

Form 3160-3
(June 2015)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM67102
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator Colgate Operating LLC		8. Lease Name and Well No. IRONHORSE 35 FED COM 172H
3a. Address 300 N MARIENFELD ST SUITE 1000, MIDLAND, TX 79701	3b. Phone No. (include area code) (432) 695-4222	9. API Well No. 30-015-55612
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SENE / 1455 FNL / 199 FEL / LAT 32.6204161 / LONG -104.0547858 At proposed prod. zone SENE / 2310 FNL / 100 FEL / LAT 32.6178444 / LONG -104.0201512		10. Field and Pool, or Exploratory Parkway/Bone Spring
11. Sec., T. R. M. or Blk. and Survey or Area SEC 34/T19S/R29E/NMP		
14. Distance in miles and direction from nearest town or post office* 14 miles		12. County or Parish EDDY
13. State NM		
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
199 feet		640.0
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
33 feet	8624 feet / 19235 feet	FED: NMB001841
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3314 feet	22. Approximate date work will start* 06/30/2024	23. Estimated duration 30 days

24. Attachments

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) KANICIA SCHLICHTING / Ph: (432) 695-4222	Date 01/10/2024
Title Regulatory Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) CODY LAYTON / Ph: (575) 234-5959	Date 09/26/2024
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field 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.



(Continued on page 2)

*(Instructions on page 2)

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 well, 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 directionally 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 well 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 will 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 connects this information to an 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: SENE / 1455 FNL / 199 FEL / TWSP: 19S / RANGE: 29E / SECTION: 34 / LAT: 32.6204161 / LONG: -104.0547858 (TVD: 0 feet, MD: 0 feet)
PPP: SWNW / 2310 FNL / 100 FWL / TWSP: 19S / RANGE: 29E / SECTION: 35 / LAT: 32.6180608 / LONG: -104.0538211 (TVD: 8580 feet, MD: 8763 feet)
PPP: SWNW / 2310 FNL / 0 FWL / TWSP: 19S / RANGE: 29E / SECTION: 36 / LAT: 32.6179527 / LONG: -104.0370025 (TVD: 8624 feet, MD: 14048 feet)
PPP: SWNE / 2310 FNL / 2644 FEL / TWSP: 19S / RANGE: 29E / SECTION: 36 / LAT: 32.6177791 / LONG: -104.0279107 (TVD: 8624 feet, MD: 16692 feet)
PPP: NWNW / 2310 FNL / 1317 FEL / TWSP: 19S / RANGE: 29E / SECTION: 35 / LAT: 32.6179804 / LONG: -104.0412796 (TVD: 8624 feet, MD: 12731 feet)
BHL: SENE / 2310 FNL / 100 FEL / TWSP: 19S / RANGE: 29E / SECTION: 36 / LAT: 32.6178444 / LONG: -104.0201512 (TVD: 8624 feet, MD: 19235 feet)

BLM Point of Contact

Name: JANET D ESTES
Title: ADJUDICATOR
Phone: (575) 234-6233
Email: JESTES@BLM.GOV

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazon Road, Artec, NM 87410
District IV
1220 S. St Francis Dr., NM 87505
Phone: (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-55612	² Pool Code	³ Pool Name
⁴ Property Code 336450	⁵ Property Name IRONHORSE 35-36 FED STATE COM	
⁷ OGRID No.	⁸ Operator Name COLGATE OPERATING, LLC	⁶ Well Number #172H
		⁹ Elevation 3,314'

¹⁰ Surface Location

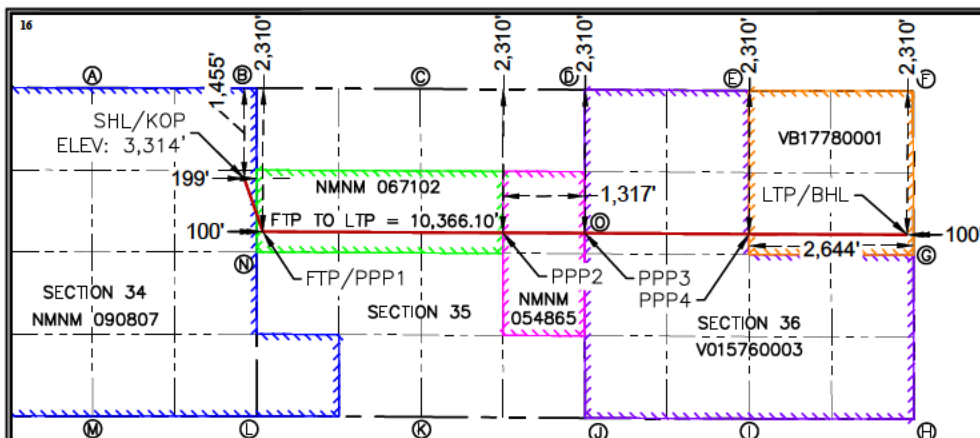
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	34	19 S	29 E		1,455'	NORTH	199'	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	36	19 S	29 E		2,310'	NORTH	100'	EAST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁷ OPERATOR CERTIFICATION

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

Signature _____ Date _____

Printed Name _____ Date _____

Email Address _____ Date _____

¹⁸ SURVEYOR CERTIFICATION

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

Date: 12/22/2023



MARK J. MURRAY P.L.S. NO. 12177

SURFACE HOLE LOCATION & KICK-OFF POINT
1.455' FNL & 199' FEL
NM EAST-NAD 83
NORTH: 588.550.60'
EAST: 627.097.55'
LAT: 32.62041619
LONG: -104.05478586
NM EAST-NAD 27
NORTH: 588.488.56'
EAST: 585.917.51'
LAT: 32.62029782
LONG: -104.05428087

FIRST TAKE POINT & PENETRATION POINT 1
2.310' FNL & 100' FWL
NM EAST-NAD 83
NORTH: 588.694.50'
EAST: 627.396.83'
LAT: 32.61806388
LONG: -104.05382113
NM EAST-NAD 27
NORTH: 588.632.48'
EAST: 586.216.77'
LAT: 32.61794248
LONG: -104.05331623

PENETRATION POINT 2 **PENETRATION POINT 3**
2.310' FNL & 1.317' FEL
NM EAST-NAD 83
NORTH: 588.575.61'
EAST: 631.258.34'
LAT: 32.61798043
LONG: -104.04127965
NM EAST-NAD 27
NORTH: 588.513.57'
EAST: 590.078.27'
LAT: 32.61786189
LONG: -104.04077507
2.310' FNL & 0' FWL
NM EAST-NAD 83
NORTH: 588.669.17'
EAST: 632.575.26'
LAT: 32.61795271
LONG: -104.03700252
NM EAST-NAD 27
NORTH: 588.607.12'
EAST: 591.395.19'
LAT: 32.61783412
LONG: -104.03649805

PENETRATION POINT 4
2.310' FNL & 2.644' FEL
NM EAST-NAD 83
NORTH: 588.656.69'
EAST: 635.219.44'
LAT: 32.61789784
LONG: -104.02841504
NM EAST-NAD 27
NORTH: 588.594.61'
EAST: 594.039.26'
LAT: 32.61777917
LONG: -104.02791078

LAST TAKE POINT & BOTTOM HOLE LOCATION
2.310' FNL & 100' FEL
NM EAST-NAD 83
NORTH: 588.644.68'
EAST: 637.763.76'
LAT: 32.61784449
LONG: -104.02015125
NM EAST-NAD 27
NORTH: 588.582.58'
EAST: 596.583.68'
LAT: 32.61772573
LONG: -104.01964720

CORNER COORDINATES
NEW MEXICO EAST - NAD 83
A. CALCULATED CORNER
N: 591.009.51' E: 624.651.10'
B. FOUNDIRON PIPE
N: 591.005.03' E: 627.255.65'
C. FOUND NAIL
N: 590.962.09' E: 629.932.85'
D. FOUNDIRON PIPE
N: 590.979.17' E: 632.572.41'
E. FOUNDIRON PIPE
N: 590.963.34' E: 635.216.34'
F. FOUNDIRON PIPE
N: 590.954.37' E: 637.859.25'
G. FOUNDIRON PIPE
N: 588.317.17' E: 637.864.40'

H. FOUNDIRON PIPE
N: 585.677.67' E: 632.869.26'
I. FOUNDIRON PIPE
N: 585.685.41' E: 635.223.20'
J. FOUNDIRON PIPE
N: 585.696.70' E: 637.580.53'
K. FOUNDIRON PIPE
N: 585.715.65' E: 629.950.81'
L. FOUNDIRON PIPE
N: 585.728.26' E: 627.298.35'
M. FOUNDIRON PIPE
N: 585.726.61' E: 624.659.03'
N-CALCULATED CORNER
N: 588.366.64' E: 627.297.00'
O. FOUNDIRON PIPE
N: 588.339.27' E: 632.575.67'

State of New Mexico
Energy, Minerals and Natural Resources DepartmentSubmit Electronically
Via E-permittingOil 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:** Colgate Operating LLC **OGRID:** 371449 **Date:** 9/30/24**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

IV. Central Delivery Point Name: Black Diamond CTB [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
Ironhorse 35 Fed Com 131H	TBD	1/5/25	TBD	TBD	TBD	TBD
Ironhorse 35 Fed Com 132H	TBD	1/5/25	TBD	TBD	TBD	TBD
Ironhorse 35 Fed Com 171H	TBD	1/5/25	TBD	TBD	TBD	TBD
Ironhorse 35 Fed Com 172H	TBD	1/5/25	TBD	TBD	TBD	TBD
Ironhorse 35 Fed Com 200H	TBD	1/5/25	TBD	TBD	TBD	TBD
Ironhorse 35 Fed Com 201H	TBD	1/5/25	TBD	TBD	TBD	TBD

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: <i>Jessica Dooling</i>
Printed Name: Jessica Dooling
Title: Regulatory Specialist
E-mail Address: Jessica.dooling@permianres.com
Date: 9/30/24
Phone: 432-999-3072
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Colgate Operating, LLC (371449)

Natural Gas Management Plan Descriptions

VI. Separation Equipment:

Colgate utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations. Our goal is to maintain 5 minutes of retention time in the test vessel and 20 minutes in the heater treater at peak production rates. The gas produced is routed from the separator to the gas sales line.

VII. Operational Practices:*Drilling*

During Colgate's drilling operations it is uncommon for venting or flaring to occur. If flaring is needed due to safety concerns, gas will be routed to a flare and volumes will be estimated.

Flowback

During completion/recompletion flowback operations, after separation flowback begins and as soon as it is technically feasible, Colgate routes gas through a permanent separator and the controlled facility where the gas is either sold or flared through a high-pressure flare if needed.

Production

Per 19.15.27.8.D, Colgate's facilities are designed to minimize waste. Our produced gas will only be vented or flared in an emergency or malfunction situation, except as allowed for normal operations noted in 19.15.27.8.D(2) & (4). All gas that is flared is metered. All gas that may be vented will be estimated.

Performance Standards

Colgate utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations.

All of Permian's permanent storage tanks associated with production operations which are routed to a flare or control device are equipped with an automatic gauging system.

All of Permian's flare stacks, both currently installed and for future installation, are:

- 1) Appropriately sized and designed to ensure proper combustion efficiency.
- 2) Equipped with an automatic ignitor or continuous pilot.
- 3) Anchored and located at least 100 feet from the well and storage tanks.

Colgate's field operations and HSE teams have implemented an AVO inspection schedule that adheres to the requirements of 19.15.27.8.E(5).

All of our operations and facilities are designed to minimize waste. We routinely employ the following methods and practices:

- Closed-loop systems
- Enclosed and properly sized tanks

Colgate Operating, LLC (371449)

- Vapor recovery units to maximize recovery of low-pressure gas streams and potential unauthorized emissions
- Low-emitting or electric engines whenever practical
- Combustors and flare stacks in the event of a malfunction or emergency
- Routine facility inspections to identify leaking components, functioning control devices, such as flares and combustors, and repair / replacement of malfunctioning components where applicable

Measurement or estimation

Colgate measures or estimates the volumes of natural gas vented, flared and/or beneficially used for all of our drilling, completing and producing wells. We utilize accepted industry standards and methodology which can be independently verified. Annual GOR testing is completed on our wells and will be submitted as required by the OCD. None of our equipment is designed to allow diversion around metering elements except during inspection, maintenance and repair operations.

VIII. Best Management Practices:

Colgate utilizes the following BMPs to minimize venting during active and planned maintenance activities:

- Use a closed-loop process wherever possible during planned maintenance activities, such as blowdowns, liquid removal, and work over operations.
- Employ low-emitting or electric engines for equipment, such as compressors
- Adhere to a strict preventative maintenance program which includes routine facility inspections, identification of component malfunctions, and repairing or replacing components such as hatches, seals, valves, etc. where applicable
- Utilize vapor recovery units (VRU's) to maximize recovery of volumes of low-pressure gas streams and potential unauthorized emissions
- Route low pressure gas and emissions streams to a combustion device to prevent venting where necessary



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

Drilling Plan Data Report

09/30/2024

APD ID: 10400096616

Submission Date: 01/10/2024

Highlighted data
reflects the most
recent changes

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM

Well Number: 172H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
14220665	RUSTLER	3182	162	162	SANDSTONE	USEABLE WATER	N
14220666	TOP SALT	2293	889	889	SALT	NONE	N
14220667	TANSILL	1928	1254	1254	ANHYDRITE, SHALE	NONE	N
14220668	YATES	1778	1404	1404	ANHYDRITE, SHALE	NONE	N
14220669	SEVEN RIVERS	1572	1610	1610	LIMESTONE	NONE	N
14220670	CAPITAN REEF	408	2774	2774	LIMESTONE	NONE	N
14220671	CHERRY CANYON	-228	3410	3410	SANDSTONE	NATURAL GAS, OIL	N
14220672	BRUSHY CANYON	-388	3570	3570	SANDSTONE	NATURAL GAS, OIL	N
14220673	BONE SPRING LIME	-2526	5708	5708	LIMESTONE	NATURAL GAS, OIL	N
14220674	BONE SPRING 1ST	-3923	7105	7105	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
14220675	BONE SPRING 2ND	-4692	7874	7874	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
14220676	BONE SPRING 3RD	-5418	8600	8600	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 8624

Equipment: BOPE will meet all requirements for above listed system per 43 CFR 3172. BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The system may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional, tested, and will meet all requirements per 43 CFR 3172. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing of the surface x intermediate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose)

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM

Well Number: 172H

from the BOP to choke manifold.

Requesting Variance? YES

Variance request: Multibowl Wellhead, Flexhose, Breaktesting, Offline Cementing Variances. Attachments in Section 8.

Testing Procedure: Operator requests to ONLY test broken pressure seals per API Standard 53 and the attachments in Section 8. The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed, b. whenever any seal subject to test pressure is broken, c. following related repairs, d. at 21-day intervals. Testing of the ram type preventer(s) and annual type preventer(s) shall be tested per 43 CFR 3172. The BOPE configuration, choke manifold layout, and accumulator system will be in compliance with 43 CFR 3172. Bleed lines will discharge 100' from wellhead in non-H2S scenarios and 150' from wellhead in H2S scenarios.

Choke Diagram Attachment:

Ironhorse_35_Fed_5MCM_20240729041943.pdf

BOP Diagram Attachment:

Ironhorse_35_Fed_5MBOP_20240729041948.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	26	20.0	NEW	API	N	0	187	0	187	3314	3127	187	J-55	94	ST&C	5.63	2.85	DRY	4.94	DRY	9.16
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1279	0	1279	3314	2035	1279	J-55	40	BUTT	5.12	3.23	DRY	5.64	DRY	6.01
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3360	0	3360	3314	-46	3360	J-55	40	BUTT	3.55	1.78	DRY	3.05	DRY	2.69
4	PRODUCTION	8.75	5.5	NEW	API	N	0	8968	0	8624	3314	-5310	8968	P-110	17	OTHER - GEOCONN	1.67	1.74	DRY	2.21	DRY	2.21
5	PRODUCTION	7.875	5.5	NEW	API	N	8968	19235	8624	8624	-5310	-5310	10267	P-110	17	OTHER - GEOCONN	1.67	1.74	DRY	2.21	DRY	2.21

Casing Attachments

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM

Well Number: 172H

Casing Attachments

Casing ID: 1StringSURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_172H_Csg_Assump_20240729042138.pdf

Casing ID: 2StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_172H_Csg_Assump_20240729042120.pdf

Casing ID: 3StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_172H_Csg_Assump_20240729042130.pdf

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM

Well Number: 172H

Casing Attachments

Casing ID: 4StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_172H_Csg_Assump_20240729042229.pdf

Casing ID: 5StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_172H_Csg_Assump_20240729042146.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	187	330	1.34	14.8	430	50	Class C	Accelerator
INTERMEDIATE	Lead		0	1020	570	1.88	12.9	1060	50	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
INTERMEDIATE	Tail		1020	1279	210	1.34	14.8	270	50	Class C	Retarder
INTERMEDIATE	Lead		0	2680	610	1.88	12.9	1130	50	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM

Well Number: 172H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		2680	3360	210	1.33	14.8	270	25	Class C	Salt
PRODUCTION	Lead		2860	8218	770	2.41	11.5	1850	40	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Tail		8218	1923 5	1430	1.73	12.5	2470	25	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Circulating Medium Table

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
8968	1923 5	OIL-BASED MUD	9	10							
0	187	SPUD MUD	8.6	9.5							
187	1279	SALT SATURATED	10	10							
1279	8968	OTHER : Fresh Water	9	10							

Operator Name: COLGATE OPERATING LLC**Well Name:** IRONHORSE 35 FED COM**Well Number:** 172H

Section 6 - Test, Logging, Coring

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

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

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

GAMMA RAY LOG,DIRECTIONAL SURVEY,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4490**Anticipated Surface Pressure:** 2592**Anticipated Bottom Hole Temperature(F):** 143**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations**

Black_Diamond_Ironhorse_H2S_Plan_20240105083527.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

IRONHORSE_35_FED_172H_PWP0_SVY_RPT_20240108144216.pdf

IRONHORSE_35_FED_172H_PWP0_AC_RPT_20240108144216.pdf

Other proposed operations facets description:**Other proposed operations facets attachment:****Other Variance attachment:**

