674.88	-393.29	10,161.57	10,110.86	50.71	200.374	
14,620.00	6,003.41	3,507.57	3,344.71	265.08	16.84	23.01	-673.28	-392.46	10,180.69	10,130.00	50.69	200.844	
14,640.00	6,003.22	3,503.40	3,340.95	265.68	16.81	22.95	-671.68	-391.62	10,199.81	10,149.14	50.67	201.314	
14,660.00	6,003.02	3,499.23	3,337.19	266.27	16.78	22.89	-670.08	-390.79	10,218.93	10,168.29	50.64	201.785	
14,680.00	6,002.83	3,495.06	3,333.43	266.87	16.75	22.84	-668.48	-389.96	10,238.05	10,187.43	50.62	202.256	
14,700.00	6,002.63	3,490.89	3,329.67	267.47	16.72	22.78	-666.88	-389.12	10,257.17	10,206.58	50.60	202.728	
14,720.00	6,002.44	3,486.72	3,325.91	268.06	16.69	22.73	-665.28	-388.29	10,276.30	10,225.72	50.57	203.200	
14,740.00	6,002.24	3,482.55	3,322.15	268.66	16.66	22.67	-663.68	-387.46	10,295.42	10,244.87	50.55	203.672	
14,760.00	6,002.05	3,478.38	3,318.39	269.25	16.63	22.62	-662.08	-386.63	10,314.55	10,264.03	50.53	204.145	
14,780.00	6,001.85	3,474.21	3,314.63	269.85	16.60	22.56	-660.48	-385.79	10,333.68	10,283.18	50.50	204.618	
14,800.00	6,001.66	3,470.04	3,310.87	270.45	16.58	22.50	-658.88	-384.96	10,352.81	10,302.33	50.48	205.092	
14,820.00	6,001.46	3,465.87	3,307.11	271.04	16.55	22.45	-657.28	-384.13	10,371.94	10,321.49	50.46	205.566	
14,840.00	6,001.27	3,461.70	3,303.35	271.64	16.52	22.39	-655.69	-383.29	10,391.08	10,340.65	50.43	206.040	
14,860.00	6,001.07	3,457.53	3,299.59	272.23	16.49	22.34	-654.09	-382.46	10,410.21	10,359.81	50.41	206.515	
14,880.00	6,000.88	3,453.36	3,295.83	272.83	16.46	22.28	-652.49	-381.63	10,429.35	10,378.97	50.39	206.991	
14,900.00	6,000.68	3,449.19	3,292.07	273.43	16.43	22.23	-650.89	-380.80	10,448.49	10,398.13	50.36	207.467	
14,920.00	6,000.49	3,445.02	3,288.31	274.02	16.40	22.17	-649.29	-379.96	10,467.63	10,417.29	50.34	207.943	
14,940.00	6,000.30	3,440.85	3,284.55	274.62	16.37	22.12	-647.69	-379.13	10,486.77	10,436.46	50.32	208.419	
14,960.00	6,000.10	3,436.68	3,280.79	275.21	16.34	22.07	-646.09	-378.30	10,505.92	10,455.62	50.29	208.896	
14,980.00	5,999.91	3,432.51	3,277.03	275.81	16.31	22.01	-644.49	-377.46	10,525.06	10,474.79	50.27	209.374	
15,000.00	5,999.71	3,428.34	3,273.27	276.41	16.28	21.96	-642.89	-376.63	10,544.21	10,493.96	50.25	209.852	
15,020.00	5,999.52	3,424.17	3,269.51	277.00	16.26	21.90	-641.29	-375.80	10,563.36	10,513.13	50.22	210.330	
15,040.00	5,999.32	3,420.00	3,265.75	277.60	16.23	21.85	-639.69	-374.97	10,582.51	10,532.31	50.20	210.808	
15,060.00	5,999.13	3,415.83	3,261.99	278.19	16.20	21.79	-638.09	-374.13	10,601.66	10,551.48	50.18	211.287	
15,080.00	5,998.93	3,411.66	3,258.23	278.79	16.17	21.74	-636.49	-373.30	10,620.81	10,570.66	50.15	211.767	
15,100.00	5,998.74	3,407.49	3,254.47	279.39	16.14	21.69	-634.89	-372.47	10,639.96	10,589.83	50.13	212.247	
15,120.00	5,998.54	3,403.32	3,250.71	279.98	16.11	21.63	-633.29	-371.63	10,659.12	10,609.01	50.11	212.727	
15,140.00	5,998.35	3,399.15	3,246.95	280.58	16.08	21.58	-631.70	-370.80	10,678.28	10,628.19	50.08	213.207	
15,160.00	5,998.15	3,394.98	3,243.19	281.17	16.05	21.53	-630.10	-369.97	10,697.44	10,647.37	50.06	213.688	
15,180.00	5,997.96	3,390.81	3,239.43	281.77	16.02	21.47	-628.50	-369.14	10,716.60	10,666.56	50.04	214.169	
15,200.00	5,997.76	3,386.64	3,235.67	282.37	16.00	21.42	-626.90	-368.30	10,735.76	10,685.74	50.02	214.650	
15,220.00	5,997.57	3,382.47	3,231.91	282.96	15.97	21.37	-625.30	-367.47	10,754.92	10,704.93	49.99	215.132	
15,240.00	5,997.37	3,378.30	3,228.15	283.56	15.94	21.31	-623.70	-366.64	10,774.08	10,724.11	49.97	215.613	
15,260.00	5,997.18	3,374.13	3,224.39	284.16	15.91	21.26	-622.10	-365.80	10,793.25	10,743.30	49.95	216.096	
15,280.00	5,996.98	3,369.96	3,220.63	284.75	15.88	21.21	-620.50	-364.97	10,812.42	10,762.49	49.92	216.578	
15,300.00	5,996.79	3,365.79	3,216.87	285.35	15.85	21.15	-618.90	-364.14	10,831.59	10,781.68	49.90	217.062	
15,320.00	5,996.59	3,361.62	3,213.11	285.94	15.82	21.10	-617.30	-363.31	10,850.76	10,800.88	49.88	217.545	
15,340.00	5,996.40	3,357.45	3,209.35	286.54	15.79	21.05	-615.70	-362.47	10,869.93	10,820.07	49.86	218.029	
15,360.00	5,996.20	3,353.28	3,205.59	287.14	15.76	21.00	-614.10	-361.64	10,889.10	10,839.27	49.83	218.513	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,380.00	5,996.01	3,349.11	3,201.83	287.73	15.74	20.94	-612.50	-360.81	10,908.27	10,858.46	49.81	218.997	
15,400.00	5,995.81	3,344.94	3,198.07	288.33	15.71	20.89	-610.90	-359.97	10,927.45	10,877.66	49.79	219.482	
15,420.00	5,995.62	3,340.77	3,194.31	288.92	15.68	20.84	-609.31	-359.14	10,946.63	10,896.86	49.76	219.967	
15,440.00	5,995.42	3,336.60	3,190.55	289.52	15.65	20.79	-607.71	-358.31	10,965.80	10,916.06	49.74	220.453	
15,460.00	5,995.23	3,332.43	3,186.79	290.12	15.62	20.73	-606.11	-357.48	10,984.98	10,935.26	49.72	220.939	
15,480.00	5,995.04	3,328.26	3,183.03	290.71	15.59	20.68	-604.51	-356.64	11,004.16	10,954.47	49.70	221.425	
15,500.00	5,994.84	3,324.09	3,179.27	291.31	15.56	20.63	-602.91	-355.81	11,023.35	10,973.67	49.67	221.912	
15,520.00	5,994.65	3,319.92	3,175.51	291.91	15.53	20.58	-601.31	-354.98	11,042.53	10,992.88	49.65	222.398	
15,540.00	5,994.45	3,315.75	3,171.75	292.50	15.50	20.53	-599.71	-354.14	11,061.72	11,012.09	49.63	222.886	
15,560.00	5,994.26	3,311.58	3,167.99	293.10	15.48	20.48	-598.11	-353.31	11,080.90	11,031.29	49.61	223.373	
15,580.00	5,994.06	3,307.41	3,164.23	293.69	15.45	20.42	-596.51	-352.48	11,100.09	11,050.50	49.58	223.861	
15,600.00	5,993.87	3,303.24	3,160.47	294.29	15.42	20.37	-594.91	-351.65	11,119.28	11,069.72	49.56	224.350	
15,620.00	5,993.67	3,299.07	3,156.71	294.89	15.39	20.32	-593.31	-350.81	11,138.47	11,088.93	49.54	224.838	
15,640.00	5,993.48	3,294.90	3,152.95	295.48	15.36	20.27	-591.71	-349.98	11,157.66	11,108.14	49.52	225.326	
15,660.00	5,993.28	3,290.73	3,149.19	296.08	15.33	20.22	-590.11	-349.15	11,176.85	11,127.36	49.50	225.814	
15,680.00	5,993.09	3,286.56	3,145.43	296.68	15.30	20.17	-588.51	-348.31	11,196.05	11,146.57	49.47	226.303	
15,700.00	5,992.89	3,282.39	3,141.67	297.27	15.27	20.12	-586.91	-347.48	11,215.24	11,165.79	49.45	226.793	
15,720.00	5,992.70	3,278.22	3,137.91	297.87	15.24	20.07	-585.32	-346.65	11,234.44	11,185.01	49.43	227.282	
15,740.00	5,992.50	3,274.05	3,134.15	298.47	15.22	20.02	-583.72	-345.82	11,253.63	11,204.23	49.41	227.772	
15,760.00	5,992.31	3,269.88	3,130.39	299.06	15.19	19.97	-582.12	-344.98	11,272.83	11,223.45	49.39	228.262	
15,780.00	5,992.11	3,265.71	3,126.63	299.66	15.16	19.92	-580.52	-344.15	11,292.03	11,242.67	49.36	228.752	
15,800.00	5,991.92	3,261.54	3,122.87	300.25	15.13	19.87	-578.92	-343.32	11,311.24	11,261.89	49.34	229.243	
15,820.00	5,991.72	3,257.37	3,119.11	300.85	15.10	19.81	-577.32	-342.48	11,330.44	11,281.12	49.32	229.734	
15,840.00	5,991.53	3,253.20	3,115.35	301.45	15.07	19.76	-575.72	-341.65	11,349.64	11,300.34	49.30	230.225	
15,860.00	5,991.33	3,249.03	3,111.59	302.04	15.04	19.71	-574.12	-340.82	11,368.85	11,319.57	49.28	230.717	
15,880.00	5,991.14	3,244.86	3,107.83	302.64	15.02	19.66	-572.52	-339.99	11,388.05	11,338.80	49.25	231.209	
15,900.00	5,990.94	3,240.69	3,104.07	303.24	14.99	19.61	-570.92	-339.15	11,407.26	11,358.03	49.23	231.701	
15,920.00	5,990.75	3,236.52	3,100.31	303.83	14.96	19.56	-569.32	-338.32	11,426.47	11,377.26	49.21	232.193	
15,940.00	5,990.55	3,232.35	3,096.55	304.43	14.93	19.51	-567.72	-337.49	11,445.68	11,396.49	49.19	232.686	
15,960.00	5,990.36	3,228.18	3,092.79	305.03	14.90	19.47	-566.12	-336.65	11,464.89	11,415.72	49.17	233.179	
15,980.00	5,990.16	3,224.01	3,089.03	305.62	14.87	19.42	-564.52	-335.82	11,484.10	11,434.96	49.15	233.672	
16,000.00	5,989.97	3,219.84	3,085.27	306.22	14.84	19.37	-562.93	-334.99	11,503.32	11,454.19	49.12	234.166	
16,020.00	5,989.78	3,215.67	3,081.51	306.82	14.81	19.32	-561.33	-334.16	11,522.53	11,473.43	49.10	234.659	
16,040.00	5,989.58	3,211.50	3,077.75	307.41	14.79	19.27	-559.73	-333.32	11,541.75	11,492.66	49.08	235.153	
16,060.00	5,989.39	3,207.33	3,073.99	308.01	14.76	19.22	-558.13	-332.49	11,560.96	11,511.90	49.06	235.648	
16,080.00	5,989.19	3,203.16	3,070.23	308.61	14.73	19.17	-556.53	-331.66	11,580.18	11,531.14	49.04	236.142	
16,100.00	5,989.00	3,198.99	3,066.47	309.20	14.70	19.12	-554.93	-330.82	11,599.40	11,550.38	49.02	236.637	
16,120.00	5,988.80	3,194.82	3,062.71	309.80	14.67	19.07	-553.33	-329.99	11,618.62	11,569.62	49.00	237.131	
16,140.00	5,988.61	3,190.65	3,058.95	310.39	14.64	19.02	-551.73	-329.16	11,637.84	11,588.87	48.98	237.626	
16,160.00	5,988.41	3,186.48	3,055.19	310.99	14.61	18.97	-550.13	-328.33	11,657.07	11,608.11	48.95	238.120	
16,180.00	5,988.22	3,182.31	3,051.43	311.59	14.59	18.93	-548.53	-327.49	11,676.29	11,627.36	48.93	238.616	
16,200.00	5,988.02	3,178.14	3,047.67	312.18	14.56	18.88	-546.93	-326.66	11,695.51	11,646.60	48.91	239.111	
16,220.00	5,987.83	3,173.97	3,043.91	312.78	14.53	18.83	-545.33	-325.83	11,714.74	11,665.85	48.89	239.606	
16,240.00	5,987.63	3,169.80	3,040.15	313.38	14.50	18.78	-543.73	-324.99	11,733.97	11,685.10	48.87	240.102	
16,260.00	5,987.44	3,165.63	3,036.39	313.97	14.47	18.73	-542.13	-324.16	11,753.19	11,704.34	48.85	240.598	
16,280.00	5,987.24	3,161.46	3,032.63	314.57	14.44	18.68	-540.54	-323.33	11,772.42	11,723.59	48.83	241.094	
16,300.00	5,987.05	3,157.29	3,028.87	315.17	14.41	18.64	-538.94	-322.50	11,791.65	11,742.85	48.81	241.591	
16,320.00	5,986.85	3,153.12	3,025.11	315.76	14.39	18.59	-537.34	-321.66	11,810.89	11,762.10	48.79	242.087	
16,340.00	5,986.66	3,148.95	3,021.35	316.36	14.36	18.54	-535.74	-320.83	11,830.12	11,781.35	48.77	242.584	
16,360.00	5,986.46	3,144.78	3,017.59	316.96	14.33	18.49	-534.14	-320.00	11,849.35	11,800.61	48.75	243.081	
16,380.00	5,986.27	3,140.61	3,013.83	317.55	14.30	18.44	-532.54	-319.16	11,868.59	11,819.86	48.73	243.578	
16,400.00	5,986.07	3,136.44	3,010.07	318.15	14.27	18.40	-530.94	-318.33	11,887.82	11,839.12	48.71	244.076	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03 8H - OH - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,407.54	5,986.00	3,134.87	3,008.65	318.38	14.26	18.38	-530.34	-318.02	11,895.07	11,846.37	48.70	244.264	

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	159.87	-23.30	8.54	24.82				
20.00	20.00	20.00	20.00	0.04	0.04	159.87	-23.30	8.54	24.82	24.74	0.07	345.362	
40.00	40.00	40.00	40.00	0.07	0.07	159.87	-23.30	8.54	24.82	24.67	0.14	172.922	
60.00	60.00	60.00	60.00	0.11	0.11	159.87	-23.30	8.54	24.82	24.60	0.22	115.335	
80.00	80.00	80.00	80.00	0.14	0.14	159.87	-23.30	8.54	24.82	24.53	0.29	86.521	
100.00	100.00	100.00	100.00	0.18	0.18	159.87	-23.30	8.54	24.82	24.46	0.36	69.227	
120.00	120.00	120.00	120.00	0.25	0.25	159.87	-23.30	8.54	24.82	24.31	0.50	49.448	
140.00	140.00	140.00	140.00	0.32	0.32	159.87	-23.30	8.54	24.82	24.17	0.65	38.459	
160.00	160.00	160.00	160.00	0.39	0.39	159.87	-23.30	8.54	24.82	24.03	0.79	31.467	
180.00	180.00	180.00	180.00	0.47	0.47	159.87	-23.30	8.54	24.82	23.88	0.93	26.626	
200.00	200.00	200.00	200.00	0.54	0.54	159.87	-23.30	8.54	24.82	23.74	1.08	23.076	
220.00	220.00	220.00	220.00	0.61	0.61	159.87	-23.30	8.54	24.82	23.60	1.22	20.361	
240.00	240.00	240.00	240.00	0.68	0.68	159.87	-23.30	8.54	24.82	23.45	1.36	18.218	
260.00	260.00	260.00	260.00	0.75	0.75	159.87	-23.30	8.54	24.82	23.31	1.51	16.483	
280.00	280.00	280.00	280.00	0.82	0.82	159.87	-23.30	8.54	24.82	23.17	1.65	15.049	
300.00	300.00	300.00	300.00	0.90	0.90	159.87	-23.30	8.54	24.82	23.02	1.79	13.845	
320.00	320.00	320.00	320.00	0.97	0.97	159.87	-23.30	8.54	24.82	22.88	1.94	12.820	
340.00	340.00	340.00	340.00	1.04	1.04	159.87	-23.30	8.54	24.82	22.74	2.08	11.936	
360.00	360.00	360.00	360.00	1.11	1.11	159.87	-23.30	8.54	24.82	22.59	2.22	11.166	
380.00	380.00	380.00	380.00	1.18	1.18	159.87	-23.30	8.54	24.82	22.45	2.37	10.489	
400.00	400.00	400.00	400.00	1.25	1.25	159.87	-23.30	8.54	24.82	22.31	2.51	9.890	
420.00	420.00	420.00	420.00	1.33	1.33	159.87	-23.30	8.54	24.82	22.16	2.65	9.355	
440.00	440.00	440.00	440.00	1.40	1.40	159.87	-23.30	8.54	24.82	22.02	2.80	8.875	
460.00	460.00	460.00	460.00	1.47	1.47	159.87	-23.30	8.54	24.82	21.88	2.94	8.442	
480.00	480.00	480.00	480.00	1.54	1.54	159.87	-23.30	8.54	24.82	21.73	3.08	8.050	
500.00	500.00	500.00	500.00	1.61	1.61	159.87	-23.30	8.54	24.82	21.59	3.23	7.692	
520.00	520.00	520.00	520.00	1.68	1.68	159.87	-23.30	8.54	24.82	21.45	3.37	7.365	
540.00	540.00	540.00	540.00	1.76	1.76	159.87	-23.30	8.54	24.82	21.30	3.51	7.064	
560.00	560.00	560.00	560.00	1.83	1.83	159.87	-23.30	8.54	24.82	21.16	3.66	6.787	
580.00	580.00	580.00	580.00	1.90	1.90	159.87	-23.30	8.54	24.82	21.02	3.80	6.531	
600.00	600.00	600.00	600.00	1.97	1.97	159.87	-23.30	8.54	24.82	20.87	3.94	6.293	
620.00	620.00	620.00	620.00	2.04	2.04	159.87	-23.30	8.54	24.82	20.73	4.09	6.073	
640.00	640.00	640.00	640.00	2.11	2.11	159.87	-23.30	8.54	24.82	20.59	4.23	5.867	
660.00	660.00	660.00	660.00	2.19	2.19	159.87	-23.30	8.54	24.82	20.44	4.37	5.674	
680.00	680.00	680.00	680.00	2.26	2.26	159.87	-23.30	8.54	24.82	20.30	4.52	5.494	
700.00	700.00	700.00	700.00	2.33	2.33	159.87	-23.30	8.54	24.82	20.16	4.66	5.325	
720.00	720.00	720.00	720.00	2.40	2.40	159.87	-23.30	8.54	24.82	20.01	4.80	5.166	
740.00	740.00	740.00	740.00	2.47	2.47	159.87	-23.30	8.54	24.82	19.87	4.95	5.016	
760.00	760.00	760.00	760.00	2.55	2.55	159.87	-23.30	8.54	24.82	19.73	5.09	4.875	
780.00	780.00	780.00	780.00	2.62	2.62	159.87	-23.30	8.54	24.82	19.58	5.23	4.742	
800.00	800.00	800.00	800.00	2.69	2.69	159.87	-23.30	8.54	24.82	19.44	5.38	4.615	
820.00	820.00	820.00	820.00	2.76	2.76	159.87	-23.30	8.54	24.82	19.30	5.52	4.495	
840.00	840.00	840.00	840.00	2.83	2.83	159.87	-23.30	8.54	24.82	19.15	5.66	4.381	
860.00	860.00	860.00	860.00	2.90	2.90	159.87	-23.30	8.54	24.82	19.01	5.81	4.273	
880.00	880.00	880.00	880.00	2.98	2.98	159.87	-23.30	8.54	24.82	18.87	5.95	4.170	
900.00	900.00	900.00	900.00	3.05	3.05	159.87	-23.30	8.54	24.82	18.72	6.09	4.072	
920.00	920.00	920.00	920.00	3.12	3.12	159.87	-23.30	8.54	24.82	18.58	6.24	3.979	
940.00	940.00	940.00	940.00	3.19	3.19	159.87	-23.30	8.54	24.82	18.43	6.38	3.889	
960.00	960.00	960.00	960.00	3.26	3.26	159.87	-23.30	8.54	24.82	18.29	6.52	3.804	
980.00	980.00	980.00	980.00	3.33	3.33	159.87	-23.30	8.54	24.82	18.15	6.67	3.722	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	159.87	-23.30	8.54	24.82	18.00	6.81	3.644	
1,020.00	1,020.00	1,020.00	1,020.00	3.48	3.48	159.87	-23.30	8.54	24.82	17.86	6.95	3.568	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,040.00	1,040.00	1,040.00	1,040.00	3.55	3.55	159.87	-23.30	8.54	24.82	17.72	7.10	3.496	
1,060.00	1,060.00	1,060.00	1,060.00	3.62	3.62	159.87	-23.30	8.54	24.82	17.57	7.24	3.427	
1,080.00	1,080.00	1,080.00	1,080.00	3.69	3.69	159.87	-23.30	8.54	24.82	17.43	7.38	3.361	
1,100.00	1,100.00	1,100.00	1,100.00	3.76	3.76	159.87	-23.30	8.54	24.82	17.29	7.53	3.297	
1,120.00	1,120.00	1,120.00	1,120.00	3.84	3.84	159.87	-23.30	8.54	24.82	17.14	7.67	3.235	
1,140.00	1,140.00	1,140.00	1,140.00	3.91	3.91	159.87	-23.30	8.54	24.82	17.00	7.81	3.176	
1,160.00	1,160.00	1,160.00	1,160.00	3.98	3.98	159.87	-23.30	8.54	24.82	16.86	7.96	3.118	
1,180.00	1,180.00	1,180.00	1,180.00	4.05	4.05	159.87	-23.30	8.54	24.82	16.71	8.10	3.063	
1,200.00	1,200.00	1,200.00	1,200.00	4.12	4.12	159.87	-23.30	8.54	24.82	16.57	8.24	3.010	
1,220.00	1,220.00	1,220.00	1,220.00	4.19	4.19	159.87	-23.30	8.54	24.82	16.43	8.39	2.958	
1,240.00	1,240.00	1,240.00	1,240.00	4.27	4.27	159.87	-23.30	8.54	24.82	16.28	8.53	2.909	
1,260.00	1,260.00	1,260.00	1,260.00	4.34	4.34	159.87	-23.30	8.54	24.82	16.14	8.68	2.861	
1,280.00	1,280.00	1,280.00	1,280.00	4.41	4.41	159.87	-23.30	8.54	24.82	16.00	8.82	2.814	
1,300.00	1,300.00	1,300.00	1,300.00	4.48	4.48	159.87	-23.30	8.54	24.82	15.85	8.96	2.769	
1,320.00	1,320.00	1,320.00	1,320.00	4.55	4.55	159.87	-23.30	8.54	24.82	15.71	9.11	2.725	
1,340.00	1,340.00	1,340.00	1,340.00	4.62	4.62	159.87	-23.30	8.54	24.82	15.57	9.25	2.683	
1,360.00	1,360.00	1,360.00	1,360.00	4.70	4.70	159.87	-23.30	8.54	24.82	15.42	9.39	2.642	
1,380.00	1,380.00	1,380.00	1,380.00	4.77	4.77	159.87	-23.30	8.54	24.82	15.28	9.54	2.603	
1,400.00	1,400.00	1,400.00	1,400.00	4.84	4.84	159.87	-23.30	8.54	24.82	15.14	9.68	2.564	
1,420.00	1,420.00	1,420.00	1,420.00	4.91	4.91	159.87	-23.30	8.54	24.82	14.99	9.82	2.527	
1,440.00	1,440.00	1,440.00	1,440.00	4.98	4.98	159.87	-23.30	8.54	24.82	14.85	9.97	2.490	
1,460.00	1,460.00	1,460.00	1,460.00	5.05	5.05	159.87	-23.30	8.54	24.82	14.71	10.11	2.455	
1,480.00	1,480.00	1,480.00	1,480.00	5.13	5.13	159.87	-23.30	8.54	24.82	14.56	10.25	2.421	
1,500.00	1,500.00	1,500.00	1,500.00	5.20	5.20	159.87	-23.30	8.54	24.82	14.42	10.40	2.387	
1,520.00	1,520.00	1,520.00	1,520.00	5.27	5.27	159.87	-23.30	8.54	24.82	14.28	10.54	2.355	
1,540.00	1,540.00	1,540.00	1,540.00	5.34	5.34	159.87	-23.30	8.54	24.82	14.13	10.68	2.323	
1,560.00	1,560.00	1,560.00	1,560.00	5.41	5.41	159.87	-23.30	8.54	24.82	13.99	10.83	2.292	
1,580.00	1,580.00	1,580.00	1,580.00	5.48	5.48	159.87	-23.30	8.54	24.82	13.85	10.97	2.262	
1,600.00	1,600.00	1,600.00	1,600.00	5.56	5.56	159.87	-23.30	8.54	24.82	13.70	11.11	2.233	
1,620.00	1,620.00	1,620.00	1,620.00	5.63	5.63	159.87	-23.30	8.54	24.82	13.56	11.26	2.205	
1,640.00	1,640.00	1,640.00	1,640.00	5.70	5.70	159.87	-23.30	8.54	24.82	13.42	11.40	2.177	
1,660.00	1,660.00	1,660.00	1,660.00	5.77	5.77	159.87	-23.30	8.54	24.82	13.27	11.54	2.150	
1,680.00	1,680.00	1,680.00	1,680.00	5.84	5.84	159.87	-23.30	8.54	24.82	13.13	11.69	2.124	
1,700.00	1,700.00	1,700.00	1,700.00	5.91	5.91	159.87	-23.30	8.54	24.82	12.99	11.83	2.098	
1,720.00	1,720.00	1,720.00	1,720.00	5.99	5.99	159.87	-23.30	8.54	24.82	12.84	11.97	2.073	
1,740.00	1,740.00	1,740.00	1,740.00	6.06	6.06	159.87	-23.30	8.54	24.82	12.70	12.12	2.048	
1,760.00	1,760.00	1,760.00	1,760.00	6.13	6.13	159.87	-23.30	8.54	24.82	12.56	12.26	2.024	
1,780.00	1,780.00	1,780.00	1,780.00	6.20	6.20	159.87	-23.30	8.54	24.82	12.41	12.40	2.001	
1,800.00	1,800.00	1,800.00	1,800.00	6.27	6.27	159.87	-23.30	8.54	24.82	12.27	12.55	1.978	
1,820.00	1,820.00	1,820.00	1,820.00	6.34	6.34	159.87	-23.30	8.54	24.82	12.13	12.69	1.956	
1,840.00	1,840.00	1,840.00	1,840.00	6.42	6.42	159.87	-23.30	8.54	24.82	11.98	12.83	1.934	
1,860.00	1,860.00	1,860.00	1,860.00	6.49	6.49	159.87	-23.30	8.54	24.82	11.84	12.98	1.912	
1,880.00	1,880.00	1,880.00	1,880.00	6.56	6.56	159.87	-23.30	8.54	24.82	11.70	13.12	1.891	
1,900.00	1,900.00	1,900.00	1,900.00	6.63	6.63	159.87	-23.30	8.54	24.82	11.55	13.26	1.871	
1,920.00	1,920.00	1,920.00	1,920.00	6.70	6.70	159.87	-23.30	8.54	24.82	11.41	13.41	1.851	
1,940.00	1,940.00	1,940.00	1,940.00	6.78	6.78	159.87	-23.30	8.54	24.82	11.27	13.55	1.831	
1,960.00	1,960.00	1,960.00	1,960.00	6.85	6.85	159.87	-23.30	8.54	24.82	11.12	13.69	1.812	
1,980.00	1,980.00	1,980.00	1,980.00	6.92	6.92	159.87	-23.30	8.54	24.82	10.98	13.84	1.793	
2,000.00	2,000.00	2,000.00	2,000.00	6.99	6.99	159.87	-23.30	8.54	24.82	10.84	13.98	1.775	
2,020.00	2,020.00	2,020.00	2,020.00	7.06	7.06	159.87	-23.30	8.54	24.82	10.69	14.12	1.757	
2,040.00	2,040.00	2,040.00	2,040.00	7.13	7.13	159.87	-23.30	8.54	24.82	10.55	14.27	1.739	
2,060.00	2,060.00	2,060.00	2,060.00	7.21	7.21	159.87	-23.30	8.54	24.82	10.41	14.41	1.722	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,080.00	2,080.00	2,080.00	2,080.00	7.28	7.28	159.87	-23.30	8.54	24.82	10.26	14.55	1.705	
2,100.00	2,100.00	2,100.00	2,100.00	7.35	7.35	159.87	-23.30	8.54	24.82	10.12	14.70	1.688	
2,120.00	2,120.00	2,120.00	2,120.00	7.42	7.42	159.87	-23.30	8.54	24.82	9.98	14.84	1.672	
2,140.00	2,140.00	2,140.00	2,140.00	7.49	7.49	159.87	-23.30	8.54	24.82	9.83	14.98	1.656	
2,160.00	2,160.00	2,160.00	2,160.00	7.56	7.56	159.87	-23.30	8.54	24.82	9.69	15.13	1.640	
2,180.00	2,180.00	2,180.00	2,180.00	7.64	7.64	159.87	-23.30	8.54	24.82	9.54	15.27	1.625	
2,200.00	2,200.00	2,200.00	2,200.00	7.71	7.71	159.87	-23.30	8.54	24.82	9.40	15.41	1.610	
2,220.00	2,220.00	2,220.00	2,220.00	7.78	7.78	159.87	-23.30	8.54	24.82	9.26	15.56	1.595	
2,240.00	2,240.00	2,240.00	2,240.00	7.85	7.85	159.87	-23.30	8.54	24.82	9.11	15.70	1.581	
2,260.00	2,260.00	2,260.00	2,260.00	7.92	7.92	159.87	-23.30	8.54	24.82	8.97	15.84	1.566	
2,280.00	2,280.00	2,280.00	2,280.00	7.99	7.99	159.87	-23.30	8.54	24.82	8.83	15.99	1.552	
2,300.00	2,300.00	2,300.00	2,300.00	8.07	8.07	159.87	-23.30	8.54	24.82	8.68	16.13	1.538	
2,320.00	2,320.00	2,320.00	2,320.00	8.14	8.14	159.87	-23.30	8.54	24.82	8.54	16.27	1.525	
2,340.00	2,340.00	2,340.00	2,340.00	8.21	8.21	159.87	-23.30	8.54	24.82	8.40	16.42	1.511	
2,360.00	2,360.00	2,360.00	2,360.00	8.28	8.28	159.87	-23.30	8.54	24.82	8.25	16.56	1.498	Level 3
2,380.00	2,380.00	2,380.00	2,380.00	8.35	8.35	159.87	-23.30	8.54	24.82	8.11	16.70	1.486	Level 3
2,400.00	2,400.00	2,400.00	2,400.00	8.42	8.42	159.87	-23.30	8.54	24.82	7.97	16.85	1.473	Level 3
2,420.00	2,420.00	2,420.00	2,420.00	8.50	8.50	159.87	-23.30	8.54	24.82	7.82	16.99	1.460	Level 3
2,440.00	2,440.00	2,440.00	2,440.00	8.57	8.57	159.87	-23.30	8.54	24.82	7.68	17.13	1.448	Level 3
2,460.00	2,460.00	2,460.00	2,460.00	8.64	8.64	159.87	-23.30	8.54	24.82	7.54	17.28	1.436	Level 3
2,480.00	2,480.00	2,480.00	2,480.00	8.71	8.71	159.87	-23.30	8.54	24.82	7.39	17.42	1.424	Level 3
2,500.00	2,500.00	2,500.00	2,500.00	8.78	8.78	159.87	-23.30	8.54	24.82	7.25	17.57	1.413	Level 3
2,520.00	2,520.00	2,520.00	2,520.00	8.85	8.85	159.87	-23.30	8.54	24.82	7.11	17.71	1.401	Level 3
2,540.00	2,540.00	2,540.00	2,540.00	8.93	8.93	159.87	-23.30	8.54	24.82	6.96	17.85	1.390	Level 3
2,560.00	2,560.00	2,560.00	2,560.00	9.00	9.00	159.87	-23.30	8.54	24.82	6.82	18.00	1.379	Level 3
2,580.00	2,580.00	2,580.00	2,580.00	9.07	9.07	159.87	-23.30	8.54	24.82	6.68	18.14	1.368	Level 3
2,600.00	2,600.00	2,600.00	2,600.00	9.14	9.14	159.87	-23.30	8.54	24.82	6.53	18.28	1.357	Level 3
2,620.00	2,620.00	2,620.00	2,620.00	9.21	9.21	159.87	-23.30	8.54	24.82	6.39	18.43	1.347	Level 3
2,640.00	2,640.00	2,640.00	2,640.00	9.28	9.28	159.87	-23.30	8.54	24.82	6.25	18.57	1.336	Level 3
2,660.00	2,660.00	2,660.00	2,660.00	9.36	9.36	159.87	-23.30	8.54	24.82	6.10	18.71	1.326	Level 3
2,680.00	2,680.00	2,680.00	2,680.00	9.43	9.43	159.87	-23.30	8.54	24.82	5.96	18.86	1.316	Level 3
2,700.00	2,700.00	2,700.00	2,700.00	9.50	9.50	159.87	-23.30	8.54	24.82	5.82	19.00	1.306	Level 3, CC
2,720.00	2,720.00	2,719.86	2,719.86	9.57	9.57	99.79	-23.34	8.60	24.88	5.75	19.14	1.300	Level 3, ES, SF
2,740.00	2,740.00	2,739.72	2,739.72	9.64	9.64	99.98	-23.46	8.77	25.09	5.81	19.28	1.302	Level 3
2,760.00	2,760.00	2,759.57	2,759.57	9.71	9.70	100.29	-23.65	9.05	25.43	6.02	19.41	1.310	Level 3
2,780.00	2,779.99	2,779.42	2,779.41	9.78	9.77	100.71	-23.93	9.45	25.91	6.36	19.55	1.325	Level 3
2,800.00	2,799.98	2,799.26	2,799.24	9.85	9.84	101.24	-24.28	9.95	26.54	6.85	19.69	1.348	Level 3
2,820.00	2,819.96	2,819.10	2,819.06	9.92	9.91	101.84	-24.71	10.58	27.30	7.47	19.82	1.377	Level 3
2,840.00	2,839.94	2,838.92	2,838.87	9.99	9.97	102.51	-25.21	11.31	28.20	8.24	19.96	1.413	Level 3
2,860.00	2,859.92	2,858.74	2,858.66	10.06	10.04	103.23	-25.80	12.16	29.25	9.16	20.09	1.456	Level 3
2,880.00	2,879.88	2,878.54	2,878.42	10.13	10.11	103.99	-26.46	13.12	30.44	10.22	20.22	1.505	
2,900.00	2,899.84	2,898.32	2,898.16	10.20	10.17	104.76	-27.20	14.19	31.78	11.42	20.35	1.561	
2,920.00	2,919.78	2,918.09	2,917.88	10.28	10.24	105.55	-28.02	15.37	33.26	12.78	20.49	1.624	
2,940.00	2,939.72	2,937.84	2,937.57	10.35	10.30	106.33	-28.91	16.66	34.90	14.28	20.62	1.692	
2,960.00	2,959.64	2,957.58	2,957.23	10.42	10.37	107.10	-29.88	18.06	36.68	15.92	20.75	1.767	
2,980.00	2,979.55	2,977.29	2,976.86	10.49	10.44	107.84	-30.92	19.57	38.60	17.72	20.88	1.848	
3,000.00	2,999.45	2,996.98	2,996.45	10.56	10.50	108.56	-32.04	21.19	40.68	19.67	21.02	1.936	
3,020.00	3,019.34	3,016.64	3,016.00	10.63	10.57	109.26	-33.24	22.92	42.91	21.76	21.15	2.029	
3,040.00	3,039.20	3,036.28	3,035.51	10.70	10.64	109.91	-34.51	24.76	45.28	24.00	21.28	2.128	
3,060.00	3,059.05	3,055.89	3,054.98	10.77	10.70	110.54	-35.85	26.70	47.80	26.39	21.41	2.233	
3,080.00	3,078.89	3,075.48	3,074.40	10.84	10.77	111.13	-37.27	28.75	50.47	28.93	21.54	2.343	
3,100.00	3,098.70	3,095.03	3,093.78	10.91	10.83	111.68	-38.76	30.91	53.29	31.62	21.67	2.459	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,120.00	3,118.50	3,114.55	3,113.11	10.98	10.90	112.20	-40.32	33.17	56.26	34.45	21.81	2.580	
3,140.00	3,138.27	3,134.04	3,132.38	11.06	10.97	112.68	-41.96	35.54	59.37	37.43	21.94	2.706	
3,160.00	3,158.03	3,153.50	3,151.60	11.13	11.04	113.14	-43.66	38.01	62.63	40.56	22.07	2.838	
3,180.00	3,177.76	3,172.91	3,170.77	11.20	11.10	113.56	-45.44	40.58	66.04	43.84	22.20	2.975	
3,200.00	3,197.47	3,192.30	3,189.88	11.27	11.17	113.95	-47.29	43.25	69.59	47.26	22.33	3.116	
3,220.00	3,217.15	3,211.64	3,208.92	11.34	11.24	114.31	-49.21	46.03	73.28	50.82	22.46	3.262	
3,240.00	3,236.81	3,230.94	3,227.91	11.42	11.31	114.65	-51.19	48.90	77.12	54.53	22.60	3.413	
3,260.00	3,256.44	3,250.20	3,246.82	11.49	11.37	114.96	-53.25	51.87	81.10	58.38	22.73	3.569	
3,280.00	3,276.05	3,269.42	3,265.68	11.56	11.44	115.25	-55.37	54.94	85.23	62.37	22.86	3.729	
3,300.00	3,295.62	3,288.59	3,284.46	11.64	11.51	115.52	-57.55	58.11	89.50	66.51	22.99	3.893	
3,320.00	3,315.17	3,307.72	3,303.17	11.71	11.58	115.77	-59.81	61.37	93.91	70.78	23.12	4.062	
3,340.00	3,334.69	3,326.80	3,321.81	11.78	11.65	115.99	-62.13	64.73	98.46	75.20	23.25	4.234	
3,360.00	3,354.18	3,345.83	3,340.38	11.86	11.72	116.20	-64.51	68.18	103.15	79.76	23.39	4.411	
3,380.00	3,373.63	3,364.82	3,358.87	11.93	11.79	116.40	-66.96	71.72	107.98	84.46	23.52	4.591	
3,400.00	3,393.06	3,383.75	3,377.28	12.01	11.86	116.57	-69.47	75.35	112.95	89.30	23.65	4.776	
3,420.00	3,412.44	3,402.63	3,395.61	12.09	11.93	116.73	-72.04	79.07	118.05	94.27	23.78	4.964	
3,440.00	3,431.80	3,421.46	3,413.86	12.16	12.00	116.88	-74.67	82.88	123.30	99.38	23.92	5.156	
3,460.00	3,451.12	3,440.24	3,432.03	12.24	12.07	117.02	-77.37	86.78	128.68	104.63	24.05	5.351	
3,480.00	3,470.40	3,458.96	3,450.11	12.32	12.14	117.14	-80.12	90.76	134.20	110.01	24.18	5.549	
3,500.00	3,489.64	3,477.62	3,468.11	12.39	12.21	117.25	-82.93	94.83	139.85	115.53	24.31	5.752	
3,520.00	3,508.85	3,496.23	3,486.01	12.47	12.28	117.35	-85.80	98.98	145.64	121.19	24.45	5.957	
3,540.00	3,528.02	3,514.77	3,503.83	12.56	12.35	117.44	-88.73	103.22	151.56	126.97	24.58	6.165	
3,560.00	3,547.14	3,533.26	3,521.56	12.64	12.43	117.52	-91.71	107.53	157.61	132.89	24.72	6.376	
3,580.00	3,566.23	3,551.69	3,539.20	12.72	12.50	117.60	-94.75	111.93	163.80	138.95	24.85	6.590	
3,600.00	3,585.27	3,570.06	3,556.74	12.80	12.57	117.66	-97.84	116.40	170.12	145.13	24.99	6.808	
3,620.00	3,604.27	3,588.36	3,574.19	12.88	12.65	117.71	-100.98	120.95	176.57	151.44	25.13	7.028	
3,640.00	3,623.22	3,606.60	3,591.55	12.96	12.72	117.76	-104.18	125.57	183.15	157.89	25.26	7.250	
3,645.28	3,628.22	3,611.40	3,596.11	12.98	12.74	117.77	-105.03	126.81	184.91	159.61	25.30	7.309	
3,660.00	3,642.15	3,624.79	3,608.81	13.05	12.80	117.88	-107.43	130.27	189.84	164.44	25.40	7.474	
3,680.00	3,661.07	3,642.93	3,626.00	13.13	12.87	118.00	-110.73	135.05	196.61	171.07	25.54	7.699	
3,700.00	3,679.99	3,661.03	3,643.11	13.22	12.95	118.08	-114.09	139.91	203.43	177.76	25.67	7.924	
3,720.00	3,698.91	3,679.08	3,660.14	13.30	13.03	118.13	-117.50	144.85	210.33	184.52	25.81	8.149	
3,740.00	3,717.83	3,697.41	3,677.39	13.39	13.10	118.15	-121.01	149.94	217.28	191.33	25.96	8.371	
3,760.00	3,736.75	3,716.16	3,695.03	13.48	13.19	118.17	-124.62	155.16	224.25	198.13	26.11	8.588	
3,780.00	3,755.67	3,734.91	3,712.67	13.57	13.27	118.18	-128.23	160.38	231.21	204.94	26.27	8.802	
3,800.00	3,774.59	3,753.66	3,730.31	13.65	13.35	118.20	-131.84	165.60	238.18	211.75	26.42	9.013	
3,820.00	3,793.51	3,772.40	3,747.95	13.74	13.44	118.21	-135.45	170.82	245.14	218.56	26.58	9.221	
3,840.00	3,812.44	3,791.15	3,765.59	13.83	13.52	118.22	-139.06	176.05	252.10	225.36	26.74	9.427	
3,860.00	3,831.36	3,809.90	3,783.23	13.92	13.60	118.23	-142.67	181.27	259.07	232.17	26.90	9.630	
3,880.00	3,850.28	3,828.65	3,800.87	14.01	13.69	118.24	-146.27	186.49	266.03	238.97	27.06	9.830	
3,900.00	3,869.20	3,847.40	3,818.51	14.10	13.78	118.25	-149.88	191.71	273.00	245.77	27.22	10.028	
3,920.00	3,888.12	3,866.14	3,836.15	14.20	13.86	118.26	-153.49	196.93	279.96	252.58	27.39	10.222	
3,940.00	3,907.04	3,884.89	3,853.79	14.29	13.95	118.27	-157.10	202.16	286.93	259.38	27.55	10.415	
3,960.00	3,925.96	3,903.64	3,871.43	14.38	14.04	118.28	-160.71	207.38	293.89	266.18	27.71	10.604	
3,980.00	3,944.88	3,922.39	3,889.08	14.47	14.13	118.29	-164.32	212.60	300.86	272.98	27.88	10.791	
4,000.00	3,963.80	3,941.14	3,906.72	14.56	14.21	118.30	-167.93	217.82	307.82	279.78	28.04	10.976	
4,020.00	3,982.73	3,959.89	3,924.36	14.66	14.30	118.31	-171.54	223.05	314.79	286.57	28.21	11.158	
4,040.00	4,001.65	3,978.63	3,942.00	14.75	14.39	118.31	-175.15	228.27	321.75	293.37	28.38	11.338	
4,060.00	4,020.57	3,997.38	3,959.64	14.85	14.48	118.32	-178.75	233.49	328.71	300.17	28.55	11.515	
4,080.00	4,039.49	4,016.13	3,977.28	14.94	14.57	118.33	-182.36	238.71	335.68	306.96	28.71	11.690	
4,100.00	4,058.41	4,034.88	3,994.92	15.04	14.67	118.33	-185.97	243.93	342.64	313.76	28.88	11.863	
4,120.00	4,077.33	4,053.63	4,012.56	15.13	14.76	118.34	-189.58	249.16	349.61	320.55	29.05	12.033	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,140.00	4,096.25	4,072.37	4,030.20	15.23	14.85	118.35	-193.19	254.38	356.57	327.35	29.22	12.201	
4,160.00	4,115.17	4,091.12	4,047.84	15.33	14.94	118.35	-196.80	259.60	363.54	334.14	29.40	12.367	
4,180.00	4,134.09	4,109.87	4,065.48	15.42	15.04	118.36	-200.41	264.82	370.50	340.94	29.57	12.531	
4,200.00	4,153.02	4,128.62	4,083.12	15.52	15.13	118.36	-204.02	270.05	377.47	347.73	29.74	12.692	
4,220.00	4,171.94	4,147.37	4,100.77	15.62	15.22	118.37	-207.63	275.27	384.43	354.52	29.91	12.851	
4,240.00	4,190.86	4,166.11	4,118.41	15.72	15.32	118.37	-211.23	280.49	391.40	361.31	30.09	13.009	
4,260.00	4,209.78	4,184.86	4,136.05	15.81	15.41	118.38	-214.84	285.71	398.36	368.10	30.26	13.164	
4,280.00	4,228.70	4,203.61	4,153.69	15.91	15.51	118.38	-218.45	290.93	405.33	374.89	30.44	13.317	
4,300.00	4,247.62	4,222.36	4,171.33	16.01	15.60	118.39	-222.06	296.16	412.29	381.68	30.61	13.468	
4,320.00	4,266.54	4,241.11	4,188.97	16.11	15.70	118.39	-225.67	301.38	419.25	388.47	30.79	13.617	
4,340.00	4,285.46	4,259.86	4,206.61	16.21	15.80	118.40	-229.28	306.60	426.22	395.25	30.97	13.764	
4,360.00	4,304.38	4,278.60	4,224.25	16.31	15.89	118.40	-232.89	311.82	433.18	402.04	31.14	13.909	
4,380.00	4,323.31	4,297.35	4,241.89	16.41	15.99	118.40	-236.50	317.05	440.15	408.83	31.32	14.053	
4,400.00	4,342.23	4,316.10	4,259.53	16.51	16.09	118.41	-240.10	322.27	447.11	415.61	31.50	14.195	
4,420.00	4,361.15	4,334.85	4,277.17	16.61	16.19	118.41	-243.71	327.49	454.08	422.40	31.68	14.334	
4,440.00	4,380.07	4,353.60	4,294.81	16.71	16.28	118.41	-247.32	332.71	461.04	429.18	31.86	14.472	
4,460.00	4,398.99	4,372.34	4,312.45	16.81	16.38	118.42	-250.93	337.93	468.01	435.97	32.04	14.608	
4,480.00	4,417.91	4,391.09	4,330.10	16.92	16.48	118.42	-254.54	343.16	474.97	442.75	32.22	14.742	
4,500.00	4,436.83	4,409.84	4,347.74	17.02	16.58	118.43	-258.15	348.38	481.94	449.54	32.40	14.875	
4,520.00	4,455.75	4,428.59	4,365.38	17.12	16.68	118.43	-261.76	353.60	488.90	456.32	32.58	15.005	
4,540.00	4,474.67	4,447.34	4,383.02	17.22	16.78	118.43	-265.37	358.82	495.87	463.10	32.76	15.134	
4,560.00	4,493.59	4,466.09	4,400.66	17.33	16.88	118.43	-268.98	364.04	502.83	469.88	32.95	15.262	
4,580.00	4,512.52	4,484.83	4,418.30	17.43	16.98	118.44	-272.58	369.27	509.79	476.67	33.13	15.388	
4,600.00	4,531.44	4,503.58	4,435.94	17.53	17.08	118.44	-276.19	374.49	516.76	483.45	33.31	15.513	
4,620.00	4,550.36	4,522.33	4,453.58	17.64	17.18	118.44	-279.80	379.71	523.72	490.23	33.50	15.635	
4,640.00	4,569.28	4,541.08	4,471.22	17.74	17.29	118.45	-283.41	384.93	530.69	497.01	33.68	15.756	
4,660.00	4,588.20	4,559.83	4,488.86	17.84	17.39	118.45	-287.02	390.16	537.65	503.79	33.87	15.876	
4,680.00	4,607.12	4,578.57	4,506.50	17.95	17.49	118.45	-290.63	395.38	544.62	510.57	34.05	15.994	
4,700.00	4,626.04	4,597.32	4,524.14	18.05	17.59	118.45	-294.24	400.60	551.58	517.35	34.24	16.111	
4,720.00	4,644.96	4,616.07	4,541.79	18.16	17.69	118.46	-297.85	405.82	558.55	524.12	34.42	16.226	
4,740.00	4,663.88	4,634.82	4,559.43	18.26	17.80	118.46	-301.46	411.04	565.51	530.90	34.61	16.340	
4,760.00	4,682.81	4,653.57	4,577.07	18.37	17.90	118.46	-305.06	416.27	572.48	537.68	34.80	16.452	
4,780.00	4,701.73	4,672.31	4,594.71	18.47	18.00	118.46	-308.67	421.49	579.44	544.46	34.98	16.563	
4,800.00	4,720.65	4,691.06	4,612.35	18.58	18.11	118.47	-312.28	426.71	586.41	551.24	35.17	16.673	
4,820.00	4,739.57	4,709.81	4,629.99	18.69	18.21	118.47	-315.89	431.93	593.37	558.01	35.36	16.781	
4,840.00	4,758.49	4,728.56	4,647.63	18.79	18.32	118.47	-319.50	437.16	600.34	564.79	35.55	16.888	
4,860.00	4,777.41	4,747.31	4,665.27	18.90	18.42	118.47	-323.11	442.38	607.30	571.56	35.74	16.993	
4,880.00	4,796.33	4,766.06	4,682.91	19.00	18.52	118.47	-326.72	447.60	614.26	578.34	35.93	17.098	
4,900.00	4,815.25	4,784.80	4,700.55	19.11	18.63	118.48	-330.33	452.82	621.23	585.11	36.12	17.201	
4,920.00	4,834.17	4,803.55	4,718.19	19.22	18.73	118.48	-333.93	458.04	628.19	591.89	36.31	17.303	
4,940.00	4,853.10	4,822.30	4,735.83	19.32	18.84	118.48	-337.54	463.27	635.16	598.66	36.50	17.403	
4,960.00	4,872.02	4,841.05	4,753.48	19.43	18.95	118.48	-341.15	468.49	642.12	605.44	36.69	17.503	
4,980.00	4,890.94	4,859.80	4,771.12	19.54	19.05	118.48	-344.76	473.71	649.09	612.21	36.88	17.601	
5,000.00	4,909.86	4,878.54	4,788.76	19.65	19.16	118.48	-348.37	478.93	656.05	618.98	37.07	17.698	
5,020.00	4,928.78	4,897.29	4,806.40	19.75	19.26	118.49	-351.98	484.16	663.02	625.76	37.26	17.794	
5,040.00	4,947.70	4,916.04	4,824.04	19.86	19.37	118.49	-355.59	489.38	669.98	632.53	37.45	17.889	
5,060.00	4,966.62	4,934.79	4,841.68	19.97	19.48	118.49	-359.20	494.60	676.95	639.30	37.65	17.982	
5,080.00	4,985.54	4,953.54	4,859.32	20.08	19.58	118.49	-362.81	499.82	683.91	646.07	37.84	18.075	
5,100.00	5,004.46	4,972.29	4,876.96	20.19	19.69	118.49	-366.41	505.04	690.88	652.85	38.03	18.166	
5,120.00	5,023.39	4,991.03	4,894.60	20.30	19.80	118.49	-370.02	510.27	697.84	659.62	38.22	18.257	
5,140.00	5,042.31	5,009.78	4,912.24	20.41	19.91	118.50	-373.63	515.49	704.81	666.39	38.42	18.346	
5,160.00	5,061.23	5,028.53	4,929.88	20.51	20.01	118.50	-377.24	520.71	711.77	673.16	38.61	18.434	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,180.00	5,080.15	5,047.28	4,947.52	20.62	20.12	118.50	-380.85	525.93	718.73	679.93	38.81	18.521	
5,200.00	5,099.07	5,066.03	4,965.16	20.73	20.23	118.50	-384.46	531.15	725.70	686.70	39.00	18.608	
5,220.00	5,117.99	5,084.77	4,982.81	20.84	20.34	118.50	-388.07	536.38	732.66	693.47	39.19	18.693	
5,240.00	5,136.91	5,103.52	5,000.45	20.95	20.45	118.50	-391.68	541.60	739.63	700.24	39.39	18.777	
5,260.00	5,155.83	5,122.27	5,018.09	21.06	20.55	118.50	-395.29	546.82	746.59	707.01	39.59	18.860	
5,280.00	5,174.75	5,141.02	5,035.73	21.17	20.66	118.51	-398.89	552.04	753.56	713.78	39.78	18.943	
5,300.00	5,193.67	5,159.77	5,053.37	21.28	20.77	118.51	-402.50	557.27	760.52	720.55	39.98	19.024	
5,320.00	5,212.60	5,178.51	5,071.01	21.39	20.88	118.51	-406.11	562.49	767.49	727.31	40.17	19.105	
5,340.00	5,231.52	5,197.26	5,088.65	21.50	20.99	118.51	-409.72	567.71	774.45	734.08	40.37	19.185	
5,360.00	5,250.44	5,216.01	5,106.29	21.61	21.10	118.51	-413.33	572.93	781.42	740.85	40.57	19.263	
5,380.00	5,269.36	5,234.76	5,123.93	21.72	21.21	118.51	-416.94	578.15	788.38	747.62	40.76	19.341	
5,400.00	5,288.28	5,253.51	5,141.57	21.83	21.32	118.51	-420.55	583.38	795.35	754.39	40.96	19.418	
5,420.00	5,307.20	5,272.26	5,159.21	21.94	21.43	118.51	-424.16	588.60	802.31	761.15	41.16	19.494	
5,440.00	5,326.12	5,291.00	5,176.85	22.06	21.54	118.52	-427.77	593.82	809.28	767.92	41.35	19.569	
5,460.00	5,345.04	5,309.75	5,194.50	22.17	21.65	118.52	-431.37	599.04	816.24	774.69	41.55	19.644	
5,480.00	5,363.96	5,328.50	5,212.14	22.28	21.76	118.52	-434.98	604.27	823.20	781.45	41.75	19.717	
5,500.00	5,382.89	5,347.25	5,229.78	22.39	21.87	118.52	-438.59	609.49	830.17	788.22	41.95	19.790	
5,520.00	5,401.81	5,366.00	5,247.42	22.50	21.98	118.52	-442.20	614.71	837.13	794.99	42.15	19.862	
5,540.00	5,420.73	5,384.74	5,265.06	22.61	22.09	118.52	-445.81	619.93	844.10	801.75	42.35	19.934	
5,560.00	5,439.65	5,403.49	5,282.70	22.72	22.20	118.52	-449.42	625.15	851.06	808.52	42.54	20.004	
5,580.00	5,458.57	5,422.24	5,300.34	22.84	22.31	118.52	-453.03	630.38	858.03	815.28	42.74	20.074	
5,600.00	5,477.49	5,440.99	5,317.98	22.95	22.42	118.52	-456.64	635.60	864.99	822.05	42.94	20.143	
5,620.00	5,496.41	5,459.74	5,335.62	23.06	22.54	118.53	-460.24	640.82	871.96	828.81	43.14	20.211	
5,640.00	5,515.33	5,478.49	5,353.26	23.17	22.65	118.53	-463.85	646.04	878.92	835.58	43.34	20.278	
5,660.00	5,534.25	5,497.23	5,370.90	23.28	22.76	118.53	-467.46	651.27	885.89	842.34	43.54	20.345	
5,680.00	5,553.18	5,515.98	5,388.54	23.40	22.87	118.53	-471.07	656.49	892.85	849.11	43.74	20.411	
5,700.00	5,572.10	5,534.73	5,406.19	23.51	22.98	118.53	-474.68	661.71	899.82	855.87	43.94	20.477	
5,720.00	5,591.02	5,553.48	5,423.83	23.62	23.09	118.53	-478.29	666.93	906.78	862.64	44.14	20.541	
5,740.00	5,609.94	5,572.23	5,441.47	23.73	23.21	118.53	-481.90	672.15	913.75	869.40	44.34	20.605	
5,760.00	5,628.86	5,590.97	5,459.11	23.85	23.32	118.53	-485.51	677.38	920.71	876.16	44.55	20.669	
5,780.00	5,647.78	5,609.72	5,476.75	23.96	23.43	118.53	-489.12	682.60	927.67	882.93	44.75	20.732	
5,800.00	5,666.70	5,628.47	5,494.39	24.07	23.54	118.53	-492.72	687.82	934.64	889.69	44.95	20.794	
5,809.89	5,676.06	5,637.74	5,503.11	24.13	23.60	118.53	-494.51	690.40	938.08	893.03	45.05	20.824	
5,820.00	5,685.60	5,647.22	5,512.03	24.19	23.66	116.71	-496.33	693.04	941.60	896.45	45.15	20.854	
5,840.00	5,704.31	5,665.97	5,529.67	24.31	23.77	113.49	-499.94	698.26	948.53	903.17	45.36	20.910	
5,850.00	5,713.58	5,675.33	5,538.48	24.37	23.82	112.05	-501.74	700.87	951.98	906.51	45.47	20.938	
5,860.00	5,722.80	5,684.69	5,547.29	24.43	23.88	110.72	-503.55	703.48	955.42	909.84	45.58	20.962	
5,880.00	5,741.03	5,703.36	5,564.86	24.57	23.99	108.31	-507.14	708.68	962.26	916.46	45.80	21.009	
5,900.00	5,759.00	5,721.97	5,582.37	24.70	24.11	106.20	-510.72	713.86	969.06	923.03	46.03	21.053	
5,920.00	5,776.66	5,740.48	5,599.79	24.85	24.22	104.35	-514.29	719.02	975.80	929.53	46.27	21.089	
5,940.00	5,794.02	5,758.88	5,617.10	25.00	24.33	102.71	-517.83	724.15	982.49	935.97	46.51	21.123	
5,950.00	5,802.57	5,768.03	5,625.71	25.08	24.38	101.97	-519.59	726.70	985.81	939.18	46.63	21.139	
5,960.00	5,811.03	5,777.15	5,634.28	25.16	24.44	101.26	-521.34	729.23	989.12	942.36	46.76	21.151	
5,980.00	5,827.69	5,795.25	5,651.32	25.33	24.55	99.97	-524.83	734.28	995.70	948.68	47.02	21.174	
6,000.00	5,843.96	5,813.17	5,668.18	25.50	24.66	98.83	-528.28	739.27	1,002.23	954.95	47.28	21.196	
6,020.00	5,859.84	5,832.49	5,686.33	25.69	24.78	97.83	-531.99	744.73	1,008.71	961.13	47.59	21.198	
6,040.00	5,875.31	5,853.90	5,706.26	25.87	24.91	96.97	-536.07	751.42	1,015.09	967.17	47.92	21.182	
6,050.00	5,882.88	5,864.76	5,716.27	25.97	24.99	96.56	-538.12	755.10	1,018.24	970.14	48.10	21.170	
6,060.00	5,890.33	5,875.72	5,726.30	26.07	25.06	96.18	-540.17	759.02	1,021.35	973.07	48.29	21.152	
6,080.00	5,904.90	5,897.96	5,746.41	26.28	25.22	95.47	-544.29	767.56	1,027.49	978.82	48.67	21.113	
6,100.00	5,919.00	5,920.64	5,766.58	26.49	25.40	94.82	-548.42	777.08	1,033.49	984.42	49.07	21.061	
6,120.00	5,932.61	5,943.79	5,786.76	26.72	25.58	94.24	-552.56	787.63	1,039.34	989.84	49.51	20.994	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,140.00	5,945.72	5,967.41	5,806.90	26.95	25.78	93.70	-556.69	799.24	1,045.04	995.08	49.96	20.917	
6,150.00	5,952.07	5,979.40	5,816.95	27.06	25.88	93.46	-558.76	805.46	1,047.83	997.63	50.20	20.875	
6,160.00	5,958.30	5,991.52	5,826.97	27.19	25.99	93.22	-560.81	811.96	1,050.57	1,000.13	50.44	20.827	
6,180.00	5,970.34	6,016.15	5,846.90	27.44	26.22	92.79	-564.91	825.83	1,055.93	1,004.97	50.96	20.722	
6,200.00	5,981.83	6,041.31	5,866.64	27.69	26.47	92.40	-568.96	840.89	1,061.09	1,009.61	51.49	20.609	
6,220.00	5,992.76	6,067.01	5,886.12	27.97	26.73	92.05	-572.97	857.17	1,066.06	1,014.00	52.06	20.476	
6,240.00	6,003.11	6,093.26	5,905.25	28.25	27.02	91.73	-576.91	874.70	1,070.82	1,018.16	52.66	20.335	
6,250.00	6,008.06	6,106.59	5,914.66	28.38	27.17	91.59	-578.84	883.95	1,073.11	1,020.15	52.96	20.261	
6,260.00	6,012.86	6,120.06	5,923.95	28.53	27.33	91.46	-580.76	893.51	1,075.35	1,022.06	53.29	20.178	
6,280.00	6,022.01	6,147.43	5,942.14	28.84	27.65	91.21	-584.51	913.61	1,079.66	1,025.70	53.95	20.010	
6,300.00	6,030.55	6,175.36	5,959.71	29.14	28.01	90.99	-588.13	935.02	1,083.72	1,029.06	54.65	19.829	
6,320.00	6,038.46	6,203.85	5,976.55	29.46	28.39	90.81	-591.62	957.72	1,087.52	1,032.13	55.39	19.634	
6,340.00	6,045.73	6,232.88	5,992.56	29.78	28.80	90.64	-594.93	981.71	1,091.06	1,034.90	56.16	19.427	
6,350.00	6,049.13	6,247.60	6,000.21	29.95	29.00	90.57	-596.51	994.18	1,092.73	1,036.17	56.55	19.323	
6,360.00	6,052.36	6,262.45	6,007.61	30.12	29.23	90.51	-598.05	1,006.96	1,094.32	1,037.35	56.97	19.209	
6,380.00	6,058.34	6,292.52	6,021.59	30.47	29.69	90.39	-600.95	1,033.42	1,097.29	1,039.48	57.81	18.980	
6,400.00	6,063.66	6,323.07	6,034.39	30.81	30.18	90.29	-603.62	1,061.04	1,099.97	1,041.28	58.69	18.742	
6,420.00	6,068.31	6,354.07	6,045.87	31.18	30.69	90.21	-606.02	1,089.72	1,102.34	1,042.73	59.61	18.493	
6,440.00	6,072.29	6,385.47	6,055.94	31.54	31.24	90.14	-608.13	1,119.38	1,104.39	1,043.84	60.56	18.237	
6,450.00	6,074.03	6,401.30	6,060.41	31.73	31.52	90.12	-609.07	1,134.55	1,105.30	1,044.26	61.03	18.110	
6,460.00	6,075.60	6,417.22	6,064.49	31.92	31.81	90.09	-609.94	1,149.91	1,106.12	1,044.59	61.53	17.975	
6,480.00	6,078.23	6,449.28	6,071.42	32.30	32.40	90.05	-611.41	1,181.17	1,107.52	1,044.98	62.54	17.710	
6,500.00	6,080.17	6,481.58	6,076.67	32.68	33.02	90.02	-612.55	1,213.01	1,108.59	1,045.02	63.57	17.440	
6,520.00	6,081.42	6,514.05	6,080.16	33.07	33.65	90.01	-613.32	1,245.29	1,109.31	1,044.70	64.62	17.168	
6,540.00	6,081.99	6,546.64	6,081.86	33.47	34.29	90.00	-613.73	1,277.82	1,109.69	1,044.02	65.67	16.897	
6,552.18	6,082.00	6,566.51	6,082.00	33.71	34.68	90.00	-613.80	1,297.69	1,109.76	1,043.44	66.32	16.733	
6,560.00	6,081.92	6,574.33	6,081.92	33.86	34.84	90.00	-613.80	1,305.51	1,109.76	1,043.11	66.65	16.651	
6,580.00	6,081.73	6,594.33	6,081.73	34.27	35.24	90.00	-613.80	1,325.51	1,109.76	1,042.27	67.49	16.444	
6,600.00	6,081.53	6,614.33	6,081.53	34.67	35.66	90.00	-613.80	1,345.51	1,109.76	1,041.42	68.34	16.239	
6,620.00	6,081.34	6,634.33	6,081.34	35.10	36.07	90.00	-613.80	1,365.51	1,109.76	1,040.55	69.21	16.034	
6,640.00	6,081.14	6,654.33	6,081.14	35.52	36.50	90.00	-613.80	1,385.51	1,109.76	1,039.67	70.08	15.834	
6,660.00	6,080.95	6,674.33	6,080.95	35.94	36.92	90.00	-613.80	1,405.51	1,109.76	1,038.80	70.96	15.639	
6,680.00	6,080.76	6,694.33	6,080.76	36.37	37.34	90.00	-613.80	1,425.51	1,109.76	1,037.93	71.83	15.449	
6,700.00	6,080.56	6,714.33	6,080.56	36.79	37.78	90.00	-613.80	1,445.51	1,109.76	1,037.04	72.72	15.260	
6,720.00	6,080.37	6,734.33	6,080.37	37.24	38.22	90.00	-613.80	1,465.51	1,109.76	1,036.12	73.64	15.070	
6,740.00	6,080.17	6,754.33	6,080.17	37.69	38.66	90.00	-613.80	1,485.50	1,109.76	1,035.20	74.56	14.885	
6,760.00	6,079.98	6,774.33	6,079.98	38.13	39.11	90.00	-613.81	1,505.50	1,109.76	1,034.28	75.47	14.704	
6,780.00	6,079.78	6,794.33	6,079.78	38.58	39.55	90.00	-613.81	1,525.50	1,109.76	1,033.37	76.39	14.527	
6,800.00	6,079.59	6,814.33	6,079.59	39.03	40.01	90.00	-613.81	1,545.50	1,109.76	1,032.44	77.32	14.352	
6,820.00	6,079.39	6,834.33	6,079.39	39.49	40.47	90.00	-613.81	1,565.50	1,109.76	1,031.48	78.28	14.178	
6,840.00	6,079.20	6,854.33	6,079.20	39.96	40.94	90.00	-613.81	1,585.50	1,109.76	1,030.53	79.23	14.007	
6,860.00	6,079.00	6,874.33	6,079.00	40.43	41.40	90.00	-613.81	1,605.50	1,109.76	1,029.58	80.18	13.840	
6,880.00	6,078.81	6,894.33	6,078.81	40.89	41.86	90.00	-613.81	1,625.50	1,109.76	1,028.62	81.14	13.678	
6,900.00	6,078.61	6,914.33	6,078.61	41.36	42.34	90.00	-613.81	1,645.50	1,109.76	1,027.66	82.10	13.517	
6,920.00	6,078.42	6,934.33	6,078.42	41.84	42.82	90.00	-613.81	1,665.50	1,109.76	1,026.67	83.09	13.357	
6,940.00	6,078.22	6,954.33	6,078.22	42.32	43.30	90.00	-613.81	1,685.49	1,109.76	1,025.69	84.07	13.201	
6,960.00	6,078.03	6,974.33	6,078.03	42.81	43.78	90.00	-613.81	1,705.49	1,109.76	1,024.71	85.05	13.048	
6,980.00	6,077.83	6,994.33	6,077.83	43.29	44.26	90.00	-613.81	1,725.49	1,109.76	1,023.72	86.04	12.899	
7,000.00	6,077.64	7,014.33	6,077.64	43.77	44.75	90.00	-613.81	1,745.49	1,109.76	1,022.73	87.03	12.752	
7,020.00	6,077.44	7,034.33	6,077.44	44.27	45.24	90.00	-613.81	1,765.49	1,109.76	1,021.72	88.04	12.605	
7,040.00	6,077.25	7,054.33	6,077.25	44.76	45.73	90.00	-613.81	1,785.49	1,109.76	1,020.71	89.05	12.463	
7,060.00	6,077.05	7,074.33	6,077.05	45.26	46.23	90.00	-613.81	1,805.49	1,109.76	1,019.70	90.06	12.323	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,080.00	6,076.86	7,094.33	6,076.86	45.76	46.72	90.00	-613.81	1,825.49	1,109.76	1,018.69	91.07	12.186	
7,100.00	6,076.66	7,114.33	6,076.66	46.25	47.22	90.00	-613.81	1,845.49	1,109.76	1,017.68	92.08	12.052	
7,120.00	6,076.47	7,134.33	6,076.47	46.76	47.73	90.00	-613.81	1,865.49	1,109.76	1,016.65	93.11	11.918	
7,140.00	6,076.27	7,154.33	6,076.27	47.27	48.23	90.00	-613.81	1,885.49	1,109.76	1,015.62	94.14	11.788	
7,160.00	6,076.08	7,174.33	6,076.08	47.78	48.74	90.00	-613.81	1,905.48	1,109.76	1,014.59	95.17	11.660	
7,180.00	6,075.88	7,194.33	6,075.88	48.28	49.25	90.00	-613.81	1,925.48	1,109.76	1,013.56	96.21	11.535	
7,200.00	6,075.69	7,214.33	6,075.69	48.79	49.76	90.00	-613.81	1,945.48	1,109.76	1,012.52	97.24	11.412	
7,220.00	6,075.49	7,234.33	6,075.49	49.31	50.27	90.00	-613.81	1,965.48	1,109.76	1,011.47	98.29	11.291	
7,240.00	6,075.30	7,254.33	6,075.30	49.83	50.79	90.00	-613.81	1,985.48	1,109.76	1,010.42	99.34	11.171	
7,260.00	6,075.11	7,274.33	6,075.11	50.34	51.31	90.00	-613.81	2,005.48	1,109.76	1,009.37	100.39	11.055	
7,280.00	6,074.91	7,294.33	6,074.91	50.86	51.82	90.00	-613.81	2,025.48	1,109.76	1,008.32	101.44	10.940	
7,300.00	6,074.72	7,314.33	6,074.72	51.38	52.34	90.00	-613.81	2,045.48	1,109.76	1,007.27	102.49	10.828	
7,320.00	6,074.52	7,334.33	6,074.52	51.90	52.87	90.00	-613.81	2,065.48	1,109.76	1,006.21	103.56	10.717	
7,340.00	6,074.33	7,354.33	6,074.33	52.43	53.39	90.00	-613.81	2,085.48	1,109.76	1,005.14	104.62	10.608	
7,360.00	6,074.13	7,374.33	6,074.13	52.96	53.92	90.00	-613.81	2,105.47	1,109.76	1,004.08	105.68	10.501	
7,380.00	6,073.94	7,394.33	6,073.94	53.48	54.44	90.00	-613.81	2,125.47	1,109.76	1,003.01	106.75	10.396	
7,400.00	6,073.74	7,414.33	6,073.74	54.01	54.97	90.00	-613.81	2,145.47	1,109.76	1,001.94	107.82	10.293	
7,420.00	6,073.55	7,434.33	6,073.55	54.54	55.50	90.00	-613.81	2,165.47	1,109.76	1,000.87	108.90	10.191	
7,440.00	6,073.35	7,454.33	6,073.35	55.07	56.03	90.00	-613.81	2,185.47	1,109.76	999.79	109.97	10.091	
7,460.00	6,073.16	7,474.33	6,073.16	55.61	56.56	90.00	-613.81	2,205.47	1,109.76	998.71	111.05	9.993	
7,480.00	6,072.96	7,494.33	6,072.96	56.14	57.10	90.00	-613.81	2,225.47	1,109.76	997.64	112.13	9.897	
7,500.00	6,072.77	7,514.33	6,072.77	56.67	57.63	90.00	-613.81	2,245.47	1,109.76	996.55	113.21	9.803	
7,520.00	6,072.57	7,534.33	6,072.57	57.21	58.17	90.00	-613.81	2,265.47	1,109.76	995.46	114.30	9.709	
7,540.00	6,072.38	7,554.33	6,072.38	57.75	58.71	90.00	-613.81	2,285.47	1,109.76	994.38	115.39	9.618	
7,560.00	6,072.18	7,574.33	6,072.18	58.29	59.25	90.00	-613.81	2,305.47	1,109.76	993.29	116.48	9.528	
7,580.00	6,071.99	7,594.33	6,071.99	58.83	59.78	90.00	-613.81	2,325.46	1,109.76	992.20	117.57	9.440	
7,600.00	6,071.79	7,614.33	6,071.79	59.37	60.33	90.00	-613.81	2,345.46	1,109.76	991.11	118.66	9.353	
7,620.00	6,071.60	7,634.33	6,071.60	59.92	60.87	90.00	-613.81	2,365.46	1,109.76	990.01	119.76	9.267	
7,640.00	6,071.40	7,654.33	6,071.40	60.46	61.41	90.00	-613.81	2,385.46	1,109.76	988.91	120.86	9.182	
7,660.00	6,071.21	7,674.33	6,071.21	61.01	61.96	90.00	-613.81	2,405.46	1,109.76	987.81	121.96	9.100	
7,680.00	6,071.01	7,694.33	6,071.01	61.55	62.50	90.00	-613.81	2,425.46	1,109.76	986.71	123.05	9.018	
7,700.00	6,070.82	7,714.33	6,070.82	62.10	63.05	90.00	-613.81	2,445.46	1,109.76	985.61	124.16	8.938	
7,720.00	6,070.62	7,734.33	6,070.62	62.65	63.60	90.00	-613.81	2,465.46	1,109.76	984.50	125.26	8.859	
7,740.00	6,070.43	7,754.33	6,070.43	63.19	64.14	90.00	-613.81	2,485.46	1,109.76	983.39	126.37	8.782	
7,760.00	6,070.23	7,774.33	6,070.23	63.74	64.69	90.00	-613.81	2,505.46	1,109.76	982.29	127.48	8.705	
7,780.00	6,070.04	7,794.33	6,070.04	64.29	65.24	90.00	-613.81	2,525.45	1,109.77	981.18	128.59	8.630	
7,800.00	6,069.85	7,814.33	6,069.85	64.84	65.79	90.00	-613.81	2,545.45	1,109.77	980.07	129.70	8.557	
7,820.00	6,069.65	7,834.33	6,069.65	65.40	66.34	90.00	-613.81	2,565.45	1,109.77	978.95	130.81	8.484	
7,840.00	6,069.46	7,854.33	6,069.46	65.95	66.90	90.00	-613.81	2,585.45	1,109.77	977.84	131.93	8.412	
7,860.00	6,069.26	7,874.33	6,069.26	66.51	67.45	90.00	-613.81	2,605.45	1,109.77	976.72	133.04	8.341	
7,880.00	6,069.07	7,894.33	6,069.07	67.06	68.00	90.00	-613.81	2,625.45	1,109.77	975.61	134.16	8.272	
7,900.00	6,068.87	7,914.33	6,068.87	67.61	68.56	90.00	-613.81	2,645.45	1,109.77	974.49	135.28	8.204	
7,920.00	6,068.68	7,934.33	6,068.68	68.17	69.11	90.00	-613.81	2,665.45	1,109.77	973.37	136.40	8.136	
7,940.00	6,068.48	7,954.33	6,068.48	68.73	69.67	90.00	-613.81	2,685.45	1,109.77	972.25	137.52	8.070	
7,960.00	6,068.29	7,974.33	6,068.29	69.29	70.23	90.00	-613.81	2,705.45	1,109.77	971.12	138.64	8.004	
7,980.00	6,068.09	7,994.33	6,068.09	69.84	70.78	90.00	-613.81	2,725.45	1,109.77	970.00	139.77	7.940	
8,000.00	6,067.90	8,014.33	6,067.90	70.40	71.34	90.00	-613.81	2,745.44	1,109.77	968.88	140.89	7.877	
8,020.00	6,067.70	8,034.33	6,067.70	70.96	71.90	90.00	-613.81	2,765.44	1,109.77	967.75	142.02	7.814	
8,040.00	6,067.51	8,054.33	6,067.51	71.52	72.46	90.00	-613.81	2,785.44	1,109.77	966.62	143.15	7.753	
8,060.00	6,067.31	8,074.33	6,067.31	72.08	73.02	90.00	-613.81	2,805.44	1,109.77	965.49	144.27	7.692	
8,080.00	6,067.12	8,094.33	6,067.12	72.64	73.58	90.00	-613.81	2,825.44	1,109.77	964.37	145.40	7.632	
8,100.00	6,066.92	8,114.33	6,066.92	73.20	74.14	90.00	-613.81	2,845.44	1,109.77	963.24	146.53	7.574	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,120.00	6,066.73	8,134.33	6,066.73	73.77	74.71	90.00	-613.81	2,865.44	1,109.77	962.10	147.66	7.515	
8,140.00	6,066.53	8,154.33	6,066.53	74.33	75.27	90.00	-613.81	2,885.44	1,109.77	960.97	148.80	7.458	
8,160.00	6,066.34	8,174.33	6,066.34	74.90	75.83	90.00	-613.81	2,905.44	1,109.77	959.84	149.93	7.402	
8,180.00	6,066.14	8,194.33	6,066.14	75.46	76.40	90.00	-613.81	2,925.44	1,109.77	958.70	151.06	7.346	
8,200.00	6,065.95	8,214.33	6,065.95	76.02	76.96	90.00	-613.82	2,945.43	1,109.77	957.57	152.20	7.292	
8,220.00	6,065.75	8,234.33	6,065.75	76.59	77.53	90.00	-613.82	2,965.43	1,109.77	956.43	153.34	7.237	
8,240.00	6,065.56	8,254.33	6,065.56	77.16	78.09	90.00	-613.82	2,985.43	1,109.77	955.29	154.48	7.184	
8,260.00	6,065.36	8,274.33	6,065.36	77.72	78.66	90.00	-613.82	3,005.43	1,109.77	954.16	155.61	7.132	
8,280.00	6,065.17	8,294.33	6,065.17	78.29	79.22	90.00	-613.82	3,025.43	1,109.77	953.02	156.75	7.080	
8,300.00	6,064.97	8,314.33	6,064.97	78.85	79.79	90.00	-613.82	3,045.43	1,109.77	951.88	157.89	7.029	
8,320.00	6,064.78	8,334.33	6,064.78	79.42	80.36	90.00	-613.82	3,065.43	1,109.77	950.74	159.03	6.978	
8,340.00	6,064.59	8,354.33	6,064.59	79.99	80.92	90.00	-613.82	3,085.43	1,109.77	949.59	160.17	6.928	
8,360.00	6,064.39	8,374.33	6,064.39	80.56	81.49	90.00	-613.82	3,105.43	1,109.77	948.45	161.32	6.879	
8,380.00	6,064.20	8,394.33	6,064.20	81.13	82.06	90.00	-613.82	3,125.43	1,109.77	947.31	162.46	6.831	
8,400.00	6,064.00	8,414.33	6,064.00	81.70	82.63	90.00	-613.82	3,145.43	1,109.77	946.17	163.60	6.783	
8,420.00	6,063.81	8,434.33	6,063.81	82.27	83.20	90.00	-613.82	3,165.42	1,109.77	945.02	164.75	6.736	
8,440.00	6,063.61	8,454.33	6,063.61	82.84	83.77	90.00	-613.82	3,185.42	1,109.77	943.87	165.89	6.690	
8,460.00	6,063.42	8,474.33	6,063.42	83.41	84.34	90.00	-613.82	3,205.42	1,109.77	942.73	167.04	6.644	
8,480.00	6,063.22	8,494.33	6,063.22	83.98	84.91	90.00	-613.82	3,225.42	1,109.77	941.58	168.19	6.598	
8,500.00	6,063.03	8,514.33	6,063.03	84.55	85.48	90.00	-613.82	3,245.42	1,109.77	940.44	169.33	6.554	
8,520.00	6,062.83	8,534.33	6,062.83	85.12	86.05	90.00	-613.82	3,265.42	1,109.77	939.29	170.48	6.510	
8,540.00	6,062.64	8,554.33	6,062.64	85.69	86.62	90.00	-613.82	3,285.42	1,109.77	938.14	171.63	6.466	
8,560.00	6,062.44	8,574.33	6,062.44	86.27	87.20	90.00	-613.82	3,305.42	1,109.77	936.99	172.78	6.423	
8,580.00	6,062.25	8,594.33	6,062.25	86.84	87.77	90.00	-613.82	3,325.42	1,109.77	935.84	173.93	6.380	
8,600.00	6,062.05	8,614.33	6,062.05	87.41	88.34	90.00	-613.82	3,345.42	1,109.77	934.69	175.08	6.339	
8,620.00	6,061.86	8,634.33	6,061.86	87.99	88.91	90.00	-613.82	3,365.41	1,109.77	933.54	176.23	6.297	
8,640.00	6,061.66	8,654.33	6,061.66	88.56	89.49	90.00	-613.82	3,385.41	1,109.77	932.38	177.39	6.256	
8,660.00	6,061.47	8,674.33	6,061.47	89.13	90.06	90.00	-613.82	3,405.41	1,109.77	931.23	178.54	6.216	
8,680.00	6,061.27	8,694.33	6,061.27	89.71	90.64	90.00	-613.82	3,425.41	1,109.77	930.08	179.69	6.176	
8,700.00	6,061.08	8,714.33	6,061.08	90.28	91.21	90.00	-613.82	3,445.41	1,109.77	928.93	180.85	6.137	
8,720.00	6,060.88	8,734.33	6,060.88	90.86	91.79	90.00	-613.82	3,465.41	1,109.77	927.77	182.00	6.098	
8,740.00	6,060.69	8,754.33	6,060.69	91.43	92.36	90.00	-613.82	3,485.41	1,109.77	926.62	183.16	6.059	
8,760.00	6,060.49	8,774.33	6,060.49	92.01	92.94	90.00	-613.82	3,505.41	1,109.77	925.46	184.31	6.021	
8,780.00	6,060.30	8,794.33	6,060.30	92.59	93.51	90.00	-613.82	3,525.41	1,109.77	924.30	185.47	5.984	
8,800.00	6,060.10	8,814.33	6,060.10	93.16	94.09	90.00	-613.82	3,545.41	1,109.77	923.15	186.62	5.947	
8,820.00	6,059.91	8,834.33	6,059.91	93.74	94.66	90.00	-613.82	3,565.41	1,109.77	921.99	187.78	5.910	
8,840.00	6,059.71	8,854.33	6,059.71	94.32	95.24	90.00	-613.82	3,585.40	1,109.77	920.83	188.94	5.874	
8,860.00	6,059.52	8,874.33	6,059.52	94.89	95.82	90.00	-613.82	3,605.40	1,109.77	919.68	190.10	5.838	
8,880.00	6,059.33	8,894.33	6,059.33	95.47	96.39	90.00	-613.82	3,625.40	1,109.77	918.52	191.25	5.803	
8,900.00	6,059.13	8,914.33	6,059.13	96.05	96.97	90.00	-613.82	3,645.40	1,109.77	917.36	192.41	5.768	
8,920.00	6,058.94	8,934.33	6,058.94	96.63	97.55	90.00	-613.82	3,665.40	1,109.77	916.20	193.57	5.733	
8,940.00	6,058.74	8,954.33	6,058.74	97.20	98.13	90.00	-613.82	3,685.40	1,109.77	915.04	194.73	5.699	
8,960.00	6,058.55	8,974.33	6,058.55	97.78	98.70	90.00	-613.82	3,705.40	1,109.77	913.88	195.89	5.665	
8,980.00	6,058.35	8,994.33	6,058.35	98.36	99.28	90.00	-613.82	3,725.40	1,109.77	912.72	197.05	5.632	
9,000.00	6,058.16	9,014.33	6,058.16	98.94	99.86	90.00	-613.82	3,745.40	1,109.77	911.56	198.21	5.599	
9,020.00	6,057.96	9,034.33	6,057.96	99.52	100.44	90.00	-613.82	3,765.40	1,109.77	910.40	199.38	5.566	
9,040.00	6,057.77	9,054.33	6,057.77	100.10	101.02	90.00	-613.82	3,785.40	1,109.77	909.23	200.54	5.534	
9,060.00	6,057.57	9,074.33	6,057.57	100.68	101.60	90.00	-613.82	3,805.39	1,109.77	908.07	201.70	5.502	
9,080.00	6,057.38	9,094.33	6,057.38	101.26	102.18	90.00	-613.82	3,825.39	1,109.77	906.91	202.86	5.471	
9,100.00	6,057.18	9,114.33	6,057.18	101.84	102.76	90.00	-613.82	3,845.39	1,109.77	905.75	204.03	5.439	
9,120.00	6,056.99	9,134.33	6,056.99	102.42	103.34	90.00	-613.82	3,865.39	1,109.77	904.58	205.19	5.408	
9,140.00	6,056.79	9,154.33	6,056.79	103.00	103.92	90.00	-613.82	3,885.39	1,109.77	903.42	206.36	5.378	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,160.00	6,056.60	9,174.33	6,056.60	103.58	104.50	90.00	-613.82	3,905.39	1,109.77	902.25	207.52	5.348	
9,180.00	6,056.40	9,194.33	6,056.40	104.16	105.08	90.00	-613.82	3,925.39	1,109.77	901.09	208.68	5.318	
9,200.00	6,056.21	9,214.33	6,056.21	104.74	105.66	90.00	-613.82	3,945.39	1,109.77	899.93	209.85	5.288	
9,220.00	6,056.01	9,234.33	6,056.01	105.32	106.24	90.00	-613.82	3,965.39	1,109.77	898.76	211.02	5.259	
9,240.00	6,055.82	9,254.33	6,055.82	105.90	106.82	90.00	-613.82	3,985.39	1,109.77	897.59	212.18	5.230	
9,260.00	6,055.62	9,274.33	6,055.62	106.49	107.40	90.00	-613.82	4,005.38	1,109.77	896.43	213.35	5.202	
9,280.00	6,055.43	9,294.33	6,055.43	107.07	107.98	90.00	-613.82	4,025.38	1,109.77	895.26	214.51	5.173	
9,300.00	6,055.23	9,314.33	6,055.23	107.65	108.57	90.00	-613.82	4,045.38	1,109.78	894.09	215.68	5.145	
9,320.00	6,055.04	9,334.33	6,055.04	108.23	109.15	90.00	-613.82	4,065.38	1,109.78	892.93	216.85	5.118	
9,340.00	6,054.84	9,354.33	6,054.84	108.81	109.73	90.00	-613.82	4,085.38	1,109.78	891.76	218.02	5.090	
9,360.00	6,054.65	9,374.33	6,054.65	109.40	110.31	90.00	-613.82	4,105.38	1,109.78	890.59	219.18	5.063	
9,380.00	6,054.45	9,394.33	6,054.45	109.98	110.89	90.00	-613.82	4,125.38	1,109.78	889.42	220.35	5.036	
9,400.00	6,054.26	9,414.33	6,054.26	110.56	111.48	90.00	-613.82	4,145.38	1,109.78	888.26	221.52	5.010	
9,420.00	6,054.07	9,434.33	6,054.07	111.14	112.06	90.00	-613.82	4,165.38	1,109.78	887.09	222.69	4.984	
9,440.00	6,053.87	9,454.33	6,053.87	111.73	112.64	90.00	-613.82	4,185.38	1,109.78	885.92	223.86	4.958	
9,460.00	6,053.68	9,474.33	6,053.68	112.31	113.23	90.00	-613.82	4,205.38	1,109.78	884.75	225.03	4.932	
9,480.00	6,053.48	9,494.33	6,053.48	112.89	113.81	90.00	-613.82	4,225.37	1,109.78	883.58	226.20	4.906	
9,500.00	6,053.29	9,514.33	6,053.29	113.48	114.39	90.00	-613.82	4,245.37	1,109.78	882.41	227.37	4.881	
9,520.00	6,053.09	9,534.33	6,053.09	114.06	114.98	90.00	-613.82	4,265.37	1,109.78	881.24	228.54	4.856	
9,540.00	6,052.90	9,554.33	6,052.90	114.65	115.56	90.00	-613.82	4,285.37	1,109.78	880.07	229.71	4.831	
9,560.00	6,052.70	9,574.33	6,052.70	115.23	116.14	90.00	-613.82	4,305.37	1,109.78	878.90	230.88	4.807	
9,580.00	6,052.51	9,594.33	6,052.51	115.81	116.73	90.00	-613.82	4,325.37	1,109.78	877.73	232.05	4.783	
9,600.00	6,052.31	9,614.33	6,052.31	116.40	117.31	90.00	-613.82	4,345.37	1,109.78	876.56	233.22	4.759	
9,620.00	6,052.12	9,634.33	6,052.12	116.98	117.90	90.00	-613.82	4,365.37	1,109.78	875.39	234.39	4.735	
9,640.00	6,051.92	9,654.33	6,051.92	117.57	118.48	90.00	-613.83	4,385.37	1,109.78	874.21	235.56	4.711	
9,660.00	6,051.73	9,674.33	6,051.73	118.15	119.07	90.00	-613.83	4,405.37	1,109.78	873.04	236.74	4.688	
9,680.00	6,051.53	9,694.33	6,051.53	118.74	119.65	90.00	-613.83	4,425.36	1,109.78	871.87	237.91	4.665	
9,700.00	6,051.34	9,714.33	6,051.34	119.32	120.24	90.00	-613.83	4,445.36	1,109.78	870.70	239.08	4.642	
9,720.00	6,051.14	9,734.33	6,051.14	119.91	120.82	90.00	-613.83	4,465.36	1,109.78	869.53	240.25	4.619	
9,740.00	6,050.95	9,754.33	6,050.95	120.49	121.41	90.00	-613.83	4,485.36	1,109.78	868.35	241.43	4.597	
9,760.00	6,050.75	9,774.33	6,050.75	121.08	121.99	90.00	-613.83	4,505.36	1,109.78	867.18	242.60	4.575	
9,780.00	6,050.56	9,794.33	6,050.56	121.67	122.58	90.00	-613.83	4,525.36	1,109.78	866.01	243.77	4.553	
9,800.00	6,050.36	9,814.33	6,050.36	122.25	123.16	90.00	-613.83	4,545.36	1,109.78	864.83	244.95	4.531	
9,820.00	6,050.17	9,834.33	6,050.17	122.84	123.75	90.00	-613.83	4,565.36	1,109.78	863.66	246.12	4.509	
9,840.00	6,049.97	9,854.33	6,049.97	123.42	124.33	90.00	-613.83	4,585.36	1,109.78	862.48	247.29	4.488	
9,860.00	6,049.78	9,874.33	6,049.78	124.01	124.92	90.00	-613.83	4,605.36	1,109.78	861.31	248.47	4.466	
9,880.00	6,049.58	9,894.33	6,049.58	124.60	125.50	90.00	-613.83	4,625.36	1,109.78	860.14	249.64	4.445	
9,900.00	6,049.39	9,914.33	6,049.39	125.18	126.09	90.00	-613.83	4,645.35	1,109.78	858.96	250.82	4.425	
9,920.00	6,049.19	9,934.33	6,049.19	125.77	126.68	90.00	-613.83	4,665.35	1,109.78	857.79	251.99	4.404	
9,940.00	6,049.00	9,954.33	6,049.00	126.35	127.26	90.00	-613.83	4,685.35	1,109.78	856.61	253.17	4.384	
9,960.00	6,048.80	9,974.33	6,048.80	126.94	127.85	90.00	-613.83	4,705.35	1,109.78	855.44	254.34	4.363	
9,980.00	6,048.61	9,994.33	6,048.61	127.53	128.44	90.00	-613.83	4,725.35	1,109.78	854.26	255.52	4.343	
10,000.00	6,048.42	10,014.33	6,048.42	128.11	129.02	90.00	-613.83	4,745.35	1,109.78	853.09	256.69	4.323	
10,020.00	6,048.22	10,034.33	6,048.22	128.70	129.61	90.00	-613.83	4,765.35	1,109.78	851.91	257.87	4.304	
10,040.00	6,048.03	10,054.33	6,048.03	129.29	130.20	90.00	-613.83	4,785.35	1,109.78	850.73	259.05	4.284	
10,060.00	6,047.83	10,074.33	6,047.83	129.88	130.78	90.00	-613.83	4,805.35	1,109.78	849.56	260.22	4.265	
10,080.00	6,047.64	10,094.33	6,047.64	130.46	131.37	90.00	-613.83	4,825.35	1,109.78	848.38	261.40	4.246	
10,100.00	6,047.44	10,114.33	6,047.44	131.05	131.96	90.00	-613.83	4,845.34	1,109.78	847.20	262.58	4.227	
10,120.00	6,047.25	10,134.33	6,047.25	131.64	132.55	90.00	-613.83	4,865.34	1,109.78	846.03	263.75	4.208	
10,140.00	6,047.05	10,154.33	6,047.05	132.23	133.13	90.00	-613.83	4,885.34	1,109.78	844.85	264.93	4.189	
10,160.00	6,046.86	10,174.33	6,046.86	132.81	133.72	90.00	-613.83	4,905.34	1,109.78	843.67	266.11	4.170	
10,180.00	6,046.66	10,194.33	6,046.66	133.40	134.31	90.00	-613.83	4,925.34	1,109.78	842.50	267.29	4.152	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	6,046.47	10,214.33	6,046.47	133.99	134.90	90.00	-613.83	4,945.34	1,109.78	841.32	268.46	4.134	
10,220.00	6,046.27	10,234.33	6,046.27	134.58	135.48	90.00	-613.83	4,965.34	1,109.78	840.14	269.64	4.116	
10,240.00	6,046.08	10,254.33	6,046.08	135.17	136.07	90.00	-613.83	4,985.34	1,109.78	838.96	270.82	4.098	
10,260.00	6,045.88	10,274.33	6,045.88	135.75	136.66	90.00	-613.83	5,005.34	1,109.78	837.78	272.00	4.080	
10,280.00	6,045.69	10,294.33	6,045.69	136.34	137.25	90.00	-613.83	5,025.34	1,109.78	836.61	273.18	4.063	
10,300.00	6,045.49	10,314.33	6,045.49	136.93	137.84	90.00	-613.83	5,045.34	1,109.78	835.43	274.35	4.045	
10,320.00	6,045.30	10,334.33	6,045.30	137.52	138.42	90.00	-613.83	5,065.33	1,109.78	834.25	275.53	4.028	
10,340.00	6,045.10	10,354.33	6,045.10	138.11	139.01	90.00	-613.83	5,085.33	1,109.78	833.07	276.71	4.011	
10,360.00	6,044.91	10,374.33	6,044.91	138.70	139.60	90.00	-613.83	5,105.33	1,109.78	831.89	277.89	3.994	
10,380.00	6,044.71	10,394.33	6,044.71	139.28	140.19	90.00	-613.83	5,125.33	1,109.78	830.71	279.07	3.977	
10,400.00	6,044.52	10,414.33	6,044.52	139.87	140.78	90.00	-613.83	5,145.33	1,109.78	829.53	280.25	3.960	
10,420.00	6,044.32	10,434.33	6,044.32	140.46	141.37	90.00	-613.83	5,165.33	1,109.78	828.35	281.43	3.943	
10,440.00	6,044.13	10,454.33	6,044.13	141.05	141.96	90.00	-613.83	5,185.33	1,109.78	827.18	282.61	3.927	
10,460.00	6,043.93	10,474.33	6,043.93	141.64	142.54	90.00	-613.83	5,205.33	1,109.78	826.00	283.79	3.911	
10,480.00	6,043.74	10,494.33	6,043.74	142.23	143.13	90.00	-613.83	5,225.33	1,109.78	824.82	284.97	3.894	
10,500.00	6,043.54	10,514.33	6,043.54	142.82	143.72	90.00	-613.83	5,245.33	1,109.78	823.64	286.15	3.878	
10,520.00	6,043.35	10,534.33	6,043.35	143.41	144.31	90.00	-613.83	5,265.32	1,109.78	822.46	287.33	3.862	
10,540.00	6,043.16	10,554.33	6,043.16	144.00	144.90	90.00	-613.83	5,285.32	1,109.78	821.28	288.51	3.847	
10,560.00	6,042.96	10,574.33	6,042.96	144.59	145.49	90.00	-613.83	5,305.32	1,109.78	820.10	289.69	3.831	
10,580.00	6,042.77	10,594.33	6,042.77	145.18	146.08	90.00	-613.83	5,325.32	1,109.78	818.92	290.87	3.815	
10,600.00	6,042.57	10,614.33	6,042.57	145.77	146.67	90.00	-613.83	5,345.32	1,109.78	817.74	292.05	3.800	
10,620.00	6,042.38	10,634.33	6,042.38	146.36	147.26	90.00	-613.83	5,365.32	1,109.78	816.55	293.23	3.785	
10,640.00	6,042.18	10,654.33	6,042.18	146.95	147.85	90.00	-613.83	5,385.32	1,109.78	815.37	294.41	3.770	
10,660.00	6,041.99	10,674.33	6,041.99	147.54	148.44	90.00	-613.83	5,405.32	1,109.78	814.19	295.59	3.754	
10,680.00	6,041.79	10,694.33	6,041.79	148.13	149.03	90.00	-613.83	5,425.32	1,109.78	813.01	296.77	3.740	
10,700.00	6,041.60	10,714.33	6,041.60	148.71	149.62	90.00	-613.83	5,445.32	1,109.78	811.83	297.95	3.725	
10,720.00	6,041.40	10,734.33	6,041.40	149.30	150.21	90.00	-613.83	5,465.32	1,109.78	810.65	299.14	3.710	
10,740.00	6,041.21	10,754.33	6,041.21	149.90	150.80	90.00	-613.83	5,485.31	1,109.78	809.47	300.32	3.695	
10,760.00	6,041.01	10,774.33	6,041.01	150.49	151.39	90.00	-613.83	5,505.31	1,109.78	808.29	301.50	3.681	
10,780.00	6,040.82	10,794.33	6,040.82	151.08	151.98	90.00	-613.83	5,525.31	1,109.78	807.10	302.68	3.667	
10,800.00	6,040.62	10,814.33	6,040.62	151.67	152.57	90.00	-613.83	5,545.31	1,109.78	805.92	303.86	3.652	
10,820.00	6,040.43	10,834.33	6,040.43	152.26	153.16	90.00	-613.83	5,565.31	1,109.78	804.74	305.04	3.638	
10,840.00	6,040.23	10,854.33	6,040.23	152.85	153.75	90.00	-613.83	5,585.31	1,109.79	803.56	306.23	3.624	
10,860.00	6,040.04	10,874.33	6,040.04	153.44	154.34	90.00	-613.83	5,605.31	1,109.79	802.38	307.41	3.610	
10,880.00	6,039.84	10,894.33	6,039.84	154.03	154.93	90.00	-613.83	5,625.31	1,109.79	801.19	308.59	3.596	
10,900.00	6,039.65	10,914.33	6,039.65	154.62	155.52	90.00	-613.83	5,645.31	1,109.79	800.01	309.77	3.583	
10,920.00	6,039.45	10,934.33	6,039.45	155.21	156.11	90.00	-613.83	5,665.31	1,109.79	798.83	310.96	3.569	
10,940.00	6,039.26	10,954.33	6,039.26	155.80	156.70	90.00	-613.83	5,685.30	1,109.79	797.65	312.14	3.555	
10,960.00	6,039.06	10,974.33	6,039.06	156.39	157.29	90.00	-613.83	5,705.30	1,109.79	796.46	313.32	3.542	
10,980.00	6,038.87	10,994.33	6,038.87	156.98	157.88	90.00	-613.83	5,725.30	1,109.79	795.28	314.50	3.529	
11,000.00	6,038.67	11,014.33	6,038.67	157.57	158.47	90.00	-613.83	5,745.30	1,109.79	794.10	315.69	3.515	
11,020.00	6,038.48	11,034.33	6,038.48	158.16	159.06	90.00	-613.83	5,765.30	1,109.79	792.92	316.87	3.502	
11,040.00	6,038.28	11,054.33	6,038.28	158.75	159.65	90.00	-613.83	5,785.30	1,109.79	791.73	318.05	3.489	
11,060.00	6,038.09	11,074.33	6,038.09	159.34	160.24	90.00	-613.84	5,805.30	1,109.79	790.55	319.24	3.476	
11,080.00	6,037.90	11,094.33	6,037.90	159.94	160.83	90.00	-613.84	5,825.30	1,109.79	789.37	320.42	3.464	
11,100.00	6,037.70	11,114.33	6,037.70	160.53	161.43	90.00	-613.84	5,845.30	1,109.79	788.18	321.60	3.451	
11,120.00	6,037.51	11,134.33	6,037.51	161.12	162.02	90.00	-613.84	5,865.30	1,109.79	787.00	322.79	3.438	
11,140.00	6,037.31	11,154.33	6,037.31	161.71	162.61	90.00	-613.84	5,885.30	1,109.79	785.82	323.97	3.426	
11,160.00	6,037.12	11,174.33	6,037.12	162.30	163.20	90.00	-613.84	5,905.29	1,109.79	784.63	325.16	3.413	
11,180.00	6,036.92	11,194.33	6,036.92	162.89	163.79	90.00	-613.84	5,925.29	1,109.79	783.45	326.34	3.401	
11,200.00	6,036.73	11,214.33	6,036.73	163.48	164.38	90.00	-613.84	5,945.29	1,109.79	782.26	327.52	3.388	
11,220.00	6,036.53	11,234.33	6,036.53	164.07	164.97	90.00	-613.84	5,965.29	1,109.79	781.08	328.71	3.376	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,240.00	6,036.34	11,254.33	6,036.34	164.67	165.56	90.00	-613.84	5,985.29	1,109.79	779.90	329.89	3.364	
11,260.00	6,036.14	11,274.33	6,036.14	165.26	166.16	90.00	-613.84	6,005.29	1,109.79	778.71	331.08	3.352	
11,280.00	6,035.95	11,294.33	6,035.95	165.85	166.75	90.00	-613.84	6,025.29	1,109.79	777.53	332.26	3.340	
11,300.00	6,035.75	11,314.33	6,035.75	166.44	167.34	90.00	-613.84	6,045.29	1,109.79	776.34	333.44	3.328	
11,320.00	6,035.56	11,334.33	6,035.56	167.03	167.93	90.00	-613.84	6,065.29	1,109.79	775.16	334.63	3.316	
11,340.00	6,035.36	11,354.33	6,035.36	167.62	168.52	90.00	-613.84	6,085.29	1,109.79	773.97	335.81	3.305	
11,360.00	6,035.17	11,374.33	6,035.17	168.22	169.11	90.00	-613.84	6,105.29	1,109.79	772.79	337.00	3.293	
11,380.00	6,034.97	11,394.33	6,034.97	168.81	169.71	90.00	-613.84	6,125.28	1,109.79	771.61	338.18	3.282	
11,400.00	6,034.78	11,414.33	6,034.78	169.40	170.30	90.00	-613.84	6,145.28	1,109.79	770.42	339.37	3.270	
11,420.00	6,034.58	11,434.33	6,034.58	169.99	170.89	90.00	-613.84	6,165.28	1,109.79	769.24	340.55	3.259	
11,440.00	6,034.39	11,454.33	6,034.39	170.58	171.48	90.00	-613.84	6,185.28	1,109.79	768.05	341.74	3.247	
11,460.00	6,034.19	11,474.33	6,034.19	171.18	172.07	90.00	-613.84	6,205.28	1,109.79	766.87	342.92	3.236	
11,480.00	6,034.00	11,494.33	6,034.00	171.77	172.66	90.00	-613.84	6,225.28	1,109.79	765.68	344.11	3.225	
11,500.00	6,033.80	11,514.33	6,033.80	172.36	173.26	90.00	-613.84	6,245.28	1,109.79	764.50	345.29	3.214	
11,520.00	6,033.61	11,534.33	6,033.61	172.95	173.85	90.00	-613.84	6,265.28	1,109.79	763.31	346.48	3.203	
11,540.00	6,033.41	11,554.33	6,033.41	173.55	174.44	90.00	-613.84	6,285.28	1,109.79	762.12	347.67	3.192	
11,560.00	6,033.22	11,574.33	6,033.22	174.14	175.03	90.00	-613.84	6,305.28	1,109.79	760.94	348.85	3.181	
11,580.00	6,033.02	11,594.33	6,033.02	174.73	175.63	90.00	-613.84	6,325.27	1,109.79	759.75	350.04	3.171	
11,600.00	6,032.83	11,614.33	6,032.83	175.32	176.22	90.00	-613.84	6,345.27	1,109.79	758.57	351.22	3.160	
11,620.00	6,032.64	11,634.33	6,032.64	175.91	176.81	90.00	-613.84	6,365.27	1,109.79	757.38	352.41	3.149	
11,640.00	6,032.44	11,654.33	6,032.44	176.51	177.40	90.00	-613.84	6,385.27	1,109.79	756.20	353.59	3.139	
11,660.00	6,032.25	11,674.33	6,032.25	177.10	177.99	90.00	-613.84	6,405.27	1,109.79	755.01	354.78	3.128	
11,680.00	6,032.05	11,694.33	6,032.05	177.69	178.59	90.00	-613.84	6,425.27	1,109.79	753.83	355.97	3.118	
11,700.00	6,031.86	11,714.33	6,031.86	178.28	179.18	90.00	-613.84	6,445.27	1,109.79	752.64	357.15	3.107	
11,720.00	6,031.66	11,734.33	6,031.66	178.88	179.77	90.00	-613.84	6,465.27	1,109.79	751.45	358.34	3.097	
11,740.00	6,031.47	11,754.33	6,031.47	179.47	180.36	90.00	-613.84	6,485.27	1,109.79	750.27	359.52	3.087	
11,760.00	6,031.27	11,774.33	6,031.27	180.06	180.96	90.00	-613.84	6,505.27	1,109.79	749.08	360.71	3.077	
11,780.00	6,031.08	11,794.33	6,031.08	180.65	181.55	90.00	-613.84	6,525.27	1,109.79	747.89	361.90	3.067	
11,800.00	6,030.88	11,814.33	6,030.88	181.25	182.14	90.00	-613.84	6,545.26	1,109.79	746.71	363.08	3.057	
11,820.00	6,030.69	11,834.33	6,030.69	181.84	182.73	90.00	-613.84	6,565.26	1,109.79	745.52	364.27	3.047	
11,840.00	6,030.49	11,854.33	6,030.49	182.43	183.33	90.00	-613.84	6,585.26	1,109.79	744.34	365.46	3.037	
11,860.00	6,030.30	11,874.33	6,030.30	183.03	183.92	90.00	-613.84	6,605.26	1,109.79	743.15	366.64	3.027	
11,880.00	6,030.10	11,894.33	6,030.10	183.62	184.51	90.00	-613.84	6,625.26	1,109.79	741.96	367.83	3.017	
11,900.00	6,029.91	11,914.33	6,029.91	184.21	185.11	90.00	-613.84	6,645.26	1,109.79	740.78	369.02	3.007	
11,920.00	6,029.71	11,934.33	6,029.71	184.80	185.70	90.00	-613.84	6,665.26	1,109.79	739.59	370.20	2.998	
11,940.00	6,029.52	11,954.33	6,029.52	185.40	186.29	90.00	-613.84	6,685.26	1,109.79	738.40	371.39	2.988	
11,960.00	6,029.32	11,974.33	6,029.32	185.99	186.88	90.00	-613.84	6,705.26	1,109.79	737.22	372.58	2.979	
11,980.00	6,029.13	11,994.33	6,029.13	186.58	187.48	90.00	-613.84	6,725.26	1,109.79	736.03	373.76	2.969	
12,000.00	6,028.93	12,014.33	6,028.93	187.18	188.07	90.00	-613.84	6,745.25	1,109.79	734.84	374.95	2.960	
12,020.00	6,028.74	12,034.33	6,028.74	187.77	188.66	90.00	-613.84	6,765.25	1,109.79	733.65	376.14	2.950	
12,040.00	6,028.54	12,054.33	6,028.54	188.36	189.26	90.00	-613.84	6,785.25	1,109.79	732.47	377.33	2.941	
12,060.00	6,028.35	12,074.33	6,028.35	188.96	189.85	90.00	-613.84	6,805.25	1,109.79	731.28	378.51	2.932	
12,080.00	6,028.15	12,094.33	6,028.15	189.55	190.44	90.00	-613.84	6,825.25	1,109.79	730.09	379.70	2.923	
12,100.00	6,027.96	12,114.33	6,027.96	190.14	191.04	90.00	-613.84	6,845.25	1,109.79	728.91	380.89	2.914	
12,120.00	6,027.76	12,134.33	6,027.76	190.74	191.63	90.00	-613.84	6,865.25	1,109.79	727.72	382.07	2.905	
12,140.00	6,027.57	12,154.33	6,027.57	191.33	192.22	90.00	-613.84	6,885.25	1,109.79	726.53	383.26	2.896	
12,160.00	6,027.37	12,174.33	6,027.37	191.92	192.82	90.00	-613.84	6,905.25	1,109.79	725.34	384.45	2.887	
12,180.00	6,027.18	12,194.33	6,027.18	192.52	193.41	90.00	-613.84	6,925.25	1,109.79	724.16	385.64	2.878	
12,200.00	6,026.99	12,214.33	6,026.99	193.11	194.00	90.00	-613.84	6,945.25	1,109.79	722.97	386.83	2.869	
12,220.00	6,026.79	12,234.33	6,026.79	193.70	194.60	90.00	-613.84	6,965.24	1,109.79	721.78	388.01	2.860	
12,240.00	6,026.60	12,254.33	6,026.60	194.30	195.19	90.00	-613.84	6,985.24	1,109.79	720.59	389.20	2.851	
12,260.00	6,026.40	12,274.33	6,026.40	194.89	195.78	90.00	-613.84	7,005.24	1,109.79	719.41	390.39	2.843	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,280.00	6,026.21	12,294.33	6,026.21	195.48	196.38	90.00	-613.84	7,025.24	1,109.79	718.22	391.58	2.834	
12,300.00	6,026.01	12,314.33	6,026.01	196.08	196.97	90.00	-613.84	7,045.24	1,109.79	717.03	392.76	2.826	
12,320.00	6,025.82	12,334.33	6,025.82	196.67	197.56	90.00	-613.84	7,065.24	1,109.79	715.84	393.95	2.817	
12,340.00	6,025.62	12,354.33	6,025.62	197.26	198.16	90.00	-613.84	7,085.24	1,109.79	714.65	395.14	2.809	
12,360.00	6,025.43	12,374.33	6,025.43	197.86	198.75	90.00	-613.84	7,105.24	1,109.79	713.47	396.33	2.800	
12,380.00	6,025.23	12,394.33	6,025.23	198.45	199.34	90.00	-613.84	7,125.24	1,109.80	712.28	397.52	2.792	
12,400.00	6,025.04	12,414.33	6,025.04	199.05	199.94	90.00	-613.84	7,145.24	1,109.80	711.09	398.71	2.783	
12,420.00	6,024.84	12,434.33	6,024.84	199.64	200.53	90.00	-613.84	7,165.23	1,109.80	709.90	399.89	2.775	
12,440.00	6,024.65	12,454.33	6,024.65	200.23	201.12	90.00	-613.84	7,185.23	1,109.80	708.71	401.08	2.767	
12,460.00	6,024.45	12,474.33	6,024.45	200.83	201.72	90.00	-613.84	7,205.23	1,109.80	707.53	402.27	2.759	
12,480.00	6,024.26	12,494.33	6,024.26	201.42	202.31	90.00	-613.84	7,225.23	1,109.80	706.34	403.46	2.751	
12,500.00	6,024.06	12,514.33	6,024.06	202.02	202.91	90.00	-613.85	7,245.23	1,109.80	705.15	404.65	2.743	
12,520.00	6,023.87	12,534.33	6,023.87	202.61	203.50	90.00	-613.85	7,265.23	1,109.80	703.96	405.84	2.735	
12,540.00	6,023.67	12,554.33	6,023.67	203.20	204.09	90.00	-613.85	7,285.23	1,109.80	702.77	407.02	2.727	
12,560.00	6,023.48	12,574.33	6,023.48	203.80	204.69	90.00	-613.85	7,305.23	1,109.80	701.58	408.21	2.719	
12,580.00	6,023.28	12,594.33	6,023.28	204.39	205.28	90.00	-613.85	7,325.23	1,109.80	700.39	409.40	2.711	
12,600.00	6,023.09	12,614.33	6,023.09	204.98	205.88	90.00	-613.85	7,345.23	1,109.80	699.21	410.59	2.703	
12,620.00	6,022.89	12,634.33	6,022.89	205.58	206.47	90.00	-613.85	7,365.23	1,109.80	698.02	411.78	2.695	
12,640.00	6,022.70	12,654.33	6,022.70	206.17	207.06	90.00	-613.85	7,385.22	1,109.80	696.83	412.97	2.687	
12,660.00	6,022.50	12,674.33	6,022.50	206.77	207.66	90.00	-613.85	7,405.22	1,109.80	695.64	414.16	2.680	
12,680.00	6,022.31	12,694.33	6,022.31	207.36	208.25	90.00	-613.85	7,425.22	1,109.80	694.45	415.35	2.672	
12,700.00	6,022.11	12,714.33	6,022.11	207.96	208.85	90.00	-613.85	7,445.22	1,109.80	693.26	416.53	2.664	
12,720.00	6,021.92	12,734.33	6,021.92	208.55	209.44	90.00	-613.85	7,465.22	1,109.80	692.07	417.72	2.657	
12,740.00	6,021.73	12,754.33	6,021.73	209.14	210.03	90.00	-613.85	7,485.22	1,109.80	690.88	418.91	2.649	
12,760.00	6,021.53	12,774.33	6,021.53	209.74	210.63	90.00	-613.85	7,505.22	1,109.80	689.70	420.10	2.642	
12,780.00	6,021.34	12,794.33	6,021.34	210.33	211.22	90.00	-613.85	7,525.22	1,109.80	688.51	421.29	2.634	
12,800.00	6,021.14	12,814.33	6,021.14	210.93	211.82	90.00	-613.85	7,545.22	1,109.80	687.32	422.48	2.627	
12,820.00	6,020.95	12,834.33	6,020.95	211.52	212.41	90.00	-613.85	7,565.22	1,109.80	686.13	423.67	2.619	
12,840.00	6,020.75	12,854.33	6,020.75	212.11	213.00	90.00	-613.85	7,585.21	1,109.80	684.94	424.86	2.612	
12,860.00	6,020.56	12,874.33	6,020.56	212.71	213.60	90.00	-613.85	7,605.21	1,109.80	683.75	426.05	2.605	
12,880.00	6,020.36	12,894.33	6,020.36	213.30	214.19	90.00	-613.85	7,625.21	1,109.80	682.56	427.24	2.598	
12,900.00	6,020.17	12,914.33	6,020.17	213.90	214.79	90.00	-613.85	7,645.21	1,109.80	681.37	428.43	2.590	
12,920.00	6,019.97	12,934.33	6,019.97	214.49	215.38	90.00	-613.85	7,665.21	1,109.80	680.18	429.62	2.583	
12,940.00	6,019.78	12,954.33	6,019.78	215.09	215.98	90.00	-613.85	7,685.21	1,109.80	678.99	430.81	2.576	
12,960.00	6,019.58	12,974.33	6,019.58	215.68	216.57	90.00	-613.85	7,705.21	1,109.80	677.80	432.00	2.569	
12,980.00	6,019.39	12,994.33	6,019.39	216.28	217.16	90.00	-613.85	7,725.21	1,109.80	676.61	433.19	2.562	
13,000.00	6,019.19	13,014.33	6,019.19	216.87	217.76	90.00	-613.85	7,745.21	1,109.80	675.42	434.37	2.555	
13,020.00	6,019.00	13,034.33	6,019.00	217.46	218.35	90.00	-613.85	7,765.21	1,109.80	674.23	435.56	2.548	
13,040.00	6,018.80	13,054.33	6,018.80	218.06	218.95	90.00	-613.85	7,785.21	1,109.80	673.05	436.75	2.541	
13,060.00	6,018.61	13,074.33	6,018.61	218.65	219.54	90.00	-613.85	7,805.20	1,109.80	671.86	437.94	2.534	
13,080.00	6,018.41	13,094.33	6,018.41	219.25	220.14	90.00	-613.85	7,825.20	1,109.80	670.67	439.13	2.527	
13,100.00	6,018.22	13,114.33	6,018.22	219.84	220.73	90.00	-613.85	7,845.20	1,109.80	669.48	440.32	2.520	
13,120.00	6,018.02	13,134.33	6,018.02	220.44	221.33	90.00	-613.85	7,865.20	1,109.80	668.29	441.51	2.514	
13,140.00	6,017.83	13,154.33	6,017.83	221.03	221.92	90.00	-613.85	7,885.20	1,109.80	667.10	442.70	2.507	
13,160.00	6,017.63	13,174.33	6,017.63	221.63	222.51	90.00	-613.85	7,905.20	1,109.80	665.91	443.89	2.500	
13,180.00	6,017.44	13,194.33	6,017.44	222.22	223.11	90.00	-613.85	7,925.20	1,109.80	664.72	445.08	2.493	
13,200.00	6,017.24	13,214.33	6,017.24	222.82	223.70	90.00	-613.85	7,945.20	1,109.80	663.53	446.27	2.487	
13,220.00	6,017.05	13,234.33	6,017.05	223.41	224.30	90.00	-613.85	7,965.20	1,109.80	662.34	447.46	2.480	
13,240.00	6,016.85	13,254.33	6,016.85	224.01	224.89	90.00	-613.85	7,985.20	1,109.80	661.15	448.65	2.474	
13,260.00	6,016.66	13,274.33	6,016.66	224.60	225.49	90.00	-613.85	8,005.19	1,109.80	659.96	449.84	2.467	
13,280.00	6,016.47	13,294.33	6,016.47	225.20	226.08	90.00	-613.85	8,025.19	1,109.80	658.77	451.03	2.461	
13,300.00	6,016.27	13,314.33	6,016.27	225.79	226.68	90.00	-613.85	8,045.19	1,109.80	657.58	452.22	2.454	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,320.00	6,016.08	13,334.33	6,016.08	226.38	227.27	90.00	-613.85	8,065.19	1,109.80	656.39	453.41	2.448	
13,340.00	6,015.88	13,354.33	6,015.88	226.98	227.87	90.00	-613.85	8,085.19	1,109.80	655.20	454.60	2.441	
13,360.00	6,015.69	13,374.33	6,015.69	227.57	228.46	90.00	-613.85	8,105.19	1,109.80	654.01	455.79	2.435	
13,380.00	6,015.49	13,394.33	6,015.49	228.17	229.06	90.00	-613.85	8,125.19	1,109.80	652.82	456.98	2.429	
13,400.00	6,015.30	13,414.33	6,015.30	228.76	229.65	90.00	-613.85	8,145.19	1,109.80	651.63	458.18	2.422	
13,420.00	6,015.10	13,434.33	6,015.10	229.36	230.25	90.00	-613.85	8,165.19	1,109.80	650.44	459.37	2.416	
13,440.00	6,014.91	13,454.33	6,014.91	229.95	230.84	90.00	-613.85	8,185.19	1,109.80	649.25	460.56	2.410	
13,460.00	6,014.71	13,474.33	6,014.71	230.55	231.44	90.00	-613.85	8,205.19	1,109.80	648.06	461.75	2.403	
13,480.00	6,014.52	13,494.33	6,014.52	231.14	232.03	90.00	-613.85	8,225.18	1,109.80	646.87	462.94	2.397	
13,500.00	6,014.32	13,514.33	6,014.32	231.74	232.63	90.00	-613.85	8,245.18	1,109.80	645.67	464.13	2.391	
13,520.00	6,014.13	13,534.33	6,014.13	232.33	233.22	90.00	-613.85	8,265.18	1,109.80	644.48	465.32	2.385	
13,540.00	6,013.93	13,554.33	6,013.93	232.93	233.82	90.00	-613.85	8,285.18	1,109.80	643.29	466.51	2.379	
13,560.00	6,013.74	13,574.33	6,013.74	233.52	234.41	90.00	-613.85	8,305.18	1,109.80	642.10	467.70	2.373	
13,580.00	6,013.54	13,594.33	6,013.54	234.12	235.01	90.00	-613.85	8,325.18	1,109.80	640.91	468.89	2.367	
13,600.00	6,013.35	13,614.33	6,013.35	234.71	235.60	90.00	-613.85	8,345.18	1,109.80	639.72	470.08	2.361	
13,620.00	6,013.15	13,634.33	6,013.15	235.31	236.20	90.00	-613.85	8,365.18	1,109.80	638.53	471.27	2.355	
13,640.00	6,012.96	13,654.33	6,012.96	235.90	236.79	90.00	-613.85	8,385.18	1,109.80	637.34	472.46	2.349	
13,660.00	6,012.76	13,674.33	6,012.76	236.50	237.39	90.00	-613.85	8,405.18	1,109.80	636.15	473.65	2.343	
13,680.00	6,012.57	13,694.33	6,012.57	237.09	237.98	90.00	-613.85	8,425.18	1,109.80	634.96	474.84	2.337	
13,700.00	6,012.37	13,714.33	6,012.37	237.69	238.58	90.00	-613.85	8,445.17	1,109.80	633.77	476.03	2.331	
13,720.00	6,012.18	13,734.33	6,012.18	238.28	239.17	90.00	-613.85	8,465.17	1,109.80	632.58	477.23	2.326	
13,740.00	6,011.98	13,754.33	6,011.98	238.88	239.77	90.00	-613.85	8,485.17	1,109.80	631.39	478.42	2.320	
13,760.00	6,011.79	13,774.33	6,011.79	239.48	240.36	90.00	-613.85	8,505.17	1,109.80	630.20	479.61	2.314	
13,780.00	6,011.59	13,794.33	6,011.59	240.07	240.96	90.00	-613.85	8,525.17	1,109.80	629.01	480.80	2.308	
13,800.00	6,011.40	13,814.33	6,011.40	240.67	241.55	90.00	-613.85	8,545.17	1,109.80	627.82	481.99	2.303	
13,820.00	6,011.21	13,834.33	6,011.21	241.26	242.15	90.00	-613.85	8,565.17	1,109.80	626.62	483.18	2.297	
13,840.00	6,011.01	13,854.33	6,011.01	241.86	242.74	90.00	-613.85	8,585.17	1,109.80	625.43	484.37	2.291	
13,860.00	6,010.82	13,874.33	6,010.82	242.45	243.34	90.00	-613.85	8,605.17	1,109.80	624.24	485.56	2.286	
13,880.00	6,010.62	13,894.33	6,010.62	243.05	243.93	90.00	-613.85	8,625.17	1,109.80	623.05	486.75	2.280	
13,900.00	6,010.43	13,914.33	6,010.43	243.64	244.53	90.00	-613.85	8,645.16	1,109.81	621.86	487.94	2.274	
13,920.00	6,010.23	13,934.33	6,010.23	244.24	245.12	90.00	-613.85	8,665.16	1,109.81	620.67	489.14	2.269	
13,940.00	6,010.04	13,954.33	6,010.04	244.83	245.72	90.00	-613.86	8,685.16	1,109.81	619.48	490.33	2.263	
13,960.00	6,009.84	13,974.33	6,009.84	245.43	246.31	90.00	-613.86	8,705.16	1,109.81	618.29	491.52	2.258	
13,980.00	6,009.65	13,994.33	6,009.65	246.02	246.91	90.00	-613.86	8,725.16	1,109.81	617.10	492.71	2.252	
14,000.00	6,009.45	14,014.33	6,009.45	246.62	247.50	90.00	-613.86	8,745.16	1,109.81	615.90	493.90	2.247	
14,020.00	6,009.26	14,034.33	6,009.26	247.21	248.10	90.00	-613.86	8,765.16	1,109.81	614.71	495.09	2.242	
14,040.00	6,009.06	14,054.33	6,009.06	247.81	248.69	90.00	-613.86	8,785.16	1,109.81	613.52	496.28	2.236	
14,060.00	6,008.87	14,074.33	6,008.87	248.41	249.29	90.00	-613.86	8,805.16	1,109.81	612.33	497.47	2.231	
14,080.00	6,008.67	14,094.33	6,008.67	249.00	249.89	90.00	-613.86	8,825.16	1,109.81	611.14	498.67	2.226	
14,100.00	6,008.48	14,114.33	6,008.48	249.60	250.48	90.00	-613.86	8,845.16	1,109.81	609.95	499.86	2.220	
14,120.00	6,008.28	14,134.33	6,008.28	250.19	251.08	90.00	-613.86	8,865.15	1,109.81	608.76	501.05	2.215	
14,140.00	6,008.09	14,154.33	6,008.09	250.79	251.67	90.00	-613.86	8,885.15	1,109.81	607.57	502.24	2.210	
14,160.00	6,007.89	14,174.33	6,007.89	251.38	252.27	90.00	-613.86	8,905.15	1,109.81	606.37	503.43	2.204	
14,180.00	6,007.70	14,194.33	6,007.70	251.98	252.86	90.00	-613.86	8,925.15	1,109.81	605.18	504.62	2.199	
14,200.00	6,007.50	14,214.33	6,007.50	252.57	253.46	90.00	-613.86	8,945.15	1,109.81	603.99	505.82	2.194	
14,220.00	6,007.31	14,234.33	6,007.31	253.17	254.05	90.00	-613.86	8,965.15	1,109.81	602.80	507.01	2.189	
14,240.00	6,007.11	14,254.33	6,007.11	253.76	254.65	90.00	-613.86	8,985.15	1,109.81	601.61	508.20	2.184	
14,260.00	6,006.92	14,274.33	6,006.92	254.36	255.24	90.00	-613.86	9,005.15	1,109.81	600.42	509.39	2.179	
14,280.00	6,006.72	14,294.33	6,006.72	254.96	255.84	90.00	-613.86	9,025.15	1,109.81	599.23	510.58	2.174	
14,300.00	6,006.53	14,314.33	6,006.53	255.55	256.44	90.00	-613.86	9,045.15	1,109.81	598.03	511.77	2.169	
14,320.00	6,006.33	14,334.33	6,006.33	256.15	257.03	90.00	-613.86	9,065.14	1,109.81	596.84	512.97	2.164	
14,340.00	6,006.14	14,354.33	6,006.14	256.74	257.63	90.00	-613.86	9,085.14	1,109.81	595.65	514.16	2.159	