Ironhorse_35_Fed_MBS_20240729042414.pdf

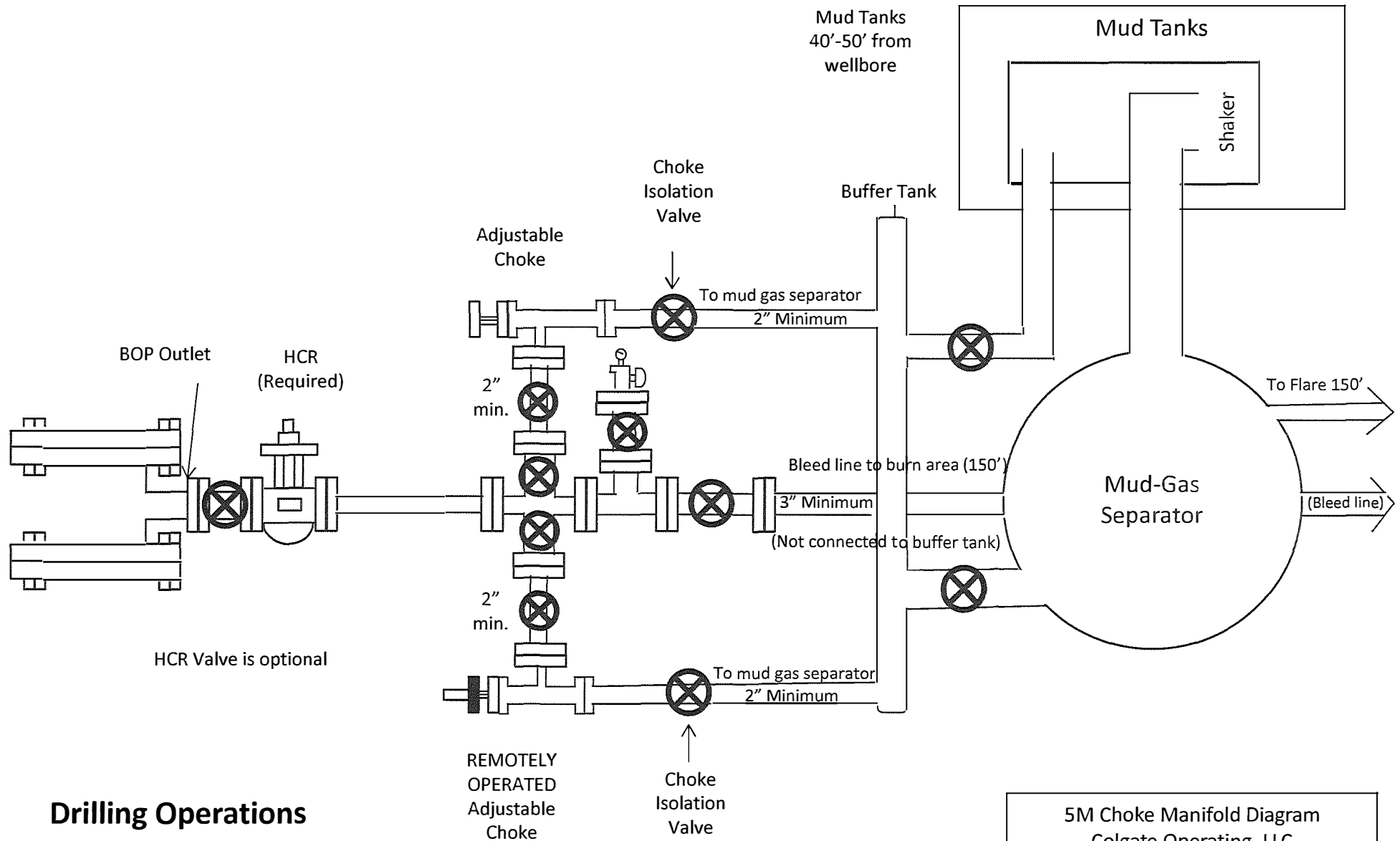
Ironhorse_35_Fed_FH_20240729042414.pdf

Ironhorse_35_Fed_Break_20240729042414.pdf

Ironhorse_35_Fed_Batch_20240729042414.pdf

Ironhorse_35_Fed_OLCV_20240729042414.pdf

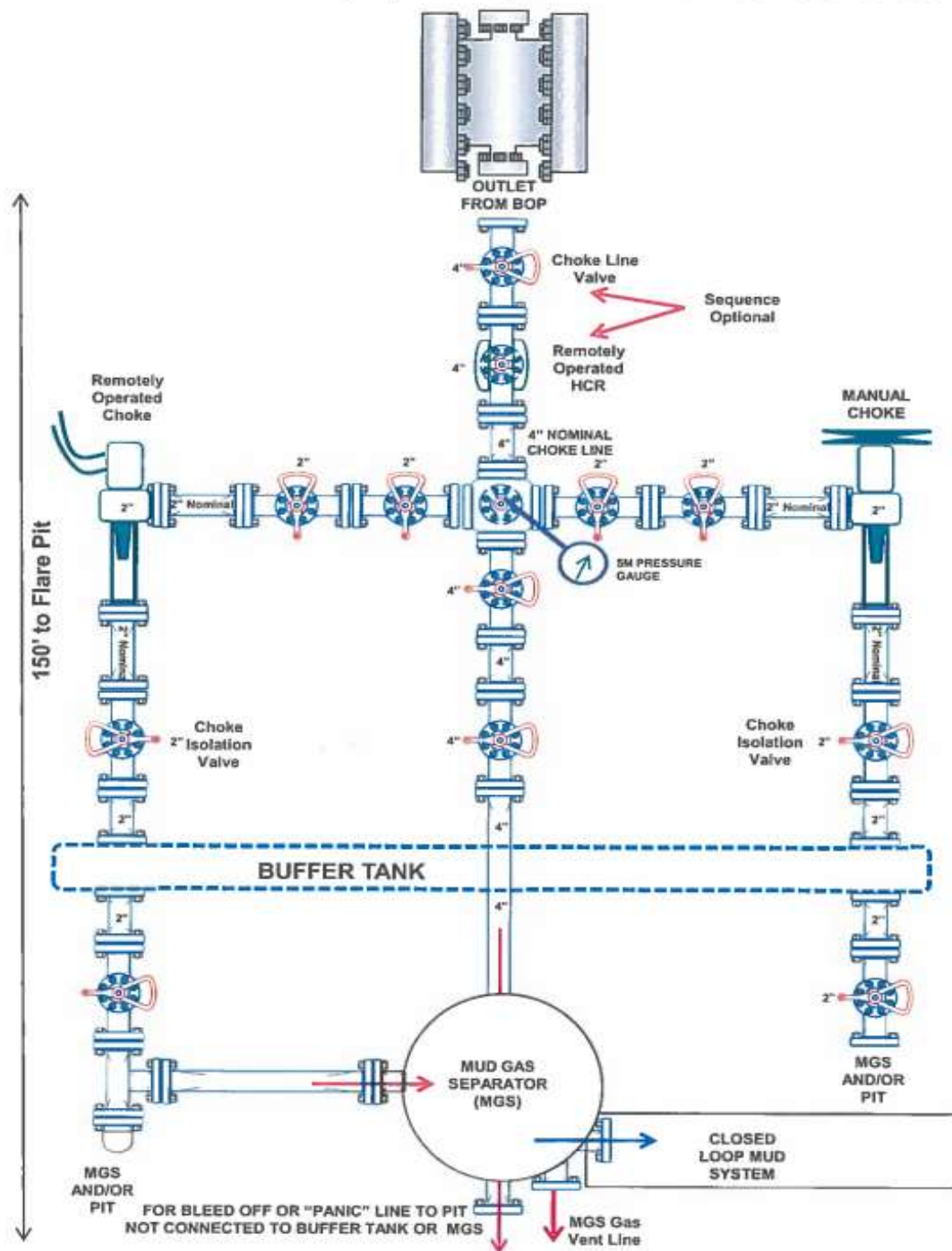
Bleed lines will discharge 100' from WH in non-H2S scenarios
and 150' from WH in H2S scenarios.

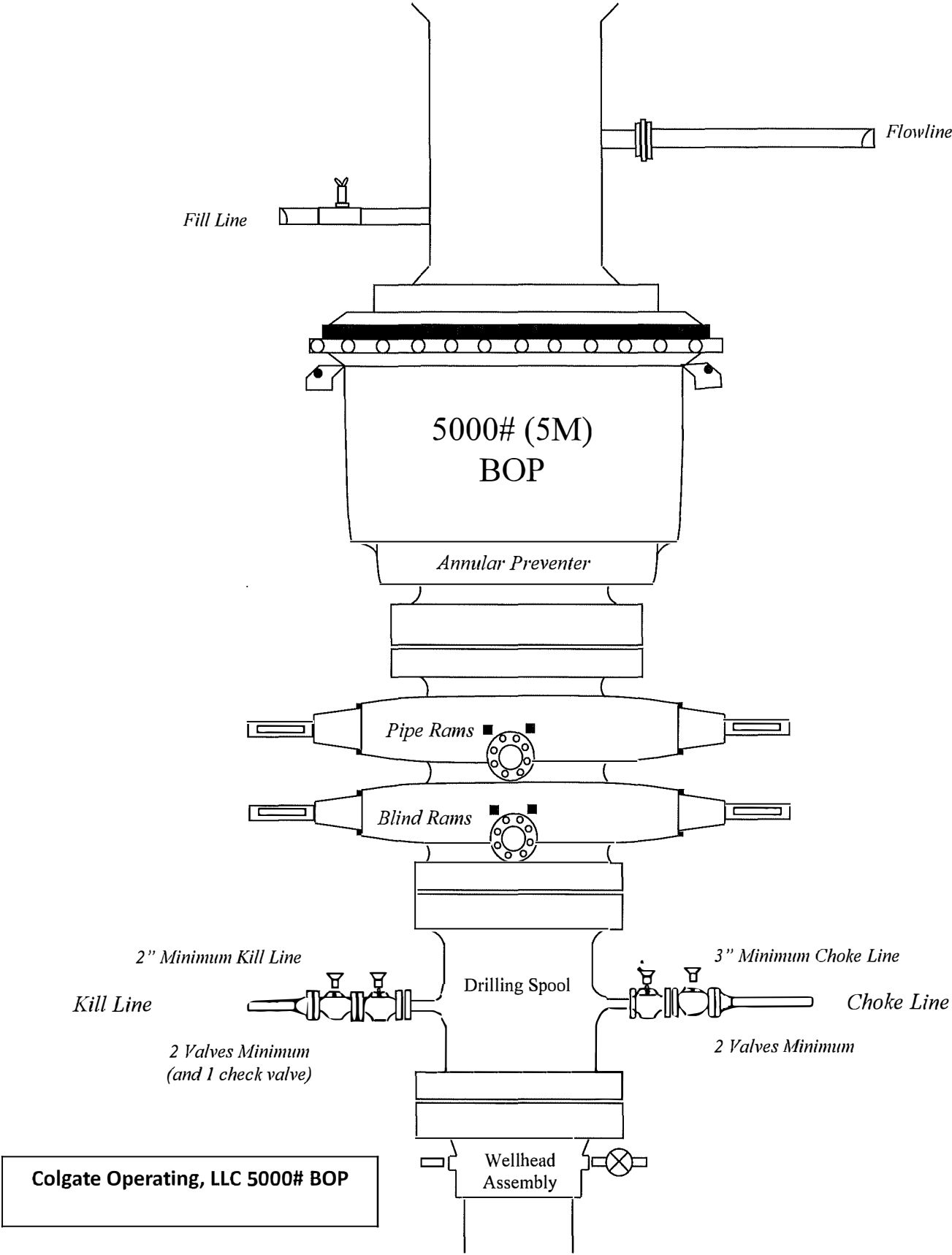


Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
Colgate Operating, LLC

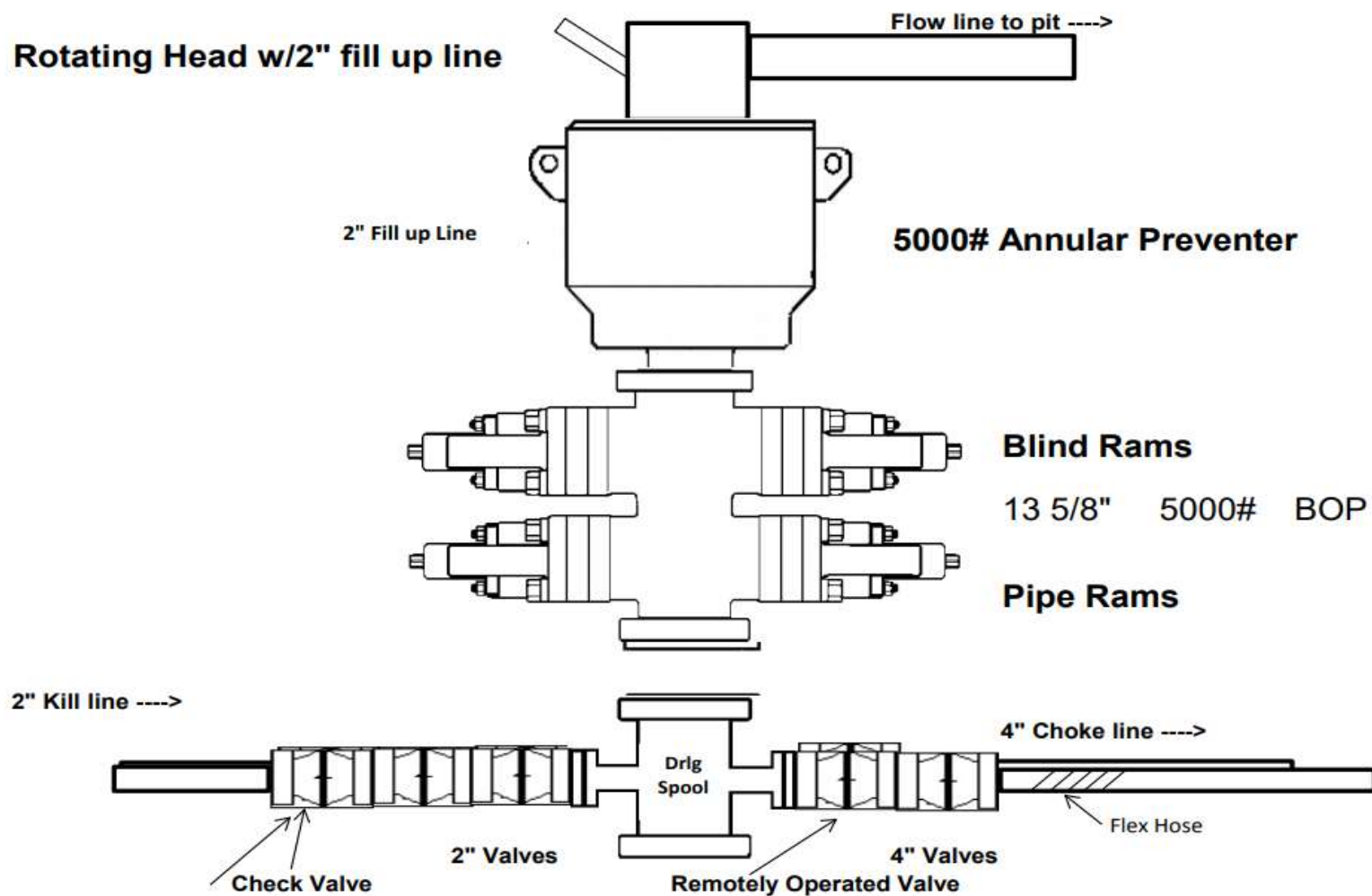
5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)





Bleed lines will discharge 100' from WH in non-H2S scenarios and 150' from WH in H2S scenarios.

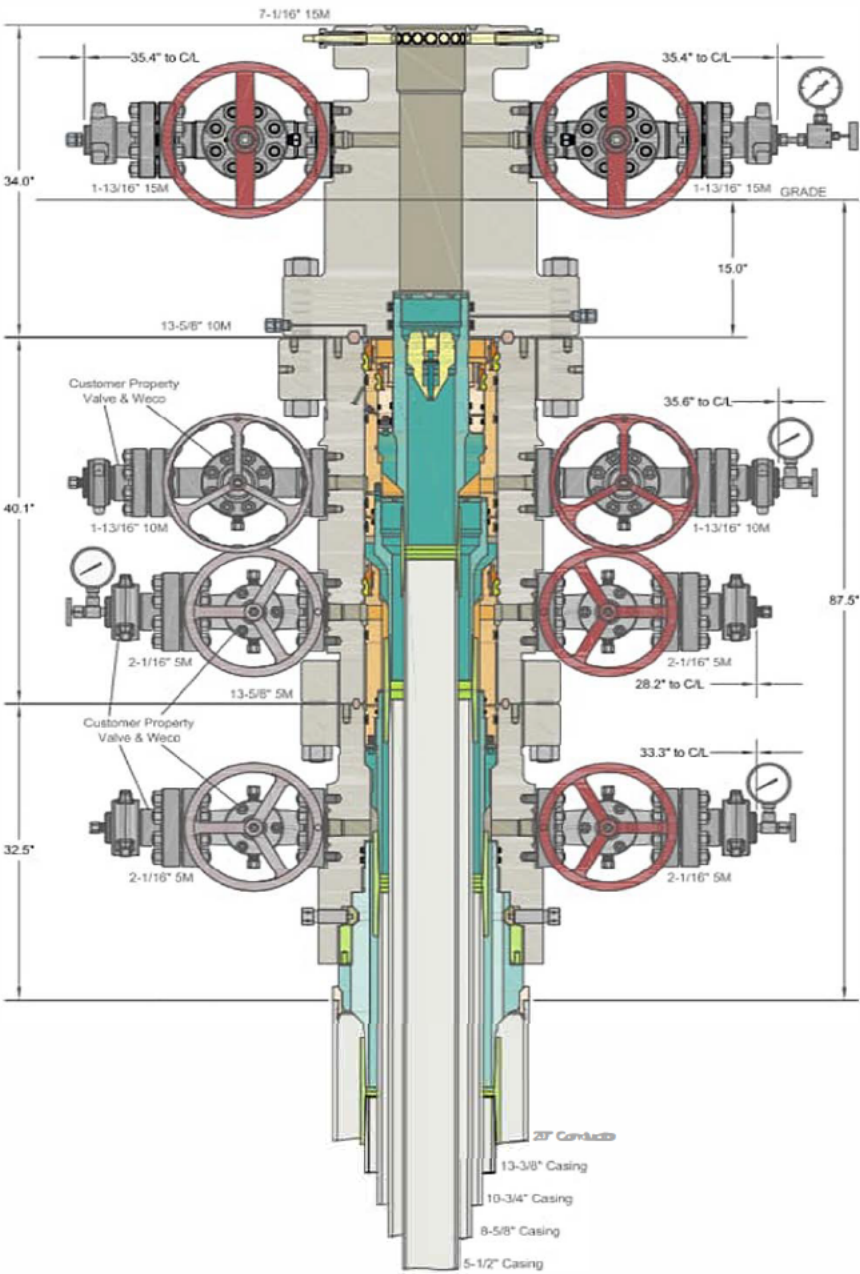
5,000 psi BOP Schematic



3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	26	20	0	187	0	187	187	J55	94	STC	5.63	2.85	Dry	4.94	Dry	9.16
Intermediate 1	17.5	13.375	0	1279	0	1279	1279	J55	40	BTC	5.12	3.23	Dry	5.64	Dry	6.01
Intermediate 2	12.25	9.625	0	3360	0	3360	3360	J55	40	BTC	3.55	1.78	Dry	3.05	Dry	2.69
Production	8.75	5.5	0	8968	0	8624	8968	P110RY	17	GeoConn	1.67	1.74	Dry	2.21	Dry	2.21
Production	7.875	5.5	8968	19235	8624	8624	10267	P110RY	17	GeoConn	1.67	1.74	Dry	2.21	Dry	2.21
BLM Min Safety Factor											1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.



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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC		Colgate Operating LLC NEW MEXICO	
20" x 13-3/8" x 10-3/4" x 8-5/8" x 5-1/2" MBU-4T-CFL-R-DBLO Sys. With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head And 10-3/4" & 7-5/8" & 5-1/2" Fluted Mandrel Casing Hangers		DRAWN	DLE
		APPRV	26OCT23
		DRAWING NO.	HBE0001038

Colgate Operating LLC

BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Colgate Operating (Colgate) requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Title 43 CFR 3172, Drilling Operations, Sections 6.b.9.iv states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. 43 CFR 3172.13, Variances from minimum standards states, "An operator may request the authorized officer to approve a variance from any of the minimum standards prescribed in [§§ 3172.6](#) through [3172.12](#). All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related minimum standard(s) are to be satisfied. The authorized officer, after considering all relevant factors, if appropriate, may approve the requested variance(s) if it is determined that the proposed alternative(s) meet or exceed the objectives of the applicable minimum standard(s)". Colgate Operating feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Colgate submits this request for the variance.

Supporting Documentation

The language used in 43 CFR 3172 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time, there have been significant changes in drilling technology. The BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR 3172 was originally released. The Colgate drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

Figure 1: Winch System attached to BOP Stack



Figure 2: BOP Winch System



American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. 43 CFR 3172 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

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API STANDARD 53

Table C.4—Initial Pressure Testing, Surface BOP Stacks

Component to be Pressure Tested	Pressure Test—Low Pressure ^{a,c} psig (MPa)	Pressure Test—High Pressure ^{a,c}	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer ^b	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers ^{a,c}	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes ^a	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes ^a	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

^a Pressure test evaluation periods shall be a minimum of five minutes.

No visible leaks.

The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

^b Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

^c For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

^d For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

^e Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

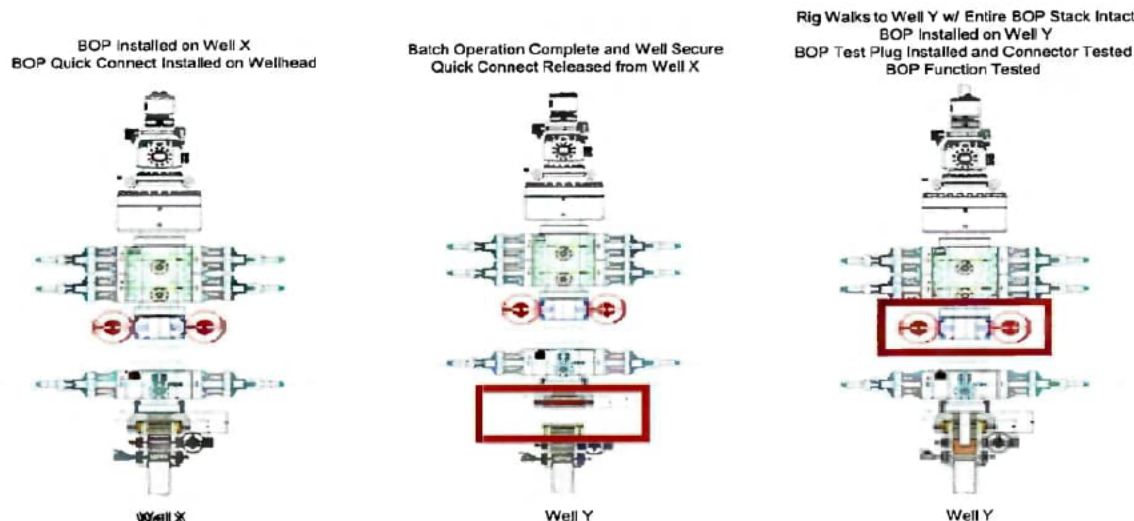
Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

Colgate feels break testing and our current procedures meet the intent of 43 CFR 3172 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. Colgate internal standards require complete BOPE tests more often than that of 43 CFR 3172 (every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, Colgate performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of 43 CFR 3172.

Procedures

- 1) Colgate will use this document for our break testing plan for New Mexico Delaware Basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
- 2) Colgate will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
 - a) A full BOP test will be conducted on the first well on the pad.
 - b) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same formation depth or shallower.
 - c) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
 - d) A full BOP test will be required prior to drilling any production hole.
- 3) After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
 - a) Between the HCV valve and choke line connection
 - b) Between the BOP quick connect and the wellhead
- 4) The BOP is then lifted and removed from the wellhead by a hydraulic system.
- 5) After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
- 6) The connections mentioned in 3a and 3b will then be reconnected.
- 7) Install test plug into the wellhead using test joint or drill pipe.
- 8) A shell test is performed against the upper pipe rams testing the two breaks.
- 9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
- 10) Function tests will be performed on the following components: lower pipe rams, blind rams, and annular.
- 11) For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
- 12) A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



Summary

A variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operations, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

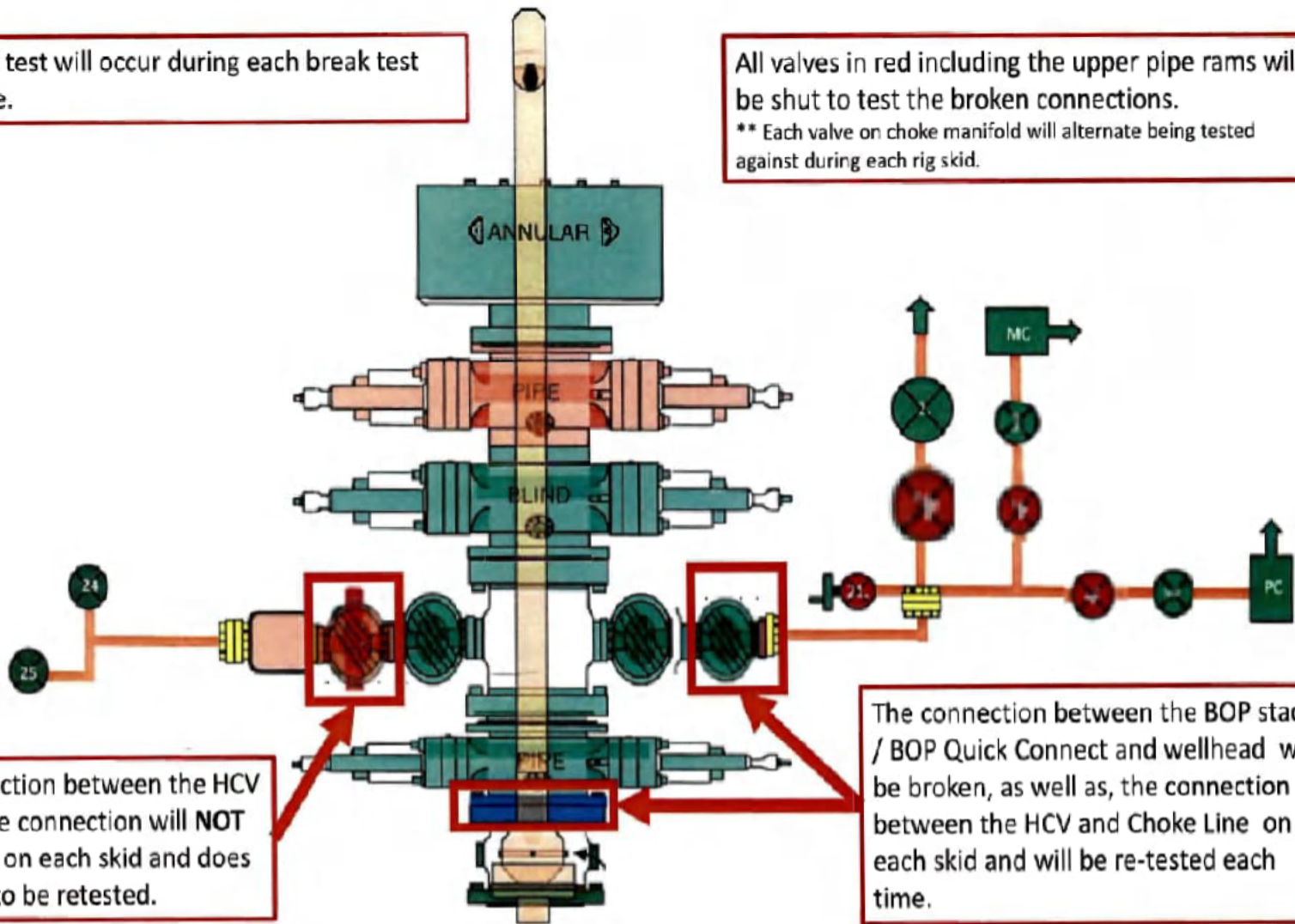
Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

- 1) After a full BOP test is conducted on the first well on the pad.
- 2) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same depth or shallower.
- 3) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
- 4) A full BOP test will be required prior to drilling the production hole.

Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.

** Each valve on choke manifold will alternate being tested against during each rig skid.



The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.



ContiTech Fluid Technology

ContiTech Oil & Marine Corp. # 11535 Brittmoore Park Dr., Houston, TX 77041-6916 USA CONSIGNEE / Ship-to address: HELMERICH & PAYNE INT'L DRILLING CO ATTN: FLEX RIG WHSE - B-BAY 210 MAGNOLIA DRIVE GALENA PARK TX 77547		Packing list / Delivery note Document No. 71461553 Document Date 28.01.2022 Customer Number 11697 Customer VAT No. Supplier Number Purchase Order No. 740362040 Purchase Order Date 18.01.2022 Sales Order Number 1388153 Sales Order Date 18.01.2022 Unloading Point RAN-No.		
Buyer: HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER 74119 TULSA		Page 1 of 2 Weights (Gross / Net) Total Gross Weight 2,507.000 LB Total Net Weight 2,507.000 LB		
Conditions Incoterms EXW Houston Ex Works				
Item	Material/Description	Quantity	Net Weight	Gross Weight
20	Buyer: Jack Peebles E-mail: Jackie.Peebles@hpinc.com Tel: 832-782-6000 Rlg/Whse: HOW 00RECERTIFY Recert of HP Hoses Serial# 67094 Commodity Code: 3" X 35 FT 10K Choke & Kill Hoses API 16C End 1: 4 - 1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4 - 1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 ring groove each end Standard: API Spec 16C - Monogrammed Working Pressure: 10.000psi Test Pressure: 15.000psi Inspection & Certification includes: External inspection of the hose & couplings Internal boroscopic inspection of hose liner Hydrostatic pressure test of hose assembly Repair of any external damage to hose body and end connections (limited to minor repairs). Clean & protect end connections Inspection Report Disposal of hose assembly if hose fails inspection and recertification process. Please Flush Hoses before sending them to our Facility.	1 PC	2,507.000 LB	2,507.000 LB

ContiTech Rubber Industrial Kft.
 H-6728 Szeged Budapesti út 10.
 P. O. Box 152 Szeged H-6701
 Phone: (62)566-700, Fax: (62)566-713
 Tax Number: 11087209-2-06
 EU Community VAT: HU11087209
 Registration No.: Cg. 0609-002502
 Registry Court: Csongrád Megyei Cégbíróság

COMMERZBANK ZRT. (HUF)
 H-1054 Budapest, Széchenyi rakpart 8.
 H-1245 Budapest P.O. Box 1070
 Account No.: 14220108-26830003
 IBAN: HU83 1422 0108 2683 0003 0000 0000
 SWIFT: COBA HU XXXX

COMMERZBANK AG Hannover (EUR)
 30159 Hannover, Theaterstr. 11-12.
 Account No.: 3 066 156 00
 Sort Code: 250 400 66
 BIC: COBAEFF250
 IBAN: DE4125040060306615600

Record Rotary Hose sleeve number on the CBC Made Hose List!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!



Hydrostatic Test Certificate

ContiTech

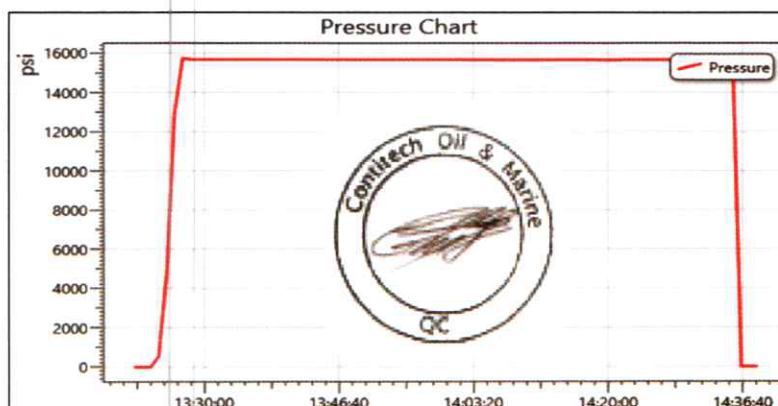
Certificate Number H100122	COM Order Reference 1388153	Customer Name & Address HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA
Customer Purchase Order No: 740362040		
Project:		
Test Center Address ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Accepted by COM Inspection Signed: Gerson Mejia-Lazo Date: 02/09/22	Accepted by Client Inspection

We certify that the goods detailed hereon have been inspected as described below by our Quality Management System, and to the best of our knowledge are found to conform the requirements of the above referenced purchase order as issued to ContiTech Oil & Marine Corporation.

Item	Part No.	Description	Qty	Serial Number	Work. Press. (psi)	Test Press. (psi)	Test Time (minutes)
20	RECERTIFICATION	3" ID 10K Choke and Kill Hose x 35ft OAL	1	67094	10,000	15,000	60

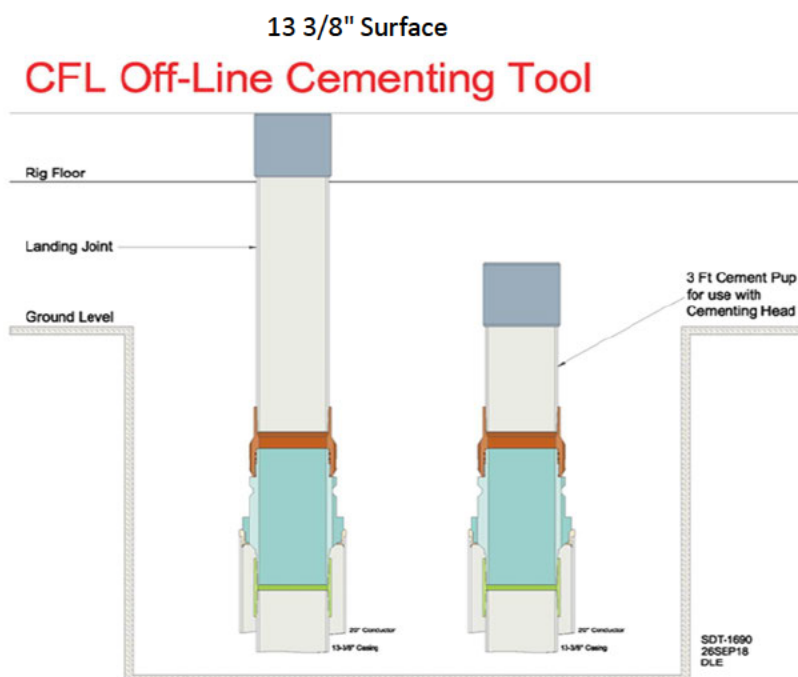
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Number	78
MaxValue	15849
MinValue	-3
AvgValue	14240
RecordName	67094-sh
RecordNumber	199

Gauge Information	
Model	ADT680
SN	21817380014
Range	(0-40000)psi
Unit	psi

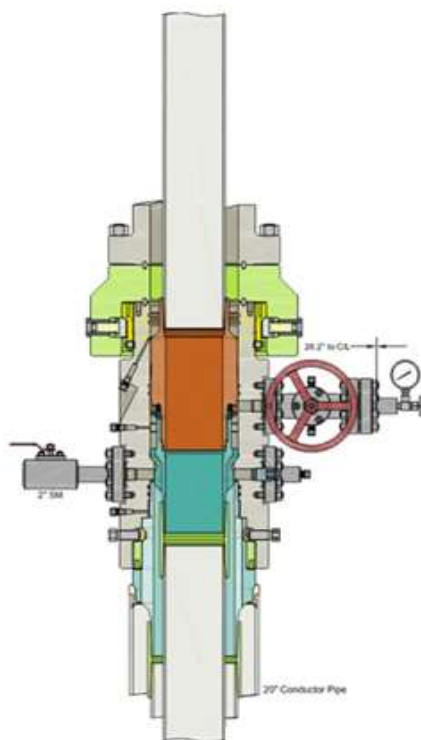


Colgate Operating Offline Cementing Procedure Surface & Intermediate Casing

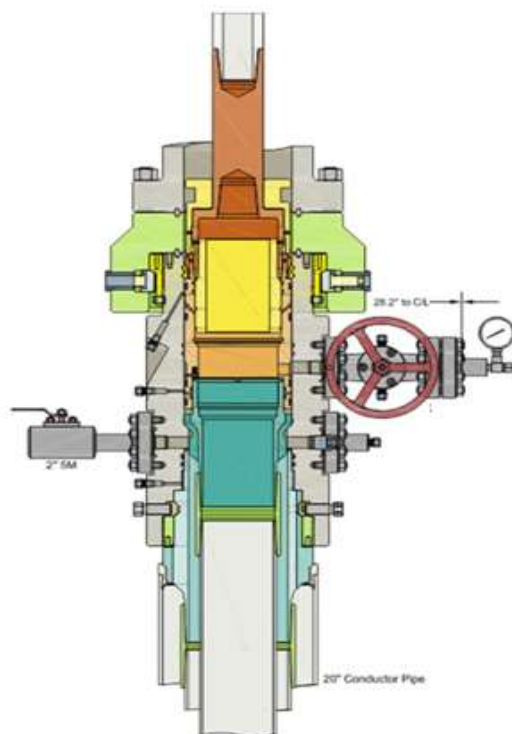
1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
 - a) If well is not static use the casing outlet valves to kill well
 - b) Drillers method will be used in well control event
 - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
 - d) Kill mud will be circulated once influx is circulated out of hole
 - e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.