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,360.00	6,005.94	14,374.33	6,005.95	257.34	258.22	90.00	-613.86	9,105.14	1,109.81	594.46	515.35	2.154	
14,380.00	6,005.75	14,394.33	6,005.75	257.93	258.82	90.00	-613.86	9,125.14	1,109.81	593.27	516.54	2.149	
14,400.00	6,005.56	14,414.33	6,005.56	258.53	259.41	90.00	-613.86	9,145.14	1,109.81	592.08	517.73	2.144	
14,420.00	6,005.36	14,434.33	6,005.36	259.13	260.01	90.00	-613.86	9,165.14	1,109.81	590.88	518.92	2.139	
14,440.00	6,005.17	14,454.33	6,005.17	259.72	260.61	90.00	-613.86	9,185.14	1,109.81	589.69	520.12	2.134	
14,460.00	6,004.97	14,474.33	6,004.97	260.32	261.20	90.00	-613.86	9,205.14	1,109.81	588.50	521.31	2.129	
14,480.00	6,004.78	14,494.33	6,004.78	260.91	261.80	90.00	-613.86	9,225.14	1,109.81	587.31	522.50	2.124	
14,500.00	6,004.58	14,514.33	6,004.58	261.51	262.39	90.00	-613.86	9,245.14	1,109.81	586.12	523.69	2.119	
14,520.00	6,004.39	14,534.33	6,004.39	262.10	262.99	90.00	-613.86	9,265.14	1,109.81	584.93	524.88	2.114	
14,540.00	6,004.19	14,554.33	6,004.19	262.70	263.58	90.00	-613.86	9,285.13	1,109.81	583.73	526.08	2.110	
14,560.00	6,004.00	14,574.33	6,004.00	263.30	264.18	90.00	-613.86	9,305.13	1,109.81	582.54	527.27	2.105	
14,580.00	6,003.80	14,594.33	6,003.80	263.89	264.78	90.00	-613.86	9,325.13	1,109.81	581.35	528.46	2.100	
14,600.00	6,003.61	14,614.33	6,003.61	264.49	265.37	90.00	-613.86	9,345.13	1,109.81	580.16	529.65	2.095	
14,620.00	6,003.41	14,634.33	6,003.41	265.08	265.97	90.00	-613.86	9,365.13	1,109.81	578.97	530.84	2.091	
14,640.00	6,003.22	14,654.33	6,003.22	265.68	266.56	90.00	-613.86	9,385.13	1,109.81	577.77	532.04	2.086	
14,660.00	6,003.02	14,674.33	6,003.02	266.27	267.16	90.00	-613.86	9,405.13	1,109.81	576.58	533.23	2.081	
14,680.00	6,002.83	14,694.33	6,002.83	266.87	267.75	90.00	-613.86	9,425.13	1,109.81	575.39	534.42	2.077	
14,700.00	6,002.63	14,714.33	6,002.63	267.47	268.35	90.00	-613.86	9,445.13	1,109.81	574.20	535.61	2.072	
14,720.00	6,002.44	14,734.33	6,002.44	268.06	268.95	90.00	-613.86	9,465.13	1,109.81	573.01	536.80	2.067	
14,740.00	6,002.24	14,754.33	6,002.24	268.66	269.54	90.00	-613.86	9,485.12	1,109.81	571.81	538.00	2.063	
14,760.00	6,002.05	14,774.33	6,002.05	269.25	270.14	90.00	-613.86	9,505.12	1,109.81	570.62	539.19	2.058	
14,780.00	6,001.85	14,794.33	6,001.85	269.85	270.73	90.00	-613.86	9,525.12	1,109.81	569.43	540.38	2.054	
14,800.00	6,001.66	14,814.33	6,001.66	270.45	271.33	90.00	-613.86	9,545.12	1,109.81	568.24	541.57	2.049	
14,820.00	6,001.46	14,834.33	6,001.46	271.04	271.92	90.00	-613.86	9,565.12	1,109.81	567.05	542.77	2.045	
14,840.00	6,001.27	14,854.33	6,001.27	271.64	272.52	90.00	-613.86	9,585.12	1,109.81	565.85	543.96	2.040	
14,860.00	6,001.07	14,874.33	6,001.07	272.23	273.12	90.00	-613.86	9,605.12	1,109.81	564.66	545.15	2.036	
14,880.00	6,000.88	14,894.33	6,000.88	272.83	273.71	90.00	-613.86	9,625.12	1,109.81	563.47	546.34	2.031	
14,900.00	6,000.68	14,914.33	6,000.68	273.43	274.31	90.00	-613.86	9,645.12	1,109.81	562.28	547.53	2.027	
14,920.00	6,000.49	14,934.33	6,000.49	274.02	274.90	90.00	-613.86	9,665.12	1,109.81	561.09	548.73	2.023	
14,940.00	6,000.30	14,954.33	6,000.30	274.62	275.50	90.00	-613.86	9,685.12	1,109.81	559.89	549.92	2.018	
14,960.00	6,000.10	14,974.33	6,000.10	275.21	276.10	90.00	-613.86	9,705.11	1,109.81	558.70	551.11	2.014	
14,980.00	5,999.91	14,994.33	5,999.91	275.81	276.69	90.00	-613.86	9,725.11	1,109.81	557.51	552.30	2.009	
15,000.00	5,999.71	15,014.33	5,999.71	276.41	277.29	90.00	-613.86	9,745.11	1,109.81	556.32	553.50	2.005	
15,020.00	5,999.52	15,034.33	5,999.52	277.00	277.88	90.00	-613.86	9,765.11	1,109.81	555.12	554.69	2.001	
15,040.00	5,999.32	15,054.33	5,999.32	277.60	278.48	90.00	-613.86	9,785.11	1,109.81	553.93	555.88	1.996	
15,060.00	5,999.13	15,074.33	5,999.13	278.19	279.08	90.00	-613.86	9,805.11	1,109.81	552.74	557.07	1.992	
15,080.00	5,998.93	15,094.33	5,998.93	278.79	279.67	90.00	-613.86	9,825.11	1,109.81	551.55	558.27	1.988	
15,100.00	5,998.74	15,114.33	5,998.74	279.39	280.27	90.00	-613.86	9,845.11	1,109.81	550.35	559.46	1.984	
15,120.00	5,998.54	15,134.33	5,998.54	279.98	280.86	90.00	-613.86	9,865.11	1,109.81	549.16	560.65	1.980	
15,140.00	5,998.35	15,154.33	5,998.35	280.58	281.46	90.00	-613.86	9,885.11	1,109.81	547.97	561.84	1.975	
15,160.00	5,998.15	15,174.33	5,998.15	281.17	282.06	90.00	-613.86	9,905.10	1,109.81	546.78	563.04	1.971	
15,180.00	5,997.96	15,194.33	5,997.96	281.77	282.65	90.00	-613.86	9,925.10	1,109.81	545.58	564.23	1.967	
15,200.00	5,997.76	15,214.33	5,997.76	282.37	283.25	90.00	-613.86	9,945.10	1,109.81	544.39	565.42	1.963	
15,220.00	5,997.57	15,234.33	5,997.57	282.96	283.84	90.00	-613.86	9,965.10	1,109.81	543.20	566.61	1.959	
15,240.00	5,997.37	15,254.33	5,997.37	283.56	284.44	90.00	-613.86	9,985.10	1,109.81	542.01	567.81	1.955	
15,260.00	5,997.18	15,274.33	5,997.18	284.16	285.04	90.00	-613.86	10,005.10	1,109.81	540.81	569.00	1.950	
15,280.00	5,996.98	15,294.33	5,996.98	284.75	285.63	90.00	-613.86	10,025.10	1,109.81	539.62	570.19	1.946	
15,300.00	5,996.79	15,314.33	5,996.79	285.35	286.23	90.00	-613.86	10,045.10	1,109.81	538.43	571.39	1.942	
15,320.00	5,996.59	15,334.33	5,996.59	285.94	286.83	90.00	-613.86	10,065.10	1,109.81	537.24	572.58	1.938	
15,340.00	5,996.40	15,354.33	5,996.40	286.54	287.42	90.00	-613.86	10,085.10	1,109.81	536.04	573.77	1.934	
15,360.00	5,996.20	15,374.33	5,996.20	287.14	288.02	90.00	-613.87	10,105.10	1,109.81	534.85	574.96	1.930	
15,380.00	5,996.01	15,394.33	5,996.01	287.73	288.61	90.00	-613.87	10,125.09	1,109.81	533.66	576.16	1.926	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - Canyon Largo 2407-03F 2H - OH - Plan #3

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	5,995.81	15,414.33	5,995.81	288.33	289.21	90.00	-613.87	10,145.09	1,109.81	532.47	577.35	1.922	
15,420.00	5,995.62	15,434.33	5,995.62	288.92	289.81	90.00	-613.87	10,165.09	1,109.81	531.27	578.54	1.918	
15,440.00	5,995.42	15,454.33	5,995.42	289.52	290.40	90.00	-613.87	10,185.09	1,109.82	530.08	579.73	1.914	
15,460.00	5,995.23	15,474.33	5,995.23	290.12	291.00	90.00	-613.87	10,205.09	1,109.82	528.89	580.93	1.910	
15,480.00	5,995.04	15,494.33	5,995.04	290.71	291.59	90.00	-613.87	10,225.09	1,109.82	527.69	582.12	1.907	
15,500.00	5,994.84	15,514.33	5,994.84	291.31	292.19	90.00	-613.87	10,245.09	1,109.82	526.50	583.31	1.903	
15,520.00	5,994.65	15,534.33	5,994.65	291.91	292.79	90.00	-613.87	10,265.09	1,109.82	525.31	584.51	1.899	
15,540.00	5,994.45	15,554.33	5,994.45	292.50	293.38	90.00	-613.87	10,285.09	1,109.82	524.12	585.70	1.895	
15,560.00	5,994.26	15,574.33	5,994.26	293.10	293.98	90.00	-613.87	10,305.09	1,109.82	522.92	586.89	1.891	
15,580.00	5,994.06	15,594.33	5,994.06	293.69	294.58	90.00	-613.87	10,325.08	1,109.82	521.73	588.09	1.887	
15,600.00	5,993.87	15,614.33	5,993.87	294.29	295.17	90.00	-613.87	10,345.08	1,109.82	520.54	589.28	1.883	
15,620.00	5,993.67	15,634.33	5,993.67	294.89	295.77	90.00	-613.87	10,365.08	1,109.82	519.35	590.47	1.880	
15,640.00	5,993.48	15,654.33	5,993.48	295.48	296.36	90.00	-613.87	10,385.08	1,109.82	518.15	591.66	1.876	
15,660.00	5,993.28	15,674.33	5,993.28	296.08	296.96	90.00	-613.87	10,405.08	1,109.82	516.96	592.86	1.872	
15,680.00	5,993.09	15,694.33	5,993.09	296.68	297.56	90.00	-613.87	10,425.08	1,109.82	515.77	594.05	1.868	
15,700.00	5,992.89	15,714.33	5,992.89	297.27	298.15	90.00	-613.87	10,445.08	1,109.82	514.57	595.24	1.864	
15,720.00	5,992.70	15,734.33	5,992.70	297.87	298.75	90.00	-613.87	10,465.08	1,109.82	513.38	596.44	1.861	
15,740.00	5,992.50	15,754.33	5,992.50	298.47	299.35	90.00	-613.87	10,485.08	1,109.82	512.19	597.63	1.857	
15,760.00	5,992.31	15,774.33	5,992.31	299.06	299.94	90.00	-613.87	10,505.08	1,109.82	510.99	598.82	1.853	
15,780.00	5,992.11	15,794.33	5,992.11	299.66	300.54	90.00	-613.87	10,525.08	1,109.82	509.80	600.02	1.850	
15,800.00	5,991.92	15,814.33	5,991.92	300.25	301.14	90.00	-613.87	10,545.07	1,109.82	508.61	601.21	1.846	
15,820.00	5,991.72	15,834.33	5,991.72	300.85	301.73	90.00	-613.87	10,565.07	1,109.82	507.42	602.40	1.842	
15,840.00	5,991.53	15,854.33	5,991.53	301.45	302.33	90.00	-613.87	10,585.07	1,109.82	506.22	603.59	1.839	
15,860.00	5,991.33	15,874.33	5,991.33	302.04	302.92	90.00	-613.87	10,605.07	1,109.82	505.03	604.79	1.835	
15,880.00	5,991.14	15,894.33	5,991.14	302.64	303.52	90.00	-613.87	10,625.07	1,109.82	503.84	605.98	1.831	
15,900.00	5,990.94	15,914.33	5,990.94	303.24	304.12	90.00	-613.87	10,645.07	1,109.82	502.64	607.17	1.828	
15,920.00	5,990.75	15,934.33	5,990.75	303.83	304.71	90.00	-613.87	10,665.07	1,109.82	501.45	608.37	1.824	
15,940.00	5,990.55	15,954.33	5,990.55	304.43	305.31	90.00	-613.87	10,685.07	1,109.82	500.26	609.56	1.821	
15,960.00	5,990.36	15,974.33	5,990.36	305.03	305.91	90.00	-613.87	10,705.07	1,109.82	499.06	610.75	1.817	
15,980.00	5,990.16	15,994.33	5,990.16	305.62	306.50	90.00	-613.87	10,725.07	1,109.82	497.87	611.95	1.814	
16,000.00	5,989.97	16,014.33	5,989.97	306.22	307.10	90.00	-613.87	10,745.06	1,109.82	496.68	613.14	1.810	
16,020.00	5,989.78	16,034.33	5,989.78	306.82	307.70	90.00	-613.87	10,765.06	1,109.82	495.48	614.33	1.807	
16,040.00	5,989.58	16,054.33	5,989.58	307.41	308.29	90.00	-613.87	10,785.06	1,109.82	494.29	615.53	1.803	
16,060.00	5,989.39	16,074.33	5,989.39	308.01	308.89	90.00	-613.87	10,805.06	1,109.82	493.10	616.72	1.800	
16,080.00	5,989.19	16,094.33	5,989.19	308.61	309.49	90.00	-613.87	10,825.06	1,109.82	491.91	617.91	1.796	
16,100.00	5,989.00	16,114.33	5,989.00	309.20	310.08	90.00	-613.87	10,845.06	1,109.82	490.71	619.11	1.793	
16,120.00	5,988.80	16,134.33	5,988.80	309.80	310.68	90.00	-613.87	10,865.06	1,109.82	489.52	620.30	1.789	
16,140.00	5,988.61	16,154.33	5,988.61	310.39	311.27	90.00	-613.87	10,885.06	1,109.82	488.33	621.49	1.786	
16,160.00	5,988.41	16,174.33	5,988.41	310.99	311.87	90.00	-613.87	10,905.06	1,109.82	487.13	622.69	1.782	
16,180.00	5,988.22	16,194.33	5,988.22	311.59	312.47	90.00	-613.87	10,925.06	1,109.82	485.94	623.88	1.779	
16,200.00	5,988.02	16,214.33	5,988.02	312.18	313.06	90.00	-613.87	10,945.06	1,109.82	484.75	625.07	1.776	
16,220.00	5,987.83	16,234.33	5,987.83	312.78	313.66	90.00	-613.87	10,965.05	1,109.82	483.55	626.27	1.772	
16,240.00	5,987.63	16,254.33	5,987.63	313.38	314.26	90.00	-613.87	10,985.05	1,109.82	482.36	627.46	1.769	
16,260.00	5,987.44	16,274.33	5,987.44	313.97	314.85	90.00	-613.87	11,005.05	1,109.82	481.17	628.65	1.765	
16,280.00	5,987.24	16,294.33	5,987.24	314.57	315.45	90.00	-613.87	11,025.05	1,109.82	479.97	629.85	1.762	
16,300.00	5,987.05	16,314.33	5,987.05	315.17	316.05	90.00	-613.87	11,045.05	1,109.82	478.78	631.04	1.759	
16,320.00	5,986.85	16,334.33	5,986.85	315.76	316.64	90.00	-613.87	11,065.05	1,109.82	477.59	632.24	1.755	
16,340.00	5,986.66	16,354.33	5,986.66	316.36	317.24	90.00	-613.87	11,085.05	1,109.82	476.39	633.43	1.752	
16,360.00	5,986.46	16,374.33	5,986.46	316.96	317.84	90.00	-613.87	11,105.05	1,109.82	475.20	634.62	1.749	
16,380.00	5,986.27	16,394.33	5,986.27	317.55	318.43	90.00	-613.87	11,125.05	1,109.82	474.01	635.82	1.746	
16,400.00	5,986.07	16,414.33	5,986.07	318.15	319.03	90.00	-613.87	11,145.05	1,109.82	472.81	637.01	1.742	
16,407.54	5,986.00	16,421.87	5,986.00	318.38	319.25	90.00	-613.87	11,152.58	1,109.82	472.36	637.46	1.741	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	56.10	1,214.08	1,806.47	2,176.98				
20.00	20.00	0.00	0.00	0.04	0.00	56.10	1,214.08	1,806.47	2,176.67	2,176.63	0.04	N/A	
40.00	40.00	0.00	0.00	0.07	0.00	56.10	1,214.08	1,806.47	2,176.54	2,176.47	0.07	N/A	
48.33	48.33	4.33	4.33	0.09	0.09	56.10	1,214.08	1,806.47	2,176.54	2,176.37	0.17	N/A	
60.00	60.00	16.00	16.00	0.11	0.32	56.10	1,214.08	1,806.47	2,176.54	2,176.11	0.43	5,088.459	
80.00	80.00	36.00	36.00	0.14	0.72	56.10	1,214.08	1,806.47	2,176.54	2,175.67	0.86	2,520.350	
100.00	100.00	56.00	56.00	0.18	1.12	56.10	1,214.08	1,806.47	2,176.54	2,175.24	1.30	1,674.993	
120.00	120.00	76.00	76.00	0.25	1.52	56.10	1,214.08	1,806.47	2,176.54	2,174.77	1.77	1,228.902	
140.00	140.00	96.00	96.00	0.32	1.92	56.10	1,214.08	1,806.47	2,176.54	2,174.30	2.24	970.449	
160.00	160.00	116.00	116.00	0.39	2.32	56.10	1,214.08	1,806.47	2,176.54	2,173.82	2.71	801.816	
180.00	180.00	136.00	136.00	0.47	2.72	56.10	1,214.08	1,806.47	2,176.54	2,173.35	3.19	683.114	
200.00	200.00	156.00	156.00	0.54	3.12	56.10	1,214.08	1,806.47	2,176.54	2,172.88	3.66	595.025	
220.00	220.00	176.00	176.00	0.61	3.52	56.10	1,214.08	1,806.47	2,176.54	2,172.41	4.13	527.059	
240.00	240.00	196.00	196.00	0.68	3.92	56.10	1,214.08	1,806.47	2,176.54	2,171.94	4.60	473.029	
260.00	260.00	216.00	216.00	0.75	4.32	56.10	1,214.08	1,806.47	2,176.54	2,171.47	5.07	429.046	
280.00	280.00	236.00	236.00	0.82	4.72	56.10	1,214.08	1,806.47	2,176.54	2,170.99	5.54	392.546	
300.00	300.00	256.00	256.00	0.90	5.12	56.10	1,214.08	1,806.47	2,176.54	2,170.52	6.02	361.770	
320.00	320.00	276.00	276.00	0.97	5.52	56.10	1,214.08	1,806.47	2,176.54	2,170.05	6.49	335.469	
340.00	340.00	296.00	296.00	1.04	5.92	56.10	1,214.08	1,806.47	2,176.54	2,169.58	6.96	312.733	
360.00	360.00	316.00	316.00	1.11	6.32	56.10	1,214.08	1,806.47	2,176.54	2,169.11	7.43	292.883	
380.00	380.00	336.00	336.00	1.18	6.72	56.10	1,214.08	1,806.47	2,176.54	2,168.64	7.90	275.402	
400.00	400.00	356.00	356.00	1.25	7.12	56.10	1,214.08	1,806.47	2,176.54	2,168.16	8.37	259.891	
420.00	420.00	376.00	376.00	1.33	7.52	56.10	1,214.08	1,806.47	2,176.54	2,167.69	8.85	246.033	
440.00	440.00	396.00	396.00	1.40	7.92	56.10	1,214.08	1,806.47	2,176.54	2,167.22	9.32	233.579	
460.00	460.00	416.00	416.00	1.47	8.32	56.10	1,214.08	1,806.47	2,176.54	2,166.75	9.79	222.325	
480.00	480.00	436.00	436.00	1.54	8.72	56.10	1,214.08	1,806.47	2,176.54	2,166.28	10.26	212.105	
500.00	500.00	456.00	456.00	1.61	9.12	56.10	1,214.08	1,806.47	2,176.54	2,165.81	10.73	202.784	
520.00	520.00	476.00	476.00	1.68	9.52	56.10	1,214.08	1,806.47	2,176.54	2,165.33	11.20	194.247	
540.00	540.00	496.00	496.00	1.76	9.92	56.10	1,214.08	1,806.47	2,176.54	2,164.86	11.68	186.401	
560.00	560.00	516.00	516.00	1.83	10.32	56.10	1,214.08	1,806.47	2,176.54	2,164.39	12.15	179.163	
580.00	580.00	536.00	536.00	1.90	10.72	56.10	1,214.08	1,806.47	2,176.54	2,163.92	12.62	172.467	
600.00	600.00	556.00	556.00	1.97	11.12	56.10	1,214.08	1,806.47	2,176.54	2,163.45	13.09	166.253	
620.00	620.00	576.00	576.00	2.04	11.52	56.10	1,214.08	1,806.47	2,176.54	2,162.98	13.56	160.471	
640.00	640.00	596.00	596.00	2.11	11.92	56.10	1,214.08	1,806.47	2,176.54	2,162.50	14.04	155.078	
660.00	660.00	616.00	616.00	2.19	12.32	56.10	1,214.08	1,806.47	2,176.54	2,162.03	14.51	150.035	
680.00	680.00	636.00	636.00	2.26	12.72	56.10	1,214.08	1,806.47	2,176.54	2,161.56	14.98	145.311	
700.00	700.00	656.00	656.00	2.33	13.12	56.10	1,214.08	1,806.47	2,176.54	2,161.09	15.45	140.874	
720.00	720.00	676.00	676.00	2.40	13.52	56.10	1,214.08	1,806.47	2,176.54	2,160.62	15.92	136.701	
740.00	740.00	696.00	696.00	2.47	13.92	56.10	1,214.08	1,806.47	2,176.54	2,160.14	16.39	132.768	
760.00	760.00	716.00	716.00	2.55	14.32	56.10	1,214.08	1,806.47	2,176.54	2,159.67	16.87	129.054	
780.00	780.00	736.00	736.00	2.62	14.72	56.10	1,214.08	1,806.47	2,176.54	2,159.20	17.34	125.543	
800.00	800.00	756.00	756.00	2.69	15.12	56.10	1,214.08	1,806.47	2,176.54	2,158.73	17.81	122.218	
820.00	820.00	776.00	776.00	2.76	15.52	56.10	1,214.08	1,806.47	2,176.54	2,158.26	18.28	119.064	
840.00	840.00	796.00	796.00	2.83	15.92	56.10	1,214.08	1,806.47	2,176.54	2,157.79	18.75	116.069	
860.00	860.00	816.00	816.00	2.90	16.32	56.10	1,214.08	1,806.47	2,176.54	2,157.31	19.22	113.221	
880.00	880.00	836.00	836.00	2.98	16.72	56.10	1,214.08	1,806.47	2,176.54	2,156.84	19.70	110.510	
900.00	900.00	856.00	856.00	3.05	17.12	56.10	1,214.08	1,806.47	2,176.54	2,156.37	20.17	107.925	
920.00	920.00	876.00	876.00	3.12	17.52	56.10	1,214.08	1,806.47	2,176.54	2,155.90	20.64	105.458	
940.00	940.00	896.00	896.00	3.19	17.92	56.10	1,214.08	1,806.47	2,176.54	2,155.43	21.11	103.102	
960.00	960.00	916.00	916.00	3.26	18.32	56.10	1,214.08	1,806.47	2,176.54	2,154.96	21.58	100.849	
980.00	980.00	936.00	936.00	3.33	18.72	56.10	1,214.08	1,806.47	2,176.54	2,154.48	22.05	98.692	
1,000.00	1,000.00	956.00	956.00	3.41	19.12	56.10	1,214.08	1,806.47	2,176.54	2,154.01	22.53	96.625	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,020.00	1,020.00	976.00	976.00	3.48	19.52	56.10	1,214.08	1,806.47	2,176.54	2,153.54	23.00	94.643	
1,040.00	1,040.00	996.00	996.00	3.55	19.92	56.10	1,214.08	1,806.47	2,176.54	2,153.07	23.47	92.741	
1,060.00	1,060.00	1,016.00	1,016.00	3.62	20.32	56.10	1,214.08	1,806.47	2,176.54	2,152.60	23.94	90.914	
1,080.00	1,080.00	1,036.00	1,036.00	3.69	20.72	56.10	1,214.08	1,806.47	2,176.54	2,152.13	24.41	89.157	
1,100.00	1,100.00	1,056.00	1,056.00	3.76	21.12	56.10	1,214.08	1,806.47	2,176.54	2,151.65	24.88	87.467	
1,120.00	1,120.00	1,076.00	1,076.00	3.84	21.52	56.10	1,214.08	1,806.47	2,176.54	2,151.18	25.36	85.840	
1,140.00	1,140.00	1,096.00	1,096.00	3.91	21.92	56.10	1,214.08	1,806.47	2,176.54	2,150.71	25.83	84.272	
1,160.00	1,160.00	1,116.00	1,116.00	3.98	22.32	56.10	1,214.08	1,806.47	2,176.54	2,150.24	26.30	82.761	
1,180.00	1,180.00	1,136.00	1,136.00	4.05	22.72	56.10	1,214.08	1,806.47	2,176.54	2,149.77	26.77	81.303	
1,200.00	1,200.00	1,156.00	1,156.00	4.12	23.12	56.10	1,214.08	1,806.47	2,176.54	2,149.30	27.24	79.895	
1,220.00	1,220.00	1,176.00	1,176.00	4.19	23.52	56.10	1,214.08	1,806.47	2,176.54	2,148.82	27.71	78.535	
1,240.00	1,240.00	1,196.00	1,196.00	4.27	23.92	56.10	1,214.08	1,806.47	2,176.54	2,148.35	28.19	77.221	
1,260.00	1,260.00	1,216.00	1,216.00	4.34	24.32	56.10	1,214.08	1,806.47	2,176.54	2,147.88	28.66	75.950	
1,280.00	1,280.00	1,236.00	1,236.00	4.41	24.72	56.10	1,214.08	1,806.47	2,176.54	2,147.41	29.13	74.720	
1,300.00	1,300.00	1,256.00	1,256.00	4.48	25.12	56.10	1,214.08	1,806.47	2,176.54	2,146.94	29.60	73.529	
1,320.00	1,320.00	1,276.00	1,276.00	4.55	25.52	56.10	1,214.08	1,806.47	2,176.54	2,146.47	30.07	72.376	
1,340.00	1,340.00	1,296.00	1,296.00	4.62	25.92	56.10	1,214.08	1,806.47	2,176.54	2,145.99	30.54	71.258	
1,360.00	1,360.00	1,316.00	1,316.00	4.70	26.32	56.10	1,214.08	1,806.47	2,176.54	2,145.52	31.02	70.175	
1,380.00	1,380.00	1,336.00	1,336.00	4.77	26.72	56.10	1,214.08	1,806.47	2,176.54	2,145.05	31.49	69.123	
1,400.00	1,400.00	1,356.00	1,356.00	4.84	27.12	56.10	1,214.08	1,806.47	2,176.54	2,144.58	31.96	68.103	
1,420.00	1,420.00	1,376.00	1,376.00	4.91	27.52	56.10	1,214.08	1,806.47	2,176.54	2,144.11	32.43	67.113	
1,440.00	1,440.00	1,396.00	1,396.00	4.98	27.92	56.10	1,214.08	1,806.47	2,176.54	2,143.64	32.90	66.150	
1,460.00	1,460.00	1,416.00	1,416.00	5.05	28.32	56.10	1,214.08	1,806.47	2,176.54	2,143.16	33.37	65.216	
1,480.00	1,480.00	1,436.00	1,436.00	5.13	28.72	56.10	1,214.08	1,806.47	2,176.54	2,142.69	33.85	64.307	
1,500.00	1,500.00	1,456.00	1,456.00	5.20	29.12	56.10	1,214.08	1,806.47	2,176.54	2,142.22	34.32	63.423	
1,520.00	1,520.00	1,476.00	1,476.00	5.27	29.52	56.10	1,214.08	1,806.47	2,176.54	2,141.75	34.79	62.563	
1,540.00	1,540.00	1,496.00	1,496.00	5.34	29.92	56.10	1,214.08	1,806.47	2,176.54	2,141.28	35.26	61.726	
1,560.00	1,560.00	1,516.00	1,516.00	5.41	30.32	56.10	1,214.08	1,806.47	2,176.54	2,140.81	35.73	60.911	
1,580.00	1,580.00	1,536.00	1,536.00	5.48	30.72	56.10	1,214.08	1,806.47	2,176.54	2,140.33	36.20	60.118	
1,600.00	1,600.00	1,556.00	1,556.00	5.56	31.12	56.10	1,214.08	1,806.47	2,176.54	2,139.86	36.68	59.344	
1,620.00	1,620.00	1,576.00	1,576.00	5.63	31.52	56.10	1,214.08	1,806.47	2,176.54	2,139.39	37.15	58.591	
1,640.00	1,640.00	1,596.00	1,596.00	5.70	31.92	56.10	1,214.08	1,806.47	2,176.54	2,138.92	37.62	57.856	
1,660.00	1,660.00	1,616.00	1,616.00	5.77	32.32	56.10	1,214.08	1,806.47	2,176.54	2,138.45	38.09	57.140	
1,680.00	1,680.00	1,636.00	1,636.00	5.84	32.72	56.10	1,214.08	1,806.47	2,176.54	2,137.98	38.56	56.441	
1,700.00	1,700.00	1,656.00	1,656.00	5.91	33.12	56.10	1,214.08	1,806.47	2,176.54	2,137.50	39.03	55.759	
1,720.00	1,720.00	1,676.00	1,676.00	5.99	33.52	56.10	1,214.08	1,806.47	2,176.54	2,137.03	39.51	55.093	
1,740.00	1,740.00	1,696.00	1,696.00	6.06	33.92	56.10	1,214.08	1,806.47	2,176.54	2,136.56	39.98	54.443	
1,760.00	1,760.00	1,716.00	1,716.00	6.13	34.32	56.10	1,214.08	1,806.47	2,176.54	2,136.09	40.45	53.808	
1,780.00	1,780.00	1,736.00	1,736.00	6.20	34.72	56.10	1,214.08	1,806.47	2,176.54	2,135.62	40.92	53.188	
1,800.00	1,800.00	1,756.00	1,756.00	6.27	35.12	56.10	1,214.08	1,806.47	2,176.54	2,135.15	41.39	52.582	
1,820.00	1,820.00	1,776.00	1,776.00	6.34	35.52	56.10	1,214.08	1,806.47	2,176.54	2,134.67	41.87	51.989	
1,840.00	1,840.00	1,796.00	1,796.00	6.42	35.92	56.10	1,214.08	1,806.47	2,176.54	2,134.20	42.34	51.410	
1,860.00	1,860.00	1,816.00	1,816.00	6.49	36.32	56.10	1,214.08	1,806.47	2,176.54	2,133.73	42.81	50.844	
1,880.00	1,880.00	1,836.00	1,836.00	6.56	36.72	56.10	1,214.08	1,806.47	2,176.54	2,133.26	43.28	50.290	
1,900.00	1,900.00	1,856.00	1,856.00	6.63	37.12	56.10	1,214.08	1,806.47	2,176.54	2,132.79	43.75	49.747	
1,920.00	1,920.00	1,876.00	1,876.00	6.70	37.52	56.10	1,214.08	1,806.47	2,176.54	2,132.32	44.22	49.217	
1,940.00	1,940.00	1,896.00	1,896.00	6.78	37.92	56.10	1,214.08	1,806.47	2,176.54	2,131.84	44.70	48.697	
1,960.00	1,960.00	1,916.00	1,916.00	6.85	38.32	56.10	1,214.08	1,806.47	2,176.54	2,131.37	45.17	48.189	
1,980.00	1,980.00	1,936.00	1,936.00	6.92	38.72	56.10	1,214.08	1,806.47	2,176.54	2,130.90	45.64	47.691	
2,000.00	2,000.00	1,956.00	1,956.00	6.99	39.12	56.10	1,214.08	1,806.47	2,176.54	2,130.43	46.11	47.203	
2,020.00	2,020.00	1,976.00	1,976.00	7.06	39.52	56.10	1,214.08	1,806.47	2,176.54	2,129.96	46.58	46.725	
2,040.00	2,040.00	1,996.00	1,996.00	7.13	39.92	56.10	1,214.08	1,806.47	2,176.54	2,129.48	47.05	46.257	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,060.00	2,060.00	2,016.00	2,016.00	7.21	40.32	56.10	1,214.08	1,806.47	2,176.54	2,129.01	47.53	45.797	
2,080.00	2,080.00	2,036.00	2,036.00	7.28	40.72	56.10	1,214.08	1,806.47	2,176.54	2,128.54	48.00	45.347	
2,100.00	2,100.00	2,056.00	2,056.00	7.35	41.12	56.10	1,214.08	1,806.47	2,176.54	2,128.07	48.47	44.906	
2,120.00	2,120.00	2,076.00	2,076.00	7.42	41.52	56.10	1,214.08	1,806.47	2,176.54	2,127.60	48.94	44.473	
2,140.00	2,140.00	2,096.00	2,096.00	7.49	41.92	56.10	1,214.08	1,806.47	2,176.54	2,127.13	49.41	44.049	
2,160.00	2,160.00	2,116.00	2,116.00	7.56	42.32	56.10	1,214.08	1,806.47	2,176.54	2,126.65	49.88	43.632	
2,180.00	2,180.00	2,136.00	2,136.00	7.64	42.72	56.10	1,214.08	1,806.47	2,176.54	2,126.18	50.36	43.223	
2,200.00	2,200.00	2,156.00	2,156.00	7.71	43.12	56.10	1,214.08	1,806.47	2,176.54	2,125.71	50.83	42.822	
2,220.00	2,220.00	2,176.00	2,176.00	7.78	43.52	56.10	1,214.08	1,806.47	2,176.54	2,125.24	51.30	42.429	
2,240.00	2,240.00	2,196.00	2,196.00	7.85	43.92	56.10	1,214.08	1,806.47	2,176.54	2,124.77	51.77	42.042	
2,260.00	2,260.00	2,216.00	2,216.00	7.92	44.32	56.10	1,214.08	1,806.47	2,176.54	2,124.30	52.24	41.662	
2,280.00	2,280.00	2,236.00	2,236.00	7.99	44.72	56.10	1,214.08	1,806.47	2,176.54	2,123.82	52.71	41.290	
2,300.00	2,300.00	2,256.00	2,256.00	8.07	45.12	56.10	1,214.08	1,806.47	2,176.54	2,123.35	53.19	40.923	
2,320.00	2,320.00	2,276.00	2,276.00	8.14	45.52	56.10	1,214.08	1,806.47	2,176.54	2,122.88	53.66	40.564	
2,340.00	2,340.00	2,296.00	2,296.00	8.21	45.92	56.10	1,214.08	1,806.47	2,176.54	2,122.41	54.13	40.210	
2,360.00	2,360.00	2,316.00	2,316.00	8.28	46.32	56.10	1,214.08	1,806.47	2,176.54	2,121.94	54.60	39.863	
2,380.00	2,380.00	2,336.00	2,336.00	8.35	46.72	56.10	1,214.08	1,806.47	2,176.54	2,121.47	55.07	39.521	
2,400.00	2,400.00	2,356.00	2,356.00	8.42	47.12	56.10	1,214.08	1,806.47	2,176.54	2,120.99	55.54	39.186	
2,420.00	2,420.00	2,376.00	2,376.00	8.50	47.52	56.10	1,214.08	1,806.47	2,176.54	2,120.52	56.02	38.856	
2,440.00	2,440.00	2,396.00	2,396.00	8.57	47.92	56.10	1,214.08	1,806.47	2,176.54	2,120.05	56.49	38.531	
2,460.00	2,460.00	2,416.00	2,416.00	8.64	48.32	56.10	1,214.08	1,806.47	2,176.54	2,119.58	56.96	38.212	
2,480.00	2,480.00	2,436.00	2,436.00	8.71	48.72	56.10	1,214.08	1,806.47	2,176.54	2,119.11	57.43	37.898	
2,500.00	2,500.00	2,456.00	2,456.00	8.78	49.12	56.10	1,214.08	1,806.47	2,176.54	2,118.64	57.90	37.590	
2,520.00	2,520.00	2,476.00	2,476.00	8.85	49.52	56.10	1,214.08	1,806.47	2,176.54	2,118.16	58.37	37.286	
2,540.00	2,540.00	2,496.00	2,496.00	8.93	49.92	56.10	1,214.08	1,806.47	2,176.54	2,117.69	58.85	36.987	
2,560.00	2,560.00	2,516.00	2,516.00	9.00	50.32	56.10	1,214.08	1,806.47	2,176.54	2,117.22	59.32	36.693	
2,580.00	2,580.00	2,536.00	2,536.00	9.07	50.72	56.10	1,214.08	1,806.47	2,176.54	2,116.75	59.79	36.403	
2,600.00	2,600.00	2,556.00	2,556.00	9.14	51.12	56.10	1,214.08	1,806.47	2,176.54	2,116.28	60.26	36.119	
2,620.00	2,620.00	2,576.00	2,576.00	9.21	51.52	56.10	1,214.08	1,806.47	2,176.54	2,115.81	60.73	35.838	
2,640.00	2,640.00	2,596.00	2,596.00	9.28	51.92	56.10	1,214.08	1,806.47	2,176.54	2,115.33	61.20	35.562	CC
2,660.00	2,660.00	2,600.00	2,600.00	9.36	52.00	56.10	1,214.08	1,806.47	2,176.60	2,115.24	61.35	35.476	ES
2,680.00	2,680.00	2,600.00	2,600.00	9.43	52.00	56.10	1,214.08	1,806.47	2,176.84	2,115.42	61.42	35.442	
2,700.00	2,700.00	2,600.00	2,600.00	9.50	52.00	56.10	1,214.08	1,806.47	2,177.26	2,115.78	61.48	35.414	
2,720.00	2,720.00	2,600.00	2,600.00	9.57	52.00	-4.05	1,214.08	1,806.47	2,177.80	2,116.26	61.53	35.391	
2,740.00	2,740.00	2,600.00	2,600.00	9.64	52.00	-4.05	1,214.08	1,806.47	2,178.38	2,116.79	61.58	35.372	
2,760.00	2,760.00	2,600.00	2,600.00	9.71	52.00	-4.05	1,214.08	1,806.47	2,179.00	2,117.37	61.63	35.357	
2,780.00	2,779.99	2,600.00	2,600.00	9.78	52.00	-4.05	1,214.08	1,806.47	2,179.67	2,118.00	61.67	35.345	
2,800.00	2,799.98	2,600.00	2,600.00	9.85	52.00	-4.05	1,214.08	1,806.47	2,180.38	2,118.68	61.70	35.337	
2,820.00	2,819.96	2,600.00	2,600.00	9.92	52.00	-4.05	1,214.08	1,806.47	2,181.14	2,119.41	61.73	35.333	
2,840.00	2,839.94	2,600.00	2,600.00	9.99	52.00	-4.05	1,214.08	1,806.47	2,181.94	2,120.19	61.76	35.332	SF
2,860.00	2,859.92	2,600.00	2,600.00	10.06	52.00	-4.04	1,214.08	1,806.47	2,182.79	2,121.01	61.77	35.335	
2,880.00	2,879.88	2,600.00	2,600.00	10.13	52.00	-4.04	1,214.08	1,806.47	2,183.68	2,121.89	61.79	35.342	
2,900.00	2,899.84	2,600.00	2,600.00	10.20	52.00	-4.04	1,214.08	1,806.47	2,184.61	2,122.81	61.80	35.352	
2,920.00	2,919.78	2,600.00	2,600.00	10.28	52.00	-4.04	1,214.08	1,806.47	2,185.59	2,123.79	61.80	35.366	
2,940.00	2,939.72	2,600.00	2,600.00	10.35	52.00	-4.04	1,214.08	1,806.47	2,186.61	2,124.81	61.80	35.384	
2,960.00	2,959.64	2,600.00	2,600.00	10.42	52.00	-4.04	1,214.08	1,806.47	2,187.67	2,125.88	61.79	35.404	
2,980.00	2,979.55	2,600.00	2,600.00	10.49	52.00	-4.04	1,214.08	1,806.47	2,188.77	2,127.00	61.78	35.429	
3,000.00	2,999.45	2,600.00	2,600.00	10.56	52.00	-4.03	1,214.08	1,806.47	2,189.92	2,128.16	61.76	35.457	
3,020.00	3,019.34	2,600.00	2,600.00	10.63	52.00	-4.03	1,214.08	1,806.47	2,191.12	2,129.37	61.74	35.488	
3,040.00	3,039.20	2,600.00	2,600.00	10.70	52.00	-4.03	1,214.08	1,806.47	2,192.35	2,130.64	61.72	35.524	
3,060.00	3,059.05	2,600.00	2,600.00	10.77	52.00	-4.03	1,214.08	1,806.47	2,193.63	2,131.95	61.68	35.562	
3,080.00	3,078.89	2,600.00	2,600.00	10.84	52.00	-4.03	1,214.08	1,806.47	2,194.95	2,133.30	61.65	35.605	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,100.00	3,098.70	2,600.00	2,600.00	10.91	52.00	-4.03	1,214.08	1,806.47	2,196.31	2,134.71	61.61	35.651	
3,120.00	3,118.50	2,600.00	2,600.00	10.98	52.00	-4.02	1,214.08	1,806.47	2,197.72	2,136.16	61.56	35.700	
3,140.00	3,138.27	2,600.00	2,600.00	11.06	52.00	-4.02	1,214.08	1,806.47	2,199.17	2,137.66	61.51	35.754	
3,160.00	3,158.03	2,600.00	2,600.00	11.13	52.00	-4.02	1,214.08	1,806.47	2,200.66	2,139.20	61.45	35.811	
3,180.00	3,177.76	2,600.00	2,600.00	11.20	52.00	-4.02	1,214.08	1,806.47	2,202.19	2,140.79	61.39	35.871	
3,200.00	3,197.47	2,600.00	2,600.00	11.27	52.00	-4.01	1,214.08	1,806.47	2,203.76	2,142.43	61.33	35.935	
3,220.00	3,217.15	2,600.00	2,600.00	11.34	52.00	-4.01	1,214.08	1,806.47	2,205.37	2,144.12	61.26	36.003	
3,240.00	3,236.81	2,600.00	2,600.00	11.42	52.00	-4.01	1,214.08	1,806.47	2,207.03	2,145.85	61.18	36.074	
3,260.00	3,256.44	2,600.00	2,600.00	11.49	52.00	-4.01	1,214.08	1,806.47	2,208.73	2,147.63	61.10	36.150	
3,280.00	3,276.05	2,600.00	2,600.00	11.56	52.00	-4.01	1,214.08	1,806.47	2,210.46	2,149.45	61.01	36.228	
3,300.00	3,295.62	2,600.00	2,600.00	11.64	52.00	-4.00	1,214.08	1,806.47	2,212.24	2,151.32	60.92	36.311	
3,320.00	3,315.17	2,600.00	2,600.00	11.71	52.00	-4.00	1,214.08	1,806.47	2,214.06	2,153.23	60.83	36.397	
3,340.00	3,334.69	2,600.00	2,600.00	11.78	52.00	-4.00	1,214.08	1,806.47	2,215.92	2,155.19	60.73	36.487	
3,360.00	3,354.18	2,600.00	2,600.00	11.86	52.00	-3.99	1,214.08	1,806.47	2,217.82	2,157.20	60.63	36.581	
3,380.00	3,373.63	2,600.00	2,600.00	11.93	52.00	-3.99	1,214.08	1,806.47	2,219.76	2,159.24	60.52	36.679	
3,400.00	3,393.06	2,600.00	2,600.00	12.01	52.00	-3.99	1,214.08	1,806.47	2,221.74	2,161.34	60.41	36.781	
3,420.00	3,412.44	2,600.00	2,600.00	12.09	52.00	-3.99	1,214.08	1,806.47	2,223.76	2,163.47	60.29	36.886	
3,440.00	3,431.80	2,600.00	2,600.00	12.16	52.00	-3.98	1,214.08	1,806.47	2,225.82	2,165.66	60.17	36.995	
3,460.00	3,451.12	2,600.00	2,600.00	12.24	52.00	-3.98	1,214.08	1,806.47	2,227.92	2,167.88	60.04	37.108	
3,480.00	3,470.40	2,600.00	2,600.00	12.32	52.00	-3.98	1,214.08	1,806.47	2,230.06	2,170.15	59.91	37.225	
3,500.00	3,489.64	2,600.00	2,600.00	12.39	52.00	-3.97	1,214.08	1,806.47	2,232.23	2,172.46	59.77	37.347	
3,520.00	3,508.85	2,600.00	2,600.00	12.47	52.00	-3.97	1,214.08	1,806.47	2,234.45	2,174.82	59.63	37.471	
3,540.00	3,528.02	2,600.00	2,600.00	12.56	52.00	-3.97	1,214.08	1,806.47	2,236.70	2,177.21	59.49	37.600	
3,560.00	3,547.14	2,600.00	2,600.00	12.64	52.00	-3.97	1,214.08	1,806.47	2,238.99	2,179.65	59.34	37.733	
3,580.00	3,566.23	2,600.00	2,600.00	12.72	52.00	-3.96	1,214.08	1,806.47	2,241.32	2,182.14	59.18	37.871	
3,600.00	3,585.27	2,600.00	2,600.00	12.80	52.00	-3.96	1,214.08	1,806.47	2,243.69	2,184.66	59.03	38.012	
3,620.00	3,604.27	2,600.00	2,600.00	12.88	52.00	-3.96	1,214.08	1,806.47	2,246.09	2,187.23	58.86	38.158	
3,640.00	3,623.22	2,600.00	2,600.00	12.96	52.00	-3.95	1,214.08	1,806.47	2,248.53	2,189.84	58.70	38.307	
3,645.28	3,628.22	2,600.00	2,600.00	12.98	52.00	-3.95	1,214.08	1,806.47	2,249.18	2,190.53	58.65	38.348	
3,660.00	3,642.15	2,600.00	2,600.00	13.05	52.00	-3.95	1,214.08	1,806.47	2,251.05	2,192.52	58.53	38.462	
3,680.00	3,661.07	2,600.00	2,600.00	13.13	52.00	-3.95	1,214.08	1,806.47	2,253.74	2,195.38	58.35	38.623	
3,700.00	3,679.99	2,600.00	2,600.00	13.22	52.00	-3.95	1,214.08	1,806.47	2,256.59	2,198.42	58.17	38.790	
3,720.00	3,698.91	2,600.00	2,600.00	13.30	52.00	-3.95	1,214.08	1,806.47	2,259.63	2,201.63	57.99	38.963	
3,740.00	3,717.83	2,600.00	2,600.00	13.39	52.00	-3.95	1,214.08	1,806.47	2,262.83	2,205.03	57.81	39.144	
3,760.00	3,736.75	2,600.00	2,600.00	13.48	52.00	-3.95	1,214.08	1,806.47	2,266.21	2,208.59	57.62	39.331	
3,780.00	3,755.67	2,600.00	2,600.00	13.57	52.00	-3.95	1,214.08	1,806.47	2,269.76	2,212.33	57.43	39.524	
3,800.00	3,774.59	2,600.00	2,600.00	13.65	52.00	-3.95	1,214.08	1,806.47	2,273.48	2,216.25	57.23	39.725	
3,820.00	3,793.51	2,600.00	2,600.00	13.74	52.00	-3.95	1,214.08	1,806.47	2,277.37	2,220.34	57.03	39.932	
3,840.00	3,812.44	2,600.00	2,600.00	13.83	52.00	-3.95	1,214.08	1,806.47	2,281.43	2,224.60	56.83	40.146	
3,860.00	3,831.36	2,600.00	2,600.00	13.92	52.00	-3.95	1,214.08	1,806.47	2,285.65	2,229.03	56.62	40.366	
3,880.00	3,850.28	2,600.00	2,600.00	14.01	52.00	-3.95	1,214.08	1,806.47	2,290.05	2,233.63	56.41	40.594	
3,900.00	3,869.20	2,600.00	2,600.00	14.10	52.00	-3.95	1,214.08	1,806.47	2,294.60	2,238.40	56.20	40.829	
3,920.00	3,888.12	2,600.00	2,600.00	14.20	52.00	-3.95	1,214.08	1,806.47	2,299.33	2,243.34	55.99	41.070	
3,940.00	3,907.04	2,600.00	2,600.00	14.29	52.00	-3.95	1,214.08	1,806.47	2,304.21	2,248.45	55.77	41.318	
3,960.00	3,925.96	2,600.00	2,600.00	14.38	52.00	-3.95	1,214.08	1,806.47	2,309.26	2,253.72	55.55	41.574	
3,980.00	3,944.88	2,600.00	2,600.00	14.47	52.00	-3.95	1,214.08	1,806.47	2,314.48	2,259.15	55.32	41.836	
4,000.00	3,963.80	2,600.00	2,600.00	14.56	52.00	-3.95	1,214.08	1,806.47	2,319.85	2,264.75	55.10	42.106	
4,020.00	3,982.73	2,600.00	2,600.00	14.66	52.00	-3.95	1,214.08	1,806.47	2,325.38	2,270.52	54.87	42.383	
4,040.00	4,001.65	2,600.00	2,600.00	14.75	52.00	-3.95	1,214.08	1,806.47	2,331.07	2,276.44	54.63	42.667	
4,060.00	4,020.57	2,600.00	2,600.00	14.85	52.00	-3.95	1,214.08	1,806.47	2,336.92	2,282.52	54.40	42.958	
4,080.00	4,039.49	2,600.00	2,600.00	14.94	52.00	-3.95	1,214.08	1,806.47	2,342.92	2,288.76	54.16	43.256	
4,100.00	4,058.41	2,600.00	2,600.00	15.04	52.00	-3.95	1,214.08	1,806.47	2,349.08	2,295.16	53.93	43.562	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,120.00	4,077.33	2,600.00	2,600.00	15.13	52.00	-3.95	1,214.08	1,806.47	2,355.40	2,301.71	53.68	43.875	
4,140.00	4,096.25	2,600.00	2,600.00	15.23	52.00	-3.95	1,214.08	1,806.47	2,361.86	2,308.42	53.44	44.195	
4,160.00	4,115.17	2,600.00	2,600.00	15.33	52.00	-3.95	1,214.08	1,806.47	2,368.48	2,315.28	53.20	44.523	
4,180.00	4,134.09	2,600.00	2,600.00	15.42	52.00	-3.95	1,214.08	1,806.47	2,375.24	2,322.29	52.95	44.858	
4,200.00	4,153.02	2,600.00	2,600.00	15.52	52.00	-3.95	1,214.08	1,806.47	2,382.16	2,329.46	52.70	45.201	
4,220.00	4,171.94	2,600.00	2,600.00	15.62	52.00	-3.95	1,214.08	1,806.47	2,389.22	2,336.77	52.45	45.551	
4,240.00	4,190.86	2,600.00	2,600.00	15.72	52.00	-3.95	1,214.08	1,806.47	2,396.43	2,344.23	52.20	45.909	
4,260.00	4,209.78	2,600.00	2,600.00	15.81	52.00	-3.95	1,214.08	1,806.47	2,403.78	2,351.84	51.95	46.274	
4,280.00	4,228.70	2,600.00	2,600.00	15.91	52.00	-3.95	1,214.08	1,806.47	2,411.28	2,359.59	51.69	46.648	
4,300.00	4,247.62	2,600.00	2,600.00	16.01	52.00	-3.95	1,214.08	1,806.47	2,418.92	2,367.49	51.43	47.029	
4,320.00	4,266.54	2,600.00	2,600.00	16.11	52.00	-3.95	1,214.08	1,806.47	2,426.70	2,375.52	51.18	47.417	
4,340.00	4,285.46	2,600.00	2,600.00	16.21	52.00	-3.95	1,214.08	1,806.47	2,434.62	2,383.70	50.92	47.813	
4,360.00	4,304.38	2,600.00	2,600.00	16.31	52.00	-3.95	1,214.08	1,806.47	2,442.68	2,392.02	50.66	48.218	
4,380.00	4,323.31	2,600.00	2,600.00	16.41	52.00	-3.95	1,214.08	1,806.47	2,450.87	2,400.47	50.40	48.630	
4,400.00	4,342.23	2,600.00	2,600.00	16.51	52.00	-3.95	1,214.08	1,806.47	2,459.20	2,409.06	50.14	49.050	
4,420.00	4,361.15	2,600.00	2,600.00	16.61	52.00	-3.95	1,214.08	1,806.47	2,467.66	2,417.79	49.87	49.478	
4,440.00	4,380.07	2,600.00	2,600.00	16.71	52.00	-3.95	1,214.08	1,806.47	2,476.26	2,426.65	49.61	49.914	
4,460.00	4,398.99	2,600.00	2,600.00	16.81	52.00	-3.95	1,214.08	1,806.47	2,484.99	2,435.64	49.35	50.358	
4,480.00	4,417.91	2,600.00	2,600.00	16.92	52.00	-3.95	1,214.08	1,806.47	2,493.85	2,444.76	49.08	50.810	
4,500.00	4,436.83	2,600.00	2,600.00	17.02	52.00	-3.95	1,214.08	1,806.47	2,502.83	2,454.02	48.82	51.270	
4,520.00	4,455.75	2,600.00	2,600.00	17.12	52.00	-3.95	1,214.08	1,806.47	2,511.94	2,463.39	48.55	51.739	
4,540.00	4,474.67	2,600.00	2,600.00	17.22	52.00	-3.95	1,214.08	1,806.47	2,521.18	2,472.90	48.28	52.215	
4,560.00	4,493.59	2,600.00	2,600.00	17.33	52.00	-3.95	1,214.08	1,806.47	2,530.55	2,482.53	48.02	52.700	
4,580.00	4,512.52	2,600.00	2,600.00	17.43	52.00	-3.95	1,214.08	1,806.47	2,540.03	2,492.28	47.75	53.194	
4,600.00	4,531.44	2,600.00	2,600.00	17.53	52.00	-3.95	1,214.08	1,806.47	2,549.64	2,502.16	47.48	53.696	
4,620.00	4,550.36	2,600.00	2,600.00	17.64	52.00	-3.95	1,214.08	1,806.47	2,559.37	2,512.15	47.22	54.205	
4,640.00	4,569.28	2,600.00	2,600.00	17.74	52.00	-3.95	1,214.08	1,806.47	2,569.21	2,522.26	46.95	54.724	
4,660.00	4,588.20	2,600.00	2,600.00	17.84	52.00	-3.95	1,214.08	1,806.47	2,579.18	2,532.50	46.68	55.251	
4,680.00	4,607.12	2,600.00	2,600.00	17.95	52.00	-3.95	1,214.08	1,806.47	2,589.26	2,542.84	46.41	55.787	
4,700.00	4,626.04	2,600.00	2,600.00	18.05	52.00	-3.95	1,214.08	1,806.47	2,599.45	2,553.31	46.15	56.331	
4,720.00	4,644.96	2,600.00	2,600.00	18.16	52.00	-3.95	1,214.08	1,806.47	2,609.76	2,563.88	45.88	56.884	
4,740.00	4,663.88	2,600.00	2,600.00	18.26	52.00	-3.95	1,214.08	1,806.47	2,620.18	2,574.57	45.61	57.445	
4,760.00	4,682.81	2,600.00	2,600.00	18.37	52.00	-3.95	1,214.08	1,806.47	2,630.71	2,585.37	45.34	58.016	
4,780.00	4,701.73	2,600.00	2,600.00	18.47	52.00	-3.95	1,214.08	1,806.47	2,641.35	2,596.27	45.08	58.595	
4,800.00	4,720.65	2,600.00	2,600.00	18.58	52.00	-3.95	1,214.08	1,806.47	2,652.10	2,607.29	44.81	59.183	
4,820.00	4,739.57	2,600.00	2,600.00	18.69	52.00	-3.95	1,214.08	1,806.47	2,662.96	2,618.41	44.55	59.780	
4,840.00	4,758.49	2,600.00	2,600.00	18.79	52.00	-3.95	1,214.08	1,806.47	2,673.92	2,629.64	44.28	60.386	
4,860.00	4,777.41	2,600.00	2,600.00	18.90	52.00	-3.95	1,214.08	1,806.47	2,684.98	2,640.97	44.02	61.001	
4,880.00	4,796.33	2,600.00	2,600.00	19.00	52.00	-3.95	1,214.08	1,806.47	2,696.15	2,652.40	43.75	61.625	
4,900.00	4,815.25	2,600.00	2,600.00	19.11	52.00	-3.95	1,214.08	1,806.47	2,707.42	2,663.94	43.49	62.258	
4,920.00	4,834.17	2,600.00	2,600.00	19.22	52.00	-3.95	1,214.08	1,806.47	2,718.79	2,675.57	43.22	62.900	
4,940.00	4,853.10	2,600.00	2,600.00	19.32	52.00	-3.95	1,214.08	1,806.47	2,730.26	2,687.30	42.96	63.552	
4,960.00	4,872.02	2,600.00	2,600.00	19.43	52.00	-3.95	1,214.08	1,806.47	2,741.83	2,699.13	42.70	64.212	
4,980.00	4,890.94	2,600.00	2,600.00	19.54	52.00	-3.95	1,214.08	1,806.47	2,753.49	2,711.06	42.44	64.882	
5,000.00	4,909.86	2,600.00	2,600.00	19.65	52.00	-3.95	1,214.08	1,806.47	2,765.25	2,723.08	42.18	65.562	
5,020.00	4,928.78	2,600.00	2,600.00	19.75	52.00	-3.95	1,214.08	1,806.47	2,777.11	2,735.19	41.92	66.251	
5,040.00	4,947.70	2,600.00	2,600.00	19.86	52.00	-3.95	1,214.08	1,806.47	2,789.05	2,747.40	41.66	66.949	
5,060.00	4,966.62	2,600.00	2,600.00	19.97	52.00	-3.95	1,214.08	1,806.47	2,801.09	2,759.69	41.40	67.657	
5,080.00	4,985.54	2,600.00	2,600.00	20.08	52.00	-3.95	1,214.08	1,806.47	2,813.22	2,772.08	41.14	68.374	
5,100.00	5,004.46	2,600.00	2,600.00	20.19	52.00	-3.95	1,214.08	1,806.47	2,825.44	2,784.55	40.89	69.102	
5,120.00	5,023.39	2,600.00	2,600.00	20.30	52.00	-3.95	1,214.08	1,806.47	2,837.75	2,797.12	40.63	69.838	
5,140.00	5,042.31	2,600.00	2,600.00	20.41	52.00	-3.95	1,214.08	1,806.47	2,850.14	2,809.76	40.38	70.585	