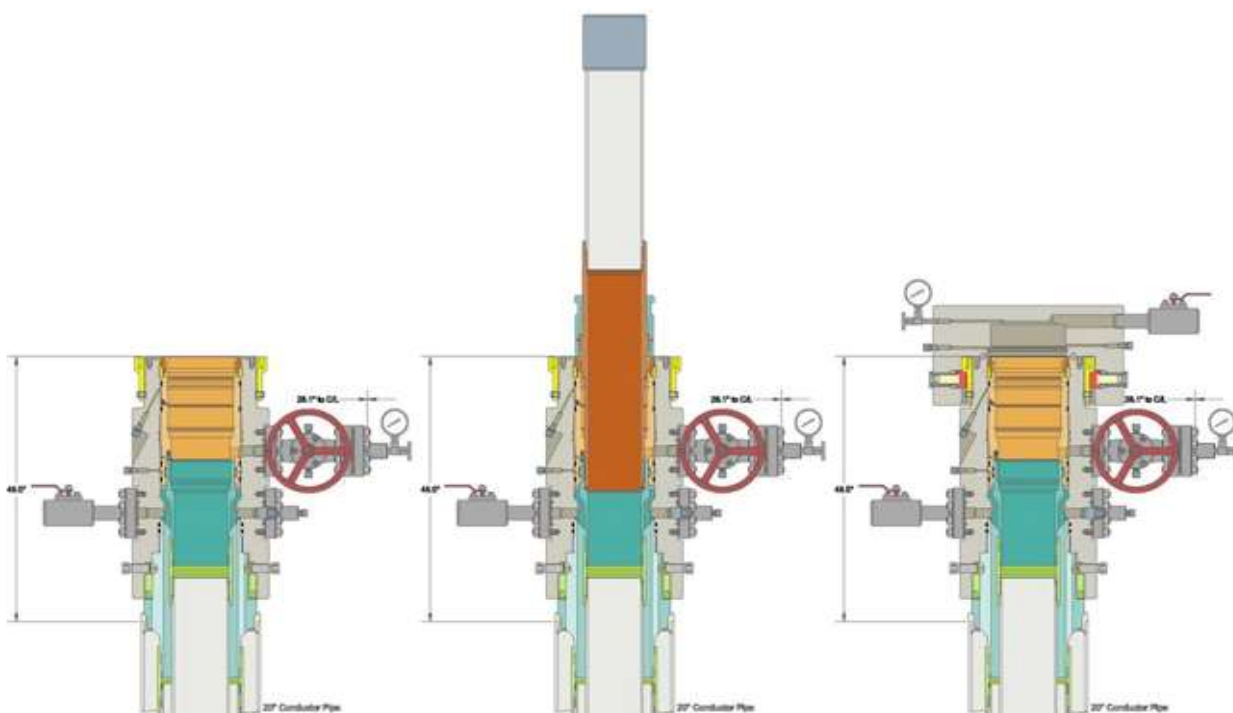
Intermediate



Run 7 5/8" Casing
Land Casing on 7 5/8" Mandrel Hanger
Cement 7 5/8" Casing
Retrieve Running Tool



Run 9 5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



Colgate Operating Multi-Well Pad Batch Drilling Procedure

Surface Casing - Colgate intends to Batch set all surface casing to a depth approved in the APD. Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land planned surface casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is greater - not to exceed 70% casing burst.

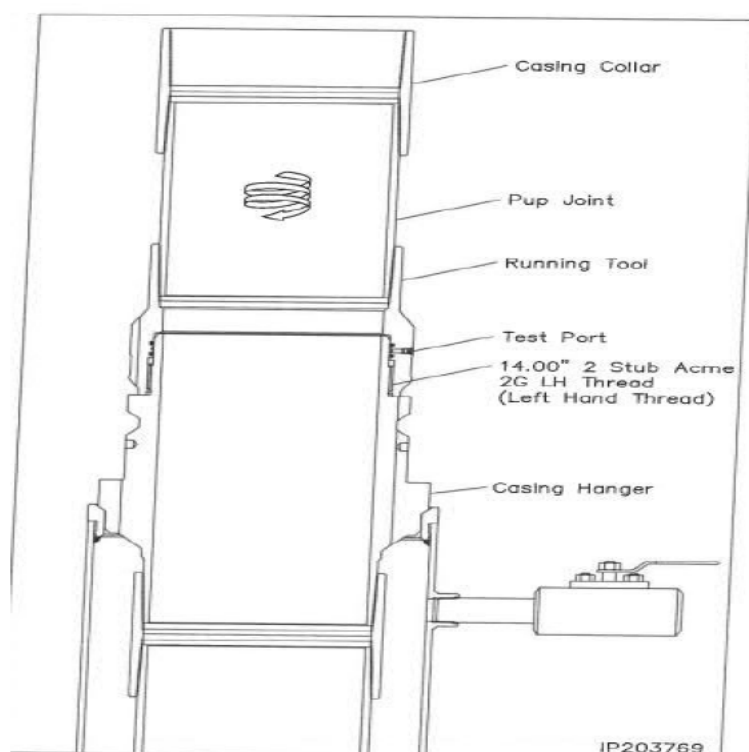


Illustration 1-1

Intermediate Casing – Colgate intends to Batch set all intermediate casing strings to a depth approved in the APD. Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior to testing BOPE, and prior to running/ cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out surface casing shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

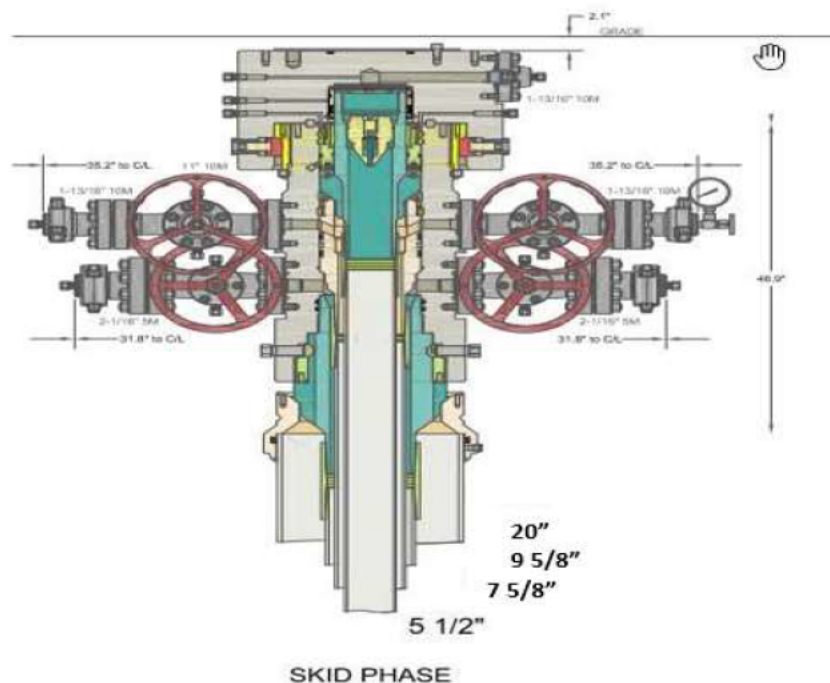


Illustration 2-2

Production Casing – Colgate intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Drilling Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run Production Casing.
6. Remove wear bushing then run Production casing to TD landing casing mandrel in wellhead.
7. Cement Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in Production mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000 psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Colgate Operating LLC
WELL NAME & NO.:	Ironhorse 35 Fed Com 172H
LOCATION:	Sec 34-19S-29E-NMP
COUNTY:	Eddy County, New Mexico ▼

COA

H ₂ S	☐ No		☒ Yes	
Potash / WIPP	☒ None	☐ Secretary	☐ R-111-Q	☐ Open Annulus ☐ WIPP
Cave / Karst	☐ Low	☐ Medium	☒ High	☐ Critical
Wellhead	☐ Conventional	☒ Multibowl	☐ Both	☐ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☒ Capitan Reef	☐ Water Disposal	☒ COM	☐ Unit
Waste Prev.	☐ Self-Certification	☐ Waste Min. Plan	☒ APD Submitted prior to 06/10/2024	
Additional Language	☒ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☒ Break Testing
	☒ Four-String	☒ Offline Cementing	☒ Fluid-Filled	

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Cherry Canyon and Brushy Canyon** formation. As a result, the Hydrogen Sulfide area must meet all requirements from 43 CFR 3176, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **20** inch surface casing shall be set at approximately **232** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. *Set depth adjusted per BLM geologist.*
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**
 - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ **Special Capitan Reef requirements:** Ensure freshwater based mud is utilized across the Capitan interval.
3. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- Cement should tie-back at least **50 feet** on top of Capitan Reef top or **200 feet** into the previous casing, whichever is greater. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Contact Eddy County Petroleum Engineering Inspection Staff:

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;

BLM NM CFO DrillingNotifications@BLM.GOV; (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - i. Notify the BLM when moving in and removing the Spudder Rig.
 - ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following

- conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
 4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
 5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
 6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
 7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
 8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - iii. Manufacturer representative shall install the test plug for the initial BOP test.
 - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
 - v. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
 - iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- iv. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- v. The results of the test shall be reported to the appropriate BLM office.
- vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- vii. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

NEW MEXICO

(SP) EDDY

IRONHORSE 35-36 FED STATE

IRONHORSE 35 FED 172H

OWB

Plan: PWP0

Standard Planning Report - Geographic

03 October, 2023

Colgate Operating
Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Company:	NEW MEXICO	TVD Reference:	KB=30 @ 3344.0usft
Project:	(SP) EDDY	MD Reference:	KB=30 @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	North Reference:	Grid
Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project	(SP) EDDY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		IRONHORSE 35-36 FED STATE			
Site Position:		Northing:	589,616.60 usft	Latitude:	32° 37' 14.151 N
From:	Map	Easting:	627,097.69 usft	Longitude:	104° 3' 17.225 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	IRONHORSE 35 FED 172H					
Well Position	+N/-S	0.0 usft	Northing:	589,550.60 usft	Latitude:	32° 37' 13.498 N
	+E/-W	0.0 usft	Easting:	627,097.55 usft	Longitude:	104° 3' 17.229 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	3,314.0 usft	

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.00	60.52	48,978.31481186

Design	PWP0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	94.85

Plan Survey Tool Program	Date	10/2/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,235.6 PWP0 (OWB)	MWD	
			OWSG_Rev2_ MWD - Star	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,500.0	10.00	185.22	2,497.5	-43.3	-4.0	2.00	2.00	0.00	185.22	
6,925.7	10.00	185.22	6,855.9	-808.7	-73.9	0.00	0.00	0.00	0.00	
7,425.7	0.00	0.00	7,353.4	-852.0	-77.9	2.00	-2.00	0.00	180.00	
8,218.8	0.00	0.00	8,146.5	-852.0	-77.9	0.00	0.00	0.00	0.00	
8,968.8	90.00	90.29	8,624.0	-854.4	399.6	12.00	12.00	12.04	90.29	
19,235.6	90.00	90.29	8,624.0	-905.9	10,666.2	0.00	0.00	0.00	0.00	LTP/BHL-IRONHOF

Colgate Operating

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Company:	NEW MEXICO	TVD Reference:	KB=30 @ 3344.0usft
Project:	(SP) EDDY	MD Reference:	KB=30 @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	North Reference:	Grid
Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
100.0	0.00	0.00	100.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
162.0	0.00	0.00	162.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
Rustler										
200.0	0.00	0.00	200.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
300.0	0.00	0.00	300.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
400.0	0.00	0.00	400.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
500.0	0.00	0.00	500.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
600.0	0.00	0.00	600.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
700.0	0.00	0.00	700.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
800.0	0.00	0.00	800.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
889.0	0.00	0.00	889.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
Salado										
900.0	0.00	0.00	900.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,254.0	0.00	0.00	1,254.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
Tansill										
1,300.0	0.00	0.00	1,300.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,404.0	0.00	0.00	1,404.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
Yates										
1,500.0	0.00	0.00	1,500.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,610.0	0.00	0.00	1,610.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
Seven Rivers										
1,700.0	0.00	0.00	1,700.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	589,550.60	627,097.55	32° 37' 13.498 N	104° 3' 17.229 W	
2,100.0	2.00	185.22	2,100.0	-1.7	-0.2	589,548.87	627,097.40	32° 37' 13.481 N	104° 3' 17.231 W	
2,200.0	4.00	185.22	2,199.8	-6.9	-0.6	589,543.65	627,096.92	32° 37' 13.430 N	104° 3' 17.237 W	
2,300.0	6.00	185.22	2,299.5	-15.6	-1.4	589,534.97	627,096.13	32° 37' 13.344 N	104° 3' 17.246 W	
2,400.0	8.00	185.22	2,398.7	-27.8	-2.5	589,522.84	627,095.02	32° 37' 13.224 N	104° 3' 17.260 W	
2,500.0	10.00	185.22	2,497.5	-43.3	-4.0	589,507.26	627,093.59	32° 37' 13.070 N	104° 3' 17.277 W	
2,575.7	10.00	185.22	2,572.0	-56.4	-5.2	589,494.17	627,092.39	32° 37' 12.940 N	104° 3' 17.291 W	
Queen										
2,600.0	10.00	185.22	2,595.9	-60.6	-5.5	589,489.97	627,092.01	32° 37' 12.898 N	104° 3' 17.296 W	
2,700.0	10.00	185.22	2,694.4	-77.9	-7.1	589,472.68	627,090.43	32° 37' 12.727 N	104° 3' 17.315 W	
2,780.8	10.00	185.22	2,774.0	-91.9	-8.4	589,458.70	627,089.15	32° 37' 12.589 N	104° 3' 17.330 W	
Capitan										
2,800.0	10.00	185.22	2,792.9	-95.2	-8.7	589,455.38	627,088.85	32° 37' 12.556 N	104° 3' 17.334 W	
2,900.0	10.00	185.22	2,891.4	-112.5	-10.3	589,438.09	627,087.27	32° 37' 12.385 N	104° 3' 17.353 W	
3,000.0	10.00	185.22	2,989.9	-129.8	-11.9	589,420.80	627,085.69	32° 37' 12.214 N	104° 3' 17.372 W	
3,100.0	10.00	185.22	3,088.3	-147.1	-13.4	589,403.51	627,084.10	32° 37' 12.043 N	104° 3' 17.391 W	
3,200.0	10.00	185.22	3,186.8	-164.4	-15.0	589,386.21	627,082.52	32° 37' 11.872 N	104° 3' 17.410 W	
3,300.0	10.00	185.22	3,285.3	-181.7	-16.6	589,368.92	627,080.94	32° 37' 11.701 N	104° 3' 17.429 W	
3,400.0	10.00	185.22	3,383.8	-199.0	-18.2	589,351.63	627,079.36	32° 37' 11.530 N	104° 3' 17.448 W	
3,426.6	10.00	185.22	3,410.0	-203.6	-18.6	589,347.03	627,078.94	32° 37' 11.484 N	104° 3' 17.453 W	
Delaware Sands										
3,500.0	10.00	185.22	3,482.3	-216.3	-19.8	589,334.33	627,077.78	32° 37' 11.359 N	104° 3' 17.467 W	
3,600.0	10.00	185.22	3,580.8	-233.6	-21.4	589,317.04	627,076.20	32° 37' 11.188 N	104° 3' 17.486 W	
3,700.0	10.00	185.22	3,679.2	-250.9	-22.9	589,299.75	627,074.62	32° 37' 11.017 N	104° 3' 17.505 W	