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

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Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,160.00	5,061.23	2,600.00	2,600.00	20.51	52.00	-3.95	1,214.08	1,806.47	2,862.62	2,822.50	40.13	71.341	
5,180.00	5,080.15	2,600.00	2,600.00	20.62	52.00	-3.95	1,214.08	1,806.47	2,875.19	2,835.32	39.87	72.107	
5,200.00	5,099.07	2,600.00	2,600.00	20.73	52.00	-3.95	1,214.08	1,806.47	2,887.84	2,848.22	39.62	72.884	
5,220.00	5,117.99	2,600.00	2,600.00	20.84	52.00	-3.95	1,214.08	1,806.47	2,900.57	2,861.20	39.37	73.669	
5,240.00	5,136.91	2,600.00	2,600.00	20.95	52.00	-3.95	1,214.08	1,806.47	2,913.39	2,874.26	39.12	74.465	
5,260.00	5,155.83	2,600.00	2,600.00	21.06	52.00	-3.95	1,214.08	1,806.47	2,926.28	2,887.40	38.88	75.272	
5,280.00	5,174.75	2,600.00	2,600.00	21.17	52.00	-3.95	1,214.08	1,806.47	2,939.25	2,900.62	38.63	76.088	
5,300.00	5,193.67	2,600.00	2,600.00	21.28	52.00	-3.95	1,214.08	1,806.47	2,952.31	2,913.92	38.38	76.915	
5,320.00	5,212.60	2,600.00	2,600.00	21.39	52.00	-3.95	1,214.08	1,806.47	2,965.44	2,927.30	38.14	77.752	
5,340.00	5,231.52	2,600.00	2,600.00	21.50	52.00	-3.95	1,214.08	1,806.47	2,978.64	2,940.75	37.90	78.599	
5,360.00	5,250.44	2,600.00	2,600.00	21.61	52.00	-3.95	1,214.08	1,806.47	2,991.92	2,954.27	37.65	79.457	
5,380.00	5,269.36	2,600.00	2,600.00	21.72	52.00	-3.95	1,214.08	1,806.47	3,005.28	2,967.87	37.41	80.325	
5,400.00	5,288.28	2,600.00	2,600.00	21.83	52.00	-3.95	1,214.08	1,806.47	3,018.71	2,981.53	37.17	81.204	
5,420.00	5,307.20	2,600.00	2,600.00	21.94	52.00	-3.95	1,214.08	1,806.47	3,032.21	2,995.27	36.94	82.093	
5,440.00	5,326.12	2,600.00	2,600.00	22.06	52.00	-3.95	1,214.08	1,806.47	3,045.78	3,009.08	36.70	82.992	
5,460.00	5,345.04	2,600.00	2,600.00	22.17	52.00	-3.95	1,214.08	1,806.47	3,059.43	3,022.96	36.46	83.903	
5,480.00	5,363.96	2,600.00	2,600.00	22.28	52.00	-3.95	1,214.08	1,806.47	3,073.14	3,036.91	36.23	84.824	
5,500.00	5,382.89	2,600.00	2,600.00	22.39	52.00	-3.95	1,214.08	1,806.47	3,086.92	3,050.93	36.00	85.757	
5,520.00	5,401.81	2,600.00	2,600.00	22.50	52.00	-3.95	1,214.08	1,806.47	3,100.77	3,065.01	35.76	86.699	
5,540.00	5,420.73	2,600.00	2,600.00	22.61	52.00	-3.95	1,214.08	1,806.47	3,114.69	3,079.16	35.53	87.653	
5,560.00	5,439.65	2,600.00	2,600.00	22.72	52.00	-3.95	1,214.08	1,806.47	3,128.67	3,093.37	35.31	88.618	
5,580.00	5,458.57	2,600.00	2,600.00	22.84	52.00	-3.95	1,214.08	1,806.47	3,142.72	3,107.64	35.08	89.594	
5,600.00	5,477.49	2,600.00	2,600.00	22.95	52.00	-3.95	1,214.08	1,806.47	3,156.83	3,121.98	34.85	90.582	
5,620.00	5,496.41	2,600.00	2,600.00	23.06	52.00	-3.95	1,214.08	1,806.47	3,171.01	3,136.38	34.63	91.580	
5,640.00	5,515.33	2,600.00	2,600.00	23.17	52.00	-3.95	1,214.08	1,806.47	3,185.25	3,150.84	34.40	92.589	
5,660.00	5,534.25	2,600.00	2,600.00	23.28	52.00	-3.95	1,214.08	1,806.47	3,199.54	3,165.37	34.18	93.610	
5,680.00	5,553.18	2,600.00	2,600.00	23.40	52.00	-3.95	1,214.08	1,806.47	3,213.90	3,179.95	33.96	94.643	
5,700.00	5,572.10	2,600.00	2,600.00	23.51	52.00	-3.95	1,214.08	1,806.47	3,228.32	3,194.59	33.74	95.687	
5,720.00	5,591.02	2,600.00	2,600.00	23.62	52.00	-3.95	1,214.08	1,806.47	3,242.80	3,209.28	33.52	96.742	
5,740.00	5,609.94	2,600.00	2,600.00	23.73	52.00	-3.95	1,214.08	1,806.47	3,257.34	3,224.04	33.30	97.809	
5,760.00	5,628.86	2,600.00	2,600.00	23.85	52.00	-3.95	1,214.08	1,806.47	3,271.94	3,238.85	33.09	98.888	
5,780.00	5,647.78	2,600.00	2,600.00	23.96	52.00	-3.95	1,214.08	1,806.47	3,286.59	3,253.72	32.87	99.978	
5,800.00	5,666.70	2,600.00	2,600.00	24.07	52.00	-3.95	1,214.08	1,806.47	3,301.30	3,268.64	32.66	101.081	
5,809.89	5,676.06	2,600.00	2,600.00	24.13	52.00	-3.95	1,214.08	1,806.47	3,308.59	3,276.04	32.56	101.630	
5,820.00	5,685.60	2,600.00	2,600.00	24.19	52.00	-4.79	1,214.08	1,806.47	3,316.01	3,283.57	32.45	102.198	
5,840.00	5,704.31	2,600.00	2,600.00	24.31	52.00	-6.15	1,214.08	1,806.47	3,330.44	3,298.21	32.23	103.338	
5,850.00	5,713.58	2,600.00	2,600.00	24.37	52.00	-6.71	1,214.08	1,806.47	3,337.52	3,305.40	32.12	103.917	
5,860.00	5,722.80	2,600.00	2,600.00	24.43	52.00	-7.21	1,214.08	1,806.47	3,344.51	3,312.51	32.01	104.497	
5,880.00	5,741.03	2,600.00	2,600.00	24.57	52.00	-8.03	1,214.08	1,806.47	3,358.22	3,326.44	31.78	105.673	
5,900.00	5,759.00	2,600.00	2,600.00	24.70	52.00	-8.68	1,214.08	1,806.47	3,371.56	3,340.01	31.55	106.873	
5,920.00	5,776.66	2,600.00	2,600.00	24.85	52.00	-9.18	1,214.08	1,806.47	3,384.51	3,353.19	31.32	108.075	
5,940.00	5,794.02	2,600.00	2,600.00	25.00	52.00	-9.57	1,214.08	1,806.47	3,397.06	3,365.98	31.08	109.300	
5,950.00	5,802.57	2,600.00	2,600.00	25.08	52.00	-9.74	1,214.08	1,806.47	3,403.18	3,372.22	30.96	109.920	
5,960.00	5,811.03	2,600.00	2,600.00	25.16	52.00	-9.88	1,214.08	1,806.47	3,409.20	3,378.36	30.84	110.533	
5,980.00	5,827.69	2,600.00	2,600.00	25.33	52.00	-10.12	1,214.08	1,806.47	3,420.93	3,390.32	30.61	111.775	
6,000.00	5,843.96	2,600.00	2,600.00	25.50	52.00	-10.31	1,214.08	1,806.47	3,432.22	3,401.86	30.36	113.037	
6,020.00	5,859.84	2,600.00	2,600.00	25.69	52.00	-10.46	1,214.08	1,806.47	3,443.08	3,412.95	30.13	114.291	
6,040.00	5,875.31	2,600.00	2,600.00	25.87	52.00	-10.57	1,214.08	1,806.47	3,453.49	3,423.60	29.88	115.562	
6,050.00	5,882.88	2,600.00	2,600.00	25.97	52.00	-10.62	1,214.08	1,806.47	3,458.52	3,428.76	29.76	116.203	
6,060.00	5,890.33	2,600.00	2,600.00	26.07	52.00	-10.66	1,214.08	1,806.47	3,463.44	3,433.79	29.64	116.835	
6,080.00	5,904.90	2,600.00	2,600.00	26.28	52.00	-10.72	1,214.08	1,806.47	3,472.93	3,443.52	29.40	118.108	
6,100.00	5,919.00	2,600.00	2,600.00	26.49	52.00	-10.78	1,214.08	1,806.47	3,481.94	3,452.78	29.16	119.394	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,120.00	5,932.61	2,600.00	2,600.00	26.72	52.00	-10.82	1,214.08	1,806.47	3,490.48	3,461.55	28.93	120.662	
6,140.00	5,945.72	2,600.00	2,600.00	26.95	52.00	-10.85	1,214.08	1,806.47	3,498.53	3,469.84	28.69	121.938	
6,150.00	5,952.07	2,600.00	2,600.00	27.06	52.00	-10.86	1,214.08	1,806.47	3,502.37	3,473.80	28.57	122.579	
6,160.00	5,958.30	2,600.00	2,600.00	27.19	52.00	-10.88	1,214.08	1,806.47	3,506.09	3,477.63	28.46	123.206	
6,180.00	5,970.34	2,600.00	2,600.00	27.44	52.00	-10.90	1,214.08	1,806.47	3,513.15	3,484.92	28.23	124.461	
6,200.00	5,981.83	2,600.00	2,600.00	27.69	52.00	-10.92	1,214.08	1,806.47	3,519.70	3,491.70	28.00	125.718	
6,220.00	5,992.76	2,600.00	2,600.00	27.97	52.00	-10.94	1,214.08	1,806.47	3,525.75	3,497.97	27.77	126.942	
6,240.00	6,003.11	2,600.00	2,600.00	28.25	52.00	-10.95	1,214.08	1,806.47	3,531.28	3,503.72	27.55	128.160	
6,250.00	6,008.06	2,600.00	2,600.00	28.38	52.00	-10.96	1,214.08	1,806.47	3,533.85	3,506.41	27.44	128.765	
6,260.00	6,012.86	2,600.00	2,600.00	28.53	52.00	-10.97	1,214.08	1,806.47	3,536.29	3,508.95	27.34	129.354	
6,280.00	6,022.01	2,600.00	2,600.00	28.84	52.00	-11.00	1,214.08	1,806.47	3,540.78	3,513.65	27.13	130.520	
6,300.00	6,030.55	2,600.00	2,600.00	29.14	52.00	-11.02	1,214.08	1,806.47	3,544.75	3,517.83	26.92	131.670	
6,320.00	6,038.46	2,600.00	2,600.00	29.46	52.00	-11.05	1,214.08	1,806.47	3,548.18	3,521.46	26.72	132.770	
6,340.00	6,045.73	2,600.00	2,600.00	29.78	52.00	-11.08	1,214.08	1,806.47	3,551.09	3,524.56	26.53	133.845	
6,350.00	6,049.13	2,600.00	2,600.00	29.95	52.00	-11.10	1,214.08	1,806.47	3,552.34	3,525.90	26.44	134.371	
6,360.00	6,052.36	2,600.00	2,600.00	30.12	52.00	-11.12	1,214.08	1,806.47	3,553.46	3,527.11	26.35	134.877	
6,380.00	6,058.34	2,600.00	2,600.00	30.47	52.00	-11.17	1,214.08	1,806.47	3,555.29	3,529.13	26.17	135.862	
6,400.00	6,063.66	2,600.00	2,600.00	30.81	52.00	-11.21	1,214.08	1,806.47	3,556.59	3,530.60	26.00	136.806	
6,420.00	6,068.31	2,600.00	2,600.00	31.18	52.00	-11.27	1,214.08	1,806.47	3,557.35	3,531.52	25.84	137.686	
6,440.00	6,072.29	2,600.00	2,600.00	31.54	52.00	-11.33	1,214.08	1,806.47	3,557.58	3,531.89	25.68	138.515	
6,450.00	6,074.03	2,600.00	2,600.00	31.73	52.00	-11.36	1,214.08	1,806.47	3,557.49	3,531.88	25.61	138.909	
6,460.00	6,075.60	2,600.00	2,600.00	31.92	52.00	-11.40	1,214.08	1,806.47	3,557.26	3,531.72	25.54	139.282	
6,480.00	6,078.23	2,600.00	2,600.00	32.30	52.00	-11.48	1,214.08	1,806.47	3,556.41	3,531.00	25.41	139.981	
6,500.00	6,080.17	2,600.00	2,600.00	32.68	52.00	-11.56	1,214.08	1,806.47	3,555.01	3,529.73	25.28	140.615	
6,520.00	6,081.42	2,600.00	2,600.00	33.07	52.00	-11.65	1,214.08	1,806.47	3,553.08	3,527.92	25.17	141.169	
6,540.00	6,081.99	2,600.00	2,600.00	33.47	52.00	-11.75	1,214.08	1,806.47	3,550.62	3,525.55	25.07	141.648	
6,552.18	6,082.00	2,600.00	2,600.00	33.71	52.00	-11.82	1,214.08	1,806.47	3,548.86	3,523.85	25.01	141.900	
6,560.00	6,081.92	2,600.00	2,600.00	33.86	52.00	-11.82	1,214.08	1,806.47	3,547.67	3,522.70	24.98	142.048	
6,580.00	6,081.73	2,600.00	2,600.00	34.27	52.00	-11.82	1,214.08	1,806.47	3,544.71	3,519.82	24.89	142.406	
6,600.00	6,081.53	2,600.00	2,600.00	34.67	52.00	-11.82	1,214.08	1,806.47	3,541.87	3,517.05	24.81	142.735	
6,620.00	6,081.34	2,600.00	2,600.00	35.10	52.00	-11.82	1,214.08	1,806.47	3,539.13	3,514.38	24.75	143.015	
6,640.00	6,081.14	2,600.00	2,600.00	35.52	52.00	-11.82	1,214.08	1,806.47	3,536.50	3,511.82	24.69	143.261	
6,660.00	6,080.95	2,600.00	2,600.00	35.94	52.00	-11.82	1,214.08	1,806.47	3,533.99	3,509.36	24.63	143.472	
6,680.00	6,080.76	2,600.00	2,600.00	36.37	52.00	-11.82	1,214.08	1,806.47	3,531.59	3,507.00	24.59	143.647	
6,700.00	6,080.56	2,600.00	2,600.00	36.79	52.00	-11.82	1,214.08	1,806.47	3,529.30	3,504.75	24.55	143.785	
6,720.00	6,080.37	2,600.00	2,600.00	37.24	52.00	-11.82	1,214.08	1,806.47	3,527.12	3,502.60	24.52	143.854	
6,740.00	6,080.17	2,600.00	2,600.00	37.69	52.00	-11.82	1,214.08	1,806.47	3,525.05	3,500.55	24.50	143.883	
6,760.00	6,079.98	2,600.00	2,600.00	38.13	52.00	-11.82	1,214.08	1,806.47	3,523.10	3,498.61	24.49	143.870	
6,780.00	6,079.78	2,600.00	2,600.00	38.58	52.00	-11.82	1,214.08	1,806.47	3,521.25	3,496.77	24.48	143.814	
6,800.00	6,079.59	2,600.00	2,600.00	39.03	52.00	-11.82	1,214.08	1,806.47	3,519.52	3,495.04	24.49	143.715	
6,820.00	6,079.39	2,600.00	2,600.00	39.49	52.00	-11.82	1,214.08	1,806.47	3,517.91	3,493.40	24.51	143.547	
6,840.00	6,079.20	2,600.00	2,600.00	39.96	52.00	-11.82	1,214.08	1,806.47	3,516.40	3,491.87	24.53	143.335	
6,860.00	6,079.00	2,600.00	2,600.00	40.43	52.00	-11.82	1,214.08	1,806.47	3,515.01	3,490.45	24.57	143.077	
6,880.00	6,078.81	2,600.00	2,600.00	40.89	52.00	-11.82	1,214.08	1,806.47	3,513.74	3,489.13	24.61	142.773	
6,900.00	6,078.61	2,600.00	2,600.00	41.36	52.00	-11.82	1,214.08	1,806.47	3,512.57	3,487.91	24.66	142.424	
6,920.00	6,078.42	2,600.00	2,600.00	41.84	52.00	-11.82	1,214.08	1,806.47	3,511.52	3,486.80	24.73	142.010	
6,940.00	6,078.22	2,600.00	2,600.00	42.32	52.00	-11.82	1,214.08	1,806.47	3,510.59	3,485.79	24.80	141.550	
6,960.00	6,078.03	2,600.00	2,600.00	42.81	52.00	-11.82	1,214.08	1,806.47	3,509.76	3,484.88	24.88	141.045	
6,980.00	6,077.83	2,600.00	2,600.00	43.29	52.00	-11.82	1,214.08	1,806.47	3,509.05	3,484.08	24.98	140.497	
7,000.00	6,077.64	2,600.00	2,600.00	43.77	52.00	-11.82	1,214.08	1,806.47	3,508.46	3,483.38	25.08	139.906	
7,020.00	6,077.44	2,600.00	2,600.00	44.27	52.00	-11.82	1,214.08	1,806.47	3,507.98	3,482.79	25.19	139.257	
7,040.00	6,077.25	2,600.00	2,600.00	44.76	52.00	-11.82	1,214.08	1,806.47	3,507.61	3,482.30	25.31	138.568	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,060.00	6,077.05	2,600.00	2,600.00	45.26	52.00	-11.82	1,214.08	1,806.47	3,507.36	3,481.91	25.45	137.839	
7,080.00	6,076.86	2,600.00	2,600.00	45.76	52.00	-11.82	1,214.08	1,806.47	3,507.22	3,481.63	25.59	137.074	
7,094.42	6,076.72	2,600.00	2,600.00	46.11	52.00	-11.82	1,214.08	1,806.47	3,507.19	3,481.50	25.69	136.500	
7,100.00	6,076.66	2,600.00	2,600.00	46.25	52.00	-11.82	1,214.08	1,806.47	3,507.19	3,481.46	25.74	136.273	
7,120.00	6,076.47	2,600.00	2,600.00	46.76	52.00	-11.82	1,214.08	1,806.47	3,507.28	3,481.38	25.90	135.425	
7,140.00	6,076.27	2,600.00	2,600.00	47.27	52.00	-11.82	1,214.08	1,806.47	3,507.49	3,481.42	26.07	134.547	
7,160.00	6,076.08	2,600.00	2,600.00	47.78	52.00	-11.82	1,214.08	1,806.47	3,507.80	3,481.55	26.25	133.639	
7,180.00	6,075.88	2,600.00	2,600.00	48.28	52.00	-11.82	1,214.08	1,806.47	3,508.23	3,481.80	26.44	132.705	
7,200.00	6,075.69	2,600.00	2,600.00	48.79	52.00	-11.82	1,214.08	1,806.47	3,508.78	3,482.14	26.63	131.746	
7,220.00	6,075.49	2,600.00	2,600.00	49.31	52.00	-11.82	1,214.08	1,806.47	3,509.44	3,482.60	26.84	130.754	
7,240.00	6,075.30	2,600.00	2,600.00	49.83	52.00	-11.82	1,214.08	1,806.47	3,510.21	3,483.15	27.06	129.743	
7,260.00	6,075.11	2,600.00	2,600.00	50.34	52.00	-11.82	1,214.08	1,806.47	3,511.10	3,483.82	27.28	128.715	
7,280.00	6,074.91	2,600.00	2,600.00	50.86	52.00	-11.82	1,214.08	1,806.47	3,512.10	3,484.59	27.51	127.671	
7,300.00	6,074.72	2,600.00	2,600.00	51.38	52.00	-11.82	1,214.08	1,806.47	3,513.21	3,485.46	27.75	126.615	
7,320.00	6,074.52	2,600.00	2,600.00	51.90	52.00	-11.82	1,214.08	1,806.47	3,514.44	3,486.44	27.99	125.541	
7,340.00	6,074.33	2,600.00	2,600.00	52.43	52.00	-11.82	1,214.08	1,806.47	3,515.78	3,487.53	28.25	124.458	
7,360.00	6,074.13	2,600.00	2,600.00	52.96	52.00	-11.82	1,214.08	1,806.47	3,517.23	3,488.72	28.51	123.370	
7,380.00	6,073.94	2,600.00	2,600.00	53.48	52.00	-11.82	1,214.08	1,806.47	3,518.80	3,490.02	28.78	122.278	
7,400.00	6,073.74	2,600.00	2,600.00	54.01	52.00	-11.82	1,214.08	1,806.47	3,520.48	3,491.43	29.05	121.183	
7,420.00	6,073.55	2,600.00	2,600.00	54.54	52.00	-11.82	1,214.08	1,806.47	3,522.27	3,492.94	29.33	120.083	
7,440.00	6,073.35	2,600.00	2,600.00	55.07	52.00	-11.82	1,214.08	1,806.47	3,524.17	3,494.55	29.62	118.984	
7,460.00	6,073.16	2,600.00	2,600.00	55.61	52.00	-11.82	1,214.08	1,806.47	3,526.19	3,496.28	29.91	117.888	
7,480.00	6,072.96	2,600.00	2,600.00	56.14	52.00	-11.82	1,214.08	1,806.47	3,528.32	3,498.11	30.21	116.797	
7,500.00	6,072.77	2,600.00	2,600.00	56.67	52.00	-11.82	1,214.08	1,806.47	3,530.56	3,500.05	30.51	115.712	
7,520.00	6,072.57	2,600.00	2,600.00	57.21	52.00	-11.82	1,214.08	1,806.47	3,532.92	3,502.10	30.82	114.630	
7,540.00	6,072.38	2,600.00	2,600.00	57.75	52.00	-11.82	1,214.08	1,806.47	3,535.38	3,504.25	31.13	113.557	
7,560.00	6,072.18	2,600.00	2,600.00	58.29	52.00	-11.82	1,214.08	1,806.47	3,537.96	3,506.51	31.45	112.494	
7,580.00	6,071.99	2,600.00	2,600.00	58.83	52.00	-11.82	1,214.08	1,806.47	3,540.64	3,508.87	31.77	111.441	
7,600.00	6,071.79	2,600.00	2,600.00	59.37	52.00	-11.82	1,214.08	1,806.47	3,543.44	3,511.35	32.10	110.401	
7,620.00	6,071.60	2,600.00	2,600.00	59.92	52.00	-11.82	1,214.08	1,806.47	3,546.35	3,513.93	32.43	109.369	
7,640.00	6,071.40	2,600.00	2,600.00	60.46	52.00	-11.82	1,214.08	1,806.47	3,549.37	3,516.61	32.76	108.350	
7,660.00	6,071.21	2,600.00	2,600.00	61.01	52.00	-11.82	1,214.08	1,806.47	3,552.50	3,519.41	33.09	107.345	
7,680.00	6,071.01	2,600.00	2,600.00	61.55	52.00	-11.82	1,214.08	1,806.47	3,555.74	3,522.31	33.43	106.355	
7,700.00	6,070.82	2,600.00	2,600.00	62.10	52.00	-11.82	1,214.08	1,806.47	3,559.09	3,525.31	33.77	105.380	
7,720.00	6,070.62	2,600.00	2,600.00	62.65	52.00	-11.82	1,214.08	1,806.47	3,562.55	3,528.43	34.12	104.417	
7,740.00	6,070.43	2,600.00	2,600.00	63.19	52.00	-11.82	1,214.08	1,806.47	3,566.11	3,531.65	34.47	103.470	
7,760.00	6,070.23	2,600.00	2,600.00	63.74	52.00	-11.82	1,214.08	1,806.47	3,569.79	3,534.97	34.81	102.538	
7,780.00	6,070.04	2,600.00	2,600.00	64.29	52.00	-11.82	1,214.08	1,806.47	3,573.57	3,538.40	35.16	101.623	
7,800.00	6,069.85	2,600.00	2,600.00	64.84	52.00	-11.82	1,214.08	1,806.47	3,577.46	3,541.94	35.52	100.724	
7,820.00	6,069.65	2,600.00	2,600.00	65.40	52.00	-11.82	1,214.08	1,806.47	3,581.46	3,545.59	35.87	99.839	
7,840.00	6,069.46	2,600.00	2,600.00	65.95	52.00	-11.82	1,214.08	1,806.47	3,585.56	3,549.34	36.23	98.971	
7,860.00	6,069.26	2,600.00	2,600.00	66.51	52.00	-11.82	1,214.08	1,806.47	3,589.78	3,553.19	36.59	98.119	
7,880.00	6,069.07	2,600.00	2,600.00	67.06	52.00	-11.82	1,214.08	1,806.47	3,594.09	3,557.15	36.94	97.284	
7,900.00	6,068.87	2,600.00	2,600.00	67.61	52.00	-11.82	1,214.08	1,806.47	3,598.52	3,561.22	37.30	96.465	
7,920.00	6,068.68	2,600.00	2,600.00	68.17	52.00	-11.82	1,214.08	1,806.47	3,603.05	3,565.38	37.66	95.661	
7,940.00	6,068.48	2,600.00	2,600.00	68.73	52.00	-11.82	1,214.08	1,806.47	3,607.68	3,569.66	38.03	94.873	
7,960.00	6,068.29	2,600.00	2,600.00	69.29	52.00	-11.82	1,214.08	1,806.47	3,612.42	3,574.04	38.39	94.102	
7,980.00	6,068.09	2,600.00	2,600.00	69.84	52.00	-11.82	1,214.08	1,806.47	3,617.27	3,578.52	38.75	93.347	
8,000.00	6,067.90	2,600.00	2,600.00	70.40	52.00	-11.82	1,214.08	1,806.47	3,622.22	3,583.10	39.11	92.607	
8,020.00	6,067.70	2,600.00	2,600.00	70.96	52.00	-11.82	1,214.08	1,806.47	3,627.27	3,587.79	39.48	91.882	
8,040.00	6,067.51	2,600.00	2,600.00	71.52	52.00	-11.82	1,214.08	1,806.47	3,632.42	3,592.58	39.84	91.173	
8,060.00	6,067.31	2,600.00	2,600.00	72.08	52.00	-11.82	1,214.08	1,806.47	3,637.68	3,597.48	40.20	90.479	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,080.00	6,067.12	2,600.00	2,600.00	72.64	52.00	-11.82	1,214.08	1,806.47	3,643.04	3,602.47	40.57	89.801	
8,100.00	6,066.92	2,600.00	2,600.00	73.20	52.00	-11.82	1,214.08	1,806.47	3,648.50	3,607.57	40.93	89.138	
8,120.00	6,066.73	2,600.00	2,600.00	73.77	52.00	-11.82	1,214.08	1,806.47	3,654.07	3,612.77	41.29	88.488	
8,140.00	6,066.53	2,600.00	2,600.00	74.33	52.00	-11.82	1,214.08	1,806.47	3,659.73	3,618.07	41.66	87.853	
8,160.00	6,066.34	2,600.00	2,600.00	74.90	52.00	-11.82	1,214.08	1,806.47	3,665.49	3,623.47	42.02	87.232	
8,180.00	6,066.14	2,600.00	2,600.00	75.46	52.00	-11.82	1,214.08	1,806.47	3,671.36	3,628.98	42.38	86.625	
8,200.00	6,065.95	2,600.00	2,600.00	76.02	52.00	-11.82	1,214.08	1,806.47	3,677.32	3,634.58	42.74	86.033	
8,220.00	6,065.75	2,600.00	2,600.00	76.59	52.00	-11.82	1,214.08	1,806.47	3,683.38	3,640.28	43.10	85.453	
8,240.00	6,065.56	2,600.00	2,600.00	77.16	52.00	-11.82	1,214.08	1,806.47	3,689.54	3,646.08	43.46	84.887	
8,260.00	6,065.36	2,600.00	2,600.00	77.72	52.00	-11.82	1,214.08	1,806.47	3,695.80	3,651.98	43.82	84.334	
8,280.00	6,065.17	2,600.00	2,600.00	78.29	52.00	-11.82	1,214.08	1,806.47	3,702.16	3,657.98	44.18	83.794	
8,300.00	6,064.97	2,600.00	2,600.00	78.85	52.00	-11.82	1,214.08	1,806.47	3,708.61	3,664.07	44.54	83.266	
8,320.00	6,064.78	2,600.00	2,600.00	79.42	52.00	-11.82	1,214.08	1,806.47	3,715.16	3,670.27	44.90	82.751	
8,340.00	6,064.59	2,600.00	2,600.00	79.99	52.00	-11.82	1,214.08	1,806.47	3,721.81	3,676.56	45.25	82.248	
8,360.00	6,064.39	2,600.00	2,600.00	80.56	52.00	-11.82	1,214.08	1,806.47	3,728.55	3,682.94	45.61	81.756	
8,380.00	6,064.20	2,600.00	2,600.00	81.13	52.00	-11.82	1,214.08	1,806.47	3,735.39	3,689.43	45.96	81.277	
8,400.00	6,064.00	2,600.00	2,600.00	81.70	52.00	-11.82	1,214.08	1,806.47	3,742.32	3,696.00	46.31	80.809	
8,420.00	6,063.81	2,600.00	2,600.00	82.27	52.00	-11.82	1,214.08	1,806.47	3,749.34	3,702.68	46.66	80.352	
8,440.00	6,063.61	2,600.00	2,600.00	82.84	52.00	-11.82	1,214.08	1,806.47	3,756.46	3,709.45	47.01	79.906	
8,460.00	6,063.42	2,600.00	2,600.00	83.41	52.00	-11.82	1,214.08	1,806.47	3,763.67	3,716.31	47.36	79.471	
8,480.00	6,063.22	2,600.00	2,600.00	83.98	52.00	-11.82	1,214.08	1,806.47	3,770.97	3,723.27	47.71	79.047	
8,500.00	6,063.03	2,600.00	2,600.00	84.55	52.00	-11.82	1,214.08	1,806.47	3,778.36	3,730.31	48.05	78.634	
8,520.00	6,062.83	2,600.00	2,600.00	85.12	52.00	-11.82	1,214.08	1,806.47	3,785.85	3,737.46	48.39	78.230	
8,540.00	6,062.64	2,600.00	2,600.00	85.69	52.00	-11.82	1,214.08	1,806.47	3,793.43	3,744.69	48.74	77.836	
8,560.00	6,062.44	2,600.00	2,600.00	86.27	52.00	-11.82	1,214.08	1,806.47	3,801.09	3,752.02	49.08	77.452	
8,580.00	6,062.25	2,600.00	2,600.00	86.84	52.00	-11.82	1,214.08	1,806.47	3,808.85	3,759.43	49.42	77.077	
8,600.00	6,062.05	2,600.00	2,600.00	87.41	52.00	-11.82	1,214.08	1,806.47	3,816.69	3,766.94	49.75	76.713	
8,620.00	6,061.86	2,600.00	2,600.00	87.99	52.00	-11.82	1,214.08	1,806.47	3,824.63	3,774.54	50.09	76.357	
8,640.00	6,061.66	2,600.00	2,600.00	88.56	52.00	-11.82	1,214.08	1,806.47	3,832.65	3,782.23	50.42	76.010	
8,660.00	6,061.47	2,600.00	2,600.00	89.13	52.00	-11.82	1,214.08	1,806.47	3,840.76	3,790.00	50.76	75.672	
8,680.00	6,061.27	2,600.00	2,600.00	89.71	52.00	-11.82	1,214.08	1,806.47	3,848.95	3,797.87	51.09	75.343	
8,700.00	6,061.08	2,600.00	2,600.00	90.28	52.00	-11.82	1,214.08	1,806.47	3,857.24	3,805.82	51.41	75.022	
8,720.00	6,060.88	2,600.00	2,600.00	90.86	52.00	-11.82	1,214.08	1,806.47	3,865.60	3,813.86	51.74	74.709	
8,740.00	6,060.69	2,600.00	2,600.00	91.43	52.00	-11.82	1,214.08	1,806.47	3,874.06	3,821.99	52.07	74.405	
8,760.00	6,060.49	2,600.00	2,600.00	92.01	52.00	-11.82	1,214.08	1,806.47	3,882.60	3,830.20	52.39	74.109	
8,780.00	6,060.30	2,600.00	2,600.00	92.59	52.00	-11.82	1,214.08	1,806.47	3,891.22	3,838.50	52.71	73.820	
8,800.00	6,060.10	2,600.00	2,600.00	93.16	52.00	-11.82	1,214.08	1,806.47	3,899.92	3,846.89	53.03	73.540	
8,820.00	6,059.91	2,600.00	2,600.00	93.74	52.00	-11.82	1,214.08	1,806.47	3,908.71	3,855.36	53.35	73.266	
8,840.00	6,059.71	2,600.00	2,600.00	94.32	52.00	-11.82	1,214.08	1,806.47	3,917.58	3,863.92	53.67	73.000	
8,860.00	6,059.52	2,600.00	2,600.00	94.89	52.00	-11.82	1,214.08	1,806.47	3,926.53	3,872.55	53.98	72.741	
8,880.00	6,059.33	2,600.00	2,600.00	95.47	52.00	-11.82	1,214.08	1,806.47	3,935.57	3,881.28	54.29	72.489	
8,900.00	6,059.13	2,600.00	2,600.00	96.05	52.00	-11.82	1,214.08	1,806.47	3,944.68	3,890.08	54.60	72.245	
8,920.00	6,058.94	2,600.00	2,600.00	96.63	52.00	-11.82	1,214.08	1,806.47	3,953.88	3,898.97	54.91	72.007	
8,940.00	6,058.74	2,600.00	2,600.00	97.20	52.00	-11.82	1,214.08	1,806.47	3,963.15	3,907.93	55.22	71.775	
8,960.00	6,058.55	2,600.00	2,600.00	97.78	52.00	-11.82	1,214.08	1,806.47	3,972.50	3,916.98	55.52	71.550	
8,980.00	6,058.35	2,600.00	2,600.00	98.36	52.00	-11.82	1,214.08	1,806.47	3,981.93	3,926.11	55.82	71.332	
9,000.00	6,058.16	2,600.00	2,600.00	98.94	52.00	-11.82	1,214.08	1,806.47	3,991.44	3,935.32	56.12	71.120	
9,020.00	6,057.96	2,600.00	2,600.00	99.52	52.00	-11.82	1,214.08	1,806.47	4,001.03	3,944.61	56.42	70.914	
9,040.00	6,057.77	2,600.00	2,600.00	100.10	52.00	-11.82	1,214.08	1,806.47	4,010.69	3,953.98	56.72	70.714	
9,060.00	6,057.57	2,600.00	2,600.00	100.68	52.00	-11.82	1,214.08	1,806.47	4,020.43	3,963.42	57.01	70.519	
9,080.00	6,057.38	2,600.00	2,600.00	101.26	52.00	-11.82	1,214.08	1,806.47	4,030.25	3,972.95	57.30	70.331	
9,100.00	6,057.18	2,600.00	2,600.00	101.84	52.00	-11.82	1,214.08	1,806.47	4,040.14	3,982.55	57.59	70.149	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,120.00	6,056.99	2,600.00	2,600.00	102.42	52.00	-11.82	1,214.08	1,806.47	4,050.11	3,992.22	57.88	69.971	
9,140.00	6,056.79	2,600.00	2,600.00	103.00	52.00	-11.82	1,214.08	1,806.47	4,060.15	4,001.98	58.17	69.800	
9,160.00	6,056.60	2,600.00	2,600.00	103.58	52.00	-11.82	1,214.08	1,806.47	4,070.26	4,011.81	58.45	69.633	
9,180.00	6,056.40	2,600.00	2,600.00	104.16	52.00	-11.82	1,214.08	1,806.47	4,080.45	4,021.71	58.73	69.472	
9,200.00	6,056.21	2,600.00	2,600.00	104.74	52.00	-11.82	1,214.08	1,806.47	4,090.70	4,031.69	59.01	69.316	
9,220.00	6,056.01	2,600.00	2,600.00	105.32	52.00	-11.82	1,214.08	1,806.47	4,101.03	4,041.74	59.29	69.165	
9,240.00	6,055.82	2,600.00	2,600.00	105.90	52.00	-11.82	1,214.08	1,806.47	4,111.44	4,051.87	59.57	69.019	
9,260.00	6,055.62	2,600.00	2,600.00	106.49	52.00	-11.82	1,214.08	1,806.47	4,121.91	4,062.07	59.84	68.878	
9,280.00	6,055.43	2,600.00	2,600.00	107.07	52.00	-11.82	1,214.08	1,806.47	4,132.45	4,072.34	60.12	68.742	
9,300.00	6,055.23	2,600.00	2,600.00	107.65	52.00	-11.82	1,214.08	1,806.47	4,143.06	4,082.68	60.39	68.611	
9,320.00	6,055.04	2,600.00	2,600.00	108.23	52.00	-11.82	1,214.08	1,806.47	4,153.75	4,093.09	60.65	68.483	
9,340.00	6,054.84	2,600.00	2,600.00	108.81	52.00	-11.82	1,214.08	1,806.47	4,164.50	4,103.58	60.92	68.361	
9,360.00	6,054.65	2,600.00	2,600.00	109.40	52.00	-11.82	1,214.08	1,806.47	4,175.31	4,114.13	61.18	68.243	
9,380.00	6,054.45	2,600.00	2,600.00	109.98	52.00	-11.82	1,214.08	1,806.47	4,186.20	4,124.75	61.45	68.129	
9,400.00	6,054.26	2,600.00	2,600.00	110.56	52.00	-11.82	1,214.08	1,806.47	4,197.15	4,135.45	61.71	68.020	
9,420.00	6,054.07	2,600.00	2,600.00	111.14	52.00	-11.82	1,214.08	1,806.47	4,208.17	4,146.21	61.96	67.914	
9,440.00	6,053.87	2,600.00	2,600.00	111.73	52.00	-11.82	1,214.08	1,806.47	4,219.26	4,157.04	62.22	67.813	
9,460.00	6,053.68	2,600.00	2,600.00	112.31	52.00	-11.82	1,214.08	1,806.47	4,230.41	4,167.94	62.47	67.716	
9,480.00	6,053.48	2,600.00	2,600.00	112.89	52.00	-11.82	1,214.08	1,806.47	4,241.63	4,178.90	62.73	67.622	
9,500.00	6,053.29	2,600.00	2,600.00	113.48	52.00	-11.82	1,214.08	1,806.47	4,252.91	4,189.93	62.98	67.533	
9,520.00	6,053.09	2,600.00	2,600.00	114.06	52.00	-11.82	1,214.08	1,806.47	4,264.25	4,201.03	63.22	67.448	
9,540.00	6,052.90	2,600.00	2,600.00	114.65	52.00	-11.82	1,214.08	1,806.47	4,275.66	4,212.19	63.47	67.366	
9,560.00	6,052.70	2,600.00	2,600.00	115.23	52.00	-11.82	1,214.08	1,806.47	4,287.13	4,223.42	63.71	67.288	
9,580.00	6,052.51	2,600.00	2,600.00	115.81	52.00	-11.82	1,214.08	1,806.47	4,298.66	4,234.71	63.96	67.213	
9,600.00	6,052.31	2,600.00	2,600.00	116.40	52.00	-11.82	1,214.08	1,806.47	4,310.26	4,246.06	64.20	67.142	
9,620.00	6,052.12	2,600.00	2,600.00	116.98	52.00	-11.82	1,214.08	1,806.47	4,321.92	4,257.48	64.43	67.075	
9,640.00	6,051.92	2,600.00	2,600.00	117.57	52.00	-11.82	1,214.08	1,806.47	4,333.63	4,268.96	64.67	67.011	
9,660.00	6,051.73	2,600.00	2,600.00	118.15	52.00	-11.82	1,214.08	1,806.47	4,345.41	4,280.51	64.91	66.950	
9,680.00	6,051.53	2,600.00	2,600.00	118.74	52.00	-11.82	1,214.08	1,806.47	4,357.25	4,292.11	65.14	66.893	
9,700.00	6,051.34	2,600.00	2,600.00	119.32	52.00	-11.82	1,214.08	1,806.47	4,369.15	4,303.78	65.37	66.839	
9,720.00	6,051.14	2,600.00	2,600.00	119.91	52.00	-11.82	1,214.08	1,806.47	4,381.10	4,315.51	65.60	66.788	
9,740.00	6,050.95	2,600.00	2,600.00	120.49	52.00	-11.82	1,214.08	1,806.47	4,393.12	4,327.29	65.82	66.740	
9,760.00	6,050.75	2,600.00	2,600.00	121.08	52.00	-11.82	1,214.08	1,806.47	4,405.19	4,339.14	66.05	66.695	
9,780.00	6,050.56	2,600.00	2,600.00	121.67	52.00	-11.82	1,214.08	1,806.47	4,417.32	4,351.05	66.27	66.653	
9,800.00	6,050.36	2,600.00	2,600.00	122.25	52.00	-11.82	1,214.08	1,806.47	4,429.51	4,363.02	66.49	66.615	
9,820.00	6,050.17	2,600.00	2,600.00	122.84	52.00	-11.82	1,214.08	1,806.47	4,441.75	4,375.04	66.71	66.579	
9,840.00	6,049.97	2,600.00	2,600.00	123.42	52.00	-11.82	1,214.08	1,806.47	4,454.06	4,387.12	66.93	66.546	
9,860.00	6,049.78	2,600.00	2,600.00	124.01	52.00	-11.82	1,214.08	1,806.47	4,466.41	4,399.26	67.15	66.516	
9,880.00	6,049.58	2,600.00	2,600.00	124.60	52.00	-11.82	1,214.08	1,806.47	4,478.82	4,411.46	67.36	66.489	
9,900.00	6,049.39	2,600.00	2,600.00	125.18	52.00	-11.82	1,214.08	1,806.47	4,491.29	4,423.72	67.57	66.465	
9,920.00	6,049.19	2,600.00	2,600.00	125.77	52.00	-11.82	1,214.08	1,806.47	4,503.81	4,436.02	67.78	66.443	
9,940.00	6,049.00	2,600.00	2,600.00	126.35	52.00	-11.82	1,214.08	1,806.47	4,516.38	4,448.39	67.99	66.423	
9,960.00	6,048.80	2,600.00	2,600.00	126.94	52.00	-11.82	1,214.08	1,806.47	4,529.01	4,460.81	68.20	66.407	
9,980.00	6,048.61	2,600.00	2,600.00	127.53	52.00	-11.82	1,214.08	1,806.47	4,541.69	4,473.29	68.41	66.393	
10,000.00	6,048.42	2,600.00	2,600.00	128.11	52.00	-11.82	1,214.08	1,806.47	4,554.43	4,485.82	68.61	66.382	
10,020.00	6,048.22	2,600.00	2,600.00	128.70	52.00	-11.82	1,214.08	1,806.47	4,567.21	4,498.40	68.81	66.373	
10,040.00	6,048.03	2,600.00	2,600.00	129.29	52.00	-11.82	1,214.08	1,806.47	4,580.05	4,511.04	69.01	66.366	
10,060.00	6,047.83	2,600.00	2,600.00	129.88	52.00	-11.82	1,214.08	1,806.47	4,592.94	4,523.73	69.21	66.362	
10,080.00	6,047.64	2,600.00	2,600.00	130.46	52.00	-11.82	1,214.08	1,806.47	4,605.88	4,536.47	69.41	66.360	
10,100.00	6,047.44	2,600.00	2,600.00	131.05	52.00	-11.82	1,214.08	1,806.47	4,618.86	4,549.26	69.60	66.361	
10,120.00	6,047.25	2,600.00	2,600.00	131.64	52.00	-11.82	1,214.08	1,806.47	4,631.90	4,562.11	69.80	66.363	
10,140.00	6,047.05	2,600.00	2,600.00	132.23	52.00	-11.82	1,214.08	1,806.47	4,644.99	4,575.01	69.99	66.369	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,160.00	6,046.86	2,600.00	2,600.00	132.81	52.00	-11.82	1,214.08	1,806.47	4,658.13	4,587.95	70.18	66.376	
10,180.00	6,046.66	2,600.00	2,600.00	133.40	52.00	-11.82	1,214.08	1,806.47	4,671.32	4,600.95	70.37	66.385	
10,200.00	6,046.47	2,600.00	2,600.00	133.99	52.00	-11.82	1,214.08	1,806.47	4,684.55	4,614.00	70.55	66.397	
10,220.00	6,046.27	2,600.00	2,600.00	134.58	52.00	-11.82	1,214.08	1,806.47	4,697.84	4,627.10	70.74	66.411	
10,240.00	6,046.08	2,600.00	2,600.00	135.17	52.00	-11.82	1,214.08	1,806.47	4,711.17	4,640.24	70.92	66.427	
10,260.00	6,045.88	2,600.00	2,600.00	135.75	52.00	-11.82	1,214.08	1,806.47	4,724.54	4,653.44	71.11	66.445	
10,280.00	6,045.69	2,600.00	2,600.00	136.34	52.00	-11.82	1,214.08	1,806.47	4,737.97	4,666.68	71.29	66.465	
10,300.00	6,045.49	2,600.00	2,600.00	136.93	52.00	-11.82	1,214.08	1,806.47	4,751.44	4,679.97	71.46	66.486	
10,320.00	6,045.30	2,600.00	2,600.00	137.52	52.00	-11.82	1,214.08	1,806.47	4,764.95	4,693.31	71.64	66.510	
10,340.00	6,045.10	2,600.00	2,600.00	138.11	52.00	-11.82	1,214.08	1,806.47	4,778.51	4,706.70	71.82	66.536	
10,360.00	6,044.91	2,600.00	2,600.00	138.70	52.00	-11.82	1,214.08	1,806.47	4,792.12	4,720.13	71.99	66.564	
10,380.00	6,044.71	2,600.00	2,600.00	139.28	52.00	-11.82	1,214.08	1,806.47	4,805.77	4,733.61	72.17	66.593	
10,400.00	6,044.52	2,600.00	2,600.00	139.87	52.00	-11.82	1,214.08	1,806.47	4,819.47	4,747.13	72.34	66.625	
10,420.00	6,044.32	2,600.00	2,600.00	140.46	52.00	-11.82	1,214.08	1,806.47	4,833.21	4,760.70	72.51	66.658	
10,440.00	6,044.13	2,600.00	2,600.00	141.05	52.00	-11.82	1,214.08	1,806.47	4,846.99	4,774.31	72.68	66.693	
10,460.00	6,043.93	2,600.00	2,600.00	141.64	52.00	-11.82	1,214.08	1,806.47	4,860.82	4,787.97	72.84	66.730	
10,480.00	6,043.74	2,600.00	2,600.00	142.23	52.00	-11.82	1,214.08	1,806.47	4,874.69	4,801.68	73.01	66.768	
10,500.00	6,043.54	2,600.00	2,600.00	142.82	52.00	-11.82	1,214.08	1,806.47	4,888.60	4,815.42	73.17	66.808	
10,520.00	6,043.35	2,600.00	2,600.00	143.41	52.00	-11.82	1,214.08	1,806.47	4,902.55	4,829.21	73.34	66.850	
10,540.00	6,043.16	2,600.00	2,600.00	144.00	52.00	-11.82	1,214.08	1,806.47	4,916.55	4,843.05	73.50	66.894	
10,560.00	6,042.96	2,600.00	2,600.00	144.59	52.00	-11.82	1,214.08	1,806.47	4,930.58	4,856.93	73.66	66.939	
10,580.00	6,042.77	2,600.00	2,600.00	145.18	52.00	-11.82	1,214.08	1,806.47	4,944.66	4,870.84	73.82	66.986	
10,600.00	6,042.57	2,600.00	2,600.00	145.77	52.00	-11.82	1,214.08	1,806.47	4,958.78	4,884.81	73.97	67.034	
10,620.00	6,042.38	2,600.00	2,600.00	146.36	52.00	-11.82	1,214.08	1,806.47	4,972.94	4,898.81	74.13	67.084	
10,640.00	6,042.18	2,600.00	2,600.00	146.95	52.00	-11.82	1,214.08	1,806.47	4,987.14	4,912.85	74.28	67.136	
10,660.00	6,041.99	2,600.00	2,600.00	147.54	52.00	-11.82	1,214.08	1,806.47	5,001.38	4,926.94	74.44	67.189	
10,680.00	6,041.79	2,600.00	2,600.00	148.13	52.00	-11.82	1,214.08	1,806.47	5,015.65	4,941.06	74.59	67.243	
10,700.00	6,041.60	2,600.00	2,600.00	148.71	52.00	-11.82	1,214.08	1,806.47	5,029.97	4,955.23	74.74	67.299	
10,720.00	6,041.40	2,600.00	2,600.00	149.30	52.00	-11.82	1,214.08	1,806.47	5,044.33	4,969.44	74.89	67.357	
10,740.00	6,041.21	2,600.00	2,600.00	149.90	52.00	-11.82	1,214.08	1,806.47	5,058.72	4,983.68	75.04	67.416	
10,760.00	6,041.01	2,600.00	2,600.00	150.49	52.00	-11.82	1,214.08	1,806.47	5,073.15	4,997.97	75.18	67.476	
10,780.00	6,040.82	2,600.00	2,600.00	151.08	52.00	-11.82	1,214.08	1,806.47	5,087.62	5,012.29	75.33	67.538	
10,800.00	6,040.62	2,600.00	2,600.00	151.67	52.00	-11.82	1,214.08	1,806.47	5,102.13	5,026.66	75.47	67.601	
10,820.00	6,040.43	2,600.00	2,600.00	152.26	52.00	-11.82	1,214.08	1,806.47	5,116.67	5,041.06	75.62	67.665	
10,840.00	6,040.23	2,600.00	2,600.00	152.85	52.00	-11.82	1,214.08	1,806.47	5,131.26	5,055.50	75.76	67.731	
10,860.00	6,040.04	2,600.00	2,600.00	153.44	52.00	-11.82	1,214.08	1,806.47	5,145.87	5,069.97	75.90	67.798	
10,880.00	6,039.84	2,600.00	2,600.00	154.03	52.00	-11.82	1,214.08	1,806.47	5,160.53	5,084.49	76.04	67.866	
10,900.00	6,039.65	2,600.00	2,600.00	154.62	52.00	-11.82	1,214.08	1,806.47	5,175.21	5,099.04	76.18	67.936	
10,920.00	6,039.45	2,600.00	2,600.00	155.21	52.00	-11.82	1,214.08	1,806.47	5,189.94	5,113.62	76.31	68.007	
10,940.00	6,039.26	2,600.00	2,600.00	155.80	52.00	-11.82	1,214.08	1,806.47	5,204.70	5,128.25	76.45	68.079	
10,960.00	6,039.06	2,600.00	2,600.00	156.39	52.00	-11.82	1,214.08	1,806.47	5,219.49	5,142.91	76.59	68.153	
10,980.00	6,038.87	2,600.00	2,600.00	156.98	52.00	-11.82	1,214.08	1,806.47	5,234.32	5,157.60	76.72	68.227	
11,000.00	6,038.67	2,600.00	2,600.00	157.57	52.00	-11.82	1,214.08	1,806.47	5,249.19	5,172.34	76.85	68.303	
11,020.00	6,038.48	2,600.00	2,600.00	158.16	52.00	-11.82	1,214.08	1,806.47	5,264.08	5,187.10	76.98	68.380	
11,040.00	6,038.28	2,600.00	2,600.00	158.75	52.00	-11.82	1,214.08	1,806.47	5,279.02	5,201.90	77.11	68.458	
11,060.00	6,038.09	2,600.00	2,600.00	159.34	52.00	-11.82	1,214.08	1,806.47	5,293.98	5,216.74	77.24	68.538	
11,080.00	6,037.90	2,600.00	2,600.00	159.94	52.00	-11.82	1,214.08	1,806.47	5,308.98	5,231.61	77.37	68.618	
11,100.00	6,037.70	2,600.00	2,600.00	160.53	52.00	-11.82	1,214.08	1,806.47	5,324.01	5,246.51	77.50	68.700	
11,120.00	6,037.51	2,600.00	2,600.00	161.12	52.00	-11.82	1,214.08	1,806.47	5,339.07	5,261.45	77.62	68.783	
11,140.00	6,037.31	2,600.00	2,600.00	161.71	52.00	-11.82	1,214.08	1,806.47	5,354.17	5,276.42	77.75	68.866	
11,160.00	6,037.12	2,600.00	2,600.00	162.30	52.00	-11.82	1,214.08	1,806.47	5,369.30	5,291.43	77.87	68.951	
11,180.00	6,036.92	2,600.00	2,600.00	162.89	52.00	-11.82	1,214.08	1,806.47	5,384.46	5,306.46	77.99	69.037	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,200.00	6,036.73	2,600.00	2,600.00	163.48	52.00	-11.82	1,214.08	1,806.47	5,399.65	5,321.53	78.12	69.124	
11,220.00	6,036.53	2,600.00	2,600.00	164.07	52.00	-11.82	1,214.08	1,806.47	5,414.87	5,336.63	78.24	69.212	
11,240.00	6,036.34	2,600.00	2,600.00	164.67	52.00	-11.82	1,214.08	1,806.47	5,430.12	5,351.77	78.36	69.301	
11,260.00	6,036.14	2,600.00	2,600.00	165.26	52.00	-11.82	1,214.08	1,806.47	5,445.41	5,366.93	78.47	69.391	
11,280.00	6,035.95	2,600.00	2,600.00	165.85	52.00	-11.82	1,214.08	1,806.47	5,460.72	5,382.13	78.59	69.482	
11,300.00	6,035.75	2,600.00	2,600.00	166.44	52.00	-11.82	1,214.08	1,806.47	5,476.07	5,397.36	78.71	69.575	
11,320.00	6,035.56	2,600.00	2,600.00	167.03	52.00	-11.82	1,214.08	1,806.47	5,491.44	5,412.62	78.82	69.668	
11,340.00	6,035.36	2,600.00	2,600.00	167.62	52.00	-11.82	1,214.08	1,806.47	5,506.85	5,427.91	78.94	69.762	
11,360.00	6,035.17	2,600.00	2,600.00	168.22	52.00	-11.82	1,214.08	1,806.47	5,522.28	5,443.23	79.05	69.856	
11,380.00	6,034.97	2,600.00	2,600.00	168.81	52.00	-11.82	1,214.08	1,806.47	5,537.74	5,458.58	79.16	69.952	
11,400.00	6,034.78	2,600.00	2,600.00	169.40	52.00	-11.82	1,214.08	1,806.47	5,553.24	5,473.96	79.28	70.049	
11,420.00	6,034.58	2,600.00	2,600.00	169.99	52.00	-11.82	1,214.08	1,806.47	5,568.76	5,489.37	79.39	70.147	
11,440.00	6,034.39	2,600.00	2,600.00	170.58	52.00	-11.82	1,214.08	1,806.47	5,584.31	5,504.81	79.50	70.245	
11,460.00	6,034.19	2,600.00	2,600.00	171.18	52.00	-11.82	1,214.08	1,806.47	5,599.88	5,520.28	79.61	70.345	
11,480.00	6,034.00	2,600.00	2,600.00	171.77	52.00	-11.82	1,214.08	1,806.47	5,615.49	5,535.78	79.71	70.445	
11,500.00	6,033.80	2,600.00	2,600.00	172.36	52.00	-11.82	1,214.08	1,806.47	5,631.12	5,551.30	79.82	70.547	
11,520.00	6,033.61	2,600.00	2,600.00	172.95	52.00	-11.82	1,214.08	1,806.47	5,646.78	5,566.86	79.93	70.649	
11,540.00	6,033.41	2,600.00	2,600.00	173.55	52.00	-11.82	1,214.08	1,806.47	5,662.47	5,582.44	80.03	70.752	
11,560.00	6,033.22	2,600.00	2,600.00	174.14	52.00	-11.82	1,214.08	1,806.47	5,678.19	5,598.05	80.14	70.855	
11,580.00	6,033.02	2,600.00	2,600.00	174.73	52.00	-11.82	1,214.08	1,806.47	5,693.93	5,613.69	80.24	70.960	
11,600.00	6,032.83	2,600.00	2,600.00	175.32	52.00	-11.82	1,214.08	1,806.47	5,709.70	5,629.36	80.34	71.065	
11,620.00	6,032.64	2,600.00	2,600.00	175.91	52.00	-11.82	1,214.08	1,806.47	5,725.49	5,645.05	80.45	71.172	
11,640.00	6,032.44	2,600.00	2,600.00	176.51	52.00	-11.82	1,214.08	1,806.47	5,741.32	5,660.77	80.55	71.279	
11,660.00	6,032.25	2,600.00	2,600.00	177.10	52.00	-11.82	1,214.08	1,806.47	5,757.16	5,676.52	80.65	71.386	
11,680.00	6,032.05	2,600.00	2,600.00	177.69	52.00	-11.82	1,214.08	1,806.47	5,773.04	5,692.29	80.75	71.495	
11,700.00	6,031.86	2,600.00	2,600.00	178.28	52.00	-11.82	1,214.08	1,806.47	5,788.94	5,708.09	80.85	71.604	
11,720.00	6,031.66	2,600.00	2,600.00	178.88	52.00	-11.82	1,214.08	1,806.47	5,804.86	5,723.92	80.94	71.714	
11,740.00	6,031.47	2,600.00	2,600.00	179.47	52.00	-11.82	1,214.08	1,806.47	5,820.81	5,739.77	81.04	71.825	
11,760.00	6,031.27	2,600.00	2,600.00	180.06	52.00	-11.82	1,214.08	1,806.47	5,836.78	5,755.65	81.14	71.937	
11,780.00	6,031.08	2,600.00	2,600.00	180.65	52.00	-11.82	1,214.08	1,806.47	5,852.78	5,771.55	81.23	72.049	
11,800.00	6,030.88	2,600.00	2,600.00	181.25	52.00	-11.82	1,214.08	1,806.47	5,868.81	5,787.48	81.33	72.162	
11,820.00	6,030.69	2,600.00	2,600.00	181.84	52.00	-11.82	1,214.08	1,806.47	5,884.86	5,803.43	81.42	72.276	
11,840.00	6,030.49	2,600.00	2,600.00	182.43	52.00	-11.82	1,214.08	1,806.47	5,900.93	5,819.41	81.52	72.390	
11,860.00	6,030.30	2,600.00	2,600.00	183.03	52.00	-11.82	1,214.08	1,806.47	5,917.02	5,835.42	81.61	72.506	
11,880.00	6,030.10	2,600.00	2,600.00	183.62	52.00	-11.82	1,214.08	1,806.47	5,933.14	5,851.44	81.70	72.621	
11,900.00	6,029.91	2,600.00	2,600.00	184.21	52.00	-11.82	1,214.08	1,806.47	5,949.29	5,867.50	81.79	72.738	
11,920.00	6,029.71	2,600.00	2,600.00	184.80	52.00	-11.82	1,214.08	1,806.47	5,965.45	5,883.57	81.88	72.855	
11,940.00	6,029.52	2,600.00	2,600.00	185.40	52.00	-11.82	1,214.08	1,806.47	5,981.64	5,899.67	81.97	72.973	
11,960.00	6,029.32	2,600.00	2,600.00	185.99	52.00	-11.82	1,214.08	1,806.47	5,997.86	5,915.80	82.06	73.091	
11,980.00	6,029.13	2,600.00	2,600.00	186.58	52.00	-11.82	1,214.08	1,806.47	6,014.09	5,931.94	82.15	73.211	
12,000.00	6,028.93	2,600.00	2,600.00	187.18	52.00	-11.82	1,214.08	1,806.47	6,030.35	5,948.12	82.24	73.330	
12,020.00	6,028.74	2,600.00	2,600.00	187.77	52.00	-11.82	1,214.08	1,806.47	6,046.63	5,964.31	82.32	73.451	
12,040.00	6,028.54	2,600.00	2,600.00	188.36	52.00	-11.82	1,214.08	1,806.47	6,062.94	5,980.53	82.41	73.572	
12,060.00	6,028.35	2,600.00	2,600.00	188.96	52.00	-11.82	1,214.08	1,806.47	6,079.26	5,996.77	82.49	73.694	
12,080.00	6,028.15	2,600.00	2,600.00	189.55	52.00	-11.82	1,214.08	1,806.47	6,095.61	6,013.03	82.58	73.816	
12,100.00	6,027.96	2,600.00	2,600.00	190.14	52.00	-11.82	1,214.08	1,806.47	6,111.98	6,029.31	82.66	73.939	
12,120.00	6,027.76	2,600.00	2,600.00	190.74	52.00	-11.82	1,214.08	1,806.47	6,128.37	6,045.62	82.75	74.062	
12,140.00	6,027.57	2,600.00	2,600.00	191.33	52.00	-11.82	1,214.08	1,806.47	6,144.78	6,061.95	82.83	74.186	
12,160.00	6,027.37	2,600.00	2,600.00	191.92	52.00	-11.82	1,214.08	1,806.47	6,161.21	6,078.30	82.91	74.311	
12,180.00	6,027.18	2,600.00	2,600.00	192.52	52.00	-11.82	1,214.08	1,806.47	6,177.67	6,094.67	82.99	74.436	
12,200.00	6,026.99	2,600.00	2,600.00	193.11	52.00	-11.82	1,214.08	1,806.47	6,194.14	6,111.07	83.07	74.562	
12,220.00	6,026.79	2,600.00	2,600.00	193.70	52.00	-11.82	1,214.08	1,806.47	6,210.64	6,127.48	83.15	74.688	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,240.00	6,026.60	2,600.00	2,600.00	194.30	52.00	-11.82	1,214.08	1,806.47	6,227.15	6,143.92	83.23	74.815	
12,260.00	6,026.40	2,600.00	2,600.00	194.89	52.00	-11.82	1,214.08	1,806.47	6,243.69	6,160.38	83.31	74.943	
12,280.00	6,026.21	2,600.00	2,600.00	195.48	52.00	-11.82	1,214.08	1,806.47	6,260.24	6,176.85	83.39	75.071	
12,300.00	6,026.01	2,600.00	2,600.00	196.08	52.00	-11.82	1,214.08	1,806.47	6,276.82	6,193.35	83.47	75.199	
12,320.00	6,025.82	2,600.00	2,600.00	196.67	52.00	-11.82	1,214.08	1,806.47	6,293.42	6,209.87	83.55	75.328	
12,340.00	6,025.62	2,600.00	2,600.00	197.26	52.00	-11.82	1,214.08	1,806.47	6,310.03	6,226.41	83.62	75.458	
12,360.00	6,025.43	2,600.00	2,600.00	197.86	52.00	-11.82	1,214.08	1,806.47	6,326.67	6,242.97	83.70	75.588	
12,380.00	6,025.23	2,600.00	2,600.00	198.45	52.00	-11.82	1,214.08	1,806.47	6,343.33	6,259.55	83.77	75.719	
12,400.00	6,025.04	2,600.00	2,600.00	199.05	52.00	-11.82	1,214.08	1,806.47	6,360.00	6,276.15	83.85	75.850	
12,420.00	6,024.84	2,600.00	2,600.00	199.64	52.00	-11.82	1,214.08	1,806.47	6,376.69	6,292.77	83.92	75.982	
12,440.00	6,024.65	2,600.00	2,600.00	200.23	52.00	-11.82	1,214.08	1,806.47	6,393.41	6,309.41	84.00	76.114	
12,460.00	6,024.45	2,600.00	2,600.00	200.83	52.00	-11.82	1,214.08	1,806.47	6,410.14	6,326.07	84.07	76.247	
12,480.00	6,024.26	2,600.00	2,600.00	201.42	52.00	-11.82	1,214.08	1,806.47	6,426.89	6,342.74	84.14	76.380	
12,500.00	6,024.06	2,600.00	2,600.00	202.02	52.00	-11.82	1,214.08	1,806.47	6,443.66	6,359.44	84.22	76.513	
12,520.00	6,023.87	2,600.00	2,600.00	202.61	52.00	-11.82	1,214.08	1,806.47	6,460.44	6,376.16	84.29	76.647	
12,540.00	6,023.67	2,600.00	2,600.00	203.20	52.00	-11.82	1,214.08	1,806.47	6,477.25	6,392.89	84.36	76.782	
12,560.00	6,023.48	2,600.00	2,600.00	203.80	52.00	-11.82	1,214.08	1,806.47	6,494.07	6,409.64	84.43	76.917	
12,580.00	6,023.28	2,600.00	2,600.00	204.39	52.00	-11.82	1,214.08	1,806.47	6,510.92	6,426.42	84.50	77.053	
12,600.00	6,023.09	2,600.00	2,600.00	204.98	52.00	-11.82	1,214.08	1,806.47	6,527.77	6,443.21	84.57	77.189	
12,620.00	6,022.89	2,600.00	2,600.00	205.58	52.00	-11.82	1,214.08	1,806.47	6,544.65	6,460.01	84.64	77.325	
12,640.00	6,022.70	2,600.00	2,600.00	206.17	52.00	-11.82	1,214.08	1,806.47	6,561.55	6,476.84	84.71	77.462	
12,660.00	6,022.50	2,600.00	2,600.00	206.77	52.00	-11.82	1,214.08	1,806.47	6,578.46	6,493.68	84.77	77.599	
12,680.00	6,022.31	2,600.00	2,600.00	207.36	52.00	-11.82	1,214.08	1,806.47	6,595.39	6,510.54	84.84	77.737	
12,700.00	6,022.11	2,600.00	2,600.00	207.96	52.00	-11.82	1,214.08	1,806.47	6,612.33	6,527.42	84.91	77.875	
12,720.00	6,021.92	2,600.00	2,600.00	208.55	52.00	-11.82	1,214.08	1,806.47	6,629.30	6,544.32	84.98	78.014	
12,740.00	6,021.73	2,600.00	2,600.00	209.14	52.00	-11.82	1,214.08	1,806.47	6,646.28	6,561.24	85.04	78.153	
12,760.00	6,021.53	2,600.00	2,600.00	209.74	52.00	-11.82	1,214.08	1,806.47	6,663.27	6,578.17	85.11	78.292	
12,780.00	6,021.34	2,600.00	2,600.00	210.33	52.00	-11.82	1,214.08	1,806.47	6,680.29	6,595.12	85.17	78.432	
12,800.00	6,021.14	2,600.00	2,600.00	210.93	52.00	-11.82	1,214.08	1,806.47	6,697.32	6,612.08	85.24	78.572	
12,820.00	6,020.95	2,600.00	2,600.00	211.52	52.00	-11.82	1,214.08	1,806.47	6,714.36	6,629.06	85.30	78.713	
12,840.00	6,020.75	2,600.00	2,600.00	212.11	52.00	-11.82	1,214.08	1,806.47	6,731.43	6,646.06	85.37	78.854	
12,860.00	6,020.56	2,600.00	2,600.00	212.71	52.00	-11.82	1,214.08	1,806.47	6,748.51	6,663.08	85.43	78.995	
12,880.00	6,020.36	2,600.00	2,600.00	213.30	52.00	-11.82	1,214.08	1,806.47	6,765.60	6,680.11	85.49	79.137	
12,900.00	6,020.17	2,600.00	2,600.00	213.90	52.00	-11.82	1,214.08	1,806.47	6,782.71	6,697.16	85.55	79.280	
12,920.00	6,019.97	2,600.00	2,600.00	214.49	52.00	-11.82	1,214.08	1,806.47	6,799.84	6,714.22	85.62	79.422	
12,940.00	6,019.78	2,600.00	2,600.00	215.09	52.00	-11.82	1,214.08	1,806.47	6,816.98	6,731.30	85.68	79.565	
12,960.00	6,019.58	2,600.00	2,600.00	215.68	52.00	-11.82	1,214.08	1,806.47	6,834.14	6,748.40	85.74	79.709	
12,980.00	6,019.39	2,600.00	2,600.00	216.28	52.00	-11.82	1,214.08	1,806.47	6,851.31	6,765.51	85.80	79.852	
13,000.00	6,019.19	2,600.00	2,600.00	216.87	52.00	-11.82	1,214.08	1,806.47	6,868.50	6,782.64	85.86	79.996	
13,020.00	6,019.00	2,600.00	2,600.00	217.46	52.00	-11.82	1,214.08	1,806.47	6,885.70	6,799.78	85.92	80.141	
13,040.00	6,018.80	2,600.00	2,600.00	218.06	52.00	-11.82	1,214.08	1,806.47	6,902.92	6,816.94	85.98	80.286	
13,060.00	6,018.61	2,600.00	2,600.00	218.65	52.00	-11.82	1,214.08	1,806.47	6,920.16	6,834.12	86.04	80.431	
13,080.00	6,018.41	2,600.00	2,600.00	219.25	52.00	-11.82	1,214.08	1,806.47	6,937.41	6,851.31	86.10	80.576	
13,100.00	6,018.22	2,600.00	2,600.00	219.84	52.00	-11.82	1,214.08	1,806.47	6,954.67	6,868.51	86.16	80.722	
13,120.00	6,018.02	2,600.00	2,600.00	220.44	52.00	-11.82	1,214.08	1,806.47	6,971.95	6,885.73	86.21	80.869	
13,140.00	6,017.83	2,600.00	2,600.00	221.03	52.00	-11.82	1,214.08	1,806.47	6,989.24	6,902.97	86.27	81.015	
13,160.00	6,017.63	2,600.00	2,600.00	221.63	52.00	-11.82	1,214.08	1,806.47	7,006.55	6,920.22	86.33	81.162	
13,180.00	6,017.44	2,600.00	2,600.00	222.22	52.00	-11.82	1,214.08	1,806.47	7,023.87	6,937.48	86.38	81.309	
13,200.00	6,017.24	2,600.00	2,600.00	222.82	52.00	-11.82	1,214.08	1,806.47	7,041.20	6,954.76	86.44	81.457	
13,220.00	6,017.05	2,600.00	2,600.00	223.41	52.00	-11.82	1,214.08	1,806.47	7,058.55	6,972.06	86.50	81.605	
13,240.00	6,016.85	2,600.00	2,600.00	224.01	52.00	-11.82	1,214.08	1,806.47	7,075.92	6,989.36	86.55	81.753	
13,260.00	6,016.66	2,600.00	2,600.00	224.60	52.00	-11.82	1,214.08	1,806.47	7,093.29	7,006.69	86.61	81.902	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,280.00	6,016.47	2,600.00	2,600.00	225.20	52.00	-11.82	1,214.08	1,806.47	7,110.68	7,024.02	86.66	82.050	
13,300.00	6,016.27	2,600.00	2,600.00	225.79	52.00	-11.82	1,214.08	1,806.47	7,128.09	7,041.37	86.72	82.200	
13,320.00	6,016.08	2,600.00	2,600.00	226.38	52.00	-11.82	1,214.08	1,806.47	7,145.51	7,058.74	86.77	82.349	
13,340.00	6,015.88	2,600.00	2,600.00	226.98	52.00	-11.82	1,214.08	1,806.47	7,162.94	7,076.11	86.82	82.499	
13,360.00	6,015.69	2,600.00	2,600.00	227.57	52.00	-11.82	1,214.08	1,806.47	7,180.38	7,093.51	86.88	82.649	
13,380.00	6,015.49	2,600.00	2,600.00	228.17	52.00	-11.82	1,214.08	1,806.47	7,197.84	7,110.91	86.93	82.799	
13,400.00	6,015.30	2,600.00	2,600.00	228.76	52.00	-11.82	1,214.08	1,806.47	7,215.32	7,128.33	86.98	82.950	
13,420.00	6,015.10	2,600.00	2,600.00	229.36	52.00	-11.82	1,214.08	1,806.47	7,232.80	7,145.76	87.04	83.101	
13,440.00	6,014.91	2,600.00	2,600.00	229.95	52.00	-11.82	1,214.08	1,806.47	7,250.30	7,163.21	87.09	83.252	
13,460.00	6,014.71	2,600.00	2,600.00	230.55	52.00	-11.82	1,214.08	1,806.47	7,267.81	7,180.67	87.14	83.404	
13,480.00	6,014.52	2,600.00	2,600.00	231.14	52.00	-11.82	1,214.08	1,806.47	7,285.33	7,198.14	87.19	83.556	
13,500.00	6,014.32	2,600.00	2,600.00	231.74	52.00	-11.82	1,214.08	1,806.47	7,302.87	7,215.63	87.24	83.708	
13,520.00	6,014.13	2,600.00	2,600.00	232.33	52.00	-11.82	1,214.08	1,806.47	7,320.42	7,233.12	87.29	83.860	
13,540.00	6,013.93	2,600.00	2,600.00	232.93	52.00	-11.82	1,214.08	1,806.47	7,337.98	7,250.64	87.34	84.013	
13,560.00	6,013.74	2,600.00	2,600.00	233.52	52.00	-11.82	1,214.08	1,806.47	7,355.55	7,268.16	87.39	84.166	
13,580.00	6,013.54	2,600.00	2,600.00	234.12	52.00	-11.82	1,214.08	1,806.47	7,373.14	7,285.70	87.44	84.319	
13,600.00	6,013.35	2,600.00	2,600.00	234.71	52.00	-11.82	1,214.08	1,806.47	7,390.74	7,303.25	87.49	84.473	
13,620.00	6,013.15	2,600.00	2,600.00	235.31	52.00	-11.82	1,214.08	1,806.47	7,408.35	7,320.81	87.54	84.627	
13,640.00	6,012.96	2,600.00	2,600.00	235.90	52.00	-11.82	1,214.08	1,806.47	7,425.97	7,338.38	87.59	84.781	
13,660.00	6,012.76	2,600.00	2,600.00	236.50	52.00	-11.82	1,214.08	1,806.47	7,443.61	7,355.97	87.64	84.935	
13,680.00	6,012.57	2,600.00	2,600.00	237.09	52.00	-11.82	1,214.08	1,806.47	7,461.25	7,373.57	87.69	85.089	
13,700.00	6,012.37	2,600.00	2,600.00	237.69	52.00	-11.82	1,214.08	1,806.47	7,478.91	7,391.18	87.74	85.244	
13,720.00	6,012.18	2,600.00	2,600.00	238.28	52.00	-11.82	1,214.08	1,806.47	7,496.58	7,408.80	87.78	85.399	
13,740.00	6,011.98	2,600.00	2,600.00	238.88	52.00	-11.82	1,214.08	1,806.47	7,514.26	7,426.43	87.83	85.555	
13,760.00	6,011.79	2,600.00	2,600.00	239.48	52.00	-11.82	1,214.08	1,806.47	7,531.96	7,444.08	87.88	85.710	
13,780.00	6,011.59	2,600.00	2,600.00	240.07	52.00	-11.82	1,214.08	1,806.47	7,549.66	7,461.74	87.92	85.866	
13,800.00	6,011.40	2,600.00	2,600.00	240.67	52.00	-11.82	1,214.08	1,806.47	7,567.38	7,479.41	87.97	86.022	
13,820.00	6,011.21	2,600.00	2,600.00	241.26	52.00	-11.82	1,214.08	1,806.47	7,585.11	7,497.09	88.02	86.178	
13,840.00	6,011.01	2,600.00	2,600.00	241.86	52.00	-11.82	1,214.08	1,806.47	7,602.85	7,514.79	88.06	86.335	
13,860.00	6,010.82	2,600.00	2,600.00	242.45	52.00	-11.82	1,214.08	1,806.47	7,620.60	7,532.49	88.11	86.492	
13,880.00	6,010.62	2,600.00	2,600.00	243.05	52.00	-11.82	1,214.08	1,806.47	7,638.36	7,550.21	88.15	86.648	
13,900.00	6,010.43	2,600.00	2,600.00	243.64	52.00	-11.82	1,214.08	1,806.47	7,656.13	7,567.93	88.20	86.806	
13,920.00	6,010.23	2,600.00	2,600.00	244.24	52.00	-11.82	1,214.08	1,806.47	7,673.92	7,585.67	88.24	86.963	
13,940.00	6,010.04	2,600.00	2,600.00	244.83	52.00	-11.82	1,214.08	1,806.47	7,691.71	7,603.42	88.29	87.121	
13,960.00	6,009.84	2,600.00	2,600.00	245.43	52.00	-11.82	1,214.08	1,806.47	7,709.52	7,621.18	88.33	87.279	
13,980.00	6,009.65	2,600.00	2,600.00	246.02	52.00	-11.82	1,214.08	1,806.47	7,727.33	7,638.96	88.38	87.437	
14,000.00	6,009.45	2,600.00	2,600.00	246.62	52.00	-11.82	1,214.08	1,806.47	7,745.16	7,656.74	88.42	87.595	
14,020.00	6,009.26	2,600.00	2,600.00	247.21	52.00	-11.82	1,214.08	1,806.47	7,763.00	7,674.53	88.46	87.754	
14,040.00	6,009.06	2,600.00	2,600.00	247.81	52.00	-11.82	1,214.08	1,806.47	7,780.84	7,692.34	88.51	87.912	
14,060.00	6,008.87	2,600.00	2,600.00	248.41	52.00	-11.82	1,214.08	1,806.47	7,798.70	7,710.15	88.55	88.071	
14,080.00	6,008.67	2,600.00	2,600.00	249.00	52.00	-11.82	1,214.08	1,806.47	7,816.57	7,727.98	88.59	88.230	
14,100.00	6,008.48	2,600.00	2,600.00	249.60	52.00	-11.82	1,214.08	1,806.47	7,834.45	7,745.81	88.64	88.390	
14,120.00	6,008.28	2,600.00	2,600.00	250.19	52.00	-11.82	1,214.08	1,806.47	7,852.34	7,763.66	88.68	88.549	
14,140.00	6,008.09	2,600.00	2,600.00	250.79	52.00	-11.82	1,214.08	1,806.47	7,870.24	7,781.52	88.72	88.709	
14,160.00	6,007.89	2,600.00	2,600.00	251.38	52.00	-11.82	1,214.08	1,806.47	7,888.15	7,799.39	88.76	88.869	
14,180.00	6,007.70	2,600.00	2,600.00	251.98	52.00	-11.82	1,214.08	1,806.47	7,906.07	7,817.26	88.80	89.029	
14,200.00	6,007.50	2,600.00	2,600.00	252.57	52.00	-11.82	1,214.08	1,806.47	7,924.00	7,835.15	88.84	89.190	
14,220.00	6,007.31	2,600.00	2,600.00	253.17	52.00	-11.82	1,214.08	1,806.47	7,941.94	7,853.05	88.89	89.350	
14,240.00	6,007.11	2,600.00	2,600.00	253.76	52.00	-11.82	1,214.08	1,806.47	7,959.88	7,870.96	88.93	89.511	
14,260.00	6,006.92	2,600.00	2,600.00	254.36	52.00	-11.82	1,214.08	1,806.47	7,977.84	7,888.88	88.97	89.672	
14,280.00	6,006.72	2,600.00	2,600.00	254.96	52.00	-11.82	1,214.08	1,806.47	7,995.81	7,906.80	89.01	89.833	
14,300.00	6,006.53	2,600.00	2,600.00	255.55	52.00	-11.82	1,214.08	1,806.47	8,013.79	7,924.74	89.05	89.995	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,320.00	6,006.33	2,600.00	2,600.00	256.15	52.00	-11.82	1,214.08	1,806.47	8,031.78	7,942.69	89.09	90.156	
14,340.00	6,006.14	2,600.00	2,600.00	256.74	52.00	-11.82	1,214.08	1,806.47	8,049.77	7,960.65	89.13	90.318	
14,360.00	6,005.94	2,600.00	2,600.00	257.34	52.00	-11.82	1,214.08	1,806.47	8,067.78	7,978.61	89.17	90.480	
14,380.00	6,005.75	2,600.00	2,600.00	257.93	52.00	-11.82	1,214.08	1,806.47	8,085.80	7,996.59	89.21	90.642	
14,400.00	6,005.56	2,600.00	2,600.00	258.53	52.00	-11.82	1,214.08	1,806.47	8,103.82	8,014.58	89.25	90.804	
14,420.00	6,005.36	2,600.00	2,600.00	259.13	52.00	-11.82	1,214.08	1,806.47	8,121.86	8,032.57	89.28	90.966	
14,440.00	6,005.17	2,600.00	2,600.00	259.72	52.00	-11.82	1,214.08	1,806.47	8,139.90	8,050.58	89.32	91.129	
14,460.00	6,004.97	2,600.00	2,600.00	260.32	52.00	-11.82	1,214.08	1,806.47	8,157.95	8,068.59	89.36	91.292	
14,480.00	6,004.78	2,600.00	2,600.00	260.91	52.00	-11.82	1,214.08	1,806.47	8,176.02	8,086.62	89.40	91.454	
14,500.00	6,004.58	2,600.00	2,600.00	261.51	52.00	-11.82	1,214.08	1,806.47	8,194.09	8,104.65	89.44	91.618	
14,520.00	6,004.39	2,600.00	2,600.00	262.10	52.00	-11.82	1,214.08	1,806.47	8,212.17	8,122.69	89.48	91.781	
14,540.00	6,004.19	2,600.00	2,600.00	262.70	52.00	-11.82	1,214.08	1,806.47	8,230.26	8,140.74	89.51	91.944	
14,560.00	6,004.00	2,600.00	2,600.00	263.30	52.00	-11.82	1,214.08	1,806.47	8,248.35	8,158.80	89.55	92.108	
14,580.00	6,003.80	2,600.00	2,600.00	263.89	52.00	-11.82	1,214.08	1,806.47	8,266.46	8,176.87	89.59	92.272	
14,600.00	6,003.61	2,600.00	2,600.00	264.49	52.00	-11.82	1,214.08	1,806.47	8,284.57	8,194.95	89.63	92.435	
14,620.00	6,003.41	2,600.00	2,600.00	265.08	52.00	-11.82	1,214.08	1,806.47	8,302.70	8,213.04	89.66	92.600	
14,640.00	6,003.22	2,600.00	2,600.00	265.68	52.00	-11.82	1,214.08	1,806.47	8,320.83	8,231.13	89.70	92.764	
14,660.00	6,003.02	2,600.00	2,600.00	266.27	52.00	-11.82	1,214.08	1,806.47	8,338.97	8,249.24	89.74	92.928	
14,680.00	6,002.83	2,600.00	2,600.00	266.87	52.00	-11.82	1,214.08	1,806.47	8,357.12	8,267.35	89.77	93.093	
14,700.00	6,002.63	2,600.00	2,600.00	267.47	52.00	-11.82	1,214.08	1,806.47	8,375.28	8,285.47	89.81	93.257	
14,720.00	6,002.44	2,600.00	2,600.00	268.06	52.00	-11.82	1,214.08	1,806.47	8,393.44	8,303.60	89.84	93.422	
14,740.00	6,002.24	2,600.00	2,600.00	268.66	52.00	-11.82	1,214.08	1,806.47	8,411.62	8,321.74	89.88	93.587	
14,760.00	6,002.05	2,600.00	2,600.00	269.25	52.00	-11.82	1,214.08	1,806.47	8,429.80	8,339.89	89.92	93.752	
14,780.00	6,001.85	2,600.00	2,600.00	269.85	52.00	-11.82	1,214.08	1,806.47	8,447.99	8,358.04	89.95	93.917	
14,800.00	6,001.66	2,600.00	2,600.00	270.45	52.00	-11.82	1,214.08	1,806.47	8,466.19	8,376.21	89.99	94.083	
14,820.00	6,001.46	2,600.00	2,600.00	271.04	52.00	-11.82	1,214.08	1,806.47	8,484.40	8,394.38	90.02	94.248	
14,840.00	6,001.27	2,600.00	2,600.00	271.64	52.00	-11.82	1,214.08	1,806.47	8,502.61	8,412.56	90.06	94.414	
14,860.00	6,001.07	2,600.00	2,600.00	272.23	52.00	-11.82	1,214.08	1,806.47	8,520.84	8,430.75	90.09	94.580	
14,880.00	6,000.88	2,600.00	2,600.00	272.83	52.00	-11.82	1,214.08	1,806.47	8,539.07	8,448.94	90.13	94.746	
14,900.00	6,000.68	2,600.00	2,600.00	273.43	52.00	-11.82	1,214.08	1,806.47	8,557.31	8,467.15	90.16	94.912	
14,920.00	6,000.49	2,600.00	2,600.00	274.02	52.00	-11.82	1,214.08	1,806.47	8,575.56	8,485.36	90.19	95.078	
14,940.00	6,000.30	2,600.00	2,600.00	274.62	52.00	-11.82	1,214.08	1,806.47	8,593.81	8,503.58	90.23	95.245	
14,960.00	6,000.10	2,600.00	2,600.00	275.21	52.00	-11.82	1,214.08	1,806.47	8,612.07	8,521.81	90.26	95.411	
14,980.00	5,999.91	2,600.00	2,600.00	275.81	52.00	-11.82	1,214.08	1,806.47	8,630.34	8,540.05	90.30	95.578	
15,000.00	5,999.71	2,600.00	2,600.00	276.41	52.00	-11.82	1,214.08	1,806.47	8,648.62	8,558.29	90.33	95.744	
15,020.00	5,999.52	2,600.00	2,600.00	277.00	52.00	-11.82	1,214.08	1,806.47	8,666.91	8,576.54	90.36	95.911	
15,040.00	5,999.32	2,600.00	2,600.00	277.60	52.00	-11.82	1,214.08	1,806.47	8,685.20	8,594.80	90.40	96.078	
15,060.00	5,999.13	2,600.00	2,600.00	278.19	52.00	-11.82	1,214.08	1,806.47	8,703.50	8,613.07	90.43	96.245	
15,080.00	5,998.93	2,600.00	2,600.00	278.79	52.00	-11.82	1,214.08	1,806.47	8,721.81	8,631.35	90.46	96.413	
15,100.00	5,998.74	2,600.00	2,600.00	279.39	52.00	-11.82	1,214.08	1,806.47	8,740.12	8,649.63	90.50	96.580	
15,120.00	5,998.54	2,600.00	2,600.00	279.98	52.00	-11.82	1,214.08	1,806.47	8,758.45	8,667.92	90.53	96.748	
15,140.00	5,998.35	2,600.00	2,600.00	280.58	52.00	-11.82	1,214.08	1,806.47	8,776.78	8,686.22	90.56	96.915	
15,160.00	5,998.15	2,600.00	2,600.00	281.17	52.00	-11.82	1,214.08	1,806.47	8,795.11	8,704.52	90.59	97.083	
15,180.00	5,997.96	2,600.00	2,600.00	281.77	52.00	-11.82	1,214.08	1,806.47	8,813.46	8,722.83	90.63	97.251	
15,200.00	5,997.76	2,600.00	2,600.00	282.37	52.00	-11.82	1,214.08	1,806.47	8,831.81	8,741.15	90.66	97.419	
15,220.00	5,997.57	2,600.00	2,600.00	282.96	52.00	-11.82	1,214.08	1,806.47	8,850.17	8,759.48	90.69	97.587	
15,240.00	5,997.37	2,600.00	2,600.00	283.56	52.00	-11.82	1,214.08	1,806.47	8,868.54	8,777.81	90.72	97.755	
15,260.00	5,997.18	2,600.00	2,600.00	284.16	52.00	-11.82	1,214.08	1,806.47	8,886.91	8,796.16	90.75	97.923	
15,280.00	5,996.98	2,600.00	2,600.00	284.75	52.00	-11.82	1,214.08	1,806.47	8,905.29	8,814.50	90.79	98.092	
15,300.00	5,996.79	2,600.00	2,600.00	285.35	52.00	-11.82	1,214.08	1,806.47	8,923.68	8,832.86	90.82	98.260	
15,320.00	5,996.59	2,600.00	2,600.00	285.94	52.00	-11.82	1,214.08	1,806.47	8,942.07	8,851.22	90.85	98.429	
15,340.00	5,996.40	2,600.00	2,600.00	286.54	52.00	-11.82	1,214.08	1,806.47	8,960.47	8,869.59	90.88	98.598	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 2600-UNKNOWN

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,360.00	5,996.20	2,600.00	2,600.00	287.14	52.00	-11.82	1,214.08	1,806.47	8,978.88	8,887.97	90.91	98.767	
15,380.00	5,996.01	2,600.00	2,600.00	287.73	52.00	-11.82	1,214.08	1,806.47	8,997.29	8,906.35	90.94	98.936	
15,400.00	5,995.81	2,600.00	2,600.00	288.33	52.00	-11.82	1,214.08	1,806.47	9,015.71	8,924.74	90.97	99.105	
15,420.00	5,995.62	2,600.00	2,600.00	288.92	52.00	-11.82	1,214.08	1,806.47	9,034.14	8,943.14	91.00	99.274	
15,440.00	5,995.42	2,600.00	2,600.00	289.52	52.00	-11.82	1,214.08	1,806.47	9,052.58	8,961.54	91.03	99.443	
15,460.00	5,995.23	2,600.00	2,600.00	290.12	52.00	-11.82	1,214.08	1,806.47	9,071.02	8,979.96	91.06	99.612	
15,480.00	5,995.04	2,600.00	2,600.00	290.71	52.00	-11.82	1,214.08	1,806.47	9,089.47	8,998.37	91.09	99.782	
15,500.00	5,994.84	2,600.00	2,600.00	291.31	52.00	-11.82	1,214.08	1,806.47	9,107.92	9,016.80	91.12	99.951	
15,520.00	5,994.65	2,600.00	2,600.00	291.91	52.00	-11.82	1,214.08	1,806.47	9,126.38	9,035.23	91.15	100.121	
15,540.00	5,994.45	2,600.00	2,600.00	292.50	52.00	-11.82	1,214.08	1,806.47	9,144.85	9,053.67	91.18	100.291	
15,560.00	5,994.26	2,600.00	2,600.00	293.10	52.00	-11.82	1,214.08	1,806.47	9,163.32	9,072.11	91.21	100.461	
15,580.00	5,994.06	2,600.00	2,600.00	293.69	52.00	-11.82	1,214.08	1,806.47	9,181.80	9,090.56	91.24	100.631	
15,600.00	5,993.87	2,600.00	2,600.00	294.29	52.00	-11.82	1,214.08	1,806.47	9,200.29	9,109.02	91.27	100.801	
15,620.00	5,993.67	2,600.00	2,600.00	294.89	52.00	-11.82	1,214.08	1,806.47	9,218.78	9,127.48	91.30	100.971	
15,640.00	5,993.48	2,600.00	2,600.00	295.48	52.00	-11.82	1,214.08	1,806.47	9,237.28	9,145.95	91.33	101.141	
15,660.00	5,993.28	2,600.00	2,600.00	296.08	52.00	-11.82	1,214.08	1,806.47	9,255.79	9,164.43	91.36	101.311	
15,680.00	5,993.09	2,600.00	2,600.00	296.68	52.00	-11.82	1,214.08	1,806.47	9,274.30	9,182.91	91.39	101.482	
15,700.00	5,992.89	2,600.00	2,600.00	297.27	52.00	-11.82	1,214.08	1,806.47	9,292.82	9,201.40	91.42	101.652	
15,720.00	5,992.70	2,600.00	2,600.00	297.87	52.00	-11.82	1,214.08	1,806.47	9,311.34	9,219.90	91.45	101.823	
15,740.00	5,992.50	2,600.00	2,600.00	298.47	52.00	-11.82	1,214.08	1,806.47	9,329.87	9,238.40	91.48	101.993	
15,760.00	5,992.31	2,600.00	2,600.00	299.06	52.00	-11.82	1,214.08	1,806.47	9,348.41	9,256.90	91.50	102.164	
15,780.00	5,992.11	2,600.00	2,600.00	299.66	52.00	-11.82	1,214.08	1,806.47	9,366.95	9,275.42	91.53	102.335	
15,800.00	5,991.92	2,600.00	2,600.00	300.25	52.00	-11.82	1,214.08	1,806.47	9,385.50	9,293.94	91.56	102.506	
15,820.00	5,991.72	2,600.00	2,600.00	300.85	52.00	-11.82	1,214.08	1,806.47	9,404.05	9,312.46	91.59	102.677	
15,840.00	5,991.53	2,600.00	2,600.00	301.45	52.00	-11.82	1,214.08	1,806.47	9,422.61	9,331.00	91.62	102.848	
15,860.00	5,991.33	2,600.00	2,600.00	302.04	52.00	-11.82	1,214.08	1,806.47	9,441.18	9,349.53	91.65	103.019	
15,880.00	5,991.14	2,600.00	2,600.00	302.64	52.00	-11.82	1,214.08	1,806.47	9,459.75	9,368.08	91.67	103.190	
15,900.00	5,990.94	2,600.00	2,600.00	303.24	52.00	-11.82	1,214.08	1,806.47	9,478.33	9,386.63	91.70	103.361	
15,920.00	5,990.75	2,600.00	2,600.00	303.83	52.00	-11.82	1,214.08	1,806.47	9,496.91	9,405.18	91.73	103.533	
15,940.00	5,990.55	2,600.00	2,600.00	304.43	52.00	-11.82	1,214.08	1,806.47	9,515.50	9,423.74	91.76	103.704	
15,960.00	5,990.36	2,600.00	2,600.00	305.03	52.00	-11.82	1,214.08	1,806.47	9,534.10	9,442.31	91.78	103.876	
15,980.00	5,990.16	2,600.00	2,600.00	305.62	52.00	-11.82	1,214.08	1,806.47	9,552.70	9,460.88	91.81	104.047	
16,000.00	5,989.97	2,600.00	2,600.00	306.22	52.00	-11.82	1,214.08	1,806.47	9,571.30	9,479.46	91.84	104.219	
16,020.00	5,989.78	2,600.00	2,600.00	306.82	52.00	-11.82	1,214.08	1,806.47	9,589.91	9,498.05	91.87	104.391	
16,040.00	5,989.58	2,600.00	2,600.00	307.41	52.00	-11.82	1,214.08	1,806.47	9,608.53	9,516.64	91.89	104.562	
16,060.00	5,989.39	2,600.00	2,600.00	308.01	52.00	-11.82	1,214.08	1,806.47	9,627.15	9,535.23	91.92	104.734	
16,080.00	5,989.19	2,600.00	2,600.00	308.61	52.00	-11.82	1,214.08	1,806.47	9,645.78	9,553.84	91.95	104.906	
16,100.00	5,989.00	2,600.00	2,600.00	309.20	52.00	-11.82	1,214.08	1,806.47	9,664.42	9,572.44	91.97	105.078	
16,120.00	5,988.80	2,600.00	2,600.00	309.80	52.00	-11.82	1,214.08	1,806.47	9,683.06	9,591.05	92.00	105.250	
16,140.00	5,988.61	2,600.00	2,600.00	310.39	52.00	-11.82	1,214.08	1,806.47	9,701.70	9,609.67	92.03	105.422	
16,160.00	5,988.41	2,600.00	2,600.00	310.99	52.00	-11.82	1,214.08	1,806.47	9,720.35	9,628.30	92.05	105.595	
16,180.00	5,988.22	2,600.00	2,600.00	311.59	52.00	-11.82	1,214.08	1,806.47	9,739.01	9,646.93	92.08	105.767	
16,200.00	5,988.02	2,600.00	2,600.00	312.18	52.00	-11.82	1,214.08	1,806.47	9,757.67	9,665.56	92.11	105.939	
16,220.00	5,987.83	2,600.00	2,600.00	312.78	52.00	-11.82	1,214.08	1,806.47	9,776.33	9,684.20	92.13	106.112	
16,240.00	5,987.63	2,600.00	2,600.00	313.38	52.00	-11.82	1,214.08	1,806.47	9,795.00	9,702.84	92.16	106.284	
16,260.00	5,987.44	2,600.00	2,600.00	313.97	52.00	-11.82	1,214.08	1,806.47	9,813.68	9,721.50	92.18	106.457	
16,280.00	5,987.24	2,600.00	2,600.00	314.57	52.00	-11.82	1,214.08	1,806.47	9,832.36	9,740.15	92.21	106.629	
16,300.00	5,987.05	2,600.00	2,600.00	315.17	52.00	-11.82	1,214.08	1,806.47	9,851.05	9,758.81	92.24	106.802	
16,320.00	5,986.85	2,600.00	2,600.00	315.76	52.00	-11.82	1,214.08	1,806.47	9,869.74	9,777.48	92.26	106.975	
16,340.00	5,986.66	2,600.00	2,600.00	316.36	52.00	-11.82	1,214.08	1,806.47	9,888.44	9,796.15	92.29	107.147	
16,360.00	5,986.46	2,600.00	2,600.00	316.96	52.00	-11.82	1,214.08	1,806.47	9,907.14	9,814.83	92.31	107.320	
16,380.00	5,986.27	2,600.00	2,600.00	317.55	52.00	-11.82	1,214.08	1,806.47	9,925.85	9,833.51	92.34	107.493	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - EL Canyon Largo 96 - OH - OH

Survey Program: 2600-UNKNOWN

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,400.00	5,986.07	2,600.00	2,600.00	318.15	52.00	-11.82	1,214.08	1,806.47	9,944.56	9,852.20	92.36	107.666	
16,407.54	5,986.00	2,600.00	2,600.00	318.38	52.00	-11.82	1,214.08	1,806.47	9,951.61	9,859.24	92.37	107.731	

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	85.30	800.69	9,731.65	9,765.45				
20.00	20.00	0.00	0.00	0.04	0.00	85.30	800.69	9,731.65	9,765.20				
40.00	40.00	0.00	0.00	0.07	0.00	85.30	800.69	9,731.65	9,764.98				
60.00	60.00	0.00	0.00	0.11	0.00	85.30	800.69	9,731.65	9,764.81	9,764.70	0.11	N/A	
80.00	80.00	0.00	0.00	0.14	0.00	85.30	800.69	9,731.65	9,764.68	9,764.53	0.15	N/A	
100.00	100.00	0.00	0.00	0.18	0.00	85.30	800.69	9,731.65	9,764.59	9,764.41	0.18	N/A	
120.00	120.00	0.00	0.00	0.25	0.00	85.30	800.69	9,731.65	9,764.54	9,764.29	0.25	N/A	
140.00	140.00	6.00	6.00	0.32	0.09	85.30	800.69	9,731.65	9,764.53	9,764.12	0.41	N/A	
160.00	160.00	26.00	26.00	0.39	0.40	85.30	800.69	9,731.65	9,764.53	9,763.74	0.79	N/A	
180.00	180.00	46.00	46.00	0.47	0.70	85.30	800.69	9,731.65	9,764.53	9,763.37	1.16	8,383.981	
200.00	200.00	66.00	66.00	0.54	1.00	85.30	800.69	9,731.65	9,764.53	9,762.99	1.54	6,340.463	
220.00	220.00	86.00	86.00	0.61	1.31	85.30	800.69	9,731.65	9,764.53	9,762.61	1.92	5,097.898	
240.00	240.00	106.00	106.00	0.68	1.61	85.30	800.69	9,731.65	9,764.53	9,762.24	2.29	4,262.549	
260.00	260.00	126.00	126.00	0.75	1.91	85.30	800.69	9,731.65	9,764.53	9,761.86	2.67	3,662.420	
280.00	280.00	146.00	146.00	0.82	2.22	85.30	800.69	9,731.65	9,764.53	9,761.49	3.04	3,210.421	
300.00	300.00	166.00	166.00	0.90	2.52	85.30	800.69	9,731.65	9,764.53	9,761.11	3.42	2,857.733	
320.00	320.00	186.00	186.00	0.97	2.82	85.30	800.69	9,731.65	9,764.53	9,760.74	3.79	2,574.865	
340.00	340.00	206.00	206.00	1.04	3.13	85.30	800.69	9,731.65	9,764.53	9,760.36	4.17	2,342.952	
360.00	360.00	226.00	226.00	1.11	3.43	85.30	800.69	9,731.65	9,764.53	9,759.99	4.54	2,149.363	
380.00	380.00	246.00	246.00	1.18	3.74	85.30	800.69	9,731.65	9,764.53	9,759.61	4.92	1,985.324	
400.00	400.00	266.00	266.00	1.25	4.04	85.30	800.69	9,731.65	9,764.53	9,759.24	5.29	1,844.548	
420.00	420.00	286.00	286.00	1.33	4.34	85.30	800.69	9,731.65	9,764.53	9,758.86	5.67	1,722.414	
440.00	440.00	306.00	306.00	1.40	4.65	85.30	800.69	9,731.65	9,764.53	9,758.49	6.04	1,615.450	
441.19	441.19	307.19	307.19	1.40	4.66	85.30	800.69	9,731.65	9,764.53	9,758.46	6.07	1,609.527	
460.00	460.00	315.00	315.00	1.47	4.78	85.30	800.69	9,731.65	9,764.54	9,758.28	6.25	1,561.618	
480.00	480.00	346.00	346.00	1.54	5.72	85.30	800.69	9,731.65	9,764.53	9,757.26	7.27	1,343.878	
500.00	500.00	366.00	366.00	1.61	6.33	85.30	800.69	9,731.65	9,764.53	9,756.58	7.94	1,229.016	
520.00	520.00	386.00	386.00	1.68	6.94	85.30	800.69	9,731.65	9,764.53	9,755.91	8.62	1,132.242	
540.00	540.00	406.00	406.00	1.76	7.55	85.30	800.69	9,731.65	9,764.53	9,755.23	9.30	1,049.596	
560.00	560.00	426.00	426.00	1.83	8.15	85.30	800.69	9,731.65	9,764.53	9,754.55	9.98	978.194	
580.00	580.00	446.00	446.00	1.90	8.76	85.30	800.69	9,731.65	9,764.53	9,753.87	10.66	915.888	
600.00	600.00	466.00	466.00	1.97	9.37	85.30	800.69	9,731.65	9,764.53	9,753.19	11.34	861.044	
620.00	620.00	486.00	486.00	2.04	9.98	85.30	800.69	9,731.65	9,764.53	9,752.51	12.02	812.397	
640.00	640.00	506.00	506.00	2.11	10.58	85.30	800.69	9,731.65	9,764.53	9,751.83	12.70	768.953	
660.00	660.00	526.00	526.00	2.19	11.19	85.30	800.69	9,731.65	9,764.53	9,751.15	13.38	729.920	
680.00	680.00	546.00	546.00	2.26	11.80	85.30	800.69	9,731.65	9,764.53	9,750.47	14.06	694.658	
700.00	700.00	566.00	566.00	2.33	12.41	85.30	800.69	9,731.65	9,764.53	9,749.79	14.74	662.646	
720.00	720.00	586.00	586.00	2.40	13.01	85.30	800.69	9,731.65	9,764.53	9,749.12	15.41	633.454	
740.00	740.00	606.00	606.00	2.47	13.62	85.30	800.69	9,731.65	9,764.53	9,748.44	16.09	606.726	
760.00	760.00	626.00	626.00	2.55	14.23	85.30	800.69	9,731.65	9,764.53	9,747.76	16.77	582.162	
780.00	780.00	646.00	646.00	2.62	14.84	85.30	800.69	9,731.65	9,764.53	9,747.08	17.45	559.510	
800.00	800.00	666.00	666.00	2.69	15.44	85.30	800.69	9,731.65	9,764.53	9,746.40	18.13	538.554	
820.00	820.00	686.00	686.00	2.76	16.05	85.30	800.69	9,731.65	9,764.53	9,745.72	18.81	519.112	
840.00	840.00	706.00	706.00	2.83	16.66	85.30	800.69	9,731.65	9,764.53	9,745.04	19.49	501.024	
841.15	841.15	707.15	707.15	2.84	16.69	85.30	800.69	9,731.65	9,764.53	9,745.00	19.53	500.021	
860.00	860.00	715.00	714.98	2.90	16.93	85.30	800.69	9,731.65	9,764.54	9,744.70	19.83	492.309	
880.00	880.00	746.02	746.00	2.98	17.87	85.30	800.69	9,731.65	9,764.53	9,743.68	20.85	468.370	
900.00	900.00	766.02	766.00	3.05	18.48	85.30	800.69	9,731.65	9,764.53	9,743.00	21.53	453.595	
920.00	920.00	786.02	786.00	3.12	19.09	85.30	800.69	9,731.65	9,764.53	9,742.32	22.21	439.724	
940.00	940.00	806.02	806.00	3.19	19.69	85.30	800.69	9,731.65	9,764.53	9,741.64	22.89	426.676	
960.00	960.00	826.02	826.00	3.26	20.30	85.30	800.69	9,731.65	9,764.53	9,740.97	23.56	414.381	
980.00	980.00	846.02	846.00	3.33	20.91	85.30	800.69	9,731.65	9,764.53	9,740.29	24.24	402.773	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,000.00	1,000.00	866.02	866.00	3.41	21.52	85.30	800.69	9,731.65	9,764.53	9,739.61	24.92	391.799	
1,020.00	1,020.00	886.02	886.00	3.48	22.12	85.30	800.69	9,731.65	9,764.53	9,738.93	25.60	381.407	
1,040.00	1,040.00	906.02	906.00	3.55	22.73	85.30	800.69	9,731.65	9,764.53	9,738.25	26.28	371.551	
1,060.00	1,060.00	926.02	926.00	3.62	23.34	85.30	800.69	9,731.65	9,764.53	9,737.57	26.96	362.193	
1,080.00	1,080.00	946.02	946.00	3.69	23.95	85.30	800.69	9,731.65	9,764.53	9,736.89	27.64	353.294	
1,100.00	1,100.00	966.02	966.00	3.76	24.55	85.30	800.69	9,731.65	9,764.53	9,736.21	28.32	344.822	
1,120.00	1,120.00	986.02	986.00	3.84	25.16	85.30	800.69	9,731.65	9,764.53	9,735.53	29.00	336.746	
1,140.00	1,140.00	1,006.02	1,006.00	3.91	25.77	85.30	800.69	9,731.65	9,764.53	9,734.85	29.68	329.040	
1,160.00	1,160.00	1,026.02	1,026.00	3.98	26.38	85.30	800.69	9,731.65	9,764.53	9,734.18	30.35	321.680	
1,180.00	1,180.00	1,046.02	1,046.00	4.05	26.98	85.30	800.69	9,731.65	9,764.53	9,733.50	31.03	314.641	
1,200.00	1,200.00	1,066.02	1,066.00	4.12	27.59	85.30	800.69	9,731.65	9,764.53	9,732.82	31.71	307.903	
1,220.00	1,220.00	1,086.02	1,086.00	4.19	28.20	85.30	800.69	9,731.65	9,764.53	9,732.14	32.39	301.448	
1,240.00	1,240.00	1,106.02	1,106.00	4.27	28.81	85.30	800.69	9,731.65	9,764.53	9,731.46	33.07	295.259	
1,260.00	1,260.00	1,126.02	1,126.00	4.34	29.41	85.30	800.69	9,731.65	9,764.53	9,730.78	33.75	289.318	
1,280.00	1,280.00	1,146.02	1,146.00	4.41	30.02	85.30	800.69	9,731.65	9,764.53	9,730.10	34.43	283.612	
1,281.64	1,281.64	1,147.66	1,147.64	4.42	30.07	85.30	800.69	9,731.65	9,764.53	9,730.05	34.48	283.154	
1,300.00	1,300.00	1,162.00	1,161.94	4.48	30.51	85.30	800.69	9,731.65	9,764.53	9,729.54	34.99	279.097	
1,320.00	1,320.00	1,186.06	1,186.00	4.55	31.24	85.30	800.69	9,731.65	9,764.53	9,728.74	35.79	272.840	
1,340.00	1,340.00	1,206.06	1,206.00	4.62	31.84	85.30	800.69	9,731.65	9,764.53	9,728.06	36.47	267.760	
1,360.00	1,360.00	1,226.06	1,226.00	4.70	32.45	85.30	800.69	9,731.65	9,764.53	9,727.38	37.15	262.865	
1,380.00	1,380.00	1,246.06	1,246.00	4.77	33.06	85.30	800.69	9,731.65	9,764.53	9,726.70	37.83	258.146	
1,400.00	1,400.00	1,266.06	1,266.00	4.84	33.67	85.30	800.69	9,731.65	9,764.53	9,726.03	38.50	253.593	
1,420.00	1,420.00	1,286.06	1,286.00	4.91	34.27	85.30	800.69	9,731.65	9,764.53	9,725.35	39.18	249.198	
1,440.00	1,440.00	1,306.06	1,306.00	4.98	34.88	85.30	800.69	9,731.65	9,764.53	9,724.67	39.86	244.953	
1,460.00	1,460.00	1,326.06	1,326.00	5.05	35.49	85.30	800.69	9,731.65	9,764.53	9,723.99	40.54	240.850	
1,480.00	1,480.00	1,346.06	1,346.00	5.13	36.09	85.30	800.69	9,731.65	9,764.53	9,723.31	41.22	236.882	
1,500.00	1,500.00	1,366.06	1,366.00	5.20	36.70	85.30	800.69	9,731.65	9,764.53	9,722.63	41.90	233.043	
1,520.00	1,520.00	1,386.06	1,386.00	5.27	37.31	85.30	800.69	9,731.65	9,764.53	9,721.95	42.58	229.327	
1,540.00	1,540.00	1,406.06	1,406.00	5.34	37.92	85.30	800.69	9,731.65	9,764.53	9,721.27	43.26	225.727	
1,560.00	1,560.00	1,426.06	1,426.00	5.41	38.52	85.30	800.69	9,731.65	9,764.53	9,720.59	43.94	222.238	
1,580.00	1,580.00	1,446.06	1,446.00	5.48	39.13	85.30	800.69	9,731.65	9,764.53	9,719.91	44.62	218.856	
1,600.00	1,600.00	1,466.06	1,466.00	5.56	39.74	85.30	800.69	9,731.65	9,764.53	9,719.23	45.30	215.574	
1,620.00	1,620.00	1,486.06	1,486.00	5.63	40.35	85.30	800.69	9,731.65	9,764.53	9,718.56	45.97	212.390	
1,640.00	1,640.00	1,506.06	1,506.00	5.70	40.95	85.30	800.69	9,731.65	9,764.53	9,717.88	46.65	209.299	
1,660.00	1,660.00	1,526.06	1,526.00	5.77	41.56	85.30	800.69	9,731.65	9,764.53	9,717.20	47.33	206.296	
1,680.00	1,680.00	1,546.06	1,546.00	5.84	42.17	85.30	800.69	9,731.65	9,764.53	9,716.52	48.01	203.378	
1,700.00	1,700.00	1,566.06	1,566.00	5.91	42.78	85.30	800.69	9,731.65	9,764.53	9,715.84	48.69	200.542	
1,720.00	1,720.00	1,586.09	1,586.00	5.99	43.38	85.30	800.69	9,731.65	9,764.53	9,715.16	49.37	197.780	
1,740.00	1,740.00	1,606.09	1,606.00	6.06	43.99	85.30	800.69	9,731.65	9,764.53	9,714.48	50.05	195.096	
1,760.00	1,760.00	1,626.09	1,626.00	6.13	44.60	85.30	800.69	9,731.65	9,764.53	9,713.80	50.73	192.485	
1,780.00	1,780.00	1,646.09	1,646.00	6.20	45.21	85.30	800.69	9,731.65	9,764.53	9,713.12	51.41	189.942	
1,800.00	1,800.00	1,666.09	1,666.00	6.27	45.81	85.30	800.69	9,731.65	9,764.53	9,712.44	52.09	187.466	
1,820.00	1,820.00	1,686.09	1,686.00	6.34	46.42	85.30	800.69	9,731.65	9,764.53	9,711.76	52.77	185.053	
1,840.00	1,840.00	1,706.09	1,706.00	6.42	47.03	85.30	800.69	9,731.65	9,764.53	9,711.08	53.45	182.702	
1,860.00	1,860.00	1,726.09	1,726.00	6.49	47.64	85.30	800.69	9,731.65	9,764.53	9,710.41	54.12	180.410	
1,880.00	1,880.00	1,746.09	1,746.00	6.56	48.24	85.30	800.69	9,731.65	9,764.53	9,709.73	54.80	178.174	
1,900.00	1,900.00	1,766.09	1,766.00	6.63	48.85	85.30	800.69	9,731.65	9,764.53	9,709.05	55.48	175.994	
1,920.00	1,920.00	1,786.09	1,786.00	6.70	49.46	85.30	800.69	9,731.65	9,764.53	9,708.37	56.16	173.866	
1,940.00	1,940.00	1,806.09	1,806.00	6.78	50.07	85.30	800.69	9,731.65	9,764.53	9,707.69	56.84	171.788	
1,960.00	1,960.00	1,826.09	1,826.00	6.85	50.67	85.30	800.69	9,731.65	9,764.53	9,707.01	57.52	169.760	
1,980.00	1,980.00	1,846.09	1,846.00	6.92	51.28	85.30	800.69	9,731.65	9,764.53	9,706.33	58.20	167.780	
2,000.00	2,000.00	1,866.09	1,866.00	6.99	51.89	85.30	800.69	9,731.65	9,764.53	9,705.65	58.88	165.844	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,020.00	2,020.00	1,886.09	1,886.00	7.06	52.49	85.30	800.69	9,731.65	9,764.53	9,704.97	59.56	163.954	
2,040.00	2,040.00	1,906.09	1,906.00	7.13	53.10	85.30	800.69	9,731.65	9,764.53	9,704.29	60.24	162.105	
2,060.00	2,060.00	1,926.09	1,926.00	7.21	53.71	85.30	800.69	9,731.65	9,764.53	9,703.62	60.91	160.298	
2,080.00	2,080.00	1,946.09	1,946.00	7.28	54.32	85.30	800.69	9,731.65	9,764.53	9,702.94	61.59	158.531	
2,080.52	2,080.52	1,946.61	1,946.52	7.28	54.33	85.30	800.69	9,731.65	9,764.53	9,702.92	61.61	158.485	
2,100.00	2,100.00	1,956.00	1,955.89	7.35	54.62	85.30	800.69	9,731.65	9,764.54	9,702.57	61.97	157.577	
2,120.00	2,120.00	1,986.11	1,986.00	7.42	55.53	85.30	800.69	9,731.65	9,764.53	9,701.58	62.95	155.109	
2,140.00	2,140.00	2,006.11	2,006.00	7.49	56.14	85.30	800.69	9,731.65	9,764.53	9,700.90	63.63	153.454	
2,160.00	2,160.00	2,026.11	2,026.00	7.56	56.75	85.30	800.69	9,731.65	9,764.53	9,700.22	64.31	151.834	
2,180.00	2,180.00	2,046.11	2,046.00	7.64	57.35	85.30	800.69	9,731.65	9,764.53	9,699.54	64.99	150.247	
2,200.00	2,200.00	2,066.11	2,066.00	7.71	57.96	85.30	800.69	9,731.65	9,764.53	9,698.86	65.67	148.693	
2,220.00	2,220.00	2,086.11	2,086.00	7.78	58.57	85.30	800.69	9,731.65	9,764.53	9,698.18	66.35	147.172	
2,240.00	2,240.00	2,106.11	2,106.00	7.85	59.18	85.30	800.69	9,731.65	9,764.53	9,697.50	67.03	145.681	
2,260.00	2,260.00	2,126.11	2,126.00	7.92	59.78	85.30	800.69	9,731.65	9,764.53	9,696.82	67.71	144.219	
2,280.00	2,280.00	2,146.11	2,146.00	7.99	60.39	85.30	800.69	9,731.65	9,764.53	9,696.14	68.39	142.787	
2,300.00	2,300.00	2,166.11	2,166.00	8.07	61.00	85.30	800.69	9,731.65	9,764.53	9,695.47	69.06	141.383	
2,320.00	2,320.00	2,186.11	2,186.00	8.14	61.61	85.30	800.69	9,731.65	9,764.53	9,694.79	69.74	140.007	
2,340.00	2,340.00	2,206.11	2,206.00	8.21	62.21	85.30	800.69	9,731.65	9,764.53	9,694.11	70.42	138.657	
2,360.00	2,360.00	2,226.11	2,226.00	8.28	62.82	85.30	800.69	9,731.65	9,764.53	9,693.43	71.10	137.333	
2,380.00	2,380.00	2,246.11	2,246.00	8.35	63.43	85.30	800.69	9,731.65	9,764.53	9,692.75	71.78	136.033	
2,400.00	2,400.00	2,266.11	2,266.00	8.42	64.04	85.30	800.69	9,731.65	9,764.53	9,692.07	72.46	134.758	
2,420.00	2,420.00	2,286.11	2,286.00	8.50	64.64	85.30	800.69	9,731.65	9,764.53	9,691.39	73.14	133.507	
2,440.00	2,440.00	2,306.11	2,306.00	8.57	65.25	85.30	800.69	9,731.65	9,764.53	9,690.71	73.82	132.279	
2,460.00	2,460.00	2,326.11	2,326.00	8.64	65.86	85.30	800.69	9,731.65	9,764.53	9,690.03	74.50	131.073	
2,480.00	2,480.00	2,346.11	2,346.00	8.71	66.46	85.30	800.69	9,731.65	9,764.53	9,689.35	75.18	129.889	
2,500.00	2,500.00	2,366.11	2,366.00	8.78	67.07	85.30	800.69	9,731.65	9,764.53	9,688.68	75.85	128.727	
2,520.00	2,520.00	2,386.11	2,386.00	8.85	67.68	85.30	800.69	9,731.65	9,764.53	9,688.00	76.53	127.584	
2,540.00	2,540.00	2,406.11	2,406.00	8.93	68.29	85.30	800.69	9,731.65	9,764.53	9,687.32	77.21	126.462	
2,560.00	2,560.00	2,426.11	2,426.00	9.00	68.89	85.30	800.69	9,731.65	9,764.53	9,686.64	77.89	125.360	
2,580.00	2,580.00	2,446.11	2,446.00	9.07	69.50	85.30	800.69	9,731.65	9,764.53	9,685.96	78.57	124.276	
2,580.39	2,580.39	2,446.50	2,446.39	9.07	69.51	85.30	800.69	9,731.65	9,764.53	9,685.95	78.58	124.255	
2,600.00	2,600.00	2,460.00	2,459.88	9.14	69.92	85.30	800.69	9,731.65	9,764.53	9,685.47	79.06	123.501	
2,620.00	2,620.00	2,486.12	2,486.00	9.21	70.72	85.30	800.69	9,731.65	9,764.53	9,684.60	79.93	122.164	
2,640.00	2,640.00	2,506.12	2,506.00	9.28	71.32	85.30	800.69	9,731.65	9,764.53	9,683.92	80.61	121.135	
2,660.00	2,660.00	2,526.12	2,526.00	9.36	71.93	85.30	800.69	9,731.65	9,764.53	9,683.24	81.29	120.123	
2,680.00	2,680.00	2,546.12	2,546.00	9.43	72.54	85.30	800.69	9,731.65	9,764.53	9,682.56	81.97	119.128	
2,700.00	2,700.00	2,566.12	2,566.00	9.50	73.15	85.30	800.69	9,731.65	9,764.53	9,681.88	82.65	118.149	
2,720.00	2,720.00	2,586.12	2,586.00	9.57	73.75	25.15	800.69	9,731.65	9,764.47	9,681.14	83.32	117.187	
2,740.00	2,740.00	2,606.12	2,606.00	9.64	74.36	25.15	800.69	9,731.65	9,764.28	9,680.28	84.00	116.239	
2,760.00	2,760.00	2,626.12	2,626.00	9.71	74.97	25.15	800.69	9,731.65	9,763.96	9,679.28	84.68	115.304	
2,780.00	2,779.99	2,646.11	2,645.99	9.78	75.58	25.16	800.69	9,731.65	9,763.52	9,678.16	85.36	114.383	
2,800.00	2,799.98	2,666.10	2,665.98	9.85	76.18	25.17	800.69	9,731.65	9,762.95	9,676.91	86.04	113.475	
2,820.00	2,819.96	2,686.09	2,685.96	9.92	76.79	25.17	800.69	9,731.65	9,762.26	9,675.54	86.71	112.582	
2,840.00	2,839.94	2,706.07	2,705.94	9.99	77.40	25.18	800.69	9,731.65	9,761.43	9,674.04	87.39	111.701	
2,860.00	2,859.92	2,726.04	2,725.92	10.06	78.00	25.19	800.69	9,731.65	9,760.49	9,672.42	88.07	110.832	
2,880.00	2,879.88	2,746.00	2,745.88	10.13	78.61	25.21	800.69	9,731.65	9,759.41	9,670.67	88.74	109.976	
2,900.00	2,899.84	2,765.96	2,765.84	10.20	79.22	25.22	800.69	9,731.65	9,758.21	9,668.80	89.42	109.131	
2,920.00	2,919.78	2,785.91	2,785.78	10.28	79.82	25.23	800.69	9,731.65	9,756.89	9,666.79	90.09	108.298	
2,940.00	2,939.72	2,805.84	2,805.72	10.35	80.43	25.25	800.69	9,731.65	9,755.44	9,664.67	90.77	107.476	
2,960.00	2,959.64	2,825.77	2,825.64	10.42	81.03	25.27	800.69	9,731.65	9,753.86	9,662.42	91.44	106.666	
2,980.00	2,979.55	2,845.68	2,845.55	10.49	81.64	25.29	800.69	9,731.65	9,752.16	9,660.04	92.12	105.866	
3,000.00	2,999.45	2,865.57	2,865.45	10.56	82.24	25.31	800.69	9,731.65	9,750.33	9,657.53	92.79	105.078	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,020.00	3,019.34	2,885.46	2,885.34	10.63	82.84	25.33	800.69	9,731.65	9,748.37	9,654.91	93.47	104.299	
3,040.00	3,039.20	2,905.32	2,905.20	10.70	83.45	25.35	800.69	9,731.65	9,746.29	9,652.15	94.14	103.532	
3,060.00	3,059.05	2,925.18	2,925.05	10.77	84.05	25.38	800.69	9,731.65	9,744.09	9,649.28	94.81	102.774	
3,080.00	3,078.89	2,945.01	2,944.89	10.84	84.65	25.41	800.69	9,731.65	9,741.76	9,646.27	95.48	102.026	
3,100.00	3,098.70	2,964.82	2,964.70	10.91	85.25	25.43	800.69	9,731.65	9,739.30	9,643.15	96.15	101.288	
3,120.00	3,118.50	2,984.62	2,984.50	10.98	85.86	25.46	800.69	9,731.65	9,736.72	9,639.89	96.83	100.560	
3,140.00	3,138.27	3,004.39	3,004.27	11.06	86.46	25.50	800.69	9,731.65	9,734.01	9,636.52	97.50	99.841	
3,160.00	3,158.03	3,024.19	3,024.03	11.13	87.06	25.53	800.69	9,731.65	9,731.18	9,633.02	98.17	99.130	
3,180.00	3,177.76	3,043.92	3,043.76	11.20	87.66	25.56	800.69	9,731.65	9,728.23	9,629.39	98.83	98.429	
3,200.00	3,197.47	3,063.63	3,063.47	11.27	88.26	25.60	800.69	9,731.65	9,725.15	9,625.65	99.50	97.737	
3,220.00	3,217.15	3,083.31	3,083.15	11.34	88.85	25.63	800.69	9,731.65	9,721.95	9,621.78	100.17	97.054	
3,240.00	3,236.81	3,102.97	3,102.81	11.42	89.45	25.67	800.69	9,731.65	9,718.62	9,617.78	100.84	96.380	
3,260.00	3,256.44	3,122.61	3,122.44	11.49	90.05	25.71	800.69	9,731.65	9,715.17	9,613.67	101.50	95.713	
3,280.00	3,276.05	3,142.21	3,142.05	11.56	90.64	25.75	800.69	9,731.65	9,711.60	9,609.43	102.17	95.055	
3,300.00	3,295.62	3,161.79	3,161.62	11.64	91.24	25.80	800.69	9,731.65	9,707.90	9,605.07	102.83	94.406	
3,320.00	3,315.17	3,181.34	3,181.17	11.71	91.83	25.84	800.69	9,731.65	9,704.08	9,600.58	103.50	93.764	
3,340.00	3,334.69	3,200.86	3,200.69	11.78	92.42	25.89	800.69	9,731.65	9,700.13	9,595.98	104.16	93.130	
3,360.00	3,354.18	3,220.34	3,220.18	11.86	93.01	25.94	800.69	9,731.65	9,696.07	9,591.25	104.82	92.503	
3,380.00	3,373.63	3,239.80	3,239.63	11.93	93.61	25.99	800.69	9,731.65	9,691.88	9,586.40	105.48	91.884	
3,400.00	3,393.06	3,259.22	3,259.06	12.01	94.19	26.04	800.69	9,731.65	9,687.57	9,581.43	106.14	91.273	
3,420.00	3,412.44	3,278.61	3,278.44	12.09	94.78	26.09	800.69	9,731.65	9,683.13	9,576.34	106.80	90.668	
3,440.00	3,431.80	3,297.96	3,297.80	12.16	95.37	26.14	800.69	9,731.65	9,678.58	9,571.12	107.45	90.071	
3,460.00	3,451.12	3,317.28	3,317.12	12.24	95.96	26.20	800.69	9,731.65	9,673.90	9,565.79	108.11	89.481	
3,480.00	3,470.40	3,336.56	3,336.40	12.32	96.54	26.26	800.69	9,731.65	9,669.11	9,560.34	108.77	88.898	
3,500.00	3,489.64	3,355.81	3,355.64	12.39	97.13	26.32	800.69	9,731.65	9,664.19	9,554.77	109.42	88.321	
3,520.00	3,508.85	3,375.01	3,374.85	12.47	97.71	26.38	800.69	9,731.65	9,659.15	9,549.07	110.07	87.751	
3,540.00	3,528.02	3,394.18	3,394.02	12.56	98.29	26.44	800.69	9,731.65	9,653.99	9,543.26	110.73	87.188	
3,560.00	3,547.14	3,413.31	3,413.14	12.64	98.87	26.50	800.69	9,731.65	9,648.71	9,537.33	111.38	86.631	
3,580.00	3,566.23	3,432.39	3,432.23	12.72	99.45	26.57	800.69	9,731.65	9,643.31	9,531.28	112.03	86.080	
3,600.00	3,585.27	3,451.43	3,451.27	12.80	100.03	26.64	800.69	9,731.65	9,637.79	9,525.12	112.68	85.536	
3,620.00	3,604.27	3,470.43	3,470.27	12.88	100.61	26.71	800.69	9,731.65	9,632.15	9,518.83	113.32	84.997	
3,640.00	3,623.22	3,489.39	3,489.22	12.96	101.18	26.78	800.69	9,731.65	9,626.40	9,512.43	113.97	84.464	
3,645.28	3,628.22	3,494.38	3,494.22	12.98	101.34	26.80	800.69	9,731.65	9,624.86	9,510.72	114.14	84.325	
3,660.00	3,642.15	3,508.31	3,508.15	13.05	101.76	26.81	800.69	9,731.65	9,620.56	9,505.94	114.62	83.938	
3,680.00	3,661.07	3,527.23	3,527.07	13.13	102.33	26.83	800.69	9,731.65	9,614.71	9,499.45	115.26	83.417	
3,700.00	3,679.99	3,546.15	3,545.99	13.22	102.91	26.84	800.69	9,731.65	9,608.86	9,492.96	115.91	82.903	
3,720.00	3,698.91	3,554.00	3,553.79	13.30	103.15	26.85	800.69	9,731.65	9,603.03	9,486.81	116.22	82.631	
3,740.00	3,717.83	3,584.04	3,583.83	13.39	104.06	26.88	800.69	9,731.65	9,597.18	9,479.98	117.20	81.888	
3,760.00	3,736.75	3,602.96	3,602.75	13.48	104.63	26.90	800.69	9,731.65	9,591.33	9,473.49	117.84	81.390	
3,780.00	3,755.67	3,621.88	3,621.67	13.57	105.21	26.91	800.69	9,731.65	9,585.49	9,467.00	118.49	80.897	
3,800.00	3,774.59	3,640.80	3,640.59	13.65	105.78	26.93	800.69	9,731.65	9,579.65	9,460.52	119.14	80.410	
3,820.00	3,793.51	3,659.72	3,659.51	13.74	106.36	26.95	800.69	9,731.65	9,573.81	9,454.03	119.78	79.927	
3,840.00	3,812.44	3,678.64	3,678.44	13.83	106.93	26.97	800.69	9,731.65	9,567.97	9,447.54	120.43	79.449	
3,860.00	3,831.36	3,697.57	3,697.36	13.92	107.51	26.98	800.69	9,731.65	9,562.13	9,441.06	121.08	78.976	
3,880.00	3,850.28	3,716.49	3,716.28	14.01	108.08	27.00	800.69	9,731.65	9,556.29	9,434.57	121.72	78.509	
3,900.00	3,869.20	3,735.41	3,735.20	14.10	108.66	27.02	800.69	9,731.65	9,550.46	9,428.09	122.37	78.046	
3,920.00	3,888.12	3,754.33	3,754.12	14.20	109.23	27.03	800.69	9,731.65	9,544.62	9,421.60	123.02	77.587	
3,940.00	3,907.04	3,773.25	3,773.04	14.29	109.81	27.05	800.69	9,731.65	9,538.79	9,415.12	123.67	77.134	
3,960.00	3,925.96	3,792.17	3,791.96	14.38	110.38	27.07	800.69	9,731.65	9,532.95	9,408.64	124.31	76.685	
3,980.00	3,944.88	3,811.09	3,810.88	14.47	110.95	27.09	800.69	9,731.65	9,527.12	9,402.16	124.96	76.241	
4,000.00	3,963.80	3,830.01	3,829.80	14.56	111.53	27.11	800.69	9,731.65	9,521.29	9,395.68	125.61	75.801	
4,020.00	3,982.73	3,848.93	3,848.73	14.66	112.10	27.12	800.69	9,731.65	9,515.45	9,389.20	126.26	75.365	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,040.00	4,001.65	3,867.86	3,867.65	14.75	112.68	27.14	800.69	9,731.65	9,509.62	9,382.72	126.91	74.934	
4,060.00	4,020.57	3,886.78	3,886.57	14.85	113.25	27.16	800.69	9,731.65	9,503.79	9,376.24	127.56	74.507	
4,080.00	4,039.49	3,905.70	3,905.49	14.94	113.83	27.18	800.69	9,731.65	9,497.96	9,369.76	128.20	74.084	
4,100.00	4,058.41	3,924.62	3,924.41	15.04	114.40	27.19	800.69	9,731.65	9,492.13	9,363.28	128.85	73.666	
4,120.00	4,077.33	3,943.56	3,943.33	15.13	114.98	27.21	800.69	9,731.65	9,486.31	9,356.80	129.50	73.251	
4,140.00	4,096.25	3,962.48	3,962.25	15.23	115.55	27.23	800.69	9,731.65	9,480.48	9,350.33	130.15	72.841	
4,160.00	4,115.17	3,981.40	3,981.17	15.33	116.13	27.25	800.69	9,731.65	9,474.65	9,343.85	130.80	72.434	
4,180.00	4,134.09	4,000.32	4,000.09	15.42	116.70	27.26	800.69	9,731.65	9,468.83	9,337.37	131.45	72.032	
4,200.00	4,153.02	4,019.24	4,019.02	15.52	117.28	27.28	800.69	9,731.65	9,463.00	9,330.90	132.10	71.633	
4,220.00	4,171.94	4,038.16	4,037.94	15.62	117.85	27.30	800.69	9,731.65	9,457.18	9,324.43	132.75	71.238	
4,240.00	4,190.86	4,057.09	4,056.86	15.72	118.42	27.32	800.69	9,731.65	9,451.36	9,317.95	133.40	70.847	
4,260.00	4,209.78	4,076.01	4,075.78	15.81	119.00	27.34	800.69	9,731.65	9,445.54	9,311.48	134.06	70.460	
4,280.00	4,228.70	4,094.93	4,094.70	15.91	119.57	27.35	800.69	9,731.65	9,439.71	9,305.01	134.71	70.076	
4,300.00	4,247.62	4,113.85	4,113.62	16.01	120.15	27.37	800.69	9,731.65	9,433.89	9,298.54	135.36	69.697	
4,320.00	4,266.54	4,132.77	4,132.54	16.11	120.72	27.39	800.69	9,731.65	9,428.08	9,292.07	136.01	69.320	
4,340.00	4,285.46	4,151.69	4,151.46	16.21	121.30	27.41	800.69	9,731.65	9,422.26	9,285.60	136.66	68.947	
4,360.00	4,304.38	4,170.61	4,170.38	16.31	121.87	27.42	800.69	9,731.65	9,416.44	9,279.13	137.31	68.577	
4,380.00	4,323.31	4,189.53	4,189.30	16.41	122.45	27.44	800.69	9,731.65	9,410.62	9,272.66	137.96	68.211	
4,400.00	4,342.23	4,208.45	4,208.23	16.51	123.02	27.46	800.69	9,731.65	9,404.81	9,266.19	138.61	67.849	
4,420.00	4,361.15	4,227.37	4,227.15	16.61	123.60	27.48	800.69	9,731.65	9,398.99	9,259.73	139.27	67.489	
4,440.00	4,380.07	4,246.30	4,246.07	16.71	124.17	27.50	800.69	9,731.65	9,393.18	9,253.26	139.92	67.133	
4,460.00	4,398.99	4,265.22	4,264.99	16.81	124.75	27.51	800.69	9,731.65	9,387.37	9,246.79	140.57	66.780	
4,480.00	4,417.91	4,284.14	4,283.91	16.92	125.32	27.53	800.69	9,731.65	9,381.55	9,240.33	141.22	66.431	
4,500.00	4,436.83	4,303.06	4,302.83	17.02	125.89	27.55	800.69	9,731.65	9,375.74	9,233.87	141.88	66.084	
4,520.00	4,455.75	4,321.98	4,321.75	17.12	126.47	27.57	800.69	9,731.65	9,369.93	9,227.40	142.53	65.741	
4,540.00	4,474.67	4,340.90	4,340.67	17.22	127.04	27.59	800.69	9,731.65	9,364.12	9,220.94	143.18	65.401	
4,560.00	4,493.59	4,359.82	4,359.59	17.33	127.62	27.61	800.69	9,731.65	9,358.31	9,214.48	143.83	65.063	
4,580.00	4,512.52	4,378.74	4,378.52	17.43	128.19	27.62	800.69	9,731.65	9,352.51	9,208.02	144.49	64.729	
4,600.00	4,531.44	4,397.66	4,397.44	17.53	128.77	27.64	800.69	9,731.65	9,346.70	9,201.56	145.14	64.398	
4,620.00	4,550.36	4,416.59	4,416.36	17.64	129.34	27.66	800.69	9,731.65	9,340.89	9,195.10	145.79	64.069	
4,640.00	4,569.28	4,435.52	4,435.28	17.74	129.92	27.68	800.69	9,731.65	9,335.09	9,188.64	146.45	63.744	
4,660.00	4,588.20	4,454.44	4,454.20	17.84	130.49	27.70	800.69	9,731.65	9,329.28	9,182.18	147.10	63.421	
4,680.00	4,607.12	4,473.36	4,473.12	17.95	131.07	27.71	800.69	9,731.65	9,323.48	9,175.72	147.75	63.101	
4,700.00	4,626.04	4,492.28	4,492.04	18.05	131.64	27.73	800.69	9,731.65	9,317.68	9,169.27	148.41	62.784	
4,720.00	4,644.96	4,511.21	4,510.96	18.16	132.22	27.75	800.69	9,731.65	9,311.87	9,162.81	149.06	62.469	
4,740.00	4,663.88	4,530.13	4,529.88	18.26	132.79	27.77	800.69	9,731.65	9,306.07	9,156.36	149.72	62.158	
4,760.00	4,682.81	4,549.05	4,548.81	18.37	133.36	27.79	800.69	9,731.65	9,300.27	9,149.90	150.37	61.849	
4,780.00	4,701.73	4,567.97	4,567.73	18.47	133.94	27.81	800.69	9,731.65	9,294.48	9,143.45	151.03	61.542	
4,800.00	4,720.65	4,586.89	4,586.65	18.58	134.51	27.83	800.69	9,731.65	9,288.68	9,137.00	151.68	61.239	
4,820.00	4,739.57	4,605.81	4,605.57	18.69	135.09	27.84	800.69	9,731.65	9,282.88	9,130.55	152.33	60.937	
4,840.00	4,758.49	4,624.73	4,624.49	18.79	135.66	27.86	800.69	9,731.65	9,277.08	9,124.09	152.99	60.639	
4,860.00	4,777.41	4,643.66	4,643.41	18.90	136.24	27.88	800.69	9,731.65	9,271.29	9,117.64	153.64	60.342	
4,880.00	4,796.33	4,662.58	4,662.33	19.00	136.81	27.90	800.69	9,731.65	9,265.49	9,111.19	154.30	60.049	
4,900.00	4,815.25	4,681.50	4,681.25	19.11	137.39	27.92	800.69	9,731.65	9,259.70	9,104.75	154.95	59.758	
4,920.00	4,834.17	4,700.42	4,700.17	19.22	137.96	27.94	800.69	9,731.65	9,253.91	9,098.30	155.61	59.469	
4,940.00	4,853.10	4,719.34	4,719.10	19.32	138.54	27.95	800.69	9,731.65	9,248.12	9,091.85	156.27	59.182	
4,960.00	4,872.02	4,738.26	4,738.02	19.43	139.11	27.97	800.69	9,731.65	9,242.33	9,085.40	156.92	58.898	
4,980.00	4,890.94	4,757.18	4,756.94	19.54	139.69	27.99	800.69	9,731.65	9,236.54	9,078.96	157.58	58.616	
5,000.00	4,909.86	4,776.10	4,775.86	19.65	140.26	28.01	800.69	9,731.65	9,230.75	9,072.52	158.23	58.337	
5,020.00	4,928.78	4,795.02	4,794.78	19.75	140.83	28.03	800.69	9,731.65	9,224.96	9,066.07	158.89	58.060	
5,040.00	4,947.70	4,813.95	4,813.70	19.86	141.41	28.05	800.69	9,731.65	9,219.17	9,059.63	159.54	57.785	
5,060.00	4,966.62	4,832.87	4,832.62	19.97	141.98	28.07	800.69	9,731.65	9,213.39	9,053.19	160.20	57.512	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,080.00	4,985.54	4,851.79	4,851.54	20.08	142.56	28.09	800.69	9,731.65	9,207.60	9,046.74	160.86	57.241	
5,100.00	5,004.46	4,870.71	4,870.46	20.19	143.13	28.10	800.69	9,731.65	9,201.82	9,040.30	161.51	56.973	
5,120.00	5,023.39	4,889.63	4,889.39	20.30	143.71	28.12	800.69	9,731.65	9,196.03	9,033.86	162.17	56.707	
5,140.00	5,042.31	4,908.55	4,908.31	20.41	144.28	28.14	800.69	9,731.65	9,190.25	9,027.43	162.83	56.442	
5,160.00	5,061.23	4,927.47	4,927.23	20.51	144.86	28.16	800.69	9,731.65	9,184.47	9,020.99	163.48	56.180	
5,180.00	5,080.15	4,946.39	4,946.15	20.62	145.43	28.18	800.69	9,731.65	9,178.69	9,014.55	164.14	55.920	
5,200.00	5,099.07	4,965.31	4,965.07	20.73	146.01	28.20	800.69	9,731.65	9,172.91	9,008.11	164.79	55.663	
5,220.00	5,117.99	4,984.23	4,983.99	20.84	146.58	28.22	800.69	9,731.65	9,167.13	9,001.68	165.45	55.407	
5,240.00	5,136.91	5,003.16	5,002.91	20.95	147.15	28.24	800.69	9,731.65	9,161.35	8,995.24	166.11	55.153	
5,260.00	5,155.83	5,022.08	5,021.83	21.06	147.73	28.26	800.69	9,731.65	9,155.57	8,988.81	166.77	54.901	
5,280.00	5,174.75	5,041.00	5,040.75	21.17	148.30	28.27	800.69	9,731.65	9,149.80	8,982.38	167.42	54.651	
5,300.00	5,193.67	5,059.92	5,059.67	21.28	148.88	28.29	800.69	9,731.65	9,144.02	8,975.94	168.08	54.403	
5,320.00	5,212.60	5,078.84	5,078.60	21.39	149.45	28.31	800.69	9,731.65	9,138.25	8,969.51	168.74	54.157	
5,340.00	5,231.52	5,090.00	5,089.75	21.50	149.79	28.32	800.69	9,731.65	9,132.48	8,963.32	169.16	53.987	
5,360.00	5,250.44	5,116.69	5,116.44	21.61	150.60	28.35	800.69	9,731.65	9,126.70	8,956.65	170.05	53.670	
5,380.00	5,269.36	5,135.61	5,135.36	21.72	151.18	28.37	800.69	9,731.65	9,120.93	8,950.22	170.71	53.429	
5,400.00	5,288.28	5,154.53	5,154.28	21.83	151.75	28.39	800.69	9,731.65	9,115.16	8,943.80	171.37	53.191	
5,420.00	5,307.20	5,173.45	5,173.20	21.94	152.33	28.41	800.69	9,731.65	9,109.39	8,937.37	172.03	52.954	
5,440.00	5,326.12	5,192.37	5,192.12	22.06	152.90	28.43	800.69	9,731.65	9,103.63	8,930.94	172.68	52.718	
5,460.00	5,345.04	5,211.29	5,211.04	22.17	153.48	28.45	800.69	9,731.65	9,097.86	8,924.52	173.34	52.485	
5,480.00	5,363.96	5,230.22	5,229.96	22.28	154.05	28.47	800.69	9,731.65	9,092.09	8,918.09	174.00	52.253	
5,500.00	5,382.89	5,249.14	5,248.89	22.39	154.62	28.48	800.69	9,731.65	9,086.33	8,911.67	174.66	52.024	
5,520.00	5,401.81	5,268.06	5,267.81	22.50	155.20	28.50	800.69	9,731.65	9,080.56	8,905.25	175.32	51.795	
5,540.00	5,420.73	5,286.98	5,286.73	22.61	155.77	28.52	800.69	9,731.65	9,074.80	8,898.82	175.97	51.569	
5,560.00	5,439.65	5,305.90	5,305.65	22.72	156.35	28.54	800.69	9,731.65	9,069.04	8,892.40	176.63	51.344	
5,580.00	5,458.57	5,324.82	5,324.57	22.84	156.92	28.56	800.69	9,731.65	9,063.27	8,885.98	177.29	51.121	
5,600.00	5,477.49	5,343.74	5,343.49	22.95	157.50	28.58	800.69	9,731.65	9,057.51	8,879.56	177.95	50.899	
5,620.00	5,496.41	5,362.66	5,362.41	23.06	158.07	28.60	800.69	9,731.65	9,051.75	8,873.15	178.61	50.679	
5,640.00	5,515.33	5,381.58	5,381.33	23.17	158.65	28.62	800.69	9,731.65	9,046.00	8,866.73	179.27	50.461	
5,660.00	5,534.25	5,400.50	5,400.25	23.28	159.22	28.64	800.69	9,731.65	9,040.24	8,860.31	179.93	50.244	
5,680.00	5,553.18	5,419.43	5,419.18	23.40	159.80	28.66	800.69	9,731.65	9,034.48	8,853.90	180.59	50.029	
5,700.00	5,572.10	5,438.35	5,438.10	23.51	160.37	28.68	800.69	9,731.65	9,028.73	8,847.48	181.24	49.815	
5,720.00	5,591.02	5,457.27	5,457.02	23.62	160.95	28.70	800.69	9,731.65	9,022.97	8,841.07	181.90	49.603	
5,740.00	5,609.94	5,476.19	5,475.94	23.73	161.52	28.72	800.69	9,731.65	9,017.22	8,834.65	182.56	49.392	
5,760.00	5,628.86	5,495.11	5,494.86	23.85	162.09	28.74	800.69	9,731.65	9,011.46	8,828.24	183.22	49.183	
5,780.00	5,647.78	5,514.03	5,513.78	23.96	162.67	28.76	800.69	9,731.65	9,005.71	8,821.83	183.88	48.975	
5,800.00	5,666.70	5,532.95	5,532.70	24.07	163.24	28.78	800.69	9,731.65	8,999.96	8,815.42	184.54	48.769	
5,809.89	5,676.06	5,542.31	5,542.06	24.13	163.53	28.79	800.69	9,731.65	8,997.12	8,812.25	184.87	48.668	
5,820.00	5,685.60	5,551.85	5,551.60	24.19	163.82	27.32	800.69	9,731.65	8,994.13	8,808.93	185.20	48.564	
5,840.00	5,704.31	5,570.56	5,570.31	24.31	164.39	24.79	800.69	9,731.65	8,987.71	8,801.86	185.86	48.359	
5,850.00	5,713.58	5,579.84	5,579.58	24.37	164.67	23.68	800.69	9,731.65	8,984.26	8,798.08	186.18	48.256	
5,860.00	5,722.80	5,589.07	5,588.80	24.43	164.95	22.65	800.69	9,731.65	8,980.64	8,794.13	186.50	48.153	
5,880.00	5,741.03	5,607.31	5,607.03	24.57	165.50	20.82	800.69	9,731.65	8,972.92	8,785.77	187.14	47.947	
5,900.00	5,759.00	5,625.27	5,625.00	24.70	166.05	19.24	800.69	9,731.65	8,964.56	8,776.78	187.78	47.741	
5,920.00	5,776.66	5,642.94	5,642.66	24.85	166.58	17.86	800.69	9,731.65	8,955.58	8,767.18	188.40	47.535	
5,940.00	5,794.02	5,660.29	5,660.02	25.00	167.11	16.66	800.69	9,731.65	8,945.98	8,756.96	189.01	47.330	
5,950.00	5,802.57	5,668.84	5,668.57	25.08	167.37	16.11	800.69	9,731.65	8,940.95	8,751.63	189.31	47.228	
5,960.00	5,811.03	5,677.31	5,677.03	25.16	167.63	15.59	800.69	9,731.65	8,935.77	8,746.16	189.61	47.126	
5,980.00	5,827.69	5,693.96	5,693.69	25.33	168.13	14.64	800.69	9,731.65	8,924.97	8,734.77	190.20	46.924	
6,000.00	5,843.96	5,710.24	5,709.96	25.50	168.63	13.79	800.69	9,731.65	8,913.59	8,722.81	190.78	46.722	
6,020.00	5,859.84	5,726.12	5,725.84	25.69	169.11	13.02	800.69	9,731.65	8,901.64	8,710.30	191.34	46.523	
6,040.00	5,875.31	5,741.58	5,741.31	25.87	169.58	12.32	800.69	9,731.65	8,889.15	8,697.26	191.89	46.325	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,050.00	5,882.88	5,749.15	5,748.88	25.97	169.81	11.99	800.69	9,731.65	8,882.70	8,690.54	192.16	46.226	
6,060.00	5,890.33	5,756.61	5,756.33	26.07	170.04	11.67	800.69	9,731.65	8,876.12	8,683.69	192.42	46.129	
6,080.00	5,904.90	5,771.18	5,770.90	26.28	170.48	11.08	800.69	9,731.65	8,862.56	8,669.63	192.94	45.935	
6,100.00	5,919.00	5,785.28	5,785.00	26.49	170.91	10.53	800.69	9,731.65	8,848.51	8,655.07	193.44	45.743	
6,120.00	5,932.61	5,798.89	5,798.61	26.72	171.32	10.01	800.69	9,731.65	8,833.96	8,640.04	193.92	45.554	
6,140.00	5,945.72	5,811.99	5,811.72	26.95	171.72	9.52	800.69	9,731.65	8,818.95	8,624.56	194.39	45.368	
6,150.00	5,952.07	5,818.35	5,818.07	27.06	171.91	9.29	800.69	9,731.65	8,811.27	8,616.66	194.61	45.276	
6,160.00	5,958.30	5,824.57	5,824.30	27.19	172.10	9.05	800.69	9,731.65	8,803.48	8,608.65	194.83	45.185	
6,180.00	5,970.34	5,836.62	5,836.34	27.44	172.47	8.60	800.69	9,731.65	8,787.59	8,592.33	195.26	45.005	
6,200.00	5,981.83	5,848.11	5,847.83	27.69	172.81	8.16	800.69	9,731.65	8,771.28	8,575.61	195.67	44.827	
6,220.00	5,992.76	5,859.04	5,858.76	27.97	173.15	7.72	800.69	9,731.65	8,754.58	8,558.52	196.05	44.654	
6,240.00	6,003.11	5,869.38	5,869.11	28.25	173.46	7.29	800.69	9,731.65	8,737.50	8,541.08	196.42	44.484	
6,250.00	6,008.06	5,874.33	5,874.06	28.38	173.61	7.06	800.69	9,731.65	8,728.83	8,532.23	196.60	44.400	
6,260.00	6,012.86	5,879.14	5,878.86	28.53	173.76	6.84	800.69	9,731.65	8,720.07	8,523.31	196.77	44.317	
6,280.00	6,022.01	5,888.29	5,888.01	28.84	174.04	6.37	800.69	9,731.65	8,702.32	8,505.23	197.09	44.155	
6,300.00	6,030.55	5,896.82	5,896.55	29.14	174.29	5.87	800.69	9,731.65	8,684.25	8,486.86	197.39	43.995	
6,320.00	6,038.46	5,904.73	5,904.46	29.46	174.53	5.33	800.69	9,731.65	8,665.89	8,468.23	197.67	43.841	
6,340.00	6,045.73	5,912.01	5,911.73	29.78	174.76	4.73	800.69	9,731.65	8,647.28	8,449.35	197.92	43.690	
6,350.00	6,049.13	5,915.40	5,915.13	29.95	174.86	4.39	800.69	9,731.65	8,637.87	8,439.83	198.04	43.616	
6,360.00	6,052.36	5,918.64	5,918.36	30.12	174.96	4.03	800.69	9,731.65	8,628.41	8,430.26	198.15	43.544	
6,380.00	6,058.34	5,924.61	5,924.34	30.47	175.14	3.21	800.69	9,731.65	8,609.33	8,410.97	198.36	43.402	
6,400.00	6,063.66	5,929.93	5,929.66	30.81	175.30	2.20	800.69	9,731.65	8,590.06	8,391.51	198.55	43.264	
6,420.00	6,068.31	5,934.59	5,934.31	31.18	175.44	0.90	800.69	9,731.65	8,570.61	8,371.90	198.71	43.132	
6,440.00	6,072.29	5,938.57	5,938.29	31.54	175.56	-0.85	800.69	9,731.65	8,551.01	8,352.16	198.85	43.003	
6,450.00	6,074.03	5,940.31	5,940.03	31.73	175.61	-1.98	800.69	9,731.65	8,541.16	8,342.25	198.91	42.940	
6,460.00	6,075.60	5,941.88	5,941.60	31.92	175.66	-3.37	800.69	9,731.65	8,531.28	8,332.32	198.96	42.880	
6,480.00	6,078.23	5,944.50	5,944.23	32.30	175.74	-7.34	800.69	9,731.65	8,511.46	8,312.41	199.05	42.761	
6,500.00	6,080.17	5,946.44	5,946.17	32.68	175.80	-14.48	800.69	9,731.65	8,491.56	8,292.44	199.11	42.647	
6,520.00	6,081.42	5,947.70	5,947.42	33.07	175.84	-30.24	800.69	9,731.65	8,471.60	8,272.45	199.15	42.538	
6,540.00	6,081.99	5,948.27	5,947.99	33.47	175.86	-70.97	800.69	9,731.65	8,451.62	8,252.45	199.17	42.434	
6,552.18	6,082.00	5,948.28	5,948.00	33.71	175.86	-105.09	800.69	9,731.65	8,439.45	8,240.28	199.17	42.373	
6,560.00	6,081.92	5,948.20	5,947.92	33.86	175.85	-105.07	800.69	9,731.65	8,431.63	8,232.47	199.17	42.335	
6,580.00	6,081.73	5,948.00	5,947.73	34.27	175.85	-105.04	800.69	9,731.65	8,411.65	8,212.49	199.16	42.236	
6,600.00	6,081.53	5,947.81	5,947.53	34.67	175.84	-105.01	800.69	9,731.65	8,391.66	8,192.52	199.15	42.138	
6,620.00	6,081.34	5,947.61	5,947.34	35.10	175.84	-104.97	800.69	9,731.65	8,371.68	8,172.54	199.14	42.040	
6,640.00	6,081.14	5,947.42	5,947.14	35.52	175.83	-104.94	800.69	9,731.65	8,351.69	8,152.56	199.13	41.942	
6,660.00	6,080.95	5,947.23	5,946.95	35.94	175.82	-104.90	800.69	9,731.65	8,331.71	8,132.59	199.12	41.843	
6,680.00	6,080.76	5,947.03	5,946.76	36.37	175.82	-104.87	800.69	9,731.65	8,311.72	8,112.61	199.11	41.745	
6,700.00	6,080.56	5,946.84	5,946.56	36.79	175.81	-104.83	800.69	9,731.65	8,291.73	8,092.64	199.10	41.647	
6,720.00	6,080.37	5,946.64	5,946.37	37.24	175.81	-104.80	800.69	9,731.65	8,271.75	8,072.66	199.09	41.548	
6,740.00	6,080.17	5,946.45	5,946.17	37.69	175.80	-104.77	800.69	9,731.65	8,251.76	8,052.69	199.08	41.450	
6,760.00	6,079.98	5,946.25	5,945.98	38.13	175.80	-104.73	800.69	9,731.65	8,231.78	8,032.71	199.07	41.352	
6,780.00	6,079.78	5,946.06	5,945.78	38.58	175.79	-104.70	800.69	9,731.65	8,211.79	8,012.73	199.06	41.253	
6,800.00	6,079.59	5,945.86	5,945.59	39.03	175.78	-104.66	800.69	9,731.65	8,191.81	7,992.76	199.05	41.155	
6,820.00	6,079.39	5,945.67	5,945.39	39.49	175.78	-104.63	800.69	9,731.65	8,171.82	7,972.78	199.04	41.056	
6,840.00	6,079.20	5,945.47	5,945.20	39.96	175.77	-104.60	800.69	9,731.65	8,151.84	7,952.81	199.03	40.958	
6,860.00	6,079.00	5,945.28	5,945.00	40.43	175.77	-104.56	800.69	9,731.65	8,131.85	7,932.83	199.02	40.860	
6,880.00	6,078.81	5,945.08	5,944.81	40.89	175.76	-104.53	800.69	9,731.65	8,111.87	7,912.86	199.01	40.761	
6,900.00	6,078.61	5,944.89	5,944.61	41.36	175.75	-104.49	800.69	9,731.65	8,091.88	7,892.88	199.00	40.663	
6,920.00	6,078.42	5,944.69	5,944.42	41.84	175.75	-104.46	800.69	9,731.65	8,071.90	7,872.91	198.99	40.564	
6,940.00	6,078.22	5,944.50	5,944.22	42.32	175.74	-104.42	800.69	9,731.65	8,051.91	7,852.93	198.98	40.466	
6,960.00	6,078.03	5,944.30	5,944.03	42.81	175.74	-104.39	800.69	9,731.65	8,031.93	7,832.96	198.97	40.367	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,980.00	6,077.83	5,944.11	5,943.83	43.29	175.73	-104.35	800.69	9,731.65	8,011.94	7,812.98	198.96	40.269	
7,000.00	6,077.64	5,943.91	5,943.64	43.77	175.72	-104.32	800.69	9,731.65	7,991.96	7,793.01	198.95	40.170	
7,020.00	6,077.44	5,943.72	5,943.44	44.27	175.72	-104.29	800.69	9,731.65	7,971.97	7,773.03	198.94	40.071	
7,040.00	6,077.25	5,943.52	5,943.25	44.76	175.71	-104.25	800.69	9,731.65	7,951.99	7,753.05	198.94	39.973	
7,060.00	6,077.05	5,943.33	5,943.05	45.26	175.71	-104.22	800.69	9,731.65	7,932.01	7,733.08	198.93	39.874	
7,080.00	6,076.86	5,943.13	5,942.86	45.76	175.70	-104.18	800.69	9,731.65	7,912.02	7,713.10	198.92	39.776	
7,100.00	6,076.66	5,942.94	5,942.66	46.25	175.69	-104.15	800.69	9,731.65	7,892.04	7,693.13	198.91	39.677	
7,120.00	6,076.47	5,942.74	5,942.47	46.76	175.69	-104.11	800.69	9,731.65	7,872.05	7,673.15	198.90	39.578	
7,140.00	6,076.27	5,942.55	5,942.27	47.27	175.68	-104.08	800.69	9,731.65	7,852.07	7,653.18	198.89	39.480	
7,160.00	6,076.08	5,942.35	5,942.08	47.78	175.68	-104.04	800.69	9,731.65	7,832.09	7,633.20	198.88	39.381	
7,180.00	6,075.88	5,942.16	5,941.88	48.28	175.67	-104.01	800.69	9,731.65	7,812.10	7,613.23	198.87	39.282	
7,200.00	6,075.69	5,941.97	5,941.69	48.79	175.67	-103.98	800.69	9,731.65	7,792.12	7,593.26	198.86	39.183	
7,220.00	6,075.49	5,941.77	5,941.49	49.31	175.66	-103.94	800.69	9,731.65	7,772.13	7,573.28	198.85	39.085	
7,240.00	6,075.30	5,941.58	5,941.30	49.83	175.65	-103.91	800.69	9,731.65	7,752.15	7,553.31	198.84	38.986	
7,260.00	6,075.11	5,941.38	5,941.11	50.34	175.65	-103.87	800.69	9,731.65	7,732.17	7,533.33	198.84	38.887	
7,280.00	6,074.91	5,941.19	5,940.91	50.86	175.64	-103.84	800.69	9,731.65	7,712.18	7,513.36	198.83	38.788	
7,300.00	6,074.72	5,940.99	5,940.72	51.38	175.64	-103.80	800.69	9,731.65	7,692.20	7,493.38	198.82	38.690	
7,320.00	6,074.52	5,940.80	5,940.52	51.90	175.63	-103.77	800.69	9,731.65	7,672.22	7,473.41	198.81	38.591	
7,340.00	6,074.33	5,940.60	5,940.33	52.43	175.62	-103.73	800.69	9,731.65	7,652.23	7,453.43	198.80	38.492	
7,360.00	6,074.13	5,940.41	5,940.13	52.96	175.62	-103.70	800.69	9,731.65	7,632.25	7,433.46	198.79	38.393	
7,380.00	6,073.94	5,940.21	5,939.94	53.48	175.61	-103.67	800.69	9,731.65	7,612.27	7,413.48	198.78	38.294	
7,400.00	6,073.74	5,940.02	5,939.74	54.01	175.61	-103.63	800.69	9,731.65	7,592.28	7,393.51	198.78	38.195	
7,420.00	6,073.55	5,939.82	5,939.55	54.54	175.60	-103.60	800.69	9,731.65	7,572.30	7,373.53	198.77	38.096	
7,440.00	6,073.35	5,939.63	5,939.35	55.07	175.59	-103.56	800.69	9,731.65	7,552.32	7,353.56	198.76	37.997	
7,460.00	6,073.16	5,939.43	5,939.16	55.61	175.59	-103.53	800.69	9,731.65	7,532.34	7,333.59	198.75	37.899	
7,480.00	6,072.96	5,939.24	5,938.96	56.14	175.58	-103.49	800.69	9,731.65	7,512.35	7,313.61	198.74	37.800	
7,500.00	6,072.77	5,939.04	5,938.77	56.67	175.58	-103.46	800.69	9,731.65	7,492.37	7,293.64	198.73	37.701	
7,520.00	6,072.57	5,938.85	5,938.57	57.21	175.57	-103.42	800.69	9,731.65	7,472.39	7,273.66	198.73	37.602	
7,540.00	6,072.38	5,938.65	5,938.38	57.75	175.56	-103.39	800.69	9,731.65	7,452.41	7,253.69	198.72	37.503	
7,560.00	6,072.18	5,938.46	5,938.18	58.29	175.56	-103.35	800.69	9,731.65	7,432.42	7,233.71	198.71	37.404	
7,580.00	6,071.99	5,938.26	5,937.99	58.83	175.55	-103.32	800.69	9,731.65	7,412.44	7,213.74	198.70	37.305	
7,600.00	6,071.79	5,938.07	5,937.79	59.37	175.55	-103.28	800.69	9,731.65	7,392.46	7,193.77	198.69	37.206	
7,620.00	6,071.60	5,937.87	5,937.60	59.92	175.54	-103.25	800.69	9,731.65	7,372.48	7,173.79	198.68	37.106	
7,640.00	6,071.40	5,937.68	5,937.40	60.46	175.54	-103.21	800.69	9,731.65	7,352.49	7,153.82	198.68	37.007	
7,660.00	6,071.21	5,937.48	5,937.21	61.01	175.53	-103.18	800.69	9,731.65	7,332.51	7,133.84	198.67	36.908	
7,680.00	6,071.01	5,937.29	5,937.01	61.55	175.52	-103.15	800.69	9,731.65	7,312.53	7,113.87	198.66	36.809	
7,700.00	6,070.82	5,937.09	5,936.82	62.10	175.52	-103.11	800.69	9,731.65	7,292.55	7,093.90	198.65	36.710	
7,720.00	6,070.62	5,936.90	5,936.62	62.65	175.51	-103.08	800.69	9,731.65	7,272.57	7,073.92	198.65	36.611	
7,740.00	6,070.43	5,936.71	5,936.43	63.19	175.51	-103.04	800.69	9,731.65	7,252.59	7,053.95	198.64	36.512	
7,760.00	6,070.23	5,936.51	5,936.23	63.74	175.50	-103.01	800.69	9,731.65	7,232.61	7,033.98	198.63	36.412	
7,780.00	6,070.04	5,936.32	5,936.04	64.29	175.49	-102.97	800.69	9,731.65	7,212.62	7,014.00	198.62	36.313	
7,800.00	6,069.85	5,936.12	5,935.85	64.84	175.49	-102.94	800.69	9,731.65	7,192.64	6,994.03	198.61	36.214	
7,820.00	6,069.65	5,935.93	5,935.65	65.40	175.48	-102.90	800.69	9,731.65	7,172.66	6,974.05	198.61	36.115	
7,840.00	6,069.46	5,935.73	5,935.46	65.95	175.48	-102.87	800.69	9,731.65	7,152.68	6,954.08	198.60	36.016	
7,860.00	6,069.26	5,935.54	5,935.26	66.51	175.47	-102.83	800.69	9,731.65	7,132.70	6,934.11	198.59	35.916	
7,880.00	6,069.07	5,935.34	5,935.07	67.06	175.46	-102.80	800.69	9,731.65	7,112.72	6,914.13	198.58	35.817	
7,900.00	6,068.87	5,935.15	5,934.87	67.61	175.46	-102.76	800.69	9,731.65	7,092.74	6,894.16	198.58	35.718	
7,920.00	6,068.68	5,934.95	5,934.68	68.17	175.45	-102.73	800.69	9,731.65	7,072.76	6,874.19	198.57	35.618	
7,940.00	6,068.48	5,934.76	5,934.48	68.73	175.45	-102.69	800.69	9,731.65	7,052.78	6,854.21	198.56	35.519	
7,960.00	6,068.29	5,934.56	5,934.29	69.29	175.44	-102.66	800.69	9,731.65	7,032.80	6,834.24	198.56	35.420	
7,980.00	6,068.09	5,934.37	5,934.09	69.84	175.43	-102.62	800.69	9,731.65	7,012.82	6,814.27	198.55	35.320	
8,000.00	6,067.90	5,934.17	5,933.90	70.40	175.43	-102.59	800.69	9,731.65	6,992.84	6,794.30	198.54	35.221	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,020.00	6,067.70	5,933.98	5,933.70	70.96	175.42	-102.55	800.69	9,731.65	6,972.86	6,774.32	198.53	35.122	
8,040.00	6,067.51	5,933.78	5,933.51	71.52	175.42	-102.52	800.69	9,731.65	6,952.88	6,754.35	198.53	35.022	
8,060.00	6,067.31	5,933.59	5,933.31	72.08	175.41	-102.48	800.69	9,731.65	6,932.90	6,734.38	198.52	34.923	
8,080.00	6,067.12	5,933.39	5,933.12	72.64	175.40	-102.45	800.69	9,731.65	6,912.92	6,714.40	198.51	34.823	
8,100.00	6,066.92	5,933.20	5,932.92	73.20	175.40	-102.41	800.69	9,731.65	6,892.94	6,694.43	198.51	34.724	
8,120.00	6,066.73	5,933.00	5,932.73	73.77	175.39	-102.38	800.69	9,731.65	6,872.96	6,674.46	198.50	34.624	
8,140.00	6,066.53	5,932.81	5,932.53	74.33	175.39	-102.34	800.69	9,731.65	6,852.98	6,654.49	198.49	34.525	
8,160.00	6,066.34	5,932.61	5,932.34	74.90	175.38	-102.31	800.69	9,731.65	6,833.00	6,634.51	198.49	34.425	
8,180.00	6,066.14	5,932.42	5,932.14	75.46	175.38	-102.27	800.69	9,731.65	6,813.02	6,614.54	198.48	34.326	
8,200.00	6,065.95	5,932.22	5,931.95	76.02	175.37	-102.24	800.69	9,731.65	6,793.04	6,594.57	198.47	34.226	
8,220.00	6,065.75	5,932.03	5,931.75	76.59	175.36	-102.20	800.69	9,731.65	6,773.06	6,574.59	198.47	34.127	
8,240.00	6,065.56	5,931.83	5,931.56	77.16	175.36	-102.17	800.69	9,731.65	6,753.08	6,554.62	198.46	34.027	
8,260.00	6,065.36	5,931.64	5,931.36	77.72	175.35	-102.13	800.69	9,731.65	6,733.11	6,534.65	198.46	33.927	
8,280.00	6,065.17	5,931.44	5,931.17	78.29	175.35	-102.10	800.69	9,731.65	6,713.13	6,514.68	198.45	33.828	
8,300.00	6,064.97	5,931.25	5,930.97	78.85	175.34	-102.06	800.69	9,731.65	6,693.15	6,494.71	198.44	33.728	
8,320.00	6,064.78	5,931.06	5,930.78	79.42	175.33	-102.03	800.69	9,731.65	6,673.17	6,474.73	198.44	33.629	
8,340.00	6,064.59	5,930.86	5,930.59	79.99	175.33	-101.99	800.69	9,731.65	6,653.19	6,454.76	198.43	33.529	
8,360.00	6,064.39	5,930.67	5,930.39	80.56	175.32	-101.96	800.69	9,731.65	6,633.21	6,434.79	198.43	33.429	
8,380.00	6,064.20	5,930.47	5,930.20	81.13	175.32	-101.92	800.69	9,731.65	6,613.24	6,414.82	198.42	33.329	
8,400.00	6,064.00	5,930.28	5,930.00	81.70	175.31	-101.89	800.69	9,731.65	6,593.26	6,394.85	198.41	33.230	
8,420.00	6,063.81	5,930.08	5,929.81	82.27	175.30	-101.85	800.69	9,731.65	6,573.28	6,374.87	198.41	33.130	
8,440.00	6,063.61	5,929.89	5,929.61	82.84	175.30	-101.82	800.69	9,731.65	6,553.30	6,354.90	198.40	33.030	
8,460.00	6,063.42	5,929.69	5,929.42	83.41	175.29	-101.78	800.69	9,731.65	6,533.33	6,334.93	198.40	32.930	
8,480.00	6,063.22	5,929.50	5,929.22	83.98	175.29	-101.75	800.69	9,731.65	6,513.35	6,314.96	198.39	32.831	
8,500.00	6,063.03	5,929.30	5,929.03	84.55	175.28	-101.71	800.69	9,731.65	6,493.37	6,294.99	198.39	32.731	
8,520.00	6,062.83	5,929.11	5,928.83	85.12	175.27	-101.68	800.69	9,731.65	6,473.40	6,275.01	198.38	32.631	
8,540.00	6,062.64	5,928.91	5,928.64	85.69	175.27	-101.64	800.69	9,731.65	6,453.42	6,255.04	198.38	32.531	
8,560.00	6,062.44	5,928.72	5,928.44	86.27	175.26	-101.61	800.69	9,731.65	6,433.44	6,235.07	198.37	32.431	
8,580.00	6,062.25	5,928.52	5,928.25	86.84	175.26	-101.57	800.69	9,731.65	6,413.47	6,215.10	198.37	32.331	
8,600.00	6,062.05	5,928.33	5,928.05	87.41	175.25	-101.54	800.69	9,731.65	6,393.49	6,195.13	198.36	32.232	
8,620.00	6,061.86	5,928.13	5,927.86	87.99	175.25	-101.50	800.69	9,731.65	6,373.51	6,175.16	198.36	32.132	
8,640.00	6,061.66	5,927.94	5,927.66	88.56	175.24	-101.47	800.69	9,731.65	6,353.54	6,155.19	198.35	32.032	
8,660.00	6,061.47	5,927.74	5,927.47	89.13	175.23	-101.43	800.69	9,731.65	6,333.56	6,135.21	198.35	31.932	
8,680.00	6,061.27	5,927.55	5,927.27	89.71	175.23	-101.40	800.69	9,731.65	6,313.59	6,115.24	198.34	31.832	
8,700.00	6,061.08	5,927.35	5,927.08	90.28	175.22	-101.36	800.69	9,731.65	6,293.61	6,095.27	198.34	31.732	
8,720.00	6,060.88	5,927.16	5,926.88	90.86	175.22	-101.33	800.69	9,731.65	6,273.63	6,075.30	198.33	31.632	
8,740.00	6,060.69	5,926.96	5,926.69	91.43	175.21	-101.29	800.69	9,731.65	6,253.66	6,055.33	198.33	31.532	
8,760.00	6,060.49	5,926.77	5,926.49	92.01	175.20	-101.26	800.69	9,731.65	6,233.68	6,035.36	198.32	31.432	
8,780.00	6,060.30	5,926.57	5,926.30	92.59	175.20	-101.22	800.69	9,731.65	6,213.71	6,015.39	198.32	31.332	
8,800.00	6,060.10	5,926.38	5,926.10	93.16	175.19	-101.19	800.69	9,731.65	6,193.73	5,995.42	198.32	31.232	
8,820.00	6,059.91	5,926.18	5,925.91	93.74	175.19	-101.15	800.69	9,731.65	6,173.76	5,975.45	198.31	31.132	
8,840.00	6,059.71	5,925.99	5,925.71	94.32	175.18	-101.11	800.69	9,731.65	6,153.78	5,955.48	198.31	31.031	
8,860.00	6,059.52	5,925.80	5,925.52	94.89	175.17	-101.08	800.69	9,731.65	6,133.81	5,935.51	198.30	30.931	
8,880.00	6,059.33	5,925.60	5,925.33	95.47	175.17	-101.04	800.69	9,731.65	6,113.84	5,915.53	198.30	30.831	
8,900.00	6,059.13	5,925.41	5,925.13	96.05	175.16	-101.01	800.69	9,731.65	6,093.86	5,895.56	198.30	30.731	
8,920.00	6,058.94	5,925.21	5,924.94	96.63	175.16	-100.97	800.69	9,731.65	6,073.89	5,875.59	198.29	30.631	
8,940.00	6,058.74	5,925.02	5,924.74	97.20	175.15	-100.94	800.69	9,731.65	6,053.91	5,855.62	198.29	30.531	
8,960.00	6,058.55	5,924.82	5,924.55	97.78	175.14	-100.90	800.69	9,731.65	6,033.94	5,835.65	198.29	30.430	
8,980.00	6,058.35	5,924.63	5,924.35	98.36	175.14	-100.87	800.69	9,731.65	6,013.97	5,815.68	198.28	30.330	
9,000.00	6,058.16	5,924.43	5,924.16	98.94	175.13	-100.83	800.69	9,731.65	5,993.99	5,795.71	198.28	30.230	
9,020.00	6,057.96	5,924.24	5,923.96	99.52	175.13	-100.80	800.69	9,731.65	5,974.02	5,775.74	198.28	30.130	
9,040.00	6,057.77	5,924.04	5,923.77	100.10	175.12	-100.76	800.69	9,731.65	5,954.05	5,755.77	198.27	30.029	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,060.00	6,057.57	5,923.85	5,923.57	100.68	175.12	-100.73	800.69	9,731.65	5,934.07	5,735.80	198.27	29.929	
9,080.00	6,057.38	5,923.65	5,923.38	101.26	175.11	-100.69	800.69	9,731.65	5,914.10	5,715.83	198.27	29.829	
9,100.00	6,057.18	5,923.46	5,923.18	101.84	175.10	-100.66	800.69	9,731.65	5,894.13	5,695.86	198.27	29.728	
9,120.00	6,056.99	5,923.26	5,922.99	102.42	175.10	-100.62	800.69	9,731.65	5,874.16	5,675.89	198.26	29.628	
9,140.00	6,056.79	5,923.07	5,922.79	103.00	175.09	-100.58	800.69	9,731.65	5,854.19	5,655.92	198.26	29.527	
9,160.00	6,056.60	5,922.87	5,922.60	103.58	175.09	-100.55	800.69	9,731.65	5,834.21	5,635.95	198.26	29.427	
9,180.00	6,056.40	5,922.68	5,922.40	104.16	175.08	-100.51	800.69	9,731.65	5,814.24	5,615.98	198.26	29.327	
9,200.00	6,056.21	5,922.48	5,922.21	104.74	175.07	-100.48	800.69	9,731.65	5,794.27	5,596.01	198.26	29.226	
9,220.00	6,056.01	5,922.29	5,922.01	105.32	175.07	-100.44	800.69	9,731.65	5,774.30	5,576.04	198.25	29.126	
9,240.00	6,055.82	5,922.09	5,921.82	105.90	175.06	-100.41	800.69	9,731.65	5,754.33	5,556.07	198.25	29.025	
9,260.00	6,055.62	5,921.90	5,921.62	106.49	175.06	-100.37	800.69	9,731.65	5,734.36	5,536.11	198.25	28.925	
9,280.00	6,055.43	5,921.70	5,921.43	107.07	175.05	-100.34	800.69	9,731.65	5,714.39	5,516.14	198.25	28.824	
9,300.00	6,055.23	5,921.51	5,921.23	107.65	175.04	-100.30	800.69	9,731.65	5,694.42	5,496.17	198.25	28.724	
9,320.00	6,055.04	5,921.31	5,921.04	108.23	175.04	-100.27	800.69	9,731.65	5,674.45	5,476.20	198.25	28.623	
9,340.00	6,054.84	5,921.12	5,920.84	108.81	175.03	-100.23	800.69	9,731.65	5,654.48	5,456.23	198.25	28.522	
9,360.00	6,054.65	5,920.92	5,920.65	109.40	175.03	-100.20	800.69	9,731.65	5,634.51	5,436.26	198.25	28.422	
9,380.00	6,054.45	5,920.73	5,920.45	109.98	175.02	-100.16	800.69	9,731.65	5,614.54	5,416.29	198.24	28.321	
9,400.00	6,054.26	5,920.54	5,920.26	110.56	175.01	-100.12	800.69	9,731.65	5,594.57	5,396.32	198.24	28.221	
9,420.00	6,054.07	5,920.34	5,920.07	111.14	175.01	-100.09	800.69	9,731.65	5,574.60	5,376.35	198.24	28.120	
9,440.00	6,053.87	5,920.15	5,919.87	111.73	175.00	-100.05	800.69	9,731.65	5,554.63	5,356.38	198.24	28.019	
9,460.00	6,053.68	5,919.95	5,919.68	112.31	175.00	-100.02	800.69	9,731.65	5,534.66	5,336.42	198.24	27.918	
9,480.00	6,053.48	5,919.76	5,919.48	112.89	174.99	-99.98	800.69	9,731.65	5,514.69	5,316.45	198.24	27.818	
9,500.00	6,053.29	5,919.56	5,919.29	113.48	174.98	-99.95	800.69	9,731.65	5,494.72	5,296.48	198.24	27.717	
9,520.00	6,053.09	5,919.37	5,919.09	114.06	174.98	-99.91	800.69	9,731.65	5,474.75	5,276.51	198.24	27.616	
9,540.00	6,052.90	5,919.17	5,918.90	114.65	174.97	-99.88	800.69	9,731.65	5,454.79	5,256.54	198.25	27.515	
9,560.00	6,052.70	5,918.98	5,918.70	115.23	174.97	-99.84	800.69	9,731.65	5,434.82	5,236.57	198.25	27.415	
9,580.00	6,052.51	5,918.78	5,918.51	115.81	174.96	-99.80	800.69	9,731.65	5,414.85	5,216.60	198.25	27.314	
9,600.00	6,052.31	5,918.59	5,918.31	116.40	174.96	-99.77	800.69	9,731.65	5,394.88	5,196.64	198.25	27.213	
9,620.00	6,052.12	5,918.39	5,918.12	116.98	174.95	-99.73	800.69	9,731.65	5,374.92	5,176.67	198.25	27.112	
9,640.00	6,051.92	5,918.20	5,917.92	117.57	174.94	-99.70	800.69	9,731.65	5,354.95	5,156.70	198.25	27.011	
9,660.00	6,051.73	5,918.00	5,917.73	118.15	174.94	-99.66	800.69	9,731.65	5,334.98	5,136.73	198.25	26.910	
9,680.00	6,051.53	5,917.81	5,917.53	118.74	174.93	-99.63	800.69	9,731.65	5,315.02	5,116.76	198.25	26.809	
9,700.00	6,051.34	5,917.61	5,917.34	119.32	174.93	-99.59	800.69	9,731.65	5,295.05	5,096.80	198.26	26.708	
9,720.00	6,051.14	5,917.42	5,917.14	119.91	174.92	-99.56	800.69	9,731.65	5,275.09	5,076.83	198.26	26.607	
9,740.00	6,050.95	5,917.22	5,916.95	120.49	174.91	-99.52	800.69	9,731.65	5,255.12	5,056.86	198.26	26.506	
9,760.00	6,050.75	5,917.03	5,916.75	121.08	174.91	-99.48	800.69	9,731.65	5,235.15	5,036.89	198.26	26.405	
9,780.00	6,050.56	5,916.83	5,916.56	121.67	174.90	-99.45	800.69	9,731.65	5,215.19	5,016.92	198.27	26.304	
9,800.00	6,050.36	5,916.64	5,916.36	122.25	174.90	-99.41	800.69	9,731.65	5,195.22	4,996.96	198.27	26.203	
9,820.00	6,050.17	5,916.44	5,916.17	122.84	174.89	-99.38	800.69	9,731.65	5,175.26	4,976.99	198.27	26.102	
9,840.00	6,049.97	5,916.25	5,915.97	123.42	174.88	-99.34	800.69	9,731.65	5,155.30	4,957.02	198.28	26.001	
9,860.00	6,049.78	5,916.05	5,915.78	124.01	174.88	-99.31	800.69	9,731.65	5,135.33	4,937.05	198.28	25.899	
9,880.00	6,049.58	5,915.86	5,915.58	124.60	174.87	-99.27	800.69	9,731.65	5,115.37	4,917.09	198.28	25.798	
9,900.00	6,049.39	5,915.66	5,915.39	125.18	174.87	-99.23	800.69	9,731.65	5,095.41	4,897.12	198.29	25.697	
9,920.00	6,049.19	5,915.47	5,915.19	125.77	174.86	-99.20	800.69	9,731.65	5,075.44	4,877.15	198.29	25.596	
9,940.00	6,049.00	5,915.28	5,915.00	126.35	174.85	-99.16	800.69	9,731.65	5,055.48	4,857.18	198.30	25.495	
9,960.00	6,048.80	5,915.08	5,914.80	126.94	174.85	-99.13	800.69	9,731.65	5,035.52	4,837.22	198.30	25.393	
9,980.00	6,048.61	5,914.89	5,914.61	127.53	174.84	-99.09	800.69	9,731.65	5,015.55	4,817.25	198.31	25.292	
10,000.00	6,048.42	5,914.69	5,914.42	128.11	174.84	-99.06	800.69	9,731.65	4,995.59	4,797.28	198.31	25.191	
10,020.00	6,048.22	5,914.50	5,914.22	128.70	174.83	-99.02	800.69	9,731.65	4,975.63	4,777.31	198.32	25.089	
10,040.00	6,048.03	5,914.30	5,914.03	129.29	174.83	-98.98	800.69	9,731.65	4,955.67	4,757.35	198.32	24.988	
10,060.00	6,047.83	5,914.11	5,913.83	129.88	174.82	-98.95	800.69	9,731.65	4,935.71	4,737.38	198.33	24.886	
10,080.00	6,047.64	5,913.91	5,913.64	130.46	174.81	-98.91	800.69	9,731.65	4,915.75	4,717.41	198.34	24.785	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.00	6,047.44	5,913.72	5,913.44	131.05	174.81	-98.88	800.69	9,731.65	4,895.79	4,697.45	198.34	24.684	
10,120.00	6,047.25	5,913.52	5,913.25	131.64	174.80	-98.84	800.69	9,731.65	4,875.83	4,677.48	198.35	24.582	
10,140.00	6,047.05	5,913.33	5,913.05	132.23	174.80	-98.81	800.69	9,731.65	4,855.87	4,657.51	198.36	24.481	
10,160.00	6,046.86	5,913.13	5,912.86	132.81	174.79	-98.77	800.69	9,731.65	4,835.91	4,637.54	198.36	24.379	
10,180.00	6,046.66	5,912.94	5,912.66	133.40	174.78	-98.73	800.69	9,731.65	4,815.95	4,617.58	198.37	24.277	
10,200.00	6,046.47	5,912.74	5,912.47	133.99	174.78	-98.70	800.69	9,731.65	4,795.99	4,597.61	198.38	24.176	
10,220.00	6,046.27	5,912.55	5,912.27	134.58	174.77	-98.66	800.69	9,731.65	4,776.03	4,577.64	198.39	24.074	
10,240.00	6,046.08	5,912.35	5,912.08	135.17	174.77	-98.63	800.69	9,731.65	4,756.07	4,557.68	198.40	23.973	
10,260.00	6,045.88	5,912.16	5,911.88	135.75	174.76	-98.59	800.69	9,731.65	4,736.12	4,537.71	198.40	23.871	
10,280.00	6,045.69	5,911.96	5,911.69	136.34	174.75	-98.56	800.69	9,731.65	4,716.16	4,517.74	198.41	23.769	
10,300.00	6,045.49	5,911.77	5,911.49	136.93	174.75	-98.52	800.69	9,731.65	4,696.20	4,497.78	198.42	23.668	
10,320.00	6,045.30	5,911.57	5,911.30	137.52	174.74	-98.48	800.69	9,731.65	4,676.24	4,477.81	198.43	23.566	
10,340.00	6,045.10	5,911.38	5,911.10	138.11	174.74	-98.45	800.69	9,731.65	4,656.29	4,457.84	198.44	23.464	
10,360.00	6,044.91	5,911.18	5,910.91	138.70	174.73	-98.41	800.69	9,731.65	4,636.33	4,437.88	198.45	23.362	
10,380.00	6,044.71	5,910.99	5,910.71	139.28	174.72	-98.38	800.69	9,731.65	4,616.38	4,417.91	198.47	23.260	
10,400.00	6,044.52	5,910.79	5,910.52	139.87	174.72	-98.34	800.69	9,731.65	4,596.42	4,397.94	198.48	23.158	
10,420.00	6,044.32	5,910.60	5,910.32	140.46	174.71	-98.30	800.69	9,731.65	4,576.47	4,377.98	198.49	23.057	
10,440.00	6,044.13	5,910.40	5,910.13	141.05	174.71	-98.27	800.69	9,731.65	4,556.51	4,358.01	198.50	22.955	
10,460.00	6,043.93	5,910.21	5,909.93	141.64	174.70	-98.23	800.69	9,731.65	4,536.56	4,338.04	198.51	22.853	
10,480.00	6,043.74	5,910.01	5,909.74	142.23	174.69	-98.20	800.69	9,731.65	4,516.60	4,318.08	198.53	22.751	
10,500.00	6,043.54	5,909.82	5,909.54	142.82	174.69	-98.16	800.69	9,731.65	4,496.65	4,298.11	198.54	22.649	
10,520.00	6,043.35	5,909.63	5,909.35	143.41	174.68	-98.12	800.69	9,731.65	4,476.70	4,278.14	198.55	22.547	
10,540.00	6,043.16	5,909.43	5,909.16	144.00	174.68	-98.09	800.69	9,731.65	4,456.75	4,258.18	198.57	22.445	
10,560.00	6,042.96	5,909.24	5,908.96	144.59	174.67	-98.05	800.69	9,731.65	4,436.79	4,238.21	198.58	22.342	
10,580.00	6,042.77	5,909.04	5,908.77	145.18	174.67	-98.02	800.69	9,731.65	4,416.84	4,218.25	198.60	22.240	
10,600.00	6,042.57	5,908.85	5,908.57	145.77	174.66	-97.98	800.69	9,731.65	4,396.89	4,198.28	198.61	22.138	
10,620.00	6,042.38	5,908.65	5,908.38	146.36	174.65	-97.95	800.69	9,731.65	4,376.94	4,178.31	198.63	22.036	
10,640.00	6,042.18	5,908.46	5,908.18	146.95	174.65	-97.91	800.69	9,731.65	4,356.99	4,158.35	198.64	21.934	
10,660.00	6,041.99	5,908.26	5,907.99	147.54	174.64	-97.87	800.69	9,731.65	4,337.04	4,138.38	198.66	21.831	
10,680.00	6,041.79	5,908.07	5,907.79	148.13	174.64	-97.84	800.69	9,731.65	4,317.09	4,118.41	198.68	21.729	
10,700.00	6,041.60	5,907.87	5,907.60	148.71	174.63	-97.80	800.69	9,731.65	4,297.14	4,098.45	198.70	21.627	
10,720.00	6,041.40	5,907.68	5,907.40	149.30	174.62	-97.77	800.69	9,731.65	4,277.19	4,078.48	198.71	21.524	
10,740.00	6,041.21	5,907.48	5,907.21	149.90	174.62	-97.73	800.69	9,731.65	4,257.24	4,058.51	198.73	21.422	
10,760.00	6,041.01	5,907.29	5,907.01	150.49	174.61	-97.69	800.69	9,731.65	4,237.30	4,038.55	198.75	21.320	
10,780.00	6,040.82	5,907.09	5,906.82	151.08	174.61	-97.66	800.69	9,731.65	4,217.35	4,018.58	198.77	21.217	
10,800.00	6,040.62	5,906.90	5,906.62	151.67	174.60	-97.62	800.69	9,731.65	4,197.40	3,998.61	198.79	21.115	
10,820.00	6,040.43	5,906.70	5,906.43	152.26	174.59	-97.59	800.69	9,731.65	4,177.46	3,978.65	198.81	21.012	
10,840.00	6,040.23	5,906.51	5,906.23	152.85	174.59	-97.55	800.69	9,731.65	4,157.51	3,958.68	198.83	20.909	
10,860.00	6,040.04	5,906.31	5,906.04	153.44	174.58	-97.51	800.69	9,731.65	4,137.57	3,938.71	198.86	20.807	
10,880.00	6,039.84	5,906.12	5,905.84	154.03	174.58	-97.48	800.69	9,731.65	4,117.62	3,918.74	198.88	20.704	
10,900.00	6,039.65	5,905.92	5,905.65	154.62	174.57	-97.44	800.69	9,731.65	4,097.68	3,898.78	198.90	20.602	
10,920.00	6,039.45	5,905.73	5,905.45	155.21	174.56	-97.41	800.69	9,731.65	4,077.74	3,878.81	198.93	20.499	
10,940.00	6,039.26	5,905.53	5,905.26	155.80	174.56	-97.37	800.69	9,731.65	4,057.79	3,858.84	198.95	20.396	
10,960.00	6,039.06	5,905.34	5,905.06	156.39	174.55	-97.33	800.69	9,731.65	4,037.85	3,838.88	198.97	20.293	
10,980.00	6,038.87	5,905.14	5,904.87	156.98	174.55	-97.30	800.69	9,731.65	4,017.91	3,818.91	199.00	20.190	
11,000.00	6,038.67	5,904.95	5,904.67	157.57	174.54	-97.26	800.69	9,731.65	3,997.97	3,798.94	199.03	20.088	
11,020.00	6,038.48	5,904.75	5,904.48	158.16	174.54	-97.23	800.69	9,731.65	3,978.03	3,778.97	199.05	19.985	
11,040.00	6,038.28	5,904.56	5,904.28	158.75	174.53	-97.19	800.69	9,731.65	3,958.09	3,759.01	199.08	19.882	
11,060.00	6,038.09	5,904.37	5,904.09	159.34	174.52	-97.15	800.69	9,731.65	3,938.15	3,739.04	199.11	19.779	
11,080.00	6,037.90	5,904.17	5,903.90	159.94	174.52	-97.12	800.69	9,731.65	3,918.21	3,719.07	199.14	19.676	
11,100.00	6,037.70	5,903.98	5,903.70	160.53	174.51	-97.08	800.69	9,731.65	3,898.27	3,699.10	199.17	19.573	
11,120.00	6,037.51	5,903.78	5,903.51	161.12	174.51	-97.05	800.69	9,731.65	3,878.33	3,679.13	199.20	19.470	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,140.00	6,037.31	5,903.59	5,903.31	161.71	174.50	-97.01	800.69	9,731.65	3,858.40	3,659.17	199.23	19.366	
11,160.00	6,037.12	5,903.39	5,903.12	162.30	174.49	-96.97	800.69	9,731.65	3,838.46	3,639.20	199.26	19.263	
11,180.00	6,036.92	5,903.20	5,902.92	162.89	174.49	-96.94	800.69	9,731.65	3,818.52	3,619.23	199.30	19.160	
11,200.00	6,036.73	5,903.00	5,902.73	163.48	174.48	-96.90	800.69	9,731.65	3,798.59	3,599.26	199.33	19.057	
11,220.00	6,036.53	5,902.81	5,902.53	164.07	174.48	-96.86	800.69	9,731.65	3,778.66	3,579.29	199.36	18.954	
11,240.00	6,036.34	5,902.61	5,902.34	164.67	174.47	-96.83	800.69	9,731.65	3,758.72	3,559.32	199.40	18.850	
11,260.00	6,036.14	5,902.42	5,902.14	165.26	174.46	-96.79	800.69	9,731.65	3,738.79	3,539.35	199.44	18.747	
11,280.00	6,035.95	5,902.22	5,901.95	165.85	174.46	-96.76	800.69	9,731.65	3,718.86	3,519.38	199.47	18.643	
11,300.00	6,035.75	5,902.03	5,901.75	166.44	174.45	-96.72	800.69	9,731.65	3,698.93	3,499.41	199.51	18.540	
11,320.00	6,035.56	5,901.83	5,901.56	167.03	174.45	-96.68	800.69	9,731.65	3,678.99	3,479.44	199.55	18.436	
11,340.00	6,035.36	5,901.64	5,901.36	167.62	174.44	-96.65	800.69	9,731.65	3,659.06	3,459.47	199.59	18.333	
11,360.00	6,035.17	5,901.44	5,901.17	168.22	174.43	-96.61	800.69	9,731.65	3,639.14	3,439.50	199.63	18.229	
11,380.00	6,034.97	5,901.25	5,900.97	168.81	174.43	-96.58	800.69	9,731.65	3,619.21	3,419.53	199.67	18.126	
11,400.00	6,034.78	5,901.05	5,900.78	169.40	174.42	-96.54	800.69	9,731.65	3,599.28	3,399.56	199.72	18.022	
11,420.00	6,034.58	5,900.86	5,900.58	169.99	174.42	-96.50	800.69	9,731.65	3,579.35	3,379.59	199.76	17.918	
11,440.00	6,034.39	5,900.66	5,900.39	170.58	174.41	-96.47	800.69	9,731.65	3,559.43	3,359.62	199.80	17.815	
11,460.00	6,034.19	5,900.47	5,900.19	171.18	174.41	-96.43	800.69	9,731.65	3,539.50	3,339.65	199.85	17.711	
11,480.00	6,034.00	5,900.27	5,900.00	171.77	174.40	-96.39	800.69	9,731.65	3,519.58	3,319.68	199.90	17.607	
11,500.00	6,033.80	5,900.08	5,899.80	172.36	174.39	-96.36	800.69	9,731.65	3,499.65	3,299.71	199.95	17.503	
11,520.00	6,033.61	5,899.88	5,899.61	172.95	174.39	-96.32	800.69	9,731.65	3,479.73	3,279.73	200.00	17.399	
11,540.00	6,033.41	5,899.69	5,899.41	173.55	174.38	-96.29	800.69	9,731.65	3,459.81	3,259.76	200.05	17.295	
11,560.00	6,033.22	5,899.49	5,899.22	174.14	174.38	-96.25	800.69	9,731.65	3,439.89	3,239.79	200.10	17.191	
11,580.00	6,033.02	5,899.30	5,899.02	174.73	174.37	-96.21	800.69	9,731.65	3,419.97	3,219.82	200.15	17.087	
11,600.00	6,032.83	5,899.11	5,898.83	175.32	174.36	-96.18	800.69	9,731.65	3,400.05	3,199.84	200.21	16.983	
11,620.00	6,032.64	5,898.91	5,898.64	175.91	174.36	-96.14	800.69	9,731.65	3,380.13	3,179.87	200.26	16.879	
11,640.00	6,032.44	5,898.72	5,898.44	176.51	174.35	-96.11	800.69	9,731.65	3,360.21	3,159.89	200.32	16.774	
11,660.00	6,032.25	5,898.52	5,898.25	177.10	174.35	-96.07	800.69	9,731.65	3,340.30	3,139.92	200.38	16.670	
11,680.00	6,032.05	5,898.33	5,898.05	177.69	174.34	-96.03	800.69	9,731.65	3,320.38	3,119.94	200.44	16.566	
11,700.00	6,031.86	5,898.13	5,897.86	178.28	174.33	-96.00	800.69	9,731.65	3,300.47	3,099.97	200.50	16.461	
11,720.00	6,031.66	5,897.94	5,897.66	178.88	174.33	-95.96	800.69	9,731.65	3,280.56	3,079.99	200.56	16.357	
11,740.00	6,031.47	5,897.74	5,897.47	179.47	174.32	-95.92	800.69	9,731.65	3,260.64	3,060.02	200.63	16.252	
11,760.00	6,031.27	5,897.55	5,897.27	180.06	174.32	-95.89	800.69	9,731.65	3,240.73	3,040.04	200.69	16.148	
11,780.00	6,031.08	5,897.35	5,897.08	180.65	174.31	-95.85	800.69	9,731.65	3,220.82	3,020.06	200.76	16.043	
11,800.00	6,030.88	5,897.16	5,896.88	181.25	174.30	-95.82	800.69	9,731.65	3,200.91	3,000.08	200.83	15.939	
11,820.00	6,030.69	5,896.96	5,896.69	181.84	174.30	-95.78	800.69	9,731.65	3,181.01	2,980.11	200.90	15.834	
11,840.00	6,030.49	5,896.77	5,896.49	182.43	174.29	-95.74	800.69	9,731.65	3,161.10	2,960.13	200.97	15.729	
11,860.00	6,030.30	5,896.57	5,896.30	183.03	174.29	-95.71	800.69	9,731.65	3,141.19	2,940.15	201.05	15.624	
11,880.00	6,030.10	5,896.38	5,896.10	183.62	174.28	-95.67	800.69	9,731.65	3,121.29	2,920.17	201.12	15.519	
11,900.00	6,029.91	5,896.18	5,895.91	184.21	174.27	-95.63	800.69	9,731.65	3,101.39	2,900.19	201.20	15.415	
11,920.00	6,029.71	5,895.99	5,895.71	184.80	174.27	-95.60	800.69	9,731.65	3,081.49	2,880.21	201.28	15.310	
11,940.00	6,029.52	5,895.79	5,895.52	185.40	174.26	-95.56	800.69	9,731.65	3,061.59	2,860.22	201.36	15.205	
11,960.00	6,029.32	5,895.60	5,895.32	185.99	174.26	-95.53	800.69	9,731.65	3,041.69	2,840.24	201.44	15.099	
11,980.00	6,029.13	5,895.40	5,895.13	186.58	174.25	-95.49	800.69	9,731.65	3,021.79	2,820.26	201.53	14.994	
12,000.00	6,028.93	5,895.21	5,894.93	187.18	174.25	-95.45	800.69	9,731.65	3,001.89	2,800.28	201.62	14.889	
12,020.00	6,028.74	5,895.01	5,894.74	187.77	174.24	-95.42	800.69	9,731.65	2,982.00	2,780.29	201.71	14.784	
12,040.00	6,028.54	5,894.82	5,894.54	188.36	174.23	-95.38	800.69	9,731.65	2,962.10	2,760.31	201.80	14.679	
12,060.00	6,028.35	5,894.62	5,894.35	188.96	174.23	-95.34	800.69	9,731.65	2,942.21	2,740.32	201.89	14.573	
12,080.00	6,028.15	5,894.43	5,894.15	189.55	174.22	-95.31	800.69	9,731.65	2,922.32	2,720.33	201.99	14.468	
12,100.00	6,027.96	5,894.23	5,893.96	190.14	174.22	-95.27	800.69	9,731.65	2,902.43	2,700.35	202.09	14.362	
12,120.00	6,027.76	5,894.04	5,893.76	190.74	174.21	-95.23	800.69	9,731.65	2,882.54	2,680.36	202.19	14.257	
12,140.00	6,027.57	5,893.85	5,893.57	191.33	174.20	-95.20	800.69	9,731.65	2,862.66	2,660.37	202.29	14.151	
12,160.00	6,027.37	5,893.65	5,893.37	191.92	174.20	-95.16	800.69	9,731.65	2,842.77	2,640.38	202.39	14.046	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,180.00	6,027.18	5,893.46	5,893.18	192.52	174.19	-95.13	800.69	9,731.65	2,822.89	2,620.39	202.50	13.940	
12,200.00	6,026.99	5,893.26	5,892.99	193.11	174.19	-95.09	800.69	9,731.65	2,803.01	2,600.39	202.61	13.834	
12,220.00	6,026.79	5,893.07	5,892.79	193.70	174.18	-95.05	800.69	9,731.65	2,783.13	2,580.40	202.73	13.728	
12,240.00	6,026.60	5,892.87	5,892.60	194.30	174.17	-95.02	800.69	9,731.65	2,763.25	2,560.41	202.84	13.623	
12,260.00	6,026.40	5,892.68	5,892.40	194.89	174.17	-94.98	800.69	9,731.65	2,743.37	2,540.41	202.96	13.517	
12,280.00	6,026.21	5,892.48	5,892.21	195.48	174.16	-94.94	800.69	9,731.65	2,723.50	2,520.42	203.08	13.411	
12,300.00	6,026.01	5,892.29	5,892.01	196.08	174.16	-94.91	800.69	9,731.65	2,703.63	2,500.42	203.21	13.305	
12,320.00	6,025.82	5,892.09	5,891.82	196.67	174.15	-94.87	800.69	9,731.65	2,683.76	2,480.42	203.34	13.199	
12,340.00	6,025.62	5,891.90	5,891.62	197.26	174.14	-94.84	800.69	9,731.65	2,663.89	2,460.42	203.47	13.092	
12,360.00	6,025.43	5,891.70	5,891.43	197.86	174.14	-94.80	800.69	9,731.65	2,644.02	2,440.42	203.60	12.986	
12,380.00	6,025.23	5,891.51	5,891.23	198.45	174.13	-94.76	800.69	9,731.65	2,624.16	2,420.42	203.74	12.880	
12,400.00	6,025.04	5,891.31	5,891.04	199.05	174.13	-94.73	800.69	9,731.65	2,604.29	2,400.41	203.88	12.774	
12,420.00	6,024.84	5,891.12	5,890.84	199.64	174.12	-94.69	800.69	9,731.65	2,584.43	2,380.41	204.02	12.667	
12,440.00	6,024.65	5,890.92	5,890.65	200.23	174.12	-94.65	800.69	9,731.65	2,564.57	2,360.40	204.17	12.561	
12,460.00	6,024.45	5,890.73	5,890.45	200.83	174.11	-94.62	800.69	9,731.65	2,544.72	2,340.40	204.32	12.454	
12,480.00	6,024.26	5,890.53	5,890.26	201.42	174.10	-94.58	800.69	9,731.65	2,524.86	2,320.39	204.48	12.348	
12,500.00	6,024.06	5,890.34	5,890.06	202.02	174.10	-94.54	800.69	9,731.65	2,505.01	2,300.38	204.64	12.241	
12,520.00	6,023.87	5,890.14	5,889.87	202.61	174.09	-94.51	800.69	9,731.65	2,485.16	2,280.36	204.80	12.135	
12,540.00	6,023.67	5,889.95	5,889.67	203.20	174.09	-94.47	800.69	9,731.65	2,465.32	2,260.35	204.97	12.028	
12,560.00	6,023.48	5,889.75	5,889.48	203.80	174.08	-94.43	800.69	9,731.65	2,445.47	2,240.33	205.14	11.921	
12,580.00	6,023.28	5,889.56	5,889.28	204.39	174.07	-94.40	800.69	9,731.65	2,425.63	2,220.32	205.31	11.814	
12,600.00	6,023.09	5,889.36	5,889.09	204.98	174.07	-94.36	800.69	9,731.65	2,405.79	2,200.30	205.49	11.707	
12,620.00	6,022.89	5,889.17	5,888.89	205.58	174.06	-94.33	800.69	9,731.65	2,385.95	2,180.28	205.68	11.601	
12,640.00	6,022.70	5,888.97	5,888.70	206.17	174.06	-94.29	800.69	9,731.65	2,366.12	2,160.25	205.87	11.494	
12,660.00	6,022.50	5,888.78	5,888.50	206.77	174.05	-94.25	800.69	9,731.65	2,346.29	2,140.23	206.06	11.386	
12,680.00	6,022.31	5,888.59	5,888.31	207.36	174.04	-94.22	800.69	9,731.65	2,326.46	2,120.20	206.26	11.279	
12,700.00	6,022.11	5,888.39	5,888.11	207.96	174.04	-94.18	800.69	9,731.65	2,306.64	2,100.18	206.46	11.172	
12,720.00	6,021.92	5,888.20	5,887.92	208.55	174.03	-94.14	800.69	9,731.65	2,286.81	2,080.14	206.67	11.065	
12,740.00	6,021.73	5,888.00	5,887.73	209.14	174.03	-94.11	800.69	9,731.65	2,266.99	2,060.11	206.88	10.958	
12,760.00	6,021.53	5,887.81	5,887.53	209.74	174.02	-94.07	800.69	9,731.65	2,247.18	2,040.08	207.10	10.851	
12,780.00	6,021.34	5,887.61	5,887.34	210.33	174.01	-94.03	800.69	9,731.65	2,227.37	2,020.04	207.33	10.743	
12,800.00	6,021.14	5,887.42	5,887.14	210.93	174.01	-94.00	800.69	9,731.65	2,207.56	2,000.00	207.56	10.636	
12,820.00	6,020.95	5,887.22	5,886.95	211.52	174.00	-93.96	800.69	9,731.65	2,187.75	1,979.96	207.79	10.528	
12,840.00	6,020.75	5,887.03	5,886.75	212.11	174.00	-93.92	800.69	9,731.65	2,167.95	1,959.91	208.04	10.421	
12,860.00	6,020.56	5,886.83	5,886.56	212.71	173.99	-93.89	800.69	9,731.65	2,148.15	1,939.86	208.29	10.313	
12,880.00	6,020.36	5,886.64	5,886.36	213.30	173.98	-93.85	800.69	9,731.65	2,128.35	1,919.81	208.54	10.206	
12,900.00	6,020.17	5,886.44	5,886.17	213.90	173.98	-93.82	800.69	9,731.65	2,108.56	1,899.76	208.80	10.098	
12,920.00	6,019.97	5,886.25	5,885.97	214.49	173.97	-93.78	800.69	9,731.65	2,088.78	1,879.70	209.07	9.991	
12,940.00	6,019.78	5,886.05	5,885.78	215.09	173.97	-93.74	800.69	9,731.65	2,068.99	1,859.64	209.35	9.883	
12,960.00	6,019.58	5,885.86	5,885.58	215.68	173.96	-93.71	800.69	9,731.65	2,049.22	1,839.58	209.63	9.775	
12,980.00	6,019.39	5,885.66	5,885.39	216.28	173.96	-93.67	800.69	9,731.65	2,029.44	1,819.52	209.92	9.668	
13,000.00	6,019.19	5,885.47	5,885.19	216.87	173.95	-93.63	800.69	9,731.65	2,009.67	1,799.45	210.22	9.560	
13,020.00	6,019.00	5,885.27	5,885.00	217.46	173.94	-93.60	800.69	9,731.65	1,989.90	1,779.38	210.53	9.452	
13,040.00	6,018.80	5,885.08	5,884.80	218.06	173.94	-93.56	800.69	9,731.65	1,970.14	1,759.30	210.84	9.344	
13,060.00	6,018.61	5,884.88	5,884.61	218.65	173.93	-93.52	800.69	9,731.65	1,950.39	1,739.22	211.17	9.236	
13,080.00	6,018.41	5,884.69	5,884.41	219.25	173.93	-93.49	800.69	9,731.65	1,930.64	1,719.14	211.50	9.128	
13,100.00	6,018.22	5,884.49	5,884.22	219.84	173.92	-93.45	800.69	9,731.65	1,910.89	1,699.05	211.84	9.020	
13,120.00	6,018.02	5,884.30	5,884.02	220.44	173.91	-93.41	800.69	9,731.65	1,891.15	1,678.96	212.19	8.913	
13,140.00	6,017.83	5,884.10	5,883.83	221.03	173.91	-93.38	800.69	9,731.65	1,871.42	1,658.87	212.55	8.805	
13,160.00	6,017.63	5,883.91	5,883.63	221.63	173.90	-93.34	800.69	9,731.65	1,851.69	1,638.77	212.92	8.697	
13,180.00	6,017.44	5,883.71	5,883.44	222.22	173.90	-93.30	800.69	9,731.65	1,831.96	1,618.66	213.30	8.589	
13,200.00	6,017.24	5,883.52	5,883.24	222.82	173.89	-93.27	800.69	9,731.65	1,812.25	1,598.56	213.69	8.481	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,220.00	6,017.05	5,883.32	5,883.05	223.41	173.88	-93.23	800.69	9,731.65	1,792.54	1,578.44	214.09	8.373	
13,240.00	6,016.85	5,883.13	5,882.85	224.01	173.88	-93.20	800.69	9,731.65	1,772.83	1,558.33	214.51	8.265	
13,260.00	6,016.66	5,882.94	5,882.66	224.60	173.87	-93.16	800.69	9,731.65	1,753.13	1,538.20	214.93	8.157	
13,280.00	6,016.47	5,882.74	5,882.47	225.20	173.87	-93.12	800.69	9,731.65	1,733.44	1,518.08	215.37	8.049	
13,300.00	6,016.27	5,882.55	5,882.27	225.79	173.86	-93.09	800.69	9,731.65	1,713.76	1,497.94	215.82	7.941	
13,320.00	6,016.08	5,882.35	5,882.08	226.38	173.85	-93.05	800.69	9,731.65	1,694.08	1,477.80	216.28	7.833	
13,340.00	6,015.88	5,882.16	5,881.88	226.98	173.85	-93.01	800.69	9,731.65	1,674.41	1,457.66	216.75	7.725	
13,360.00	6,015.69	5,881.96	5,881.69	227.57	173.84	-92.98	800.69	9,731.65	1,654.75	1,437.51	217.24	7.617	
13,380.00	6,015.49	5,881.77	5,881.49	228.17	173.84	-92.94	800.69	9,731.65	1,635.10	1,417.35	217.75	7.509	
13,400.00	6,015.30	5,881.57	5,881.30	228.76	173.83	-92.90	800.69	9,731.65	1,615.45	1,397.19	218.26	7.401	
13,420.00	6,015.10	5,881.38	5,881.10	229.36	173.83	-92.87	800.69	9,731.65	1,595.82	1,377.02	218.80	7.294	
13,440.00	6,014.91	5,881.18	5,880.91	229.95	173.82	-92.83	800.69	9,731.65	1,576.19	1,356.84	219.35	7.186	
13,460.00	6,014.71	5,880.99	5,880.71	230.55	173.81	-92.79	800.69	9,731.65	1,556.57	1,336.66	219.91	7.078	
13,480.00	6,014.52	5,880.79	5,880.52	231.14	173.81	-92.76	800.69	9,731.65	1,536.97	1,316.47	220.50	6.970	
13,500.00	6,014.32	5,880.60	5,880.32	231.74	173.80	-92.72	800.69	9,731.65	1,517.37	1,296.27	221.10	6.863	
13,520.00	6,014.13	5,880.40	5,880.13	232.33	173.80	-92.68	800.69	9,731.65	1,497.78	1,276.07	221.72	6.755	
13,540.00	6,013.93	5,880.21	5,879.93	232.93	173.79	-92.65	800.69	9,731.65	1,478.21	1,255.85	222.36	6.648	
13,560.00	6,013.74	5,880.01	5,879.74	233.52	173.78	-92.61	800.69	9,731.65	1,458.65	1,235.63	223.01	6.541	
13,580.00	6,013.54	5,879.82	5,879.54	234.12	173.78	-92.57	800.69	9,731.65	1,439.09	1,215.40	223.69	6.433	
13,600.00	6,013.35	5,879.62	5,879.35	234.71	173.77	-92.54	800.69	9,731.65	1,419.56	1,195.16	224.39	6.326	
13,620.00	6,013.15	5,879.43	5,879.15	235.31	173.77	-92.50	800.69	9,731.65	1,400.03	1,174.91	225.12	6.219	
13,640.00	6,012.96	5,879.23	5,878.96	235.90	173.76	-92.46	800.69	9,731.65	1,380.52	1,154.65	225.86	6.112	
13,660.00	6,012.76	5,879.04	5,878.76	236.50	173.75	-92.43	800.69	9,731.65	1,361.02	1,134.38	226.64	6.005	
13,680.00	6,012.57	5,878.84	5,878.57	237.09	173.75	-92.39	800.69	9,731.65	1,341.53	1,114.10	227.43	5.899	
13,700.00	6,012.37	5,878.65	5,878.37	237.69	173.74	-92.35	800.69	9,731.65	1,322.07	1,093.81	228.25	5.792	
13,720.00	6,012.18	5,878.45	5,878.18	238.28	173.74	-92.32	800.69	9,731.65	1,302.61	1,073.51	229.10	5.686	
13,740.00	6,011.98	5,878.26	5,877.98	238.88	173.73	-92.28	800.69	9,731.65	1,283.18	1,053.20	229.98	5.579	
13,760.00	6,011.79	5,878.06	5,877.79	239.48	173.72	-92.25	800.69	9,731.65	1,263.76	1,032.87	230.89	5.473	
13,780.00	6,011.59	5,877.87	5,877.59	240.07	173.72	-92.21	800.69	9,731.65	1,244.36	1,012.53	231.83	5.368	
13,800.00	6,011.40	5,877.68	5,877.40	240.67	173.71	-92.17	800.69	9,731.65	1,224.98	992.18	232.80	5.262	
13,820.00	6,011.21	5,877.48	5,877.21	241.26	173.71	-92.14	800.69	9,731.65	1,205.62	971.81	233.81	5.156	
13,840.00	6,011.01	5,877.29	5,877.01	241.86	173.70	-92.10	800.69	9,731.65	1,186.28	951.43	234.85	5.051	
13,860.00	6,010.82	5,877.09	5,876.82	242.45	173.70	-92.06	800.69	9,731.65	1,166.96	931.03	235.93	4.946	
13,880.00	6,010.62	5,876.90	5,876.62	243.05	173.69	-92.03	800.69	9,731.65	1,147.67	910.62	237.05	4.841	
13,900.00	6,010.43	5,876.70	5,876.43	243.64	173.68	-91.99	800.69	9,731.65	1,128.40	890.19	238.21	4.737	
13,920.00	6,010.23	5,876.51	5,876.23	244.24	173.68	-91.95	800.69	9,731.65	1,109.16	869.75	239.41	4.633	
13,940.00	6,010.04	5,876.31	5,876.04	244.83	173.67	-91.92	800.69	9,731.65	1,089.94	849.29	240.66	4.529	
13,960.00	6,009.84	5,876.12	5,875.84	245.43	173.67	-91.88	800.69	9,731.65	1,070.76	828.80	241.95	4.425	
13,980.00	6,009.65	5,875.92	5,875.65	246.02	173.66	-91.84	800.69	9,731.65	1,051.60	808.30	243.30	4.322	
14,000.00	6,009.45	5,875.73	5,875.45	246.62	173.65	-91.81	800.69	9,731.65	1,032.48	787.78	244.69	4.219	
14,020.00	6,009.26	5,875.53	5,875.26	247.21	173.65	-91.77	800.69	9,731.65	1,013.39	767.24	246.14	4.117	
14,040.00	6,009.06	5,875.34	5,875.06	247.81	173.64	-91.73	800.69	9,731.65	994.33	746.68	247.65	4.015	
14,060.00	6,008.87	5,875.14	5,874.87	248.41	173.64	-91.70	800.69	9,731.65	975.31	726.09	249.22	3.913	
14,080.00	6,008.67	5,874.95	5,874.67	249.00	173.63	-91.66	800.69	9,731.65	956.34	705.48	250.85	3.812	
14,100.00	6,008.48	5,874.75	5,874.48	249.60	173.62	-91.62	800.69	9,731.65	937.40	684.85	252.56	3.712	
14,120.00	6,008.28	5,874.56	5,874.28	250.19	173.62	-91.59	800.69	9,731.65	918.51	664.18	254.33	3.612	
14,140.00	6,008.09	5,874.36	5,874.09	250.79	173.61	-91.55	800.69	9,731.65	899.67	643.50	256.17	3.512	
14,160.00	6,007.89	5,874.17	5,873.89	251.38	173.61	-91.51	800.69	9,731.65	880.88	622.78	258.10	3.413	
14,180.00	6,007.70	5,873.97	5,873.70	251.98	173.60	-91.48	800.69	9,731.65	862.14	602.03	260.11	3.315	
14,200.00	6,007.50	5,873.78	5,873.50	252.57	173.59	-91.44	800.69	9,731.65	843.46	581.26	262.21	3.217	
14,220.00	6,007.31	5,873.58	5,873.31	253.17	173.59	-91.40	800.69	9,731.65	824.85	560.45	264.40	3.120	
14,240.00	6,007.11	5,873.39	5,873.11	253.76	173.58	-91.37	800.69	9,731.65	806.30	539.61	266.69	3.023	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,260.00	6,006.92	5,873.19	5,872.92	254.36	173.58	-91.33	800.69	9,731.65	787.82	518.73	269.08	2.928	
14,280.00	6,006.72	5,873.00	5,872.72	254.96	173.57	-91.29	800.69	9,731.65	769.41	497.83	271.59	2.833	
14,300.00	6,006.53	5,872.80	5,872.53	255.55	173.56	-91.26	800.69	9,731.65	751.09	476.88	274.21	2.739	
14,320.00	6,006.33	5,872.61	5,872.33	256.15	173.56	-91.22	800.69	9,731.65	732.86	455.90	276.96	2.646	
14,340.00	6,006.14	5,872.42	5,872.14	256.74	173.55	-91.18	800.69	9,731.65	714.72	434.88	279.84	2.554	
14,360.00	6,005.94	5,872.22	5,871.94	257.34	173.55	-91.15	800.69	9,731.65	696.68	413.82	282.86	2.463	
14,380.00	6,005.75	5,872.03	5,871.75	257.93	173.54	-91.11	800.69	9,731.65	678.75	392.72	286.03	2.373	
14,400.00	6,005.56	5,871.83	5,871.56	258.53	173.54	-91.07	800.69	9,731.65	660.94	371.58	289.36	2.284	
14,420.00	6,005.36	5,871.64	5,871.36	259.13	173.53	-91.04	800.69	9,731.65	643.26	350.41	292.85	2.197	
14,440.00	6,005.17	5,871.44	5,871.17	259.72	173.52	-91.00	800.69	9,731.65	625.72	329.20	296.52	2.110	
14,460.00	6,004.97	5,871.25	5,870.97	260.32	173.52	-90.96	800.69	9,731.65	608.33	307.95	300.38	2.025	
14,480.00	6,004.78	5,871.05	5,870.78	260.91	173.51	-90.93	800.69	9,731.65	591.11	286.67	304.44	1.942	
14,500.00	6,004.58	5,870.86	5,870.58	261.51	173.51	-90.89	800.69	9,731.65	574.07	265.37	308.70	1.860	
14,520.00	6,004.39	5,870.66	5,870.39	262.10	173.50	-90.85	800.69	9,731.65	557.22	244.04	313.18	1.779	
14,540.00	6,004.19	5,870.47	5,870.19	262.70	173.49	-90.82	800.69	9,731.65	540.59	222.69	317.89	1.701	
14,560.00	6,004.00	5,870.27	5,870.00	263.30	173.49	-90.78	800.69	9,731.65	524.19	201.34	322.85	1.624	
14,580.00	6,003.80	5,870.08	5,869.80	263.89	173.48	-90.74	800.69	9,731.65	508.05	180.00	328.05	1.549	
14,600.00	6,003.61	5,869.88	5,869.61	264.49	173.48	-90.71	800.69	9,731.65	492.19	158.69	333.50	1.476	Level 3
14,620.00	6,003.41	5,869.69	5,869.41	265.08	173.47	-90.67	800.69	9,731.65	476.65	137.42	339.23	1.405	Level 3
14,640.00	6,003.22	5,869.49	5,869.22	265.68	173.46	-90.63	800.69	9,731.65	461.45	116.24	345.21	1.337	Level 3
14,660.00	6,003.02	5,869.30	5,869.02	266.27	173.46	-90.60	800.69	9,731.65	446.63	95.16	351.47	1.271	Level 3
14,680.00	6,002.83	5,869.10	5,868.83	266.87	173.45	-90.56	800.69	9,731.65	432.22	74.24	357.98	1.207	Level 2
14,700.00	6,002.63	5,868.91	5,868.63	267.47	173.45	-90.52	800.69	9,731.65	418.28	53.54	364.74	1.147	Level 2
14,720.00	6,002.44	5,868.71	5,868.44	268.06	173.44	-90.49	800.69	9,731.65	404.84	33.11	371.73	1.089	Level 2
14,740.00	6,002.24	5,868.52	5,868.24	268.66	173.43	-90.45	800.69	9,731.65	391.96	13.05	378.91	1.034	Level 2
14,760.00	6,002.05	5,868.32	5,868.05	269.25	173.43	-90.41	800.69	9,731.65	379.70	-6.54	386.25	0.983	Level 1
14,780.00	6,001.85	5,868.13	5,867.85	269.85	173.42	-90.38	800.69	9,731.65	368.12	-25.55	393.67	0.935	Level 1
14,800.00	6,001.66	5,867.93	5,867.66	270.45	173.42	-90.34	800.69	9,731.65	357.29	-43.83	401.12	0.891	Level 1
14,820.00	6,001.46	5,867.74	5,867.46	271.04	173.41	-90.30	800.69	9,731.65	347.27	-61.22	408.48	0.850	Level 1
14,840.00	6,001.27	5,867.54	5,867.27	271.64	173.41	-90.27	800.69	9,731.65	338.13	-77.53	415.66	0.813	Level 1
14,860.00	6,001.07	5,867.35	5,867.07	272.23	173.40	-90.23	800.69	9,731.65	329.96	-92.56	422.52	0.781	Level 1
14,880.00	6,000.88	5,867.16	5,866.88	272.83	173.39	-90.20	800.69	9,731.65	322.82	-106.10	428.92	0.753	Level 1
14,900.00	6,000.68	5,866.96	5,866.68	273.43	173.39	-90.16	800.69	9,731.65	316.79	-117.92	434.71	0.729	Level 1
14,920.00	6,000.49	5,866.77	5,866.49	274.02	173.38	-90.12	800.69	9,731.65	311.92	-127.81	439.73	0.709	Level 1
14,940.00	6,000.30	5,866.57	5,866.30	274.62	173.38	-90.09	800.69	9,731.65	308.27	-135.57	443.84	0.695	Level 1
14,960.00	6,000.10	5,866.38	5,866.10	275.21	173.37	-90.05	800.69	9,731.65	305.89	-141.04	446.93	0.684	Level 1
14,980.00	5,999.91	5,866.18	5,865.91	275.81	173.36	-90.01	800.69	9,731.65	304.81	-144.09	448.90	0.679	Level 1
14,986.53	5,999.84	5,866.12	5,865.84	276.00	173.36	-90.00	800.69	9,731.65	304.74	-144.55	449.29	0.678	Level 1, CC, SF
15,000.00	5,999.71	5,865.99	5,865.71	276.41	173.36	-89.98	800.69	9,731.65	305.04	-144.66	449.70	0.678	Level 1, ES
15,020.00	5,999.52	5,865.79	5,865.52	277.00	173.35	-89.94	800.69	9,731.65	306.57	-142.76	449.33	0.682	Level 1
15,040.00	5,999.32	5,865.60	5,865.32	277.60	173.35	-89.90	800.69	9,731.65	309.40	-138.43	447.83	0.691	Level 1
15,060.00	5,999.13	5,865.40	5,865.13	278.19	173.34	-89.87	800.69	9,731.65	313.47	-131.80	445.27	0.704	Level 1
15,080.00	5,998.93	5,865.21	5,864.93	278.79	173.33	-89.83	800.69	9,731.65	318.75	-123.02	441.77	0.722	Level 1
15,100.00	5,998.74	5,865.01	5,864.74	279.39	173.33	-89.79	800.69	9,731.65	325.18	-112.28	437.46	0.743	Level 1
15,120.00	5,998.54	5,864.82	5,864.54	279.98	173.32	-89.76	800.69	9,731.65	332.69	-99.80	432.48	0.769	Level 1
15,140.00	5,998.35	5,864.62	5,864.35	280.58	173.32	-89.72	800.69	9,731.65	341.20	-85.78	426.98	0.799	Level 1
15,160.00	5,998.15	5,864.43	5,864.15	281.17	173.31	-89.68	800.69	9,731.65	350.65	-70.44	421.10	0.833	Level 1
15,180.00	5,997.96	5,864.23	5,863.96	281.77	173.30	-89.65	800.69	9,731.65	360.97	-53.98	414.95	0.870	Level 1
15,200.00	5,997.76	5,864.04	5,863.76	282.37	173.30	-89.61	800.69	9,731.65	372.07	-36.58	408.65	0.910	Level 1
15,220.00	5,997.57	5,863.84	5,863.57	282.96	173.29	-89.57	800.69	9,731.65	383.89	-18.40	402.29	0.954	Level 1
15,240.00	5,997.37	5,863.65	5,863.37	283.56	173.29	-89.54	800.69	9,731.65	396.37	0.42	395.95	1.001	Level 2
15,260.00	5,997.18	5,863.45	5,863.18	284.16	173.28	-89.50	800.69	9,731.65	409.45	19.76	389.68	1.051	Level 2

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,280.00	5,996.98	5,863.26	5,862.98	284.75	173.28	-89.46	800.69	9,731.65	423.07	39.52	383.55	1.103	Level 2
15,300.00	5,996.79	5,863.06	5,862.79	285.35	173.27	-89.43	800.69	9,731.65	437.18	59.61	377.57	1.158	Level 2
15,320.00	5,996.59	5,862.87	5,862.59	285.94	173.26	-89.39	800.69	9,731.65	451.73	79.96	371.77	1.215	Level 2
15,340.00	5,996.40	5,862.67	5,862.40	286.54	173.26	-89.35	800.69	9,731.65	466.69	100.51	366.18	1.274	Level 3
15,360.00	5,996.20	5,862.48	5,862.20	287.14	173.25	-89.32	800.69	9,731.65	482.01	121.22	360.80	1.336	Level 3
15,380.00	5,996.01	5,862.28	5,862.01	287.73	173.25	-89.28	800.69	9,731.65	497.67	142.04	355.63	1.399	Level 3
15,400.00	5,995.81	5,862.09	5,861.81	288.33	173.24	-89.24	800.69	9,731.65	513.63	162.95	350.68	1.465	Level 3
15,420.00	5,995.62	5,861.89	5,861.62	288.92	173.23	-89.21	800.69	9,731.65	529.86	183.92	345.94	1.532	
15,440.00	5,995.42	5,861.70	5,861.42	289.52	173.23	-89.17	800.69	9,731.65	546.34	204.93	341.41	1.600	
15,460.00	5,995.23	5,861.51	5,861.23	290.12	173.22	-89.13	800.69	9,731.65	563.05	225.96	337.09	1.670	
15,480.00	5,995.04	5,861.31	5,861.04	290.71	173.22	-89.10	800.69	9,731.65	579.97	247.01	332.96	1.742	
15,500.00	5,994.84	5,861.12	5,860.84	291.31	173.21	-89.06	800.69	9,731.65	597.07	268.06	329.02	1.815	
15,520.00	5,994.65	5,860.92	5,860.65	291.91	173.20	-89.02	800.69	9,731.65	614.36	289.10	325.26	1.889	
15,540.00	5,994.45	5,860.73	5,860.45	292.50	173.20	-88.99	800.69	9,731.65	631.80	310.13	321.67	1.964	
15,560.00	5,994.26	5,860.53	5,860.26	293.10	173.19	-88.95	800.69	9,731.65	649.39	331.15	318.25	2.041	
15,580.00	5,994.06	5,860.34	5,860.06	293.69	173.19	-88.91	800.69	9,731.65	667.12	352.14	314.98	2.118	
15,600.00	5,993.87	5,860.14	5,859.87	294.29	173.18	-88.88	800.69	9,731.65	684.97	373.11	311.85	2.196	
15,620.00	5,993.67	5,859.95	5,859.67	294.89	173.17	-88.84	800.69	9,731.65	702.94	394.06	308.87	2.276	
15,640.00	5,993.48	5,859.75	5,859.48	295.48	173.17	-88.80	800.69	9,731.65	721.01	414.99	306.02	2.356	
15,660.00	5,993.28	5,859.56	5,859.28	296.08	173.16	-88.77	800.69	9,731.65	739.18	435.89	303.30	2.437	
15,680.00	5,993.09	5,859.36	5,859.09	296.68	173.16	-88.73	800.69	9,731.65	757.45	456.76	300.69	2.519	
15,700.00	5,992.89	5,859.17	5,858.89	297.27	173.15	-88.69	800.69	9,731.65	775.80	477.60	298.20	2.602	
15,720.00	5,992.70	5,858.97	5,858.70	297.87	173.14	-88.66	800.69	9,731.65	794.23	498.42	295.81	2.685	
15,740.00	5,992.50	5,858.78	5,858.50	298.47	173.14	-88.62	800.69	9,731.65	812.73	519.22	293.52	2.769	
15,760.00	5,992.31	5,858.58	5,858.31	299.06	173.13	-88.58	800.69	9,731.65	831.31	539.98	291.33	2.854	
15,780.00	5,992.11	5,858.39	5,858.11	299.66	173.13	-88.55	800.69	9,731.65	849.95	560.73	289.22	2.939	
15,800.00	5,991.92	5,858.19	5,857.92	300.25	173.12	-88.51	800.69	9,731.65	868.65	581.44	287.20	3.025	
15,820.00	5,991.72	5,858.00	5,857.72	300.85	173.12	-88.47	800.69	9,731.65	887.40	602.14	285.26	3.111	
15,840.00	5,991.53	5,857.80	5,857.53	301.45	173.11	-88.44	800.69	9,731.65	906.21	622.81	283.40	3.198	
15,860.00	5,991.33	5,857.61	5,857.33	302.04	173.10	-88.40	800.69	9,731.65	925.07	643.46	281.61	3.285	
15,880.00	5,991.14	5,857.41	5,857.14	302.64	173.10	-88.36	800.69	9,731.65	943.97	664.09	279.89	3.373	
15,900.00	5,990.94	5,857.22	5,856.94	303.24	173.09	-88.33	800.69	9,731.65	962.92	684.70	278.23	3.461	
15,920.00	5,990.75	5,857.02	5,856.75	303.83	173.09	-88.29	800.69	9,731.65	981.92	705.28	276.63	3.550	
15,940.00	5,990.55	5,856.83	5,856.55	304.43	173.08	-88.25	800.69	9,731.65	1,000.95	725.85	275.10	3.639	
15,960.00	5,990.36	5,856.63	5,856.36	305.03	173.07	-88.22	800.69	9,731.65	1,020.01	746.40	273.61	3.728	
15,980.00	5,990.16	5,856.44	5,856.16	305.62	173.07	-88.18	800.69	9,731.65	1,039.12	766.93	272.19	3.818	
16,000.00	5,989.97	5,856.25	5,855.97	306.22	173.06	-88.14	800.69	9,731.65	1,058.25	787.45	270.81	3.908	
16,020.00	5,989.78	5,856.05	5,855.78	306.82	173.06	-88.11	800.69	9,731.65	1,077.42	807.94	269.48	3.998	
16,040.00	5,989.58	5,855.86	5,855.58	307.41	173.05	-88.07	800.69	9,731.65	1,096.62	828.43	268.19	4.089	
16,060.00	5,989.39	5,855.66	5,855.39	308.01	173.04	-88.03	800.69	9,731.65	1,115.84	848.89	266.95	4.180	
16,080.00	5,989.19	5,855.47	5,855.19	308.61	173.04	-88.00	800.69	9,731.65	1,135.09	869.34	265.75	4.271	
16,100.00	5,989.00	5,855.27	5,855.00	309.20	173.03	-87.96	800.69	9,731.65	1,154.37	889.78	264.59	4.363	
16,120.00	5,988.80	5,855.08	5,854.80	309.80	173.03	-87.93	800.69	9,731.65	1,173.67	910.20	263.47	4.455	
16,140.00	5,988.61	5,854.88	5,854.61	310.39	173.02	-87.89	800.69	9,731.65	1,193.00	930.61	262.38	4.547	
16,160.00	5,988.41	5,854.69	5,854.41	310.99	173.01	-87.85	800.69	9,731.65	1,212.34	951.01	261.33	4.639	
16,180.00	5,988.22	5,854.49	5,854.22	311.59	173.01	-87.82	800.69	9,731.65	1,231.71	971.40	260.31	4.732	
16,200.00	5,988.02	5,854.30	5,854.02	312.18	173.00	-87.78	800.69	9,731.65	1,251.10	991.77	259.33	4.824	
16,220.00	5,987.83	5,854.10	5,853.83	312.78	173.00	-87.74	800.69	9,731.65	1,270.50	1,012.13	258.37	4.917	
16,240.00	5,987.63	5,853.91	5,853.63	313.38	172.99	-87.71	800.69	9,731.65	1,289.93	1,032.49	257.44	5.011	
16,260.00	5,987.44	5,853.71	5,853.44	313.97	172.99	-87.67	800.69	9,731.65	1,309.37	1,052.83	256.54	5.104	
16,280.00	5,987.24	5,853.52	5,853.24	314.57	172.98	-87.63	800.69	9,731.65	1,328.83	1,073.16	255.67	5.197	
16,300.00	5,987.05	5,853.32	5,853.05	315.17	172.97	-87.60	800.69	9,731.65	1,348.30	1,093.48	254.82	5.291	

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

Hilcorp Energy Company

Scientific Drilling, Intl

Anticollision Report

Scientific Drilling

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design Canyon Largo 2407-03F - HUN Canyon Largo Unit 333 - OH - OH

Offset Site Error: 0.00 usft

Survey Program: 315-INCLINOMETER

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,320.00	5,986.85	5,853.13	5,852.85	315.76	172.97	-87.56	800.69	9,731.65	1,367.79	1,113.79	254.00	5.385	
16,340.00	5,986.66	5,852.93	5,852.66	316.36	172.96	-87.52	800.69	9,731.65	1,387.29	1,134.09	253.20	5.479	
16,360.00	5,986.46	5,852.74	5,852.46	316.96	172.96	-87.49	800.69	9,731.65	1,406.81	1,154.39	252.42	5.573	
16,380.00	5,986.27	5,852.54	5,852.27	317.55	172.95	-87.45	800.69	9,731.65	1,426.34	1,174.67	251.67	5.668	
16,400.00	5,986.07	5,852.35	5,852.07	318.15	172.94	-87.41	800.69	9,731.65	1,445.89	1,194.95	250.93	5.762	
16,407.54	5,986.00	5,852.28	5,852.00	318.38	172.94	-87.40	800.69	9,731.65	1,453.25	1,202.59	250.66	5.798	

Scientific Drilling, Intl

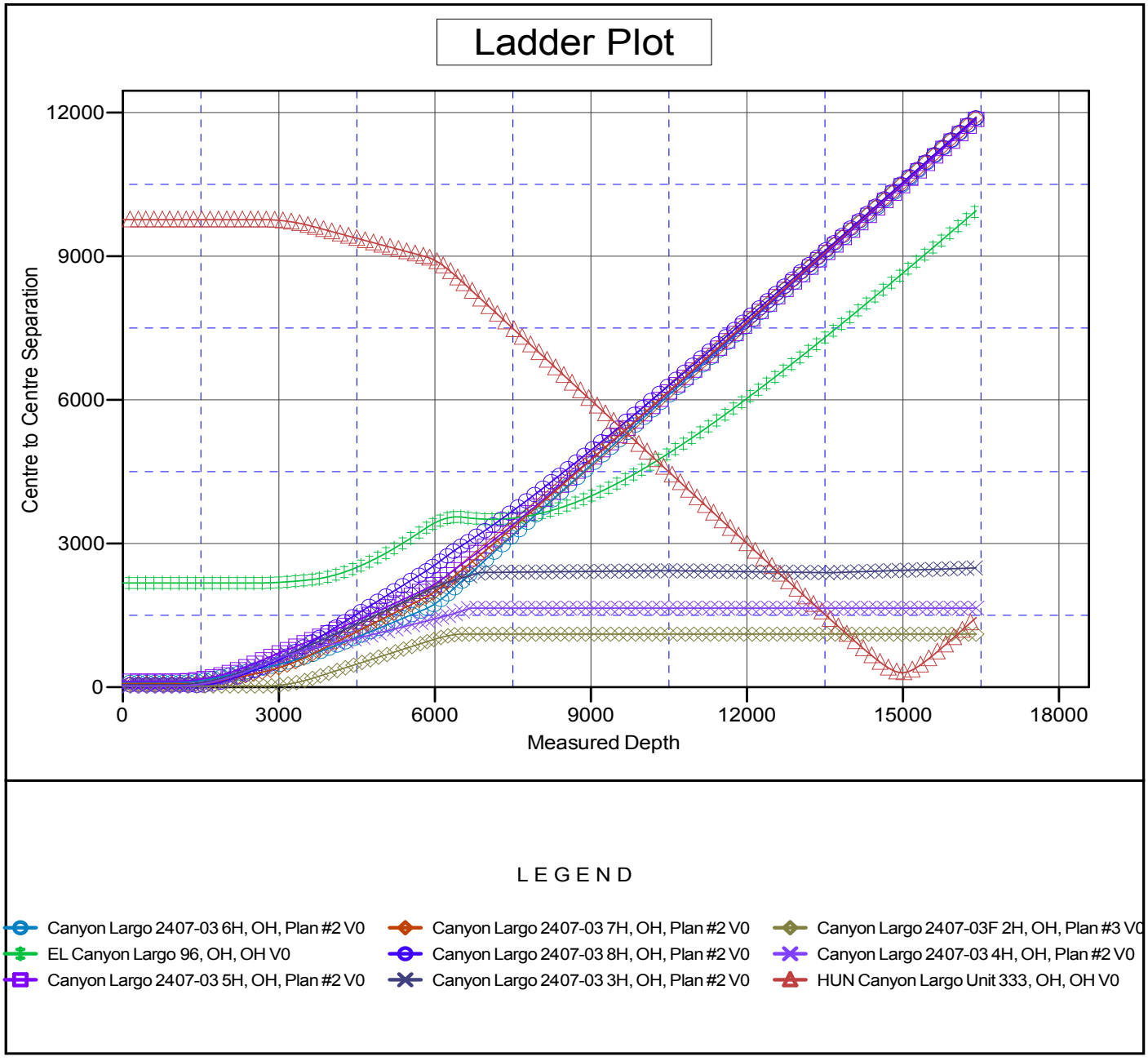
Anticollision Report

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to GL 7010' @ 7010.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Canyon Largo 2407-03F 1H - Slot G
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.16°

Ladder Plot



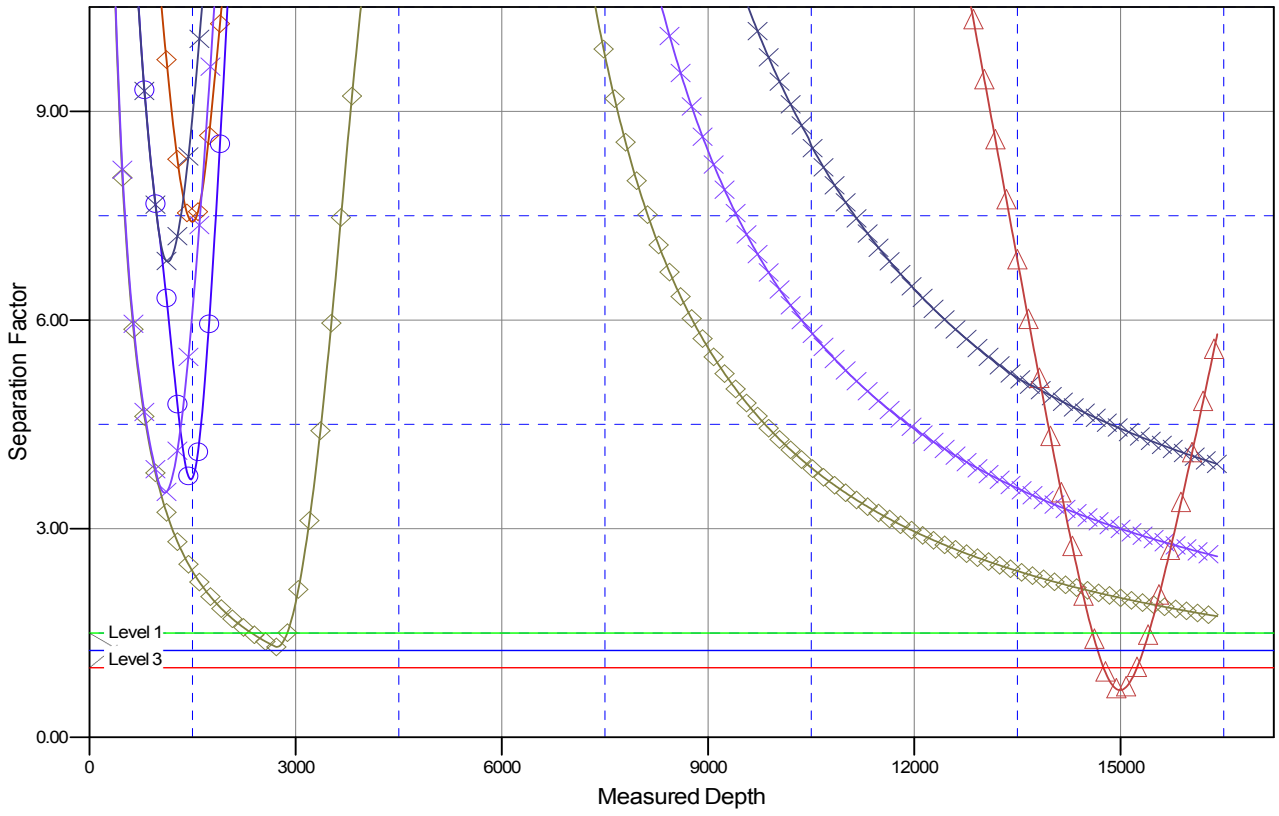
Scientific Drilling, Intl
Anticollision Report

Company:	Hilcorp Energy Corp.	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H - Slot G
Project:	Rio Arriba, NM NAD27	**TVD Reference:**	GL 7010' @ 7010.00usft
Reference Site:	Canyon Largo 2407-03F	**MD Reference:**	GL 7010' @ 7010.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	Grand Junction District
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to GL 7010' @ 7010.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Canyon Largo 2407-03F 1H - Slot G
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
Grid Convergence at Surface is: 0.16°

Separation Factor Plot



LEGEND

- Canyon Largo 2407-03 6H, OH, Plan #2 V0
- Canyon Largo 2407-03 7H, OH, Plan #2 V0
- Canyon Largo 2407-03F 2H, OH, Plan #3 V0
- EL Canyon Largo 96, OH, OH V0
- Canyon Largo 2407-03 8H, OH, Plan #2 V0
- Canyon Largo 2407-03 4H, OH, Plan #2 V0
- Canyon Largo 2407-03 5H, OH, Plan #2 V0
- Canyon Largo 2407-03 3H, OH, Plan #2 V0
- HUN Canyon Largo Unit 333, OH, OH V0

Rio Arriba County, NM Canyon Largo Unit 2407-03F #1H

Hilcorp

Technical Drilling Plan (Rev. 1)

Hilcorp Energy Company proposes to drill and complete the referenced horizontal well targeting the Mancos formation.

Note: This technical drilling plan will be adjusted based upon actual conditions.

1. Location

Date:	July 24, 2025	Pool:	Basin Mancos
Well Name:	Canyon Largo Unit 2407-03F #1H	Ground Elevation (ft. MSL):	7,011’
Surface Hole Location:	36.342075° N, 107.565394° W	Total Measured Depth (ft.)	16,408’
Bottom Hole Location:	36.343431° N, 107.527526° W	County, State:	Rio Arriba County, NM

Note: All geographic coordinates on the drilling tech plan and the directional drilling plan refer to NAD 27 geodetic coordinate system. All depths on the drilling tech plan and the directional drilling plan are referenced from an estimated RKB datum of 25’ above ground level.

2. Geological Markers

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

Formation	Depth (ft. TVD)	Remarks
San Jose	Surface	Water
Ojo Alamo	1,905’	Possible Water
Kirtland	2,035’	Possible Water
Fruitland	2,191’	Possible Gas & Water
Pictured Cliffs	2,552’	Water
Lewis Shale	2,646’	None
Cliffhouse	4,064’	Possible Gas & Water
Menefee	4,128’	Possible Gas & Water
Point Lookout	4,841’	Possible Gas & Water
Mancos	5,046’	Oil & Gas
Mancos Lateral Target Zone	6,082’	Oil & Gas

3. Pressure Control Equipment

A. BOP Equipment

See Appendix A for BOP equipment and choke manifold diagram.

- BOP equipment will be nippled up on top of the wellhead after surface casing is set and cemented.
- Pressure control configurations will be designed to meet the minimum 5M standards.
- All equipment will have 5M pressure rating at a minimum.
- A rotating head will be installed on top of the annular as seen in the attached diagram.

B. BOP Pressure Testing

- For all BOP pressure testing, a BOP test unit with a chart recorder and a BOP test plug will be utilized.
- All tests and inspections will be recorded and logged with time and results.
- A full BOP pressure test will be conducted when initially installed for the first well on the pad or if a seal subject to test pressure is broken, following related repairs, and at a minimum in 30-day intervals.
- A BOPE shell pressure test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken, repaired, and fall within the 30-day interval of the first full test.
- The New Mexico Oil & Gas Conservation Division and the BLM will be notified 24 hours in advance of pressure testing BOPE.
- The BOP rams will be tested to 250 psi (Low) for 5 minutes and 5,000 psi (High) for 10 minutes.
- The BOP annular will be tested to 250 psi (Low) for 5 minutes and 3,500 psi (High) for 10 minutes.

C. BOP Function Testing

- Annular preventors will be functionally tested at least once per week.
- Pipe and blind rams will be function tested each trip.

D. Casing Pressure Testing

- Surface casing will be pressure tested to 600 psi for 30 minutes.
- Intermediate casing will be pressure tested to 1,500 psi for 30 minutes.

4. Casing Program

A. Proposed Casing Program:

Proposed Casing Design							
Casing String	Hole Size	Casing (size/weight/grade)	Top Depth (MD/TVD)	Shoe Depth (MD/TVD)	Collapse	Burst	Tensile
Surface	17-1/2"	13-3/8"-54.5#-J55 (or equiv)-LTC/BTC	0'	350'/350'	1,130 psi	2,730 psi	514 klbs
Intermediate	12-1/4"	9-5/8"-40#-L80 (or equiv)-LTC/BTC	0'	5,362'/5,250'	3,090 psi	5,750 psi	916 klbs
Production	8-1/2"	5-1/2"-20.0#-P110 (or equiv)-LTC/BTC	0'	16,408'/5,986'	11,080 psi	12,360 psi	548 klbs

Proposed Casing Design Safety Factors				
Casing String	Burst Design SF	Collapse Design SF	Joint Tensile Design SF	Connection Tensile Design SF
Surface	16.7	8.8	51.8	55.2
Intermediate	2.0	1.3	5.1	5.3
Production	3.4	3.5	2.4	2.1

B. Casing Design Parameters & Calculations:

- Designed for full wellbore evacuation.
- Mud Weights used for calculations:
  - Surface = 9.0 ppg
  - Intermediate = 10.5 ppg
  - Production = 12.0 ppg
- Minimum Acceptable Safety Factors:
  - Burst: 1.15
  - Collapse: 1.15
  - Tensile: 1.50
- Casing Safety Factor Calculations:

$$Casing\ Burst\ Safety\ Factor = \frac{Casing\ Burst\ Rating(psi)}{Maximum\ Mud\ Weight\ (ppg) \times TVD(ft) \times 0.052}$$

$$Casing\ Collapse\ Safety\ Factor = Hydrostatic\ of\ Mud\ Weight\ in\ Annulus(psi) - \left[TVD\ of\ Casing\ Shoe\ (ft) \times 0.10\frac{psi}{ft}\right]$$

$$Tensile\ Safety\ Factor = \frac{Tensile\ Rating\ of\ Casing\ String\ (lbs)}{Measured\ Depth\ of\ Casing(ft) \times Casing\ Weight\ \frac{lb}{ft} \times DrillingFluid\ Bouyancy\ Factor}$$

Production Casing Notes:

- Production casing will be run from surface to TD.
- If the 8-1/2" hole is not drilled to the planned measured depth, casing setting depth will be adjusted accordingly.
- A toe initiation sliding sleeve will be installed at the toe of the production casing.

5. Proposed Centralizer Program:

Proposed Centralizer Program	
Casing String	Centralizers & Placement
Surface Casing	1 centralizer per joint on bottom 3 joints.
Intermediate Casing	1 centralizer per joint in shoe track. 1 centralizer every 3rd joint to surface.
Production Casing	Centralizers determined by hole conditions from TD to top of cement.

6. Proposed Cement Program:

Proposed Cement Design								
Interval	Depth (ft. MD)	Lead/Tail	Volume (ft^3)	Sacks	Excess (%)	Slurry	Density (ppg)	Planned TOC
Surface	350’	Lead	486 ft^3	352	100%	Class G Cement Yield: 1.38 ft^3/sk	14.6	Surface
		Slurry Additives: CaCl (1%), Cello Flake (0.25 lb/sk), CD-2 (0.2%)						
Intermediate	5,362’	Lead	1,556 ft^3	304	25%	ASTM Type IL Yield: 5.12 ft^3/sk	9.5	Surface
		Slurry Additives: FL-24 (0.5%), FL-66 (0.5%), IntegraGuard GW-86 (0.2%), IntegraSeal PHENO (2.0 lb/sk), IntegraSeal POLI (0.25 lb/sk), LW-5E (50.0%), R-3 (0.4%), S-8 Silica Flour (35.0%), XCem-311 (0.3%)						
		Tail	533 ft^3	248	25%	ASTM Type IL Yield: 2.15 ft^3/sk	12.5	4,000’
		Slurry Additives: A-10 (5.0%), A-2 (1.0 lb/sk), IntegraSeal PHENO (1.0 lb/sk), IntegraSeal POLI (0.5 lb/sk), R-7C (0.3%), StaticFree (0.01%), XCem-311 (0.3%)						
Production	16,408’	Lead	556 ft^3	354	25%	ASTM Type IL Yield: 1.57 ft^3/sk	12.0	4,000’
		Slurry Additives: AEXT-1012 (60.0%), FL-66 (0.3%), GW-86 (0.2%), IntegraSeal PHENO (2.0 lb/sk), IntegraSeal Poli (0.25 lb/sk), KCl (3.0%), R-3 (0.55%), STATIC FREE (0.01 lb/sk), XCem-311 (0.3%)						
		Tail	2,873 ft^3	1,941	25%	Class G Yield: 1.48 ft^3/sk	14.0	6,100’
		Slurry Additives: Fly Ash (20.0%), Bentonite (4.0%), FL-66 (0.3%), GW-86 (0.1%), IntegraSeal PHENO (1.0 lb/sk), IntegraSeal POLI (0.25 lb/sk), R-3 (0.25%), StaticFree (0.01 lb/sk)						

Cement Program Notes:

- The cement slurry additives may be adjusted to accommodate required pump and compressive test times.
- Actual cement volumes will be determined and may be adjusted onsite based on well conditions.
- For the intermediate hole section, a 2-stage or 3-stage cement job may be performed if hole conditions dictate. If needed, the stage tool will be placed appropriately as conditions indicate.
- Cement will be circulated to surface on surface and intermediate casing sections to protect water bearing zones.
- A minimum of 8 hours of wait on cement time will be observed on each hole section to allow adequate time for cement to achieve a minimum of 500 psi of compressive strength. The BOP will not be nippled down, the wellhead will not be installed, the casing will not be tested and the prior casing shoe will not be drilled out until adequate wait on cement time has been observed (8 hours or time to reach 500 psi compressive strength).

7. Drilling Fluids Program

A. Proposed Drilling Fluids Program:

Proposed Drilling Fluids Program					
Interval	Fluid Type	Density	Fluid Loss	Invert Ratio	Depth
		(ppg)	(mL/30 min)	(%Diesel / %Brine)	(ft. MD)
Surface	Water/Gel	8.3 – 9.2	NC	N/A	0' – 350'
Intermediate	LSND / Gel	8.4 – 10.0	<6	N/A	350' – 5,362'
Production	Oil Base Mud	10.0 – 12.0	6 – 8	70/30 – 75/25	5,362' – 16,408'

Drilling Fluids Notes:

- In the 8-1/2" production section, oil base mud will be utilized which will be an invert mud. The base fluid will be diesel. Brine fluid (if needed) will be $CaCl_2$ or KCl.
- Lost circulation material may be added to the mud systems to manage fluid losses as hole conditions dictate.
- The well will be drilled utilizing a closed-loop circulating system. Drill cuttings for all hole sections will be transported to an approved disposal site.
- Estimated total volume of drill cuttings for disposal: 1,585 bbls (8,897 ft^3).