Colgate Operating Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Company:	NEW MEXICO	TVD Reference:	KB=30 @ 3344.0usft
Project:	(SP) EDDY	MD Reference:	KB=30 @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	North Reference:	Grid
Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
3,800.0	10.00	185.22	3,777.7	-268.1	-24.5	589,282.46	627,073.04	32° 37' 10.846 N	104° 3' 17.524 W	
3,900.0	10.00	185.22	3,876.2	-285.4	-26.1	589,265.16	627,071.46	32° 37' 10.674 N	104° 3' 17.543 W	
3,938.4	10.00	185.22	3,914.0	-292.1	-26.7	589,258.53	627,070.85	32° 37' 10.609 N	104° 3' 17.550 W	
BYCN										
4,000.0	10.00	185.22	3,974.7	-302.7	-27.7	589,247.87	627,069.87	32° 37' 10.503 N	104° 3' 17.562 W	
4,100.0	10.00	185.22	4,073.2	-320.0	-29.3	589,230.58	627,068.29	32° 37' 10.332 N	104° 3' 17.581 W	
4,200.0	10.00	185.22	4,171.6	-337.3	-30.8	589,213.29	627,066.71	32° 37' 10.161 N	104° 3' 17.600 W	
4,300.0	10.00	185.22	4,270.1	-354.6	-32.4	589,195.99	627,065.13	32° 37' 9.990 N	104° 3' 17.619 W	
4,400.0	10.00	185.22	4,368.6	-371.9	-34.0	589,178.70	627,063.55	32° 37' 9.819 N	104° 3' 17.638 W	
4,500.0	10.00	185.22	4,467.1	-389.2	-35.6	589,161.41	627,061.97	32° 37' 9.648 N	104° 3' 17.657 W	
4,600.0	10.00	185.22	4,565.6	-406.5	-37.2	589,144.11	627,060.39	32° 37' 9.477 N	104° 3' 17.676 W	
4,700.0	10.00	185.22	4,664.0	-423.8	-38.7	589,126.82	627,058.81	32° 37' 9.306 N	104° 3' 17.695 W	
4,800.0	10.00	185.22	4,762.5	-441.1	-40.3	589,109.53	627,057.23	32° 37' 9.135 N	104° 3' 17.714 W	
4,900.0	10.00	185.22	4,861.0	-458.4	-41.9	589,092.24	627,055.64	32° 37' 8.964 N	104° 3' 17.733 W	
5,000.0	10.00	185.22	4,959.5	-475.7	-43.5	589,074.94	627,054.06	32° 37' 8.793 N	104° 3' 17.752 W	
5,100.0	10.00	185.22	5,058.0	-493.0	-45.1	589,057.65	627,052.48	32° 37' 8.622 N	104° 3' 17.771 W	
5,200.0	10.00	185.22	5,156.4	-510.2	-46.7	589,040.36	627,050.90	32° 37' 8.451 N	104° 3' 17.790 W	
5,300.0	10.00	185.22	5,254.9	-527.5	-48.2	589,023.07	627,049.32	32° 37' 8.279 N	104° 3' 17.809 W	
5,400.0	10.00	185.22	5,353.4	-544.8	-49.8	589,005.77	627,047.74	32° 37' 8.108 N	104° 3' 17.828 W	
5,500.0	10.00	185.22	5,451.9	-562.1	-51.4	588,988.48	627,046.16	32° 37' 7.937 N	104° 3' 17.847 W	
5,600.0	10.00	185.22	5,550.4	-579.4	-53.0	588,971.19	627,044.58	32° 37' 7.766 N	104° 3' 17.866 W	
5,700.0	10.00	185.22	5,648.9	-596.7	-54.6	588,953.90	627,043.00	32° 37' 7.595 N	104° 3' 17.885 W	
5,760.1	10.00	185.22	5,708.0	-607.1	-55.5	588,943.51	627,042.05	32° 37' 7.492 N	104° 3' 17.897 W	
Bone Spring										
5,800.0	10.00	185.22	5,747.3	-614.0	-56.1	588,936.60	627,041.41	32° 37' 7.424 N	104° 3' 17.904 W	
5,900.0	10.00	185.22	5,845.8	-631.3	-57.7	588,919.31	627,039.83	32° 37' 7.253 N	104° 3' 17.923 W	
6,000.0	10.00	185.22	5,944.3	-648.6	-59.3	588,902.02	627,038.25	32° 37' 7.082 N	104° 3' 17.942 W	
6,100.0	10.00	185.22	6,042.8	-665.9	-60.9	588,884.72	627,036.67	32° 37' 6.911 N	104° 3' 17.961 W	
6,200.0	10.00	185.22	6,141.3	-683.2	-62.5	588,867.43	627,035.09	32° 37' 6.740 N	104° 3' 17.980 W	
6,300.0	10.00	185.22	6,239.7	-700.5	-64.0	588,850.14	627,033.51	32° 37' 6.569 N	104° 3' 17.999 W	
6,400.0	10.00	185.22	6,338.2	-717.8	-65.6	588,832.85	627,031.93	32° 37' 6.398 N	104° 3' 18.018 W	
6,500.0	10.00	185.22	6,436.7	-735.0	-67.2	588,815.55	627,030.35	32° 37' 6.227 N	104° 3' 18.037 W	
6,600.0	10.00	185.22	6,535.2	-752.3	-68.8	588,798.26	627,028.77	32° 37' 6.055 N	104° 3' 18.056 W	
6,700.0	10.00	185.22	6,633.7	-769.6	-70.4	588,780.97	627,027.18	32° 37' 5.884 N	104° 3' 18.076 W	
6,800.0	10.00	185.22	6,732.1	-786.9	-72.0	588,763.68	627,025.60	32° 37' 5.713 N	104° 3' 18.095 W	
6,900.0	10.00	185.22	6,830.6	-804.2	-73.5	588,746.38	627,024.02	32° 37' 5.542 N	104° 3' 18.114 W	
6,925.7	10.00	185.22	6,855.9	-808.7	-73.9	588,741.94	627,023.62	32° 37' 5.498 N	104° 3' 18.118 W	
7,000.0	8.51	185.22	6,929.3	-820.6	-75.0	588,730.04	627,022.53	32° 37' 5.381 N	104° 3' 18.132 W	
7,100.0	6.51	185.22	7,028.4	-833.6	-76.2	588,717.02	627,021.34	32° 37' 5.252 N	104° 3' 18.146 W	
7,177.0	4.97	185.22	7,105.0	-841.3	-76.9	588,709.34	627,020.64	32° 37' 5.176 N	104° 3' 18.154 W	
FBSG										
7,200.0	4.51	185.22	7,127.9	-843.2	-77.1	588,707.45	627,020.46	32° 37' 5.157 N	104° 3' 18.156 W	
7,300.0	2.51	185.22	7,227.7	-849.3	-77.6	588,701.35	627,019.90	32° 37' 5.097 N	104° 3' 18.163 W	
7,400.0	0.51	185.22	7,327.7	-851.9	-77.9	588,698.72	627,019.66	32° 37' 5.071 N	104° 3' 18.166 W	
7,425.7	0.00	0.00	7,353.4	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
7,500.0	0.00	0.00	7,427.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
7,600.0	0.00	0.00	7,527.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
7,700.0	0.00	0.00	7,627.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
7,800.0	0.00	0.00	7,727.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
7,900.0	0.00	0.00	7,827.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
7,946.3	0.00	0.00	7,874.0	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
SBSG										
8,000.0	0.00	0.00	7,927.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
8,100.0	0.00	0.00	8,027.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	

Colgate Operating Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Company:	NEW MEXICO	TVD Reference:	KB=30 @ 3344.0usft
Project:	(SP) EDDY	MD Reference:	KB=30 @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	North Reference:	Grid
Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,200.0	0.00	0.00	8,127.7	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
8,218.8	0.00	0.00	8,146.5	-852.0	-77.9	588,698.60	627,019.65	32° 37' 5.070 N	104° 3' 18.166 W	
8,300.0	9.74	90.29	8,227.3	-852.0	-71.0	588,698.57	627,026.54	32° 37' 5.069 N	104° 3' 18.086 W	
8,400.0	21.74	90.29	8,323.4	-852.2	-43.9	588,698.43	627,053.62	32° 37' 5.067 N	104° 3' 17.769 W	
8,500.0	33.74	90.29	8,411.7	-852.4	2.5	588,698.20	627,100.09	32° 37' 5.063 N	104° 3' 17.226 W	
8,600.0	45.74	90.29	8,488.5	-852.7	66.4	588,697.88	627,163.91	32° 37' 5.059 N	104° 3' 16.479 W	
8,700.0	57.74	90.29	8,550.3	-853.1	144.7	588,697.49	627,242.29	32° 37' 5.053 N	104° 3' 15.563 W	
8,800.0	69.74	90.29	8,594.4	-853.6	234.3	588,697.04	627,331.80	32° 37' 5.046 N	104° 3' 14.516 W	
8,900.0	81.74	90.29	8,619.0	-854.1	331.0	588,696.55	627,428.55	32° 37' 5.039 N	104° 3' 13.385 W	
8,968.8	90.00	90.29	8,624.0	-854.4	399.6	588,696.21	627,497.11	32° 37' 5.033 N	104° 3' 12.584 W	
9,000.0	90.00	90.29	8,624.0	-854.6	430.8	588,696.05	627,528.31	32° 37' 5.031 N	104° 3' 12.219 W	
9,100.0	90.00	90.29	8,624.0	-855.1	530.8	588,695.55	627,628.31	32° 37' 5.023 N	104° 3' 11.050 W	
9,200.0	90.00	90.29	8,624.0	-855.6	630.8	588,695.05	627,728.30	32° 37' 5.016 N	104° 3' 9.880 W	
9,300.0	90.00	90.29	8,624.0	-856.1	730.7	588,694.54	627,828.30	32° 37' 5.008 N	104° 3' 8.711 W	
9,400.0	90.00	90.29	8,624.0	-856.6	830.7	588,694.04	627,928.30	32° 37' 5.001 N	104° 3' 7.542 W	
9,500.0	90.00	90.29	8,624.0	-857.1	930.7	588,693.54	628,028.30	32° 37' 4.993 N	104° 3' 6.373 W	
9,600.0	90.00	90.29	8,624.0	-857.6	1,030.7	588,693.04	628,128.30	32° 37' 4.986 N	104° 3' 5.204 W	
9,700.0	90.00	90.29	8,624.0	-858.1	1,130.7	588,692.54	628,228.30	32° 37' 4.978 N	104° 3' 4.034 W	
9,800.0	90.00	90.29	8,624.0	-858.6	1,230.7	588,692.04	628,328.30	32° 37' 4.970 N	104° 3' 2.865 W	
9,900.0	90.00	90.29	8,624.0	-859.1	1,330.7	588,691.53	628,428.30	32° 37' 4.963 N	104° 3' 1.696 W	
10,000.0	90.00	90.29	8,624.0	-859.6	1,430.7	588,691.03	628,528.29	32° 37' 4.955 N	104° 3' 0.527 W	
10,100.0	90.00	90.29	8,624.0	-860.1	1,530.7	588,690.53	628,628.29	32° 37' 4.948 N	104° 2' 59.358 W	
10,200.0	90.00	90.29	8,624.0	-860.6	1,630.7	588,690.03	628,728.29	32° 37' 4.940 N	104° 2' 58.188 W	
10,300.0	90.00	90.29	8,624.0	-861.1	1,730.7	588,689.53	628,828.29	32° 37' 4.932 N	104° 2' 57.019 W	
10,400.0	90.00	90.29	8,624.0	-861.6	1,830.7	588,689.02	628,928.29	32° 37' 4.925 N	104° 2' 55.850 W	
10,500.0	90.00	90.29	8,624.0	-862.1	1,930.7	588,688.52	629,028.29	32° 37' 4.917 N	104° 2' 54.681 W	
10,600.0	90.00	90.29	8,624.0	-862.6	2,030.7	588,688.02	629,128.29	32° 37' 4.910 N	104° 2' 53.512 W	
10,700.0	90.00	90.29	8,624.0	-863.1	2,130.7	588,687.52	629,228.29	32° 37' 4.902 N	104° 2' 52.342 W	
10,800.0	90.00	90.29	8,624.0	-863.6	2,230.7	588,687.02	629,328.28	32° 37' 4.894 N	104° 2' 51.173 W	
10,900.0	90.00	90.29	8,624.0	-864.1	2,330.7	588,686.52	629,428.28	32° 37' 4.887 N	104° 2' 50.004 W	
11,000.0	90.00	90.29	8,624.0	-864.6	2,430.7	588,686.01	629,528.28	32° 37' 4.879 N	104° 2' 48.835 W	
11,100.0	90.00	90.29	8,624.0	-865.1	2,530.7	588,685.51	629,628.28	32° 37' 4.871 N	104° 2' 47.666 W	
11,200.0	90.00	90.29	8,624.0	-865.6	2,630.7	588,685.01	629,728.28	32° 37' 4.864 N	104° 2' 46.496 W	
11,300.0	90.00	90.29	8,624.0	-866.1	2,730.7	588,684.51	629,828.28	32° 37' 4.856 N	104° 2' 45.327 W	
11,400.0	90.00	90.29	8,624.0	-866.6	2,830.7	588,684.01	629,928.28	32° 37' 4.848 N	104° 2' 44.158 W	
11,500.0	90.00	90.29	8,624.0	-867.1	2,930.7	588,683.50	630,028.28	32° 37' 4.841 N	104° 2' 42.989 W	
11,600.0	90.00	90.29	8,624.0	-867.6	3,030.7	588,683.00	630,128.27	32° 37' 4.833 N	104° 2' 41.820 W	
11,700.0	90.00	90.29	8,624.0	-868.1	3,130.7	588,682.50	630,228.27	32° 37' 4.826 N	104° 2' 40.650 W	
11,800.0	90.00	90.29	8,624.0	-868.6	3,230.7	588,682.00	630,328.27	32° 37' 4.818 N	104° 2' 39.481 W	
11,900.0	90.00	90.29	8,624.0	-869.1	3,330.7	588,681.50	630,428.27	32° 37' 4.810 N	104° 2' 38.312 W	
12,000.0	90.00	90.29	8,624.0	-869.6	3,430.7	588,680.99	630,528.27	32° 37' 4.803 N	104° 2' 37.143 W	
12,100.0	90.00	90.29	8,624.0	-870.1	3,530.7	588,680.49	630,628.27	32° 37' 4.795 N	104° 2' 35.974 W	
12,200.0	90.00	90.29	8,624.0	-870.6	3,630.7	588,679.99	630,728.27	32° 37' 4.787 N	104° 2' 34.804 W	
12,300.0	90.00	90.29	8,624.0	-871.1	3,730.7	588,679.49	630,828.27	32° 37' 4.780 N	104° 2' 33.635 W	
12,400.0	90.00	90.29	8,624.0	-871.6	3,830.7	588,678.99	630,928.26	32° 37' 4.772 N	104° 2' 32.466 W	
12,500.0	90.00	90.29	8,624.0	-872.1	3,930.7	588,678.49	631,028.26	32° 37' 4.764 N	104° 2' 31.297 W	
12,600.0	90.00	90.29	8,624.0	-872.6	4,030.7	588,677.98	631,128.26	32° 37' 4.756 N	104° 2' 30.128 W	
12,700.0	90.00	90.29	8,624.0	-873.1	4,130.7	588,677.48	631,228.26	32° 37' 4.749 N	104° 2' 28.958 W	
12,800.0	90.00	90.29	8,624.0	-873.6	4,230.7	588,676.98	631,328.26	32° 37' 4.741 N	104° 2' 27.789 W	
12,900.0	90.00	90.29	8,624.0	-874.1	4,330.7	588,676.48	631,428.26	32° 37' 4.733 N	104° 2' 26.620 W	
13,000.0	90.00	90.29	8,624.0	-874.6	4,430.7	588,675.98	631,528.26	32° 37' 4.726 N	104° 2' 25.451 W	
13,100.0	90.00	90.29	8,624.0	-875.1	4,530.7	588,675.47	631,628.26	32° 37' 4.718 N	104° 2' 24.282 W	
13,200.0	90.00	90.29	8,624.0	-875.6	4,630.7	588,674.97	631,728.25	32° 37' 4.710 N	104° 2' 23.112 W	
13,300.0	90.00	90.29	8,624.0	-876.1	4,730.7	588,674.47	631,828.25	32° 37' 4.703 N	104° 2' 21.943 W	
13,400.0	90.00	90.29	8,624.0	-876.6	4,830.7	588,673.97	631,928.25	32° 37' 4.695 N	104° 2' 20.774 W	