8. Estimated Pressures & Drilling Hazards

A. Estimated Pressures

- Estimated Reservoir Pressure of Mancos Shale target: 2,000 – 2,200 psi (based on layer pressure tests in Mancos formation in offset wells).
- No over-pressured intervals expected.
- There is production from the Fruitland Coal, Mesa Verde and Pictured Cliffs formations in offset wells in the area, which could result in these formations being depleted.

B. Water Flows

- Water flows are possible in the intermediate section. Water flows will be mitigated with increased mud weight.

C. Lost Circulation

- Lost circulation is possible in the intermediate section. Losses will be mitigated by utilizing LCM in the mud system.

D. Hydrogen Sulfide

- No hydrogen sulfide is expected to be encountered based on nearby well production.

9. Pilot Hole

- No pilot hole is planned for this wellbore.

10. Testing, Logging, Coring

A. Mud Logging

- Mud loggers will collect formation samples every 30'-90' from intermediate casing shoe to TD of the well.

B. MWD

- Measurement while drilling tools will be utilized on all sections of the well to measure and record inclination and azimuth.

C. LWD

- Logging while drilling tools (gamma ray) will be utilized while drilling the production section from the intermediate casing shoe to the production hole section TD to assist in staying in the desired production formation interval while drilling the horizontal section.

D. Open Hole Logging

- None

E. Coring

- None

F. Cased Hole Logging

- The 9-5/8" intermediate casing will be cemented to surface to protect water bearing zones. If cement is not circulated to surface on the intermediate cement job, a cement bod log will be run to verify top of cement.

11. Directional Drilling Plan

- The directional drilling plan and plot are attached.
- Note, the horizontal is drilled up-dip, so the deepest TVD in the well occurs at the heel (6,082' TVD). The TVD at total measured depth of the well is shallower (5,986' TVD).
- The directional plan is built from geologic targets from offset wells and lease boundaries. The production hole section will be landed and drilled horizontally within the target formation utilizing LWD tools to steer the wellbore. On-site adjustments to the directional plan will be made as formation and wellbore dictate.

12. Completion

A. Pressure Testing

- A pressure test of the 5-1/2" production casing will be conducted to the maximum anticipated frac pressure for 30 minutes.
- Pressure will be cycled to shift the toe sleeve open.

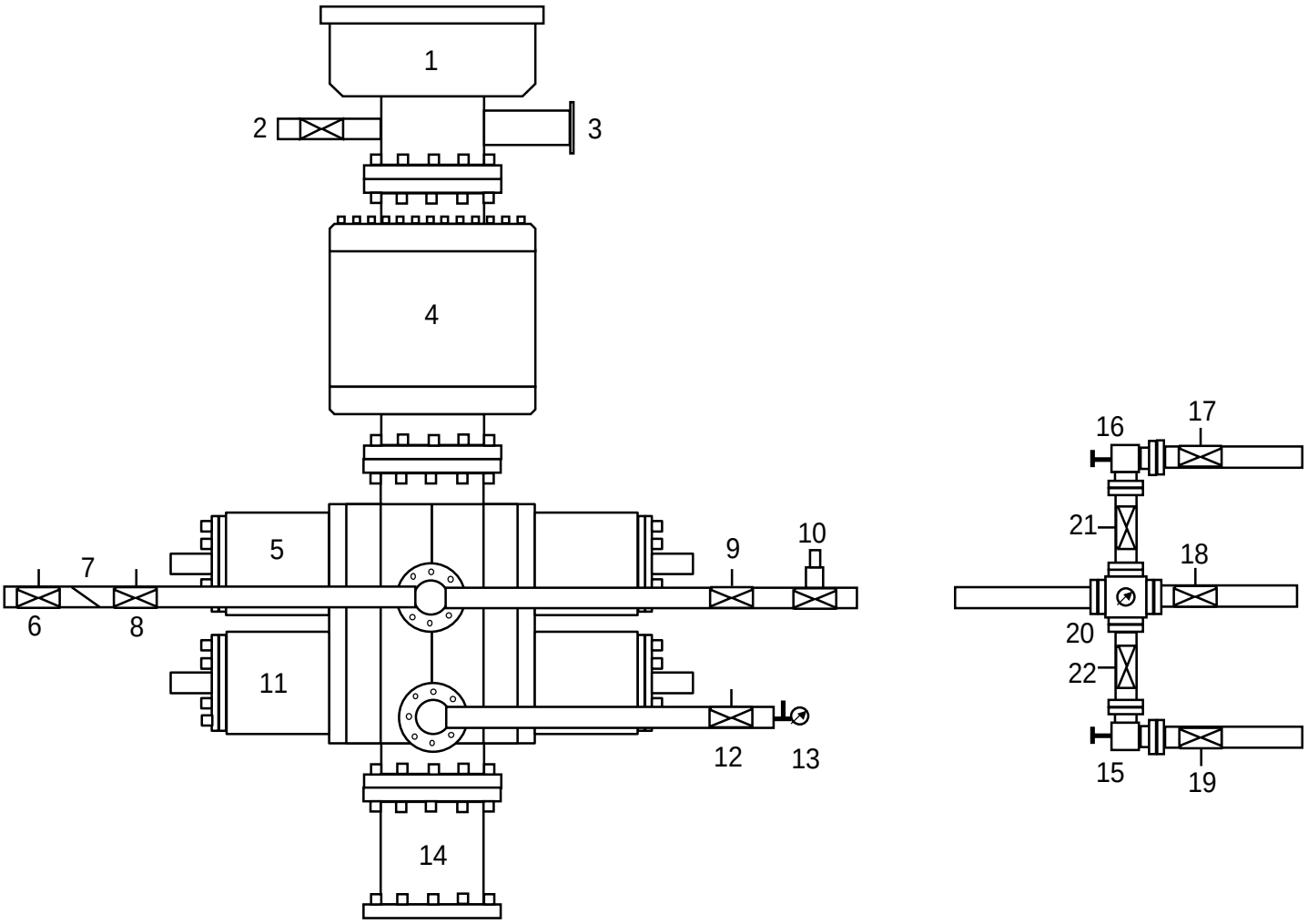
B. Stimulation

- The well will be stimulated with sand and water. The number of stages and amount of proppant used will be adjusted based on actual lateral length and real-time pumping conditions during the stimulation.
- Individual stages will be perforated on wireline and isolated using frac plugs or dissolvable frac plugs.
- Upon completion of the stimulation operation, frac plugs will be drilled out and the stimulation fluid will be flowed back.

*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 8(2) NMAC, 19.15.16.15 8(2)NMAC, and 19.15.16.15 8(4) NMAC.

Appendix A

13-5/8" 5M BOP & 5M Choke Manifold Configuration



1	Rotating Head	12	Manual Isolation Valve
2	Fill-Up Line	13	Needle Valve & Pressure Gauge
3	Flow Line	14	Spacer Spool (if needed)
4	5M Annular Preventer	15	Manual Choke
5	5M Pipe Rams	16	Hydraulicly Operated Choke
6	Manual Isolation Valve	17	Manual Isolation Valve
7	Check Valve	18	Manual Isolation Valve
8	Manual Isolation Valve	19	Manual Isolation Valve
9	Manual Isolation Valve	20	Valve Block & Pressure Gauge
10	High Closing Ratio Valve	21	Manual Isolation Valve
11	5M Blind Rams	22	Manual Isolation Valve

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

SUPO Data Report
02/12/2026

APD ID: 10400095286
Submission Date: 10/17/2023
Operator Name: HILCORP ENERGY COMPANY
Well Name: CANYON LARGO UNIT 2407 03F
Well Number: 1H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Supo_for_APD_20260210111100.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Supo_for_APD_20250805143002.pdf

New road type: RESOURCE

Length: 2702.1 Feet **Width (ft.):** 30

Max slope (%): 8 **Max grade (%):** 8

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: PER BLM INSTRUCTION AS IDENTIFIED DURING ONSITE

New road access plan or profile prepared? Y

New road access plan

Supo_for_APD_20250805083734.pdf

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Access road engineering design? Y

Access road engineering design

Supo_for_APD_20250805083832.pdf

Turnout? N

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: See attached SUPO

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: See attached SUPO

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: CULVERT,LOW WATER

Drainage Control comments: PER BLM INSTRUCTION AS IDENTIFIED DURING ONSITE

Road Drainage Control Structures (DCS) description: PER BLM INSTRUCTION AS IDENTIFIED DURING ONSITE

Road Drainage Control Structures (DCS) attachment:

Supo_for_APD_20250805083350.pdf

Access Additional Attachments

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Existing Well map Attachment:

See_attached_SUPO_20231016152317.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Similar to existing wells in area

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: RAW PRODUCED

Water source use type: STIMULATION

Source latitude: **Source longitude:**

Source datum:

City:

Water source permit type: OTHER

Water source transport method: PIPELINE

Source land ownership: FEDERAL

Source transportation land ownership: FEDERAL

Water source volume (barrels): 300000 **Source volume (acre-feet):** 38.6679289

Source volume (gal): 12600000

Water source and transportation

See_attached_SUPO_20231016152331.pdf

Water source comments: See SUPO for additional information

New water well? Y

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer: Entrada

Est. depth to top of aquifer(ft): 7913 **Est thickness of aquifer:** 275

Aquifer comments: See NOI Attachment

Aquifer documentation:

Hilcorp_SJ_4366_NOI__Attachments_20250905105027.pdf

Well depth (ft): 8400 **Well casing type:** STEEL

Well casing outside diameter (in.): 7 **Well casing inside diameter (in.):** 6.28

New water well casing? Y **Used casing source:**

Drilling method: ROTARY **Drill material:** FRESH WATER

Grout material: GROUT **Grout depth:** 5350

Casing length (ft.): 8400 **Casing top depth (ft.):** 0

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Well Production type: SLOT **Completion Method:** NATURAL

Water well additional information: See NOI Attachment

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: See attached SUPO

Construction Materials source location

Section 7 - Methods for Handling

Waste type: SEWAGE

Waste content description: Portable toilets

Amount of waste:

Waste disposal frequency : Monthly

Safe containment description: Portable toilets

Safe containmant attachment:

Supo_for_APD_20250805141751.pdf

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: OMI Waste Water Treatment

Waste type: GARBAGE

Waste content description: Enclosed metal trash container

Amount of waste:

Waste disposal frequency : Monthly

Safe containment description: Enclosed metal trash container

Safe containmant attachment:

Supo_for_APD_20250805140731.pdf

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Waste Management

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Waste type: DRILLING

Waste content description: Formation cuttings

Amount of waste: 1585 barrels

Waste disposal frequency : Daily

Safe containment description: Roll-off bins

Safe containmant attachment:

See_attached_Technical_Plan_20231017135739.pdf

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Envirotech Land Farm

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? N

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

Cuttings area liner

Cuttings area liner specifications and installation description

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

See_attached_SUPO_20231017131558.pdf

Comments:

Section 10 - Plans for Surface

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** Canyon Largo Unit 2407-03F

Multiple Well Pad Number: 1H

Recontouring

See_attached_SUPO_20231017155550.pdf

Drainage/Erosion control construction: Per BLM instruction as identified during BLM onsite

Drainage/Erosion control reclamation: Per BLM instruction as identified during BLM onsite

Well pad proposed disturbance (acres): 8.09	**Well pad interim reclamation (acres):** 5.09	**Well pad long term disturbance (acres):** 3
Road proposed disturbance (acres): 1.87	**Road interim reclamation (acres):** 0.87	**Road long term disturbance (acres):** 1
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 0.7	**Pipeline interim reclamation (acres):** 0.7	**Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0.44	**Other interim reclamation (acres):** 0.27	**Other long term disturbance (acres):** 0.16
Total proposed disturbance: 11.1	**Total interim reclamation:** 6.93	**Total long term disturbance:** 4.16

Disturbance Comments:

Reconstruction method: Per BLM instruction as identified during BLM onsite

Topsoil redistribution: Per BLM instruction as identified during BLM onsite

Soil treatment: Per BLM instruction as identified during BLM onsite

Existing Vegetation at the well pad: Per BLM instruction as identified during BLM onsite

Existing Vegetation at the well pad

See_attached_SUPO_20231017142034.pdf

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Existing Vegetation Community at the road: Per BLM instruction as identified during BLM onsite

Existing Vegetation Community at the road

See_attached_SUPO_20231017141942.pdf

Existing Vegetation Community at the pipeline: Per BLM instruction as identified during BLM onsite

Existing Vegetation Community at the pipeline

See_attached_SUPO_20231017142043.pdf

Existing Vegetation Community at other disturbances: Per BLM instruction as identified during BLM onsite

Existing Vegetation Community at other disturbances

See_attached_SUPO_20231017142052.pdf

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed

Seed Table

Seed Summary

Total pounds/Acre: 10

Seed Type	Pounds/Acre
SHRUB	6
PERENNIAL GRASS	4

Seed reclamation

Operator Contact/Responsible Official

First Name: Travis **Last Name:** Munkres

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Phone: (505)320-2585 **Email:** tmunkres@hilcorp.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment

Weed treatment plan description: Per BLM instruction as identified during BLM onsite

Weed treatment plan

See_attached_SUPO_20231017141936.pdf

Monitoring plan description: Per BLM instruction as identified during BLM onsite

Monitoring plan

See_attached_SUPO_20231017141901.pdf

Success standards: Per BLM instruction as identified during BLM onsite

Pit closure description: Per BLM instruction as identified during BLM onsite

Pit closure attachment:

See_attached_SUPO_20231017141759.pdf

Section 11 - Surface

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other

Right of Way needed? Y **Use APD as ROW?** Y

ROW Type(s): 281001 ROW - ROADS,287001 ROW – Water Facility,288100 ROW – O&G Pipeline,289001 ROW- O&G Well Pad

ROW

SUPO Additional Information: NOS action covering this item was reviewed during the onsite completed on 5/14/2025

Use a previously conducted onsite? Y

Previous Onsite information: 5/14/2025 onsite

Other SUPO

Canyon_Largo_Unit_2407_SUPO_1H_20260210111227.pdf

Please see attached information in the Supo

Please see attached information in the Supo

Please see attached information in the Supo

Please see attached information in the Supo

Please see attached information in the Supo

SEE ATTACHED SUPO

SEE ATTACHED SUPO

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Hilcorp

Application Packet:

- Draft Notice of Publication – for OSE review
- WR-30: Notice of Intention to Drill Well to Appropriate Nonpotable Groundwater from an Aquifer the Top of Which is at a Depth of 2,500 Feet or More (NOI)
- Variance Request pursuant to 19.27.4.37 NMAC
- Attachment A: Technical Memorandum describing target aquifer and overlying confining strata (aka: Shomaker Report)
- Attachment B: Access Agreement
- Attachment C: Artesian Well Plan of Operations, Drill Plan, and Drill Diagram
- Attachment D: Well Identification Chart
- Attachment E: WR-08 Additional POD Attachment
- Attachment F: Place of Use/Project Area Map
- Attachment G: WR-07 Exploratory Well Application

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2019 AUG 22 PM 4:46

CANYON LARGO 2506-30 No.1

Water Well

SJ-4366

Received by OCD: 3/2/2026 10:15:37 AM

Released to Imaging: 3/23/2026 10:09:09 AM

Daily Times Notice

NOTICE is hereby given that Hilcorp Energy Company c/o Keri Hutchins, 382 Road 3100, Aztec, NM 87410, intends to file with the New Mexico Office of the State Engineer a Notice of Intention to Drill one well to Appropriate Nonpotable Groundwater from an aquifer the top of which is at a depth of 2,500 feet or more pursuant to NMSA 1978 §§ 72-12-26 and 27. The water well, Canyon Largo 2506-30 #1, will be drilled to an anticipated depth 8,400 feet below ground surface, constructed of 7 inch diameter casing, and will have all water production isolated within the Entrada Formation Aquifer. The subject well would be located approximately 45 miles south of the City of Bloomfield, San Juan County, New Mexico. The projected point of diversion is located on BLM lands, and can be approximately located as follows:
SW/4 SW/4 of Section 30, T25N, R6W, N.M.P.M., Rio Arriba County, New Mexico

The applicant intends to divert up to 706 acre-feet per annum from the well location listed above for an estimated 20 year period from the Entrada Formation Aquifer in the San Juan Basin. The requested diversion will be used to supply nonpotable water for oil and gas exploration and production operations on private, State, and BLM lands within Rio Arriba County, New Mexico.

Any person may bring an action in Rio Arriba County District Court for damages or for injunctive relief with respect to any claimed impairment of existing water rights due to an appropriation of nonpotable water under NMSA 1978 §§ 72-12-25 to 28. Applications to appropriate nonpotable water under NMSA 1978 § 72-12- 28 are not subject to protest or hearing before the State Engineer.

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2019 AUG 22 PM 4:46
27

Received by OCD: 3/2/2026 10:15:37 AM
Released to Imaging: 3/23/2026 10:09:09 AM

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CANYON LARGO 2506-30 #1
Water Well

File Number: SJ-4366
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER

NOTICE OF INTENTION TO DRILL WELLS OR RECOMPLETE EXISTING WELLS TO APPROPRIATE NONPOTABLE GROUNDWATER FROM AN AQUIFER THE TOP OF WHICH IS AT A DEPTH OF 2500 FEET OR MORE PURSUANT TO NMSA 1978 §§ 72-12-26 and 27

1. FILER OF NOTICE (required):

Name: HILCORP ENERGY COMPANY Phone: 505-564-0743
Contact: Keri Hutchins - Landman
Address: 382 Road 3100
Aztec, NM 87410

Party on whose behalf the notice is being filed; required if different from filer **(required):**

Name: _____ Phone: _____
Contact: _____
Address: _____
_____

2. SOURCE OF WATER (required):

Deep Nonpotable Underground Water Basin: San Juan Basin
Target Aquifer(s): Entrada Sandstone
Estimated depth to top of aquifer (feet): See Attachment A
Estimated total dissolved solids content (parts per million): See Attachment A

Please provide as "Attachment A" a description of the target aquifer and overlying confining strata, geologic cross sections of the target aquifer and overlying confining strata, and a map showing the lateral extent and depth of the target aquifer and overlying confining strata. Also include any other studies that form the basis for the contention that the target aquifer meets the criteria of 72-12-25 NMSA, addressing total dissolved solids content of the target aquifer groundwater, and hydraulic separation of target aquifer from shallower aquifer systems and surface water. "Attachment A" is required for this form to be complete and the NOI accepted for filing by the state engineer.

2019 AUG 22 PM 4 46
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

3. OWNER OF LAND ON WHICH WELL IS TO BE LOCATED (required):

Name: See Attachment B Phone: _____

If not the same as the filer or appropriator, the access agreement(s) granting the filer and/or the appropriator the right of entry and permission to construct the well(s) for which this Notice of Intention (NOI) is being filed must be submitted as "Attachment(s) B" to this form for this form to be complete and the NOI accepted for filing by the state engineer.

4. LOCATION OF WELL (A, B, or C required, D and E required if known):

A. X = ATTM C, D, E feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

B. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

C. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

D. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

E. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

Do Not Write Below This Line

File Number: SJ-4366
Trn Number: _____

Form: wr-30
Version: Jan 12, 2010

Received by OCD: 3/2/2026 10:15:37 AM
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5. **COMMON DESCRIPTION FOR LOCATION OF WELL (required):**

The proposed well(s) for which this NOI is filed is to be located in the county of Rio Arriba.
Description by common landmarks:
One well located in Rio Arriba County, New Mexico. Access Agreement and description in ATTM B and D

6. **WELL INFORMATION (required):**

Proposed depth of well attm D ft; Outside diameter of casing attC inches.
Name of well driller and NMOSE license number ATTM A, C, D, E
Proposed production interval from ATTM C ft bgs to attm C ft bgs.

An artesian well plan of operations for well construction must be submitted for approval as "Attachment C" to this form for this form to be complete and the NOI accepted for filing by the state engineer.

7. **QUANTITY (required):**

Proposed pumping rate: att A & Sec 14 gallons per minute
Diversion amount: att A & Sec 14 acre-feet per annum
Consumptive use amount: att A & Sec 14 acre-feet per annum

8. **ESTIMATED DURATION OF THE PROPOSED DIVERSION (required):**

20 years based on estimated volume of 706 acre-feet

9. **PURPOSE OF USE (required):**

Domestic: ☐ Livestock: ☐ Irrigation: ☐ Municipal: ☐ Commercial: ☐
Oil and gas exploration and production: ■ Prospecting: ☐ Mining: ☐
Road construction: ☐ Agriculture: ☐ Generation of electricity: ☐
Industrial: ☐ Geothermal: ☐
Other (specify):

10. **PLACE OF USE (required):**

Within the land area with the following description:

Subdivision	Section	Township	Range	Acres
See Attachment F				
			Total:	

2019 AUG 22 PM 4:16
STATE ENGINEER OFFICE AZTEC, NEW MEXICO

11. **COMMON DESCRIPTION OF PLACE OF USE (required):**

County of: Rio Arriba County
Description by common landmarks: The water will be used for oil and gas production in the vicinity of the well

12. **OWNER OF LAND UPON WHICH WATER IS TO BE BENEFICIALLY USED (required):**

See ATTM F; Bureau of Land Management, State of New Mexico, and private land

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13. **DATE (month and year) FOR PLACING WATER TO BENEFICIAL USE (required):**

Immediately upon obtaining all necessary permits and approvals

14. **ADDITIONAL INFORMATION:**

This Notice of Intention Application proposes to drill and appropriate water from one deep water well diverting a maximum of 15,000 bwpd or 706 af/y from the Entrada Sandstone Formation. The water will be used for oil and gas development in the vicinity of the wells, as further described in Attachment F

15. **ADDITIONAL STATE ENGINEER REQUIREMENTS ON THE APPROPRIATION OF WATER FROM A WELL DRILLED UNDER THIS NOI:**

a. **Driller's well record must be filed with the state engineer no later than twenty (20) days after the completion of well drilling in accordance with 19.27.4 NMAC and § 72-13-5 NMSA.**
b. **A representative sample of deep aquifer water collected in a manner acceptable to the state engineer shall be analyzed for total dissolved solids (TDS) in parts per million, including concentrations of common anions and cations that constitute common components of measured TDS. All analyses shall be performed by a certified laboratory. Analytical results including description of sampling protocol and sample chain of custody shall be submitted to the state engineer within 20 days of analysis. Specific analyses for radionuclides, arsenic, and other parameters of interest may be requested in anticipation of cooperative agency concerns regarding use and treatment of well water as well as disposition of waste streams. These additional analyses may also aid in establishing hydraulic separation of the aquifer. The state engineer may require additional information in order to validate the aquifer depth and water quality.**
c. **Prior to pump testing or appropriating any water from the well drilled under this NOI, the filer shall submit to the state engineer copies of all required permits for discharge of water on the land surface or re-injection of the water or wastewater issued by the NM Environment Department or any other state or federal agency having jurisdiction over such disposal.**
d. **Prior to any diversion of water from the well drilled under this NOI, the well shall be equipped with a functioning totalizing meter acceptable to the State Engineer, installed at the well head before the first supply line branch. The filer shall notify the Office of the State Engineer in writing of the make, model, serial number, the initial reading, and the date of installation of the totalizing meter.**
e. **Records of the amount of water diverted from the well drilled under this NOI shall be submitted to the Office of the State Engineer on or before the 10th day of January, April, July, and October for the three preceding calendar months.**
f. **Water shall be sampled and analyzed for total dissolved solids on a quarterly basis in a manner acceptable to the Office of the State Engineer. Results shall be submitted to the Office of the State Engineer within 20 days of analysis.**
g. **Pursuant to § 72-8-1 NMSA, the state engineer and his representatives shall be allowed entry upon private property for the performance of their respective duties, including access to the well for meter reading, water level measurement, and water quality sampling.**
h. **Pursuant to §§ 72-13-8 and 72-13-9 NMSA, water diverted shall be conserved and conducted in such a manner so as to prevent waste.**

16. **ONLY THOSE APPROPRIATIONS FROM AQUIFERS DETERMINED BY THE STATE ENGINEER TO BE 2500 FEET IN DEPTH OR GREATER THAT CONTAIN NON-POTABLE WATER (1000 PPM OR GREATER DISSOLVED SOLIDS) NOT HYDROLOGICALLY CONNECTED TO ANY OTHER SOURCE OF WATER WILL BE RECOGNIZED AS VALID WATER RIGHTS.**

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i. **ACKNOWLEDGMENT**

ACKNOWLEDGMENT FOR CORPORATION

I, Greg Lalicker, affirm that the foregoing statements are true to the best of my knowledge and belief.

By: _____

Signature of Officer

State of (Texas)
ss.
County of (Harris)

This instrument was acknowledged before me on August 5th, 2019,
(date)

by Greg Lalicker as Chief Executive Officer
(Name of Officer) (Title of Officer)

of Hilcorp Energy Company, a Texas corporation, on behalf of said corporation.
(Name of Corporation Acknowledging) (State of Corporation)

My commission expires 02/08/2023

_____
Notary Public

BRENDA MARICELA GUZMAN
Notary Public, State of Texas
Comm. Expires 02-08-2023
Notary ID 130054545

ACKNOWLEDGEMENT FOR INDIVIDUAL

(I, We)_____ affirm that the foregoing statements are true to the best of my knowledge and belief.

_____ _____.
Applicant Signature Applicant Signature

State of (_____)
ss.
County of (_____)

This instrument was acknowledged before me on _____,
(date)

by _____.
(Name of Applicant)

My commission expires _____

_____
Notary Public

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NEW MEXICO OFFICE OF THE STATE ENGINEER
INSTRUCTIONS - NOTICE OF INTENTION TO DRILL WELLS OR RECOMPLETE EXISTING WELLS TO APPROPRIATE NONPOTABLE GROUNDWATER FROM AN AQUIFER THE TOP OF WHICH IS AT A DEPTH OF 2500 FEET OR MORE PURSUANT TO NMSA 1978 §§ 72-12-26 and 27:

a. This form should not be used for an appropriation from a nonpotable deep underground water basin declared by the state engineer unless it is for one of the following specific uses: oil and gas exploration and production, prospecting, mining, road construction, agriculture, generation of electricity, industrial, or geothermal.
b. Completion of sections 1 through 13 of this Notice of Intention (NOI) form is required.
c. An NOI is reviewed for completeness and compliance with §§ 72-12-26 and 27. If incomplete or noncompliant the NOI will not be accepted for filing and it will be returned with a statement of deficiencies.
d. A completed and compliant NOI shall be filed in triplicate at the appropriate OSE District Office with a $25 filing fee. A separate NOI must be submitted for each proposed well.
e. Upon filing of an NOI with the state engineer, the filer shall cause the NOI to be published in the county in which the proposed well is to be located once a week for three consecutive weeks as required by § 72-12-26. The published notice shall also include: *Any person may bring an action in the district court of the county in which any such well is situated for damages or for injunctive relief with respect to any claimed impairment of existing water rights due to an appropriation of nonpotable water under 72-12-25 to 72-12-28 NMSA 1978. Applications to appropriate nonpotable water under § 72-12-28 are not subject to protest or hearing before the State Engineer.*
f. Pursuant to § 72-12-26, drilling of a well may not commence prior to the tenth day after the last date the notice was published. Affidavit of publication shall be filed with the Office of the State Engineer within 10 days of publication.
g. The well shall be drilled in accordance with 19.27.4 NMAC by a driller licensed in the State of New Mexico from surface through an appreciable portion of the first confining unit overlying the deep artesian aquifer.
h. The well shall be set back a minimum of 50 feet from an existing well of other ownership unless a variance has been granted by the state engineer. The well shall be set back from potential sources of contamination in accordance with rules and regulations of the New Mexico Environment Department.
i. The Office of the State Engineer requires that the well be drilled under a valid state engineer permit. An exploratory permit may be used for this purpose and will be issued by the state engineer for drilling a well only upon proof that the foregoing conditions have been satisfied.
j. A state engineer approved artesian well plan of operations for well construction must be adhered to during drilling and shall specify construction of the interval from ground surface down through an appreciable portion of the first confining layer that is found below a depth of 2500 feet. This shall be a condition to the state engineer permit required to drill the well.

LINE BY LINE INSTRUCTIONS

1. Required; name, contact, phone, and address required for the person proposing to drill wells or recomplete existing wells to appropriate nonpotable deep water.
2. Required;
3. Required; access agreements are required for all public and private lands listed as the drill site not owned by the filer or appropriator and shall be submitted with the NOI and are required for the NOI to be complete and accepted for filing.
4. A, B, or C required specifying point location; and D and E are required if known.
5. Required; describe well location by county in which it is to be drilled and by commonly known landmarks.
6. Required; An artesian well plan of operations for well construction must be submitted for approval as "Attachment C" to this form for this form to be complete and the NOI accepted for filing by the state engineer. The proposed well shall be drilled by an NM OSE licensed well driller.
7. Required; state assumptions made regarding well pumping schedule.
8. Required; estimate the number of years that water will be diverted and placed to beneficial use; estimate the volume of groundwater that this is based upon.
9. Required; specify all proposed purpose(s) of use.
10. Required; attach additional pages if necessary.
11. Required; describe place of use by county and using commonly known landmarks.
12. Required; describe when the application of water to beneficial use will begin.
13. Use this space and attach additional pages for additional information related to the proposed appropriation.

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Assistance in preparing the notice for publication is available. This Notice of Intention form should be addressed to the **Office of the State Engineer** at the district office determined by the proposed well location:

District No. 1. 5550 San Antonio Dr. NE, Albuquerque, NM 87109; Phone # 505-383-4000
District No. 2. 1900 West Second St., Roswell, NM 88201; Phone # 575-622-6521
District No. 3. 321 W Spruce St., Box 844, Deming, NM 88030; Phone # 575-546-2851
District No. 4. 1680 Hickory Loop, Suite J, Las Cruces, NM 88005; Phone # 575-524-6161
District No. 5 100 Gossett Drive, Suite A, Aztec, NM 87410; Phone # 505-334-4571
District No. 6. P.O. Box 25102, Santa Fe, NM 87504-5102; Phone # 505-827-6120
District No. 7. P.O. Box 481, Cimarron, NM 87714; Phone # 575-376-2918

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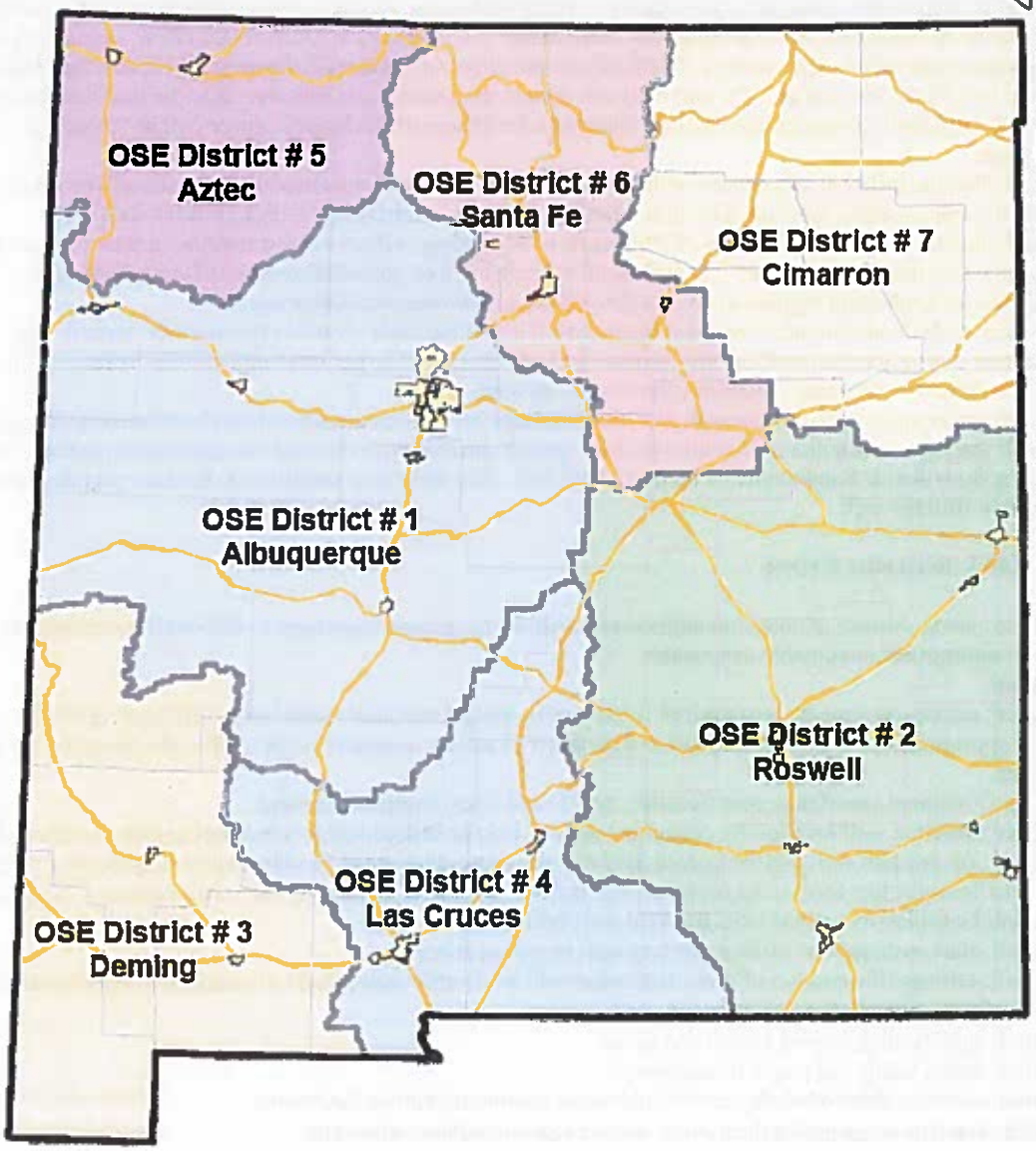
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO



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Variance Request

CANYON LARGO
2506-30 No. 1
Water Well
SJ-4366

Keri Hutchins
Surface Landman
Hilcorp Energy
P.O. Box 4700
Farmington, NM 87401
Phone 505.564.0743

Hilcorp

Office of the State Engineer
District Office V
100 Gossett Dr., Suite A
Aztec, NM 87410

July 3, 2019

Hilcorp Energy Company respectfully requests a variance to NMAC 19.27.4.30 regarding the Annular Space Requirements defined in the rule. Hilcorp Energy Company is asking a waiver to the requirement stating the diameter of the borehole in which the annular seal is to be placed shall be at least three inches greater than the outside diameter of the outermost casing couplings.

Hilcorp Energy Company will drill and complete the artesian water well to Oil & Gas standards based on a high degree of experience in Drilling and Completions in similar wells. Those standards will provide adequate cement for zonal isolation of formations and provide for safe operations for the life of the well.

Hilcorp is requesting 2 variances. The first variance is for the intermediate (artesian) casing. The proposed well design requires running 9-5/8" 40ppf LTC intermediate casing inside of 13-3/8" 54.5ppf surface casing and 12-1/4" openhole. This provides an annular clearance of 2" between the ID of the 13-3/8" and OD of the 9-5/8" coupling and an annular clearance of 2-5/8" between the OD of the 9-5/8" casing and ID of the 12-1/4" openhole.

This intermediate casing design is standard to the Oil and Gas Industry, and reducing the clearance below 3" allows for increased annular velocities while pumping cement and a more efficient cement placement. On the first attached chart, the annular velocity (AV) of the intermediate section (12-1/4" hole) is approximately 115 ft/min. The industry standard openhole size that would provide the recommended clearance of NMAC 19.27.4.30 is 14.5". The AV of the 14.5" hole is reduced 55 ft/min while pumping at the same rate. Recommended Oil & Gas industry practice is to try to achieve AV's of up to 260 ft/min. The higher AV achieved using the proposed casing design variance provides higher AV's and a more efficient cement placement.

The second variance is for the production casing. The proposed well design requires running 7" 26ppf production casing inside the 9-5/8" 40ppf intermediate casing and 8-3/4" openhole. This provides annular clearance of 1.75" inside the openhole section.

This production casing design is standard to the Oil and Gas Industry, and reducing the clearance below 3" allows for increased annular velocities while pumping cement and a more

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efficient cement placement. The second chart on the attachment shows the AV for the proposed variance design and the hole size needed to pass the recommended clearance. The 8.75" hole has an AV of 225 ft/min vs 95 ft/min for the NMAC 19.27.4.30 required clearance. Once again the higher AV will provide a superior bond of the cement to both the pipe and formation. This will result in better zonal isolation when compared to the larger annular space requirement.

This well design has been successfully deployed in the Oil & Gas Industry and is considered a standard configuration.

If you have any questions or need additional information, please contact me at khutchins@hilcorp.com or 505-564-0743. If you have a technical question about this variance request, please contact Jeff Wampler, Project Engineer, jwampler@hilcorp.com or 713-757-7111.

Sincerely,

Keri Hutchins

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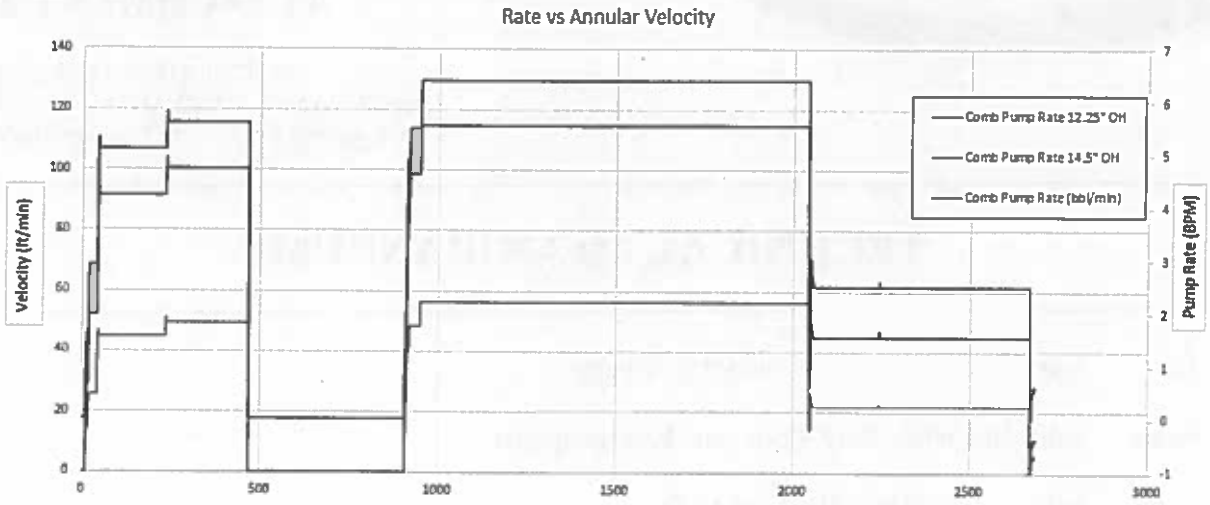
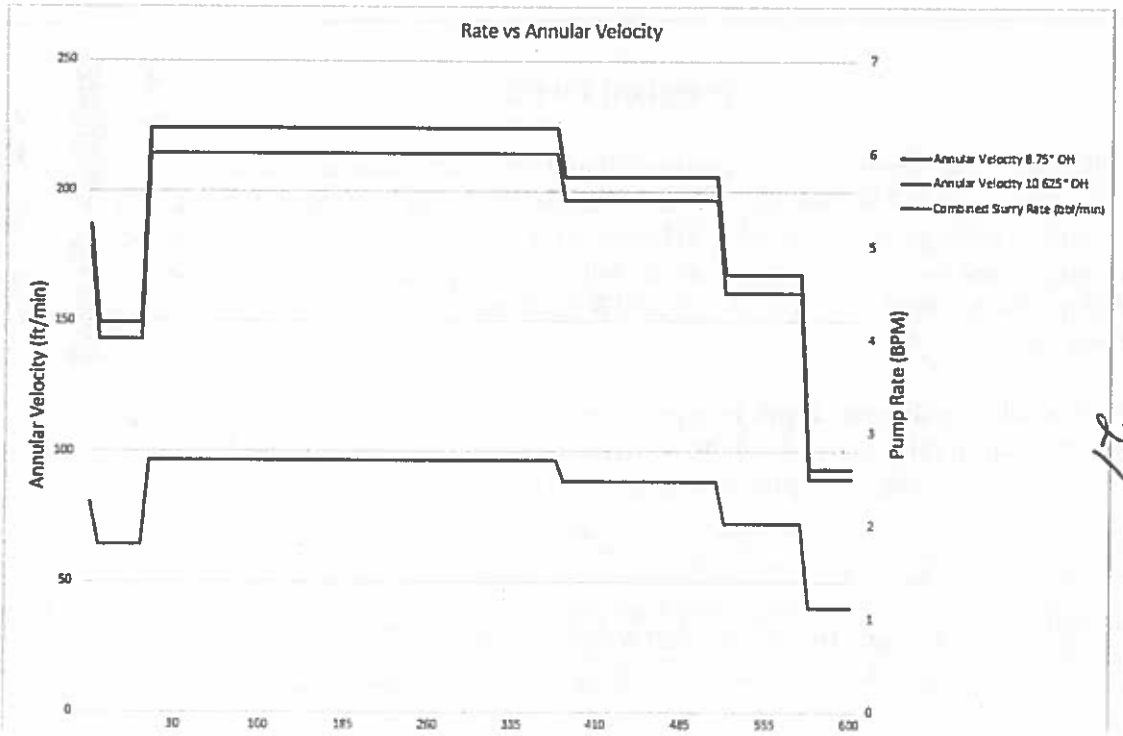
Intermediate Hole AV



Production Hole AV



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JSAI

Review Draft
ATTACHMENT A

NOTICE OF INTENTION
pursuant to NMSA §§72-12-26 and 27 for
a proposed well in the San Juan Basin

TECHNICAL MEMORANDUM

To: Keri Hutchins, Hilcorp Energy Company

From: John Shomaker, PhD, Principal Hydrogeologist

Date: July 29, 2019 (REVIEW DRAFT)

Subject: Description of target aquifer and overlying confining strata

INTRODUCTION

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2019 AUG 27 PM 4 47

Hilcorp Energy Company proposes to drill a water-supply well as described in Table 1 and shown on Figure 1. It will be completed in the Entrada Sandstone at a depth (vertical depth to the top of the aquifer) of approximately 8,125 ft below ground level (bgl), under the provisions of §72-12-25 et seq., NMSA. Total vertical depth will be approximately 8,400 ft. The maximum anticipated production from each well is 15,000 BWPD (barrels of water per day), equivalent to 70[illegible] acre-feet per year (ac-ft/yr).

Table 1. Location, estimated depth to top of Entrada Sandstone (the proposed aquifer), and total vertical depth, for proposed well to be drilled under the provisions of §72-12-25 et seq., NMSA. Depths are referred to ground-level datum.

proposed well	surface location (approximate; see NOI for final location)	estimated depth to top of Entrada Sandstone, (TVD), ft	estimated total depth, (TVD), ft
Canyon Largo Unit 2506-30 No. 1	SW/4 SW/4 Sec. 30, T. 25 N., R. 6 W.	8,125	8,400

NOI = Notice of Intention

2611 Broadbent Pkwy NE, Albuq, NM 87107
505-345-3407 • www.shomaker.com

JOHN SHOMAKER & ASSOCIATES, INC.
WATER-RESOURCE AND ENVIRONMENTAL CONSULTANTS

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JSAI

ATTACHMENT A

NOTICE OF INTENTION
pursuant to NMSA §§72-12-26 and 27 for
a proposed well in the San Juan Basin

TECHNICAL MEMORANDUM

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
Via email
2019 OCT 16 AM 8:23

To: Keri Hutchins, Hilcorp Energy Company

From: John Shomaker, PhD, Principal Hydrogeologist

Date: July 29, 2019

Subject: Description of target aquifer and overlying confining strata

INTRODUCTION

Hilcorp Energy Company proposes to drill a water-supply well as described in Table 1 and shown on Figure 1. It will be completed in the Entrada Sandstone at a depth (vertical depth to the top of the aquifer) of approximately 8,125 ft below ground level (bgl), under the provisions of §72-12-25 et seq., NMSA. Total vertical depth will be approximately 8,400 ft. The maximum anticipated production from each well is 15,000 BWPD (barrels of water per day), equivalent to 706 acre-feet per year (ac-ft/yr).

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proposed well	surface location (approximate; see NOI for final location)	estimated depth to top of Entrada Sandstone, (TVD), ft	estimated total depth, (TVD), ft
Canyon Largo Unit 2506-30 No. 1	SW/4 SW/4 Sec. 30, T. 25 N., R. 6 W.	8,125	8,400

NOI - Notice of Intention

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JOHN SHOMAKER & ASSOCIATES, INC.
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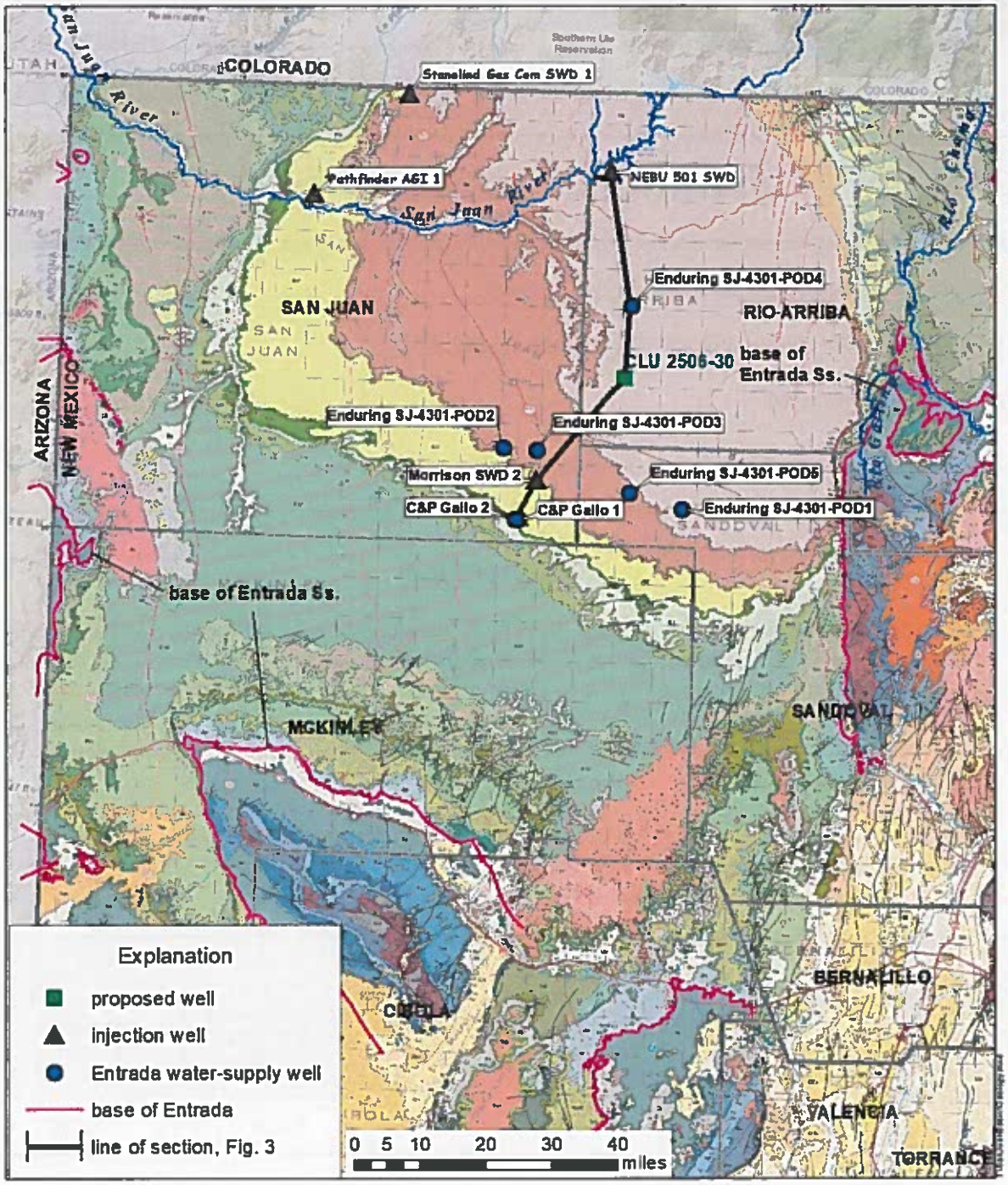

Figure 1. Geologic map showing base of Entrada Sandstone, location of proposed Hilcorp well (CLU 2506-30), other wells mentioned in text, nearby recent Entrada supply wells drilled by others, San Juan River, and Rio Gallina.

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This Technical Memorandum is Attachment A to the Notice of Intention (NOI), as required by State Engineer regulations, to describe the target aquifer and the overlying confining strata, and to provide the information demonstrating conformance with the provisions of §72-12-25 et seq., NMSA. Attachment A is to contain "a description of the target aquifer and overlying confining strata, geologic cross-sections of the target aquifer and overlying confining strata. Also include any other studies that form the basis for the contention that the target aquifer meets the criteria of 72-12-25 NMSA, addressing total dissolved solids content of the target aquifer groundwater, and hydraulic separation of target aquifer from shallower aquifer systems and surface water."[1]

DESCRIPTION OF TARGET AQUIFER AND OVERLYING CONFINING STRATA

Target Aquifer: Entrada Sandstone

The Entrada is a widespread dune-sand deposit of Jurassic age. Its distribution in the San Juan Basin is indicated by the contact labeled "base of Entrada Ss." shown on Figure 1, which shows that the unit is present under almost all of the San Juan Basin, and extends beyond the map area into Arizona, Utah, and Colorado. Its stratigraphic position is shown in the cross-section of Figure 2. The Entrada is described by Craigg (2001, p. 19) as follows (references omitted).

> The Entrada Sandstone is present throughout the San Juan Basin and adjacent Colorado Plateau. Throughout most of the basin, the Entrada unconformably overlies the Chinle Formation (and equivalent rocks of the Dolores Formation in Colorado) except in the northwest, where it unconformably overlies the Wingate Sandstone.
>
> The Entrada Sandstone generally consists of reddish-orange, mottled red and white to light-brown silty sandstone and very fine to medium-grained well-sorted quartz sandstone interbedded with thinner reddish-brown siltstone. High-angle, large-scale crossbedding is a characteristic feature, indicating deposition in an eolian environment, whereas the siltstone represents deposition in interdune and sabkha environments.

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Kernodle (1996, citing others) gives a thickness range of 60 to 350 ft for the Entrada in general, and a typical thickness of 130 ft in the southeastern San Juan Basin. It is about 122 ft thick in Hilcorp's Stanolind Gas Com SWD No. 1 (API No. 30-045-23779, in Sec. 17, T. 32 N., R. 12 W.), near the northern edge of the basin, and ranges from about 135 ft to 220 ft in the three wells shown in the cross-section with the proposed Hilcorp well (see Figures 1 and 3).

Lateral Extent and Depth: The Entrada is continuous in the subsurface over the entire area within the formation contact marked on Figure 1 and extends into Colorado, Utah, and Arizona. The nearest outcrop is about 36 miles east-southeast from the proposed Hilcorp CLU 2506-30 well. The thickness of the Entrada is variable over short distances because of its origin as preserved sand dunes. The thickness of the combined Entrada and Todilto is somewhat more regular, in that Todilto limestone and anhydrite filled the lower inter-dune areas.

[1] From Section 2, OSE Form wr-30, version of January 12, 2010.

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The depth to the top of the Entrada varies from zero on the outcrops, indicated on Figure 1, to more than 9,000 ft in the central part of the basin. The depth is greater than 2,500 ft over most of the basin.

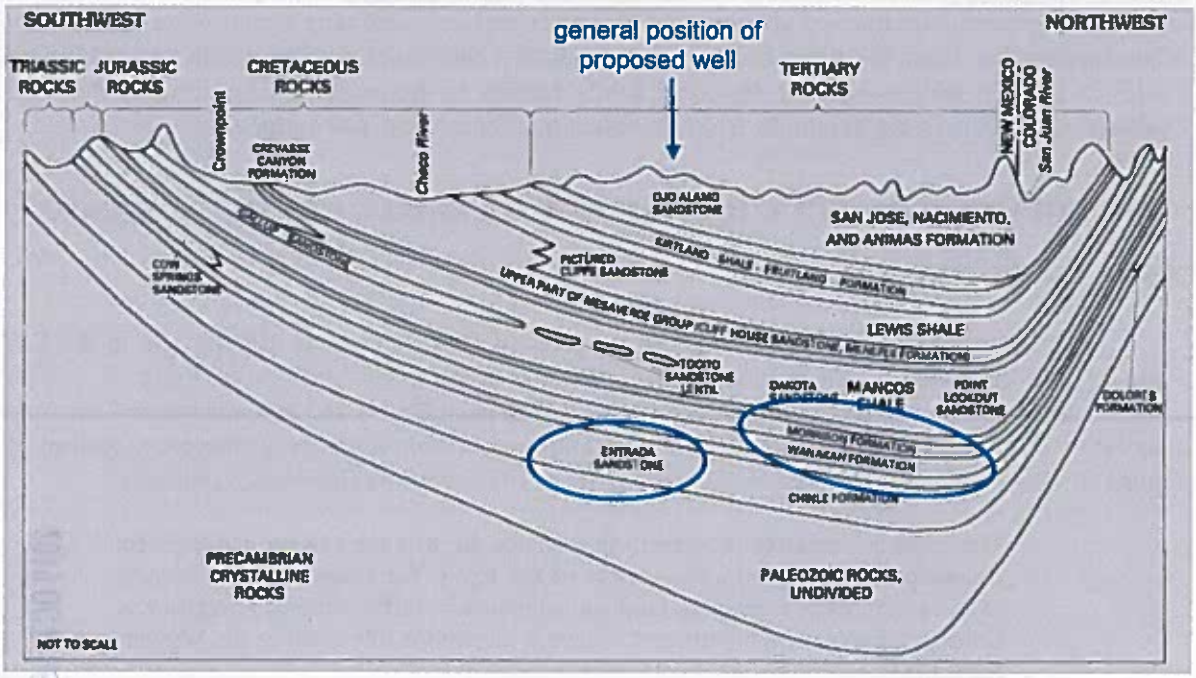

Figure 2. Diagrammatic southwest-northeast stratigraphic section across central San Juan Basin showing relationships of Entrada Sandstone, Wanakah Formation (Todilto Limestone at base), Morrison Formation (including Westwater Canyon Member aquifer), and other geologic units. Modified from Craigg, 2001, fig. 6.

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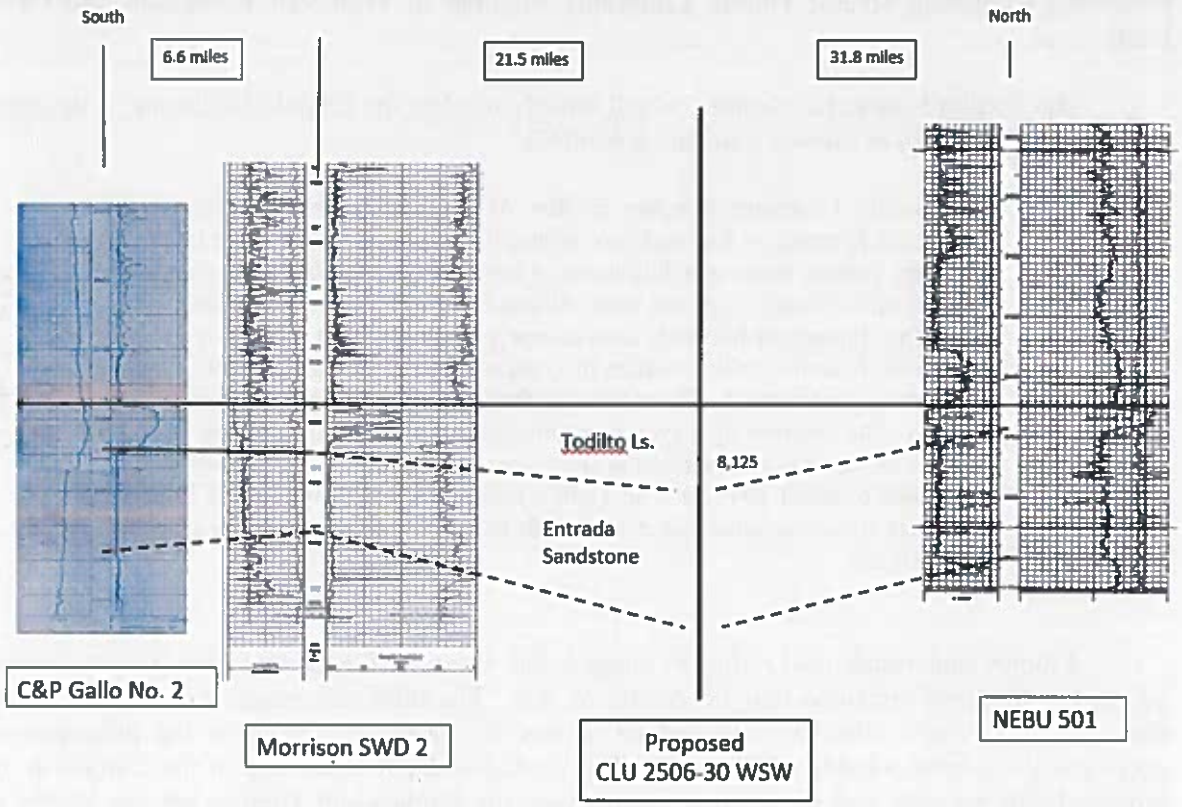

No scale.

Figure 3. Diagrammatic geophysical-log cross-section showing predicted depth to the top of the Entrada Sandstone in the proposed Hilcorp CLU 2506-30 No. 1 water supply well, and depths in the Morrison SWD 2 (API No. 30-045-33684) in Sec. 13, T. 22 N., R. 9 W., Cherokee & Pittsburg Gallo Wash No. 2 water well (C&P Gallo No. 2), OSE File No. SJ-549-Explor-1, in Sec. 16, T. 21 N., R. 9 W., and the NEBU 501 SWD well (API No. 30-039-24236, in Sec. 10, T. 30 N., R. 7 W.). Data for Enduring Well SJ-4301 POD4, which would lie on the line of cross-section, has not been released. The well locations are shown on Figure 1. Depths are in feet. No scale. Distances shown are approximate.

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Overlying Confining Strata: Todilto Limestone Member of Wanakah Formation and Other Units

The Todilto Limestone Member, which directly overlies the Entrada Sandstone, is described by Craigg (2001, p. 20) as follows (references omitted).

> The Todilto Limestone Member in New Mexico and equivalent Pony Express Limestone Member in Colorado are arbitrarily separated by the State line. These members contain two major lithofacies, a lower gray limestone unit and an upper gypsum and anhydrite unit and some siltstone and sandstone. The limestone facies is present throughout the study area except in the Gallup Sag and in the extreme northwest. It conformably overlies the Entrada Sandstone and typically forms an erosion-resistant caprock. The maximum thickness of the limestone facies is about 40 feet. The massive light-gray to white gypsum and anhydrite facies is present only in the eastern one-half of the study area. Its thickness ranges from zero to a maximum of about 100 feet. The Todilto Limestone and Pony Express Limestone Members were deposited either in a fresh to saline inland lake or in a restricted marine basin.

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Ridgley and Hatch (2013, fig. 6) suggest that the total thickness of the Todilto reaches 140 ft, but the local thickness may be greater or less. The thickness ranges from about 25 ft to about 60 ft in three selected wells spaced across the basin, as shown in the diagrammatic geophysical-log cross-section of Figure 3. The predicted depth to the top of the Entrada in the proposed Hilcorp well, and the relationship between the Entrada and Todilto, are also shown on Figure 3.

In addition to the Todilto, the Entrada is separated from overlying aquifers by low-conductivity beds assigned to the Beclabito Member of the Wanakah Formation above the Todilto, the Summerville Formation, and the Recapture Shale Member of the Morrison Formation.

CONFORMANCE WITH CRITERIA OF §72-12-25 et seq., NMSA

Total Dissolved Solids (TDS) Content

The nearest Entrada wells for which major-ion water analyses were found in the public record are the Northeast Blanco Unit No. 501 salt-water disposal well (NEBU 501 SWD) in Sec. 10, T. 30 N., R. 7 W., API No. 30-039-24236 (Figure 1) and the Cherokee and Pittsburg Gallo Wash No. 2 in Sec. 16, T. 21 N., R. 9 W. (OSE File No. SJ-549 Explor-1). TDS concentrations were 15,500 mg/L and 10,630 mg/L, respectively, in water from those wells. The analyses are shown below in Table 2. Samples from all of the Enduring wells under File No. SJ-4301 (Figure 1) show TDS concentrations substantially above the 1,000 mg/L criterion. A TDS concentration significantly in excess of 1,000 mg/L can be confidently expected in Entrada Sandstone water from the proposed Hilcorp well.

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Table 2. Summary of analyses of water from the Northeast Blanco Unit No. 501 salt-water disposal well and Cherokee and Pittsburg Gallo Wash No. 2. Concentrations in mg/L.

	NEBU 501 SWD	C&P Gallo Wash 2
location	Sec. 10, T. 30 N., R. 7 W.	Sec. 16, T. 21 N., R. 9 W.
date	Aug. 2, 1988	July 14, 1978
sodium	4,237	3,250
potassium	--	27.5
calcium	1,162	172
magnesium	267	13
iron, total	500+?	2.1
chloride	8,165	544
carbonate	0	--
bicarbonate	102	242
sulfate	1,600	6,380
TDS	15,500	10,630
reference	NMOCD, API No. 30-03-924236	Shomaker, 1981, p. 67

mg/L - milligrams per liter
TDS - total dissolved solids
NMOCD - New Mexico Oil Conservation Division records

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Hydraulic Separation from Shallower Aquifers and Surface Water: Confining Zone

In most of the San Juan Basin, the next-shallower aquifer above the Entrada Sandstone is the Westwater Canyon Member of the Morrison Formation. The top of the Morrison is expected to be about 800 ft above the top of the Entrada, and the top of the Westwater Canyon would be somewhat deeper. The Entrada is separated from the Westwater Canyon by very-low-conductivity beds of the Todilto Limestone Member of the Wanakah Formation, and also the siltstones of the Beclabito Member of the Wanakah (or Summerville Formation) and the Recapture Shale Member of the Morrison Formation. The hydraulic separation is demonstrated by several lines of evidence.

Vertical Hydraulic Conductivity of Todilto Limestone Member: The relationship between the Entrada and the Todilto is described by Ridgley and Hatch (2013, p. 1) in these terms: "[p]reservation of individual sand dunes [the Entrada] overlain by a carbonate unit that serves as both source rock and seal make the Todilto a locally sourced TPS [Total Petroleum System]."

The hydraulic conductivity across bedding planes is not known to have been measured, but the Todilto is recognized as an effective barrier to flow. Wu et al. (2011, §22.3.2.2), referring to the then-proposed Pathfinder AGI No. 1 Well in Sec. 1, T. 29 N., R. 15 W. (Figure 1), say "[t]he Entrada is effectively sealed on top by the overlying Todilto Limestone and Beclabito siltstones of the

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Jurassic Wanakah Formation and below by the underlying shales and mudstones of the Triassic Chinle Formation." The New Mexico Oil Conservation Division (NMOCD, 2009, p. 2) found, in an order relating to the same well, that "the Entrada formation is sealed on top by the Todilto Limestone and Beclabito siltstones [the upper member of the Wanakah]. The Caprock (Wanakah) is a low porosity siltstone and recrystallized limestone which is an effective barrier above the injection zone."

The results of the pumping tests of the C&P Gallo Wash No. 2 Well (SJ-549-Expl-1; Shomaker, 1981), are consistent with the response of a Theissian aquifer, that is, an aquifer that has essentially no hydraulic connection above or below.

Vertical Hydraulic Conductivity of Summerville Formation: Four intervals in the clay-rich siltstone interpreted as the Summerville Formation immediately above the Todilto were cored in the C&P Gallo Wash No. 2 Well (Shomaker, 1981, table 19), and horizontal and vertical permeabilities were determined for each by Core Laboratories, Inc. The vertical permeability (specific liquid permeability to 8,000 mg/L sodium chloride solution) ranged from 3.9×10^{-6} to 6.1×10^{-5} millidarcies, equivalent to hydraulic conductivity values in the 10^{-7} to 10^{-8} ft/day range.

Groundwater Head Difference Between Entrada and Next Overlying Aquifer: The hydraulic separation between the Entrada and the Westwater Canyon is consistent with the significant difference in groundwater head as between two water wells near each other in T. 21 N., R. 9 W., one completed in the Entrada and the other in the Westwater Canyon, as shown in Table 3. The head in the Entrada was 114 ft lower than that in the Westwater in a well about 3,000 ft distant.

Water Quality in Entrada Sandstone and Overlying Aquifers: As shown in Table 3, the quality of water in the Entrada is significantly different, with a TDS of 10,630 mg/L, from water in the Westwater Canyon aquifer at 3,648 mg/L, in two wells within the same section.

Table 3. Comparison of characteristics of Entrada Sandstone and next-shallower aquifer, the Westwater Canyon Member of the Morrison Formation, in two wells in Sec. 16, T. 21 N., R. 9 W. (data from Shomaker, 1981)

	C&P Gallo No. 1	C&P Gallo No. 2
location in Sec. 16, T. 21 N., R. 9 W.	C SW/4 NE/4	NE/4 SE/4 SE/4
OSE File No.	SJ-118	SJ-549-Explor-1
aquifer	Westwater Canyon	Entrada
GL elevation, ft	6,380	6,418
depth to top of Morrison Formation, GL, ft	4,580	4,603
depth to top of Entrada Sandstone, GL, ft	5,508 (after deepening)	5,532
depth to water, ft (+ means above GL)	+129	23
water-level elevation, ft	6,509	6,395
total dissolved solids, mg/L	3,648	10,630

GL - ground level
mg/L – milligrams per liter

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Effects of Pumping from Proposed Well on Surface Water Supplies

The effect of the proposed pumping on streamflow in New Mexico would probably be near zero. The perennial stream reach where Jurassic beds are beneath valley alluvium nearest the proposed wells appears to be in the Rio Gallina, roughly 40 miles east of the proposed wells. Even though some depletion due to pumping from the Entrada might be calculated, in regional groundwater systems that include widespread confined aquifers and confining beds, much of the water produced from the aquifers is actually released from storage in the confining beds (see, e.g., Bredehoeft et al., 1983; Shomaker, 1995). In the case of the proposed Entrada wells, this probably applies primarily to the underlying Chinle beds. The release from storage in these beds mitigates the drawdown effects in the aquifer at large distances. In addition, the reach of the Rio Gallina is separated from the Entrada Sandstone in the San Juan Basin by a significant structural discontinuity.

Large thicknesses of low hydraulic conductivity beds of the Jurassic sequence above the Todilto, then the Mancos Shale and, in most areas other Cretaceous and Tertiary units as well, separate the Entrada from the San Juan River within New Mexico. The nearest point at which Jurassic beds subcrop beneath the San Juan River is about 4 miles from the Four Corners, about 91 miles northwest of the proposed Hilcorp well (see Figure 1), and here the subcrop unit is the Morrison, still separated from the Entrada by beds of the Todilto and Summerville equivalents.

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Although the actual streamflow depletion that would result from the proposed Hilcorp pumping is likely to be minimal, the State Engineer may require that existing surface-water rights be protected by acquiring and transferring some existing surface-water rights. In the case of the Enduring Resources Notices of Intention for wells under State Engineer File No. SJ-4301 *et al,* the State Engineer staff prepared a groundwater flow model for calculating the surface-water depletions (see Keyes, 2018). The Keyes model is very simple and very conservative in concept, and treats the Entrada, along with the Morrison Formation and the Dakota Sandstone, as a single aquifer with uniform hydraulic characteristics throughout the San Juan Basin; it does not account for structural discontinuities or leakage into the aquifer from underlying beds.

The depletion predicted for the Rio Gallina by the Keyes model, assuming that 15,000 BWPD (706 ac-ft/yr) is pumped from each well, for total pumping periods of 20 years and 100 years, and assuming no re-injection into the Entrada through disposal wells, is shown on Figure 4. If pumping continues for 100 years, the calculated rate of depletion at the end of 100 years would be 12.3 ac-ft/yr. If pumping were continuous for 20 years and then ceased, the depletion rate as of the end of 100 years would be 4.4 ac-ft/yr.

The Keyes model was also operated to estimate the depletion of the San Juan River under the same 20-year and 100-year pumping assumptions. In both cases, the predicted 100-year rate of depletion is less than 0.1 ac-ft/yr, and may be considered de minimis by the State Engineer.

Water pumped from the proposed wells will be used as drilling water and in well stimulation for oil and gas production, and, except for minor incidental losses, will be injected into petroleum-producing intervals shallower than the Entrada for well stimulation, or will be injected into salt-water disposal wells along with produced water from the oil and gas wells. Almost all of the currently permitted San Juan Basin disposal wells are completed in the Entrada, and

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sometimes in additional, shallower zones. Although there will be large drawdown effects in the Entrada itself, no actual net depletion is likely to result from the proposed pumping because the water will be re-injected into beds within or above the Entrada.

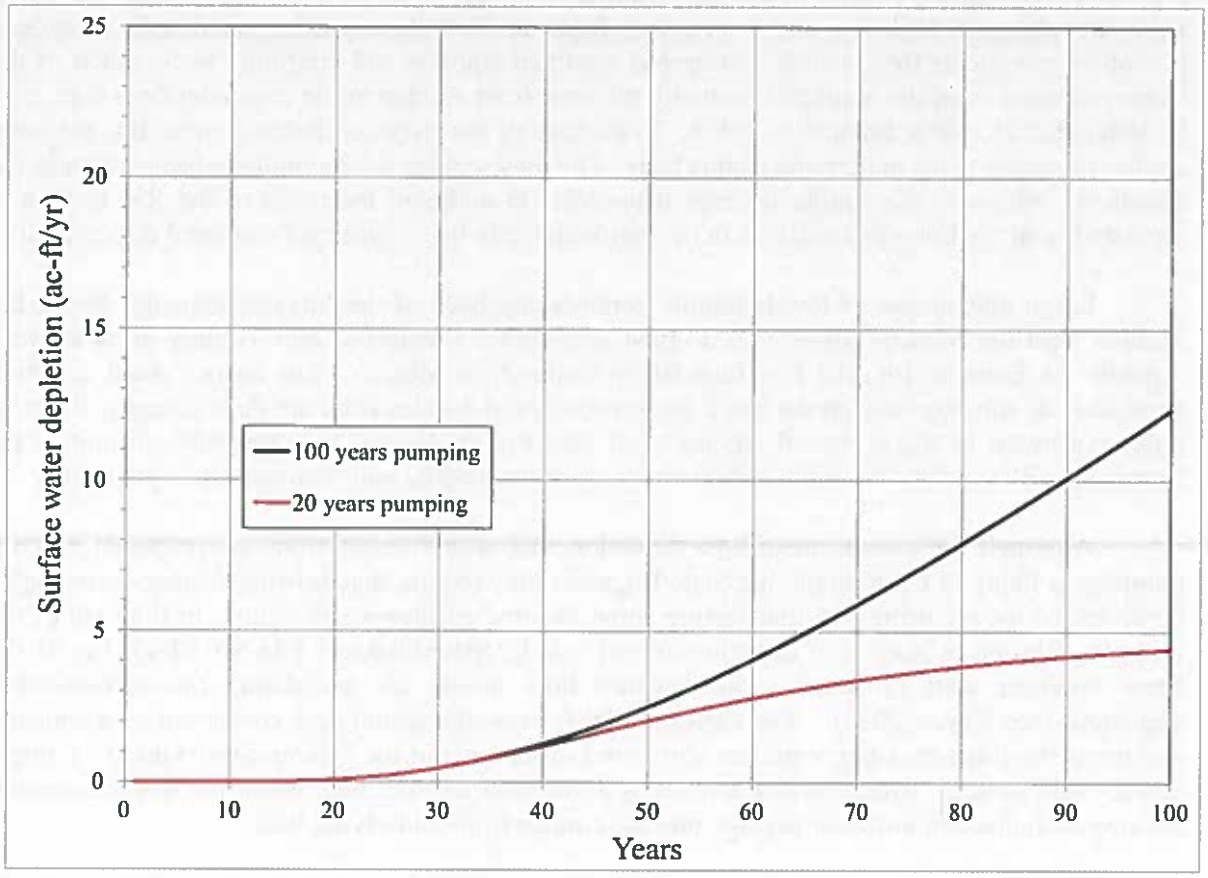

Figure 4. Rate of streamflow depletion of Rio Gallina, in a reach about 40 miles east of the proposed Hilcorp well, due to pumping of 15,000 BWPD (706 ac-ft/yr) from proposed Hilcorp well, as calculated using the State Engineer (Keyes, 2018) groundwater flow model. The black curve represents the effect of 100 years of continuous pumping; the red curve assumes a 20-year period of pumping with no pumping thereafter.

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Attachment B – Access Agreement

This water well will be located on a new, proposed pad located on Bureau of Land Management (BLM) surface. The surface area is being permitted in conjunction with two oil and gas wells through the BLM via an Application for Permit to Drill (APD). These new facilities are considered "on lease—within Unit" and will not require a separate right of way grant from the BLM; thus, APD approval is sufficient to grant access to the surface area.

APD approval from the BLM is anticipated by the end of October 2019.

CANYON LARGO 2506-30 #1

Water Well

SJ-4366

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ARTESIAN WELL PLAN OF OPERATIONS

(for new well construction and repairs)

An Artesian Well Plan of Operations shall be filed with and approved by the Office of the State Engineer prior to commencing the drilling or repairing of an artesian well.

A detailed diagram of the proposed artesian well shall be attached to this plan.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP:

Office of the State Engineer POD Number (Well Number) for well (if known): Canyon Largo 2506-30 #1 SJ-4366

Name of well owner: Hilcorp Energy Company

Mailing address: 382 Road 3100

City: Aztec State: New Mexico Zip code: 87410

Phone number: 505-564-0743 E-mail: khutchins@hilcorp.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide drilling services: Mote Drilling Inc.

New Mexico Well Driller License No.: 733 Expiration Date: June 30, 2021

IV. WELL INFORMATION:

1) Will this well be used for any type of monitoring program? no If yes, please describe in section V; applicant should be familiar with the need for specialty materials or design required for the monitoring program.

2) Will the well tap or penetrate brackish, saline, or otherwise poor quality water? yes If yes, please provide additional detail in section V.

3) Depth of top of the anticipated artesian aquifer: 7,913' feet below ground level (bgl).

4) Is a flowing artesian head anticipated? no

5) Will a pitless adapter be installed in the well? no

6) GPS Well Location: Latitude: 36 deg, 21 min, 58.60 sec
Longitude: -107 deg, 30 min, 49.89 sec, NAD 83

7) Will permanent surface casing be installed? yes If yes, provide details below. (Note: surface casing is shallow casing generally set above the confining unit overlying the artesian aquifer and is considered optional).

a) Diameter of borehole to be drilled for the surface casing: 17.5 inches.

b) Proposed surface casing depth: 340 feet below ground level.

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c) Surface casing material, grade: Steel J-55, 54.5 ppf

d) Inside diameter (ID): 12.615 inches.

e) Outside diameter (OD): 13.375 inches.

f) Wall thickness: 0.380 inches.

g) Casing joint connection type (**note whether welded, glued, coupled, etc. If coupled, include outside diameter OD and the length in inches, and also the number of threads per inch.**):
BTC connection, 14.375" OD, 5 threads per inch

h) Interval of proposed surface casing annular sanitary seal: 0 to 340 feet below ground level.

i) Surface casing sanitary seal material:
Cement

8) Artesian casing (Note: artesian casing shall be set adequately into the confining unit overlying the artesian aquifer; in some designs this may also be the production casing; NMOSE inspection requirements apply to installing, grouting and testing the artesian casing):

a) Diameter of borehole to be drilled for the artesian casing: 12.25 inches.

b) Proposed artesian casing depth: 5,350' feet below ground level.

c) Artesian casing material, grade: Steel P-110, 40 ppf

d) Inside diameter (ID): 8.835 inches.

e) Outside diameter (OD): 9.625 inches.

f) Wall thickness: 0.395 inches.

g) Casing joint connection type (**note whether welded, glued, coupled, etc. If coupled, include outside diameter (OD) and the length in inches, and also the number of threads per inch.**)
BTC connection, 10.625" OD, 5 threads per inch

h) Type and spacing of artesian casing centralizers:
solid, spiral vane centralizer. 1 every second joint to surface

i) Manufacturer and model of float shoe: Weatherford, 402 SureSeal

j) Method of annular grout placement: check one Pressure Grout ☑ Tremmie Pipe ☐

k) Interval of proposed annular grout: 0 to 5,350' feet below ground level.

l) Proposed annular grout mix: See section P gallons of water per 94 pound sack of Portland cement.

m) Cement type proposed: Halcem Lead, Halcem Tail

n) Theoretical volume of annular grout required: 2217 cu. ft

o) Will the grout be: ☐ batch-mixed and delivered to the site
☑ mixed on site

p) Grout additives requested, and percent by dry weight relative to cement: (See AWWA Standard A100-06 or Halliburton red book; common additives: calcium chloride, bentonite solution, pozzolan ash):

Lead Cmt: Halcem Sytem
0.3% HR-5, 0.125 lb/sk Poly E flake, 1.974 ft3/sk -- 10.28 gal/sk, 12.3 ppg

Tail Cmt: Varicem Cement
0.1% HR-5, 0.125 lb/sk Poly E flake, 1.295 ft3/sk -- 5.69 gal/sk, 13.5 ppg

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q) Additional notes and calculations:

9) Production casing (set through the artesian casing and into the artesian aquifer; may not be necessary if the artesian casing is used as the production casing):

a) Will you be using a production casing within the artesian casing? Yes If yes, provide a description of the following in section V:

i. Diameter of borehole to be drilled for production casing; casing joint connection type - note whether coupled, welded, glued, etc.; proposed production casing depth; and inside diameter, outside diameter, wall thickness, casing material, and casing material grade of production casing.

ii. List the proposed screened/ perforated interval(s) if you plan to use well screen or perforated casing.

iii. List the vertical intervals and seal or fill material if the annulus between the production casing and artesian casing/borehole is to be sealed/ filled.

V. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

Production Section Details

Production Openhole: 8-3/4"
Outside Casing Diameter: 7" Inside Casing Diameter: 6.276"
Wall Thickness: 0.362"
Weight, Grade: 26 ppf, P-110 Connection: BTC, 7" flush joint, 5 threads per inch
Set Depth: 8,400'
Centralizers: Solid, Spiral Vane. 1 every joint to intermediate casing, 1 every 3rd joint from intermediate shoe to surface

Proposed Perforated Interval: 7,915 - 8,350'

Cement:
Bondcem
0.3% Super CBL, 0.1% HR -601, 6.08 gal/sk FW. 13.3 ppg, 1.356 ft3/sk
Volume: 758 cu. ft

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VI. SIGNATURE:

I, Jeff Wampler, say that I have carefully read the foregoing Artesian Well Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Artesian Well Plan of Operations and attachments are true to the best of my knowledge and belief.

Jeff Wampler — Signature of Applicant — 8-2-19 — Date

Robert Thompson — Signature of Well driller — 11-5-19 — Date

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VII. ACTION OF THE STATE ENGINEER:

This Artesian Well Plan of Operations is:

☐ Approved subject to the attached conditions.

☐ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this _____ day of _____, _____

_____, State Engineer

By: _____

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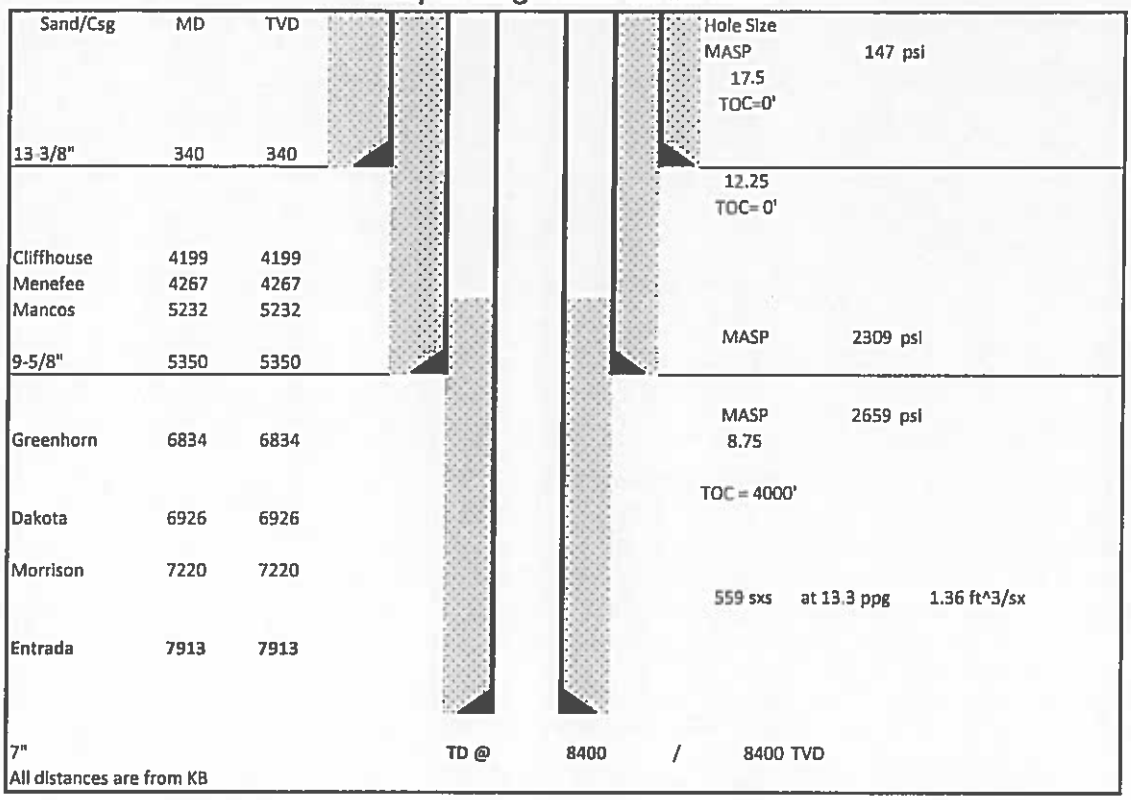
Canyon Largo 2506-30 #1 WBD



	Size	Wt	Depth	Grade	Cxn	Design Factors	Collapse	Burst	Tension
Surface	13.375	54.5	340	J55	BTC	Rating	1130	2740	514000
						SF	6.73	15.83	4.34
Int	9.625	40.0	5350	P110	BTC	Rating	3470.00	7910.00	988000
						SF	1.31	2.99	3.15
Prod	7.000	26.0	8400	P110	Hyd 513	Rating	4850	9960	548000
						SF	1.06	2.22	1.72

Csg	$/ft	ID	Drift	Capacity (bpf)	Displacement BPF Closed end	Open end
Surface		12.615	12.46	0.1546	0.1738	0.0192
Int		8.835	8.679	0.0758	0.0900	0.0142
Prod		6.276	6.151	0.0383	0.0476	0.0093

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Attachment D - Well Identification Chart

OSE File and POD#	Well Name	Longitude	Latitude	Legal Description	County	Surface Owner	Type of Access Agreement	Alternative Location Description	Proposed Total Depth	Outside Casing Diameter
	Canyon Largo 2506-30 #1 Water Well	-107.513858	36.366278	SW/4 SW/4 of Section 30, T25N-R6W, N.M.P.M.	Rio Arriba County	BLM	Pending BLM APD	From intersection of US Hwy 550 & NM Hwy 64; south on US Hwy 550 for 49.4 miles, turn left onto County Road 378 in Counselor, NM; drive apx 12 miles to County Road 523; stay on County Road 523 for approximately 2 miles	8,400	7"

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ATTACHMENT E – WR-08 Additional PODs

NEW MEXICO OFFICE OF THE STATE ENGINEER

ATTACHMENT 1
POINT OF DIVERSION DESCRIPTIONS

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

a. Is this a: ☐ Move-From Point of Diversion(s) ☐ Move-To Point of Diversion(s)	**b. Information on Attachment(s):** Number of points of diversion involved in the application: 1 Total number of pages attached to the application:

☐ **Surface Point of Diversion** OR ☒ **Well**

Name of ditch, acequia, or spring:	
Stream or water course:	
Tributary of:	

c. Location (Required):
Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)

NM State Plane (NAD83) (feet) NM West Zone ☒ NM Central Zone ☐ NM East Zone ☐	UTM (NAD83) (meters) Zone 13N ☐ Zone 12N ☐	☐ Lat/Long–(WGS84) 1/10th of second	OTHER (allowable only for move-from descriptions - see application form for format) ☒ PLSS (quarters, section, township, range) ☐ Hydrographic Survey, Map & Tract ☐ Lot, Block & Subdivision ☐ Grant
POD Number: SJ–4366 Canyon Largo 2506-30 #1	X or Longitude -107.513858	Y or Latitude 36.366278	Other Location Description: SW/4 SW/4 Sec.30, T25N-R06W, NMPM
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:

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FOR OSE INTERNAL USE

Form wr-08
POD DESCRIPTIONS - ATTACHMENT 1

File Number: SJ–4366	Trn Number:
Trans Description (optional)	

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Attachment F – Place of Use

The water well will be used to supply water for oil and gas drilling, completion, and maintenance purposes primarily on the CLU 2407-03F #1H well pad and the CLU 2506-30L #1H well pad. These well pads are located in the SE/SW of Section 03, T24N-R07W, N.M.P.M. and the NW/SW of Section 30, T25N-R06W, N.M.P.M. The water will be used for the aforementioned wells, additional potential wellbores on those pads, as well as other wells in Rio Arriba County, New Mexico.

CANYON LARGO 2506-30 No. 1

Water Well

SJ-4366

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Canyon Largo Unit 2506-30 #1 Water Well

0.1 0 0.07 0.1 Miles

1:4,687

N

NAD_1927_StatePlane_New_Mexico_West_FIPS_3003

© Hilcorp

This map is to be used for Hilcorp or Harvest purposes only. Not survey quality.

Legend

Hilcorp Wells Surface Location

- Gas Well
- Oil Well
- Oil and Gas
- SWD
- Injection Well
- Abandoned Loc
- Location
- Other Location

Notes

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CANYON LARGO 2506-30 #1

Water Well

File No. SJ-4366

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL

A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐	Pollution Control And/Or Recovery	☐	Ground Source Heat Pump	
☒ Exploratory Well (Pump test)	☐	Construction Site/Public Works Dewatering	☐	Other(Describe):	
☐ Monitoring Well	☐	Mine Dewatering			

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: Hilcorp Energy Company	Name: Hilcorp Energy Company
Contact or Agent: check here if Agent ☐ Keri Hutchins - Landman	Contact or Agent: check here if Agent ☐ Jeff Wampler - Engineer
Mailing Address: 382 Road 3100	Mailing Address: 1111 Travis St
City: Aztec	City: Houston
State: NM Zip Code: 87410	State: TX Zip Code: 77002
Phone: 505-564-0743 ☐ Home ☐ Cell Phone (Work):	Phone: 713-757-7111 ☐ Home ☐ Cell Phone (Work):
E-mail (optional): khutchins@hilcorp.com	E-mail (optional): jwampler@hilcorp.com

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2019 AUG 22 PM 4:46
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

FOR OSE INTERNAL USE Application for Permit, Form WR-07, Rev 11/17/16

File No.: SJ-4366	Trn. No.:	Receipt No.: 5-6457
Trans Description (optional):		
Sub-Basin:	PCW/LOG Due Date:	

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2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☒ NM State Plane (NAD83) (Feet)
- ☒ NM West Zone
- ☐ NM East Zone
- ☐ NM Central Zone

☐ UTM (NAD83) (Meters)
- ☐ Zone 12N
- ☐ Zone 13N

☐ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
Canyon Largo 2506-30 #1	-107.513858	36.366278	SW/4 SW/4 Sec. 30, T25N-R6W, NMPM

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: Bureau of Land Management

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): 8,400	Outside diameter of well casing (inches): 7"
Driller Name: Mote Drilling Inc.	Driller License Number: 733

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
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4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☒ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Jeff Wampler - Engineer, Hilcorp Energy Company
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature Jeff Wampler

Applicant Signature

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2019 AUG 22 PM 4:49

ACTION OF THE STATE ENGINEER

This application is:

☐ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this _____ day of _____ 20 _____, for the State Engineer,

_____, State Engineer

By: _____ _____
Signature Print

Title: _____
Print

FOR OSE INTERNAL USE Application for Permit, Form WR-07

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OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – AZTEC OFFICE

OFFICIAL RECEIPT NUMBER: 5 - 6457 DATE: 9-4-2019 FILE NO.: SJ- 4316a

TOTAL: 5.00 RECEIVED: five DOLLARS ☐ CASH: ☒ CHECK NO.: 1214

PAYOR: Keri Hutchins ADDRESS: 108 Rd. 2350

CITY: Aztec STATE: NM ZIP: 87410 RECEIVED BY: MT

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; **yellow** copy remains in district office; and **goldenrod** copy to accompany application being filed. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of the daily deposit.

A. Ground Water Filing Fees

___	1. Change of Ownership of Water Right	$ 2.00
___	2. Application to Appropriate or Supplement Domestic 72-12-1 Well	$ 125.00
___	3. Application to Repair or Deepen 72-12-1 Well	$ 75.00
___	4. Application for Replacement 72-12-1 Well	$ 75.00
___	5. Application to Change Purpose of Use 72-12-1 Well	$ 75.00
___	6. Application for Stock Well/Temp. Use	$ 5.00
___	7. Application to Appropriate Irrigation, Municipal, or Commercial Use	$ 25.00
___	8. Declaration of Water Right	$ 1.00
___	9. Application for Supplemental Non 72-12-1 Well	$ 25.00
___	10. Application to Change Place or Purpose of Use Non 72-12-1 Well	$ 25.00
___	11. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water	$ 50.00
___	12. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water	$ 50.00
___	13. Application to Change Point of Diversion of Non 72-12-1 Well	$ 25.00
___	14. Application to Repair or Deepen Non 72-12-1 Well	$ 5.00
1	15. Application for Test, Expl. Observ. Well	$ 5.00
___	16. Application for Extension of Time	$ 25.00
___	17. Proof of Application to Beneficial Use	$ 25.00
___	18. Notice of Intent to Appropriate	$ 25.00

B. Surface Water Filing Fees

___	1. Change of Ownership of a Water Right	$ 5.00
___	2. Declaration of Water Right	$ 10.00
___	3. Amended Declaration	$ 25.00
___	4. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water	$ 200.00
___	5. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water	$ 200.00
___	6. Application to Change Point of Diversion	$ 100.00
___	7. Application to Change Place and/or Purpose of Use	$ 100.00
___	8. Application to Appropriate	$ 25.00
___	9. Notice of Intent to Appropriate	$ 25.00
___	10. Application for Extension of Time	$ 50.00
___	11. Supplemental Well to a Surface Right	$ 100.00
___	12. Return Flow Credit	$ 100.00
___	13. Proof of Completion of Works	$ 25.00
___	14. Proof of Application of Water to Beneficial Use	$ 25.00
___	15. Water Development Plan	$ 100.00
___	16. Declaration of Livestock Water Impoundment	$ 10.00
___	17. Application for Livestock Water Impoundment	$ 10.00

All fees are non-refundable.

C. Well Driller Fees

___	1. Application for Well Driller's License	$ 50.00
___	2. Application for Renewal of Well Driller's License	$ 50.00

D. Reproduction of Documents

___ @ 25¢/copy $_____

___ Map(s) $_____

E. Certification $_____

F. *Credit Card Convenience Fee $_____

G. Other_____ $_____

Comments: Expl. / NOI

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OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – AZTEC OFFICE

OFFICIAL RECEIPT NUMBER: 5 - 6451 DATE: 8-27-2019 FILE NO.: TBD (NOI)

TOTAL: 25.00 RECEIVED: twenty five .00/100 DOLLARS ☐ CASH: ☐ CHECK NO.: 1213

PAYOR: Keri Hutchins / Hilcorp ADDRESS: 382 Rd 3100

CITY: Aztec STATE: NM ZIP: 87410 RECEIVED BY: S. Williams

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; **yellow** copy remains in district office; and **goldenrod** copy to accompany application being filed. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of the daily deposit.

A. Ground Water Filing Fees

___	1. Change of Ownership of Water Right	$ 2.00
___	2. Application to Appropriate or Supplement Domestic 72-12-1 Well	$ 125.00
___	3. Application to Repair or Deepen 72-12-1 Well	$ 75.00
___	4. Application for Replacement 72-12-1 Well	$ 75.00
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___	6. Application for Stock Well/Temp. Use	$ 5.00
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___	13. Application to Change Point of Diversion of Non 72-12-1 Well	$ 25.00
___	14. Application to Repair or Deepen Non 72-12-1 Well	$ 5.00
___	15. Application for Test, Expl. Observ. Well	$ 5.00
___	16. Application for Extension of Time	$ 25.00
___	17. Proof of Application to Beneficial Use	$ 25.00
1	18. Notice of Intent to Appropriate	$ 25.00

B. Surface Water Filing Fees

___	1. Change of Ownership of a Water Right	$ 5.00
___	2. Declaration of Water Right	$ 10.00
___	3. Amended Declaration	$ 25.00
___	4. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water	$ 200.00
___	5. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water	$ 200.00
___	6. Application to Change Point of Diversion	$ 100.00
___	7. Application to Change Place and/or Purpose of Use	$ 100.00
___	8. Application to Appropriate	$ 25.00
___	9. Notice of Intent to Appropriate	$ 25.00
___	10. Application for Extension of Time	$ 50.00
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___	12. Return Flow Credit	$ 100.00
___	13. Proof of Completion of Works	$ 25.00
___	14. Proof of Application of Water to Beneficial Use	$ 25.00
___	15. Water Development Plan	$ 100.00
___	16. Declaration of Livestock Water Impoundment	$ 10.00
___	17. Application for Livestock Water Impoundment	$ 10.00

All fees are non-refundable.

C. Well Driller Fees

___	1. Application for Well Driller's License	$ 50.00
___	2. Application for Renewal of Well Driller's License	$ 50.00

D. Reproduction of Documents

___	@ 25¢/copy	$_____
___	Map(s)	$_____

E. Certification $_____

F. *Credit Card Convenience Fee $_____

G. Other_____ $_____

Comments:

Canyon Largo 2506-30 #1
NOI well

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SEE ATTACHED SUPO

SEE ATTACHED SUPO

SEE ATTACHED SUPO

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SEE ATTACHED SUPO

SEE ATTACHED SUPO

Hilcorp Energy Company's Surface Use Plan of Operations

Canyon Largo Unit 2407-03F #001H, #002H, #003H and Five Future Oil and Natural Gas Wells Project

May 2025

Hilcorp Energy Company
1111 Travis Street
Houston, Texas 77002
Phone: (713) 209-2400

Developed by:

EIS
Environmental & Permitting Solutions

479 Wolverine Drive #9180
Bayfield, Colorado 81122
Phone: (970) 884-4080

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Pursuant to Onshore Oil and Gas Order No. 1 (43 CFR 3160), this Surface Use Plan of Operations (SUPO) has been prepared for Hilcorp Energy Company's (Hilcorp) proposed Canyon Largo Unit 2407-03F #001H, #002H, #003H and five future Natural Gas Wells and one source water well Project (CLU 2407-03F Project) Application for Permit to Drill (APD). This SUPO is in accordance with Onshore Oil and Gas Order No. 1.

Infrastructure proposed to be constructed, operated, subsequently interim reclaimed, and eventually fully reclaimed as part of the CLU 2407-03F Project entails one well pad with production facilities and construction buffer zone, one access road, eight TUAs, and one well-connect pipeline corridor. The aforementioned proposed infrastructure associated with the CLU 2407-03F Project would be located both off lease and on-lease. The proposed on-lease portion of the project would be built per lease authority associated with Hilcorp's Canyon Largo Unit (NMSF-079915, NMSF-078922, E-809-17, E-5615-4 NMSF-078875, NMSF-078878). The proposed off-lease portion of the project would be constructed by ROW authority when granted. A total of 8 horizontal oil and gas wells and one vertical source water well are planned to be drilled from this well pad. All 8 oil and gas wells would be horizontally drilled, possibly produced and eventually plugged and abandoned from the proposed well-pad location. The proposed oil and gas wells would access Federal minerals within Hilcorp's Canyon Largo Unit.

1) EXISTING ROADS

A. The project area would be located in northwest New Mexico; specifically, in the northwest portion of San Juan County, New Mexico:

- From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 46.8 miles to Mile Marker 104.9;
- Go Left (Northerly) exiting US Hwy 550 onto County Road #377 for 4.1 miles to fork in roadway;
- Go Left (Northerly) which is straight remaining on County Road #377 for 2.2 miles to fork in roadway;
- Go Left (Northerly) which is straight remaining on County Road #377 for 2.0 miles to fork in roadway;
- Go Right (Easterly) exiting County Road #377 onto County Road #503 for 2.2 miles to fork in roadway;
- Go Left (Northerly) exiting County Road #503 onto existing roadway for 0.5 miles to fork in roadway;
- Go Straight (Northerly) for 200' to new access on right-hand side of existing roadway which continues for 2702.1' to Hilcorp Canyon Largo Unit 2407-03F #001H staked location.

B. For existing County Roads or roads that are considered collector roads, Hilcorp would defer to the county or to the Roads Committee, when formed, for maintenance determinations.

C. Roads would be maintained to the same or better condition as they existed prior to the commencement of operations. Maintenance would continue until final abandonment and reclamation of the well location (See Appendix B).

D. Best management practices (BMPs) for dust abatement and erosion control would be utilized along the roads to reduce fugitive dust for the life of the project. Water application using a rear-spraying truck or other suitable means would be the primary method of dust suppression along the roads. Any additional erosion-control practices, such as the application of magnesium

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chloride, organic-based compounds, or polymer compounds to the roads, would be included in the conditions of approval (COAs) attached to the approved APD.

E. No routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than 6 inches, the soil would be deemed too wet for construction or maintenance.

F. Approximately 765 feet of existing on-lease road will be permanently closed between the southern corner of the existing Canyon Largo Unit #462 well pad and the northwest corner of the proposed CLU 2407-03F Project well pad. A permanent pipe fence will be constructed at each end of the closed road to deter travel across the subject road. Appropriate earthen material and Geomat will be added only to the roadbed, of the closed road, and the roadbed will be reseeded. Permanent pipe fences would be installed perpendicular to, and across the extent of, the subject road at or near 36.34448, -107.56921 and 36.34305, -107.56742

2) NEW OR RECONSTRUCTED ACCESS ROAD(S)

A. As a result of the closure of that certain road detailed in Section 1. F. above, Hilcorp would construct a new access road as part of the CLU 2407-03F Project. The well pad access road would be 2,702.1 feet long and include a 36-inch culvert at the northeastern edge of the well pad as shown on the construction plats in Appendix C.

B. The proposed access road would be classified as a BLM resource road and would be constructed in accordance with the BLM Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development and BLM Manual 9113, Sections 1 and 2.

C. Maximum width would be a 30-foot overall ROW with a 14-foot road running surface. During drilling and subsequent operations, all equipment and vehicles would be confined to the 14-foot driving surface.

D. The maximum road grade would be no greater than eight percent, unless specified by the BLM.

E. Topsoil removal, storage, and protection are described in detail in the Surface Reclamation Plan.

F. No construction or routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than six (6) inches, the soil would be deemed too wet for construction or maintenance.

G. Hilcorp will be responsible for road maintenance from the beginning of construction to completion of operations when the well is plugged and abandoned. See attached Road Maintenance Plan (Appendix B).

H. BMPs for dust abatement and erosion control will be utilized along the road to reduce fugitive dust for the life of the project. Water application using a rear-spraying truck or other suitable means will be the primary method of dust suppression along the road. See Hilcorp's Dust Mitigation Plan (Appendix H) for further details.

I. Culvert(s) and low water crossing(s) will be installed along the existing road as listed below and further detailed in Appendix G. TUAs D – H (described below) are off lease and will be permitted as an off lease action via a SF299.

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- TUA "A" - One low water crossing at 36.33429, -107.57887
- TUA "B" - One low water crossing at 36.33243, -107.58205
- TUA "C" - One low water crossing at 36.33066, -107.58887
- TUA "D" - One low water crossing at 36.32841, -107.60306 (off lease)
- TUA "E" - One low water crossing at 36.32855, -107.60341 (off lease)
- TUA "F" - One- 24" culvert on existing road at 36.32864, -107.60384 (off lease)
- TUA "G" - One- 24" culvert on existing road at 36.32803, -107.6055 (off lease)
- TUA "H" - One low water crossing at 36.32791, -107.60649 (off lease)

3) LOCATION OF EXISTING WELLS

Water wells and oil and gas wells (plugged and abandoned, active, and proposed) within a 1-mile radius of the proposed CLU 2407-03F Project area are depicted in Appendix E. There are no water wells and 16 oil and gas wells (plugged and abandoned, active, or proposed) within a 1-mile radius of the proposed well pad location.

4) LOCATION OF EXISTING OR PROPOSED PRODUCTION FACILITIES

A. Pipelines

1 To accommodate gathering and transportation of produced federal oil and gas minerals from Hilcorp's proposed CLU 2407-03F Project, Hilcorp will be constructing, installing, and maintaining a 1,048.6-foot gathering system consisting of one up-to-6-inch-outside-diameter steel gas well-connect pipeline with cathodic protection from the proposed CLU 2407-03F well pad to existing Enterprise pipeline. This pipeline will be located on public lands managed by BLM. The well connect pipeline plat is included in Appendix C.

2 All activities associated with the construction, installation, operation, and maintenance will be in accordance with the APD submitted by Hilcorp and approved by the BLM.

B. Production Facilities

1 Hilcorp elects to defer providing the BLM with the well layout of production equipment per Onshore Order I Section VIII. Hilcorp will provide the well layout of production equipment Notice of Intent (NOI) once the Post Completion Facility set onsite has been conducted with the BLM's Environmental Protection Staff.

2 Any production equipment encompassed by a dirt berm or one in which fluids are present shall be adequately fenced and properly maintained in order to safeguard both livestock and wildlife.

3 Facilities would be painted Covert Green, as designated during the project onsite, to blend with the natural color of the landscape surrounding the well pad. Where necessary,

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contrasting safety paint would be used to highlight areas that may be potentially hazardous.

5) LOCATIONS AND TYPES OF WATER SUPPLY

Hilcorp proposes the CLU 2407-03F water supply well (permit No. SJ-4366 with the NM Office of the State Engineer) to be drilled and subsequently provide water for drilling and completion of the proposed oil and natural gas wells. The NM office of the State Engineers' approval of permit No. SJ-4366 will follow the approval of the APD associated with this surface use plan of operations. This water source well will be drilled from the herein proposed well pad with the same drilling rig and in the same manner as the oil and natural gas wells. This water source well would be permitted through the New Mexico Office of the State Engineer (OSE) and is more formally detailed in Appendix I. Appendix I further details the notice of intention to drill the well and the public notice to change the point of diversion to the herein proposed well pad. Operation activity associated with this water source well would be minimal and would only occur during times of drilling, completion, and for maintenance and repair of the water source well. The water source well will be plumbed into a water line for use in the development of oil and natural gas wells on the proposed location.

A. In addition, if needed, fresh water may be purchased from the list of freshwater sources below. Water would be trucked from these sources to the proposed location (See Appendix F – Water Route Map)
    - Sharp Water Well #1 – Section 18 of Township 28 North, Range 08 West, Permit Number (SJ 00163S)
    - Gould Pass Water Well – Section 15 of Township 27 North, Range 07 West, Permit Number (SJ00195)
    - Gonzales Mesa Water Well #1 – Section 03 of Township 25 North, Range 06 West, Permit Number (SJ 00885 – 3)
    - Jicarilla 1 and 2 Water wells – Section 08 of Township 25 North, Range 04 West, Permit Number (SJ01111)

B. Hilcorp will report the water source(s) used during drilling operations on the subsequent drilling reports and report the water sources used during completion on the subsequent completion reports.

C. The Canyon Largo 2407 pad will have eight (8) 25,000 bbl. water storage tanks on location to store water for continual, real-time water supply during drilling and completions. The completion layout in Appendix B shows the proposed water tank location on the north side of the pad

6) CONSTRUCTION MATERIALS

A. The construction phase of the project would commence upon receipt of the approved APD. The Bureau of Land Management – Farmington Field Office BLM-FFO would be notified (505-564-7600) at least 48 hours prior to the start of construction activities associated with the project. All project activities would be confined to permitted areas only.

B. Following the removal of vegetation, the top 6 inches of topsoil (if available) will be stripped. Excavated topsoil, which will be free of brush and tree limbs, trunks, and root balls, will be stored separately from subsoil or other excavated material. The topsoil will be stockpiled as a berm along the well pad perimeter (within the construction zone) or as a windrow along the road or pipeline corridor. Topsoil will not be used for padding well-connect pipelines. Gaps will be made

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in soil stockpiles (where necessary) to avoid ponding or to divert water during storm events. If present, surface rocks will be stockpiled adjacent to the topsoil stockpile(s). Vehicles and equipment will not be allowed to cross topsoil stockpile(s). Topsoil will not be stripped when soils are moisture-saturated or frozen below the stripping depth. If the location becomes prone to wind or water erosion, Hilcorp will take appropriate measures to prevent topsoil loss from wind. Such measures may include using tackifiers or water to wet the topsoil stockpile(s) so that a crust is created across the exposed soil. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments may be added to the topsoil as advised by the Hilcorp environmental scientist or appropriate agent/contractor

C. All surface infrastructure would be constructed utilizing native borrow within the permitted area to create a balanced working surface. If the need for surfacing material arises, it will be obtained from a permitted location approved by the surface managing agency. Should fill material be necessary Hilcorp will use material from the adjacent stock pond which is located approximately 1,000 feet east of the well pad (NAD 83 Coordinates 36.34242, -10756221).

D. A berm will be constructed completely around any production facilities which contain fluids (i.e. production tanks, produced water tanks, etc.). These berms will be constructed of compacted subsoil, corrugated metal, or equivalent, be impervious, and hold 110 percent of the capacity of the largest tank. If manifolded tanks are constructed, berms will be constructed to hold 110 percent of the combined capacity of the manifolded tanks.

D. Vegetation within the disturbance area, including trees that measure less than 3 inches in diameter (at ground level) and slash/brush, would be chipped or mulched and incorporated into the topsoil as additional organic matter. All trees 3 inches in diameter or greater (at ground level) would be cut at ground level and de-limbed. Tree trunks (left whole) and cut limbs would be stacked and made available to the public. The subsurface portion of trees (tree stumps) would be buried in the fill slope or disposed of appropriately.

E. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, hydraulic mulcher, chippers, and dozer.

F. Construction and maintenance activities would cease if soil or road surfaces become saturated to the extent that construction equipment is unable to stay within the project area and/or when activities cause irreparable harm to roads, soils, or streams.

7) METHODS FOR HANDLING WASTE

The CLU 2407-03F Project horizontal oil and natural gas wells and water supply well will be drilled, and waste handled, as described by the methods outlined below.

A. Cuttings

1 Drilling operations would utilize a closed-loop system. Drilling of the horizontal lateral would be accomplished with water-based mud. All cuttings would be placed in roll-off bins and hauled to the Envirotech land farm at 43 Co Rd 7175, Bloomfield, NM 87413. Hilcorp would follow Onshore Oil and Gas Order No. 1 regarding the placement, operation, and removal of closed-loop systems. No blow pit would be used.

2 Closed-loop tanks would be adequately sized for containment of all fluids.

B. Drilling Fluids

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1 Drilling fluids would be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids would be recycled and transferred to other permitted closed-loop systems or disposed of at one of the locations specified below in part G.

C. Spills

1 Any spills of non-freshwater fluids would be immediately cleaned up and removed to an approved disposal site.

D. Sewage

1 Portable toilets would be provided and maintained as needed during construction. Toilets will be monitored and emptied by Peak Septic Tank Service ("Peak"). Peak will take sewage from toilets to OMI Wastewater Treatment located at 1397 South Lake Street for disposal.

E. Garbage and other waste materials

1 All garbage and trash would be placed in enclosed metal trash containment. The enclosed metal trash container would be hauled off site and emptied at the Waste Management San Juan County landfill located at 78 County Road 3140, Aztec, NM 87410.

F. Hazardous Waste

1 No chemicals subject to reporting under Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.

2 No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities would be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.

3 All fluids (i.e., scrubber cleaners) used during washing of production equipment would be properly disposed of to avoid ground contamination or hazard to livestock or wildlife.

G. Produced Water:

1 Hilcorp would dispose of produced water from the CLU 2407-03F Project at the following facilities:

- San Juan 32-7 Unit 301 SWD, API 30-045-28549, operated by Hilcorp Energy Company, located in the Southwest ¼ of the Southwest ¼ Section 34, Township 32 North, Range 7 West.
- Holiday 1 SWD 301, API 30-045-35231, operated by Hilcorp Energy Company, located in Township 25 North, Range 10 West, Section 22, NE/4 SE/4.
- Jillson Federal 1 SWD, API 30-039-25465, operated by Hilcorp Energy Company, located in Township 24 North, Range 3 West, Section 8, SE/4 NW/4.
- Canyon 1 SWD, API 30-045-34454, operated by Hilcorp Energy Company, located in Township 26 North, Range 11 West, Section 35, SE/4 SW/4.

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2 Produced water could be transported through Hilcorp's existing waterline infrastructure. Some produced water may also be used in future drilling and completion operations as an alternative disposal method.

8) ANCILLARY FACILITIES

No ancillary facilities are foreseen for the CLU 2407-03F project. The proposed well pad location is adequately sized to support all planned construction, drilling, completion, and production activities. If ancillary facilities become necessary, Hilcorp will submit a sundry request for the use of the required facility.

9) WELL SITE LAYOUT

During construction, the proposed well pad would be leveled to provide adequate space and a level working surface for vehicles and equipment. Excavated materials from cuts would be used on fill portions of the well pad to level the surface. The approximate cuts, fills, and well pad orientation is shown on the construction plats in Appendix C. Rig orientation and the location of drilling equipment is depicted in Appendix D.

Drilling of the proposed CLU 2407-03F Project well would require constructing a 400-foot by 605-foot (5.55 acres) area with an additional 50-foot construction buffer zone on all sides of the pad (2.54 acres). The resulting area of the well pad and construction buffer zone would encompass an 8.09-acre disturbed area. The well pad would require a maximum cut of 13 feet on the west corner #3 and a maximum fill of 13 feet on the east corner #6. The entire area would be utilized during construction, setting of production equipment, drilling and completion phases. Topsoil would be stored in a berm within the construction buffer zone, along the northern, southern, and eastern edge of disturbance.

10) PLANS FOR SURFACE RECLAMATION

A Surface Reclamation Plan for the CLU 2407-03F Project is attached hereto in Appendix A. This Surface Reclamation Plan was prepared in accordance with Onshore Oil and Gas Order No. 1.

The Surface Reclamation plan addresses:

- Configuration of the reshaped topography;
- Drainage systems;
- Segregation of spoil material (stockpiles);
- Surface disturbances;
- Backfill requirements;
- Redistribution of topsoil;
- Soil treatments;
- Seeding or other steps to reestablish vegetation;
- Weed control;
- and practices necessary to reclaim all disturbed areas.

11) SURFACE OWNERSHIP

The proposed well pad and well connect pipeline would be located on:

Bureau of Land Management Farmington Field Office

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6251 College Boulevard, Suite A
Farmington, New Mexico 87401
(505) 564-7600

12) OTHER INFORMATION

A. Construction contractors would call New Mexico One-Call (or equivalent) to identify the location of any marked or unmarked pipelines or cables located in proximity to the proposed CLU 2407-03F Project or any other areas proposed to have ground disturbance at least two working days prior to ground disturbance.

B. A Class III Cultural Resource Inventory of the proposed well pad has been conducted and filed with the BLM-Farmington Field Office. Cultural mitigation would occur if any is listed in the approved APD, ROW grant stipulations, license agreement stipulations, or ROE stipulations.

C. The CLU 2407-03F Project is located within the Crow Mesa Closure (Big Game) SDA. Seasonal closures will apply (December 1st – March 31st) for drilling and construction.

D. All activities associated with the construction, use/operation, maintenance, and abandonment or termination of the CLU 2407-03F well pad would be limited to areas approved in the APD.

E. Hilcorp will be fully responsible for the actions of its subcontractors. A complete copy of the approved Application for Permit to Drill will be furnished to the field representatives and will be on location during all construction, drilling, and completions operations.

F. The project is not within a Chapter House boundary.

G. The project is within the Rancho Largo grazing unit.

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APPENDIX A. SURFACE RECLAMATION PLAN

Hilcorp Energy Company's Surface Reclamation Plan

Canyon Largo Unit 2407-03F #001H, #002H, #003H, and Five Future Natural Gas Well Project

May 2025

Prepared for

Hilcorp

Hilcorp Energy Company
1111 Travis Street
Houston, Texas 77002
Phone: (713) 209-2400

Developed by

EIS
Environmental & Permitting Solutions

479 Wolverine Drive
Bayfield, Colorado 81122
Phone: (970) 881-4080

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1 INTRODUCTION

Applicant	Hilcorp Energy Company
Project Name	Canyon Largo Unit 2407-03F #001H, #002H, #003H and Five Future Natural Gas Well Project (CLU 2407-03F Project)
Project Type	Eight planned Oil and Natural gas wells, one water source well, one Well Pad, one Well-Connect Pipeline, one Access Road, and eight TUAs.
Legal Location	Section 3; Township 24 North; Range 7 West; NMPM Rio Arriba County, New Mexico
Lease Numbers	NMSF-078922, NMSF-079915, E-809-17, E-5615-4 NMSF-078875, NMSF-078878

Hilcorp Energy Company (Hilcorp) is providing this Surface Reclamation Plan to the Bureau of Land Management – Farmington Field Office (BLM-FFO) for their Canyon Largo Unit 2407-03F #001H, #002H, #003H, Five Future Natural Gas Wells, and One Water Source Well Project Applications for Permit to Drill (APDs) (CLU 2407-03F Project). This reclamation plan has been prepared to meet the requirements and guidelines of the Onshore Oil and Gas Order No. 1. The CLU 2407-03F Project and the associated well pad and well connect pipeline are part of Hilcorp's Canyon Largo Unit.

The Hilcorp Contact person for this reclamation plan is:

Travis Munkres
Construction Forman
Hilcorp Energy Company
P.O. Box 4700
Farmington, New Mexico 87499
505-324-5167

1.1 Reclamation Plan Revisions

Hilcorp may submit a request to the BLM-FFO to revise the Reclamation Plan at any time during the life of the project in accordance to page 44 of the Gold Book (USDI-USDA 2007). Hilcorp would include justification for the revision request.

2 PROJECT DESCRIPTION

Hilcorp proposes the Canyon Largo Unit #001H, #002H, #003H and five future natural gas wells, one water source well (permit No. SJ-4366 with the NM Office of the State Engineer), one multi-well well pad, one well connect pipeline, one access road, and eight TUAs (CLU 2407-03F Project). The proposed well pad, access road, and well connect pipeline is within Section 3 of Township 24 North, Range 7 West N.M.P.M for this project are located public lands managed by the BLM-FFO and would access Federal minerals and be permitted through APDs. The project would include the construction, use, and

subsequent reclamation of one multi-well well pad with construction buffer zone, one (1) well connect pipeline corridor, access road, and eight (8) TUAs.

The project area would be located on public lands managed by the BLM-FFO within Rio Arriba County, New Mexico. Specifically, the proposed Project would be located, as the crow flies, approximately 34.44 miles southeast of Bloomfield, New Mexico. A description of the surface hole locations can be found in Table 2-1 below.

Table 2-1. Legal Coordinates for the Proposed Wellhead Locations.

Well Number	Legal Description
CLU 2407-03F #001H	2591 feet FSL and 1795 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #002H	2568 feet FSL and 1803 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #003H	2544 feet FSL and 1812 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #004H	2614 feet FSL and 1787 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #005H	2753 feet FNL and 1753 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #006H	2776 feet FNL and 1762 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #007H	2800 feet FSL and 1770 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F #008H	2823 feet FSL and 1778 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico
CLU 2407-03F WSW #001H (Permit No. SJ-4366)	2729 feet FSL and 1745 feet FWL, Section 3, Township 24 North, Range 7 West, NMPM Rio Arriba County, New Mexico

2.1 Estimated Total Area of Disturbance

The CLU 2407-03F Project would result in a total of 11.10 acres of disturbance, of which 10.75 acres would be new surface disturbance. New surface disturbance is placed with respect to archeology, paleontology, geology, terrain characteristics, current/proposed Hilcorp infrastructure, and efforts to

minimize ground/vegetative disturbance in areas of critical habitat to sensitive species. During interim reclamation, approximately 5.23 acres would be fully reclaimed (recontoured and reseeded), 1.00 acre would be interim reclaimed by reseeding but not recontoured (6.93 total interim reclaimed), and the remaining 4.16 acres would be stabilized and used as a working surface throughout the life of the project.

2.1.1 Well Pad

The proposed well pad would be a 400-foot by 605-foot (5.55 acres) area with an additional 50-foot construction buffer zone on all sides of the pad (2.54 acres). The resulting area of the well pad and construction buffer zone would encompass an 8.09-acre working surface. During the construction of the well pad, elevated areas within the pad area would be excavated and utilized as fill material on low areas of the pad to establish a level working surface. The well pad would require a maximum cut of 13 feet on corner 3 and a maximum fill of 13 feet on corner 6 of the pad. This entire area would be utilized during construction, setting of production equipment, drilling, and completion phases. Eight horizontal oil and gas wells and one vertical water source well are planned to be drilled from this well pad. Once all drilling and completion phases are complete for the wells, the well pad would be interim reclaimed to 3.00 acres for the production phase of the project.

2.1.2 Well-connect Pipeline

The proposed well-connect pipeline would be 1,048.6 feet long from the kick-off point at Canyon Largo Unit #104 riser to the proposed Canyon Largo Unit 2407-03F #001H well head. The total 1,048.6 feet of pipeline would be on BLM-managed lands within a 40-foot-wide corridor. An anticipated 225 feet of the pipeline would be on pad. Construction and installation of the well-connect pipeline corridor may result in a maximum total surface disturbance of 0.70 acres. All proposed well-connect pipeline disturbance will be temporary and will be re-contoured and reseeded for full reclamation.

2.1.3 Roadway TUA

The proposed access route to the CLU 2407-03F Project will require the installation of two (2) culverts and six (6) low water crossings to aid in erosion control and water management along the existing roadway. Construction and installation of the roadway TUAs may result in a maximum total surface disturbance of 0.44 acres. Approximately 0.16 acres of the TUAs are existing roads surface. All proposed new disturbance within the TUA will be temporary and will be re-contoured and reseeded as appropriate.

2.1.4 Access Road

The proposed permitted access road would be 2702.1 feet long from the kick-off point on an existing road. The total 2,702.1 feet would be within a 30-foot-wide corridor. Construction of the access road would initiate 1.87 acres of new disturbance During interim reclamation, approximately 0.87 acres of the newly constructed road would be fully reclaimed. For the long term, a 14-foot-wide running surface and the bottoms of the bar ditches along either side of the access road would remain for the life of the project (1.00 acres).

Table 2-2. Project Disturbance Estimates for the Proposed CLU 2407-03F Project

	Total	New Disturbance	Interim Reclamation	Long-term Disturbance
Well pad	8.09	7.91 [1]	5.09	3.00
Well-connect pipeline	0.70 [2]	0.70 [2]	0.70 [2]	-
Roadway TUA	0.44	0.27 [3]	0.27	0.16
Access Road	1.87	1.87	0.87	1.00
Total:	**11.10**	**10.75**	**6.93**	**4.16**

[1] 0.18 acres are accounted for as existing roadway within pad.
[2] 0.20 acres are accounted for on pad.
[3] 0.16 acres are accounted for as existing roadway.

3 PRE-DISTURBANCE SITE VISIT

The pre-disturbance site visit occurred for the proposed project on May 14, 2025. Table 3-1, below, provides a list of individuals present at the site visit and a list of BMPs that will be implemented for the project as discussed at the site visit.

- Hilcorp will adhere to the Crow Mesa Big Game Winter Closure from December 1 – March 31.
- Pre-construction migratory bird surveys will also be completed if construction is planned during May 15 – July 15 migratory bird nesting season.
- All above ground equipment will be painted Covert Green.

Table 3-1. Pre-disturbance onsite May 14, 2025, attendees

Name	Affiliation
Ryan McBee	BLM-FFO
Brian Garland	BLM-FFO
Ken Christesen	BLM-FFO
Avery Owen	BLM-FFO
Kate Kaufman	Hilcorp
Virgil Chavez	Hilcorp
Travis Munkers	Hilcorp
Max Lopez	Hilcorp
Jarrod Keller	EIS Environmental
Tanner Paulek	EIS Environmental
Bridget Motiff	EIS Environmental

3.1 Vegetation Community

The proposed project area within the vegetation community area classified as Sagebrush Shrubland Community. The dominant species throughout the action area is blue grama grass (*Bouteloua gracilis*).

Ground cover by the dominant species was visually estimated to be approximately 65 percent across the entire action area.

3.2 Proposed Reclamation Seed Mix

Disturbance would be re-contoured, and topsoil would be redistributed and prepared for seeding by the construction contractor. Ripping, disking, and seeding of the site would be done by Hilcorp's construction contractor using the BLM-approved seed mix, which is shown in Table 3-2. The proposed reclamation seed mix takes into account the existing vegetation on the proposed project site.

Table 3-2. BLM Farmington Field Office Sagebrush Shrubland Community Seed Mix.

Common Name	Scientific Name	Variety	Season	Form	PLS lbs/acre[1]
Fourwing saltbush	*Atriplex canescens*	VNS	Cool	Shrub	2.0
Winterfat	*Krascheninnikovia lanata*	VNS	Cool	Shrub	2.0
Sand dropseed	*Sporobolus cryptandrus*	VNS	Warm	Bunch	0.5
Western wheatgrass	*Pascopyrum smithii*	Arriba	Cool	Sod- forming	4.0
Indian ricegrass	*Achnatherum hymenoides*	Paloma or Rimrock	Cool	Bunch	4.0
Bottle brush squirreltail	*Elymus elymoides*	Tusas or VNS	Cool	Bunch	3.0
Blue flax	*Linum lewisii*	Apar	Cool	Forb	0.25
Blue grama	*Bouteloua gracilis*	Alma or Hachita	Warm	Sod	2.5
Rocky Mtn. bee plant	*Cleome serrulate*	Local collection or VNS	Cool	Forb	0.5

[1]Based on 60 PLS per square foot, drill seeded; double this rate (120 PLS per square foot) if broadcast or hydro-seeded.

3.3 Pre-Disturbance Weed Survey

During the onsite visit, the proposed action area was surveyed for noxious weeds listed on the NMDA's Class-A and Class-B noxious weeds list. No NMDA Class A or B listed species were identified. The Onsite Noxious Weed form for the CLU 2407-03F Project area was completed and signed by the BLM-FFO representative.

3.4 Pre-Disturbance Soil Evaluation

The BLM-FFO representative and Hilcorp representative collaboratively decided at the pre-disturbance site visit that no soil testing is necessary for the proposed project areas.

3.5 Pre-Disturbance Site Photographs

Photographs were taken of the pre-disturbance sites. Each photograph in this Surface Reclamation Plan is notated with the direction the photograph was taken and the location of the photo point. The photographs and locations are listed in Table 3-3 below.

Table 3-3. List of required pre-disturbance site photographs.

Photographs	Location Description
1, 2, 3, 4	From each well pad corner, looking toward the center stake
5, 6, 7, 8	Four Cardinal directions from the center stake
9	Start of Well-Connect Pipeline
10	End of Well-Connect Pipeline

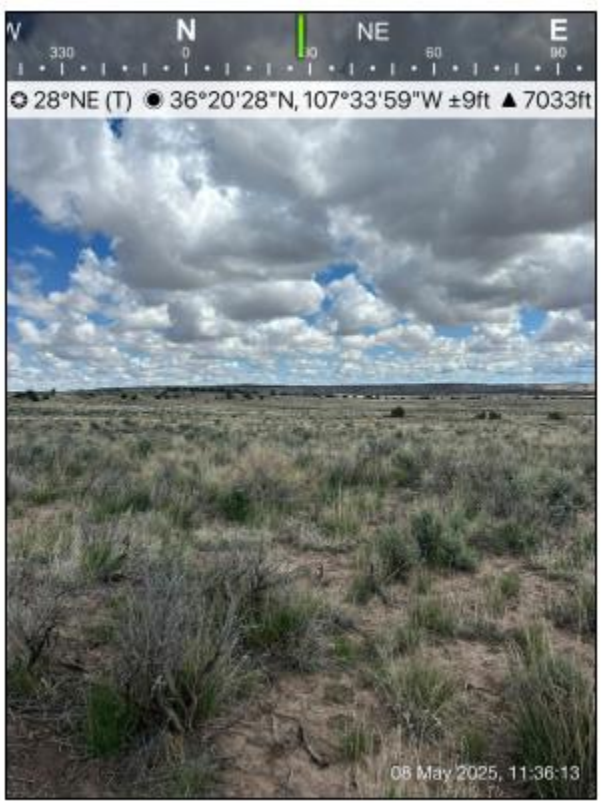

Figure 1. Well Pad Corner 2, Looking Towards the Southwest.

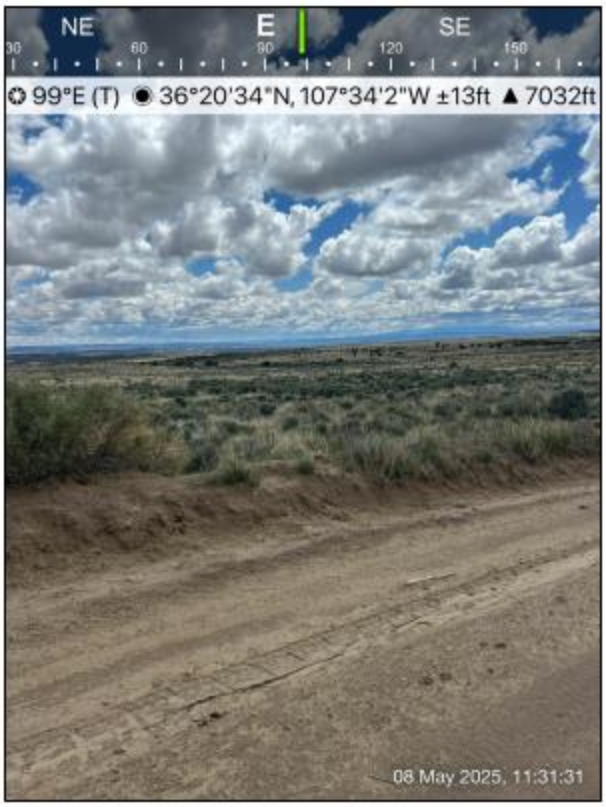

Figure 2. Well Pad Corner 3, Looking Towards the Northwest.

Figure 3. Well Pad Corner 5, Looking Towards the Northeast.

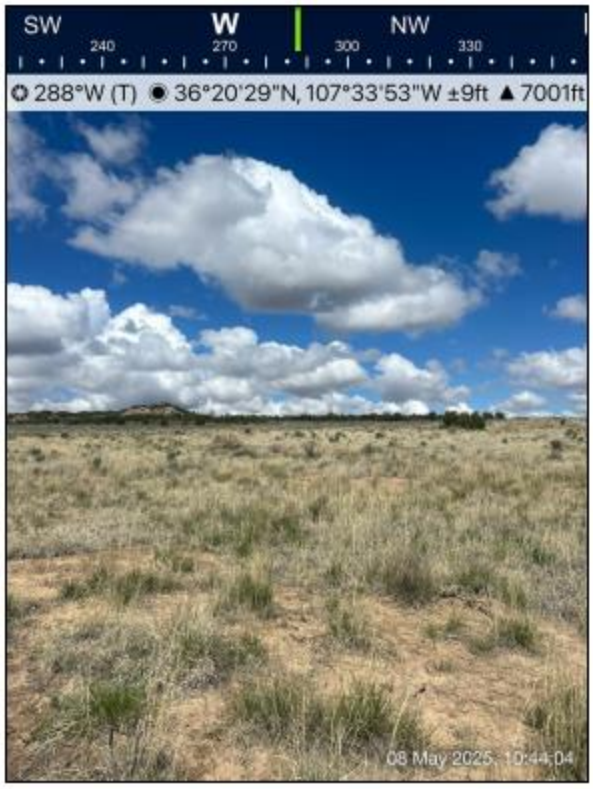

Figure 4. Well Pad Corner 6, Looking Towards the Southeast.

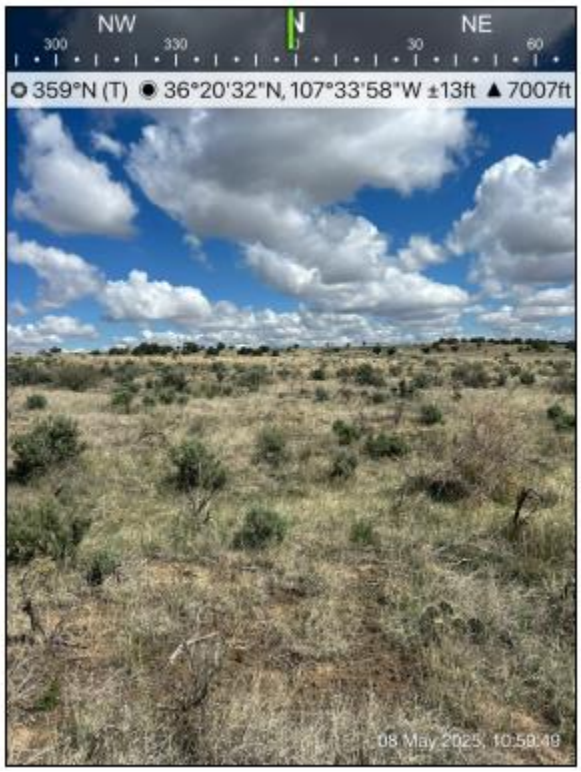

Figure 5. Well Head Stake, Looking Towards the North.

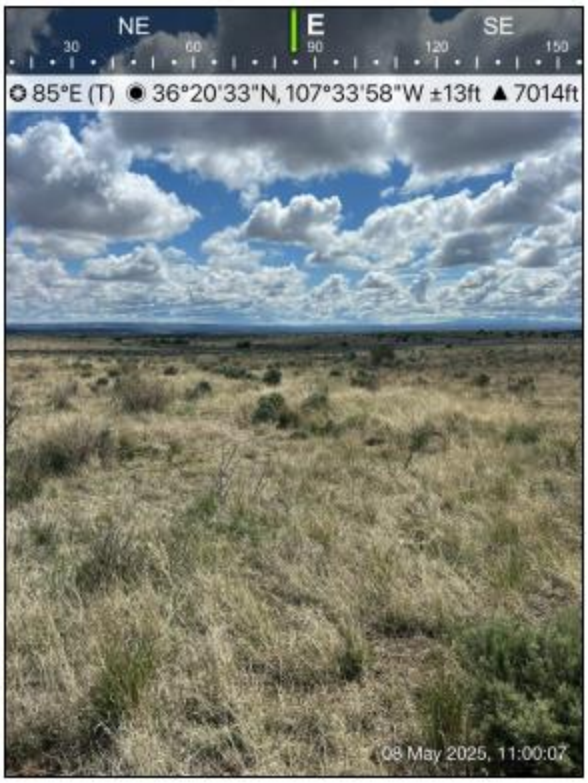

Figure 6. Well Head Stake, Looking Towards the East.

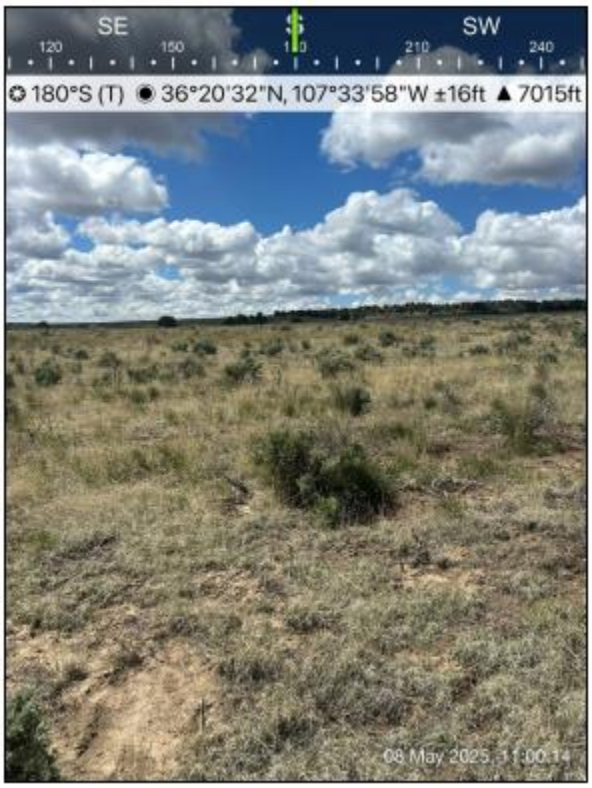

Figure 7. Well Head Stake, Looking Towards the South.

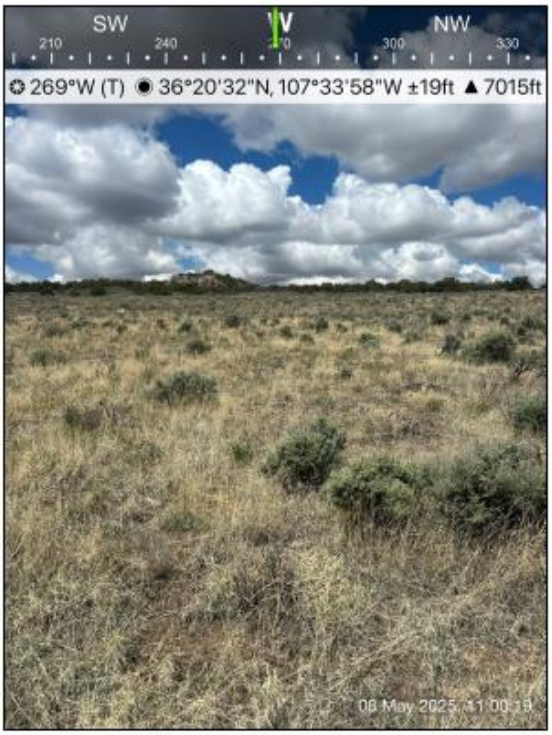

Figure 8. Well Head Stake, Looking Towards the West.

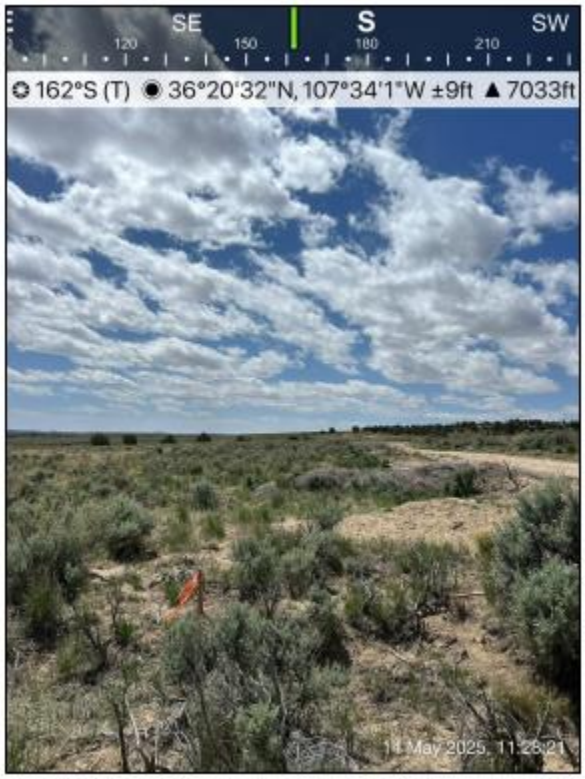

Figure 9. Pipeline Start, Looking Towards the East.

Figure 10. Pipeline End, Looking Towards the West.

4 Reclamation Techniques for Successful Revegetation

All activities associated with the construction, use/operation, maintenance, and abandonment or termination of the CLU 2407-03F Project are limited to areas approved in the APD's.

4.1 Vegetation and Site Clearing

Vegetation removed during construction, including trees that measure less than three to six inches in diameter (at ground level) and slash/brush, would be chipped or mulched and incorporated into the topsoil as additional organic matter. If trees are present, all trees three to six inches in diameter or greater (at ground level) would be cut to ground level and delimbed. Tree trunks (left whole) and cut limbs would be donated. The subsurface portion of trees (tree stumps) would be disposed of appropriately.

4.2 Topsoil Stripping, Storage, and Replacement

The upper six inches of topsoil (if available) would be stripped following vegetation and site clearing. Topsoil would not be mixed with the underlying subsoil horizons and would be stockpiled as a berm along the perimeter of the well pad, separate from subsoil horizons or other excavated material. Topsoil and sub-surface soils would be replaced in the proper order, prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic would not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are depleted from the

topsoil, amendments would be added to the topsoil as advised by the Hilcorp environmental scientist or appropriate agent/contractor.

4.3 Water Management/Erosion Control Features

The BLM-FFO representative and the Hilcorp representative would work in collaboration to develop site-specific erosion control or water management features and to identify installation locations. Potential erosion control or water management features that may be used include (but are not limited to) water bars or rolling dips for roads, sediment basins or sediment traps, check dams, silt fencing, outlet protection for culverts, erosion control blankets or geotextiles, and straw wattles.

Hilcorp (or its contractors) may use erosion control blankets, straw bales, or straw wattles as appropriate to limit erosion and sediment transport from any stockpiled soils.

The following best management practices concerning water management would be applied to the CLU 2407-03F Project as determined during the May 14, 2025, onsite visit.

- Diversions would be installed upon reclamation.
- Silt traps would be installed upon reclamation.
- One 24-inch culvert will be installed under the access road near the northeast corner of the well pad.
- Upon interim reclamation, the area would be reseeded with the BLM approved sagebrush shrubland seed mix to reduce soil erosion.
- Culvert(s) and low water crossing(s) will be installed along the existing road as listed below:
    - TUA “A” - One low water crossing at 36.33429, -107.57887
    - TUA “B” - One low water crossing at 36.33243, -107.58205
    - TUA “C” - One low water crossing at 36.33066, -107.58887
    - TUA “D” - One low water crossing at 36.32841, -107.60306
    - TUA “E” - One low water crossing at 36.32855, -107.60341
    - TUA “F” - One- 24” culvert on existing road at 36.32864, -107.60384
    - TUA “G” - One- 24” culvert on existing road at 36.32803, -107.6055
    - TUA “H” - One low water crossing at 36.32791, -107.60649

4.4 Seedbed Preparation

For cut-and-fill slopes, initial seedbed preparation would consist of backfilling and re-contouring. Disturbed areas would be re-contoured to blend with the surrounding landscape, emphasizing restoration of the existing drainage patterns and landform to pre-construction condition, to the extent practicable.

Within areas that would be reseeded, stockpiled topsoil would be evenly redistributed prior to final seedbed preparation. Topsoil would not be redistributed when the ground or topsoil is wet. Seedbed preparation within compacted areas would include ripping to a minimum depth of 18 inches and spacing furrows two feet apart. Ripping would be conducted perpendicularly in two phases, where practicable. If large clumps/clods result from the ripping process, disking would be conducted perpendicular to slopes in

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order to provide terracing and minimize runoff and erosion. Final seedbed preparation would consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting. Seedbed preparation may not be necessary for topsoil storage piles or other areas of temporary seeding.

4.5 Soil Amendments

Soil amendments would be added to the topsoil, if needed, as advised by the Hilcorp environmental scientist or appropriate agent/contractor.

4.6 Seeding

The seed mix chosen for this project area is listed in Table 3-2. Seeding would occur at the time of interim reclamation. A disc-type seed drill with two boxes for various seed sizes would be utilized for seeding the disturbed areas of the site. Hilcorp or its reclamation subcontractor would ensure that perennial grasses and shrubs are planted at the appropriate depth. Intermediate size seeds (such as wheatgrasses and shrubs) would be planted at a depth of 0.5-inch, larger seeds (such as Indian ricegrass) would be planted at a depth of one to two inches, and small seeds (such as alkali sacaton and sand dropseed) would be planted at a depth of 0.25 inch. In situations where differing planting depths are not practicable with the equipment being used, the entire mix would be planted no deeper than 0.25 inch. A drag, packer, or roller would follow the seeder to ensure uniform seed coverage and adequate compaction. Seed would be drilled perpendicular to slopes in order to minimize runoff and erosion.

Drill seeding may be used on well-packed and stable soils that occur on gentler slopes and where tractors and drills can safely operate. Where drill seeding is not practicable due to topography, the contractor would hand-broadcast seed using a “cyclone” hand seeder or similar broadcast seeder. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed would then be raked into the ground so the seed is planted no deeper than 0.25 inch below the surface.

4.7 Noxious and Invasive Weed Control

Hilcorp will manage the weeds should any noxious or invasive weeds arise in the project area. Hilcorp will treat with specific requirements and follow the weed treatment, including the period of treatment, using the list of approved herbicides.

5 Vegetation Reclamation Standards

Interim reclamation of all disturbed areas is successful when all ground surface disturbing activities at the site have been completed, and all disturbed areas have been either built on, compacted, covered, paved, or otherwise stabilized in such a way as to permanently prevent erosion, or when all of the following criteria have been met.

6 Monitoring Requirements

The CLU 2407-03F Project is located both off-lease and on-lease within public lands managed by the BLM. Monitoring for BLM-managed lands would be completed according to this reclamation plan. Monitoring activities would be initiated after the project is completed (Interim Monitoring), during the post disturbance earthwork, and seeding inspection process.

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6.1 Interim Reclamation

A reclamation monitoring program will begin in the year following the completion of the initial set of planned reclamation activities.

Monitoring of the approved areas will be done by Hilcorp or their contractor at least annually during the spring or early summer, after snow has melted and vegetation has had some time to grow. Areas of unstable soil or erosion will be restabilized, protected, and monitored as appropriate. Areas within the reseeded area will be chosen and compared to the reference area near the project for adequate vegetation growth. In the scenario that seeded vegetation doesn't grow within the expected time, the reseeding area will be reassessed and retreated to promote desired vegetation growth. Any issues with invasion of noxious weeds will be addressed using the weed plan that is in place for the CLU 2407-03F Project. If any actions are taken to mitigate vegetation growth or to treat weeds, then additional monitoring site visits would be made at appropriate intervals to assess the success of those actions and to take additional actions as appropriate to support the reclamation.

At the end of each year, an annual report will be completed, documenting the status of the site at the time of each monitoring visit, details of any actions which were taken, and the monitoring results of the year. All reports will be maintained in Hilcorp's records.

7 REFERENCES

43 CFR Part 3160, "Onshore Oil and Gas Order No. 1; Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Approval of Operations," 72 Federal Register 44 (March 2007), pp. 10328-10338.

U.S. Department of the Interior - U.S. Department of Agriculture (USDI-USDA). 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+307/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

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APPENDIX B. ROAD MAINTENANCE PLAN

Hilcorp
Road Maintenance Plan

The following Road Maintenance Plan will be implemented and followed by Hilcorp Energy Company (Hilcorp) for roads utilized in its San Juan Basin Operations. All roads will be constructed and maintained to meet Bureau of Land Management (BLM) Gold Book Standards, BLM Manuals 9113-1 (Roads Design Handbook), and BLM Manuals 9113-2 (Roads National Inventory and Condition Assessment Guidance and Instructions Handbook).

Road Inspections

1. A Hilcorp representative or designated inspector will conduct regular inspections of all newly constructed, reconstructed, and improved roads used for construction, operation, maintenance, and termination of Hilcorp's oil and gas operations.

2. Inspector will examine roads for proper maintenance of key features including: reduction of ruts and holes, maintenance of crowns and sloped areas related to the roads, condition of surface materials, efficacy of culverts and sediment traps, condition of interim reclamation, and presence of noxious weeds.

3. Road inspections will be conducted within 5 business days of major storm events such as major snow melt or prolonged rain, in order to ensure proper operation of drainage systems, and erosion and sediment control structures and features.

4. Inspectors will examine the roadways and document the inspection using the attached checklist during each inspection.

5. Inspection records will be filed and provided to the BLM upon written request.

Maintenance Procedures

For existing County Roads or roads that are considered collector roads, Hilcorp would defer to the county or to the Roads Committee, when formed, for maintenance determinations.

Roads would be maintained to the same or better condition as existed prior to the commencement of operations. Maintenance would continue until final abandonment and reclamation of Hilcorp's related oil and gas operation.

Best management practices (BMPs) for dust abatement and erosion control would be utilized along the roads to reduce fugitive dust on as needed basis. Water application using a rear-spraying truck or other suitable means would be the primary method of dust suppression along the roads.

No routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than 6 inches, the soil would be deemed too wet for construction or maintenance.

In addition to regular maintenance, road inspection would be used to identify any additional maintenance needs.

Road and Drainage Structures and Features

1. *Road Crown*
   Maintenance of road crowns will be conducted to rectify ruts, holes, and rough areas and ensure adequate drainage on road features and outslopes. Needed maintenance will be conducted using a maintainer to re-grade and/or resurface the road crown.

2. *Culverts*
   Culverts and silt trap maintenance and/or repair will be conducted on as-needed basis, using hand tools or machinery such as a back hoe. Excavation and debris removal activities will be conducted in accordance to the requirements of the surface management agency and conducted with compliance to applicable Clean Water Act-Best Management Practices, and applicable requirements for passage for aquatic species. If the culvert is damaged by having its inlet or outlet crushed, it would be replaced.

3. *Ditches*
   Road side ditches will be maintained to ensure proper function, on as-needed basis, using maintainer or the appropriate equipment to clear and/or blade as necessary. Maintenance activities will be implemented with consideration of resource objective for soil, water, and visual quality as is feasible with relation to maintenance costs.

4. *Silt Traps and Water Control Structures*
   Silt traps and water control structures will be maintained to ensure proper function, on as-needed basis using maintainer or the appropriate equipment to clear, excavate, and/or blade as necessary. Sediment removed from silt traps and water control structures would be disposed at an approved facility or utilized for construction activities with the approval of the surface management agency.

5. *Replacement of Road Surface Material*
   Road surface material will be maintained and supplemented/replaced on as-needed basis, using the appropriate substrate from an approved source, in order to maintain proper road operation and condition.

6. *Maintenance of Interim Reclamation*
   Disturbance related to maintenance activities will be subject to interim reclamation and stabilizations standards and guidelines, in order to meet objectives outlined in the reclamation plan, as pertaining to projects on case-by-case basis.

7. *Noxious Weeds*
   Should any noxious or invasive weeds be documented during the inspection and/or maintenance activities, the BLM/FFO weed coordinator will provide Hilcorp with specific requirements and instructions for weed treatments, including the period of treatment, list of approved herbicides, required documentation to be submitted to the BLM/FFO after treatment, and any other site-specific instructions that may be applicable.

Hilcorp

Hilcorp Road Inspection and Maintenance Report Form	
Road Inspected (Well ID):	Type of Area:
Title of Inspector:	Access Road to Well Pad:
Name of Inspector:	Type of Inspection:(Monthly/Major Storm/Winter Event)

Site Inspection Information

Road Condition Checklist				
Road Feature:	Good	Poor	Action Needed	Comments
Road Crown				
Surface Condition (slopes/gravel)				
Surface Drainage				
Culvert(s)				
Ditches and Turnouts				
Revegetation				
Noxious Weeds				
Sediment Control:	Good	Poor	Action Needed	Comments
Check Dam				
Silt Trap/Sediment Pond				
Filter Berm				
Sediment Trap				
Sediment Basin				
Wattles				
Silt Fence				

Actions Taken	Date Work Was Preformed

Type of Inspection	Date:	Signature:	

Signature certifying that the site is in compliance (after all the necessary repairs, maintenance, and changes are completed)

Date

Signature

APPENDIX C. WELL PAD AND PIPELINE PLATS WITH ACCESS ROUTE AND DIRECTIONS

C-102

Submit Electronically
Via OCD Permitting

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

Revised July 9, 2024

Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name
	17610	DEVILS FORK GALLUP (ASSOCIATED)

Property Code	Property Name	Well Number
	CANYON LARGO UNIT 2407-03F	001H

OGRID No.	Operator Name	Ground Level Elevation
372171	HILCORP ENERGY COMPANY	7011'

Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal
Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
K	3	24N	7W		2591' SOUTH	1795' WEST	36.342087 °N	-107.566002 °W	RIO ARRIBA

Bottom Hole Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
F	1	24N	7W	11	2396' NORTH	2409' WEST	36.343443 °N	-107.528131 °W	RIO ARRIBA

Dedicated Acres	Penetrated Spacing Unit	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit	Consolidation Code
2003.20	Entire Section 1, T24N, R7W Entire Section 2, T24N, R7W Entire Section 3, T24N, R7W	Defining		☐ Yes ☒ No	Unit

Order Numbers: R-327

Well setbacks are under Common Ownership: ☒ Yes ☐ No

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
K	3	24N	7W		2591' SOUTH	1795' WEST	36.342087 °N	-107.566002 °W	RIO ARRIBA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
G	3	24N	7W	10	2376' NORTH	2168' EAST	36.343449 °N	-107.561595 °W	RIO ARRIBA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
F	1	24N	7W	11	2396' NORTH	2309' WEST	36.343443 °N	-107.528471 °W	RIO ARRIBA

Unitized Area or Area of Uniform Interest	Spacing Unit Type	Ground Floor Elevation
CANYON LARGO UNIT	☒ Horizontal ☐ Vertical ☐ Directional	7011'

OPERATOR CERTIFICATION

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

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Dawnash Deal
Signature

08/06/2025
Date

Dawn Nash-Deal
Printed Name

Dnash@hilcorp.com
E-mail Address

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.

JASON C. EDWARDS
NEW MEXICO
15269
8/4/2025
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Signature and Seal of Professional Surveyor

Certificate Number: 15269
Date of Survey: JUNE 1, 2019

Note: 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.

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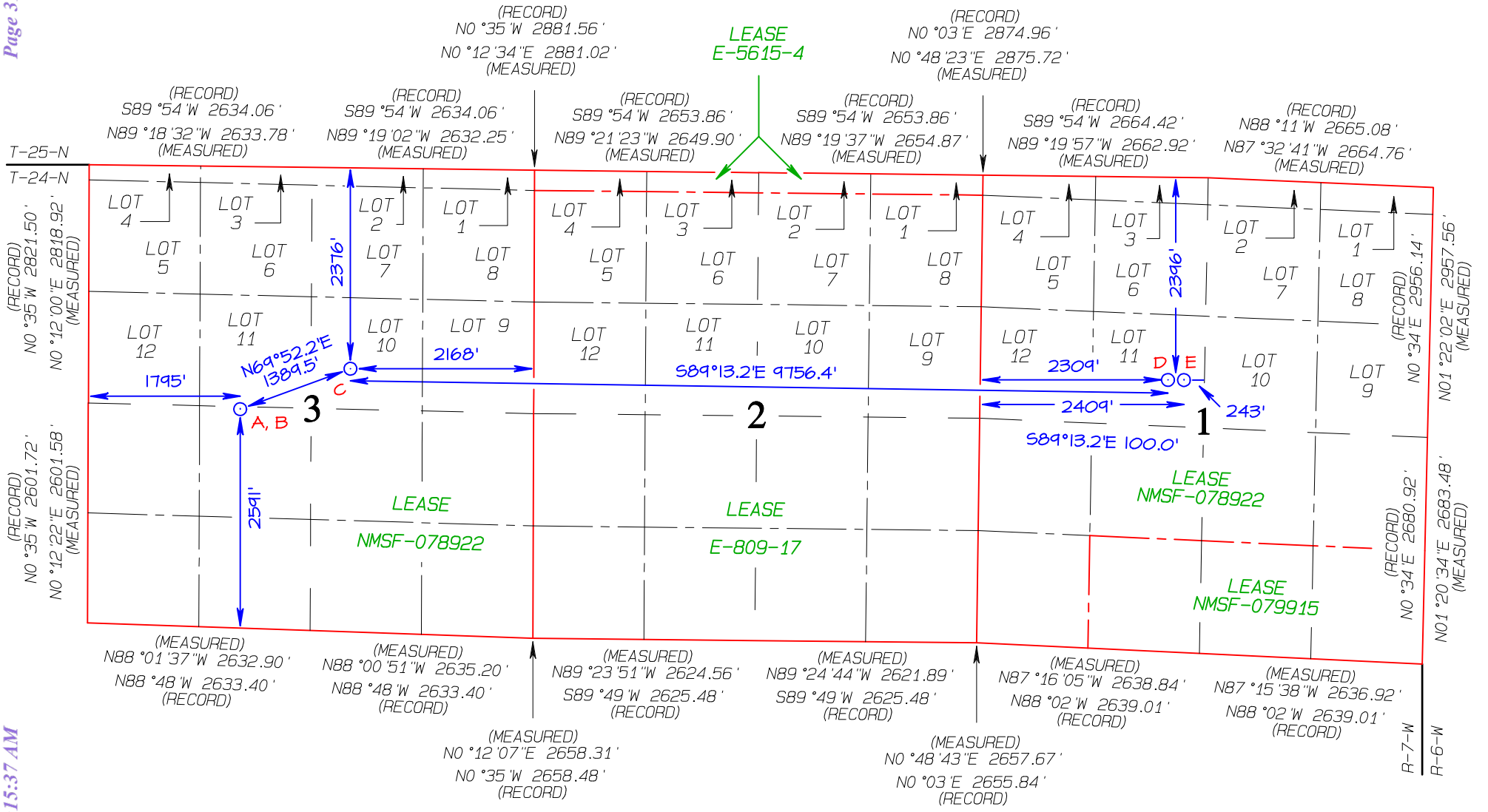
CANYON LARGO UNIT 2407-03F #001H



SURFACE LOCATION (A)
2591 ' FSL 1795 ' FWL
SECTION 3, T24N, R7W
LAT 36.342075 °N
LONG -107.565394 °W
DATUM: NAD1927

LAT 36.342087 °N
LONG -107.566002 °W
DATUM: NAD1983

KICK OFF POINT (B)
2591 ' FSL 1795 ' FWL
SECTION 3, T24N, R7W
LAT 36.342075 °N
LONG -107.565394 °W
DATUM: NAD1927

LAT 36.342087 °N
LONG -107.566002 °W
DATUM: NAD1983

FIRST TAKE POINT (C)
2376 ' FNL 2168 ' FEL
SECTION 3, T24N, R7W
LAT 36.343437 °N
LONG -107.560988 °W
DATUM: NAD1927

LAT 36.343449 °N
LONG -107.561595 °W
DATUM: NAD1983

LAST TAKE POINT (D)
2396 ' FNL 2309 ' FWL
SECTION 1, T24N, R7W
LAT 36.343432 °N
LONG -107.527865 °W
DATUM: NAD1927

LAT 36.343443 °N
LONG -107.528471 °W
DATUM: NAD1983

BOTTOM HOLE LOCATION (E)
2396 ' FNL 2409 ' FWL
SECTION 1, T24N, R7W
LAT 36.343431 °N
LONG -107.527526 °W
DATUM: NAD1927

LAT 36.343443 °N
LONG -107.528131 °W
DATUM: NAD1983

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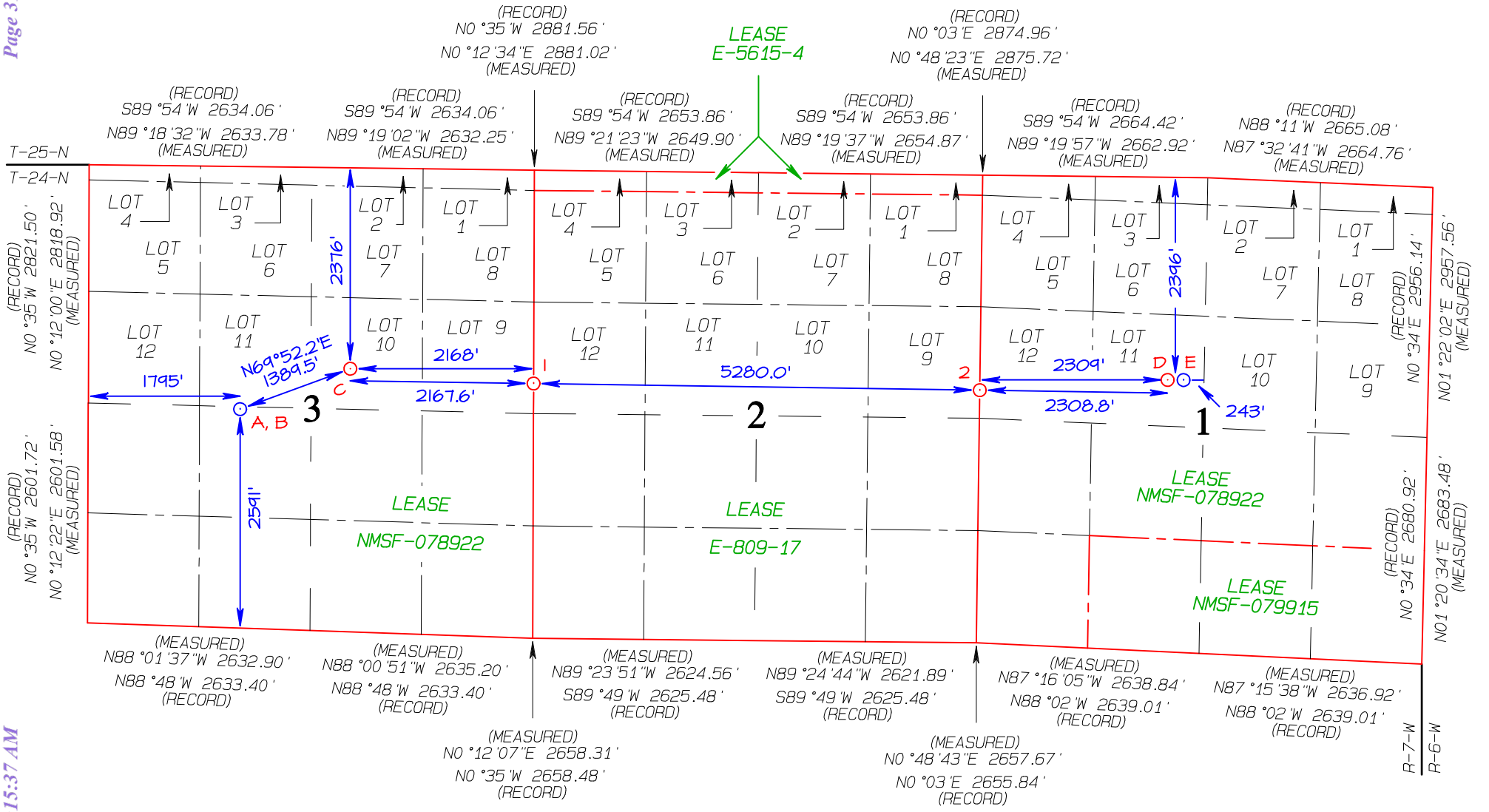
CANYON LARGO UNIT 2407-03F #001H



SURFACE LOCATION (A)
2591 ' FSL 1795 ' FWL
SECTION 3, T24N, R7W
LAT 36.342075 °N
LONG -107.565394 °W
DATUM: NAD1927

LAT 36.342087 °N
LONG -107.566002 °W
DATUM: NAD1983

FIRST TAKE POINT (C)
2376 ' FNL 2168 ' FEL
SECTION 3, T24N, R7W
LAT 36.343437 °N
LONG -107.560988 °W
DATUM: NAD1927

LAT 36.343449 °N
LONG -107.561595 °W
DATUM: NAD1983

LEASE X-ING (1)
2380 ' FNL 0 ' FEL
SECTION 3, T24N, R7W
LAT 36.343437 °N
LONG -107.553629 °W
DATUM: NAD1927

LAT 36.343449 °N
LONG -107.554236 °W
DATUM: NAD1983

LEASE X-ING (2)
2391 ' FNL 0 ' FEL
SECTION 2, T24N, R7W
LAT 36.343434 °N
LONG -107.535704 °W
DATUM: NAD1927

LAT 36.343446 °N
LONG -107.536310 °W
DATUM: NAD1983

LAST TAKE POINT (D)
2396 ' FNL 2309 ' FWL
SECTION 1, T24N, R7W
LAT 36.343432 °N
LONG -107.527865 °W
DATUM: NAD1927

LAT 36.343443 °N
LONG -107.528471 °W
DATUM: NAD1983

BOTTOM HOLE LOCATION (E)
2396 ' FNL 2409 ' FWL
SECTION 1, T24N, R7W
LAT 36.343431 °N
LONG -107.527526 °W
DATUM: NAD1927

LAT 36.343443 °N
LONG -107.528131 °W
DATUM: NAD1983

Received by OCD: 3/2/2026 10:15:37 AM

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HILCORP ENERGY COMPANY LARGO UNIT 2407-03F #001H
2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 7011'
LAT 36.342087°N LONG -107.566002°W DATUM: NAD83

~ SURFACE OWNER ~

Bureau of Land Management

GRAPHIC SCALE 1"=90'

0 90 180

TO BE ABANDONED

EXISTING ROADWAY

EXISTING ROADWAY

TO REMAIN IN OPERATION

Steel T-Posts have been set to define Edge of Disturbance limits which are 50' offset from edge of staked wellpad.

EDGE OF TOTAL DISTURBANCE (MARKED WITH STEEL T-POSTS)

EDGE OF TOTAL DISTURBANCE (MARKED WITH STEEL T-POSTS)

EDGE OF TOTAL DISTURBANCE (MARKED WITH STEEL T-POSTS)

DRAINAGE DIVERSION

225' 175'

C13 ③

INSTALL 36" CULVERT

⑤ F2

A' A

C5 ④

ACCESS 2702.1' (0-8%)

WELLHEAD TO BACK 255'

405' 405'

N

CLU 2407-03F WSW #001 PROPOSED WELLBORE

CLU 2407-03F #005H PROPOSED WELLBORE

CLU 2407-03F #006H PROPOSED WELLBORE

CLU 2407-03F #007H PROPOSED WELLBORE

CLU 2407-03F #008H PROPOSED WELLBORE

CLU 2407-03F #004H PROPOSED WELLBORE

25' 25' 25' 25' 25'

B' WORKING SIDE 225' B

C7 F4 F9

CLU 2407-03F #001H PROPOSED WELLBORE

CLU 2407-03F #002H PROPOSED WELLBORE

CLU 2407-03F #003H PROPOSED WELLBORE

25'

LAYDOWN S19°E 150'

200' 200'

C' C

225' 175'

② C9 ① F3 ⑥ F13

Area of Wellpad
605' X 400' = 5.56 Acres

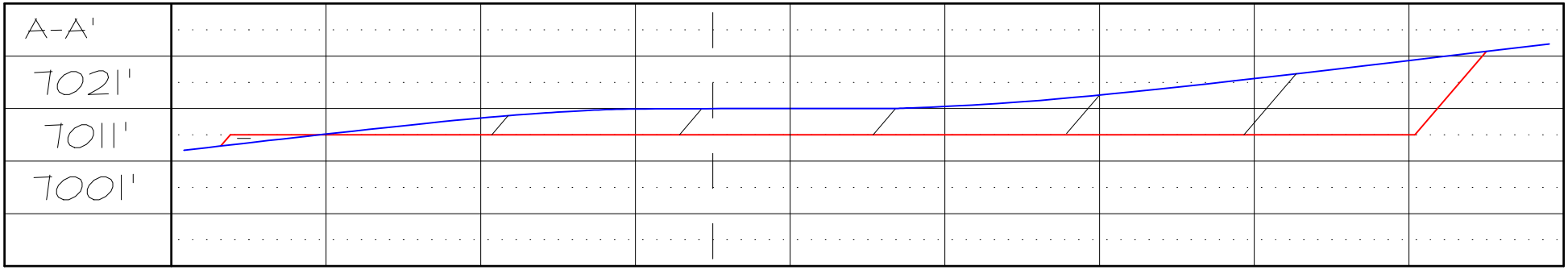
Area of Total Disturbance
705' X 500' = 8.09 Acres

Page 315 of 434

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 7011'

HORIZONTAL SCALE 1"=55' VERTICAL SCALE 1"=30'

C/L



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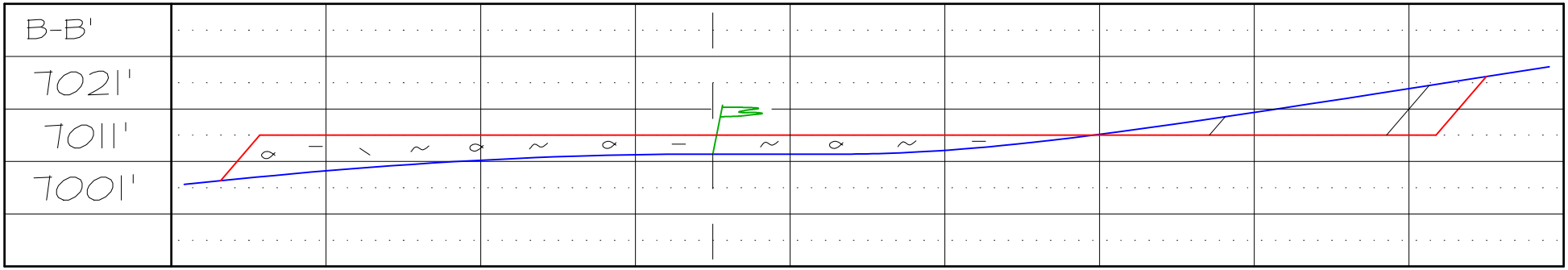

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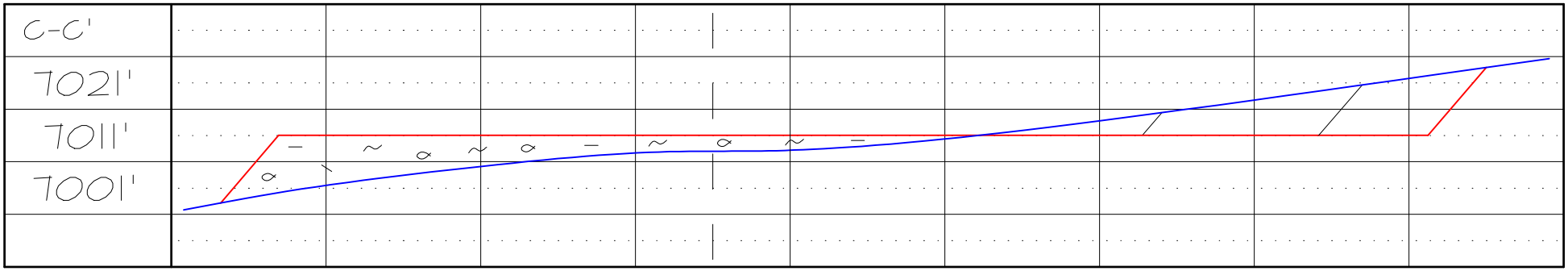

EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

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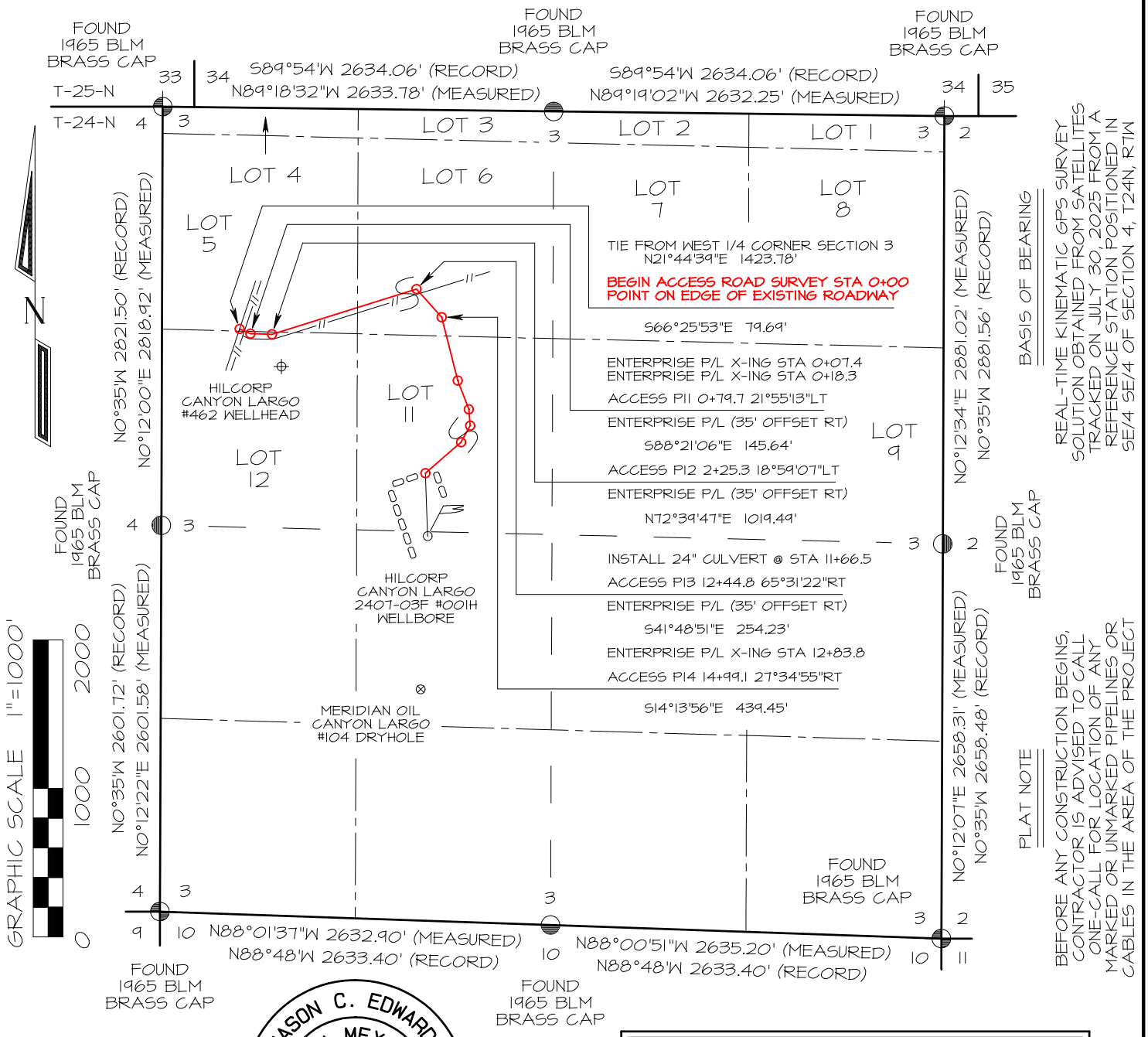
HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED ACCESS ROAD SURVEY LOCATED IN NW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 27+02.1	2702.1 FT / 163.8 RODS

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 4, 2025

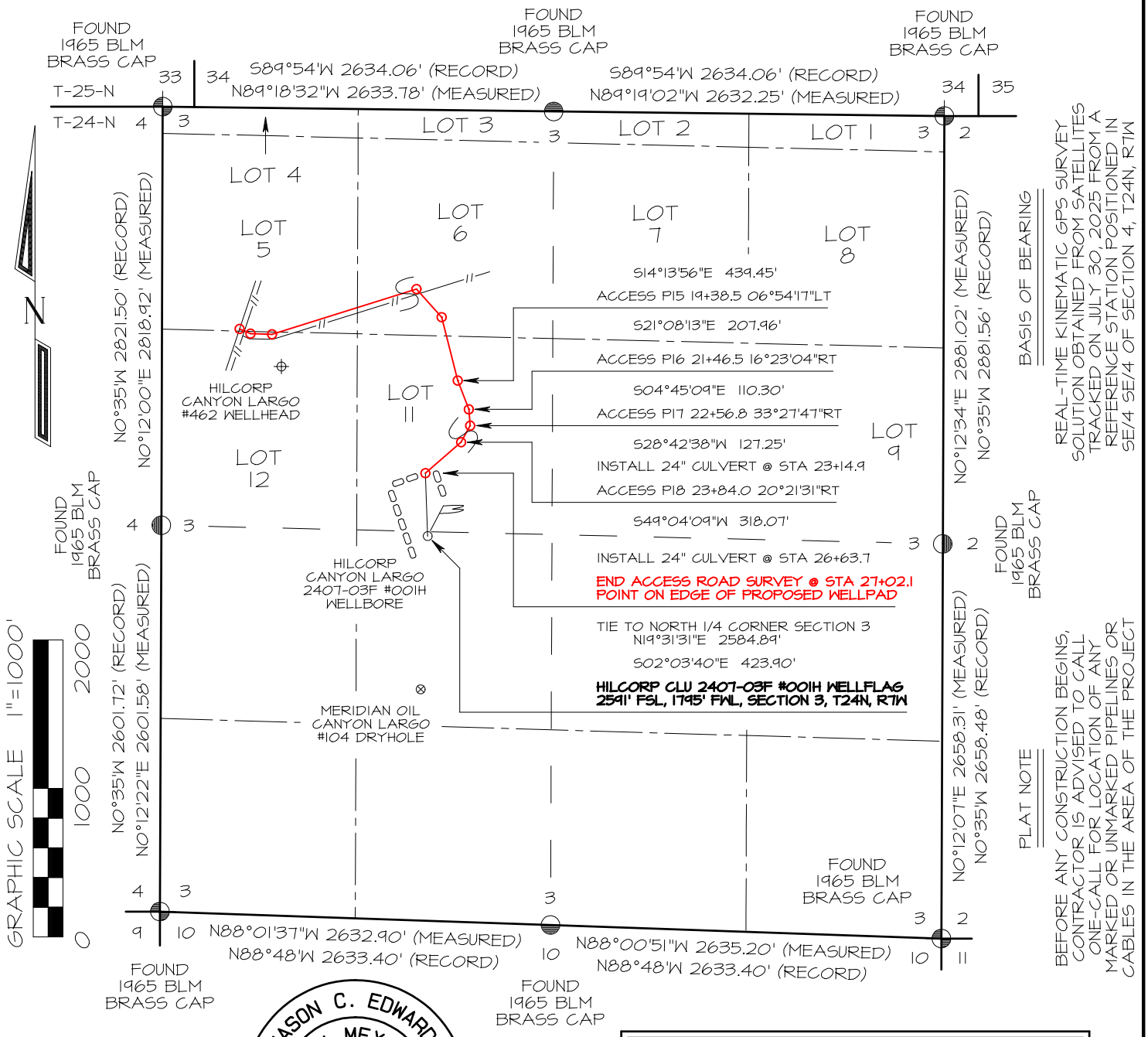
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
HILCORP ENERGY COMPANY
P.O. BOX #61529
HOUSTON, TX 77208-1529

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486–1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE | DRAWN BY: EDO
SHEET 6 OF 15 | FILENAME: 2473KAP1

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED ACCESS ROAD SURVEY LOCATED IN NW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 27+02.1	2702.1 FT / 163.8 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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Land Surveyor:
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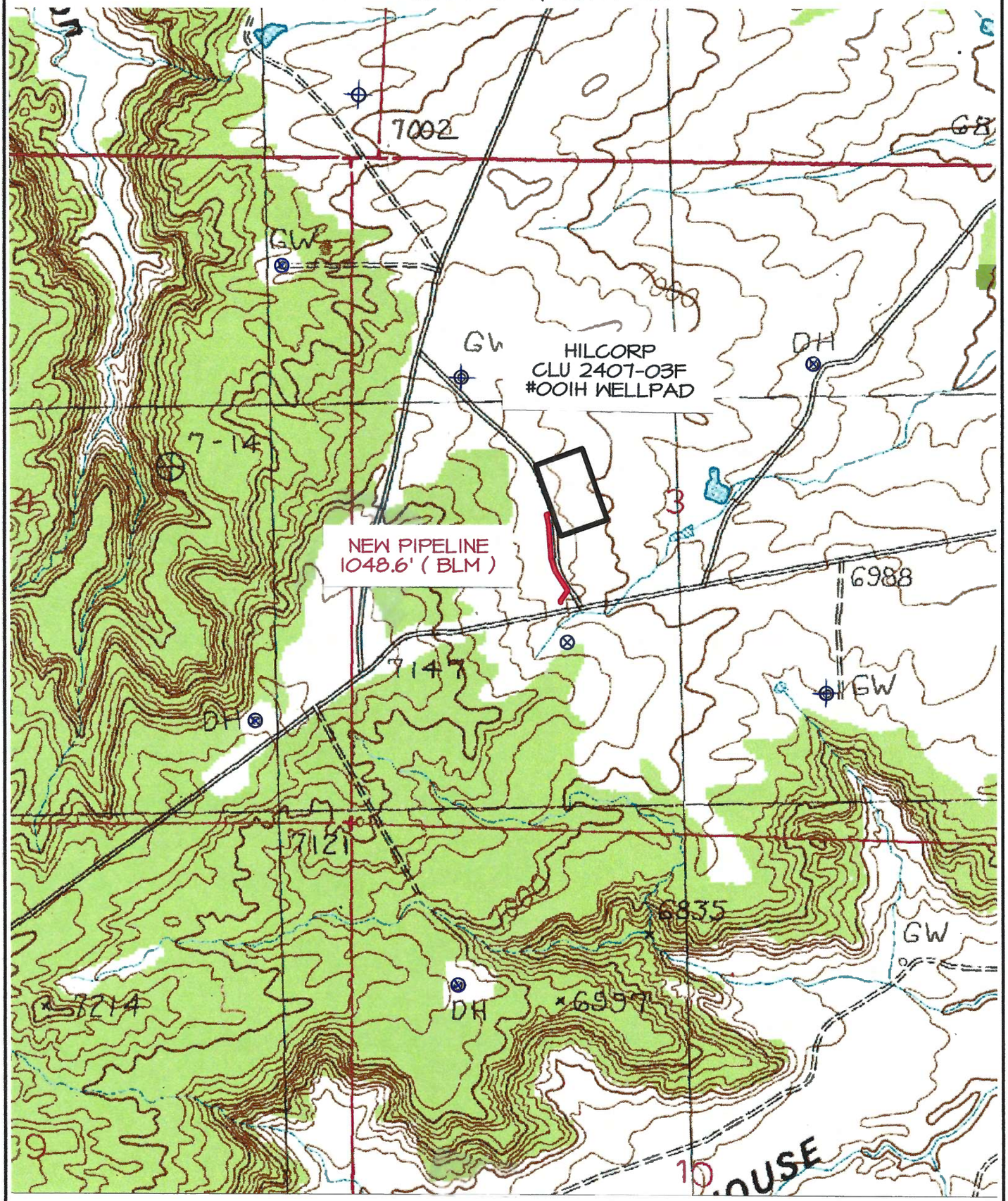
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486–1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 1 OF 15
FILENAME: 2413KAP2

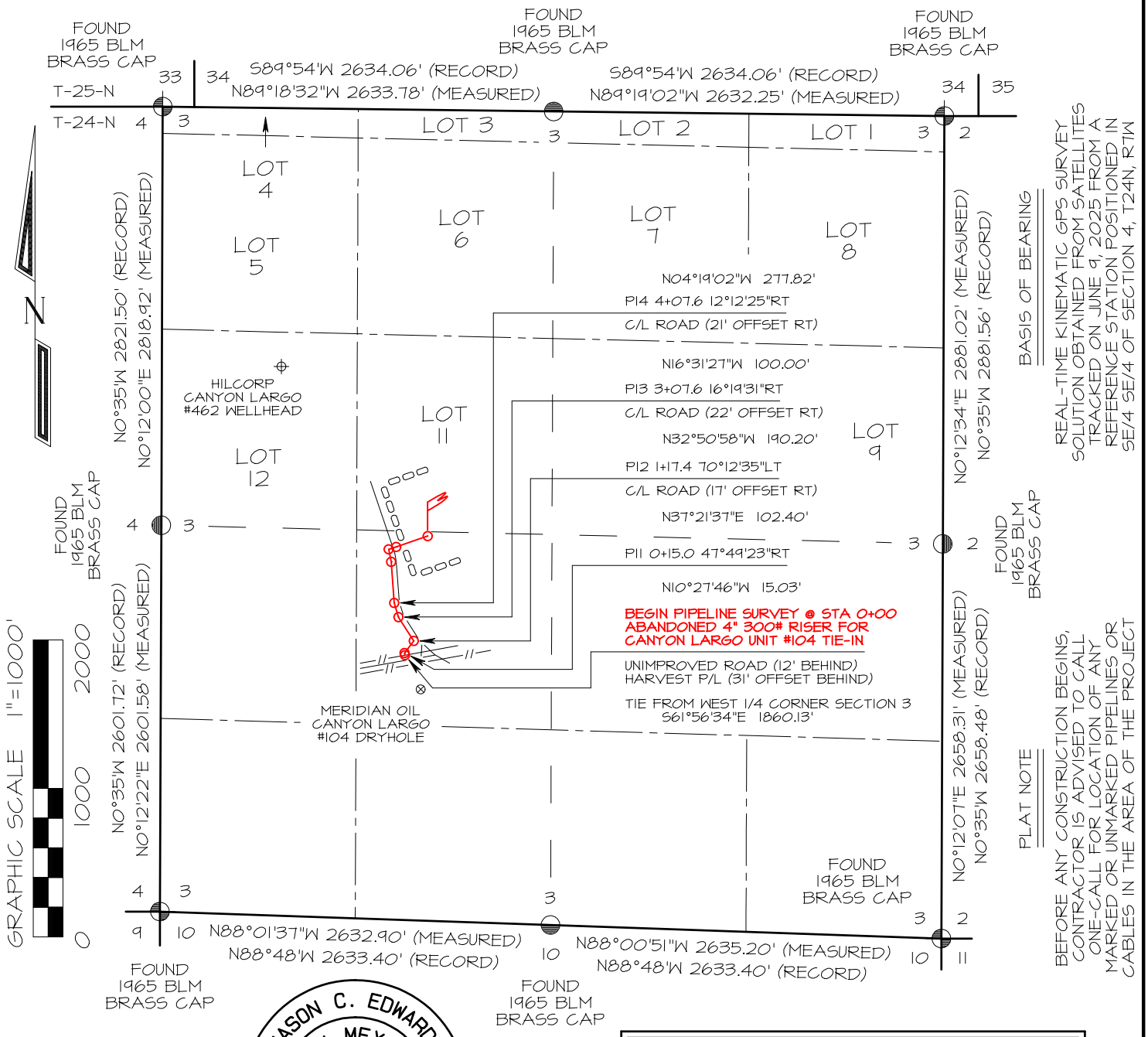
HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H PIPELINE

LOCATED IN NE/4 SW/4 OF SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED PIPELINE SURVEY LOCATED IN NE/4 SW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 10+48.6	1048.6 FT / 63.6 RODS

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 4, 2025

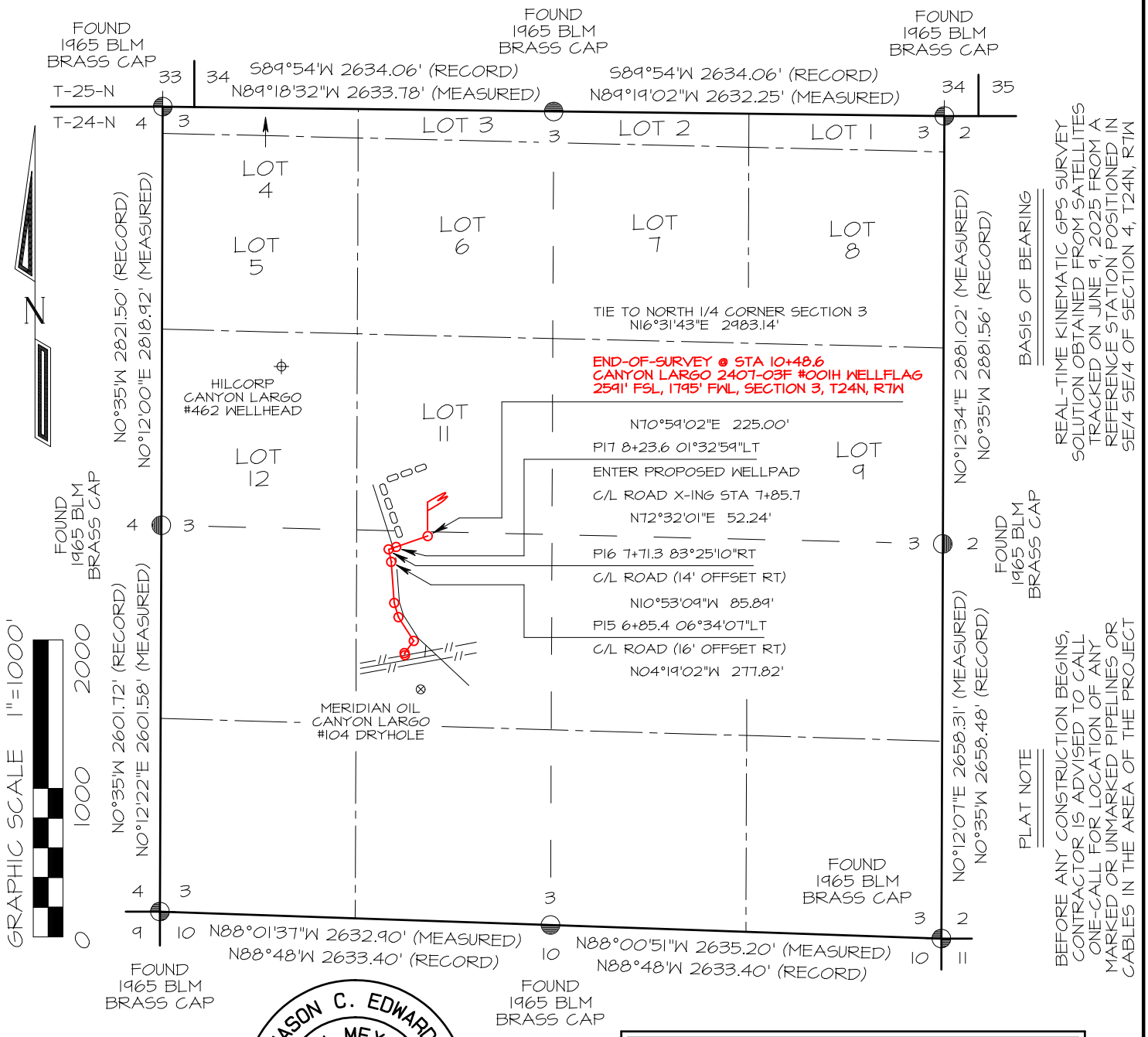
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
HILCORP ENERGY COMPANY
P.O. BOX #61529
HOUSTON, TX 77208-1529

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486–1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 9 OF 15
FILENAME: 2473K-GP1

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED PIPELINE SURVEY LOCATED IN NE/4 SW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JUNE 9, 2025 FROM A REFERENCE STATION POSITIONED IN SE/4 SE/4 OF SECTION 4, T24N, R7W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 10+48.6	1048.6 FT / 63.6 RODS

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 4, 2025

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
HILCORP ENERGY COMPANY
P.O. BOX #61529
HOUSTON, TX 77208-1529

Land Surveyor:
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Post Office Box 6612
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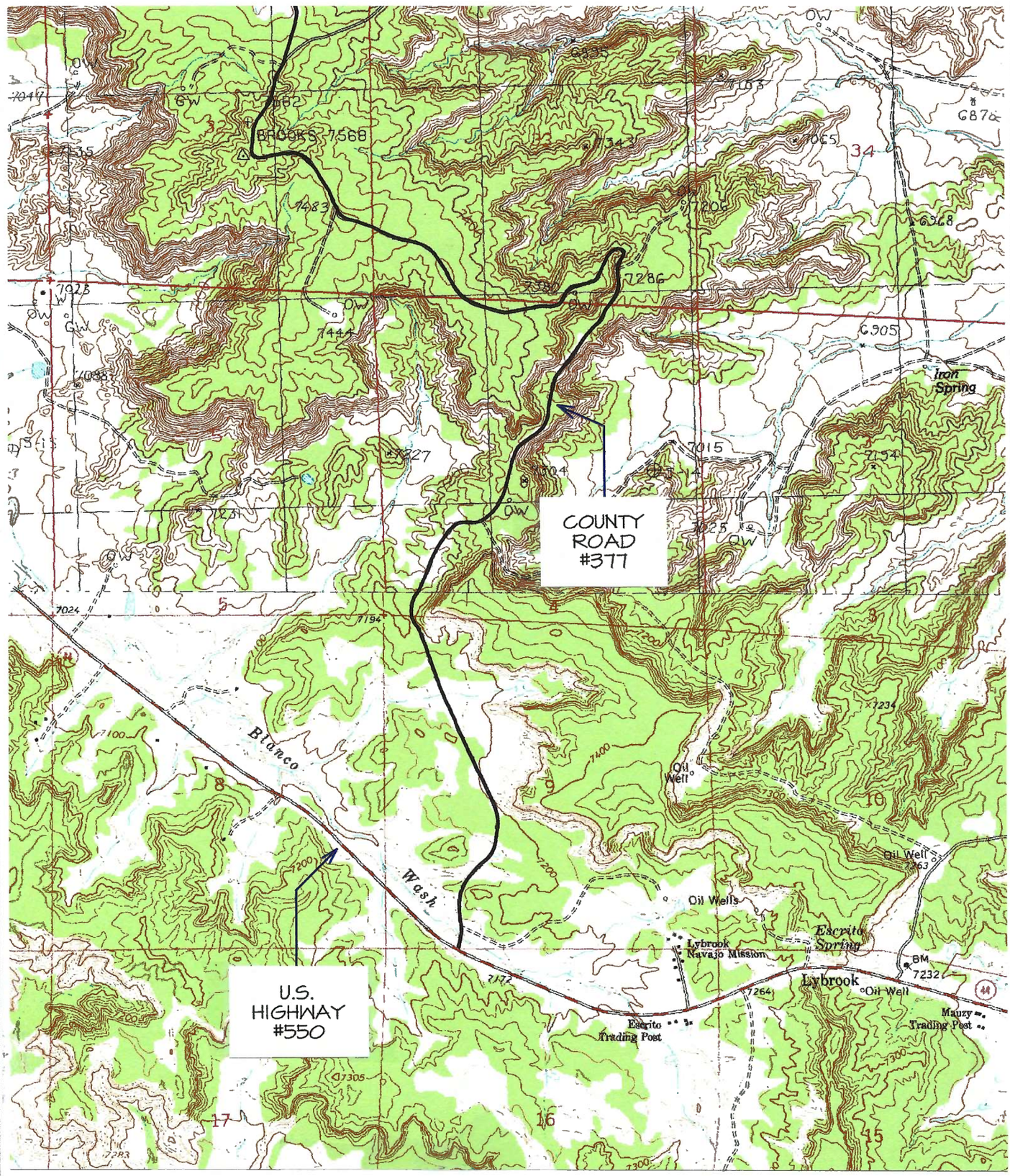
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 10 OF 15
FILENAME: 2473KGP2

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H

2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



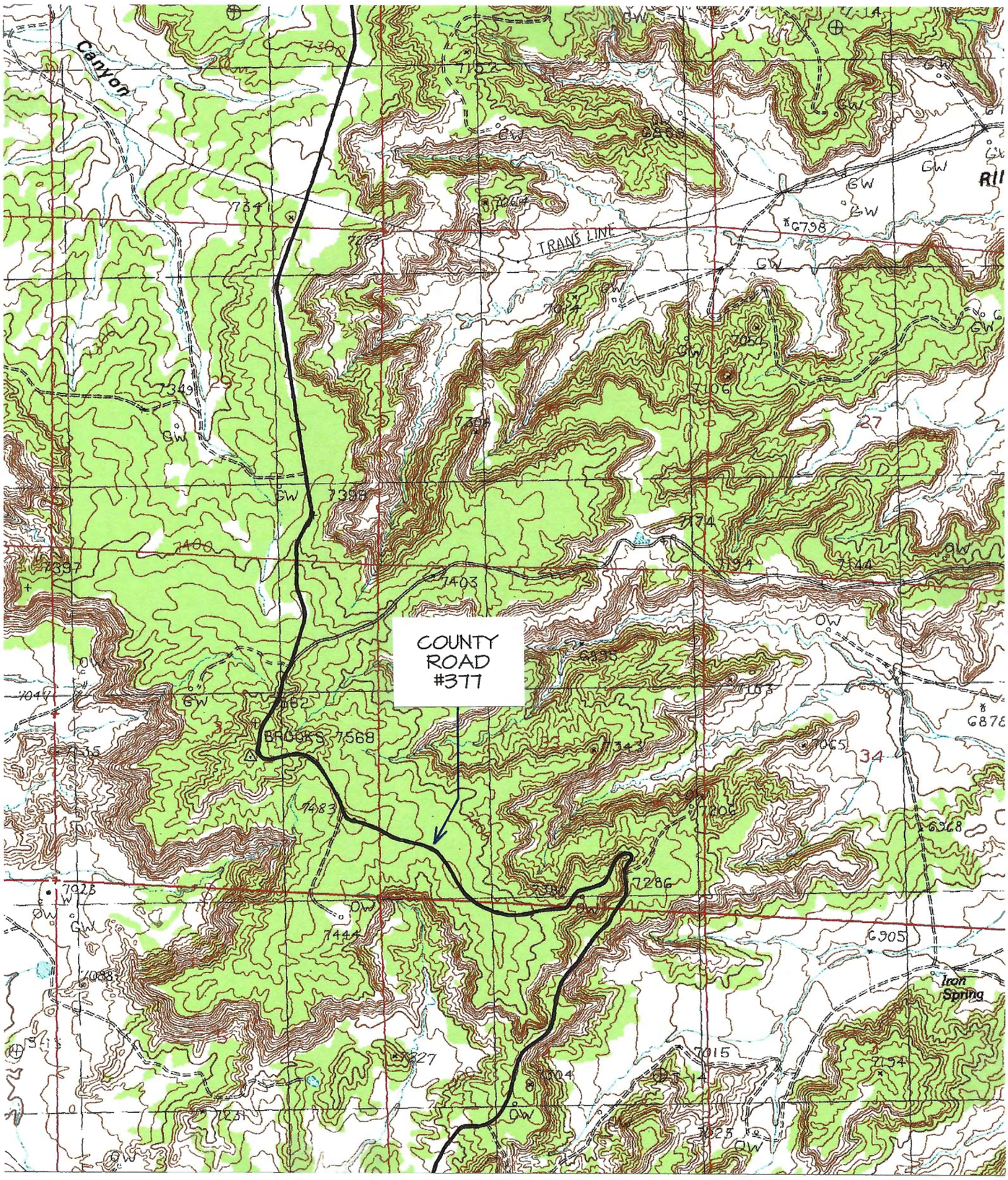
TOPO NAMES : LYBROOK & CROW MESA EAST

⊕ PRODUCING WELL

⊗ PLUGGED & ABANDONED WELL

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

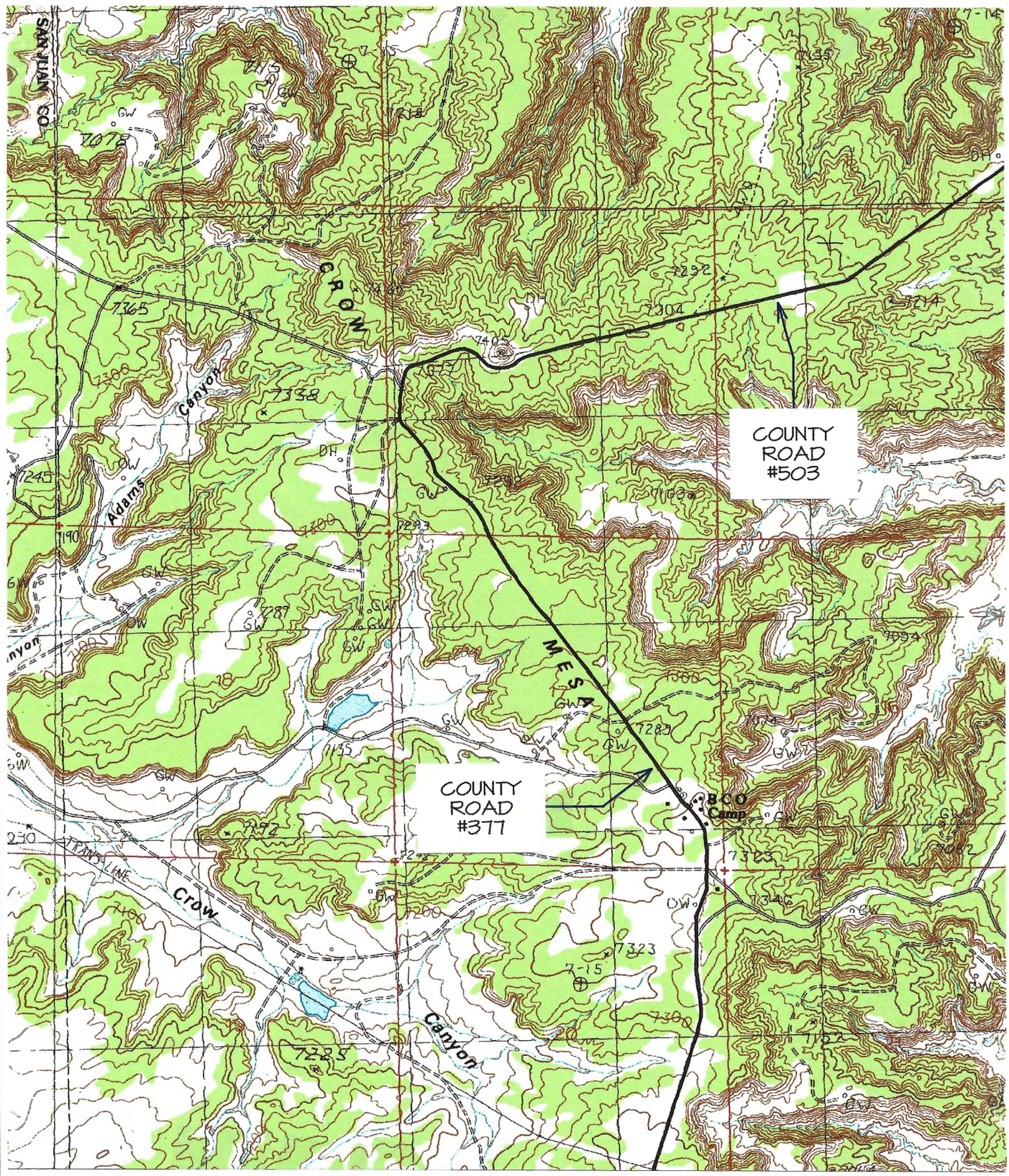
2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

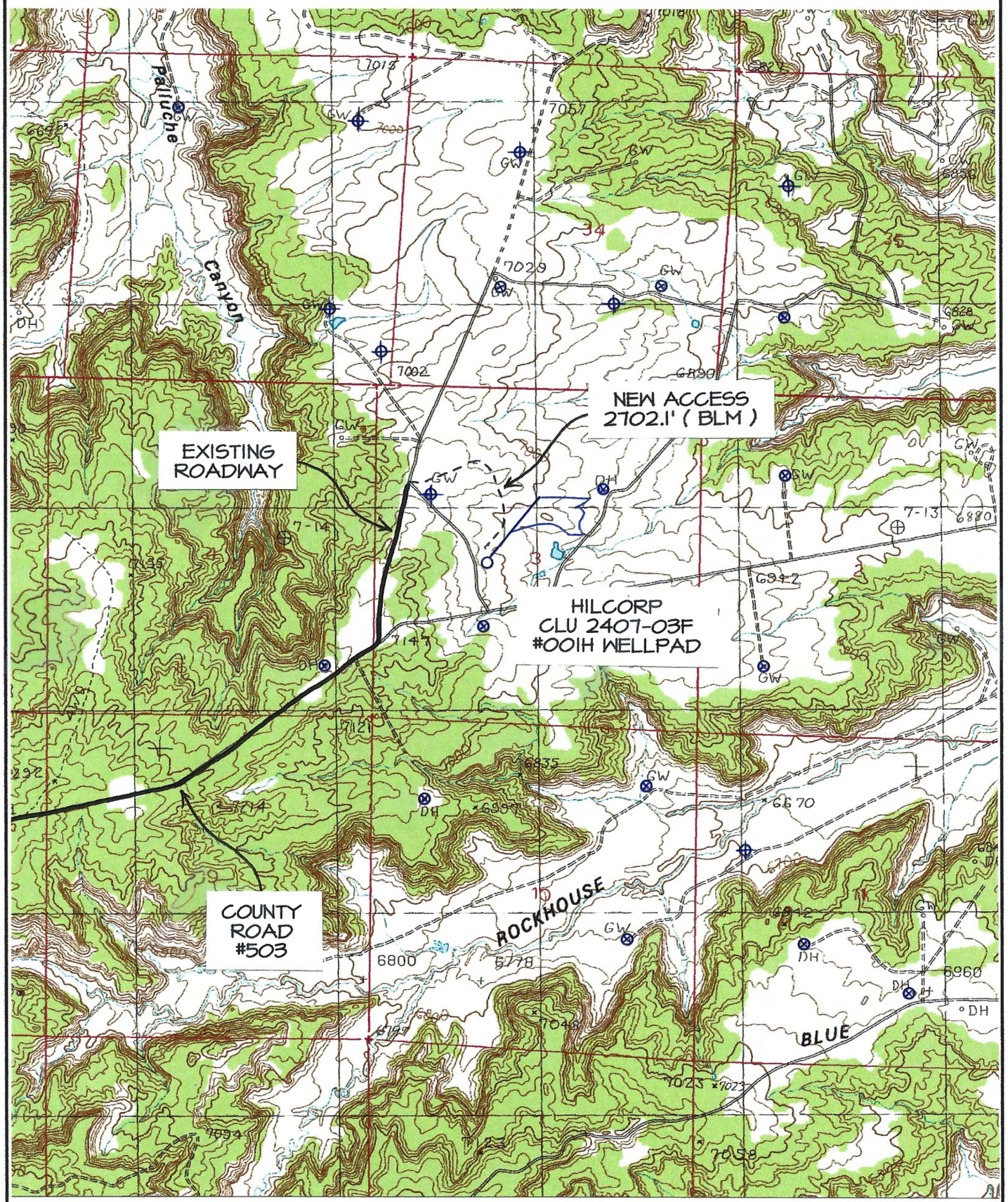
2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Hilcorp Energy Company Canyon Largo Unit 2407-03F #001H

2591' FSL & 1795' FWL, Section 3, T24N, R7W, N.M.P.M., Rio Arriba County, NM

Latitude: 36.342087°N Longitude: -107.566002°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 46.8 miles to Mile Marker 104.9;

Go Left (Northerly) exiting US Hwy 550 on County Road #377 for 4.1 miles to fork in roadway;

Go Left (Northerly) which is straight remaining on County Road #377 for 2.2 miles to fork in roadway;

Go Left (Northerly) which is straight remaining on County Road #377 for 2.0 miles to fork in roadway;

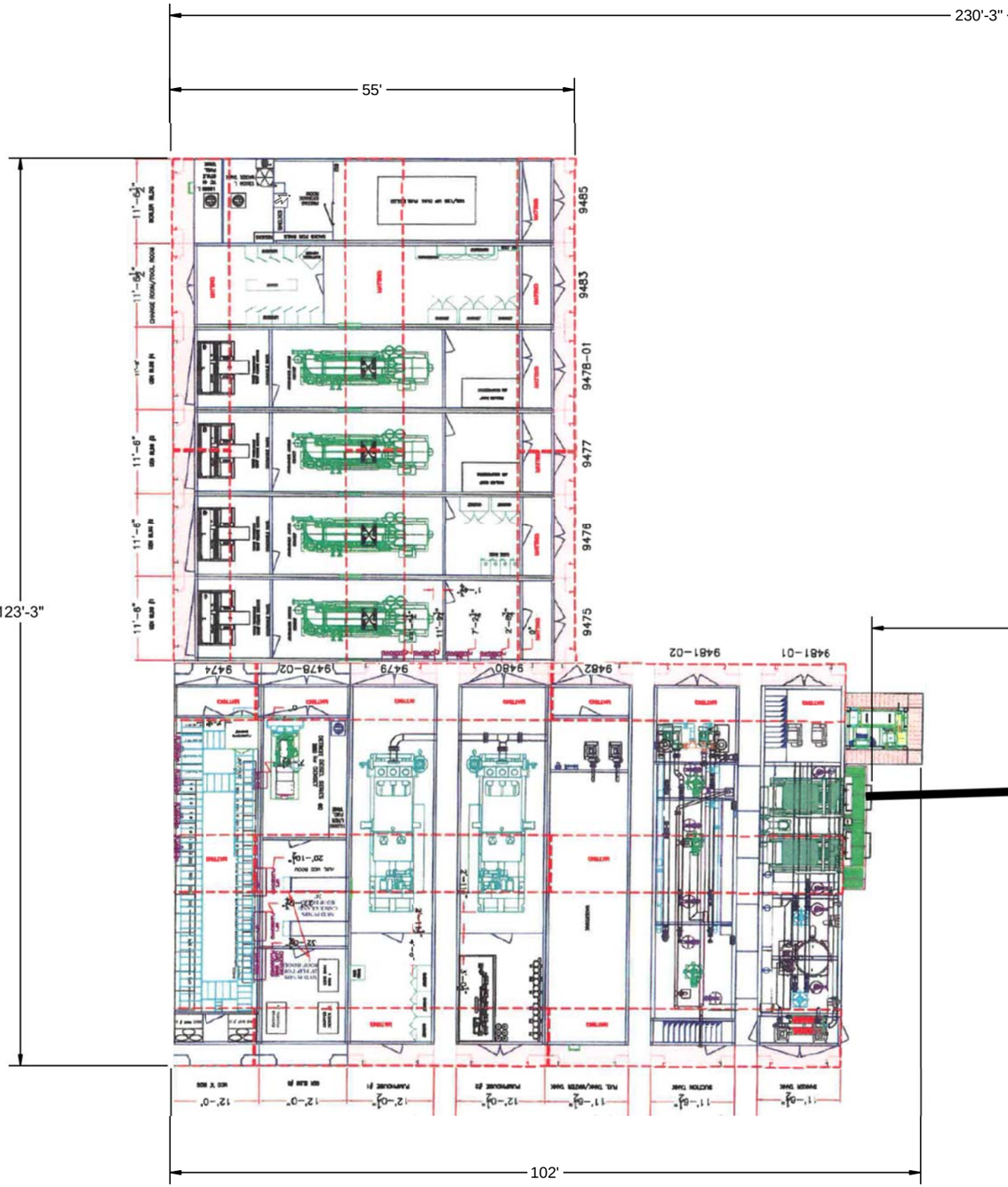
Go Right (Easterly) exiting County Road #377 on County Road #503 for 2.2 miles to fork in roadway;

Go Left (Northerly) exiting County Road #503 on existing roadway for 0.5 miles to fork in roadway;

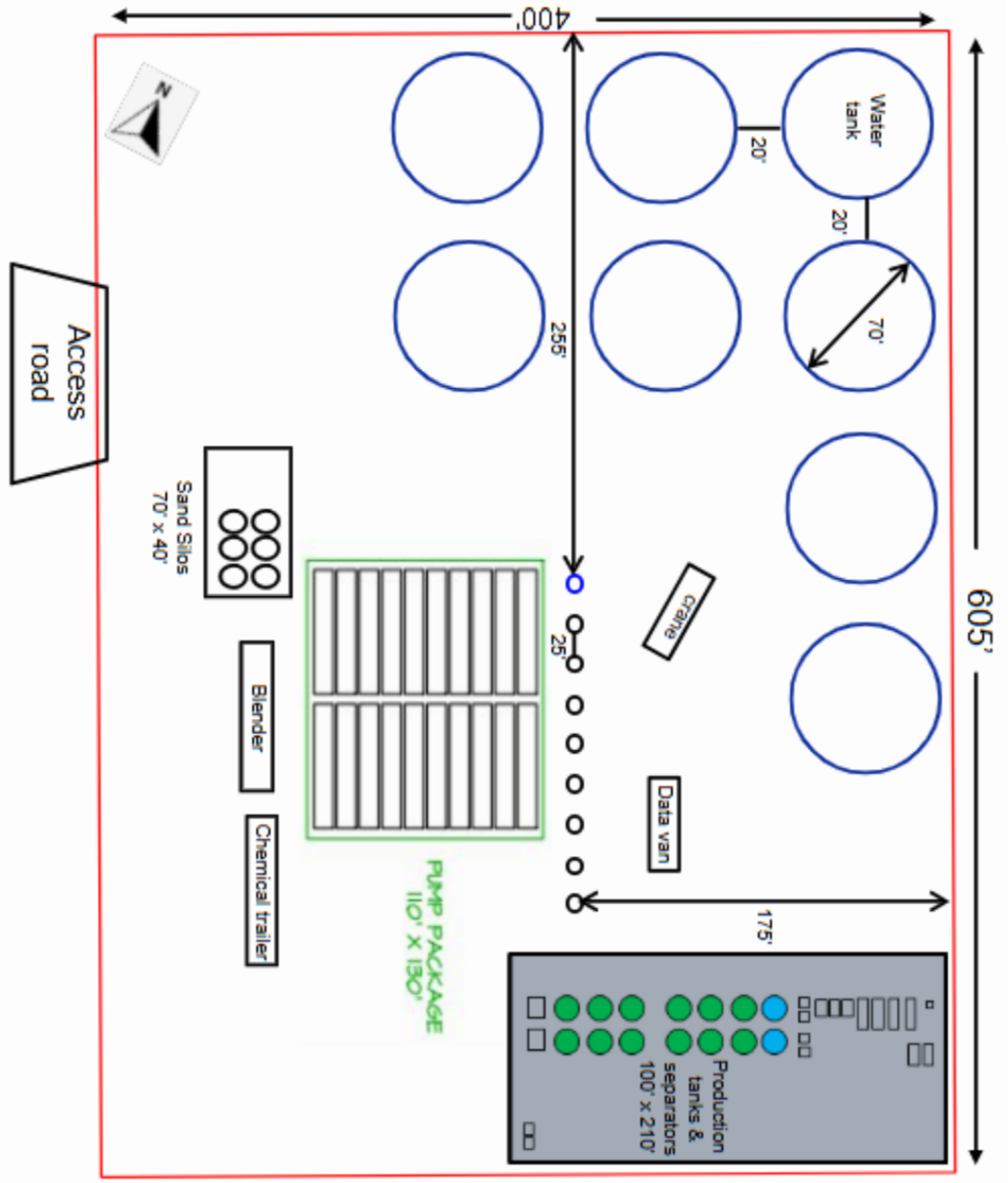
Go Straight (Northerly) for 200' to new access on right-hand side of existing roadway which continues for 2702.1' to Hilcorp Canyon Largo Unit 2407-03F #001H staked location.

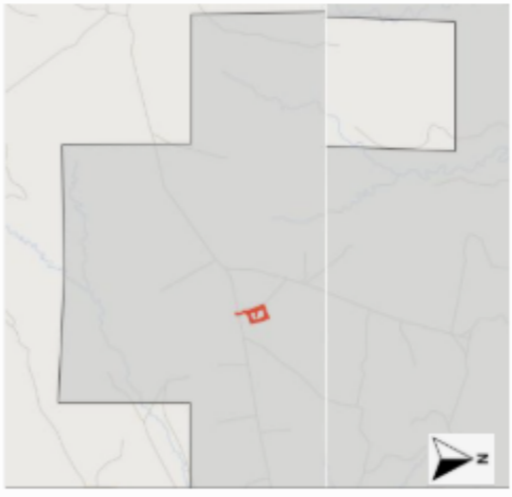
APPENDIX D. DRILL RIG DIAGRAMS

Released to Imaging: 3/23/2026 10:09:09 AM
Received by OCD: 3/2/2026 10:15:37 AM



AZTEC DRILLING


400'
605'
Water tank
20'
20'
70'
255'
25'
175'
Access road
Sand Silos
70' x 40'
Blender
Chemical trailer
PUMP PACKAGE
110' X 130'
Data van
Chem
Production tanks & separators
100' x 210'
N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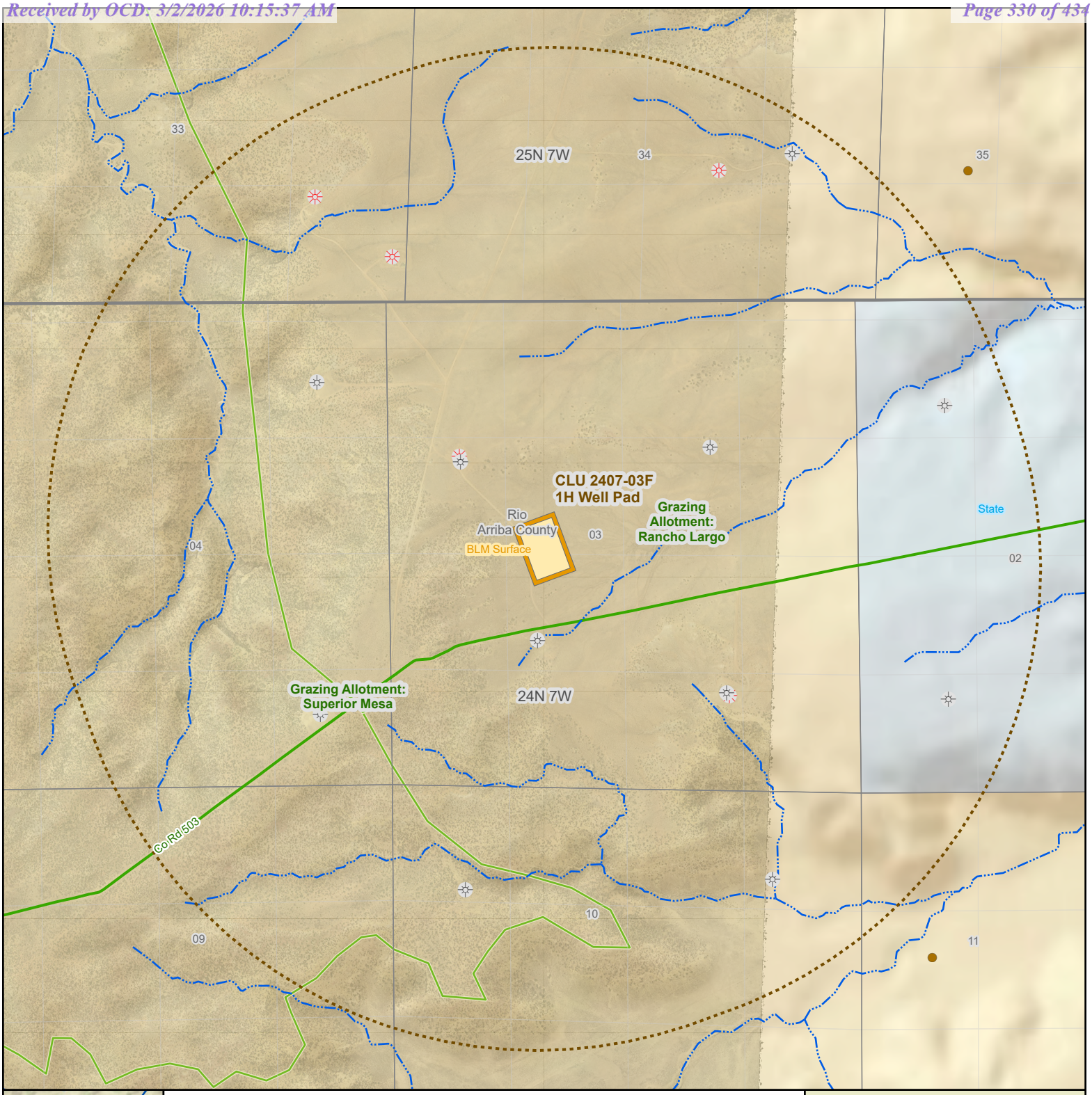
APPENDIX E. MAP OF EXISTING WELLS WITHIN 1-MILE

Received by OCD: 3/2/2026 10:15:37 AM



Gas Well Within 1 Mile Radius:
- Gas Active
- Gas Plugged
- Well Not in 1 Mile Radius

Water Wells
- Unknown
- Active
- Capped
- Changed Location Well
- Inactive
- Pending
- Plugged
- others

CLU 2407-03F H1 Well Pad:
- Well Pad
- Edge of Disturbance
- CLU 2407-03F H1 1 Mile Buffer
- Stream (NHD)
- BLM Range Allotment

- County or Numbered Road
- Named or Minor Access Road

Surface Ownership:
- BLM
- Private
- State
- Tribal

Public Land Survey:
- Township
- Section

Hilcorp Energy Company
CLU 2407-03F 1H Well Pad

Existing Wells
Within 1 Mile Radius

~~ Location Information ~~
T24N R7W, Section 03
Rio Arriba County, New Mexico

Hilcorp

Coordinate System: NAD 1983 State Plane NM West FIPS 3003 Feet
Data Sources: EMNRD, Hilcorp, US Census, USGS

N

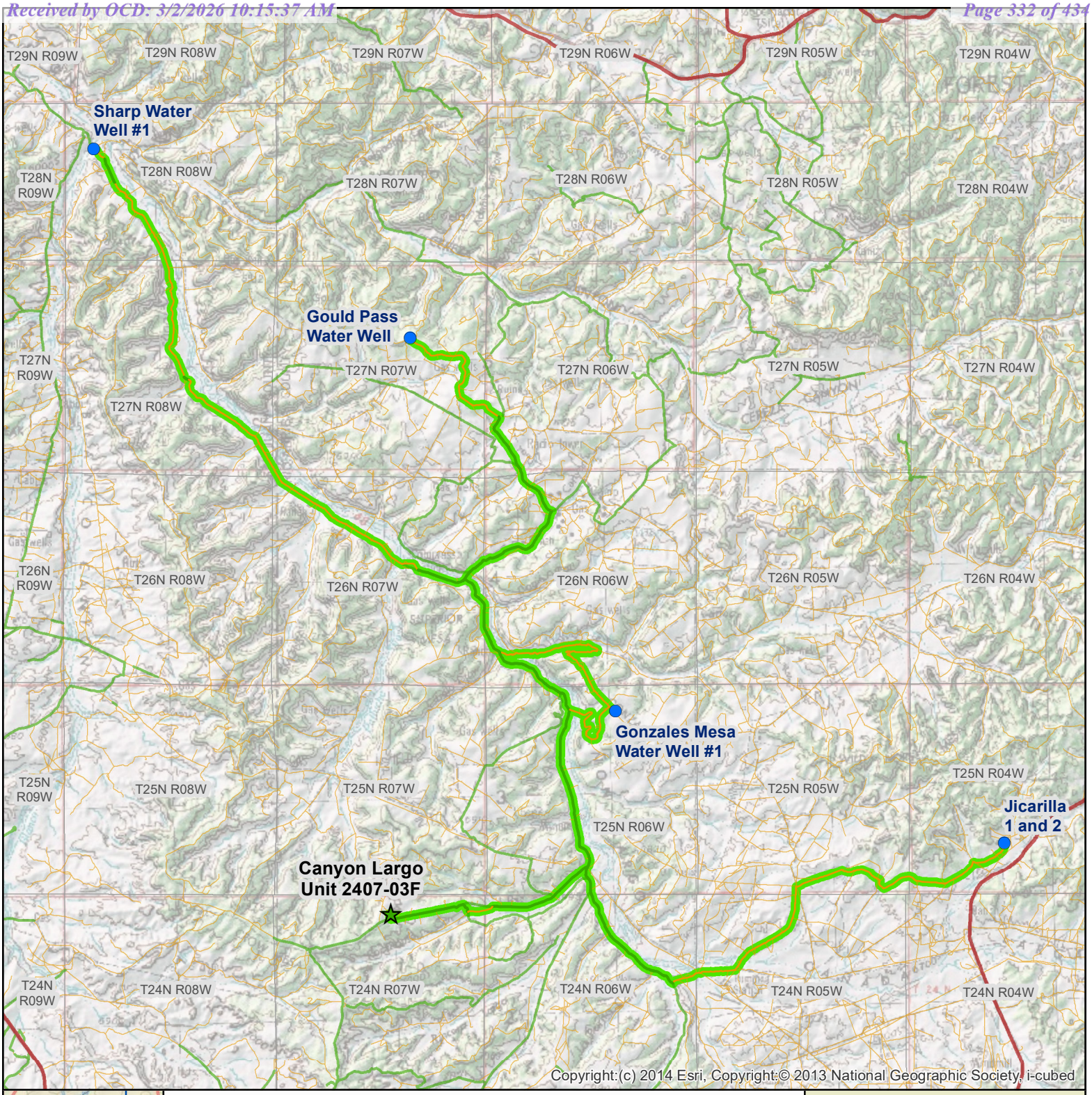
Prepared for Hilcorp Energy Company by EIS Environmental & Permitting Geographic Information Services, 5/6/2025

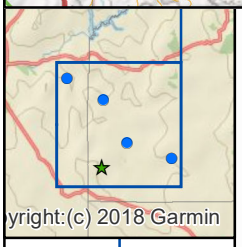
EIS

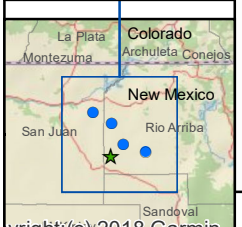
Feet
0 500 1,000 2,000
1:18,000 1:18,000

Released to Imaging: 3/23/2026 10:09:09 AM
Note: For reference only. Not for legal use. Duplication by permission only.