Colgate Operating

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Company:	NEW MEXICO	TVD Reference:	KB=30 @ 3344.0usft
Project:	(SP) EDDY	MD Reference:	KB=30 @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	North Reference:	Grid
Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,500.0	90.00	90.29	8,624.0	-877.1	4,930.7	588,673.47	632,028.25	32° 37' 4.687 N	104° 2' 19.605 W	
13,600.0	90.00	90.29	8,624.0	-877.6	5,030.7	588,672.97	632,128.25	32° 37' 4.680 N	104° 2' 18.436 W	
13,700.0	90.00	90.29	8,624.0	-878.1	5,130.7	588,672.46	632,228.25	32° 37' 4.672 N	104° 2' 17.266 W	
13,800.0	90.00	90.29	8,624.0	-878.6	5,230.7	588,671.96	632,328.25	32° 37' 4.664 N	104° 2' 16.097 W	
13,900.0	90.00	90.29	8,624.0	-879.1	5,330.7	588,671.46	632,428.25	32° 37' 4.656 N	104° 2' 14.928 W	
14,000.0	90.00	90.29	8,624.0	-879.6	5,430.7	588,670.96	632,528.24	32° 37' 4.649 N	104° 2' 13.759 W	
14,100.0	90.00	90.29	8,624.0	-880.1	5,530.7	588,670.46	632,628.24	32° 37' 4.641 N	104° 2' 12.590 W	
14,200.0	90.00	90.29	8,624.0	-880.6	5,630.7	588,669.95	632,728.24	32° 37' 4.633 N	104° 2' 11.420 W	
14,300.0	90.00	90.29	8,624.0	-881.2	5,730.7	588,669.45	632,828.24	32° 37' 4.625 N	104° 2' 10.251 W	
14,400.0	90.00	90.29	8,624.0	-881.7	5,830.7	588,668.95	632,928.24	32° 37' 4.618 N	104° 2' 9.082 W	
14,500.0	90.00	90.29	8,624.0	-882.2	5,930.7	588,668.45	633,028.24	32° 37' 4.610 N	104° 2' 7.913 W	
14,600.0	90.00	90.29	8,624.0	-882.7	6,030.7	588,667.95	633,128.24	32° 37' 4.602 N	104° 2' 6.744 W	
14,700.0	90.00	90.29	8,624.0	-883.2	6,130.7	588,667.44	633,228.24	32° 37' 4.595 N	104° 2' 5.574 W	
14,800.0	90.00	90.29	8,624.0	-883.7	6,230.7	588,666.94	633,328.23	32° 37' 4.587 N	104° 2' 4.405 W	
14,900.0	90.00	90.29	8,624.0	-884.2	6,330.7	588,666.44	633,428.23	32° 37' 4.579 N	104° 2' 3.236 W	
15,000.0	90.00	90.29	8,624.0	-884.7	6,430.7	588,665.94	633,528.23	32° 37' 4.571 N	104° 2' 2.067 W	
15,100.0	90.00	90.29	8,624.0	-885.2	6,530.7	588,665.44	633,628.23	32° 37' 4.564 N	104° 2' 0.898 W	
15,200.0	90.00	90.29	8,624.0	-885.7	6,630.7	588,664.94	633,728.23	32° 37' 4.556 N	104° 1' 59.728 W	
15,300.0	90.00	90.29	8,624.0	-886.2	6,730.7	588,664.43	633,828.23	32° 37' 4.548 N	104° 1' 58.559 W	
15,400.0	90.00	90.29	8,624.0	-886.7	6,830.7	588,663.93	633,928.23	32° 37' 4.540 N	104° 1' 57.390 W	
15,500.0	90.00	90.29	8,624.0	-887.2	6,930.7	588,663.43	634,028.23	32° 37' 4.532 N	104° 1' 56.221 W	
15,600.0	90.00	90.29	8,624.0	-887.7	7,030.7	588,662.93	634,128.22	32° 37' 4.525 N	104° 1' 55.052 W	
15,700.0	90.00	90.29	8,624.0	-888.2	7,130.7	588,662.43	634,228.22	32° 37' 4.517 N	104° 1' 53.882 W	
15,800.0	90.00	90.29	8,624.0	-888.7	7,230.7	588,661.92	634,328.22	32° 37' 4.509 N	104° 1' 52.713 W	
15,900.0	90.00	90.29	8,624.0	-889.2	7,330.7	588,661.42	634,428.22	32° 37' 4.501 N	104° 1' 51.544 W	
16,000.0	90.00	90.29	8,624.0	-889.7	7,430.7	588,660.92	634,528.22	32° 37' 4.494 N	104° 1' 50.375 W	
16,100.0	90.00	90.29	8,624.0	-890.2	7,530.7	588,660.42	634,628.22	32° 37' 4.486 N	104° 1' 49.206 W	
16,200.0	90.00	90.29	8,624.0	-890.7	7,630.7	588,659.92	634,728.22	32° 37' 4.478 N	104° 1' 48.036 W	
16,300.0	90.00	90.29	8,624.0	-891.2	7,730.7	588,659.42	634,828.22	32° 37' 4.470 N	104° 1' 46.867 W	
16,400.0	90.00	90.29	8,624.0	-891.7	7,830.7	588,658.91	634,928.21	32° 37' 4.462 N	104° 1' 45.698 W	
16,500.0	90.00	90.29	8,624.0	-892.2	7,930.7	588,658.41	635,028.21	32° 37' 4.455 N	104° 1' 44.529 W	
16,600.0	90.00	90.29	8,624.0	-892.7	8,030.7	588,657.91	635,128.21	32° 37' 4.447 N	104° 1' 43.360 W	
16,700.0	90.00	90.29	8,624.0	-893.2	8,130.7	588,657.41	635,228.21	32° 37' 4.439 N	104° 1' 42.190 W	
16,800.0	90.00	90.29	8,624.0	-893.7	8,230.7	588,656.91	635,328.21	32° 37' 4.431 N	104° 1' 41.021 W	
16,900.0	90.00	90.29	8,624.0	-894.2	8,330.7	588,656.40	635,428.21	32° 37' 4.423 N	104° 1' 39.852 W	
17,000.0	90.00	90.29	8,624.0	-894.7	8,430.7	588,655.90	635,528.21	32° 37' 4.416 N	104° 1' 38.683 W	
17,100.0	90.00	90.29	8,624.0	-895.2	8,530.7	588,655.40	635,628.21	32° 37' 4.408 N	104° 1' 37.514 W	
17,200.0	90.00	90.29	8,624.0	-895.7	8,630.7	588,654.90	635,728.20	32° 37' 4.400 N	104° 1' 36.345 W	
17,300.0	90.00	90.29	8,624.0	-896.2	8,730.6	588,654.40	635,828.20	32° 37' 4.392 N	104° 1' 35.175 W	
17,400.0	90.00	90.29	8,624.0	-896.7	8,830.6	588,653.90	635,928.20	32° 37' 4.384 N	104° 1' 34.006 W	
17,500.0	90.00	90.29	8,624.0	-897.2	8,930.6	588,653.39	636,028.20	32° 37' 4.377 N	104° 1' 32.837 W	
17,600.0	90.00	90.29	8,624.0	-897.7	9,030.6	588,652.89	636,128.20	32° 37' 4.369 N	104° 1' 31.668 W	
17,700.0	90.00	90.29	8,624.0	-898.2	9,130.6	588,652.39	636,228.20	32° 37' 4.361 N	104° 1' 30.499 W	
17,800.0	90.00	90.29	8,624.0	-898.7	9,230.6	588,651.89	636,328.20	32° 37' 4.353 N	104° 1' 29.329 W	
17,900.0	90.00	90.29	8,624.0	-899.2	9,330.6	588,651.39	636,428.20	32° 37' 4.345 N	104° 1' 28.160 W	
18,000.0	90.00	90.29	8,624.0	-899.7	9,430.6	588,650.88	636,528.19	32° 37' 4.337 N	104° 1' 26.991 W	
18,100.0	90.00	90.29	8,624.0	-900.2	9,530.6	588,650.38	636,628.19	32° 37' 4.329 N	104° 1' 25.822 W	
18,200.0	90.00	90.29	8,624.0	-900.7	9,630.6	588,649.88	636,728.19	32° 37' 4.322 N	104° 1' 24.653 W	
18,300.0	90.00	90.29	8,624.0	-901.2	9,730.6	588,649.38	636,828.19	32° 37' 4.314 N	104° 1' 23.483 W	
18,400.0	90.00	90.29	8,624.0	-901.7	9,830.6	588,648.88	636,928.19	32° 37' 4.306 N	104° 1' 22.314 W	
18,500.0	90.00	90.29	8,624.0	-902.2	9,930.6	588,648.37	637,028.19	32° 37' 4.298 N	104° 1' 21.145 W	
18,600.0	90.00	90.29	8,624.0	-902.7	10,030.6	588,647.87	637,128.19	32° 37' 4.290 N	104° 1' 19.976 W	
18,700.0	90.00	90.29	8,624.0	-903.2	10,130.6	588,647.37	637,228.19	32° 37' 4.282 N	104° 1' 18.807 W	
18,800.0	90.00	90.29	8,624.0	-903.7	10,230.6	588,646.87	637,328.18	32° 37' 4.274 N	104° 1' 17.637 W	
18,900.0	90.00	90.29	8,624.0	-904.2	10,330.6	588,646.37	637,428.18	32° 37' 4.267 N	104° 1' 16.468 W	

Colgate Operating
Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Company:	NEW MEXICO	TVD Reference:	KB=30 @ 3344.0usft
Project:	(SP) EDDY	MD Reference:	KB=30 @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	North Reference:	Grid
Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,000.0	90.00	90.29	8,624.0	-904.7	10,430.6	588,645.87	637,528.18	32° 37' 4.259 N	104° 1' 15.299 W
19,100.0	90.00	90.29	8,624.0	-905.2	10,530.6	588,645.36	637,628.18	32° 37' 4.251 N	104° 1' 14.130 W
19,200.0	90.00	90.29	8,624.0	-905.7	10,630.6	588,644.86	637,728.18	32° 37' 4.243 N	104° 1' 12.961 W
19,235.6	90.00	90.29	8,624.0	-905.9	10,666.2	588,644.68	637,763.76	32° 37' 4.240 N	104° 1' 12.545 W

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FTP/PP-IRONHORSE	0.00	0.00	8,624.0	-856.1	299.3	588,694.50	627,396.83	32° 37' 5.019 N	104° 3' 13.756 W
- plan misses target center by 10.7usft at 8870.4usft MD (8613.9 TVD, -853.9 N, 301.9 E)									
- Point									
LTP/BHL-IRONHORS	0.00	0.00	8,624.0	-905.9	10,666.2	588,644.68	637,763.76	32° 37' 4.240 N	104° 1' 12.545 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
162.0	162.0	Rustler				
889.0	889.0	Salado				
1,254.0	1,254.0	Tansill				
1,404.0	1,404.0	Yates				
1,610.0	1,610.0	Seven Rivers				
2,575.7	2,572.0	Queen				
2,780.8	2,774.0	Capitan				
3,426.6	3,410.0	Delaware Sands				
3,938.4	3,914.0	BYCN		0.00		
5,760.1	5,708.0	Bone Spring				
7,177.0	7,105.0	FBSG				
7,946.3	7,874.0	SBSG				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,000.0	2,000.0	0.0	0.0	Start Build 2.00	
2,500.0	2,497.5	-43.3	-4.0	Start 4425.7 hold at 2500.0 MD	
6,925.7	6,855.9	-808.7	-73.9	Start Drop -2.00	
7,425.7	7,353.4	-852.0	-77.9	Start 793.1 hold at 7425.7 MD	
8,218.8	8,146.5	-852.0	-77.9	Start DLS 12.00 TFO 90.29	
8,968.8	8,624.0	-854.4	399.6	Start 10266.8 hold at 8968.8 MD	
19,235.6	8,624.0	-905.9	10,666.2	TD at 19235.6	

NEW MEXICO

(SP) EDDY

IRONHORSE 35-36 FED STATE

IRONHORSE 35 FED 172H

OWB

PWP0

Anticollision Report

03 October, 2023

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference	PWP0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 20,000.0usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/3/2023		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	19,235.6	PWP0 (OWB)	MWD	OWSG_Rev2_ MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
IRONHORSE 35-36 FED STATE						
Black Diamond 34 Fed Com 122H - AWP - FINAL MWD	2,073.0	2,078.5	123.5	109.1	8.589	CC
Black Diamond 34 Fed Com 122H - AWP - FINAL MWD	2,100.0	2,105.4	123.6	109.1	8.488	ES
Black Diamond 34 Fed Com 122H - AWP - FINAL MWD	3,600.0	3,610.8	194.3	169.4	7.782	SF
Black Diamond 34 Fed Com 131H - AWP - FINAL MWD	958.7	960.1	182.3	175.8	27.997	CC, ES
Black Diamond 34 Fed Com 131H - AWP - FINAL MWD	2,200.0	2,192.4	245.9	230.6	16.106	SF
Black Diamond 34 Fed Com 132H - AWP - FINAL MWD	2,745.6	2,750.8	49.4	30.3	2.583	CC
Black Diamond 34 Fed Com 132H - AWP - FINAL MWD	3,000.0	3,005.1	50.6	29.7	2.419	ES
Black Diamond 34 Fed Com 132H - AWP - FINAL MWD	8,703.1	8,645.6	120.0	59.4	1.980	SF
IRONHORSE 35 FED 131H - OWB - PWP0	1,700.0	1,700.0	165.0	153.3	14.076	CC, ES
IRONHORSE 35 FED 131H - OWB - PWP0	19,235.6	19,818.1	2,060.4	1,559.1	4.110	SF
IRONHORSE 35 FED 132H - OWB - PWP0	2,000.0	2,000.0	99.0	85.1	7.136	CC, ES
IRONHORSE 35 FED 132H - OWB - PWP0	19,235.6	19,847.1	872.1	460.4	2.119	SF
IRONHORSE 35 FED 200H - OWB - PWP0	2,000.0	2,000.0	132.0	118.1	9.515	CC, ES
IRONHORSE 35 FED 200H - OWB - PWP0	19,235.6	20,068.8	1,528.2	1,069.1	3.329	SF
IRONHORSE 35-36 FED 171H - OWB - PWP0	2,000.0	2,000.0	33.0	19.1	2.379	CC, ES, SF
IRONHORSE 35-36 FED 201H - OWB - PWP0	2,298.5	2,305.3	66.0	50.2	4.175	CC
IRONHORSE 35-36 FED 201H - OWB - PWP0	2,400.0	2,408.9	66.0	49.6	4.017	ES
IRONHORSE 35-36 FED 201H - OWB - PWP0	8,250.0	8,239.1	146.6	85.2	2.386	SF
Parkway ST 36 #1 - AWP - INC ONLY	16,025.0	8,635.4	329.5	-60.1	0.846	Level 3, CC, ES, SF
SILVER BAR						
SILVER BAR 35 FED ST COM 203H - OWB - PWP0	8,218.8	8,132.5	2,002.4	1,944.4	34.509	CC
SILVER BAR 35 FED ST COM 203H - OWB - PWP0	19,235.6	19,995.6	2,141.0	1,791.0	6.117	ES, SF