APPENDIX F. WATER ROUTE MAPS







- Canyon Largo Unit 2407-03F Well Pad
- Water Source

Roads:
- Highway
- County or Numbered Road
- Secondary Road
- Water Transportation Route

Public Land Survey:
- Township

Hilcorp Energy Company
Canyon Largo Unit 2407-03F Well Pad

Water Transportation Map

~~ Location Information ~~
San Juan and Rio Arriba Counties, New Mexico

Miles
0 1 2 4
1 inch = 20,000 feet *1:240,000*

Hilcorp

Coordinate System: NAD 1983 State Plane NM West FIPS 3003 Feet
Data Sources: BLM, EIS, ESRI, Hilcorp

N

Prepared for Hilcorp Energy Company by EIS Environmental & Permitting Geographic Information Services, 9/25/2023

EIS

Note: For reference only. Not for legal use. Duplication by permission only.

APPENDIX G. PROPOSED ROAD UPGRADE AREAS

G

PROPOSED ROAD UPGRADES FOR

HILCORP ENERGY COMPANY

CANYON LARGO UNIT 2407-03F #001H

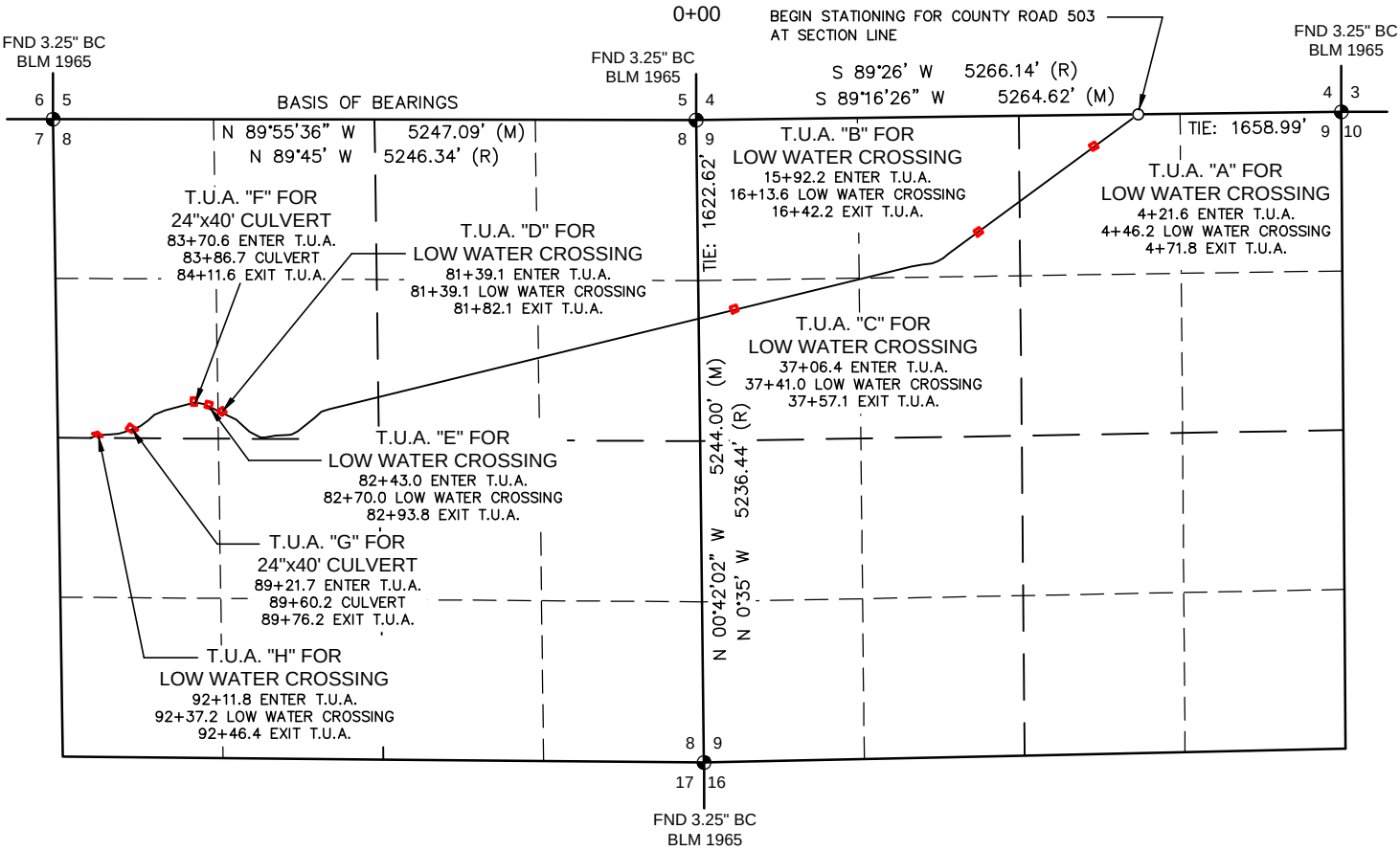
COUNTY ROAD 503

LOCATED IN THE NW/NE, NE/NW & SW/NE OF SECTION 9 AND
SE/NW & SW/NW OF SECTION 8,
T24N, R9W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO

Hilcorp

750' 0 750' 1500'

SCALE = 1" = 1500'



NOTES

1) BASIS OF BEARINGS FOR THIS SURVEY ARE BETWEEN FOUND MONUMENTS AT THE NORTHEAST CORNER AND THE NORTHWEST CORNER OF SECTION 8, TOWNSHIP 24 NORTH, RANGE 9 WEST, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO LINE BEARS: N 89°55'36" W 5247.09'
2) DATE OF FIELD SURVEY: JULY, 2025.
3) THIS EXHIBIT IS NOT A BOUNDARY SURVEY AND SHOULD NOT BE USED AS SUCH.
4) THIS EXHIBIT MAY NOT SHOW ALL EXISTING EASEMENTS AND UTILITIES.
5) CALL THE NEW MEXICO 811 SYSTEM FOR UTILITY LOCATIONS BEFORE EXCAVATING OR DIGGING.

HENRY P. BROADHURST, JR. NEW MEXICO 11393 PROFESSIONAL SURVEYOR 07/21/2025

~ SURFACE OWNERSHIP ~ BUREAU OF LAND MANAGEMENT	
TUA "A" 0.057 ACRES	TUA "E" 0.057 ACRES
TUA "B" 0.057 ACRES	TUA "F" 0.055 ACRES
TUA "C" 0.057 ACRES	TUA "G" 0.070 ACRES
TUA "D" 0.052 ACRES	TUA "H" 0.032 ACRES
TOTAL T.U.A. 0.437 ACRES	
DATE OF SURVEY	07/17/25 GR

PREPARED BY:

CCI
CHENAULT CONSULTING INC.
4800 COLLEGE BLVD #105
FARMINGTON, NM 87402
505-325-1772

I, HENRY P. BROADHURST, JR., A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I CONDUCTED AND AM RESPOSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

DRAWING: CLU 2409 ROAD UPGRADES	
SCALE: 1" = 1500'	REV. 0 07/18/2025
DRAFTED BY: GRR	
SHEET: 1 of 2	

PROPOSED ROAD UPGRADES FOR

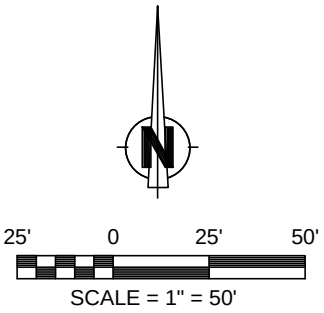
HILCORP ENERGY COMPANY

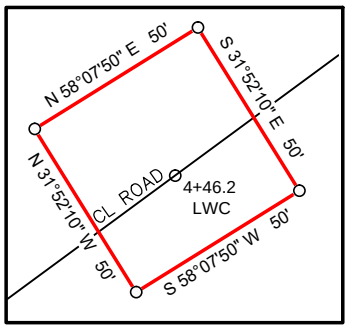
CANYON LARGO UNIT 2407-03F #001H

COUNTY ROAD 503

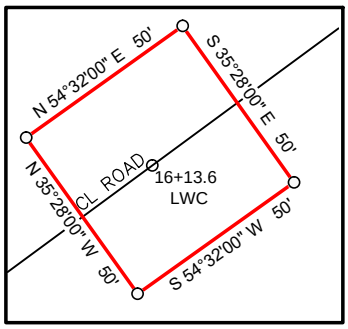
LOCATED IN THE NW/NE, NE/NW & SW/NE OF SECTION 9 AND
SE/NW & SW/NW OF SECTION 8,
T24N, R9W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO

Hilcorp





T.U.A. "A" FOR
LOW WATER CROSSING
0.057 ACRES



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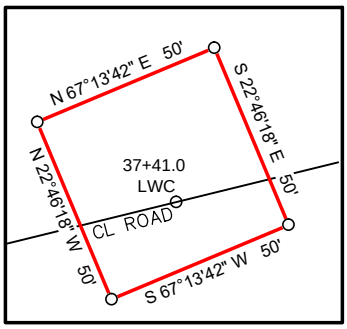
LOW WATER CROSSING
0.057 ACRES



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LOW WATER CROSSING
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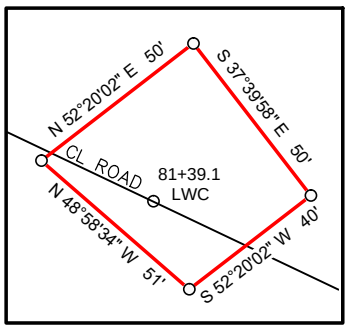

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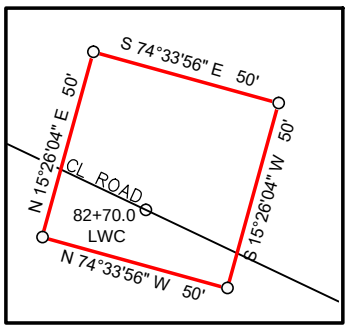
LOW WATER CROSSING
0.052 ACRES



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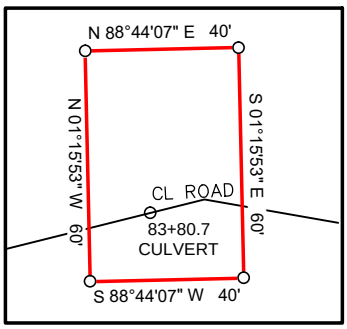
LOW WATER CROSSING
0.057 ACRES



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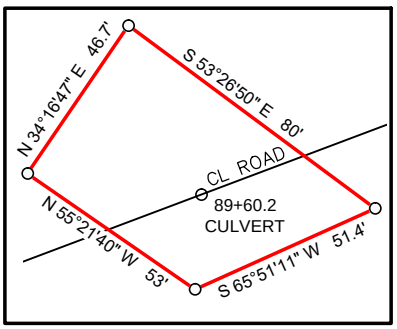
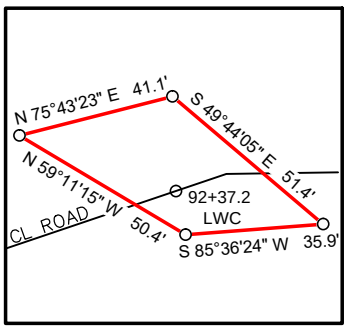
LOW WATER CROSSING
0.055 ACRES



T.U.A. "G" FOR
LOW WATER CROSSING
0.070 ACRES



T.U.A. "H" FOR
LOW WATER CROSSING
0.032 ACRES

PREPARED BY:

CCI
CHENAULT CONSULTING INC.
4800 COLLEGE BLVD #105
FARMINGTON, NM 87402
505-325-7751

DRAWING: CLU 2409 ROAD UPGRADES	
SCALE: 1" = 50'	REV. 0 07/18/2025
DRAFTED BY: GRR	
SHEET: 2 of 2	

APPENDIX H. DUST MITIGATION PLAN

Hilcorp Energy Company's Dust Mitigation Plan

Canyon Largo Unit 2407-03F #001H, #002H, #003H, and Five Future Natural Gas Well Project

May 2025

Prepared for

Hilcorp

Hilcorp Energy Company
1111 Travis Street
Houston, Texas 77002
Phone: (713) 209-2400

Developed by

EIS
Environmental & Permitting Solutions

479 Wolverine Drive
Bayfield, Colorado 81122
Phone: (970) 881-4080

1 SUMMARY

Dust could be created by traffic and by dirt work during construction, drilling, and/or completion of the CLU 2407-03F Project and with any substantial maintenance. Specific, intermittent actions will be used to lower the volume of dust and to reduce potential impacts. Both Hilcorp Energy Company (Hilcorp) and its construction contractor will have the authority and responsibility to implement dust control measures, primarily traffic speed control, traffic reduction, and application of fresh water to the working area and adjacent road.

2 ISSUE

The proposed CLU 2407-03F Project construction will occur in a developed area with sparse vegetation underlain by relatively fine grained, low moisture soil. The area is in a dry climate and typically experiences only rare, distinct, light to heavy rainstorms primarily in the summer months. Planned construction activities will include blading and grading the soil, driving large vehicles onsite, unloading equipment, setting of equipment, construction of the lay flat waterlines, drilling and completions, and then recontouring and reclaiming areas of the pad. These construction activities have a high probability of disrupting soil and stirring particles (dust) into the air. In the future, traffic from ongoing maintenance and operations may also result in intermittent generation of dust.

3 MITIGATION MEASURES

Excessive dust that could be created by traffic or activities during construction and maintenance will be mitigated by the following:

1) Speed control: Vehicles on-site will be restricted to speeds of 5 mph or slower.
2) Traffic reduction: Contractors will be encouraged to carpool to the location to reduce total traffic on site and in the area.
3) Workers on site will be encouraged to park their vehicles on the adjacent exiting disturbance as permitted rather than driving on the temporary pipeline ROW except as needed for construction including transportation of tools and equipment.
4) Application of fluids: The construction area and adjacent road will be watered with fresh water during periods of high use or high wind to lower the amount of free dust in the air. Magnesium chloride, organic-based compounds, and/or polymer compounds could also be used, if needed, on the adjacent road with the approval of the BLM-FFO. Fresh water could be obtained from commercial services in the area and applied by a standard tank truck with a sprayer.
5) Reclamation: Following construction, reclamation will begin with recontouring of the non-working surface of the well pad and re-spreading of topsoil. Seeding will occur following approved procedures with the Pinyon/Juniper Community Seed Mix as specified by the BLM at the on-site meeting or another seed mix if requested by BLM in the future.
6) Hilcorp will monitor the project for noxious weeds and for success of the reclamation. Hilcorp will treat noxious weeds using methods and products specifically approved by the BLM-FFO.

4 RESPONSIBILITY AND AUTHORITY

1) Hilcorp will include dust mitigation as part of the contracted construction activity.
2) During construction, the on-site foreman and/or construction supervisor will be responsible for communicating and enforcing the on-site parking and speed restrictions.
3) During construction, the on-site foreman and/or construction supervisor will have authority and responsibility to bring in water trucks to mitigate dust on-site.
4) Hilcorp's on-site foreman and/or construction supervisor will have authority and responsibility to commence interim reclamation promptly after construction.
5) Hilcorp's operations staff will have the responsibility for monitoring the success of reclamation on the project, managing storm water, monitoring and mitigating noxious weeds, and providing additional appropriate services to ensure successful reclamation of the project.

APPENDIX I. WATER WELL PERMIT

Page 341 of 434

Public Notice

NOTICE is hereby given that Hilcorp Energy Company c/o Keri Hutchins, 382 Road 3100, Aztec, NM 87410, filed with the New Mexico Office of the State Engineer on August 27, 2019 a Notice of Intention to Drill one well to Appropriate Nonpotable Groundwater from an aquifer the top of which is at a depth of 2,500 feet or more pursuant to NMSA 1978 §§ 72-12-26 and 27. This Notice of Intention was assigned SJ-4366. The water well, Canyon Largo 2506-30 #1, will be drilled to an anticipated depth 8,400 feet below ground surface, constructed of seven inch diameter casing, and will have all water production isolated within the Entrada Formation Aquifer. The subject well would be located approximately 45 miles south of the City of Bloomfield, San Juan County, New Mexico. The projected point of diversion has changed. It was previously noticed in newspapers in January and February of 2020 with a location of SW/4 SW/4 of Section 30, T25N, R6W, N.M.P.M. The revised projected point of diversion is located on BLM land in the SE/4 NW/4 of Section 3, T24N, R7W, N.M.P.M., and Lat 36.342462 °N, Long -107.565569 °W, Datum NAD1927, Rio Arriba County, New Mexico The applicant intends to divert up to 706 acre-feet per annum from the well location listed above for an estimated 20 year period from the Entrada Formation Aquifer in the San Juan Basin. The requested diversion will be used to supply nonpotable water for oil and gas exploration and production operations on private, State, and BLM lands within Rio Arriba County, New Mexico.

Any person may bring an action in Rio Arriba County District Court for damages or for injunctive relief with respect to any claimed impairment of existing water rights due to an appropriation of nonpotable water under NMSA 1978 §§ 72-12-25 to 28. Applications to appropriate nonpotable water under NMSA 1978 § 72-12- 28 are not subject to protest or hearing before the State Engineer. (Published July 6,13, 20, 2023)

's Bill

84 ne at $ 67.20

84 mes at 117.60

fidavit 5.00

btotal 189.80

Tax 16.96

Total $ 206.76

Paymen Grande SUN

Date Ju

By

Affidavit of Publication

State of New Mexico
County of Rio Arriba

I, Richard L. Connor, being first duly sworn, declare and say I am the publisher of the Rio Grande SUN, a weekly newspaper published in the English language and having a general circulation in the County of Rio Arriba, State of New Mexico, and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 of the Session Laws of 1937. The publication, a copy of which is hereto attached, was published in said paper once each week for

3 consecutive weeks and on the same day of each week in the regular issue of the paper during the time of publication and the notice was published in the newspaper proper, and not in any supplement. The first publication being on the

6th day of July, 2023

and the last publication on the 20th day of July, 2023 payment for said advertisement has been duly made, or assessed as court costs. The undersigned has personal knowledge of the matters and things set forth in this affidavit.

Richard L Connor

Publisher

Subscribed and sworn to before me this 20th day of July A.D. 2023

STATE OF NEW MEXICO
NOTARY PUBLIC
MARIA G. CHAVEZ
COMMISSION # 1092337
EXPIRES OCTOBER 21, 2024

Maria G Chavez

Maria G. Chavez/Notary Public

My commission expires 21 October 2024

Received by OCD: 3/2/2026 10:15:37 AM

Released to Imaging: 3/3/2026 10:09:09 AM

File No.

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL A WELL WITH NO WATER RIGHT

(check applicable boxes):

For fees, see State Engineer website: https://www.ose.nm.gov/

Purpose:

- ☐ Pollution Control And/Or Recovery
- ☐ Ground Source Heat Pump
- ☐ Other(Describe):
- ☒ Exploratory Well*(Pump test)
- ☐ Construction Site/Public Works Dewatering
- ☐ Monitoring Well
- ☐ Mine Dewatering

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

*New Mexico Environment Department-Drinking Water Bureau (NMED-DWB) will be notified if a proposed exploratory well is used for public water supply.

☐ Yes ☑ No Angled/Directional borehole - include schematic and azimuth, inclination, measured depth and true vertical depth.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

Note: if there is known artesian conditions, contamination or high mineral content at the drilling location, include the borehole log or a well log from an existing well at that location. If this information is not submitted, check box and attach form WD-09 to this form. ☑

1. APPLICANT(S)

Name: Hilcorp Energy Company	Name:
Contact or Agent: Max Lopez - Associate Landman check here if Agent ☐	Contact or Agent: check here if Agent ☐
Mailing Address: 382 Road 3100	Mailing Address:
City: Aztec	City:
State: New Mexico Zip Code: 87410	State: Zip Code:
Phone: (505) 634-6059 ☐ Home ☒ Cell Phone (Work): (505) 333-1741	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): max.lopez@hilcorp.com	E-mail (optional):

2025 OCT -7 PM 2:35 STATE ENGINEER OFFICE AZTEC, NEW MEXICO

FOR OSE INTERNAL USE Application for Permit, Form WR-07, Rev 10/02/2024

File No.:	Trn. No.:	Receipt No.:
Trans Description (optional):		
Sub-Basin:	PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell), District V (Aztec) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

■ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	-Public Land Survey System (PLSS) (QQQSection, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name	Well Depth in feet	Casing Diameter (OD)
SJ-4366	-107.5662	36.34247	SE 1/4, NW 1/4, SEC 3, T24N, R7W	8,628	7.625"

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STATE ENGINEER OFFICE AZTEC, NEW MEXICO

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ■ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

The Canyon Largo Unit 2407-03F WSW #001 (SJ-4366) will share a well pad with Canyon Largo Unit 2407-03F O&G New Drills.

Well is on land owned by: BLM

Well Information: NOTE: If casings telescope or involve nested casing, please provide diagram. Attached? ■ **Yes** ☐ **No**

Approximate depth to water (feet): 8,321'	Outside diameter of well casing (inches): 7.625"
Driller Name: MO-TE Drilling, Inc.	Driller License Number: WD733

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Well to be drilled to Entrada formation for the production on non-fresh water to be used in hydraulic fracturing operations in the area.

FOR OSE INTERNAL USE Application for Permit, Form WR-07 Version 10/02/2024

File No.:	Trn No.:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory*:
Is proposed well a future public water supply well?
☐ Yes ☒ NO
If Yes, an application must be filed with NMED-DWB, concurrently.
☐ Include a description of any proposed pump test, if applicable.

Monitoring*:
☐ Include the reason for the monitoring well, and,
☐ The duration of the planned monitoring.

Pollution Control and/or Recovery:
☐ Include a plan for pollution control/recovery, that includes the following:
☐ A description of the need for the pollution control or recovery operation.
☐ The estimated maximum period of time for completion of the operation.
☐ The annual diversion amount.
☐ The annual consumptive use amount.
☐ The maximum amount of water to be diverted and injected for the duration of the operation.
☐ The method and place of discharge.
☐ The method of measurement of water produced and discharged.
☐ The source of water to be injected.
☐ The method of measurement of water injected.
☐ The characteristics of the aquifer.
☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system.
☐ Proof of any permit required from the New Mexico Environment Department.
☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.

Construction De-Watering:
☐ Include a description of the proposed dewatering operation,
☐ The estimated duration of the operation,
☐ The maximum amount of water to be diverted,
☐ A description of the need for the dewatering operation, and,
☐ A description of how the diverted water will be disposed of.

Ground Source Heat Pump:
☐ Include a description of the geothermal heat exchange project,
☐ The number of boreholes for the completed project and required depths.
☐ The time frame for constructing the geothermal heat exchange project, and,
☐ The duration of the project.
☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.

Mine De-Watering:
☐ Include a plan for Mine De-Watering, that includes the following:
☐ A description of the need for mine dewatering.
☐ The estimated maximum period of time for completion of the operation.
☐ The source(s) of the water to be diverted.
☐ The geohydrologic characteristics of the aquifer(s).
☐ The maximum amount of water to be diverted per annum.
☐ The maximum amount of water to be diverted for the duration of the operation.
☐ The quality of the water.
☐ The method of measurement of water diverted.
☐ The recharge of water to the aquifer.
☐ Description of the estimated area of hydrologic effect of the project.
☐ The method and place of discharge.
☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project.
☐ A description of the methods employed to estimate effects on surface water rights and underground water rights.
☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.

(* if exploration or monitoring drilling activity is required by NMED, then you must also submit the NMED Work Plan)

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Hilcorp Energy Company (Max Lopez - Associate Landman)
Print Name(s)

affirm that the foregoing statements are true to the best of (my,our) knowledge and belief.

Max Lopez
Applicant Signature

Applicant Signature

STATE ENGINEER OFFICE AZTEC, NEW MEXICO
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ACTION OF THE STATE ENGINEER

This application is:
☐ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this _____ day of _____ 20 _____ , for the State Engineer,

_____, State Engineer

By: _____ _____
Signature Print

Title: _____
Print

FOR OSE INTERNAL USE Application for Permit, Form WR-07 Version 10/02/2024

File No.:	Trn No.:

WD-09
ARTESIAN WELL PLAN OF OPERATIONS and/or CONTAMINATION PRESENT

(for new well construction and repairs)

An Artesian Well Plan of Operations shall be filed and approved by the Office of the State Engineer prior to commencing the drilling of an artesian well or when low-quality or contaminated water is present in accordance with Chapter 72, Article 13 NMSA 1978 and 19.27.4.30.A(4) NMAC.

Artesian Well Plan of Operations ■ Contamination Present ☐

1. Applicant(s)

OSE POD Number: SJ-4366	Well Tag ID No.:
Name: Hilcorp Energy Company	Name:
Contact Or Agent ☐Check if Agent Max Lopez - Associate Landman	Contact Or Agent ☐Check if Agent
Mailing Address: 382 Road 3100	Mailing Address:
City: Aztec State: New Mexico	City: State:
Zip: 87410	Zip:
Phone: ☐Cell ☐Home	Phone: ☐Cell ☐Home
Phone Work: 505-333-1741	Phone Work:
E-Mail: max.lopez@hilcorp.com	E-Mail:

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STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

2. Background Information

Do artesian wells exist near the proposed well?	☐Yes ■No	
If yes, provide the OSE POD Number(s):		
If yes, what is the completed depth to water in nearby wells?		Feet
If yes, what the top depth of the artesian Aquifer?		Feet
Are there flowing artesian wells in the area?	☐Yes ■No	
If flowing artesian wells exist, provide the OSE POD Number(s) in the space below:		
Does low quality (contaminated) water exist in the area*?	■Yes ☐No	
If yes, what is the estimated bottom depth of the Low Quality water?	8,521	Feet
If yes, attach groundwater quality analyses?	■Yes ☐No	
What type of drilling method are you employing? Rotary		
Specialty equipment you may be using:		

3. Well Information

■ Detailed Wellbore diagram attached including but not limited to estimated formation tops. Diagram needs to match all information presented in the Artesian Well Plan of Operations.

GPS Well Location (NAD 83)						
Latitude:	N36°	Deg.	20'	Min.	32.90679"	Sec.
Longitude:	W107°	Deg.	33'	Min.	58.22796"	Sec.
County:	Rio Arriba					

4. Well Construction Information

Will the flowlines be connected below ground surface? ☐Yes ■No
Pitless adapter is required when flow line breaches the casing.
Will there be pitless installed? ☐Yes ■No

Item	Surface Casing	Artesian/ Contamination Casing	Production/ Open hole
Borehole Diameter (inches)	13.5		9.875
Proposed Bottom Depth (Feet)	500		8,628
Casing Type and Grade	J55 (or equivalent)		L80 (or equivalent)
Casing Weight (lbs/ft)	32.75		29.7
Casing ID (inches)	10.192		6.875
Casing Wall Thickness (inches)	0.279		0.375
Casing OD (Inches)	10.75		7.625
Casing Coupler Type	BTC		BTC
Coupler OD (Inches)	11.75		8.50
Centralizer type (Bow, rigid, Steel Spring, etc.)	Bow Spring		Rigid
Centralizer Make & Model	Weatherford VariForm		Centek Spiral Vane
Centralizer Spacing (Feet)	42		42
Centralizer OD (Inches)	14.21		9.252
Number of Bands (Steel Spring)	8		N/A
Maximum Offset from Casing (Steel Spring) (Inches)	1.73		N/A
Shoe Make	Weatherford		Weatherford
Shoe Model	Sure Seal Model 323		Sure Seal Model 323
Permanent Filter Pack Feed OD (inches)			
Permanent Filter Pack Feed Coupler OD (Inches)			

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Annular Sealant			
	Surface Casing	**Artesian/ Contamination Casing**	**Production/ Open hole**
Top of Annular Sealant (Feet)	0		0
Base of Annular Sealant (Feet)	500		8,628
Proposed Volume of Annular Sealant (units)[1]	217 sacks		1,761 sacks
Proposed Sealant Overage	100%		50%
Cement Type	Class G		Class G / Type IL
Method of Sealant Placement	Pressure pump		Pressure pump
Cement Additives:	**Surface Casing**	**Artesian/ Contamination Casing**	**Production/ Open hole**
% Bentonite			
Parts Sand /94 lb sk			
%CaCl			
Other additives			
Water Demand (gal/94 lb-sk cement)			

5. Additional Information including variance requests (in accordance with 19.27.4.37 NMAC).

For cement additives, please refer to the attached technical drilling plan which has cement blend (additives) and testing results for the surface cement slurry (single slurry), production cement lead slurry and the production cement tail slurry.

Hilcorp requests variance from NMAC 19.27.4.30, please see attached variance request letter.

The Canyon Largo Unit 2407-03F WSW #001 (SJ-4366) will share a well pad with Hilcorp's Canyon Largo Unit 2407-03F Oil and Natural Gas New Drills.

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[1] Calculate the proposed volume of sealant as accurately as possible. The following link to GeoPro Water Well Grout Volume Calculator may be used - https://geoproinc.com/resources/water_well.html

6. Well Driller Information

New Mexico Licensed Well Driller: MO-TE Drilling, Inc.	
New Mexico Well Driller License No. WD733	Expiration Date: June 30, 2027

7. Signature

I, Max Lopez, say that I carefully read the foregoing Artesian Well Plan of Operations and Contamination Present form and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the construction of wells and will comply with them, and that each and all of the statements in the Artesian Well Plan and Contamination Present form and attachments are true to the best of my knowledge and belief.

Max Lopez 10/07/2025

Signature Date

8. Action of the State Engineer

This Artesian Well Plan of Operations and Contamination Present form is:

_____ Approved subject to the attached conditions.

_____ Not approved for the reasons provided in the attached letter.

Witness my hand and official seal this _____ day of _____, 20____

_____, State Engineer

By: _____

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2025 OCT -7 PM 2:30

OSE Official Use Only	Artesian Plan of Operations	Version August 2, 2023	Page 4 of 4
OSE File #	OSE POD #	Transaction #	

Hilcorp

Richy Winningham
Senior Drilling Engineer
Hilcorp Energy
1111 Travis Street
Houston, TX 77002
Phone 346.237.2184

2025 OCT -7 PM 2:35
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

Office of the State Engineer
District Office V
100 Gossett Dr., Suite A
Aztec, NM
87410

September 30, 2025

Hilcorp Energy Company respectfully requests a variance to NMAC 19.27.4.30 regarding the Annular Space Requirements defined in the rule. Hilcorp Energy Company is asking for a waiver to the requirement stating the diameter of the borehole in which the annular seal is to be placed shall be at least three inches greater than the outside diameter of the outermost casing couplings.

Hilcorp Energy Company will drill and complete the artesian water well to Oil & Gas standards based on a high degree of experience in Drilling and Completions in similar wells. Those standards will provide adequate cement for zonal isolation of formations and provide for safe operations for the life of the well.

Hilcorp is requesting two variances. The first variance is for the surface casing. The proposed well design requires running 10-3/4" 32.75 lbs/ft J55 BTC surface casing inside of 13-1/2" open hole. This provides an annular clearance of 2-3/4" between the ID of the 13-1/2" open hole and the OD of the 10-3/4" casing pipe body and also provides an annular clearance of 1-3/4" between the ID of the 13-1/2" open hole and the OD of the 10-3/4" casing's couplings (11-3/4" OD).

This surface casing design is standard to the Oil and Gas Industry. By reducing the annular clearance from 3" to 2-3/4", the annular velocity while pumping cement increases, increasing the cement placement efficiency and improving the resulting cement bond. On the first attached chart, the annular velocity of the surface section (13-1/2" hole) is 185 ft/min while displacing the cement. To meet the 3" annular clearance requirement set forth by NMAC 19.27.4.30, an industry standard 14-1/2" hole would be required. The resulting annular velocity of the cement job with 10-3/4" casing inside a 14-1/2" hole is reduced to 131 ft/min while pumping at the same flow rate. Recommended Oil & Gas industry practice is to try to achieve annular velocity of up to 260 ft/min. The proposed hole size and casing design results in a higher annular velocity which increases the cement placement efficiency and improves the resulting cement bond.

The second variance is for the production (artesian) casing. The proposed well design requires running 7-5/8" 29.7 lbs/ft L80 BTC production casing inside the 10-3/4" 32.75 lbs/ft

surface casing and the 9-7/8" open hole. This provides annular clearance of 2-1/4" between the ID of the 9-7/8" open hole and the OD of the 7-5/8" casing pipe body and also provides an annular clearance of 1-3/8" between the ID of the 9-7/8" open hole and the OD of the 7-5/8" casing's couplings (8-1/2").

This production casing design is standard to the Oil and Gas Industry. By reducing the annular clearance from 3" to 2-1/4", the annular velocity while pumping cement increases, increasing the cement placement efficiency and improving the resulting cement bond. On the second attached chart, the annular velocity of the production section (9-7/8" hole) is 157 ft/min while displacing the cement. To meet the 3" annular clearance requirement set forth by NMAC 19.27.4.30, an industry standard 10-5/8" hole would be required. The resulting annular velocity of the cement job with 7-5/8" casing inside a 10-5/8" hole is reduced to 113 ft/min while pumping at the same flow rate. Recommended Oil & Gas industry practice is to try to achieve annular velocity of up to 260 ft/min. The proposed hole size and casing design results in a higher annular velocity which increases the cement placement efficiency and improves the resulting cement bond.

This well design has been successfully deployed in the Oil & Gas Industry and is considered a standard configuration.

If you have any questions or need further technical explanation, please contact me at richard.winningham@hilcorp.com or 346-237-2184.

Sincerely,

Hilcorp Energy Company

Richy Winningham

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AZTEC, NEW MEXICO

Figure 1: Surface hole section annular velocity comparison during cement job.

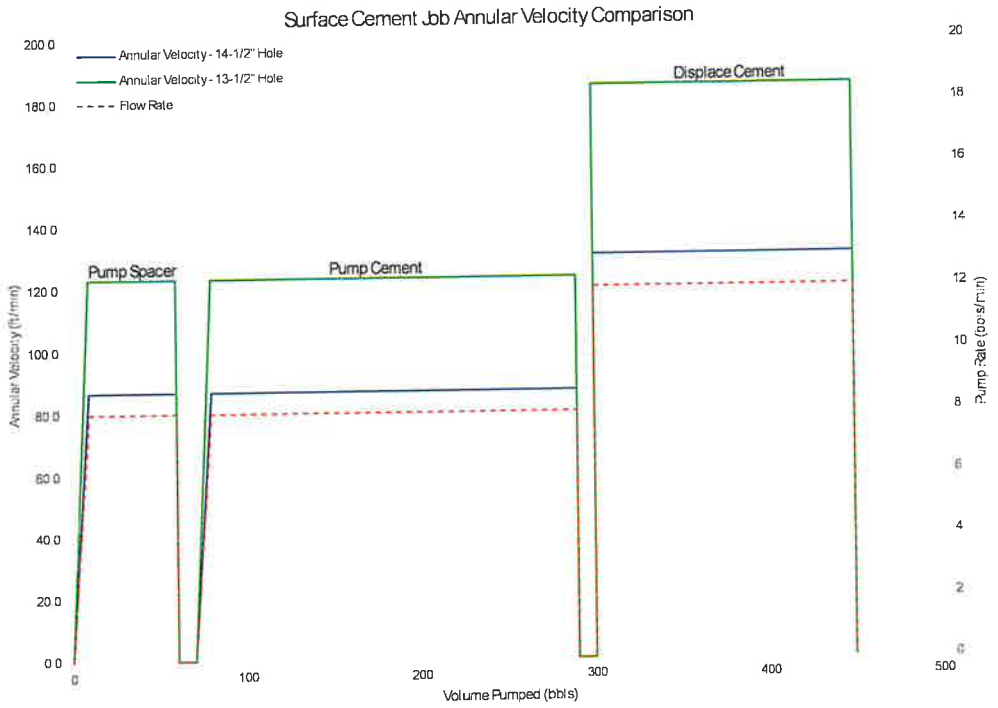
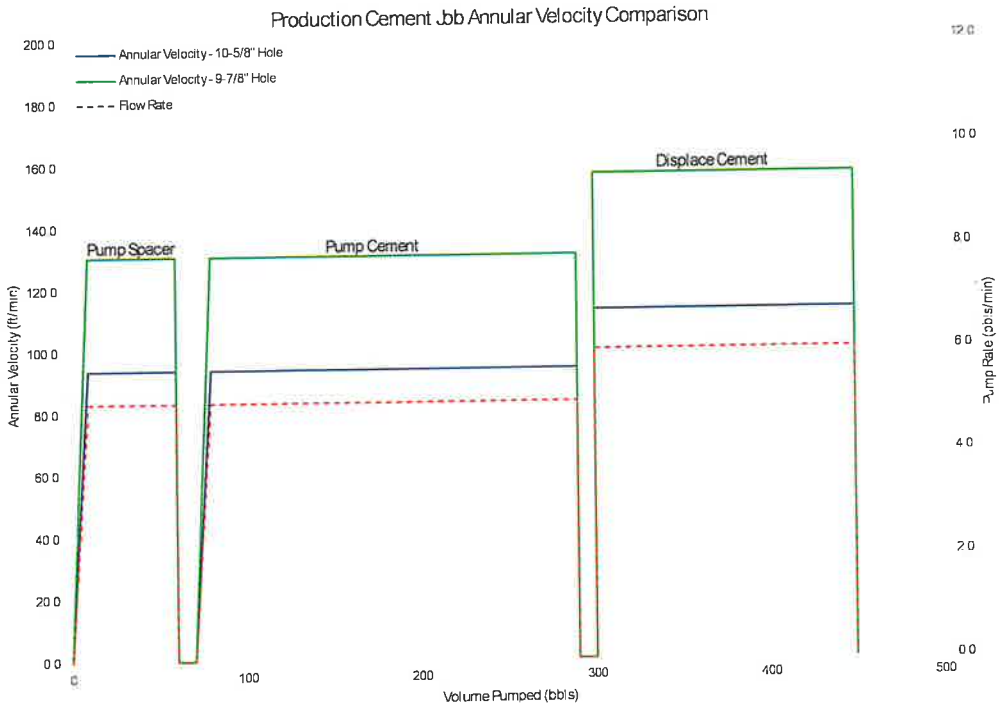


Figure 2: Production hole section annular velocity comparison during cement job.



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AZTEC, NEW MEXICO
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Rio Arriba County, NM Canyon Largo Unit 2407-03F WSW #001

Hilcorp

Technical Drilling Plan (Rev. 2)

Hilcorp Energy Company proposes to drill and complete the referenced vertical well targeting the Entrada formation.

Note: This technical drilling plan will be adjusted based upon actual conditions.

1. Location

Date:	Sept. 30, 2025	**Well Name:**	Canyon Largo Unit 2407-03F WSW #001
Pool:	Entrada	**County, State:**	Rio Arriba County, NM
Ground Elevation (ft. MSL):	7,011'	**Surface Hole Location:**	36.342462° N, 107.565569° W
Total Measured Depth (ft.):	8,628'	**Bottom Hole Location:**	36.342462° N, 107.565569° W

Note: All geographic coordinates on the drilling tech plan and the directional drilling plan refer to NAD 27 geodetic coordinate system. All depths on the drilling tech plan and the directional drilling plan are referenced from an estimated RKB datum of 27' above ground level.

2. Geological Markers

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

Formation	Depth (ft. TVD)	Remarks
San Jose	0'	Water
Ojo Alamo	1,886'	Possible Water
Kirtland	2,007'	Possible Water
Fruitland	2,158'	Possible Gas & Water
Pictured Cliffs	2,532'	Water
Lewis Shale	2,600'	None
Cliffhouse	4,192'	Possible Gas & Water
Point Lookout	4,960'	Possible Gas & Water
Mancos	5,380'	Oil
El Vado	5,897'	Oil
Juanna Lopez	6,438'	Possible Gas & Water
Greenhorn	6,763'	Possible Gas & Water
Graneros	6,814'	Possible Gas & Water
Two Wells	6,842'	Possible Gas & Water
Burro Canyon	7,096'	Possible Gas & Water
Morrison	7,190'	Possible Gas & Water
Todilto	8,268'	Possible Gas & Water
Entrada	8,321'	Water

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AZTEC, NEW MEXICO

3. Pressure Control Equipment

A. BOP Equipment

See Appendix A for BOP equipment and choke manifold diagram.

- BOP equipment will be nippled up on top of the wellhead after surface casing is set and cemented.
- Pressure control configurations will be designed to meet the minimum 3M standards.
- All equipment will have 3M pressure rating at a minimum.
- A rotating head will be installed on top of the annular as seen in the attached diagram.

B. BOP Pressure Testing

- For all BOP pressure testing, a BOP test unit with a chart recorder and a BOP test plug will be utilized.
- All tests and inspections will be recorded and logged with time and results.
- A full BOP pressure test will be conducted upon initial nipple up, if a seal subject to test pressure is broken, following any related repairs, and at a minimum in 30-day intervals.
- **The New Mexico Oil & Gas Conservation Division and the BLM will be notified 24 hours in advance of pressure testing BOPE.**
- The BOP rams will be tested to **250 psi (Low) for 5 minutes and 3,000 psi (High) for 10 minutes.**
- The BOP annular will be tested to **250 psi (Low) for 5 minutes and 2,100 psi (High) for 10 minutes.**

C. BOP Function Testing

- Annular preventors will be functionally tested at least once per week.
- Pipe and blind rams will be function tested each trip.

D. Casing Pressure Testing

- **Surface casing will be pressure tested to 600 psi for 30 minutes.**
- **Production casing will be pressure tested to 1,500 psi for 30 minutes.**

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4. Casing Program

A. Proposed Casing Program:

Proposed Casing Design							
Casing String	**Hole Size**	**Casing (size/weight/grade)**	**Top Depth (MD/TVD)**	**Shoe Depth (MD/TVD)**	**Collapse**	**Burst**	**Tensile**
Surface	13-1/2"	10-3/4"-32.75#-J55 (or equiv)-LTC/BTC	0'	500'/500'	870 psi	2,500 psi	505 klbs
Production	9-7/8"	7-5/8"-29.7#-L80 (or equiv)-LTC/BTC	0'	8,628' / 8,628'	4,790 psi	6,890 psi	683 klbs

Proposed Casing Design Safety Factors				
Casing String	**Burst Design SF**	**Collapse Design SF**	**Joint Tensile Design SF**	**Connection Tensile Design SF**
Surface	10.7	4.7	35.8	39.7
Production	1.5	1.3	3.1	3.3

B. Casing Design Parameters & Calculations:

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- Designed for full wellbore evacuation.
- Mud Weights used for calculations:
  - Surface = 9.0 ppg
  - Production = 10.0 ppg
- Minimum Acceptable Safety Factors:
  - Burst: 1.15
  - Collapse: 1.15
  - Tensile: 1.50
- Casing Safety Factor Calculations:

$$Casing\ Burst\ Safety\ Factor = \frac{Casing\ Burst\ Rating (psi)}{Maximum\ Mud\ Weight\ (ppg) \times TVD (ft) \times 0.052}$$

$$Casing\ Collapse\ Safety\ Factor = \frac{Casing\ Collapse\ Rating\ (psi)}{Hydrostatic\ of\ Mud\ Weight\ Used\ to\ Drill\ Hole\ Section\ (psi) - \left[TVD\ of\ Casing\ Shoe\ (ft) \times 0.10 \frac{psi}{ft}\right]}$$

$$Tensile\ Safety\ Factor = \frac{Tensile\ Rating\ of\ Casing\ String\ (lbs)}{Measured\ Depth\ of\ Casing (ft) \times Casing\ Weight\ \frac{lb}{ft} \times DrillingFluid\ Bouyancy\ Factor}$$

Surface Casing Notes:

- Surface section will be drill, cased and cemented to 500'. The deepest fresh water well in a 5 mile radius of the wellbore is 200' total depth.

Production Casing Notes:

- If the 8-3/4" hole is not drilled to the planned measured depth, casing setting depth will be adjusted accordingly.
- The 8-3/4" hole section will be drilled and the production casing will be set past the Entrada formation, likely in the Chinle formation.

5. Proposed Centralizer Program:

Casing String	Centralizer Description	Frequency & Placement
Surface Casing	13-1/2" x 10-3/4" bow spring slip-on type.	1 centralizer per joint.
Production Casing	9.252" x 7.625" solid body slip-on type.	1 centralizer per joint from TD to 10-3/4" surface casing shoe.

6. Proposed Cement Program:

Proposed Cement Design								
Interval	**Depth (ft. MD)**	**Lead/Tail**	**Volume (ft^3)**	**Sacks**	**Excess (%)**	**Slurry**	**Density (ppg)**	**Planned TOC**
Surface	500'	Tail	364 ft^3	217	100%	Class G Cement Yield: 1.68 ft^3/sk	13.9	Surface
		Slurry Additives: A-10 (5%), A-2 (2.0 lb/sk), A-7P (2.0%), IntegraSeal PHENO (2.5 lb/sk), IntegraSeal POLI (0.25 lb/sk), XCem-311 (0.3%)						
Production	8,628'	Lead	2,421 ft^3	1,541	50%	ASTM Type IL Yield: 1.57 ft^3/sk	12.0	Surface
		Slurry Additives: AEXT-1012 (60.0%), GW-86 (0.2%), IntegraSeal PHENO (2.0 lb/sk), IntegraSeal POLI (0.25 lb/sk), KCl (3.0%), R-3 (0.55%), STATIC FREE (0.01 lb/sk), XCem-311 (0.3%), XCem-532 (0.3%)						
		Tail	322 ft^3	220	50%	Class G Yield: 1.46 ft^3/sk	14.0	7,628'
		Slurry Additives: Fly Ash (20.0%), Bentonite (2.0%), GW-86 (0.1%), IntegraSeal PHENO (1.0 lb/sk), IntegraSeal POLI (0.25 lb/sk), R-3 (0.31%), StaticFree (0.01 lb/sk), XCem-1205 (1.0 lb/sk), XCem-532 (0.3%)						

Cement Program Notes:

- The cement slurry additives may be adjusted to accommodate required pump and compressive test times.
- Actual cement volumes will be determined and may be adjusted onsite based on well conditions.
- For the production hole section, a 2-stage or 3-stage cement job may be performed if hole conditions dictate. If needed, the stage tool(s) will be placed appropriately as conditions dictate.
- Cement will be circulated to surface on surface and production casing sections to protect water bearing zones.
- A minimum of 8 hours of wait on cement time will be observed on each hole section to allow adequate time for cement to achieve a minimum of 500 psi of compressive strength. The BOP will not be nippled down, the wellhead will not be installed, the casing will not be tested and the prior casing shoe will not be drilled out until adequate wait on cement time has been observed (8 hours or time to reach 500 psi compressive strength).

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7. Drilling Fluids Program

A. Proposed Drilling Fluids Program:

Proposed Drilling Fluids Program					
Interval	**Fluid Type**	**Density**	**Fluid Loss**	**Invert Ratio**	**Depth**
		(ppg)	(mL/30 min)	(%Diesel / %Brine)	(ft. MD)
Surface	Water/Gel	8.3 – 8.5	NC	N/A	0' – 500'
Production	LSND / KCl Fluid	8.5 – 10.0	<20	N/A	500' – 8,628'

Drilling Fluids Notes:

- In the 8-3/4" production hole section, potassium chloride (KCl) fluid may be used, up to fully saturated.
- Lost circulation material may be added to the mud systems to manage fluid losses as hole conditions dictate.
- The well will be drilled utilizing a closed-loop circulating system. Drill cuttings for all hole sections will be transported to an approved disposal site.
- Estimated total volume of drill cuttings for disposal: 858 bbls (4,820 ft^3).

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8. Estimated Pressures & Drilling Hazards

A. Estimated Pressures & Temperatures

- Surface Hole Section
  - Estimated reservoir pressures are normally pressured, at or below 0.43 psi/ft.
  - The estimated temperature at TD of the surface hole section is 90°F.
- Production Hole Section
  - Estimated reservoir pressures are normally pressured, at or below 0.43 psi/ft.
  - The estimated temperature at TD of the surface hole section is 190°F.
- Estimated Reservoir Pressure of Entrada: 2,100 – 2,400 psi
- No over-pressured intervals expected.
- There is production from the Fruitland Coal, Mesa Verde and Pictured Cliffs formations in offset wells in the area, which could result in these formations being depleted.

B. Water Flows

- Water flows are possible and will be mitigated with increased mud weight.

C. Lost Circulation

- Lost circulation is possible and will be mitigated by utilizing LCM in the mud system.

D. Hydrogen Sulfide

- No hydrogen sulfide is expected to be encountered based on nearby well production.

9. Pilot Hole

- No pilot hole is planned for this wellbore.

10. Testing, Logging, Coring

A. Mud Logging

- Mud loggers will collect formation samples every 90' from surface casing shoe to TD of the well.

B. MWD

- Measurement while drilling tools will be utilized on the production section of the well to measure and record inclination and azimuth.

C. LWD

- Logging while drilling tools (gamma ray) will be utilized while drilling the production section from the surface casing shoe to the production hole section TD.

D. Open Hole Logging

- The production hole section will be triple combo logged from well TD to the surface casing shoe unless hole conditions are not conducive to logging.

E. Coring

- None

F. Cased Hole Logging

- The 10-3/4" surface casing will be cemented to surface to protect water bearing zones. If cement is not circulated to surface on the surface cement job, a top cement job may be pumped to fill any remaining annular space. If cement is not circulated to surface, a cement bond log will be run on the 10-3/4" surface casing to verify top of cement and bond.
- The 7-5/8" production casing will be cemented to surface to protect water bearing zones. If cement is not circulated to surface on the production cement job, a cement bond log will be run on the 7-5/8" production casing to verify top of cement and bond.

11. Directional Drilling Plan

- This is planned to be a vertical well.

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12. Completion

A. Pressure Testing

- A pressure test of the 7-5/8" production casing will be conducted to the maximum anticipated frac pressure for 30 minutes.

B. Stimulation

- The production casing will be perforated across the Entrada formation.
- A packer will be run to just above the Entrada perforations.
- Pressure will be applies to break down the Entrada perforations.
- The well will be swabbed to recover all of the stimulation water and to collect a sample of the natural reservoir water.
- A complete water analysis of the formation water will be conducted.
- Depending on the inflow rate, the perforations may be acidized or fracture stimulated to improve inflow.

13. Production

- The well will be produced via 4-1/2" production tubing and electronic submersible pump.
- The well will be produced to surface water storage facility.

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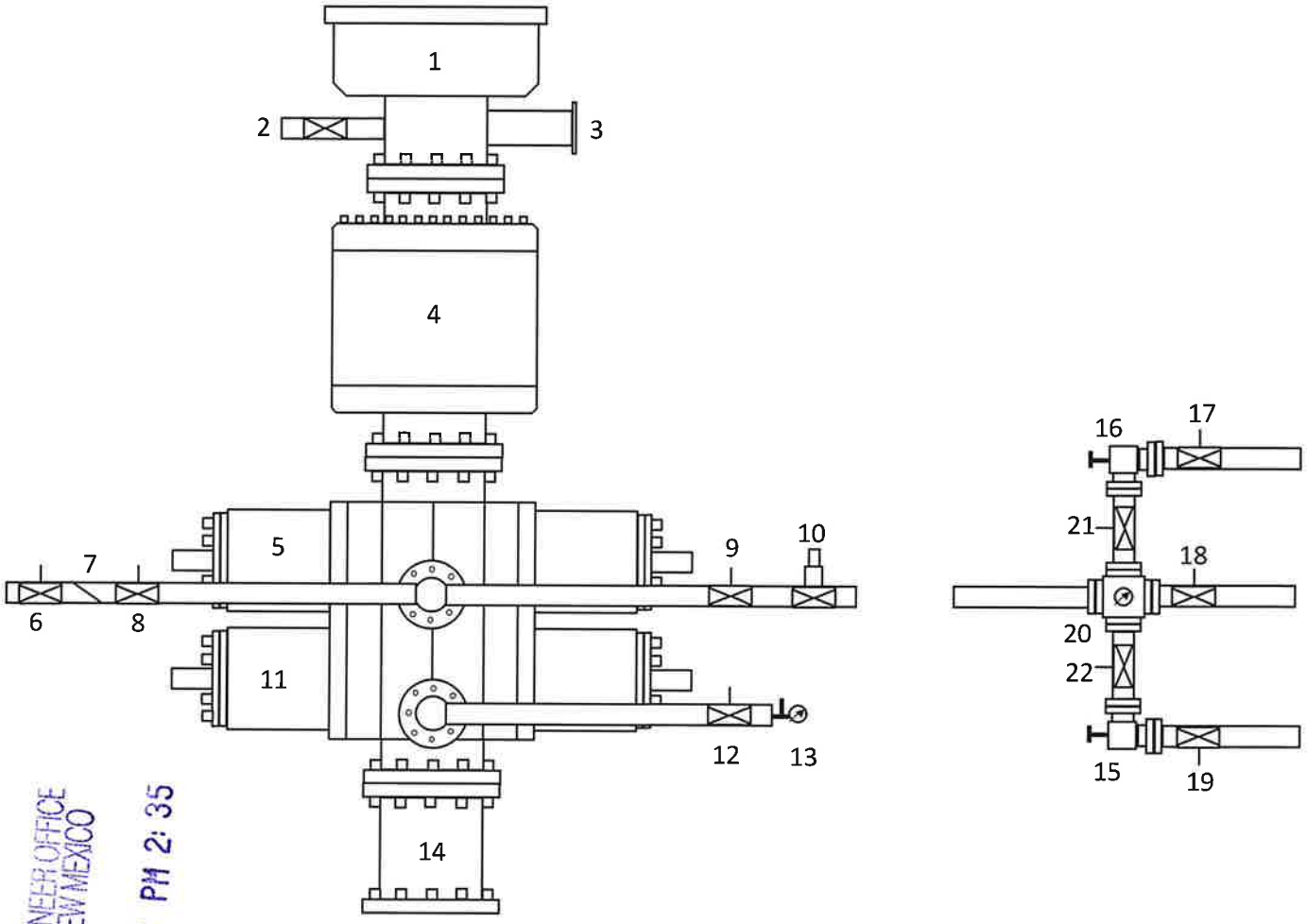
Appendix A

11" 3M BOP & 3M Choke Manifold Configuration



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1	Rotating Head	12	Manual Isolation Valve
2	Fill-Up Line	13	Needle Valve & Pressure Gauge
3	Flow Line	14	Spacer Spool (if needed)
4	3M Annular Preventer	15	Manual Choke
5	3M Pipe Rams	16	Hydraulicly Operated Choke
6	Manual Isolation Valve	17	Manual Isolation Valve
7	Check Valve	18	Manual Isolation Valve
8	Manual Isolation Valve	19	Manual Isolation Valve
9	Manual Isolation Valve	20	Valve Block & Pressure Gauge
10	High Closing Ratio Valve	21	Manual Isolation Valve
11	3M Blind Rams	22	Manual Isolation Valve

14. Attachments

- Well bore schematic.
- 10-3/4" 32.75# J55 BTC casing spec sheet.
- 10-3/4" casing float shoe and float collar spec sheets.
- 10-3/4" bow spring centralizer spec sheet.
- 7-5/8" 29.7# L80 BTC casing spec sheet.
- 7-5/8" casing float shoe and float collar spec sheets.
- 7-5/8" solid body centralizer spec sheet.
- Surface cement slurry blend and testing.
- Production cement lead slurry blend and testing.
- Production cement tail slurry blend and testing.

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Well Name: Canyon Largo 2407-03F WSW #001
API #:

Hilcorp Energy Company

Entrada

San Juan South

Planned Well Bore Schematic

Hilcorp

Total Depth: 8,628' MD / 8,628' TVD
RKB (MSL): 17'
Elevation (MSL): 7,011'
SHL Lat/Long: 36.342462°N, 107.565569°W
BHL Lat/Long: 36.342462°N, 107.565569°W

Wellhead A Section 10-3/4" SOW x 11" 5M
Tubing Head 11" 5M x 7-1/16" 5M

Rev 0
9/30/25
R.W.

Hole Size (in.)	MW (ppg)	FIT (ppg)	FG (ppg)	MD (ft.)	TVD (ft.)
13-1/2"	8.4				
	9.0	N/A	N/A	500' MD	500' TVD
9-7/8"	9.0				
		N/A	N/A	8,628' MD	8,628' TVD

Schematic

Ojo Alamo [1,886' TVD / Water]
Kirtland [2,007' TVD]
Fruitland Coal [2,157' TVD / Losses/Water/Gas]
Pictured Cliffs [2,532' TVD / Losses/Water/Gas]
Lewis Shale [2,600' TVD]
Cliff House [4,192' TVD / Water/Gas]
Point Lookout [4,960' TVD / Losses/Gas]
Mancos Shale [5,380' TVD / Oil]
El Vado [5,897' TVD / Oil]
Juana Lopez [6,438' TVD / Water/Gas]
Greenhorn [6,763' TVD / Water/Gas]
Graneros [6,814' TVD / Water/Gas]
Two Wells [6,842' TVD / Water/Gas]
Burro Canyon [7,096' TVD / Water/Gas]
Morrison [7,190' TVD / Water/Gas]
Todilto [8,268' TVD / Water/Gas]
Entrada [8,321' TVD / Water]

Surface Cement
Single Stage
TOC: Surface
Volume: 64.8 bbls
OH Excess: 100%
Density: 14.6 ppg
Shoe Track: 1 joints
WOC time: 8 hrs

Surface Casing
10-3/4" 32.75# J55 BTC
Nominal ID: 10.192"
Drift ID: 10.036"
Connection OD: 11.750"
Burst Pressure: 2,500 psi
Collapse Pressure: 870 psi
Tensile $_{BODY}$: 505 klbs

Logging: NONE

Production Cement
Single Stage
Lead TOC: Surface
Lead Density: 12.0 ppg
Lead Excess: 50%
Lead Volume: 431.2 bbls
Tail TOC: 7,628'
Tail Density 14.0 ppg
Tail Excess: 50%
Tail Volume: 57.4 bbls
Shoe Track 2 joints
WOC Time: 5 hrs

Production Casing
7-5/8" 29.7# L80 BTC
Nominal ID: 6.875"
Drift ID: 6.750"
Connection OD: 8.500"
Burst Pressure: 6,890 psi
Collapse Pressure: 4,790 psi
Tensile $_{BODY}$: 683 klbs

Logging:
Mudlogging
90' Samples
LWD
Gamma
Wireline
Triple Combo

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API BTC

Coupling	Pipe Body
Grade: J55 (Casing)	Grade: J55 (Casing)
Body: Bright Green	1st Band: Bright Green
1st Band: White	2nd Band: -
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -

Outside Diameter	10.750 in.	Wall Thickness	0.279 in.	Grade	J55 (Casing)
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry

Nominal OD	10.750 in.	Drift	10.036 in.
Wall Thickness	0.279 in.	Plain End Weight	31.23 lb/ft
Nominal Weight	32.750 lb/ft	OD Tolerance	API
Nominal ID	10.192 in.		

Performance

SMYS	55,000 psi
Min UTS	75,000 psi
Body Yield Strength	505 x1000 lb
Min. Internal Yield Pressure	2500 psi
Collapse Pressure	870 psi
Max. Allowed Bending	23 °/100 ft

Connection Data

Geometry

Thread per In	5	Joint Strength	561 x1000 lb
Connection OD	11.750 in.	Coupling Face Load	628 x1000 lb
Hand Tight Stand Off	1 in.	Internal Pressure Capacity	2500 psi

Performance

Notes

For products according to API Standards 5CT & 5B: Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

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TECHNICAL DATA SHEET

Shoe, float 10-3/4 323 COMP-Grip K55 BTC 32.75-65.7

DIMENSIONS

Equipment Size	273.050	mm	10.750	in
Equipment Weight Range	32.75-65.7	lb/ft		
OD	298.450	mm	11.750	in
Max. Drillout Diameter	255.422	mm	10.056	in
Min. Flow Area	3167.736	mm²	4.910	in²
Model	323			
Connections	BTC Box			
Jet Orientation	down jets			
Nose Configuration	concentric concrete			
Landing Surface	standard			
Long Description	Shoe, float 10-3/4 323 single sure seal 3 valve standard concentric concrete nose down jets K55 BTC 32.75-65.7 PDC drillable, ratings exclude connection			

Material Specifications

Material Grade	K55
Valve	3.25 in sure seal 3
Valve Quantity	single
PDC Drillable	Yes

Ratings

Burst Pressure	47.8	MPa	6,940	psi
Collapse Pressure	50.7	MPa	7,360	psi
Back Pressure	27.6	MPa	4,000	psi
Temperature	205	C	400	F

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TECHNICAL DATA SHEET

Collar, float 10-3/4 402NP single sure seal 3 valve NR K55 BTC 32.75-55.5, PDC drillable, ratings exclude connections

DIMENSIONS

Equipment Size	273.050 mm	10.750 in
Equipment Weight Range	32.75-55.50 lb/ft	
OD	298.450 mm	11.750 in
Max. Drillout Diameter	255.422 mm	10.056 in
Min. Flow Area	3167.736 mm²	4.910 in²
Model	402NP	
Connections	BTC Box X BTC Pin	
Landing Surface	Wiperlok plate	

Material Specifications

Material Grade	K55
Valve	3.25 in sure seal 3
Valve Quantity	single
PDC Drillable	Yes

Ratings

Burst Pressure	47.8 MPa	6,940 psi
Collapse Pressure	50.7 MPa	7,360 psi
Tensile	0 kN	0 lbf
Back Pressure	27.6 MPa	4,000 psi
Bump Pressure	27.6 MPa	4,000 psi
Temperature	204 C	400 F

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Centralizer, VariForm UR 10-3/4" x 13-1/2" (HD)

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DIMENSIONS				
Bow Spring Type	VS50			
Bow Spring Quantity	8			
Bow OD (as New)	361	mm	14.21	in
Internal Diameter	279	mm	10.98	in
Maximum Rigid OD	288	mm	11.33	in
Minimum Running ID[5]	311.15	mm	12.25	in
Overall Length	450	mm	17.72	in
Weight	7.49	kg	16.51	lb
API Recommended Restoring Force	4.537	kN	1020	lbf
API Recommended Starting Force	9.074	kN	2040	lbf

RATINGS RESTRICTION

RESTRICTION SIZE		STARTING FORCE		RUNNING FORCE		RESTORING FORCE	STANDOFF
12.3 in	312.4 mm	17.29 kN	3886.95 lbf	5.57 kN	1252.19 lbf	n/a	n/a

RATINGS OPEN HOLE[2]

OPEN HOLE SIZE		STARTING FORCE		RUNNING FORCE		RESTORING FORCE		STANDOFF
13.5 in	342.9 mm	3.19 kN	717.14 lbf	2.68 kN	602.49 lbf	16.35 kN	3675.63 lbf	90 %
14.25 in	361.95 mm	0 kN	0 lbf	0 kN	0 lbf	8.00 kN	1799.40 lbf	76 %

Recommended Stop Collar Beveled One End

- P/N 1034055 (CS set screws)
- P/N 1044428 (SS set screws)

Note 1: The API recommended restoring force is taken from the closest size per Table 1 of API Spec.10D.
Note 2: All Open Hole Performance Data represents centralizer performance after being run through the staged restriction size.
Note 3: Uncontrolled if printed.
Note 4: Ratings in BOLD are extrapolated from engineering tests using the same and/or similar bow spring types and quantities
Note 5: Minimum Restriction ID describes the minimum casing ID the centralizer can pass through. While passing through this ID, starting and running forces may be high and exceed API recommended values; also, centralizer performance may be reduced in subsequent open hole sections.

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01/17/2017	2540003 (powder coated) 2540024 (dip painted)	C	Sebastian Krieger	Christian Kiess	#890 | #1245

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API BTC

Coupling	Pipe Body
Grade: L80 Type 1	Grade: L80 Type 1
Body: Red	1st Band: Red
1st Band: Brown	2nd Band: Brown
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -

Outside Diameter	7.625 in.	Wall Thickness	0.375 in.	Grade	L80 Type 1
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry

Nominal OD	7.625 in.	Drift	6.750 in.
Wall Thickness	0.375 in.	Plain End Weight	29.06 lb/ft
Nominal Weight	29.700 lb/ft	OD Tolerance	API
Nominal ID	6.875 in.		

Performance

SMYS	80,000 psi
Min UTS	95,000 psi
Body Yield Strength	683 x1000 lb
Min. Internal Yield Pressure	6890 psi
Collapse Pressure	4790 psi
Max. Allowed Bending	48 °/100 ft

Connection Data

Geometry

Thread per In	5	Joint Strength	720 x1000 lb
Connection OD	8.500 in.	Coupling Face Load	562 x1000 lb
Hand Tight Stand Off	1 in.	Internal Pressure Capacity	6890 psi

Performance

Notes

For products according to API Standards 5CT & 5B: Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

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TECHNICAL DATA SHEET

Shoe, float 7-5/8 323 single sure seal 3 valve standard concentric concrete nose down jets K55 BTC 26.4-47.1 PDC drillable, ratings exclude connection

DIMENSIONS

Equipment Size	193.675	mm	7.625	in
Equipment Weight Range	26.4-47.1	lb/ft		
OD	215.900	mm	8.500	in
Max. Drillout Diameter	174.295	mm	6.862	in
Min. Flow Area	1867.738	mm²	2.895	in²
Model	323			
Connections	BTC Box			
Jet Orientation	down jets			
Nose Configuration	concentric concrete			
Landing Surface	standard			

Material Specifications

Material Grade	K55
Valve	2.5 in sure seal 3
Valve Quantity	single
PDC Drillable	Yes

Ratings

Burst Pressure	63.9	MPa	9,260	psi
Collapse Pressure	66	MPa	9,570	psi
Back Pressure	34.5	MPa	5,000	psi
Temperature	205	C	400	F

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Note:
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22-Aug-2023	00574622	C.10	System	Ok	1/1

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TECHNICAL DATA SHEET

Collar, float 7-5/8 402NP single sure seal 3 valve NR K55 BTC 26.4-39.0, PDC drillable, ratings exclude connections

DIMENSIONS

Equipment Size	193.675	mm	7.625	in
Equipment Weight Range	26.40-39.00	lb/ft		
OD	215.900	mm	8.500	in
Max. Drillout Diameter	174.295	mm	6.862	in
Min. Flow Area	1867.738	mm²	2.895	in²
Model	402NP			
Connections	BTC Box X BTC Pin			
Landing Surface	Wiperlok plate			

Material Specifications

Material Grade	K55
Valve	2.5 in sure seal 3
Valve Quantity	single
PDC Drillable	Yes

Ratings

Burst Pressure	63.9	MPa	9,260	psi
Collapse Pressure	66	MPa	9,570	psi
Tensile	0	kN	0	lbf
Back Pressure	34.5	MPa	5,000	psi
Bump Pressure	34.5	MPa	5,000	psi
Temperature	204	C	400	F

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Note:
1. For additional product ratings please see Endeca or Windchill.
2. Image may not be an exact representation of equipment.
3. Uncontrolled if printed.
4. All ratings are calculated at ambient temperature unless otherwise specified.

Print Date	Part Number	Rev	Prepared By	Status	Page #
22-Aug-2023	00578315	E.7	System	Ok	1/1

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0758-0912OSN

CENTEK

OSN spiral vane solid body centralizer

OSN spiral vane centralizers are a high strength solid body product suitable for less demanding wells

Product Specifications

Product Name	7-5/8" ID for use in 9-1/2" Hole, Spiral			
Casing Size	7.625	in	194	mm
Nominal OD	9.252	in	235	mm
Installation method	Slip on			
Number of vanes or blades	5			units
Vane or blade type	Spiral			
Method of Manufacture	Pressed and welded			
Material	Carbon steel			
Centralizer coating	Powder coated			
Weight	12.6	lb	5.72	kg
Height	10	in	254	mm

Performance Specifications

Test Standard	Centek QA			
Test Centralizer Installation Method	Lugs acting as a stop collar.			
Start Force Test Orientation	Pushed in. Centralizer coating not present during test.			
Flow by Area	16.2	in^2	10452	mm^2
Annular infringement	36			%
Positive standoff	80			%
Test Reference	N/A			
Datasheet Issue date	05/11/2020			
Revision Number	1			

Key info		
Casing Size	7.625	in
	194	mm
Nominal OD	9.252	in
	235	mm
Flow by Area	16.2	in^2
	10452	mm^2
Annular infringement	36	%
Positive standoff	80	%
Datasheet Issue date	05/11/2020	

RECOMMENDED STOP COLLAR

0758-0SO
0SO slip on stop collar

Images are for illustration only.
As there will be no significant flow between the casing OD and centralizer ID, this area is excluded from the flow calculation.
To indicate true standoff conditions, the positive standoff calculation takes into account the clearances between casing OD/centralizer ID and centralizer OD/Hole size ID.
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AMERICAN CEMENTING

Rifle Laboratory Report

American Cementing

Job Type:	**Surface**	Category / Fluid:	**Cement / Tail**
Test Type:	**Pilot**	Test/Iteration:	**49725-1**
TVD / TMD:	**1460 ft / 1550 ft**	Density:	**13.9000 lb/gal**
BHST / BHCT:	**104 °F / 81 °F**	Yield:	**1.68 ft³/sk**
T. Gradient:	**- °F/-ft**	Water Rqmnt:	**8.27 gal/sk**
Surface Temp:	**70 °F**	Total Fluid Rqmnt:	**8.27 gal/sk**
		Sack Weight:	**94.00 lbs**
		Fluid SG:	**1.67**

* - Represents the iteration and analysis numbers of specific results (i.e. [Iteration #] – [Analysis #])

Material Information

Tested Blend(TB) Details

Density:	13.90	**lb/gal**
Yield:	1.68	**ft³/sk**
Fluid SG:	1.67	
Water Req:	8.273	**gal/sk**
Water Src:	Tap	
Water SG:	1.00	
SVF:	0.3419	

No	Material	Concen.	Uom	SG	Lot
1	CLASS G	100.000	%	3.14	
2	A-10	5.000	%BWOB	2.70	
3	A-2	2.000	lb/sk	2.18	
4	A-7P	2.000	lb/sk	1.96	
5	IntegraSeal PHENO	2.500	lb/sk	1.30	
6	IntegraSeal POLI	0.250	lb/sk	1.40	
7	XCem-311	0.300	%BWOB	2.25	

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AMERICAN CEMENTING

Rifle Laboratory Report

Test Analysis/Results

Mixability Analysis

Test # 49725	Vortex (@ 12K RPM)	Water Temp (°F)	Cement Temp (°F)	Time to Add (sec)	Max RPM
1-1 *	Dime Size	70	70	6	12040

Free Fluid Analysis

Test # 49725	Test Temp (°F)	Sample size (ml)	Measured Free Fluid (ml)	% Free Fluid	Channeling	Angle (°)
1-4 *	70	250	0	0.00%	None	0

Rheology Analysis

Test # 49725	Type	300	200	100	60	30	6	3	PV (cp)	YP
1-2 * Temp: 70 Cond: 0	Up	72	68	63	62	61	43.9	25.8		
	Down		65	58	55	52	45.4	30.7		
	Avg	72	66.5	60.5	58.5	56.5	44.6	28.2	31.5695	48.995
1-3 * Temp: 81 Cond: 30	Up	75	70	64	62	58	43.7	26.9		
	Down		68	61	58	56	40.8	31.2		
	Avg	75	69	62.5	60	57	42.2	29	35.2671	48.2756

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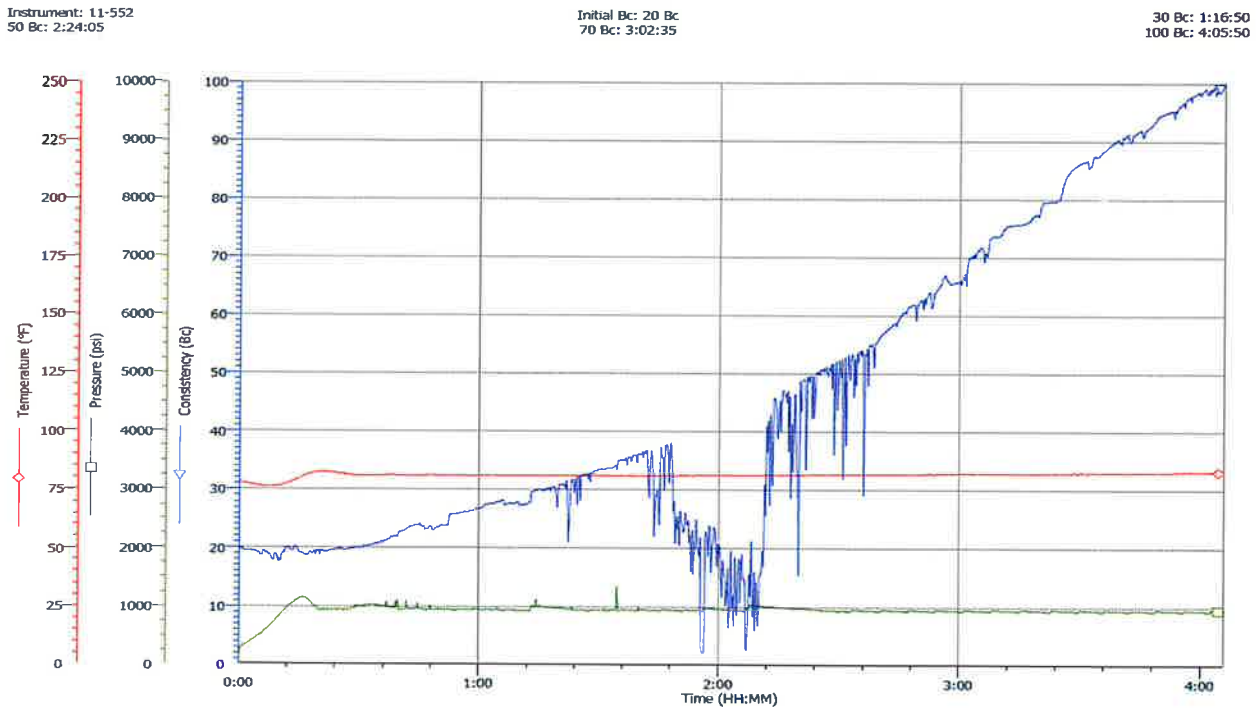
Thickening Time Analysis

Test # 49725	Test Temp (°F)	Initial Consistency	30 bc	50 bc	70 bc	100 bc	Termination Time	Termination Consistency
1-6 *	81	20	01:17	02:24	03:02	04:06	04:06	102

49725-1-6 ThickeningTime



UCA Compressive Strength Analysis

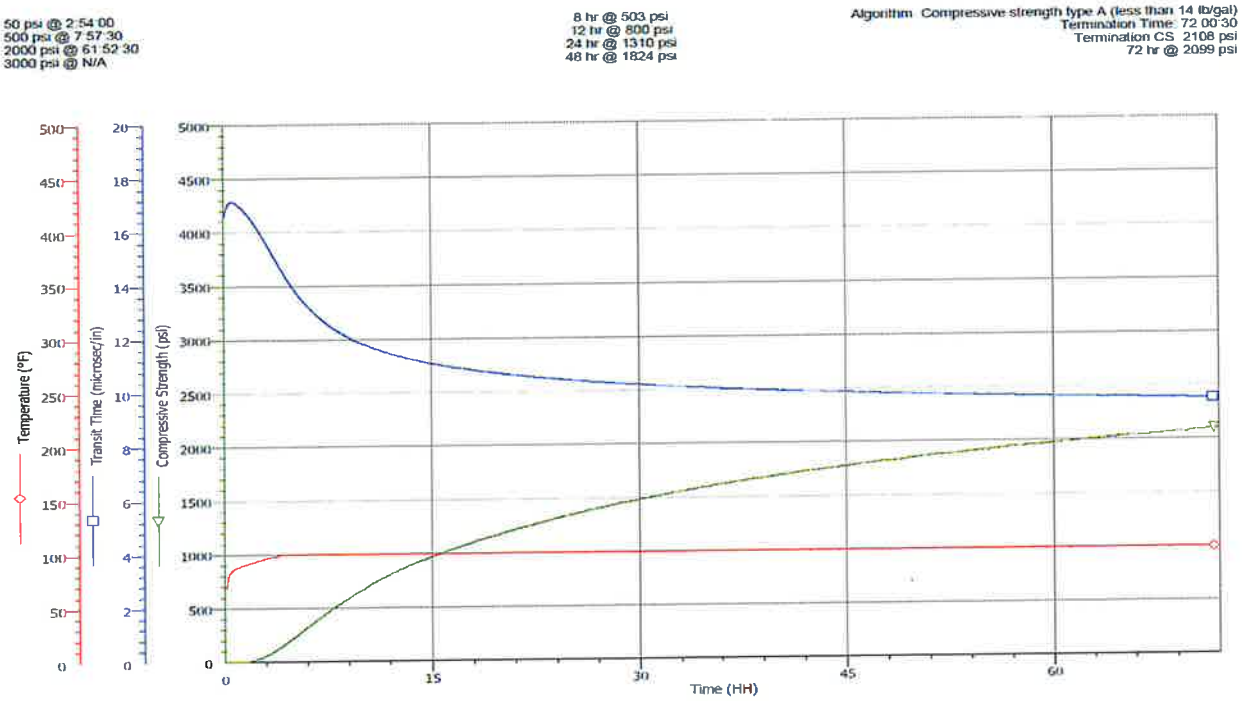
Pilot Tail 49725-1 : 9/18/2025

AMERICAN CEMENTING

Rifle Laboratory Report

Test # 49725	Test Temp (°F)	Time to 50 psi	Time to 500 psi	8h	12h	24h	48h	72h	Algorithm
1-7 *	95	02:54	07:58	503	800	1310	1824	2099	A

49725-1-7 UCACompressiveStrength



49725-1-4 Free Fluid Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	30	81		Yes	No

49725-1-3 Rheology Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	30	81		Yes	No

49725-1-6 Thickening Time Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	273.00	Yes	No
2	15	81	930.00	Yes	No

49725-1-7 UCA Compressive Strength Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	800.00	No	Yes
2	15	81	800.00	No	Yes
2	225	95	800.00	No	Yes

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AMERICAN CEMENTING

Rifle Laboratory Report

American Cementing

Job Type:	**Long String**	Category / Fluid:	**Cement / Lead**
Test Type:	**Pilot**	Test/Iteration:	**49004-1**
TVD / TMD:	**7400 ft / 22000 ft**	Density:	**12.0000 lb/gal**
BHST / BHCT:	**190 °F / 190 °F**	Yield:	**1.57 ft^3/sk**
T. Gradient:	**1.60 °F/100ft**	Water Rqmnt:	**8.60 gal/sk**
Surface Temp:	**70 °F**	Total Fluid Rqmnt:	**8.60 gal/sk**
		Sack Weight:	**64.00 lbs**
		Fluid SG:	**1.44**

* - Represents the iteration and analysis numbers of specific results (i.e. [Iteration #] – [Analysis #])

Material Information

Tested Blend(TB) Details

Density:	12.00	**lb/gal**
Yield:	1.571	**ft^3/sk**
Fluid SG:	1.44	
Water Req:	8.599	**gal/sk**
Water Src:	Distilled	
Water SG:	1.00	
SVF:	0.2681	

No	Material	Concen.	Uom	SG
1	AEXT-1012	60.000	%	2.40
2	ASTM TYPE IL	40.000	%	3.10
3	GW-86	0.200	%BWOB	1.40
4	IntegraSeal PHENO	2.000	lb/sk	1.30
5	IntegraSeal POLI	0.250	lb/sk	1.40
6	KCL	3.000	%BWOW	2.72
7	R-3	0.550	%BWOB	1.36
8	STATIC FREE	0.010	lb/sk	0.94
9	XCem-311	0.300	%BWOB	2.25
10	XCem-532	0.300	%BWOB	1.44

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AMERICAN CEMENTING

Rifle Laboratory Report

Test Analysis/Results

Mixability Analysis

Test # 49004	Vortex (@ 12K RPM)	Water Temp (°F)	Cement Temp (°F)	Time to Add (sec)	Max RPM
1-1 *	Half Dollar Size	70	70	7	12037

Free Fluid Analysis

Test # 49004	Test Temp (°F)	Sample size (ml)	Measured Free Fluid (ml)	% Free Fluid	Channeling	Angle (°)
1-3 *	70	250	0	0.00%	None	45

Fluid Loss Analysis

Test # 49004	Temp (°F)	Measured Fluid Loss (ml)	Test Time (min)	ISO Fluid Loss
1-2 *	190	57	30	114.00

Rheology Analysis

Test # 49004	Type	300	200	100	60	30	6	3	PV (cp)	YP
1-5 * Temp: 190 Cond: 30	Up	45	38	29	25	21	14.8	12.1		
	Down		38	29	26	21	15.9	15.1		
	Avg	45	38	29	25.5	21	15.4	13.6	31.2255	17.0454
1-6 * Temp: 70 Cond: 0	Up	43	34	23	17	3	7.6	5.6		
	Down		33	22	17	13	7.5	7.1		
	Avg	43	33.5	22.5	17	8	7.6	6.4	39.5611	6.2202

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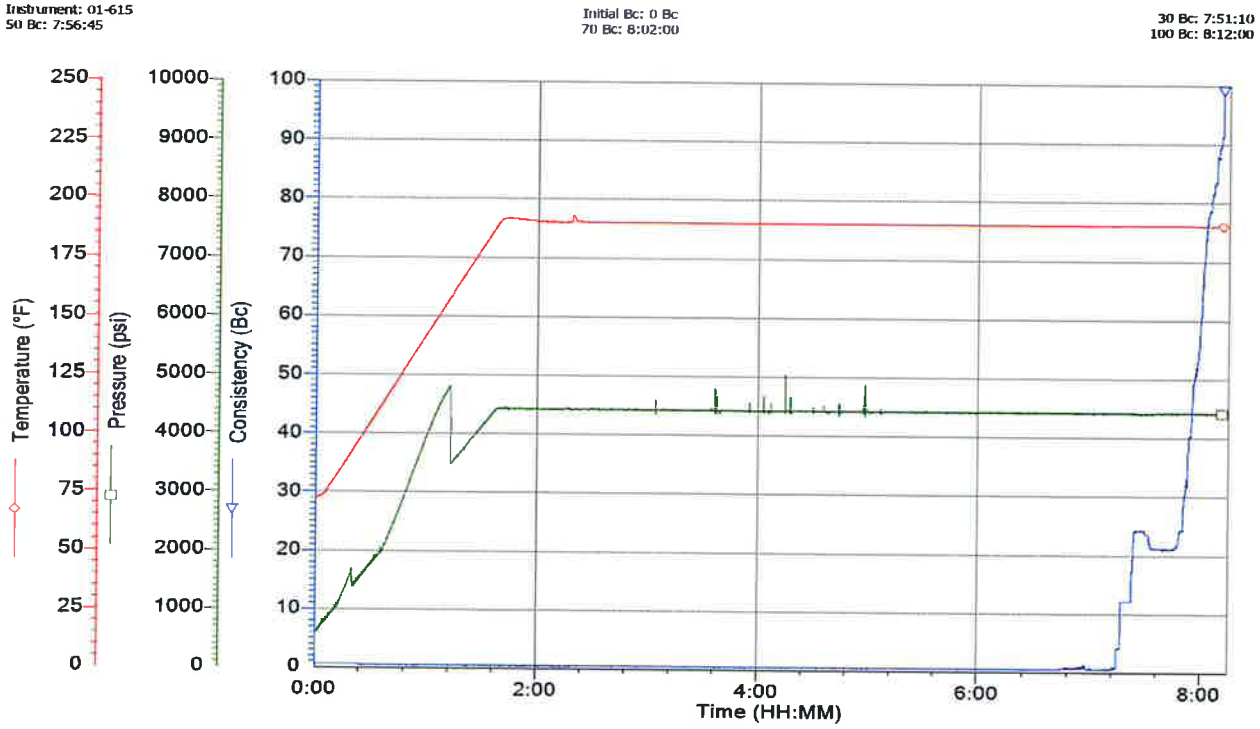
AMERICAN CEMENTING

Rifle Laboratory Report

Thickening Time Analysis

Test # 49004	Test Temp (°F)	Initial Consistency	30 bc	50 bc	70 bc	100 bc	Termination Time	Termination Consistency
1-7 *	190	0	07:51	07:57	08:02	08:12	08:12	101

Type IL from 07-19



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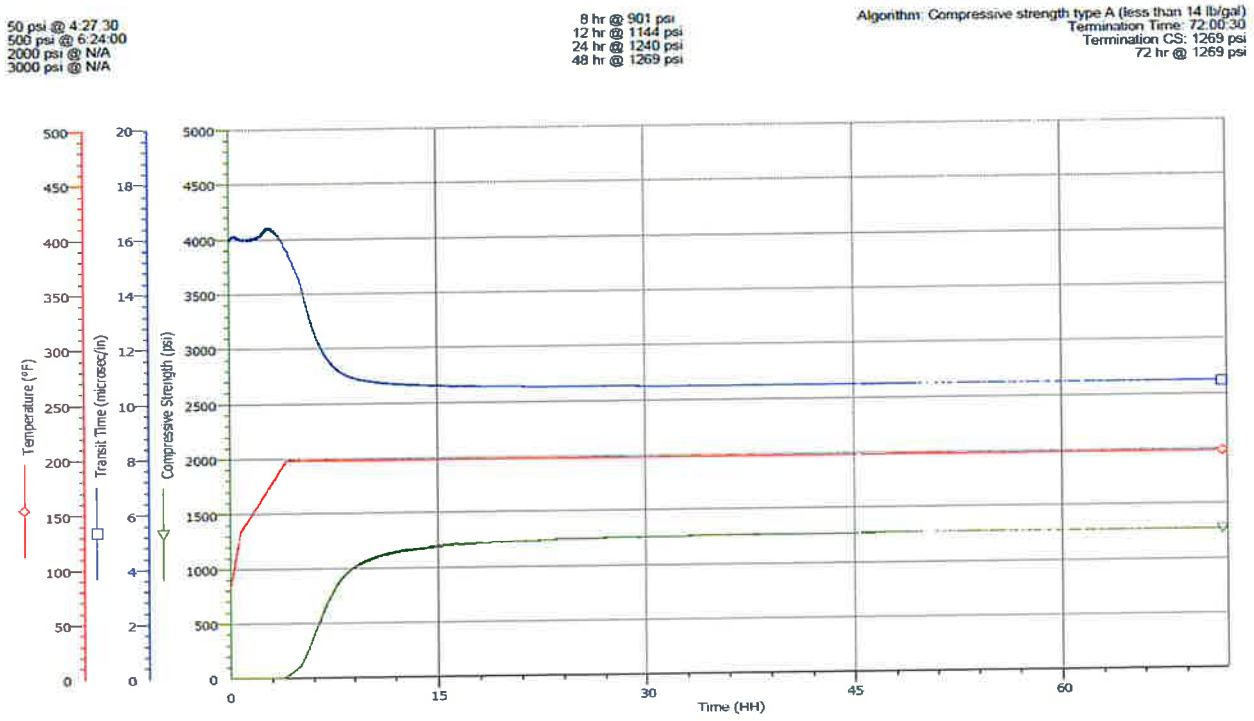
Rifle Laboratory Report

UCA Compressive Strength Analysis

Test # 49004	Test Temp (°F)	Time to 50 psi	Time to 500 psi	8h	12h	24h	48h	72h	Algorithm
1-9 *	198	04:28	06:24	901	1144	1240	1269	1269	A



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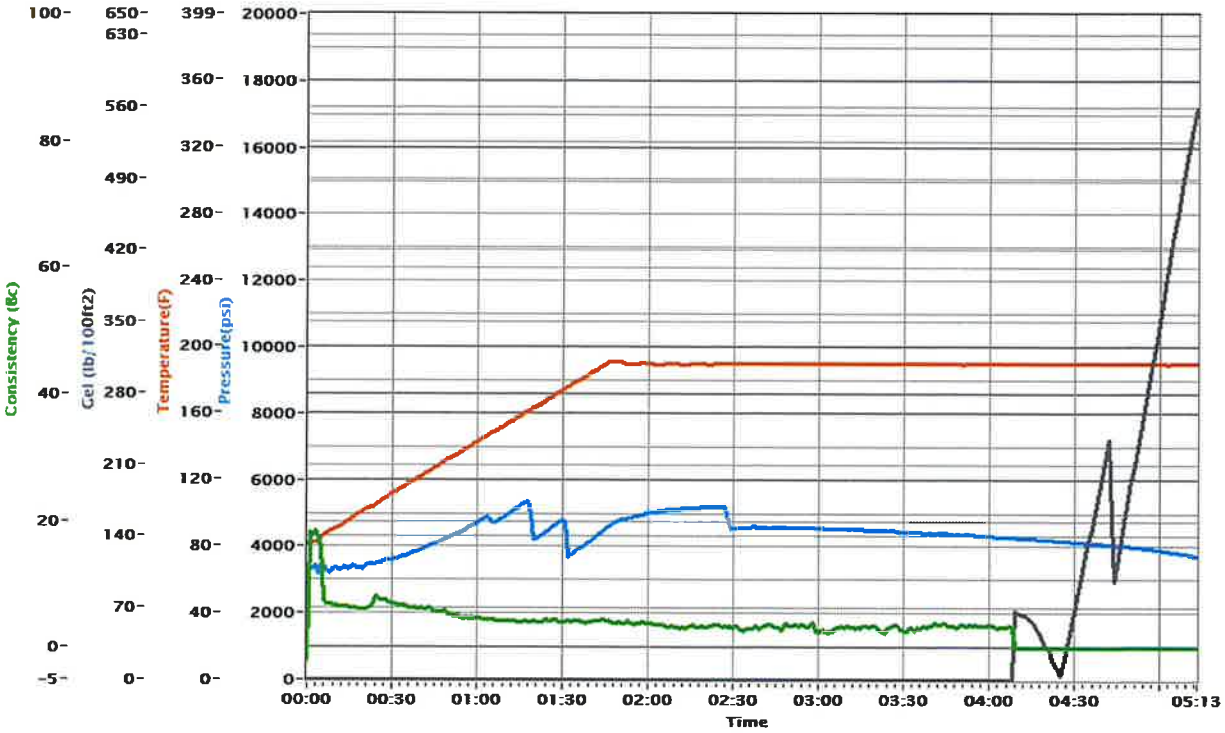
Rifle Laboratory Report

Static Gel Strength Analysis

Test # 49004	Test Temp (°F)	100 lbf/ft2	200 lbf/ft2	300 lbf/ft2	400 lbf/ft2	500 lbf/ft2	Transition Time
1-11 *	190	04:33	04:51	04:57	05:03	05:09	00:36

49004-1-11 StaticGelStrength



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Rifle Laboratory Report

49004-1-3 Free Fluid Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70		Yes	No
2	30	190		Yes	No
3	120	70		No	Yes

49004-1-2 Fluid Loss Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70		Yes	No
2	30	190		Yes	No

49004-1-5 Rheology Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70		Yes	No
2	30	190		Yes	No

49004-1-7 Thickening Time Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	520.00	Yes	No
2	98	190	4480.00	Yes	No
3	30	190	4480.00	Yes	No
4	10	190	4480.00	No	Yes
5	999	190	4480.00	Yes	No

49004-1-9 UCA Compressive Strength Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	520.00	Yes	No
2	98	190	4480.00	Yes	No
3	60	190	4480.00	Yes	No
4	0	70	3000.00	No	Yes
5	39	128	3000.00	No	Yes
6	201	194	3000.00	No	Yes

49004-1-11 Static Gel Strength Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	520.00	Yes	No
2	104	190	4480.00	Yes	No
3	144	190	4480.00	Yes	No
4	999	190	4480.00	No	Yes

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AMERICAN CEMENTING

Rifle Laboratory Report

American Cementing

Job Type:	**Long String**	Category / Fluid:	**Cement / Tail**
Test Type:	**Pilot**	Test/Iteration:	**48944-17**
TVD / TMD:	**7400 ft / 22000 ft**	Density:	**14.0000 lb/gal**
BHST / BHCT:	**190 °F / 190 °F**	Yield:	**1.46 ft³/sk**
T. Gradient:	**1.60 °F/100ft**	Water Rqmnt:	**7.00 gal/sk**
Surface Temp:	**70 °F**	Total Fluid Rqmnt:	**7.00 gal/sk**
		Sack Weight:	**90.00 lbs**
		Fluid SG:	**1.68**

* - Represents the iteration and analysis numbers of specific results (i.e. [Iteration #] – [Analysis #])

Material Information

Tested Blend(TB) Details

Density:	14.00	**lb/gal**
Yield:	1.462	**ft³/sk**
Fluid SG:	1.68	
Water Req:	7.005	**gal/sk**
Water Src:	Distilled	
Water SG:	1.00	
SVF:	0.3595	

No	Material	Concen.	Uom	SG	Lot
1	CLASS G	80.000	%	3.14	3/6/2024
2	FLY ASH (POZZOLAN)	20.000	%	2.46	
3	BENTONITE	2.000	%BWOB	2.65	01-15-25
4	GW-86	0.100	%BWOB	1.40	4A3778W
5	IntegraSeal PHENO	1.000	lb/sk	1.30	14650
6	IntegraSeal POLI	0.250	lb/sk	1.40	
7	R-3	0.310	%BWOB	1.36	08R-07 134
8	STATIC FREE	0.010	lb/sk	0.94	
9	XCem-1205	1.000	lb/sk	1.36	07-17-25
10	XCem-532	0.300	%BWOB	1.44	PD3650085.

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AMERICAN CEMENTING

Rifle Laboratory Report

Test Analysis/Results

Mixability Analysis

Test # 48944	Vortex (@ 12K RPM)	Water Temp (°F)	Cement Temp (°F)	Time to Add (sec)	Max RPM
17-2 *	Half Dollar Size	70	70	8	12059

Free Fluid Analysis

Test # 48944	Test Temp (°F)	Sample size (ml)	Measured Free Fluid (ml)	% Free Fluid	Channeling	Angle (°)
14-5 *	70	250	0	0.00%	None	45

Fluid Loss Analysis

Test # 48944	Temp (°F)	Measured Fluid Loss (ml)	Test Time (min)	ISO Fluid Loss
14-4 *	190	39	30	78.00

Rheology Analysis

Test # 48944	Type	300	200	100	60	30	6	3	PV (cp)	YP
14-2 * Temp: 70 Cond: 0	Up	119	91	58	42	29	14.3	10.2		
	Down		89	58	44	0	14.8	11.9		
	Avg	119	90	58	43	14.5	14.6	11	107.8388	17.0184
14-3 * Temp: 190 Cond: 30	Up	87	70	50	40	31	18.2	14		
	Down		70	50	40	30	17.4	15.4		
	Avg	87	70	50	40	30.5	17.8	14.7	70.5565	22.1454

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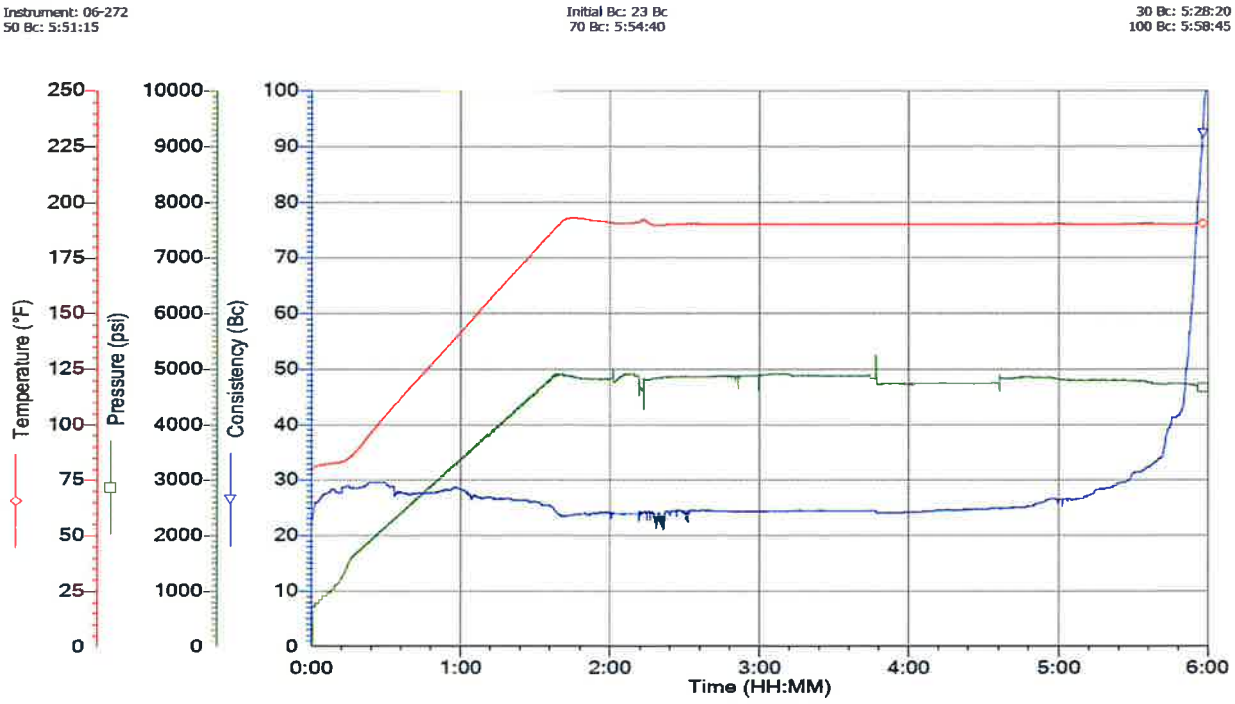
Rifle Laboratory Report

Thickening Time Analysis

Test # 48944	Test Temp (°F)	Initial Consistency	30 bc	50 bc	70 bc	100 bc	Termination Time	Termination Consistency
17-3 *	190	23	05:28	05:51	05:45	05:59	05:59	101

48944-17-3 ThickeningTime



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AMERICAN CEMENTING

Rifle Laboratory Report

UCA Compressive Strength Analysis

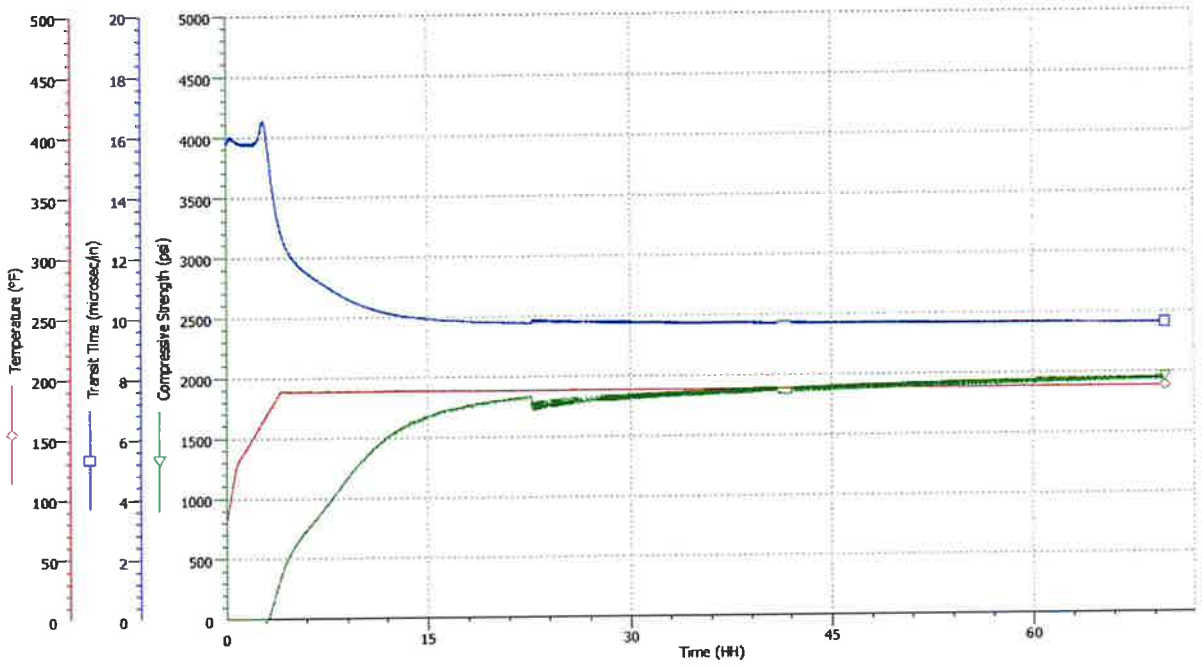
Test # 48944	Test Temp (°F)	Time to 50 psi	Time to 500 psi	8h	12h	24h	48h	72h	Algorithm
17-1 *	194	03:16	04:36	1018	1492	1754	1877	1946	A

48944-17-1 UCACompressiveStrength

50 psi @ 3 16:00
500 psi @ 4:36:30
2000 psi @ N/A
3000 psi @ N/A

8 hr @ 1018 psi
12 hr @ 1492 psi
24 hr @ 1754 psi
48 hr @ 1877 psi

Algorithm: Compressive strength type A (less than 14 lb/gal)
Termination Time
Termination CS: N/A
72 hr @ N/A



7/26/2025 3:10:37 PM

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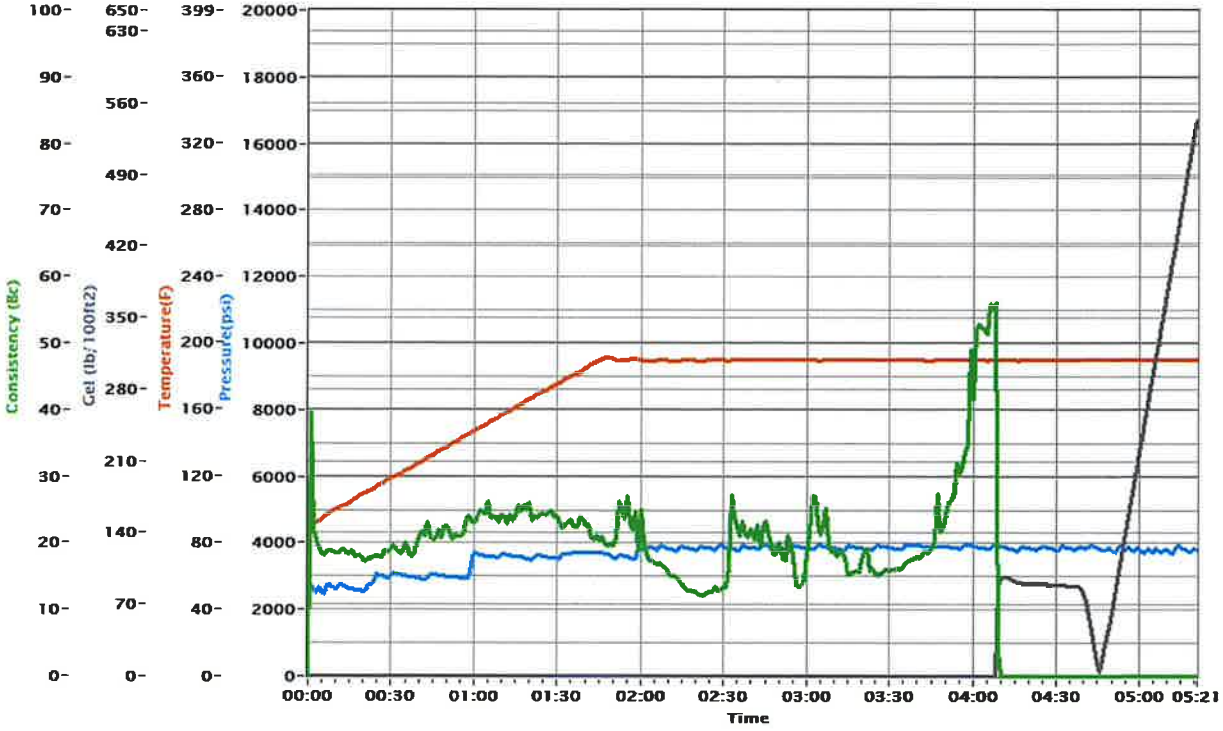
AMERICAN CEMENTING

Rifle Laboratory Report

Static Gel Strength Analysis

Test # 48944	Test Temp (°F)	100 lbf/ft2	200 lbf/ft2	300 lbf/ft2	400 lbf/ft2	500 lbf/ft2	Transition Time
17-4 *	190	04:52	04:59	05:06	05:12	05:18	00:26

48944-17-4 StaticGelStrength



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AMERICAN CEMENTING

Rifle Laboratory Report

48944-14-5 Free Fluid Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	30	190		Yes	No

48944-14-4 Fluid Loss Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	30	190		Yes	No

48944-14-3 Rheology Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	30	190		Yes	No

48944-17-3 Thickening Time Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	520.00	Yes	No
2	98	190	4480.00	Yes	No
3	23	190	4480.00	Yes	No
4	10	190	4480.00	No	Yes
5	999	190	4480.00	Yes	No

48944-17-1 UCA Compressive Strength Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	520.00	Yes	No
2	98	190	4480.00	Yes	No
3	60	190	4480.00	Yes	No
4	0	70	3000.00	No	Yes
5	39	128	3000.00	No	Yes
6	201	194	3000.00	No	Yes

48944-17-4 Static Gel Strength Schedule

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	70	520.00	Yes	No
2	104	190	4480.00	Yes	No
3	144	190	4480.00	Yes	No
4	999	190	4480.00	No	Yes

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AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

PWD Data Report
02/12/2026

APD ID: 10400095286 **Submission Date:** 10/17/2023

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD Surface Owner Description:

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit

Pit liner description:

Pit liner manufacturers

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule

Lined pit reclamation description:

Lined pit reclamation

Leak detection system description:

Leak detection system

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Lined pit Monitor description:

Lined pit Monitor

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information

Section 3 - Unlined

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Other PWD Surface Owner Description:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule

Unlined pit reclamation description:

Unlined pit reclamation

Unlined pit Monitor description:

Unlined pit Monitor

Do you propose to put the produced water to beneficial use?