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS		Reference Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned: Distance				Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	-43.91	105.2	-101.2	146.0					
100.0	100.0	102.5	102.5	0.1	0.2	-43.51	105.5	-100.1	145.4	145.1	0.36	398.585		
200.0	200.0	203.5	203.4	0.5	0.6	-42.31	106.5	-96.9	144.0	143.0	1.08	132.844		
300.0	300.0	302.8	302.6	0.8	1.0	-40.62	108.3	-92.8	142.6	140.8	1.80	79.341		
400.0	400.0	402.0	401.7	1.2	1.3	-38.61	110.8	-88.5	141.8	139.3	2.51	56.466		
500.0	500.0	501.6	501.1	1.6	1.7	-36.00	114.5	-83.2	141.6	138.4	3.23	43.877		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
532.0	532.0	533.6	533.0	1.7	1.8	-35.01	116.0	-81.2	141.6	138.1	3.46	40.956		
600.0	600.0	601.6	600.7	1.9	2.0	-32.67	119.2	-76.5	141.6	137.7	3.95	35.903		
700.0	700.0	701.6	700.4	2.3	2.4	-29.38	123.9	-69.7	142.1	137.5	4.66	30.477		
800.0	800.0	802.7	801.4	2.6	2.8	-27.46	126.1	-65.5	142.1	136.7	5.39	26.391		
900.0	900.0	902.7	901.3	3.0	3.1	-25.96	127.7	-62.1	142.0	135.9	6.10	23.266		
1,000.0	1,000.0	1,003.8	1,002.4	3.4	3.5	-25.91	127.1	-61.8	141.3	134.5	6.81	20.768		
1,100.0	1,100.0	1,104.5	1,103.2	3.7	3.8	-25.73	126.2	-60.8	140.1	132.6	7.51	18.647		
1,200.0	1,200.0	1,205.1	1,203.7	4.1	4.2	-25.46	124.9	-59.5	138.3	130.1	8.22	16.822		
1,300.0	1,300.0	1,304.7	1,303.2	4.4	4.5	-25.13	123.5	-58.0	136.5	127.6	8.93	15.280		
1,400.0	1,400.0	1,403.3	1,401.8	4.8	4.9	-24.54	123.1	-56.2	135.3	125.7	9.64	14.032		
1,463.7	1,463.7	1,466.2	1,464.7	5.0	5.1	-24.02	123.4	-55.0	135.1	125.0	10.10	13.384		
1,500.0	1,500.0	1,502.2	1,500.7	5.1	5.2	-23.69	123.8	-54.3	135.2	124.8	10.36	13.054		
1,600.0	1,600.0	1,602.8	1,601.3	5.5	5.6	-22.86	124.7	-52.6	135.3	124.2	11.07	12.217		
1,700.0	1,700.0	1,707.2	1,705.7	5.9	5.9	-22.95	122.2	-51.7	132.8	121.0	11.79	11.261		
1,800.0	1,800.0	1,806.2	1,804.6	6.2	6.3	-23.76	118.7	-52.3	129.7	117.3	12.48	10.392		
1,900.0	1,900.0	1,906.1	1,904.4	6.6	6.6	-24.69	115.3	-53.0	127.0	113.8	13.18	9.633		
2,000.0	2,000.0	2,005.8	2,004.0	6.9	7.0	-25.82	111.9	-54.2	124.4	110.5	13.88	8.961		
2,073.0	2,073.0	2,078.5	2,076.7	7.2	7.2	148.44	109.7	-54.9	123.5	109.1	14.38	8.589 CC		
2,100.0	2,100.0	2,105.4	2,103.6	7.3	7.3	148.38	109.0	-55.1	123.6	109.1	14.56	8.488 ES		
2,200.0	2,199.8	2,205.3	2,203.5	7.6	7.6	148.67	106.2	-56.0	126.0	110.7	15.23	8.269		
2,300.0	2,299.5	2,308.6	2,306.7	7.9	8.0	149.25	102.3	-57.8	130.9	115.0	15.91	8.227		
2,400.0	2,398.7	2,408.7	2,406.6	8.3	8.3	149.56	95.5	-60.5	136.3	119.8	16.58	8.223		
2,500.0	2,497.5	2,508.8	2,506.3	8.6	8.7	150.27	88.2	-63.6	144.7	127.4	17.26	8.382		
2,600.0	2,595.9	2,608.7	2,605.9	9.0	9.0	151.28	80.8	-66.8	154.3	136.4	17.94	8.602		
2,700.0	2,694.4	2,708.8	2,705.6	9.3	9.4	152.02	72.8	-70.1	163.7	145.1	18.63	8.786		
2,800.0	2,792.9	2,809.4	2,805.8	9.7	9.7	152.57	64.3	-73.7	172.6	153.3	19.32	8.933		
2,900.0	2,891.4	2,910.4	2,906.3	10.1	10.1	153.03	55.0	-77.1	180.9	160.8	20.02	9.034		
3,000.0	2,989.9	3,014.7	3,009.9	10.4	10.5	153.35	43.9	-80.4	187.7	167.0	20.71	9.061		
3,100.0	3,088.3	3,122.1	3,116.3	10.8	10.9	154.09	29.1	-81.0	190.6	169.3	21.38	8.915		
3,200.0	3,186.8	3,224.2	3,217.2	11.2	11.2	154.98	13.4	-80.1	191.6	169.5	22.08	8.676		
3,300.0	3,285.3	3,328.5	3,320.1	11.6	11.6	157.16	-2.6	-74.8	191.3	168.5	22.75	8.408		
3,400.0	3,383.8	3,429.2	3,419.2	12.0	12.0	159.40	-19.9	-68.6	189.1	165.7	23.45	8.066		
3,459.3	3,442.2	3,485.0	3,474.0	12.3	12.2	160.68	-29.1	-65.3	188.5	164.6	23.91	7.884		
3,500.0	3,482.3	3,522.2	3,510.8	12.4	12.3	161.69	-34.4	-62.7	188.9	164.6	24.22	7.797		
3,600.0	3,580.8	3,610.8	3,598.7	12.8	12.6	164.58	-43.0	-55.6	194.3	169.4	24.97	7.782 SF		
3,700.0	3,679.2	3,709.4	3,696.7	13.3	13.0	167.83	-50.1	-47.4	202.9	177.3	25.68	7.904		
3,800.0	3,777.7	3,807.4	3,794.1	13.7	13.3	170.77	-56.9	-39.2	212.3	186.0	26.38	8.049		
3,900.0	3,876.2	3,902.8	3,889.0	14.1	13.7	173.25	-62.6	-31.9	223.2	196.2	27.08	8.244		
4,000.0	3,974.7	3,996.8	3,982.7	14.5	14.0	175.19	-66.4	-25.8	236.5	208.7	27.76	8.519		
4,100.0	4,073.2	4,097.2	4,082.9	14.9	14.4	176.75	-69.4	-20.5	250.9	222.4	28.48	8.811		
4,200.0	4,171.6	4,207.2	4,192.5	15.4	14.8	178.44	-76.3	-14.1	262.3	233.1	29.24	8.971		
4,300.0	4,270.1	4,305.0	4,289.8	15.8	15.1	179.98	-84.0	-7.8	272.4	242.5	29.95	9.094		
4,400.0	4,368.6	4,402.0	4,386.4	16.2	15.5	-178.60	-90.9	-1.4	283.4	252.7	30.67	9.241		
4,500.0	4,467.1	4,495.4	4,479.4	16.6	15.8	-177.32	-96.3	5.0	295.9	264.5	31.36	9.436		
4,600.0	4,565.6	4,590.0	4,573.7	17.1	16.1	-176.07	-100.2	11.9	310.2	278.2	32.05	9.679		
4,700.0	4,664.0	4,684.8	4,668.1	17.5	16.5	-174.84	-102.9	19.7	326.1	293.4	32.74	9.961		
4,800.0	4,762.5	4,799.4	4,782.2	17.9	16.9	-173.31	-107.9	29.7	341.0	307.4	33.57	10.159		
4,900.0	4,861.0	4,897.9	4,879.9	18.4	17.3	-171.95	-115.4	38.7	352.8	318.5	34.30	10.286		
5,000.0	4,959.5	4,997.7	4,979.1	18.8	17.6	-170.77	-122.5	47.1	365.1	330.1	35.03	10.421		
5,100.0	5,058.0	5,109.8	5,090.7	19.2	18.0	-170.01	-131.8	53.1	375.6	339.8	35.82	10.488		
5,200.0	5,156.4	5,205.3	5,185.8	19.7	18.4	-169.67	-140.4	56.1	384.9	348.3	36.54	10.533		
5,300.0	5,254.9	5,300.9	5,281.0	20.1	18.7	-169.41	-148.0	59.0	395.2	357.9	37.25	10.607		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,400.0	5,353.4	5,399.9	5,379.7	20.6	19.1	-169.23	-155.1	61.6	406.1	368.2	37.98	10.693		
5,500.0	5,451.9	5,513.6	5,493.0	21.0	19.5	-169.18	-164.9	63.0	415.3	376.6	38.76	10.717		
5,600.0	5,550.4	5,608.0	5,586.9	21.4	19.8	-169.16	-174.1	63.7	423.3	383.8	39.47	10.723		
5,700.0	5,648.9	5,701.3	5,679.9	21.9	20.2	-169.18	-181.7	64.5	432.8	392.7	40.18	10.772		
5,800.0	5,747.3	5,821.2	5,799.2	22.3	20.6	-169.10	-193.3	65.9	441.0	400.0	40.96	10.766		
5,900.0	5,845.8	5,912.6	5,890.0	22.8	20.9	-168.85	-204.1	68.0	447.4	405.7	41.69	10.732		
6,000.0	5,944.3	6,009.6	5,986.3	23.2	21.3	-168.59	-214.2	70.6	455.2	412.8	42.42	10.730		
6,100.0	6,042.8	6,102.7	6,079.0	23.6	21.6	-168.47	-222.8	72.3	464.1	420.9	43.14	10.758		
6,200.0	6,141.3	6,215.7	6,191.6	24.1	22.0	-168.47	-232.9	73.4	472.9	429.0	43.90	10.771		
6,300.0	6,239.7	6,320.5	6,295.6	24.5	22.4	-168.36	-245.6	74.4	478.6	433.9	44.65	10.718		
6,400.0	6,338.2	6,411.8	6,386.3	25.0	22.7	-168.28	-256.1	75.3	484.9	439.6	45.37	10.687		
6,500.0	6,436.7	6,500.0	6,474.1	25.4	23.1	-168.32	-264.1	75.7	493.5	447.4	46.07	10.712		
6,600.0	6,535.2	6,589.8	6,563.6	25.9	23.4	-168.32	-270.5	77.1	504.2	457.4	46.76	10.783		
6,700.0	6,633.7	6,679.3	6,653.0	26.3	23.7	-168.36	-274.9	78.7	517.0	469.6	47.42	10.902		
6,800.0	6,732.1	6,797.9	6,771.4	26.8	24.1	-168.30	-282.4	81.3	528.7	480.4	48.27	10.953		
6,900.0	6,830.6	6,904.2	6,877.2	27.2	24.5	-168.06	-292.3	84.6	537.8	488.7	49.04	10.967		
6,925.7	6,855.9	6,930.2	6,903.1	27.3	24.6	-168.01	-294.8	85.2	539.9	490.7	49.23	10.968		
7,000.0	6,929.3	6,999.2	6,971.7	27.6	24.9	-167.88	-301.3	87.2	545.6	495.8	49.76	10.965		
7,100.0	7,028.4	7,091.8	7,063.8	28.1	25.2	-167.43	-309.5	92.1	551.5	501.1	50.47	10.929		
7,200.0	7,127.9	7,185.3	7,156.8	28.4	25.6	-166.83	-316.9	98.1	555.3	504.1	51.17	10.852		
7,300.0	7,227.7	7,279.7	7,250.9	28.8	25.9	-166.25	-323.2	103.4	556.8	504.9	51.87	10.735		
7,400.0	7,327.7	7,392.0	7,362.8	29.1	26.3	-165.53	-330.5	108.8	554.8	502.2	52.67	10.535		
7,425.7	7,353.4	7,416.5	7,387.2	29.2	26.4	19.85	-332.5	109.7	553.3	500.5	52.84	10.471		
7,500.0	7,427.7	7,471.0	7,441.6	29.4	26.6	19.98	-334.9	110.1	550.4	497.1	53.22	10.341		
7,539.5	7,467.2	7,497.6	7,468.2	29.6	26.7	19.85	-334.7	108.9	550.0	496.6	53.37	10.305		
7,600.0	7,527.7	7,545.7	7,516.2	29.7	26.8	19.69	-333.5	107.6	550.8	497.1	53.63	10.270		
7,700.0	7,627.7	7,759.1	7,728.1	30.0	27.6	21.24	-348.3	117.9	549.5	494.8	54.73	10.040		
7,800.0	7,727.7	7,860.4	7,825.8	30.3	27.9	19.34	-360.1	94.8	530.3	474.9	55.34	9.583		
7,900.0	7,827.7	7,957.2	7,912.0	30.6	28.2	14.81	-362.7	51.5	513.0	457.0	55.95	9.169		
8,000.0	7,927.7	8,034.3	7,973.0	30.9	28.4	9.52	-361.1	4.5	499.7	443.1	56.55	8.836		
8,100.0	8,027.7	8,127.9	8,035.8	31.2	28.5	1.54	-358.0	-64.6	494.2	437.2	56.97	8.674		
8,113.2	8,040.9	8,138.5	8,041.9	31.3	28.5	0.54	-357.9	-73.2	494.1	437.1	57.00	8.669		
8,200.0	8,127.7	8,185.0	8,065.8	31.5	28.6	-4.08	-358.0	-113.1	499.3	442.7	56.58	8.824		
8,218.8	8,146.5	8,192.1	8,069.0	31.6	28.6	-4.81	-358.0	-119.5	501.9	445.6	56.36	8.905		
8,225.0	8,152.7	8,194.4	8,070.0	31.6	28.6	-95.21	-358.0	-121.5	502.9	446.7	56.28	8.936		
8,250.0	8,177.7	8,201.9	8,073.2	31.7	28.6	-95.43	-358.0	-128.3	507.7	451.8	55.88	9.085		
8,275.0	8,202.6	8,207.6	8,075.6	31.8	28.6	-95.31	-358.1	-133.5	513.6	458.2	55.40	9.271		
8,300.0	8,227.3	8,212.1	8,077.4	31.8	28.6	-94.93	-358.1	-137.7	520.8	465.9	54.85	9.494		
8,325.0	8,251.8	8,215.1	8,078.5	31.9	28.6	-94.21	-358.1	-140.4	529.0	474.8	54.23	9.755		
8,350.0	8,276.1	8,217.2	8,079.3	32.0	28.6	-93.24	-358.1	-142.3	538.4	484.8	53.57	10.051		
8,375.0	8,299.9	8,218.4	8,079.8	32.1	28.6	-92.01	-358.1	-143.5	548.8	495.9	52.88	10.378		
8,400.0	8,323.4	8,218.9	8,080.0	32.1	28.6	-90.53	-358.1	-143.9	560.2	508.0	52.18	10.736		
8,425.0	8,346.3	8,218.6	8,079.9	32.2	28.6	-88.82	-358.1	-143.6	572.4	521.0	51.47	11.121		
8,450.0	8,368.8	8,217.7	8,079.6	32.3	28.6	-86.88	-358.1	-142.8	585.5	534.7	50.78	11.529		
8,475.0	8,390.6	8,216.3	8,079.0	32.3	28.6	-84.75	-358.1	-141.5	599.2	549.1	50.11	11.957		
8,500.0	8,411.7	8,212.1	8,077.4	32.4	28.6	-82.20	-358.1	-137.7	613.6	564.1	49.43	12.414		
8,525.0	8,432.1	8,212.1	8,077.4	32.4	28.6	-80.01	-358.1	-137.7	628.4	579.5	48.89	12.854		
8,550.0	8,451.8	8,212.1	8,077.4	32.5	28.6	-77.74	-358.1	-137.7	643.7	595.3	48.41	13.297		
8,575.0	8,470.6	8,205.7	8,074.8	32.5	28.6	-74.73	-358.1	-131.7	659.3	611.5	47.83	13.785		
8,600.0	8,488.5	8,198.6	8,071.8	32.6	28.6	-71.66	-358.0	-125.3	675.2	627.9	47.29	14.279		
8,625.0	8,505.4	8,198.6	8,071.8	32.6	28.6	-69.30	-358.0	-125.3	691.2	644.2	47.00	14.707		
8,650.0	8,521.4	8,193.4	8,069.6	32.7	28.6	-66.47	-358.0	-120.6	707.4	660.8	46.64	15.169		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)						
8,675.0	8,536.4	8,185.0	8,065.8	32.7	28.6	-63.45	-358.0	-113.1	723.7	677.4	46.24	15.649		
8,700.0	8,550.3	8,185.0	8,065.8	32.8	28.6	-61.19	-358.0	-113.1	739.8	693.7	46.15	16.031		
8,725.0	8,563.1	8,178.0	8,062.5	32.8	28.6	-58.49	-357.9	-107.0	756.0	710.0	45.92	16.462		
8,750.0	8,574.7	8,171.6	8,059.4	32.8	28.6	-55.95	-357.9	-101.3	771.9	726.2	45.76	16.869		
8,775.0	8,585.2	8,167.0	8,057.1	32.9	28.6	-53.67	-357.9	-97.3	787.7	742.0	45.71	17.233		
8,800.0	8,594.4	8,158.1	8,052.6	32.9	28.6	-51.27	-357.9	-89.8	803.3	757.7	45.59	17.621		
8,825.0	8,602.5	8,158.1	8,052.6	33.0	28.6	-49.48	-357.9	-89.8	818.6	772.8	45.78	17.880		
8,850.0	8,609.3	8,144.7	8,045.4	33.0	28.5	-47.16	-357.9	-78.4	833.6	788.0	45.62	18.273		
8,875.0	8,614.8	8,144.7	8,045.4	33.1	28.5	-45.60	-357.9	-78.4	848.2	802.3	45.91	18.476		
8,900.0	8,619.0	8,131.3	8,037.8	33.2	28.5	-43.61	-358.0	-67.4	862.4	816.6	45.83	18.819		
8,925.0	8,622.0	8,127.1	8,035.3	33.3	28.5	-42.11	-358.1	-63.9	876.1	830.1	46.07	19.019		
8,950.0	8,623.6	8,117.9	8,029.8	33.3	28.5	-40.56	-358.2	-56.6	889.5	843.3	46.19	19.257		
8,968.8	8,624.0	8,117.9	8,029.8	33.4	28.5	-39.69	-358.2	-56.6	899.1	852.6	46.52	19.330		
9,000.0	8,624.0	8,104.4	8,021.5	33.6	28.5	-39.28	-358.5	-46.0	915.2	868.6	46.66	19.613		
9,100.0	8,624.0	8,077.4	8,003.7	34.2	28.4	-38.43	-359.3	-25.8	970.3	922.7	47.62	20.375		
9,200.0	8,624.0	8,050.3	7,984.6	35.0	28.4	-37.53	-360.4	-6.4	1,030.2	981.6	48.53	21.228		
9,300.0	8,624.0	8,023.1	7,964.6	36.1	28.3	-36.62	-361.6	11.9	1,094.2	1,044.9	49.37	22.164		
9,400.0	8,624.0	8,009.6	7,954.3	37.3	28.3	-36.18	-362.0	20.6	1,162.2	1,111.7	50.47	23.027		
9,500.0	8,624.0	7,990.1	7,939.0	38.6	28.3	-35.55	-362.3	32.7	1,233.6	1,182.3	51.32	24.039		
9,600.0	8,624.0	7,974.4	7,926.2	40.0	28.2	-35.05	-362.5	41.9	1,308.1	1,255.9	52.14	25.086		
9,700.0	8,624.0	7,955.7	7,910.8	41.5	28.2	-34.45	-362.7	52.3	1,385.1	1,332.3	52.82	26.225		
9,800.0	8,624.0	7,942.3	7,899.4	43.1	28.2	-34.04	-362.6	59.5	1,464.4	1,410.9	53.50	27.371		
9,900.0	8,624.0	7,935.1	7,893.3	44.8	28.1	-33.82	-362.5	63.1	1,545.6	1,491.4	54.20	28.514		
10,000.0	8,624.0	7,928.9	7,887.8	46.6	28.1	-33.63	-362.4	66.2	1,628.6	1,573.8	54.83	29.702		
10,100.0	8,624.0	7,915.4	7,876.0	48.4	28.1	-33.23	-362.1	72.6	1,713.2	1,657.9	55.29	30.987		
10,200.0	8,624.0	7,902.0	7,864.0	50.3	28.0	-32.83	-361.8	78.6	1,799.1	1,743.4	55.69	32.307		
10,300.0	8,624.0	7,902.0	7,864.0	52.2	28.0	-32.83	-361.8	78.6	1,886.2	1,830.0	56.21	33.559		
10,400.0	8,624.0	7,888.6	7,851.8	54.1	28.0	-32.44	-361.4	84.3	1,974.4	1,917.9	56.52	34.935		
10,500.0	8,624.0	7,888.6	7,851.8	56.1	28.0	-32.44	-361.4	84.3	2,063.5	2,006.6	56.93	36.244		
10,600.0	8,624.0	7,875.1	7,839.4	58.1	28.0	-32.06	-360.9	89.5	2,153.4	2,096.3	57.18	37.664		
10,700.0	8,624.0	7,875.1	7,839.4	60.2	28.0	-32.06	-360.9	89.5	2,244.1	2,186.6	57.52	39.017		
10,800.0	8,624.0	7,861.7	7,827.0	62.3	27.9	-31.69	-360.2	94.3	2,335.5	2,277.8	57.71	40.468		
10,900.0	8,624.0	7,861.7	7,827.0	64.4	27.9	-31.69	-360.2	94.3	2,427.4	2,369.4	58.00	41.854		
11,000.0	8,624.0	7,855.2	7,820.9	66.5	27.9	-31.52	-359.8	96.6	2,519.9	2,461.7	58.21	43.292		
11,100.0	8,624.0	7,848.3	7,814.4	68.6	27.9	-31.34	-359.3	98.9	2,612.8	2,554.4	58.40	44.743		
11,200.0	8,624.0	7,848.3	7,814.4	70.8	27.9	-31.34	-359.3	98.9	2,706.3	2,647.6	58.62	46.168		
11,300.0	8,624.0	7,842.2	7,808.6	73.0	27.9	-31.18	-358.8	100.8	2,800.1	2,741.3	58.78	47.634		
11,400.0	8,624.0	7,834.9	7,801.6	75.2	27.9	-31.00	-358.1	103.0	2,894.3	2,835.4	58.93	49.115		
11,500.0	8,624.0	7,834.9	7,801.6	77.4	27.9	-31.00	-358.1	103.0	2,988.8	2,929.7	59.11	50.566		
11,600.0	8,624.0	7,834.9	7,801.6	79.6	27.9	-31.00	-358.1	103.0	3,083.7	3,024.4	59.27	52.024		
11,700.0	8,624.0	7,828.2	7,795.3	81.8	27.8	-30.84	-357.5	104.9	3,178.8	3,119.4	59.39	53.520		
11,800.0	8,624.0	7,821.4	7,788.8	84.1	27.8	-30.68	-356.8	106.8	3,274.2	3,214.7	59.51	55.022		
11,900.0	8,624.0	7,821.4	7,788.8	86.3	27.8	-30.68	-356.8	106.8	3,369.8	3,310.2	59.65	56.495		
12,000.0	8,624.0	7,821.4	7,788.8	88.6	27.8	-30.68	-356.8	106.8	3,465.7	3,405.9	59.78	57.974		
12,100.0	8,624.0	7,821.4	7,788.8	90.8	27.8	-30.68	-356.8	106.8	3,561.8	3,501.9	59.91	59.457		
12,200.0	8,624.0	7,821.4	7,788.8	93.1	27.8	-30.68	-356.8	106.8	3,658.1	3,598.1	60.02	60.943		
12,300.0	8,624.0	7,808.0	7,775.9	95.4	27.8	-30.38	-355.2	110.0	3,754.5	3,694.4	60.08	62.489		
12,400.0	8,624.0	7,808.0	7,775.9	97.7	27.8	-30.38	-355.2	110.0	3,851.1	3,790.9	60.19	63.979		
12,500.0	8,624.0	7,808.0	7,775.9	100.0	27.8	-30.38	-355.2	110.0	3,947.9	3,887.6	60.30	65.470		
12,600.0	8,624.0	7,808.0	7,775.9	102.3	27.8	-30.38	-355.2	110.0	4,044.8	3,984.4	60.40	66.964		
12,700.0	8,624.0	7,808.0	7,775.9	104.6	27.8	-30.38	-355.2	110.0	4,141.9	4,081.3	60.50	68.459		
12,800.0	8,624.0	7,808.0	7,775.9	106.9	27.8	-30.38	-355.2	110.0	4,239.1	4,178.5	60.60	69.955		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)						
12,900.0	8,624.0	7,808.0	7,775.9	109.2	27.8	-30.38	-355.2	110.0	4,336.4	4,275.7	60.69	71.452		
13,000.0	8,624.0	7,794.4	7,762.7	111.5	27.7	-30.08	-353.5	112.9	4,433.8	4,373.1	60.73	73.003		
13,100.0	8,624.0	7,794.4	7,762.7	113.9	27.7	-30.08	-353.5	112.9	4,531.3	4,470.5	60.82	74.499		
13,200.0	8,624.0	7,794.4	7,762.7	116.2	27.7	-30.08	-353.5	112.9	4,628.9	4,568.0	60.91	75.995		
13,300.0	8,624.0	7,794.4	7,762.7	118.5	27.7	-30.08	-353.5	112.9	4,726.6	4,665.6	61.00	77.490		
13,400.0	8,624.0	7,794.4	7,762.7	120.9	27.7	-30.08	-353.5	112.9	4,824.4	4,763.3	61.08	78.986		
13,500.0	8,624.0	7,794.4	7,762.7	123.2	27.7	-30.08	-353.5	112.9	4,922.3	4,861.1	61.16	80.480		
13,600.0	8,624.0	7,794.4	7,762.7	125.5	27.7	-30.08	-353.5	112.9	5,020.3	4,959.0	61.24	81.974		
13,700.0	8,624.0	7,794.4	7,762.7	127.9	27.7	-30.08	-353.5	112.9	5,118.3	5,057.0	61.32	83.467		
13,800.0	8,624.0	7,794.4	7,762.7	130.2	27.7	-30.08	-353.5	112.9	5,216.4	5,155.0	61.40	84.958		
13,900.0	8,624.0	7,794.4	7,762.7	132.6	27.7	-30.08	-353.5	112.9	5,314.6	5,253.2	61.48	86.448		
14,000.0	8,624.0	7,787.7	7,756.2	134.9	27.7	-29.94	-352.6	114.1	5,412.8	5,351.3	61.54	87.961		
14,100.0	8,624.0	7,780.9	7,749.5	137.3	27.7	-29.80	-351.6	115.2	5,511.2	5,449.6	61.59	89.474		
14,200.0	8,624.0	7,780.9	7,749.5	139.7	27.7	-29.80	-351.6	115.2	5,609.5	5,547.8	61.67	90.959		
14,300.0	8,624.0	7,780.9	7,749.5	142.0	27.7	-29.80	-351.6	115.2	5,707.9	5,646.2	61.75	92.441		
14,400.0	8,624.0	7,780.9	7,749.5	144.4	27.7	-29.80	-351.6	115.2	5,806.4	5,744.5	61.82	93.921		
14,500.0	8,624.0	7,780.9	7,749.5	146.7	27.7	-29.80	-351.6	115.2	5,904.9	5,843.0	61.90	95.399		
14,600.0	8,624.0	7,780.9	7,749.5	149.1	27.7	-29.80	-351.6	115.2	6,003.4	5,941.4	61.97	96.875		
14,700.0	8,624.0	7,780.9	7,749.5	151.5	27.7	-29.80	-351.6	115.2	6,102.0	6,040.0	62.04	98.349		
14,800.0	8,624.0	7,780.9	7,749.5	153.8	27.7	-29.80	-351.6	115.2	6,200.7	6,138.5	62.12	99.820		
14,900.0	8,624.0	7,780.9	7,749.5	156.2	27.7	-29.80	-351.6	115.2	6,299.4	6,237.2	62.19	101.288		
15,000.0	8,624.0	7,780.9	7,749.5	158.6	27.7	-29.80	-351.6	115.2	6,398.1	6,335.8	62.27	102.754		
15,100.0	8,624.0	7,780.9	7,749.5	161.0	27.7	-29.80	-351.6	115.2	6,496.9	6,434.5	62.34	104.217		
15,200.0	8,624.0	7,780.9	7,749.5	163.3	27.7	-29.80	-351.6	115.2	6,595.7	6,533.2	62.41	105.677		
15,300.0	8,624.0	7,780.9	7,749.5	165.7	27.7	-29.80	-351.6	115.2	6,694.5	6,632.0	62.49	107.134		
15,400.0	8,624.0	7,780.9	7,749.5	168.1	27.7	-29.80	-351.6	115.2	6,793.4	6,730.8	62.56	108.588		
15,500.0	8,624.0	7,780.9	7,749.5	170.5	27.7	-29.80	-351.6	115.2	6,892.3	6,829.6	62.64	110.039		
15,600.0	8,624.0	7,780.9	7,749.5	172.9	27.7	-29.80	-351.6	115.2	6,991.2	6,928.5	62.71	111.487		
15,700.0	8,624.0	7,774.0	7,742.8	175.2	27.7	-29.66	-350.6	116.2	7,090.1	7,027.3	62.77	112.956		
15,800.0	8,624.0	7,767.3	7,736.2	177.6	27.6	-29.53	-349.6	117.1	7,189.2	7,126.3	62.83	114.423		
15,900.0	8,624.0	7,767.3	7,736.2	180.0	27.6	-29.53	-349.6	117.1	7,288.2	7,225.2	62.90	115.860		
16,000.0	8,624.0	7,767.3	7,736.2	182.4	27.6	-29.53	-349.6	117.1	7,387.2	7,324.2	62.98	117.295		
16,100.0	8,624.0	7,767.3	7,736.2	184.8	27.6	-29.53	-349.6	117.1	7,486.2	7,423.2	63.06	118.725		
16,200.0	8,624.0	7,767.3	7,736.2	187.2	27.6	-29.53	-349.6	117.1	7,585.3	7,522.2	63.13	120.152		
16,300.0	8,624.0	7,767.3	7,736.2	189.6	27.6	-29.53	-349.6	117.1	7,684.4	7,621.2	63.21	121.576		
16,400.0	8,624.0	7,767.3	7,736.2	191.9	27.6	-29.53	-349.6	117.1	7,783.5	7,720.3	63.28	122.996		
16,500.0	8,624.0	7,767.3	7,736.2	194.3	27.6	-29.53	-349.6	117.1	7,882.7	7,819.3	63.36	124.412		
16,600.0	8,624.0	7,767.3	7,736.2	196.7	27.6	-29.53	-349.6	117.1	7,981.8	7,918.4	63.44	125.825		
16,700.0	8,624.0	7,767.3	7,736.2	199.1	27.6	-29.53	-349.6	117.1	8,081.0	8,017.5	63.51	127.233		
16,800.0	8,624.0	7,767.3	7,736.2	201.5	27.6	-29.53	-349.6	117.1	8,180.2	8,116.7	63.59	128.638		
16,900.0	8,624.0	7,767.3	7,736.2	203.9	27.6	-29.53	-349.6	117.1	8,279.5	8,215.8	63.67	130.039		
17,000.0	8,624.0	7,767.3	7,736.2	206.3	27.6	-29.53	-349.6	117.1	8,378.7	8,315.0	63.75	131.436		
17,100.0	8,624.0	7,767.3	7,736.2	208.7	27.6	-29.53	-349.6	117.1	8,478.0	8,414.2	63.83	132.829		
17,200.0	8,624.0	7,767.3	7,736.2	211.1	27.6	-29.53	-349.6	117.1	8,577.3	8,513.4	63.91	134.218		
17,300.0	8,624.0	7,767.3	7,736.2	213.5	27.6	-29.53	-349.6	117.1	8,676.6	8,612.6	63.98	135.603		
17,400.0	8,624.0	7,767.3	7,736.2	215.9	27.6	-29.53	-349.6	117.1	8,775.9	8,711.8	64.06	136.984		
17,500.0	8,624.0	7,767.3	7,736.2	218.3	27.6	-29.53	-349.6	117.1	8,875.2	8,811.1	64.15	138.361		
17,600.0	8,624.0	7,767.3	7,736.2	220.7	27.6	-29.53	-349.6	117.1	8,974.5	8,910.3	64.23	139.733		
17,700.0	8,624.0	7,767.3	7,736.2	223.1	27.6	-29.53	-349.6	117.1	9,073.9	9,009.6	64.31	141.102		
17,800.0	8,624.0	7,767.3	7,736.2	225.5	27.6	-29.53	-349.6	117.1	9,173.3	9,108.9	64.39	142.466		
17,900.0	8,624.0	7,767.3	7,736.2	227.9	27.6	-29.53	-349.6	117.1	9,272.7	9,208.2	64.47	143.826		
18,000.0	8,624.0	7,767.3	7,736.2	230.3	27.6	-29.53	-349.6	117.1	9,372.1	9,307.5	64.55	145.182		