Beneficial use user

Estimated depth of the shallowest aquifer (feet):

Precipitated Solids Permit

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

State

Unlined Produced Water Pit Estimated

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information

Section 4 -

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD Surface Owner Description:

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection

Underground Injection Control (UIC) Permit?

UIC Permit

Section 5 - Surface

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD Surface Owner Description :

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F **Well Number:** 1H

Section 6 -

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

PWD Surface Owner Description:

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type

Have other regulatory requirements been met?

Other regulatory requirements

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data

02/12/2026

APD ID: 10400095286

Submission Date: 10/17/2023

Operator Name: HILCORP ENERGY COMPANY

Well Name: CANYON LARGO UNIT 2407 03F

Well Number: 1H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond

Federal/Indian APD: FED

BLM Bond number: NMB001486

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

03/02/2026

Well Name: CANYON LARGO UNIT 2407 03F

Well Location: T24N / R7W / SEC 3 / LOT 11 / 36.342087 / -107.566002

County or Parish/State: RIO ARRIBA / NM

Well Number: 1H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF078922

Unit or CA Name: CANYON LARGO UNIT

Unit or CA Number: NMNM78383X

US Well Number:

Operator: HILCORP ENERGY COMPANY

Notice of Intent

Sundry ID: 2898222

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 03/02/2026

Time Sundry Submitted: 08:04

Date proposed operation will begin: 04/06/2026

Procedure Description: Hilcorp Energy Company requests to revise the Approved APD for the above-listed well. The bottom hole location has been updated to redirect the lateral toward the west instead of the east. In addition, the casing design has been revised to utilize a production liner in place of the previously planned production casing. Please see the attached revised plat, technical plans, and directional plans.

NOI Attachments

Procedure Description

Canyon_Largo_Unit_2407_03F_1H__Drilling_Technical_Plan_Rev_5_20260302072030.pdf

Canyon_Largo_2407_03F_1H_Plan_5_20260302072018.pdf

Canyon_Largo_Unit_2407_03F_001H_Revised_Well_Plats_Signed_20260302071957.pdf

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Well Name: CANYON LARGO UNIT 2407 03F

Well Location: T24N / R7W / SEC 3 / LOT 11 / 36.342087 / -107.566002

County or Parish/State: RIO ARRIBA / NM

Well Number: 1H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF078922

Unit or CA Name: CANYON LARGO UNIT

Unit or CA Number: NMNM78383X

US Well Number:

Operator: HILCORP ENERGY COMPANY

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: DAWN NASH-DEAL

Signed on: MAR 02, 2026 07:20 AM

Name: HILCORP ENERGY COMPANY

Title: Operations Regulatory Tech

Street Address: 1111 TRAVIS ST

City: HOUSTON **State:** TX

Phone: (505) 324-5132

Email address: DNASH@HILCORP.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5055647742

BLM POC Email Address: krennick@blm.gov

Disposition: Approved

Disposition Date: 03/02/2026

Signature: Kenneth Rennick

Released to Imaging: 3/23/2026 10:09:09 AM

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Form 3160-5
(October 2024)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: LOT 11 / 2591 FSL / 1795 FWL / TWSP: 24N / RANGE: 7W / SECTION: 3 / LAT: 36.342087 / LONG: -107.566002 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 9 / 2380 FNL / 0 FEL / TWSP: 24N / RANGE: 7W / SECTION: 3 / LAT: 36.343449 / LONG: -107.554236 (TVD: 6082 feet, MD: 16408 feet)

PPP: LOT 10 / 2376 FNL / 2168 FEL / TWSP: 24N / RANGE: 7W / SECTION: 3 / LAT: 36.343449 / LONG: -107.561595 (TVD: 6082 feet, MD: 16408 feet)

BHL: LOT 11 / 2396 FNL / 2409 FWL / TWSP: 24N / RANGE: 7W / SECTION: 1 / LAT: 36.343443 / LONG: -107.528131 (TVD: 6082 feet, MD: 16408 feet)

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Rio Arriba County, NM Canyon Largo Unit 2407-03F #001H

Hilcorp

Technical Drilling Plan (Rev. 5)

Hilcorp Energy Company proposes to drill and complete the referenced horizontal well targeting the Mancos formation.

Note: This technical drilling plan will be adjusted based upon actual conditions.

1. Location

Well Information			
Date:	February 27, 2026	Pool Name:	Devils Fork Gallup
Well Name:	Canyon Largo Unit 2407-03F #001H	Ground Elevation (ft. MSL):	7,011’
County, State	Rio Arriba County, NM	Total Measured Depth (ft.)	18,868’

Surface Hole Location				
UL	Section	Township	Range	Lot
K	3	24N	7W	
Feet From N/S Line	Feet From E/W Line	Latitude	Longitude	
2,591’ South	1,795’ West	36.342075° N	107.565394° W	

Bottom Hole Location				
UL	Section	Township	Range	Lot
E	5	24N	7W	12
Feet From N/S Line	Feet From E/W Line	Latitude	Longitude	
2,400’ North	0’ West	36.343305° N	107.607323° W	

Note: All geographic coordinates on the drilling tech plan and the directional drilling plan refer to NAD 27 geodetic coordinate system. All depths on the drilling tech plan and the directional drilling plan are referenced from an estimated RKB datum of 25’ above ground level.

2. Geological Markers

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

Formation	Depth (ft. TVD)	Remarks
San Jose	Surface	Water
Ojo Alamo	1,905’	Possible Water
Kirtland	2,035’	Possible Water
Fruitland	2,191’	Possible Gas & Water
Pictured Cliffs	2,552’	Water
Lewis Shale	2,646’	None
Cliffhouse	4,064’	Possible Gas & Water
Menefee	4,128’	Possible Gas & Water
Point Lookout	4,841’	Possible Gas & Water
Mancos	5,046’	Oil & Gas
Mancos Lateral Target Zone	6,082’	Oil & Gas

3. Pressure Control Equipment

A. BOP Equipment

See Appendix A for BOP equipment and choke manifold diagram.

- BOP equipment will be nippled up on top of the wellhead after surface casing is set and cemented.
- Pressure control configurations will be designed to meet the minimum 5M standards.
- All equipment will have 5M pressure rating at a minimum.
- A rotating head will be installed on top of the annular as seen in the attached diagram.

B. BOP Pressure Testing

- For all BOP pressure testing, a BOP test unit with a chart recorder and a BOP test plug will be utilized.
- All tests and inspections will be recorded and logged with time and results.
- A full BOP pressure test will be conducted when initially installed for the first well on the pad or if a seal subject to test pressure is broken, following related repairs, and at a minimum in 30-day intervals.
- A BOPE shell pressure test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken, repaired, and fall within the 30-day interval of the first full test.
- The New Mexico Oil & Gas Conservation Division and the BLM will be notified 24 hours in advance of pressure testing BOPE.
- The BOP rams will be tested to 250 psi (Low) for 5 minutes and 5,000 psi (High) for 10 minutes.
- The BOP annular will be tested to 250 psi (Low) for 5 minutes and 3,500 psi (High) for 10 minutes.

C. BOP Function Testing

- Annular preventors will be functionally tested at least once per week.
- Pipe and blind rams will be function tested each trip.

D. Casing Pressure Testing

- Surface casing will be pressure tested to 600 psi for 30 minutes.
- Intermediate casing will be pressure tested to 1,500 psi for 30 minutes.

4. Casing Program

A. Proposed Casing Program:

Proposed Casing Design							
Casing String	Hole Size	Casing (size/weight/grade)	Top Depth (MD/TVD)	Shoe Depth (MD/TVD)	Collapse	Burst	Tensile
Surface	12-1/4"	9-5/8"-36#-J55 (or equiv)-LTC/BTC	0'	350'/350'	2,020 psi	3,520 psi	564 klbs
Intermediate	8-3/4"	7"-23#-J55 (or equiv)-LTC/BTC	0'	6,502'/6,000'	3,270 psi	4,360 psi	366 klbs
Production	6-1/8"	4-1/2"-13.5#-P110 (or equiv)-LTC/BTC	6,000'/5,835	18,868'/5,925'	11,950 psi	14,100 psi	367 klbs

Proposed Casing Design Safety Factors				
Casing String	Burst Design SF	Collapse Design SF	Joint Tensile Design SF	Connection Tensile Design SF
Surface	22.8	16.9	51.4	58.3
Intermediate	1.5	1.4	2.9	3.4
Production	5.1	5.5	2.2	2.1

B. Casing Design Parameters & Calculations:

- Designed for full wellbore evacuation.
- Mud Weights used for calculations:
  - Surface = 8.5 ppg
  - Intermediate = 9.5 ppg
  - Production = 9.0 ppg
- Minimum Acceptable Safety Factors:
  - Burst: 1.15
  - Collapse: 1.15
  - Tensile: 1.50
- Casing Safety Factor Calculations:

$$Casing\ Burst\ Safety\ Factor = \frac{Casing\ Burst\ Rating(psi)}{Maximum\ Mud\ Weight\ (ppg) \times TVD(ft) \times 0.052}$$

$$Casing\ Collapse\ Safety\ Factor = Hydrostatic\ of\ Mud\ Weight\ in\ Annulus(psi) - \left[TVD\ of\ Casing\ Shoe\ (ft) \times 0.10\frac{psi}{ft}\right]$$

$$Tensile\ Safety\ Factor = \frac{Tensile\ Rating\ of\ Casing\ String\ (lbs)}{Measured\ Depth\ of\ Casing(ft) \times Casing\ Weight\ \frac{lb}{ft} \times DrillingFluid\ Bouyancy\ Factor}$$

Production Casing Notes:

- Production liner will be run from above the intermediate casing shoe to TD with a minimum of 500' of liner lap.
- If the 6-1/8" hole is not drilled to the planned measured depth, casing setting depth will be adjusted accordingly.
- A toe initiation sliding sleeve will be installed at the toe of the production casing.

5. Proposed Centralizer Program:

Proposed Centralizer Program	
Casing String	Centralizers & Placement
Surface Casing	1 centralizer per joint on bottom 3 joints.
Intermediate Casing	1 centralizer per joint in shoe track. 1 centralizer every 3rd joint to surface.
Production Casing	Centralizers determined by hole conditions from TD to top of cement.

6. Proposed Cement Program:

Proposed Cement Design								
Interval	Depth (ft. MD)	Lead/Tail	Volume (ft^3)	Sacks	Excess (%)	Slurry	Density (ppg)	Planned TOC
Surface	350’	Lead	219 ft^3	159	100%	Class G Cement Yield: 1.38 ft^3/sk	14.6	Surface
		Slurry Additives: CaCl (1%), Cello Flake (0.25 lb/sk), CD-2 (0.2%)						
Intermediate	6,502’	Lead	1,026 ft^3	333	25%	ASTM Type IL Yield: 3.08 ft^3/sk	11.5	Surface
		Slurry Additives: A-10 (5.0%), A-2 (2.0 lb/sk), A-7P (0.5 lb/sk), FL-24 (0.3%), IntegraSeal PHENO (1.0 llb/sk), IntegraSeal POLI (0.25 lb/sk), R-7C (0.5%), XCem-1018 (7.0 lb/sk), XCem-1205 (5.0 lb/sk), XCem-311 (0.3%)						
		Tail	188 ft^3	126	25%	Class G Yield: 1.49 ft^3/sk	14.0	5,500’
		Slurry Additives: Fly Ash (20.0%), Bentonite (4.0%), GW-86 (0.1%), XCem-1205 (2.0 lb/sk), XCem-311 (0.3%), XCem-532 (0.3%)						
Production	18,868’	Lead	1,511 ft^3	1,035	25%	Class G Yield: 1.46 ft^3/sk	14.0	6,000’
		Slurry Additives: Fly Ash (20.0%), Bentonite (2.0%), GW-86 (0.1%), R-3 (0.22%), StaticFree (0.01 lb/sk), XCem-1205 (2.0 lb/sk), XCem-532 (0.3%)						

Cement Program Notes:

- The cement slurry additives may be adjusted to accommodate required pump and compressive test times.
- Actual cement volumes will be determined and may be adjusted onsite based on well conditions.
- For the intermediate hole section, a 2-stage or 3-stage cement job may be performed if hole conditions dictate. If needed, the stage tool will be placed appropriately as conditions indicate.
- Cement will be circulated to surface on surface and intermediate casing sections to protect water bearing zones.
- A minimum of 8 hours of wait on cement time will be observed on each hole section to allow adequate time for cement to achieve a minimum of 500 psi of compressive strength. The BOP will not be nippled down, the wellhead will not be installed, the casing will not be tested and the prior casing shoe will not be drilled out until adequate wait on cement time has been observed (8 hours or time to reach 500 psi compressive strength).

7. Drilling Fluids Program

A. Proposed Drilling Fluids Program:

Proposed Drilling Fluids Program					
Interval	Fluid Type	Density	Fluid Loss	Invert Ratio	Depth
		(ppg)	(mL/30 min)	(%Diesel / %Brine)	(ft. MD)
Surface	Water/Gel	8.3 – 8.5	NC	N/A	0' – 350'
Intermediate	LSND / Gel	8.5 – 9.5	<8	N/A	350' – 6,502'
Production	LSND / Gel	8.5 – 9.0	<8	N/A	6,502' – 18,868'

Drilling Fluids Notes:

- In the 8-3/4" intermediate hole section, drilling fluid will have up to 7% KCl base.
- In the 6-1/8" production section, produced water based fluid with lubricant will be utilized. In the event of swelling shales or hole instability due to chemistry, an oil base fluid system may be used as a contingency.
- Lost circulation material may be added to the mud systems to manage fluid losses as hole conditions dictate.
- The well will be drilled utilizing a closed-loop circulating system. Drill cuttings for all hole sections will be transported to an approved disposal site.
- Estimated total volume of drill cuttings for disposal: 959 bbls (5,385 ft^3).

8. Estimated Pressures & Drilling Hazards

A. Estimated Pressures

- Estimated Reservoir Pressure of Mancos Shale target: 2,000 – 2,200 psi (based on layer pressure tests in Mancos formation in offset wells).
- No over-pressured intervals expected.
- There is production from the Fruitland Coal, Mesa Verde and Pictured Cliffs formations in offset wells in the area, which could result in these formations being depleted.

B. Water Flows

- Water flows are possible in the intermediate section. Water flows will be mitigated with increased mud weight.

C. Lost Circulation

- Lost circulation is possible in the intermediate section. Losses will be mitigated by utilizing LCM in the mud system.

D. Hydrogen Sulfide

- No hydrogen sulfide is expected to be encountered based on nearby well production.

9. Pilot Hole

- No pilot hole is planned for this wellbore.

10. Testing, Logging, Coring

A. Mud Logging

- Mud loggers will collect formation samples every 30'-90' from intermediate casing shoe to TD of the well.

B. MWD

- Measurement while drilling tools will be utilized on all sections of the well to measure and record inclination and azimuth.

C. LWD

- Logging while drilling tools (gamma ray) will be utilized while drilling the production section from the intermediate casing shoe to the production hole section TD to assist in staying in the desired production formation interval while drilling the horizontal section.

D. Open Hole Logging

- None

E. Coring

- None

F. Cased Hole Logging

- The 9-5/8" surface casing and 7" intermediate casing strings will be cemented to surface to protect water bearing zones. If cement is not circulated to surface on the surface or intermediate cement job, a cement bond log will be run to verify top of cement.

11. Directional Drilling Plan

- The directional drilling plan and plot are attached.
- Note, the horizontal is drilled up-dip, so the deepest TVD in the well occurs at the heel. The TVD at total measured depth of the well is shallower than the heel.
- The directional plan is built from geologic targets from offset wells and lease boundaries. The production hole section will be landed and drilled horizontally within the target formation utilizing LWD tools to steer the wellbore. On-site adjustments to the directional plan will be made as formation and wellbore dictate.

12. Completion

A. Pressure Testing

- A pressure test of the 4-1/2" production casing will be conducted to the maximum anticipated frac pressure for 30 minutes prior to fracing the well.
- Pressure will be cycled to shift the toe sleeve open.

B. Stimulation

- The well will be stimulated with sand and water. The number of stages and amount of proppant used will be adjusted based on actual lateral length and real-time pumping conditions during the stimulation.
- Individual stages will be perforated on wireline and isolated using frac plugs or dissolvable frac plugs.
- Upon completion of the stimulation operation, frac plugs will be drilled out and the stimulation fluid will be flowed back.

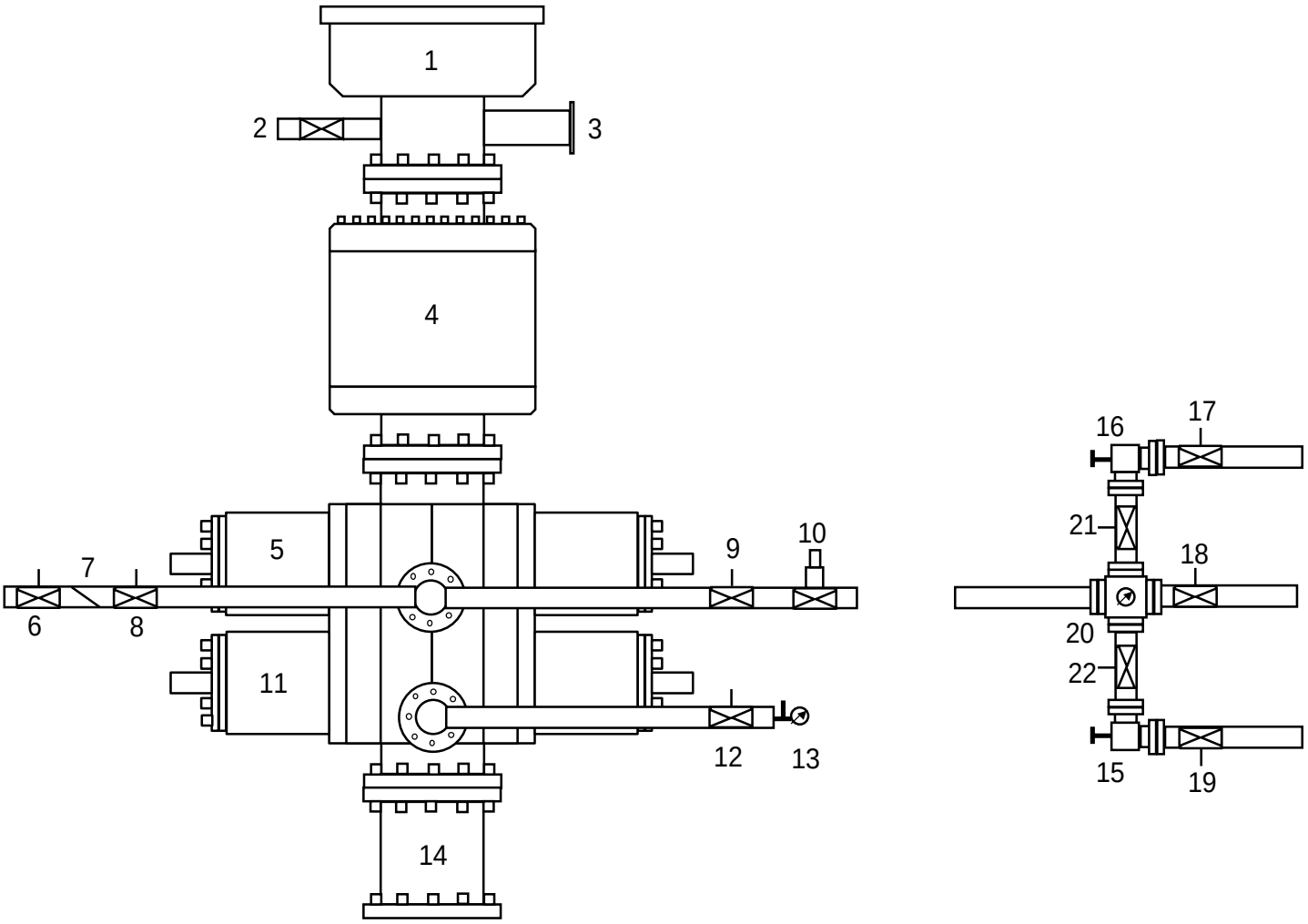
*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 8(2) NMAC, 19.15.16.15 8(2)NMAC, and 19.15.16.15 8(4) NMAC.

Rio Arriba County, NM Canyon Largo Unit 2407-03F #001H

Hilcorp

Appendix A

13-5/8" 5M BOP & 5M Choke Manifold Configuration



1	Rotating Head	12	Manual Isolation Valve
2	Fill-Up Line	13	Needle Valve & Pressure Gauge
3	Flow Line	14	Spacer Spool (if needed)
4	5M Annular Preventer	15	Manual Choke
5	5M Pipe Rams	16	Hydraulicly Operated Choke
6	Manual Isolation Valve	17	Manual Isolation Valve
7	Check Valve	18	Manual Isolation Valve
8	Manual Isolation Valve	19	Manual Isolation Valve
9	Manual Isolation Valve	20	Valve Block & Pressure Gauge
10	High Closing Ratio Valve	21	Manual Isolation Valve
11	5M Blind Rams	22	Manual Isolation Valve

Received by OCD: 3/2/2026 10:15:37 AM
Released to Imaging: 3/25/2026 10:09:09 AM

Hilcorp Energy Company

Canyon Largo 2407-03F 1H
OH
Plan #5

GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	1943868.08	578911.37	36.3420750	-107.5653940	

PROJECT DETAILS: Rio Arriba, 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

Scientific Drilling

PLAN DETAILS

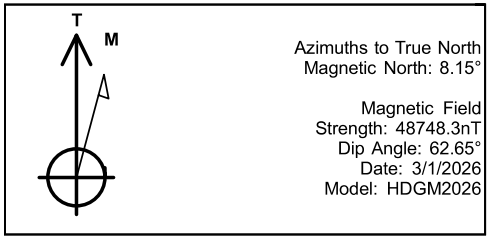
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.000	1000.00	0.00	0.00	0.00	0.00	Start Build 2.50
1474.53	11.86	61.846	1471.14	23.10	43.16	2.50	-42.29	Start 3767.36 hold at 1474.53 MD
5241.89	11.86	61.846	5158.04	388.53	726.00	0.00	-711.35	Start DLS 8.00 TFO -151.39
6501.90	90.35	269.904	6000.00	471.05	17.18	8.00	0.00	Start DLS 0.00 TFO 164.62
18867.82	90.34	269.905	5925.00	450.43	-12348.49	0.00	12356.70	TD at 18867.82

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
CLU 1H LP Rev1	6000.00	471.05	17.18	1944339.18	578927.24	36.3433690	-107.5653357
CLU 1H BHL	5925.00	450.43	-12348.49	1944284.28	566561.71	36.3433050	-107.6073230
CLU 1H FTP	6000.00	471.05	-7.82	1944339.11	578902.24	36.3433690	-107.5654206
CLU 1H LTP	5925.00	450.75	-12248.65	1944284.88	566661.54	36.3433060	-107.6069840

Plan: Plan #5 (Canyon Largo 2407-03F 1H/OH)

Created By: Janie Collins Date: 18:29, February 17 2026

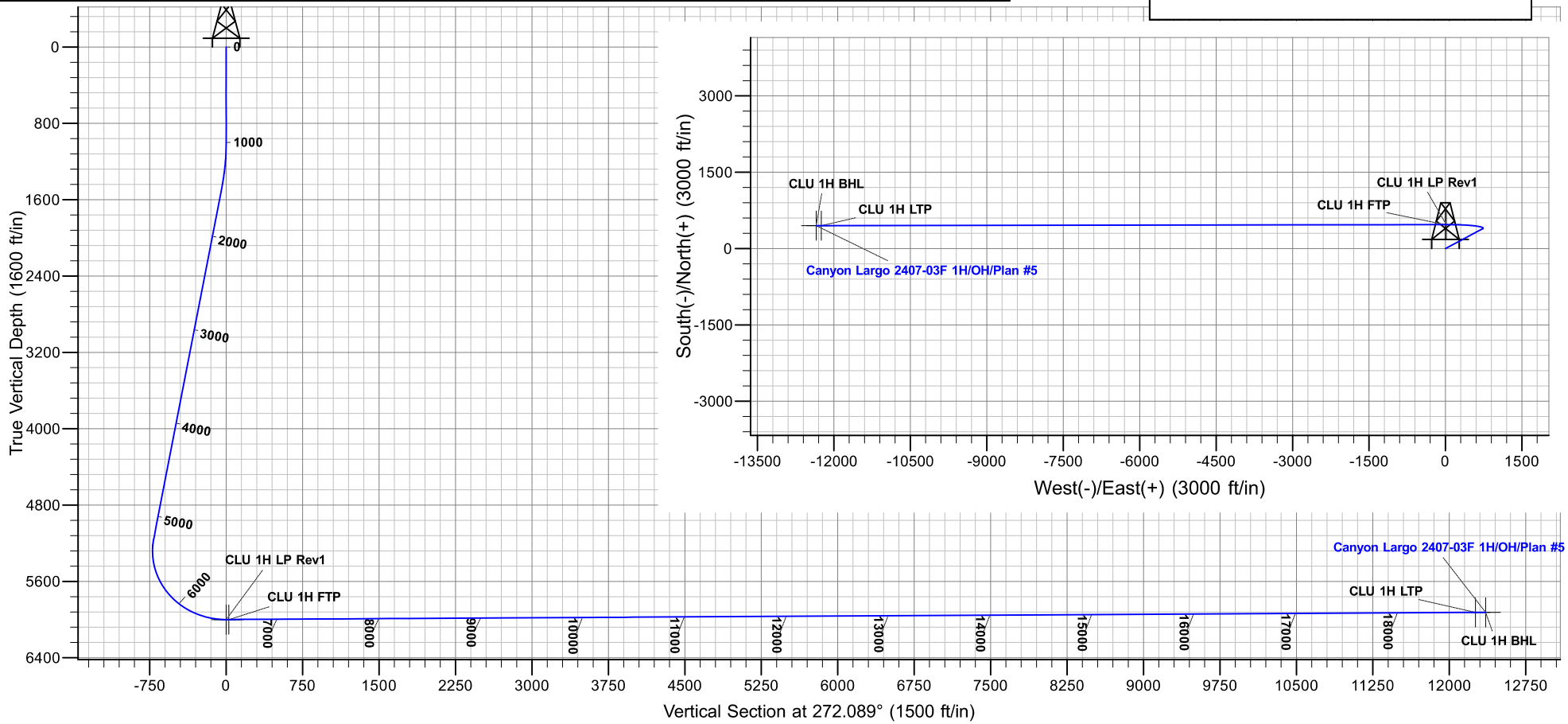


Azimuths to True North
Magnetic North: 8.15°

Magnetic Field
Strength: 48748.3nT
Dip Angle: 62.65°
Date: 3/1/2026
Model: HDGM2026

CASING DETAILS

TVD	MD	Name	Size
350.00	350.00	9-5/8"	9.62
6000.00	6501.90	7"	7.00
5925.00	18867.82	4-1/2"	4.50



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Hilcorp
Energy Company

Hilcorp Energy - San Juan Basin

Rio Arriba, NM NAD27
Canyon Largo 2407-03F
Canyon Largo 2407-03F 1H

OH

Plan: Plan #5

Standard Planning Report

17 February, 2026

Scientific Drilling

www.scientificdrilling.com

Hilcorp Energy Company

Scientific Drilling
Planning Report

Scientific Drilling

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Project Rio Arriba, 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 Canyon Largo 2407-03F

Site Position:		**Northing:**	1,943,868.09 usft	**Latitude:**	36.3420750
From:	Lat/Long	**Easting:**	578,911.37 usft	**Longitude:**	-107.5653940
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.16 °

Well Canyon Largo 2407-03F 1H

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,943,868.09 usft	**Latitude:**	36.3420750
	+E/-W	0.00 ft	**Easting:**	578,911.37 usft	**Longitude:**	-107.5653940
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	7,011.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2026	3/1/2026	8.15	62.65	48,748.30000000

Design Plan #5

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	272.089

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,474.53	11.86	61.846	1,471.14	23.10	43.16	2.50	2.50	0.00	61.85	
5,241.89	11.86	61.846	5,158.04	388.53	726.00	0.00	0.00	0.00	0.00	
6,501.90	90.35	269.904	6,000.00	471.05	17.18	8.00	6.23	-12.06	-151.39	CLU 1H LP Rev1
18,867.82	90.34	269.905	5,925.00	450.43	-12,348.49	0.00	0.00	0.00	164.62	CLU 1H BHL

Released to Imaging: 3/23/2026 10:09:09 AM

Hilcorp Energy Company

Scientific Drilling
Planning Report

Scientific Drilling

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.50	61.846	1,099.97	1.03	1.92	-1.88	2.50	2.50	0.00
1,200.00	5.00	61.846	1,199.75	4.12	7.69	-7.53	2.50	2.50	0.00
1,300.00	7.50	61.846	1,299.14	9.25	17.29	-16.94	2.50	2.50	0.00
1,400.00	10.00	61.846	1,397.97	16.43	30.70	-30.08	2.50	2.50	0.00
1,474.53	11.86	61.846	1,471.14	23.10	43.16	-42.29	2.50	2.50	0.00
1,500.00	11.86	61.846	1,496.07	25.57	47.78	-46.81	0.00	0.00	0.00
1,600.00	11.86	61.846	1,593.94	35.27	65.90	-64.57	0.00	0.00	0.00
1,700.00	11.86	61.846	1,691.80	44.97	84.03	-82.33	0.00	0.00	0.00
1,800.00	11.86	61.846	1,789.67	54.67	102.15	-100.09	0.00	0.00	0.00
1,900.00	11.86	61.846	1,887.53	64.37	120.28	-117.85	0.00	0.00	0.00
2,000.00	11.86	61.846	1,985.39	74.07	138.40	-135.61	0.00	0.00	0.00
2,100.00	11.86	61.846	2,083.26	83.77	156.53	-153.37	0.00	0.00	0.00
2,200.00	11.86	61.846	2,181.12	93.47	174.65	-171.13	0.00	0.00	0.00
2,300.00	11.86	61.846	2,278.99	103.17	192.78	-188.89	0.00	0.00	0.00
2,400.00	11.86	61.846	2,376.85	112.87	210.90	-206.65	0.00	0.00	0.00
2,500.00	11.86	61.846	2,474.71	122.57	229.03	-224.41	0.00	0.00	0.00
2,600.00	11.86	61.846	2,572.58	132.27	247.15	-242.17	0.00	0.00	0.00
2,700.00	11.86	61.846	2,670.44	141.97	265.28	-259.93	0.00	0.00	0.00
2,800.00	11.86	61.846	2,768.31	151.67	283.40	-277.69	0.00	0.00	0.00
2,900.00	11.86	61.846	2,866.17	161.37	301.53	-295.45	0.00	0.00	0.00
3,000.00	11.86	61.846	2,964.03	171.07	319.65	-313.20	0.00	0.00	0.00
3,100.00	11.86	61.846	3,061.90	180.77	337.78	-330.96	0.00	0.00	0.00
3,200.00	11.86	61.846	3,159.76	190.47	355.90	-348.72	0.00	0.00	0.00
3,300.00	11.86	61.846	3,257.63	200.17	374.03	-366.48	0.00	0.00	0.00
3,400.00	11.86	61.846	3,355.49	209.87	392.15	-384.24	0.00	0.00	0.00
3,500.00	11.86	61.846	3,453.36	219.57	410.28	-402.00	0.00	0.00	0.00
3,600.00	11.86	61.846	3,551.22	229.27	428.40	-419.76	0.00	0.00	0.00
3,700.00	11.86	61.846	3,649.08	238.97	446.53	-437.52	0.00	0.00	0.00
3,800.00	11.86	61.846	3,746.95	248.67	464.65	-455.28	0.00	0.00	0.00
3,900.00	11.86	61.846	3,844.81	258.37	482.78	-473.04	0.00	0.00	0.00
4,000.00	11.86	61.846	3,942.68	268.07	500.90	-490.80	0.00	0.00	0.00
4,100.00	11.86	61.846	4,040.54	277.77	519.03	-508.56	0.00	0.00	0.00
4,200.00	11.86	61.846	4,138.40	287.47	537.15	-526.32	0.00	0.00	0.00
4,300.00	11.86	61.846	4,236.27	297.17	555.28	-544.08	0.00	0.00	0.00
4,400.00	11.86	61.846	4,334.13	306.87	573.41	-561.84	0.00	0.00	0.00
4,500.00	11.86	61.846	4,432.00	316.57	591.53	-579.60	0.00	0.00	0.00
4,600.00	11.86	61.846	4,529.86	326.27	609.66	-597.36	0.00	0.00	0.00
4,700.00	11.86	61.846	4,627.73	335.97	627.78	-615.12	0.00	0.00	0.00
4,800.00	11.86	61.846	4,725.59	345.67	645.91	-632.88	0.00	0.00	0.00
4,900.00	11.86	61.846	4,823.45	355.37	664.03	-650.64	0.00	0.00	0.00
5,000.00	11.86	61.846	4,921.32	365.07	682.16	-668.40	0.00	0.00	0.00

Hilcorp Energy Company

Scientific Drilling
Planning Report

Scientific Drilling

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.00	11.86	61.846	5,019.18	374.77	700.28	-686.15	0.00	0.00	0.00
5,200.00	11.86	61.846	5,117.05	384.47	718.41	-703.91	0.00	0.00	0.00
5,241.89	11.86	61.846	5,158.04	388.53	726.00	-711.35	0.00	0.00	0.00
5,300.00	8.09	45.836	5,215.27	394.20	734.20	-719.35	8.00	-6.49	-27.55
5,400.00	6.06	338.616	5,314.66	404.03	737.33	-722.11	8.00	-2.03	-67.22
5,500.00	11.65	298.620	5,413.51	413.80	726.53	-710.96	8.00	5.58	-40.00
5,600.00	19.03	286.605	5,509.90	423.31	702.01	-686.11	8.00	7.38	-12.01
5,700.00	26.76	281.251	5,601.97	432.38	664.24	-648.04	8.00	7.73	-5.35
5,800.00	34.61	278.180	5,687.90	440.82	613.97	-597.49	8.00	7.85	-3.07
5,900.00	42.51	276.134	5,766.04	448.48	552.17	-535.46	8.00	7.90	-2.05
6,000.00	50.43	274.627	5,834.87	455.21	480.05	-463.13	8.00	7.93	-1.51
6,100.00	58.37	273.431	5,893.03	460.88	399.00	-381.94	8.00	7.94	-1.20
6,200.00	66.32	272.424	5,939.40	465.37	310.61	-293.44	8.00	7.95	-1.01
6,300.00	74.28	271.534	5,973.09	468.60	216.59	-199.37	8.00	7.96	-0.89
6,400.00	82.24	270.711	5,993.42	470.51	118.78	-101.55	8.00	7.96	-0.82
6,500.00	90.20	269.919	6,000.01	471.05	19.08	-1.90	8.00	7.96	-0.79
6,501.90	90.35	269.904	6,000.00	471.05	17.18	0.00	8.00	7.96	-0.79
6,600.00	90.35	269.904	5,999.40	470.88	-80.91	98.02	0.00	0.00	0.00
6,700.00	90.35	269.904	5,998.79	470.72	-180.91	197.95	0.00	0.00	0.00
6,800.00	90.35	269.904	5,998.18	470.55	-280.91	297.88	0.00	0.00	0.00
6,900.00	90.35	269.904	5,997.56	470.38	-380.91	397.80	0.00	0.00	0.00
7,000.00	90.35	269.904	5,996.95	470.21	-480.91	497.73	0.00	0.00	0.00
7,100.00	90.35	269.904	5,996.34	470.04	-580.90	597.65	0.00	0.00	0.00
7,200.00	90.35	269.904	5,995.73	469.88	-680.90	697.58	0.00	0.00	0.00
7,300.00	90.35	269.904	5,995.12	469.71	-780.90	797.50	0.00	0.00	0.00
7,400.00	90.35	269.904	5,994.50	469.54	-880.90	897.43	0.00	0.00	0.00
7,500.00	90.35	269.904	5,993.89	469.37	-980.90	997.35	0.00	0.00	0.00
7,600.00	90.35	269.904	5,993.28	469.20	-1,080.89	1,097.28	0.00	0.00	0.00
7,700.00	90.35	269.904	5,992.67	469.03	-1,180.89	1,197.20	0.00	0.00	0.00
7,800.00	90.35	269.904	5,992.06	468.87	-1,280.89	1,297.13	0.00	0.00	0.00
7,900.00	90.35	269.904	5,991.45	468.70	-1,380.89	1,397.05	0.00	0.00	0.00
8,000.00	90.35	269.904	5,990.84	468.53	-1,480.89	1,496.98	0.00	0.00	0.00
8,100.00	90.35	269.904	5,990.23	468.36	-1,580.88	1,596.91	0.00	0.00	0.00
8,200.00	90.35	269.904	5,989.62	468.19	-1,680.88	1,696.83	0.00	0.00	0.00
8,300.00	90.35	269.904	5,989.01	468.03	-1,780.88	1,796.76	0.00	0.00	0.00
8,400.00	90.35	269.904	5,988.39	467.86	-1,880.88	1,896.68	0.00	0.00	0.00
8,500.00	90.35	269.904	5,987.78	467.69	-1,980.88	1,996.61	0.00	0.00	0.00
8,600.00	90.35	269.904	5,987.17	467.52	-2,080.87	2,096.53	0.00	0.00	0.00
8,700.00	90.35	269.904	5,986.56	467.36	-2,180.87	2,196.46	0.00	0.00	0.00
8,800.00	90.35	269.904	5,985.95	467.19	-2,280.87	2,296.38	0.00	0.00	0.00
8,900.00	90.35	269.904	5,985.34	467.02	-2,380.87	2,396.31	0.00	0.00	0.00
9,000.00	90.35	269.904	5,984.73	466.85	-2,480.87	2,496.23	0.00	0.00	0.00
9,100.00	90.35	269.904	5,984.12	466.68	-2,580.86	2,596.16	0.00	0.00	0.00
9,200.00	90.35	269.904	5,983.51	466.52	-2,680.86	2,696.09	0.00	0.00	0.00
9,300.00	90.35	269.904	5,982.90	466.35	-2,780.86	2,796.01	0.00	0.00	0.00
9,400.00	90.35	269.904	5,982.29	466.18	-2,880.86	2,895.94	0.00	0.00	0.00
9,500.00	90.35	269.904	5,981.68	466.01	-2,980.86	2,995.86	0.00	0.00	0.00
9,600.00	90.35	269.904	5,981.08	465.85	-3,080.85	3,095.79	0.00	0.00	0.00
9,700.00	90.35	269.904	5,980.47	465.68	-3,180.85	3,195.71	0.00	0.00	0.00
9,800.00	90.35	269.904	5,979.86	465.51	-3,280.85	3,295.64	0.00	0.00	0.00
9,900.00	90.35	269.904	5,979.25	465.34	-3,380.85	3,395.56	0.00	0.00	0.00
10,000.00	90.35	269.904	5,978.64	465.18	-3,480.85	3,495.49	0.00	0.00	0.00

Hilcorp Energy Company

Scientific Drilling
Planning Report

Scientific Drilling

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,100.00	90.35	269.904	5,978.03	465.01	-3,580.84	3,595.41	0.00	0.00	0.00
10,200.00	90.35	269.904	5,977.42	464.84	-3,680.84	3,695.34	0.00	0.00	0.00
10,300.00	90.35	269.904	5,976.81	464.67	-3,780.84	3,795.26	0.00	0.00	0.00
10,400.00	90.35	269.904	5,976.20	464.51	-3,880.84	3,895.19	0.00	0.00	0.00
10,500.00	90.35	269.904	5,975.59	464.34	-3,980.84	3,995.12	0.00	0.00	0.00
10,600.00	90.35	269.904	5,974.99	464.17	-4,080.83	4,095.04	0.00	0.00	0.00
10,700.00	90.35	269.904	5,974.38	464.00	-4,180.83	4,194.97	0.00	0.00	0.00
10,800.00	90.35	269.904	5,973.77	463.84	-4,280.83	4,294.89	0.00	0.00	0.00
10,900.00	90.35	269.904	5,973.16	463.67	-4,380.83	4,394.82	0.00	0.00	0.00
11,000.00	90.35	269.904	5,972.55	463.50	-4,480.83	4,494.74	0.00	0.00	0.00
11,100.00	90.35	269.904	5,971.94	463.34	-4,580.82	4,594.67	0.00	0.00	0.00
11,200.00	90.35	269.904	5,971.34	463.17	-4,680.82	4,694.59	0.00	0.00	0.00
11,300.00	90.35	269.904	5,970.73	463.00	-4,780.82	4,794.52	0.00	0.00	0.00
11,400.00	90.35	269.904	5,970.12	462.83	-4,880.82	4,894.44	0.00	0.00	0.00
11,500.00	90.35	269.904	5,969.51	462.67	-4,980.82	4,994.37	0.00	0.00	0.00
11,600.00	90.35	269.904	5,968.91	462.50	-5,080.81	5,094.30	0.00	0.00	0.00
11,700.00	90.35	269.904	5,968.30	462.33	-5,180.81	5,194.22	0.00	0.00	0.00
11,800.00	90.35	269.904	5,967.69	462.17	-5,280.81	5,294.15	0.00	0.00	0.00
11,900.00	90.35	269.904	5,967.08	462.00	-5,380.81	5,394.07	0.00	0.00	0.00
12,000.00	90.35	269.904	5,966.48	461.83	-5,480.81	5,494.00	0.00	0.00	0.00
12,100.00	90.35	269.904	5,965.87	461.67	-5,580.80	5,593.92	0.00	0.00	0.00
12,200.00	90.35	269.904	5,965.26	461.50	-5,680.80	5,693.85	0.00	0.00	0.00
12,300.00	90.35	269.904	5,964.66	461.33	-5,780.80	5,793.77	0.00	0.00	0.00
12,400.00	90.35	269.904	5,964.05	461.16	-5,880.80	5,893.70	0.00	0.00	0.00
12,500.00	90.35	269.904	5,963.44	461.00	-5,980.80	5,993.63	0.00	0.00	0.00
12,600.00	90.35	269.904	5,962.84	460.83	-6,080.79	6,093.55	0.00	0.00	0.00
12,700.00	90.35	269.904	5,962.23	460.66	-6,180.79	6,193.48	0.00	0.00	0.00
12,800.00	90.35	269.904	5,961.62	460.50	-6,280.79	6,293.40	0.00	0.00	0.00
12,900.00	90.35	269.904	5,961.02	460.33	-6,380.79	6,393.33	0.00	0.00	0.00
13,000.00	90.35	269.904	5,960.41	460.16	-6,480.79	6,493.25	0.00	0.00	0.00
13,100.00	90.35	269.904	5,959.80	460.00	-6,580.78	6,593.18	0.00	0.00	0.00
13,200.00	90.35	269.905	5,959.20	459.83	-6,680.78	6,693.10	0.00	0.00	0.00
13,300.00	90.35	269.905	5,958.59	459.66	-6,780.78	6,793.03	0.00	0.00	0.00
13,400.00	90.35	269.905	5,957.99	459.50	-6,880.78	6,892.95	0.00	0.00	0.00
13,500.00	90.35	269.905	5,957.38	459.33	-6,980.78	6,992.88	0.00	0.00	0.00
13,600.00	90.35	269.905	5,956.77	459.16	-7,080.77	7,092.81	0.00	0.00	0.00
13,700.00	90.35	269.905	5,956.17	459.00	-7,180.77	7,192.73	0.00	0.00	0.00
13,800.00	90.35	269.905	5,955.56	458.83	-7,280.77	7,292.66	0.00	0.00	0.00
13,900.00	90.35	269.905	5,954.96	458.66	-7,380.77	7,392.58	0.00	0.00	0.00
14,000.00	90.35	269.905	5,954.35	458.50	-7,480.77	7,492.51	0.00	0.00	0.00
14,100.00	90.35	269.905	5,953.75	458.33	-7,580.76	7,592.43	0.00	0.00	0.00
14,200.00	90.35	269.905	5,953.14	458.17	-7,680.76	7,692.36	0.00	0.00	0.00
14,300.00	90.35	269.905	5,952.54	458.00	-7,780.76	7,792.28	0.00	0.00	0.00
14,400.00	90.35	269.905	5,951.93	457.83	-7,880.76	7,892.21	0.00	0.00	0.00
14,500.00	90.35	269.905	5,951.33	457.67	-7,980.76	7,992.14	0.00	0.00	0.00
14,600.00	90.35	269.905	5,950.72	457.50	-8,080.75	8,092.06	0.00	0.00	0.00
14,700.00	90.35	269.905	5,950.12	457.33	-8,180.75	8,191.99	0.00	0.00	0.00
14,800.00	90.35	269.905	5,949.51	457.17	-8,280.75	8,291.91	0.00	0.00	0.00
14,900.00	90.35	269.905	5,948.91	457.00	-8,380.75	8,391.84	0.00	0.00	0.00
15,000.00	90.35	269.905	5,948.30	456.84	-8,480.75	8,491.76	0.00	0.00	0.00
15,100.00	90.35	269.905	5,947.70	456.67	-8,580.74	8,591.69	0.00	0.00	0.00
15,200.00	90.35	269.905	5,947.10	456.50	-8,680.74	8,691.61	0.00	0.00	0.00

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Hilcorp Energy Company

Scientific Drilling
Planning Report

Scientific Drilling

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,300.00	90.35	269.905	5,946.49	456.34	-8,780.74	8,791.54	0.00	0.00	0.00
15,400.00	90.35	269.905	5,945.89	456.17	-8,880.74	8,891.46	0.00	0.00	0.00
15,500.00	90.35	269.905	5,945.28	456.00	-8,980.74	8,991.39	0.00	0.00	0.00
15,600.00	90.35	269.905	5,944.68	455.84	-9,080.73	9,091.32	0.00	0.00	0.00
15,700.00	90.35	269.905	5,944.08	455.67	-9,180.73	9,191.24	0.00	0.00	0.00
15,800.00	90.35	269.905	5,943.47	455.51	-9,280.73	9,291.17	0.00	0.00	0.00
15,900.00	90.35	269.905	5,942.87	455.34	-9,380.73	9,391.09	0.00	0.00	0.00
16,000.00	90.35	269.905	5,942.27	455.17	-9,480.73	9,491.02	0.00	0.00	0.00
16,100.00	90.35	269.905	5,941.66	455.01	-9,580.72	9,590.94	0.00	0.00	0.00
16,200.00	90.35	269.905	5,941.06	454.84	-9,680.72	9,690.87	0.00	0.00	0.00
16,300.00	90.35	269.905	5,940.46	454.68	-9,780.72	9,790.79	0.00	0.00	0.00
16,400.00	90.35	269.905	5,939.85	454.51	-9,880.72	9,890.72	0.00	0.00	0.00
16,500.00	90.35	269.905	5,939.25	454.35	-9,980.72	9,990.65	0.00	0.00	0.00
16,600.00	90.35	269.905	5,938.65	454.18	-10,080.72	10,090.57	0.00	0.00	0.00
16,700.00	90.35	269.905	5,938.04	454.01	-10,180.71	10,190.50	0.00	0.00	0.00
16,800.00	90.35	269.905	5,937.44	453.85	-10,280.71	10,290.42	0.00	0.00	0.00
16,900.00	90.35	269.905	5,936.84	453.68	-10,380.71	10,390.35	0.00	0.00	0.00
17,000.00	90.35	269.905	5,936.24	453.52	-10,480.71	10,490.27	0.00	0.00	0.00
17,100.00	90.35	269.905	5,935.63	453.35	-10,580.71	10,590.20	0.00	0.00	0.00
17,200.00	90.35	269.905	5,935.03	453.19	-10,680.70	10,690.12	0.00	0.00	0.00
17,300.00	90.35	269.905	5,934.43	453.02	-10,780.70	10,790.05	0.00	0.00	0.00
17,400.00	90.34	269.905	5,933.83	452.85	-10,880.70	10,889.98	0.00	0.00	0.00
17,500.00	90.34	269.905	5,933.23	452.69	-10,980.70	10,989.90	0.00	0.00	0.00
17,600.00	90.34	269.905	5,932.62	452.52	-11,080.70	11,089.83	0.00	0.00	0.00
17,700.00	90.34	269.905	5,932.02	452.36	-11,180.69	11,189.75	0.00	0.00	0.00
17,800.00	90.34	269.905	5,931.42	452.19	-11,280.69	11,289.68	0.00	0.00	0.00
17,900.00	90.34	269.905	5,930.82	452.03	-11,380.69	11,389.60	0.00	0.00	0.00
18,000.00	90.34	269.905	5,930.22	451.86	-11,480.69	11,489.53	0.00	0.00	0.00
18,100.00	90.34	269.905	5,929.62	451.70	-11,580.69	11,589.45	0.00	0.00	0.00
18,200.00	90.34	269.905	5,929.01	451.53	-11,680.68	11,689.38	0.00	0.00	0.00
18,300.00	90.34	269.905	5,928.41	451.37	-11,780.68	11,789.31	0.00	0.00	0.00
18,400.00	90.34	269.905	5,927.81	451.20	-11,880.68	11,889.23	0.00	0.00	0.00
18,500.00	90.34	269.905	5,927.21	451.03	-11,980.68	11,989.16	0.00	0.00	0.00
18,600.00	90.34	269.905	5,926.61	450.87	-12,080.68	12,089.08	0.00	0.00	0.00
18,700.00	90.34	269.905	5,926.01	450.70	-12,180.67	12,189.01	0.00	0.00	0.00
18,800.00	90.34	269.905	5,925.41	450.54	-12,280.67	12,288.93	0.00	0.00	0.00
18,867.82	90.34	269.905	5,925.00	450.43	-12,348.49	12,356.70	0.00	0.00	0.00

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Hilcorp Energy Company

Scientific Drilling
Planning Report

Scientific Drilling

Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CLU 1H LTP	0.00	0.000	5,925.00	450.75	-12,248.65	1,944,284.89	566,661.55	36.3433060	-107.6069840
- plan misses target center by 0.62ft at 18767.98ft MD (5925.60 TVD, 450.59 N, -12248.65 E)									
- Point									
CLU 1H BHL	0.00	0.000	5,925.00	450.43	-12,348.49	1,944,284.29	566,561.71	36.3433050	-107.6073230
- plan hits target center									
- Point									
CLU 1H LP Rev1	0.00	0.000	6,000.00	471.05	17.18	1,944,339.18	578,927.25	36.3433690	-107.5653357
- plan hits target center									
- Point									
CLU 1H FTP	0.00	0.000	6,000.00	471.05	-7.82	1,944,339.12	578,902.25	36.3433690	-107.5654206
- plan misses target center by 0.16ft at 6526.90ft MD (5999.85 TVD, 471.01 N, -7.82 E)									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
350.00	350.00	9-5/8"	9.62	12.25
6,501.90	6,000.00	7"	7.00	7.50
18,867.82	5,925.00	4-1/2"	4.50	6.13

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
36.00	36.00	San Jose		0.00	0.000
1,913.76	1,901.00	Ojo Alamo		0.00	0.000
2,046.60	2,031.00	Kirtland		0.00	0.000
2,206.01	2,187.00	Fruitland		0.00	0.000
2,574.89	2,548.00	Pictured Cliffs		0.00	0.000
2,670.94	2,642.00	Lewis Shale		0.00	0.000
4,119.88	4,060.00	Cliff House		0.00	0.000
4,185.28	4,124.00	Menefee		0.00	0.000
4,913.84	4,837.00	Point Lookout		0.00	0.000
5,123.32	5,042.00	Mancos		0.00	0.000
6,501.90	6,000.00	Mancos Lateral Target Zone		0.00	0.000

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Planning Report

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Database:	Grand Junction	**Local Co-ordinate Reference:**	Well Canyon Largo 2407-03F 1H
Company:	Hilcorp Energy - San Juan Basin	**TVD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Project:	Rio Arriba, NM NAD27	**MD Reference:**	GL 7011' & RKB 25' @ 7036.00ft (Nabors B29)
Site:	Canyon Largo 2407-03F	**North Reference:**	True
Well:	Canyon Largo 2407-03F 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.00	1,000.00	0.00	0.00	Start Build 2.50
1,474.53	1,471.14	23.10	43.16	Start 3767.36 hold at 1474.53 MD
5,241.89	5,158.04	388.53	726.00	Start DLS 8.00 TFO -151.39
6,501.90	6,000.00	471.05	17.18	Start DLS 0.00 TFO 164.62
18,867.82	5,925.00	450.43	-12,348.49	TD at 18867.82

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C-102

Submit Electronically
Via OCD Permitting

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

Revised July 9, 2024

Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name
30-039-31393	17610	DEVILS FORK GALLUP (ASSOCIATED)

Property Code	Property Name	Well Number
~~318470~~ 338988	CANYON LARGO UNIT 2407-03F	001H

OGRID No.	Operator Name	Ground Level Elevation
372171	HILCORP ENERGY COMPANY	7011'

Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal
Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
K	3	24N	7W		2591' SOUTH	1795' WEST	36.342087 °N	-107.566002 °W	RIO ARRIBA

Bottom Hole Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
E	5	24N	7W	12	2400' NORTH	0' WEST	36.343317 °N	-107.607932 °W	RIO ARRIBA

Dedicated Acres	Penetrated Spacing Unit	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit	Consolidation Code
869.26	NW/4 - Section 3, T24N, R7W N/2 - Section 4, T24N, R7W N/2 - Section 5, T24N, R7W			☐ Yes ☐ No	

Order Numbers

Well setbacks are under Common Ownership: ☐ Yes ☐ No

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
K	3	24N	7W		2591' SOUTH	1795' WEST	36.342087 °N	-107.566002 °W	RIO ARRIBA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
F	3	24N	7W	11	2399' NORTH	1780' WEST	36.343381 °N	-107.566028 °W	RIO ARRIBA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
E	5	24N	7W	12	2400' NORTH	100' WEST	36.343318 °N	-107.607592 °W	RIO ARRIBA

Unitized Area or Area of Uniform Interest	Spacing Unit Type	Ground Floor Elevation
CANYON LARGO UNIT	☒ Horizontal ☐ Vertical ☐ Directional	7011'

OPERATOR CERTIFICATION

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

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Dawnnash Deal
Signature

3/2/2026
Date

Dawn Nash-Deal
Printed Name

Dnash@hilcorp.com
E-mail Address

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.

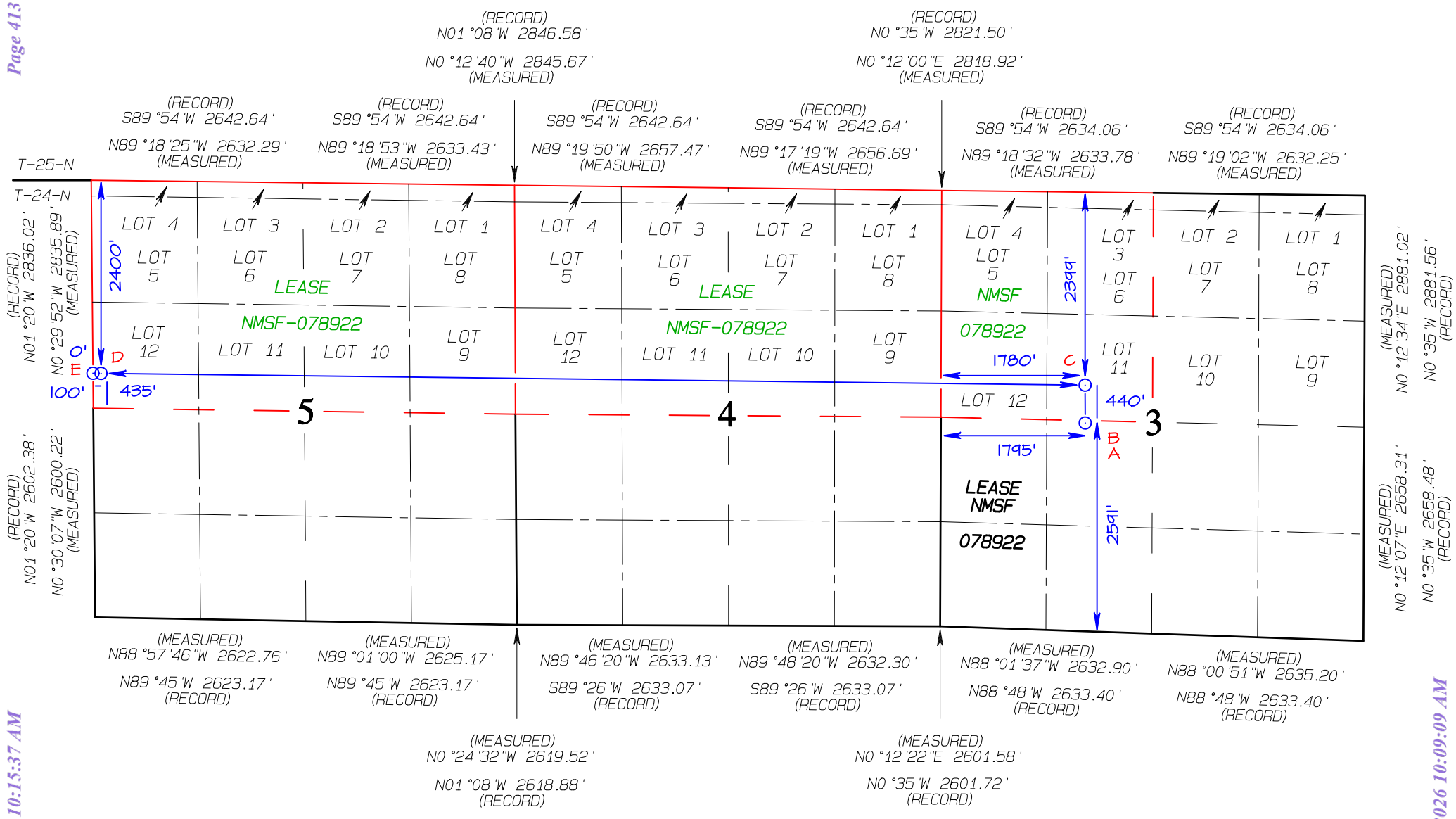
JASON C. EDWARDS
NEW MEXICO
15269
3/1/2026
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Signature and Seal of Professional Surveyor

Certificate Number	Date of Survey
15269	JUNE 1, 2019

Note: 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.

CANYON LARGO UNIT 2407-03F #001H



BOTTOM HOLE LOCATION (E)
2400' FNL 0' FWL
SECTION 5, T24N, R7W
LAT 36.343305 °N
LONG -107.607323 °W
DATUM: NAD1927

LAT 36.343317 °N
LONG -107.607932 °W
DATUM: NAD1983

N89°18.6'W
100.0'

LAST TAKE POINT (D)
2400' FNL 100' FWL
SECTION 5, T24N, R7W
LAT 36.343306 °N
LONG -107.606984 °W
DATUM: NAD1927

LAT 36.343318 °N
LONG -107.607592 °W
DATUM: NAD1983

N89°18.9'W
1,242.7'

FIRST TAKE POINT (C)
2399' FNL 1780' FWL
SECTION 3, T24N, R7W
LAT 36.343369 °N
LONG -107.565421 °W
DATUM: NAD1927

LAT 36.343381 °N
LONG -107.566028 °W
DATUM: NAD1983

N0°09.5'W
471.1'

KICK OFF POINT (B)
2591' FSL 1795' FWL
SECTION 3, T24N, R7W
LAT 36.342075 °N
LONG -107.565394 °W
DATUM: NAD1927

LAT 36.342087 °N
LONG -107.566002 °W
DATUM: NAD1983

SURFACE LOCATION (A)
2591' FSL 1795' FWL
SECTION 3, T24N, R7W
LAT 36.342075 °N
LONG -107.565394 °W
DATUM: NAD1927

LAT 36.342087 °N
LONG -107.566002 °W
DATUM: NAD1983

Received by OCD: 3/2/2026 10:15:37 AM
Released to Imaging: 3/23/2026 10:09:09 AM

HILCORP ENERGY COMPANY LARGO UNIT 2407-03F #001H
2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 7011'
LAT 36.342087°N LONG -107.566002°W DATUM: NAD83

~ SURFACE OWNER ~

Bureau of Land Management

GRAPHIC SCALE 1"=90'

0 90 180

TO BE ABANDONED

EDGE OF TOTAL DISTURBANCE (MARKED WITH STEEL T-POSTS)

C13 ③ DRAINAGE DIVERSION

225' 175'

INSTALL 24" CULVERT

A' C5 ④ A ⑤ F2

ACCESS 2702.1' (0-8%)

WELLHEAD TO BACK 255'

405' 405'

N

CLU 2407-03F WSW #001 PROPOSED WELLBORE

CLU 2407-03F #005H PROPOSED WELLBORE

CLU 2407-03F #006H PROPOSED WELLBORE

CLU 2407-03F #007H PROPOSED WELLBORE

CLU 2407-03F #008H PROPOSED WELLBORE

CLU 2407-03F #004H PROPOSED WELLBORE

25' 25' 25' 25' 25' 25'

B' WORKING SIDE 225' B

C7 F4 CLU 2407-03F #001H PROPOSED WELLBORE F9

CLU 2407-03F #002H PROPOSED WELLBORE

CLU 2407-03F #003H PROPOSED WELLBORE

25'

200' LAYDOWN S19°E 150' 200'

C' C

② C9 225' ① F3 175' ⑥ F13

EDGE OF TOTAL DISTURBANCE (MARKED WITH STEEL T-POSTS)

EDGE OF TOTAL DISTURBANCE (MARKED WITH STEEL T-POSTS)

EXISTING ROADWAY

EXISTING ROADWAY

TO REMAIN IN OPERATION

Steel T-Posts have been set to define Edge of Disturbance limits which are 50' offset from edge of staked wellpad.

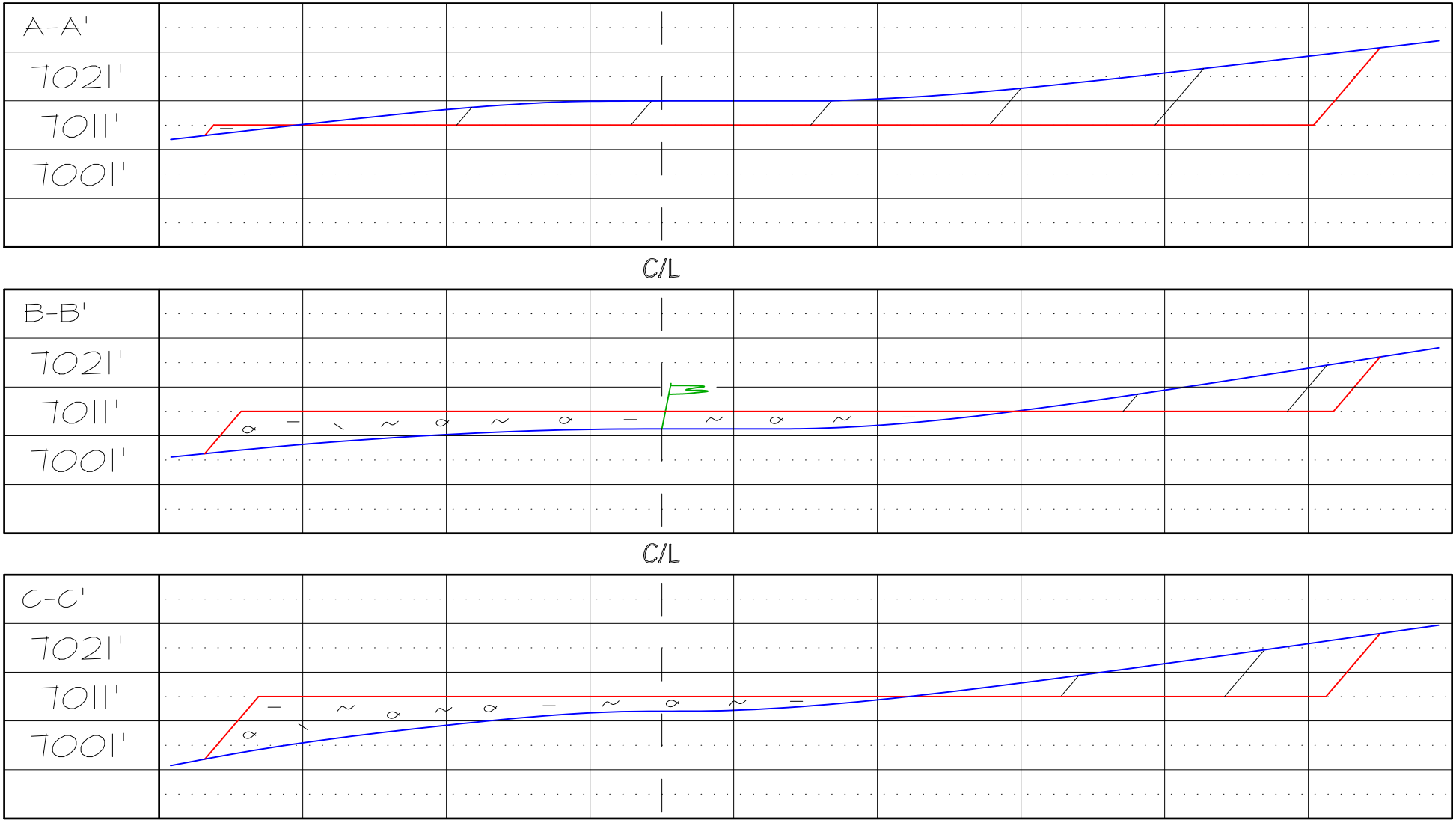
Area of Wellpad
605' X 400' = 5.56 Acres

Area of Total Disturbance
705' X 500' = 8.09 Acres

Released to Imaging: 3/23/2026 10:09:09 AM
Received by OCD: 3/2/2026 10:15:37 AM

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 7011'

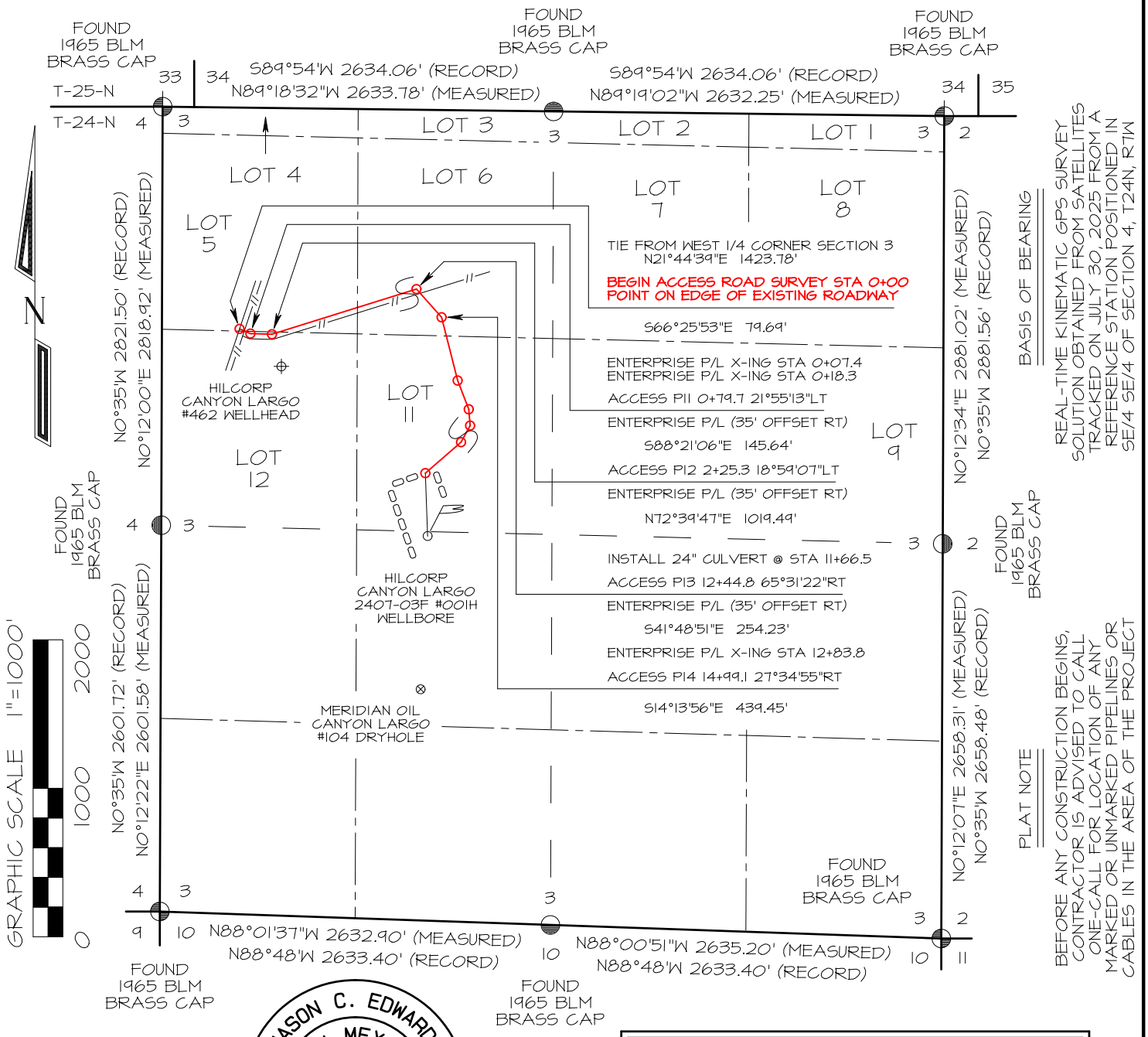
HORIZONTAL SCALE 1"=55' VERTICAL SCALE 1"=30'



EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED ACCESS ROAD SURVEY LOCATED IN NW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 27+02.1	2702.1 FT / 163.8 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: February 12, 2026

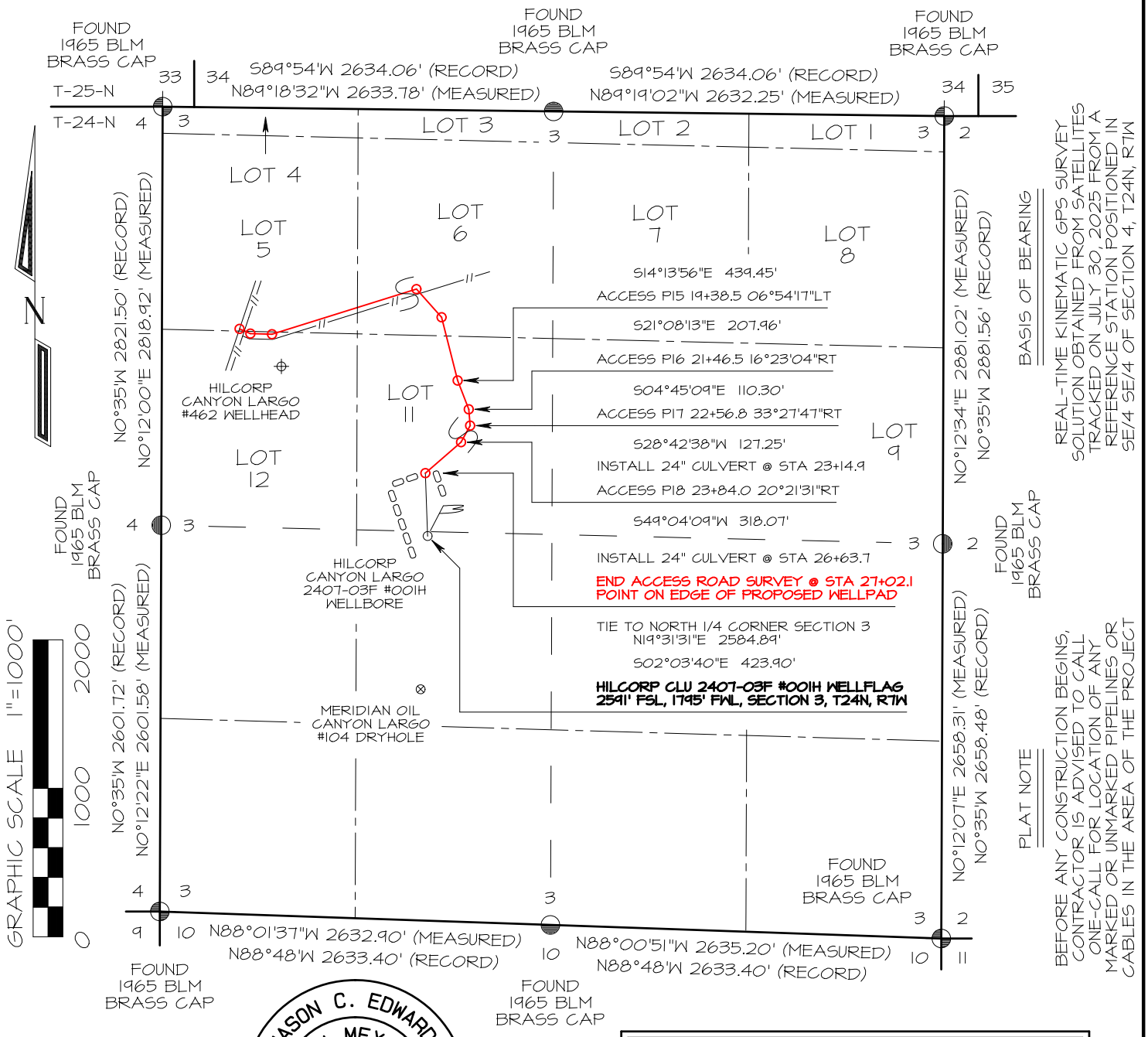
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
HILCORP ENERGY COMPANY
P.O. BOX #61529
HOUSTON, TX 77208-1529

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 5 OF 14
FILENAME: 2473KAP1

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED ACCESS ROAD SURVEY LOCATED IN NW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 27+02.1	2702.1 FT / 163.8 RODS

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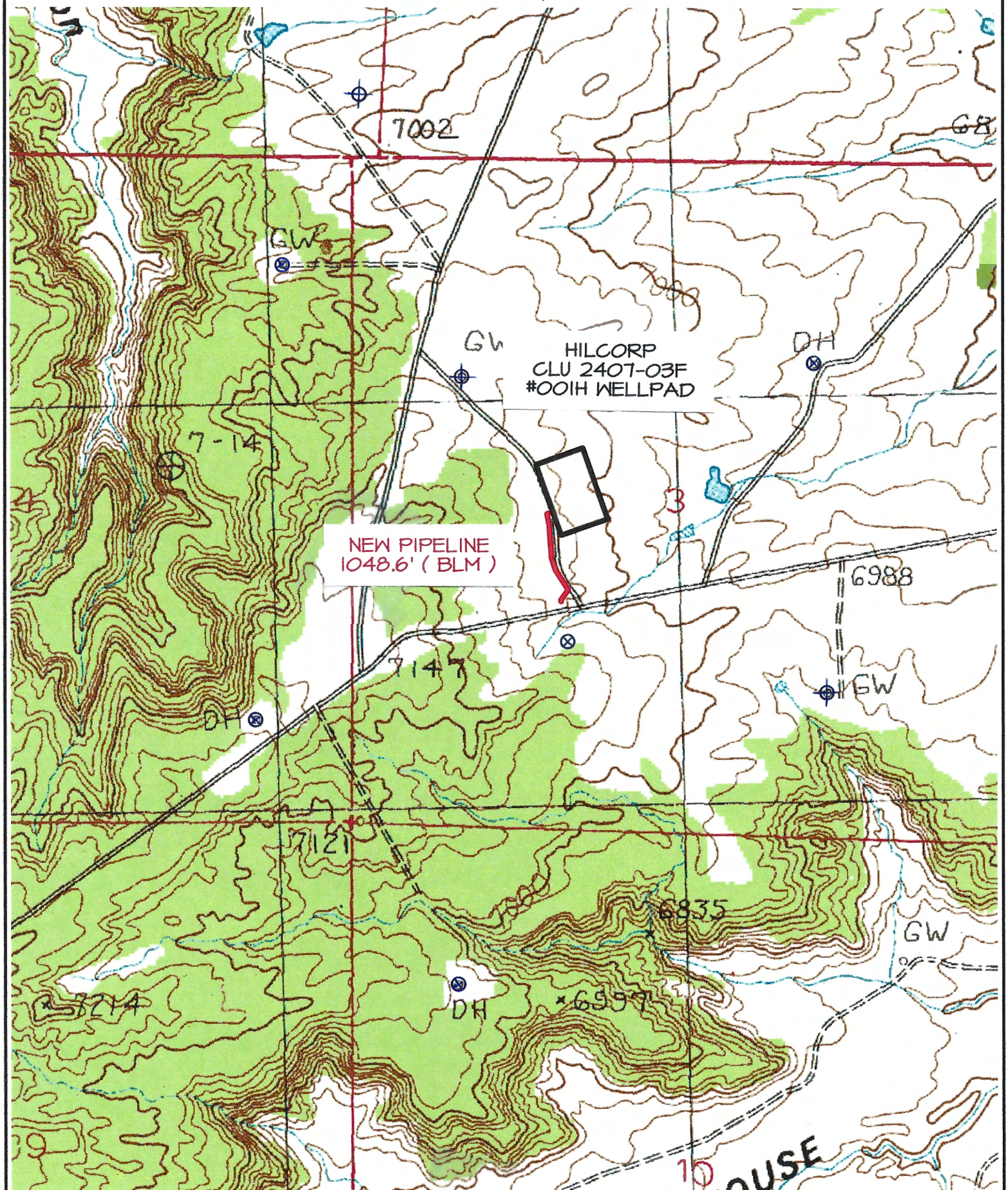
P.O. BOX #61529
HOUSTON, TX 77208-1529

NCE SURVEYS, INC.
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486–1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 6 OF 14
FILENAME: 2413KAP2

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H PIPELINE

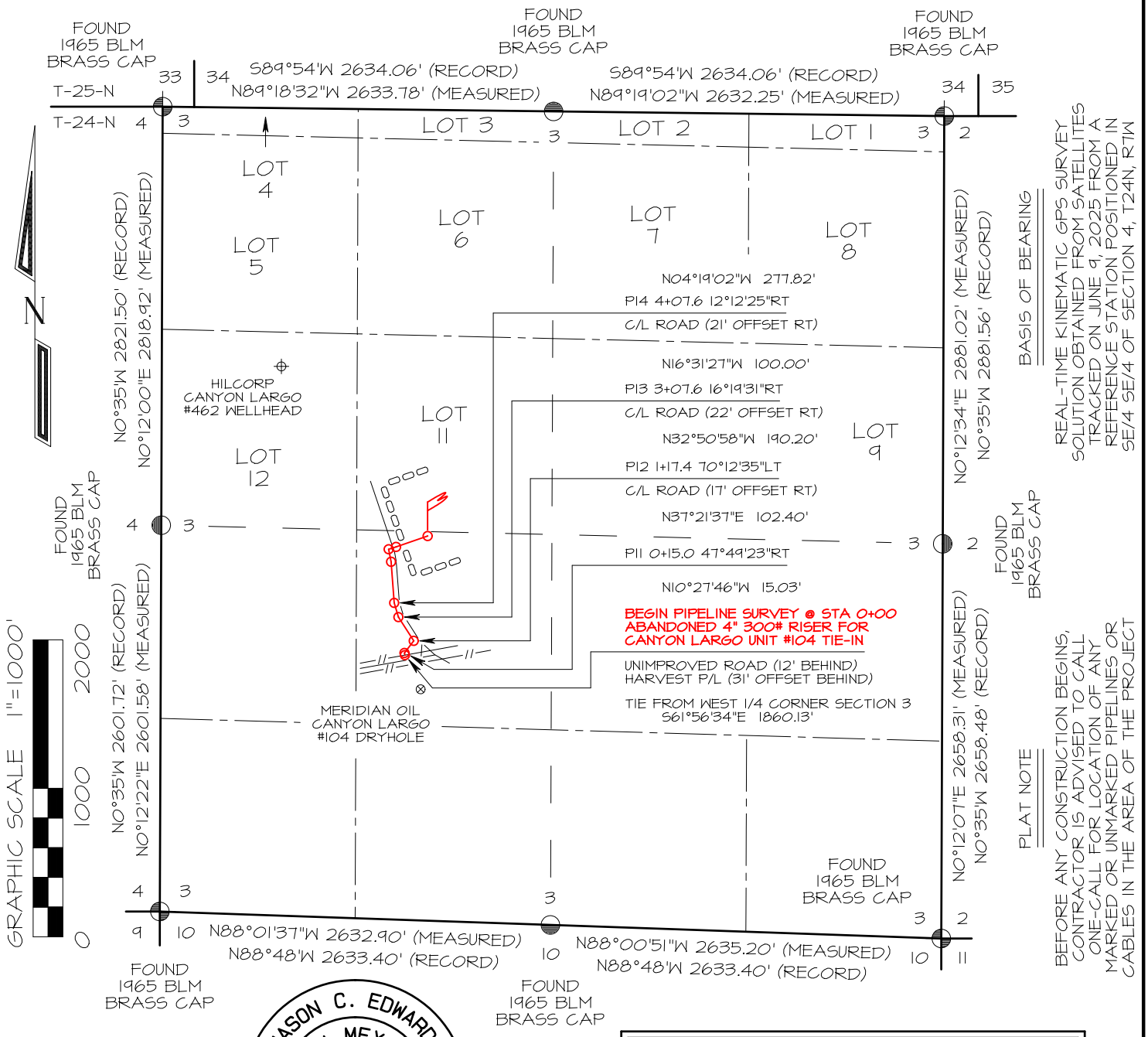
LOCATED IN NE/4 SW/4 OF SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Received by OCD: 3/2/2026 10:15:37 AM

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED PIPELINE SURVEY LOCATED IN NE/4 SW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JUNE 9, 2025 FROM A REFERENCE STATION POSITIONED IN SE/4 SE/4 OF SECTION 4, T24N, R7W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 10+48.6	1048.6 FT / 63.6 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: February 12, 2026

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

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HILCORP ENERGY COMPANY
P.O. BOX #61529
HOUSTON, TX 77208-1529

Land Surveyor:
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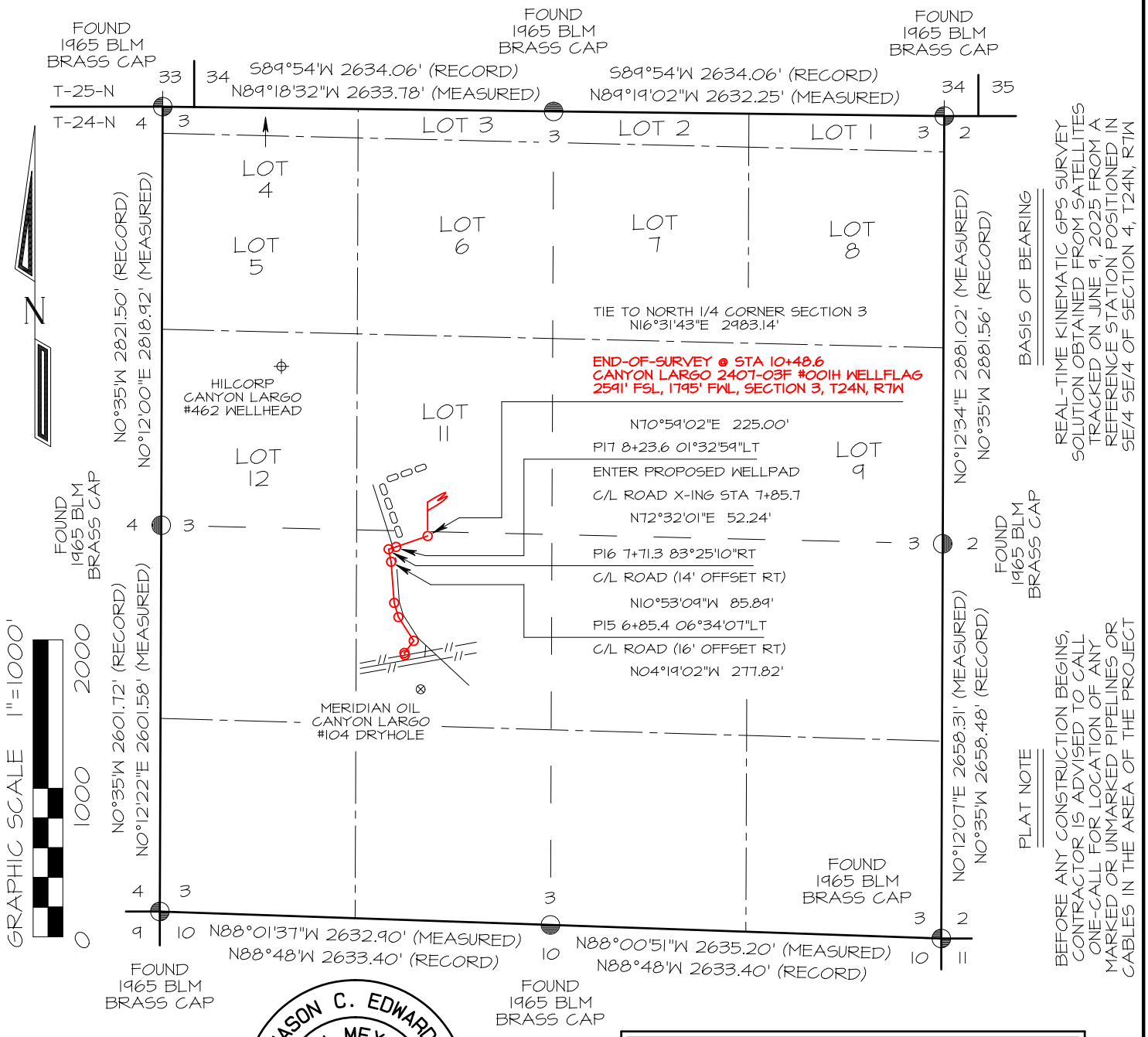
111 East Pinon Street
Farmington, NM 87402
(505) 486–1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 8 OF 14
FILENAME: 2473KGPI

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407–03F #001H
PROPOSED PIPELINE SURVEY LOCATED IN NE/4 SW/4 SECTION 3
T24N, R7W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO



BASIS OF BEARING

REAL-TIME KINEMATIC GPS SURVEY SOLUTION OBTAINED FROM SATELLITES TRACKED ON JUNE 9, 2025 FROM A REFERENCE STATION POSITIONED IN SE/4 SE/4 OF SECTION 4, T24N, R7W

PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 10+48.6	1048.6 FT / 63.6 RODS

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JASON C. EDWARDS Date: February 12, 2026

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New Mexico L.S. #15269

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HILCORP ENERGY COMPANY
P.O. BOX #61529
HOUSTON, TX 77208-1529

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Land Surveyor: Jason C. Edwards
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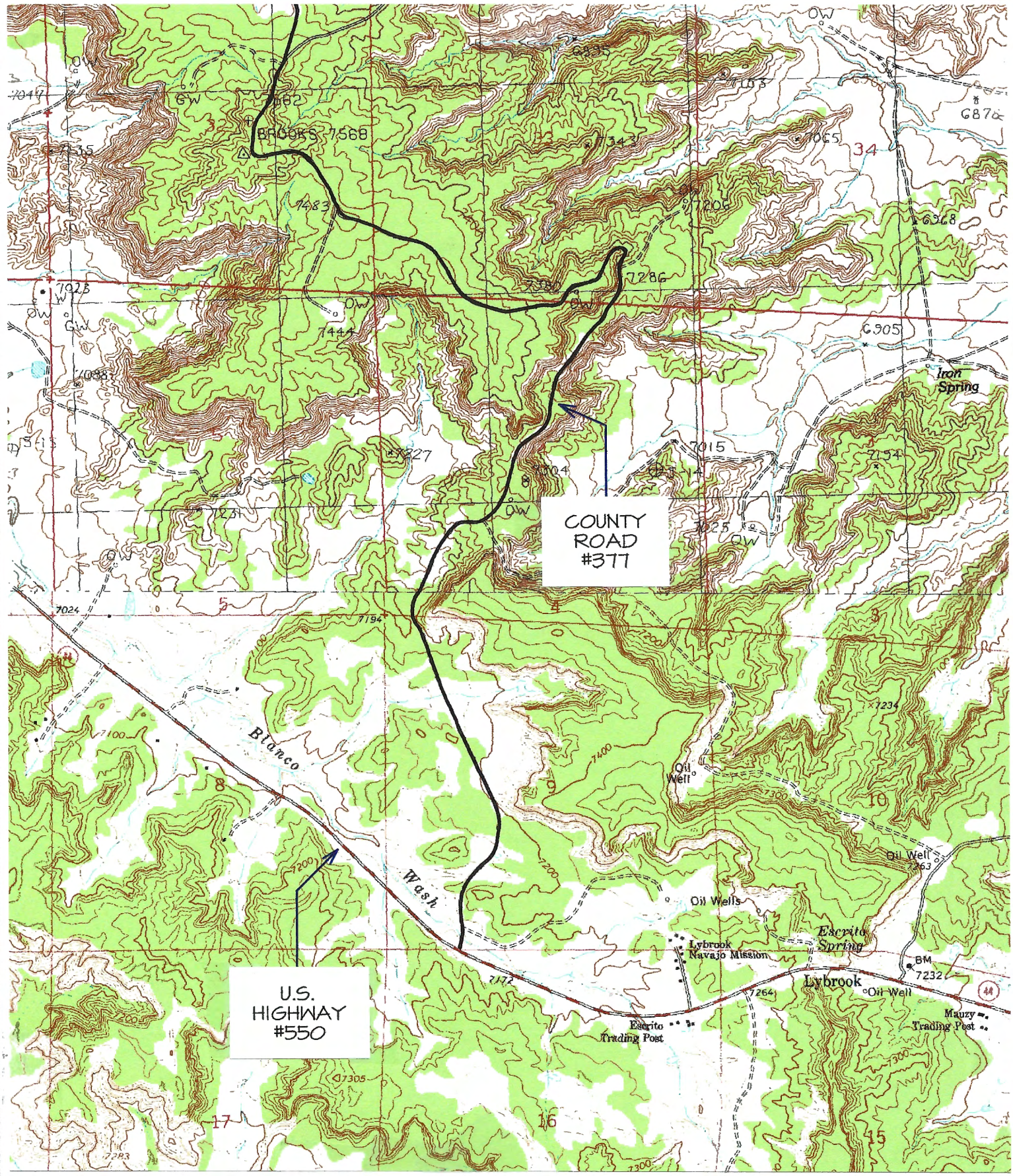
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 9 OF 14
FILENAME: 24T3KGP2

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAMES : LYBROOK & CROW MESA EAST

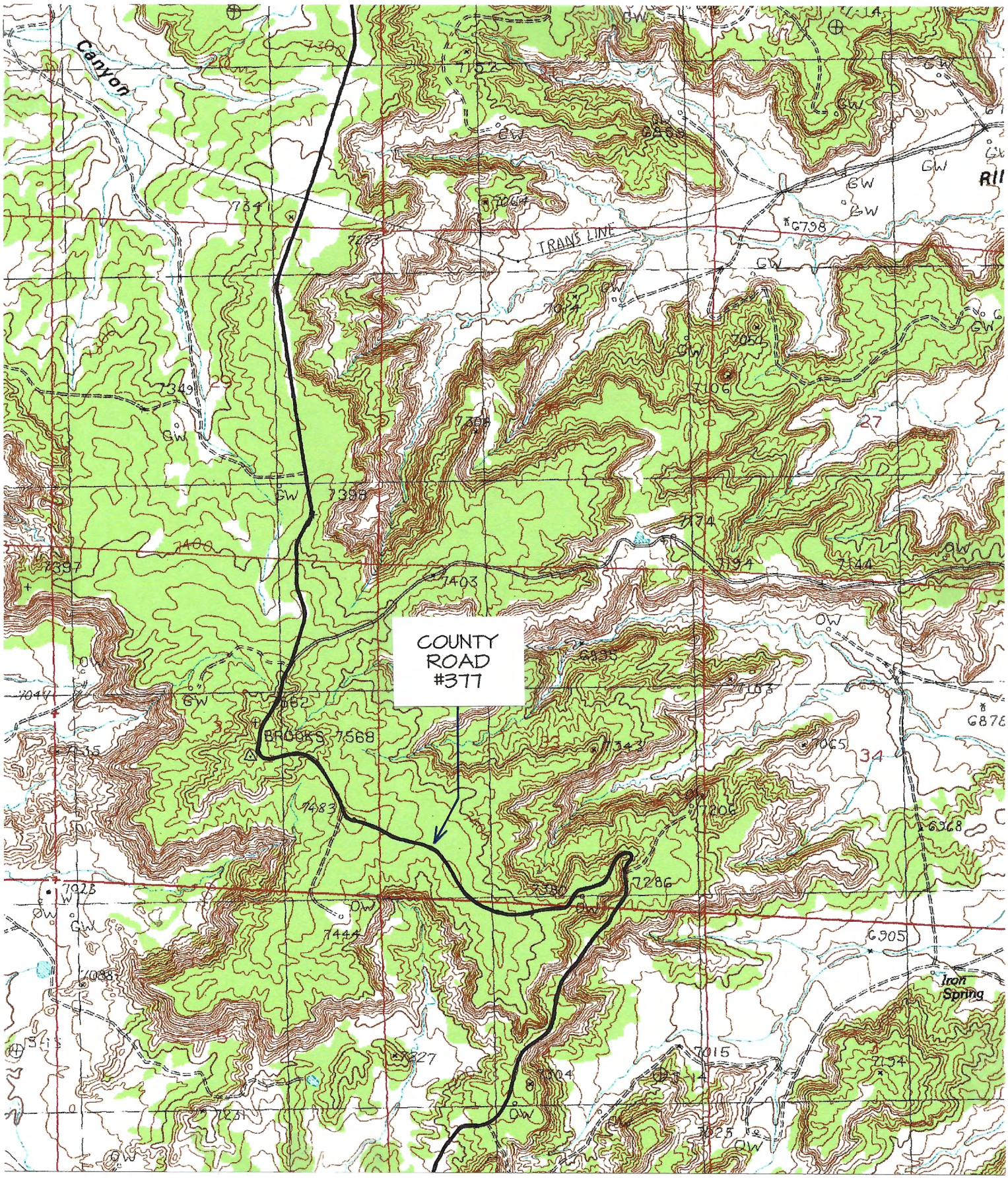
⊕ PRODUCING WELL

⊗ PLUGGED & ABANDONED WELL

Received by OCD: 3/2/2026 10:15:27 AM

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

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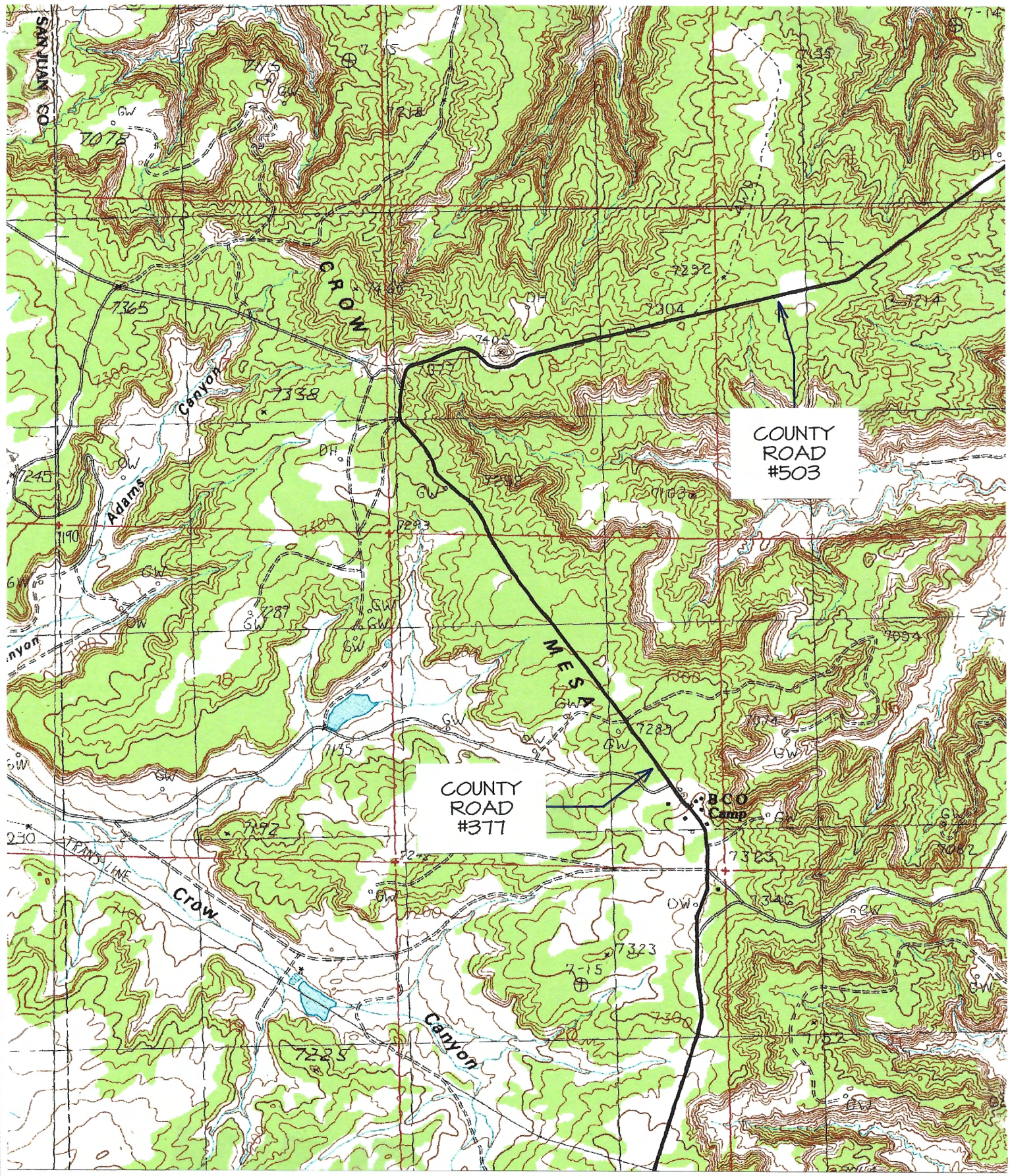
HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO

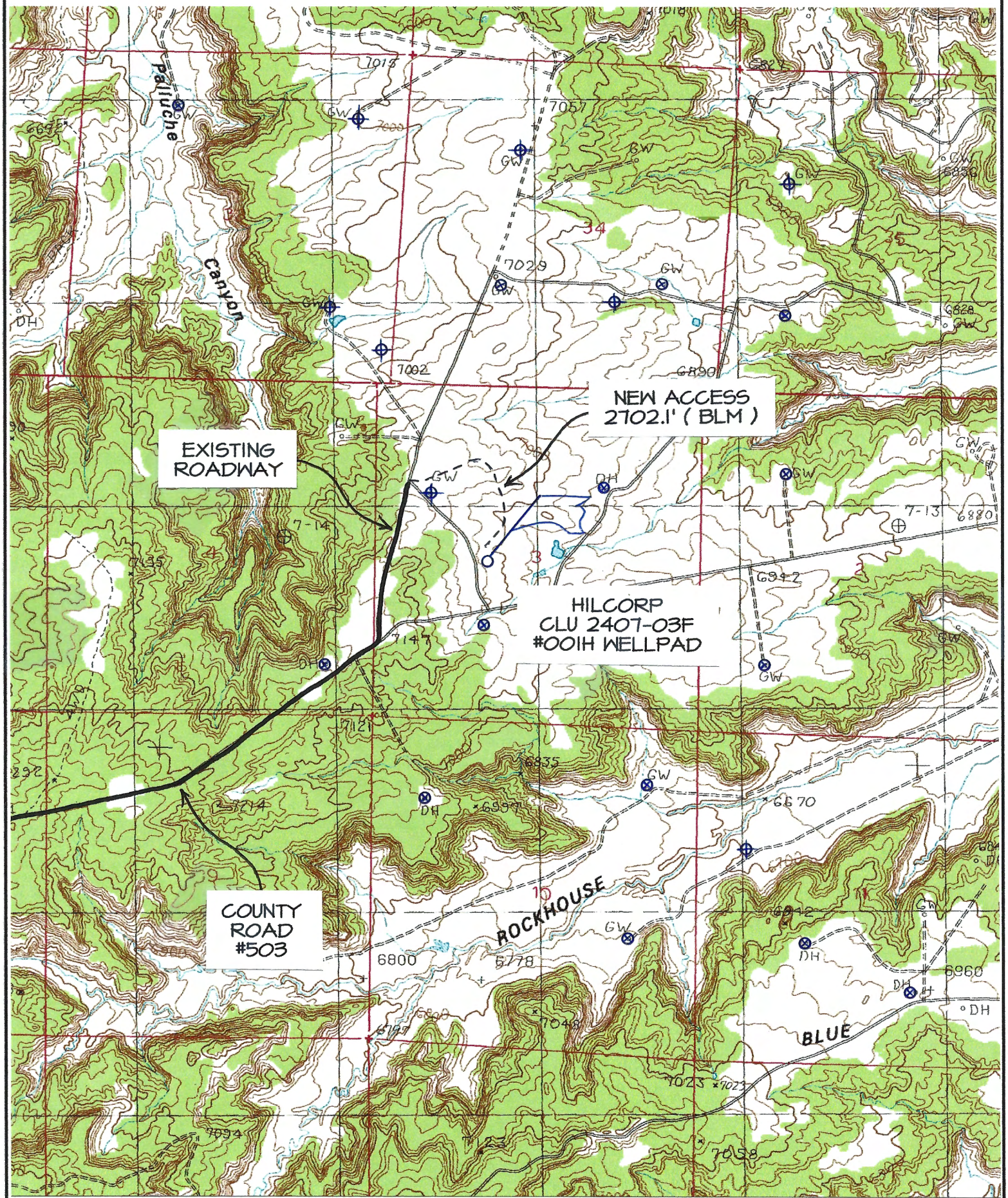


TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Received by OCD: 3/2/2026 10:15:37 AM

HILCORP ENERGY COMPANY CANYON LARGO UNIT 2407-03F #001H

2591' FSL & 1795' FWL, SECTION 3, T24N, R7W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : CROW MESA EAST ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Received by OCD: 3/2/2026 10:15:37 AM

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Hilcorp Energy Company Canyon Largo Unit 2407-03F #001H

2591' FSL & 1795' FWL, Section 3, T24N, R7W, N.M.P.M., Rio Arriba County, NM

Latitude: 36.342087°N Longitude: -107.566002°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 46.8 miles to Mile Marker 104.9;

Go Left (Northerly) exiting US Hwy 550 on County Road #377 for 4.1 miles to fork in roadway;

Go Left (Northerly) which is straight remaining on County Road #377 for 2.2 miles to fork in roadway;

Go Left (Northerly) which is straight remaining on County Road #377 for 2.0 miles to fork in roadway;

Go Right (Easterly) exiting County Road #377 on County Road #503 for 2.2 miles to fork in roadway;

Go Left (Northerly) exiting County Road #503 on existing roadway for 0.5 miles to fork in roadway;

Go Straight (Northerly) for 200' to new access on right-hand side of existing roadway which continues for 2702.1' to Hilcorp Canyon Largo Unit 2407-03F #001H staked location.

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Hilcorp Energy Company **OGRID:** 372171 **Date:** 10/16/2023

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Canyon Lago Unit 2407-03F 1H		K-3-24N-7W	2591' FSL & 1795' FWL	0 bbl	2,000 mcf/d	20 bbl/d
Canyon Lago Unit 2407-03F 2H		K-3-24N-7W	2568' FSL & 1803' FWL	0 bbl	2,000 mcf/d	20 bbl/d

IV. Central Delivery Point Name: Chaco Gas Plant [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Canyon Lago Unit 2407-03F 1H		**2024**				
Canyon Lago Unit 2407-03F 2H		**2024**				

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Cherylene Weston
Printed Name:	Cherylene Weston
Title:	Operations/Regulatory Tech-Sr.
E-mail Address:	cweston@hilcorp.com
Date:	10/16/2023
Phone:	713-289-2615

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

Hilcorp Energy Natural Gas Management Plan Attachments

VI. Separation Equipment

The operator will select separation equipment for the maximum anticipated throughput and pressure to optimize gas capture. Separation equipment is sized according to manufacturer's design specifications. Separation vessels are built following the A.S.M.E. section VII division 1 codes for pressure vessel design, fabrication, inspection, testing and certification. Anticipated well pressures and production rates are evaluated to select separation equipment according to the equipment's designed operating pressure and throughput.

After completion, the operator utilizes flowback equipment, including separators, to manage wellbore fluids and solids during the initial separation period. After the initial flowback period is complete the operator utilizes iterative facility separation equipment to ensure that optimal separation is achieved.

VII. Operational Practices 19.15.27.8 NMAC A through F

A. The operator will maximize the recovery of natural gas and minimize the amount of gas vented or flared when technically and safely feasible as further described and detailed within the following subsections (B-F of 19.15.27.8). In all cases where natural gas venting and flaring requires regulatory reporting, reporting will be submitted accurately and within the required time frames.
B. Venting and flaring during drilling operations:
    a. New Drill HZ Gas Wells: The operator drills wells in the area by utilizing a balanced mud to safely drill the wellbore. This technique prevents gas from coming to surface during the drilling process. If there is an emergency or malfunction and natural gas does come to surface the natural gas will be captured and routed to sales if technically and safely feasible.
C. Venting and flaring during completion or recompletion operations:
    a. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. The natural gas will be utilized on site as needed for fuel gas and natural gas will be sold.

D. Venting and flaring during production operations:
    a. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible.

        Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

(a) If there is an emergency or malfunction vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
(b) If the wellbore needs to be unloaded to atmosphere the operator will not vent the well after the well has achieved a stabilized rate and pressure. The operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, etc. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
(c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low pressure vessel. The formation is only anticipated to produce water and therefore tank emissions are anticipated to be negligible.
(d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operations will always utilize the water transfer systems when available. Water loading emissions are anticipated to be negligible.
(e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment that is being repaired or maintained.
(f) Electric controllers and pumps will be installed to replace pneumatic controllers whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
(g) No dehydration or amine units are anticipated to be set on location.
(h) Compressors, compressor engines, turbines, flanges, connectors, valves, storage tanks, and other low-pressure vessels and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operations.
(i) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to atmosphere.
(j) If natural gas does not meet gathering pipeline specifications gas samples will be collected twice per week to determine when pipeline specification gas content has been achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
(k) If pipeline, equipment, or facilities need purged of impurities gas losses will be minimized as much as technically and safely feasible.

E. Performance standards:

a. The production facilities are designed to handle the maximum throughput and pressures from producing wellbores and will be designed to minimize waste. The amount of gas vented and flared will be minimized when technically and safely feasible.
b. All tanks that are routed to a control device that is installed after 5/25/2021 will have an automatic gauging system to minimize the amount of vented natural gas.
c. If a flare stack is installed or replaced after 5/25/2021 it will be equipped with an automatic ignitor or continuous pilot. The flare stack will be properly sized and designed to ensure proper combustion efficiency. The flare stack will be located 100 feet away from the nearest wellhead or storage tank.
d. AVO inspections will be conducted weekly for the year after completion and for all wells producing greater than 60,000 cubic feet of natural gas daily. The AVO inspection will include all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated pipeline to identify any leaks and releases by comprehensive auditory, visual, and olfactory inspection. The AVO inspection records will be maintained for 5 years which will be available at the department's request. Identified leaks will be repaired as soon as feasible to minimize the amount of vented natural gas. F. Measurement or estimation of vented and flared natural gas.

a. The volume of natural gas that is vented, flared or consumed for beneficial use will be measured when possible, or estimated, during drilling, completions, or production operations.
b. Equipment will be installed to measure the volume of natural gas flared for all APD's issued after 5/25/2021 on facilities that will have an average daily gas rate greater than 60,000 cubic feet of natural gas. Measurement equipment will conform to API MPMS Chapter 14.10 regulations. The measurement equipment will not have a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment. If metering is not practical then the volume of gas will be estimated.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 558937
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

ACKNOWLEDGMENTS

☑	I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well.

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CONDITIONS

Action 558937

CONDITIONS

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	Action Number: 558937
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CONDITIONS

Created By	Condition	Condition Date
dawnn	Cement is required to circulate on both surface and intermediate1 strings of casing.	3/2/2026
dawnn	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	3/2/2026
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	3/23/2026
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	3/23/2026
ward.rikala	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.	3/23/2026
ward.rikala	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.	3/23/2026
ward.rikala	If the method of isolation was not by circulation, a CBL must be performed; if strata isolation is not achieved, then remediation will be required before further operations.	3/23/2026