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Distance		Minimum		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)			
18,100.0	8,624.0	7,767.3	7,736.2	232.6	27.6	-29.53	-349.6	117.1	9,471.5	9,406.8	64.64	146.533		
18,200.0	8,624.0	7,767.3	7,736.2	235.0	27.6	-29.53	-349.6	117.1	9,570.9	9,506.2	64.72	147.880		
18,300.0	8,624.0	7,767.3	7,736.2	237.4	27.6	-29.53	-349.6	117.1	9,670.3	9,605.5	64.80	149.223		
18,400.0	8,624.0	7,767.3	7,736.2	239.8	27.6	-29.53	-349.6	117.1	9,769.8	9,704.9	64.89	150.561		
18,500.0	8,624.0	7,767.3	7,736.2	242.3	27.6	-29.53	-349.6	117.1	9,869.2	9,804.2	64.97	151.895		
18,600.0	8,624.0	7,767.3	7,736.2	244.7	27.6	-29.53	-349.6	117.1	9,968.7	9,903.6	65.06	153.225		
18,700.0	8,624.0	7,760.5	7,729.5	247.1	27.6	-29.39	-348.5	117.8	10,068.1	10,003.0	65.13	154.578		
18,800.0	8,624.0	7,753.7	7,722.9	249.5	27.6	-29.27	-347.4	118.4	10,167.6	10,102.4	65.21	155.928		
18,900.0	8,624.0	7,753.7	7,722.9	251.9	27.6	-29.27	-347.4	118.4	10,267.1	10,201.8	65.29	157.244		
19,000.0	8,624.0	7,753.7	7,722.9	254.3	27.6	-29.27	-347.4	118.4	10,366.6	10,301.2	65.38	158.556		
19,100.0	8,624.0	7,753.7	7,722.9	256.7	27.6	-29.27	-347.4	118.4	10,466.1	10,400.7	65.47	159.863		
19,200.0	8,624.0	7,753.7	7,722.9	259.1	27.6	-29.27	-347.4	118.4	10,565.6	10,500.1	65.56	161.166		
19,235.6	8,624.0	7,753.7	7,722.9	259.9	27.6	-29.27	-347.4	118.4	10,601.1	10,535.5	65.59	161.628		

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

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COMPASS 5000.15 Build 91E

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: Reference		14-MWD+IFR1+MS Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	-31.52	165.2	-101.3	193.7					
100.0	100.0	102.6	102.6	0.1	0.2	-31.42	165.0	-100.8	193.3	193.0	0.37	528.344		
200.0	200.0	203.5	203.5	0.5	0.6	-31.14	164.5	-99.4	192.2	191.1	1.09	177.043		
300.0	300.0	303.3	303.3	0.8	1.0	-30.79	164.0	-97.7	190.9	189.1	1.80	105.996		
400.0	400.0	404.0	403.9	1.2	1.3	-30.36	163.5	-95.8	189.5	187.0	2.52	75.182		
500.0	500.0	503.9	503.8	1.6	1.7	-29.90	162.9	-93.7	188.0	184.7	3.24	58.071		
600.0	600.0	603.7	603.6	1.9	2.0	-29.23	162.7	-91.1	186.5	182.6	3.95	47.186		
700.0	700.0	703.2	703.1	2.3	2.4	-28.36	163.0	-88.0	185.3	180.6	4.67	39.705		
800.0	800.0	803.9	803.7	2.6	2.8	-27.24	163.6	-84.2	184.0	178.6	5.38	34.170		
900.0	900.0	903.0	902.7	3.0	3.1	-25.81	164.4	-79.5	182.6	176.5	6.10	29.952		
958.7	958.7	960.1	959.7	3.2	3.3	-24.88	165.4	-76.7	182.3	175.8	6.51	27.997	CC, ES	
1,000.0	1,000.0	998.7	998.3	3.4	3.5	-24.19	166.7	-74.9	182.7	175.9	6.80	26.889		
1,100.0	1,100.0	1,098.0	1,097.2	3.7	3.8	-22.05	170.9	-69.2	184.4	176.9	7.50	24.574		
1,200.0	1,200.0	1,196.5	1,195.5	4.1	4.2	-19.99	175.6	-63.9	187.0	178.7	8.21	22.769		
1,300.0	1,300.0	1,295.9	1,294.7	4.4	4.5	-18.55	180.1	-60.4	190.1	181.2	8.92	21.313		
1,400.0	1,400.0	1,394.9	1,393.7	4.8	4.9	-17.58	184.4	-58.5	193.6	184.0	9.63	20.116		
1,500.0	1,500.0	1,492.8	1,491.4	5.1	5.2	-16.69	189.3	-56.8	197.9	187.5	10.32	19.166		
1,600.0	1,600.0	1,592.6	1,591.0	5.5	5.6	-15.48	195.4	-54.1	203.0	191.9	11.03	18.393		
1,700.0	1,700.0	1,690.9	1,689.1	5.9	5.9	-14.42	201.5	-51.8	208.4	196.6	11.74	17.751		
1,800.0	1,800.0	1,789.4	1,787.3	6.2	6.3	-13.48	208.1	-49.9	214.4	202.0	12.44	17.234		
1,900.0	1,900.0	1,888.2	1,885.8	6.6	6.6	-12.69	215.2	-48.4	221.1	207.9	13.15	16.817		
2,000.0	2,000.0	1,989.0	1,986.4	6.9	7.0	-11.87	222.4	-46.7	227.8	213.9	13.86	16.427		
2,100.0	2,100.0	2,090.0	2,087.1	7.3	7.3	163.95	229.3	-44.2	235.6	221.1	14.57	16.173		
2,200.0	2,199.8	2,192.4	2,189.3	7.6	7.7	165.21	235.3	-41.1	245.9	230.6	15.27	16.106	SF	
2,300.0	2,299.5	2,290.6	2,287.3	7.9	8.0	166.54	240.5	-37.8	259.1	243.1	15.95	16.247		
2,400.0	2,398.7	2,385.6	2,382.0	8.3	8.4	167.91	246.5	-34.5	276.6	260.0	16.61	16.656		
2,500.0	2,497.5	2,480.6	2,476.7	8.6	8.7	169.25	253.4	-31.1	298.7	281.5	17.27	17.294		
2,600.0	2,595.9	2,576.0	2,571.8	9.0	9.1	170.55	260.8	-27.8	323.2	305.3	17.94	18.016		
2,700.0	2,694.4	2,672.1	2,667.5	9.3	9.4	171.64	268.7	-24.6	348.1	329.5	18.61	18.703		
2,800.0	2,792.9	2,768.0	2,763.0	9.7	9.8	172.55	276.5	-21.7	373.3	354.0	19.29	19.353		
2,900.0	2,891.4	2,862.3	2,857.0	10.1	10.1	173.33	284.7	-18.9	398.9	379.0	19.95	19.991		
3,000.0	2,989.9	2,957.7	2,951.9	10.4	10.4	174.00	293.4	-16.3	425.0	404.4	20.63	20.602		
3,100.0	3,088.3	3,052.5	3,046.2	10.8	10.8	174.59	302.2	-13.6	451.4	430.1	21.30	21.189		
3,200.0	3,186.8	3,146.0	3,139.2	11.2	11.1	175.09	311.5	-11.1	478.3	456.4	21.97	21.774		
3,300.0	3,285.3	3,241.0	3,233.7	11.6	11.5	175.53	321.2	-8.7	505.7	483.0	22.65	22.328		
3,400.0	3,383.8	3,334.6	3,326.8	12.0	11.8	175.91	331.1	-6.4	533.4	510.0	23.32	22.873		
3,500.0	3,482.3	3,427.7	3,419.3	12.4	12.1	176.22	341.5	-4.4	561.6	537.6	23.99	23.412		
3,600.0	3,580.8	3,529.6	3,520.5	12.8	12.5	176.56	352.6	-1.9	589.7	564.9	24.72	23.850		
3,700.0	3,679.2	3,633.1	3,623.5	13.3	12.9	177.04	362.3	2.3	616.3	590.8	25.47	24.195		
3,800.0	3,777.7	3,747.3	3,737.2	13.7	13.3	177.61	371.3	7.8	641.6	615.3	26.29	24.408		
3,900.0	3,876.2	3,849.3	3,838.9	14.1	13.6	178.18	377.1	13.9	664.9	637.9	27.02	24.609		
4,000.0	3,974.7	3,949.6	3,938.8	14.5	14.0	178.63	382.4	18.9	687.7	659.9	27.74	24.791		
4,100.0	4,073.2	4,050.7	4,039.8	14.9	14.4	178.93	387.3	22.4	710.1	681.6	28.46	24.945		
4,200.0	4,171.6	4,154.4	4,143.3	15.4	14.7	179.34	391.6	27.5	731.8	702.6	29.21	25.057		
4,300.0	4,270.1	4,250.9	4,239.5	15.8	15.1	179.78	395.0	33.3	753.1	723.2	29.91	25.183		
4,400.0	4,368.6	4,347.4	4,335.8	16.2	15.4	-179.81	398.7	39.0	774.8	744.1	30.61	25.310		
4,500.0	4,467.1	4,443.9	4,432.1	16.6	15.8	-179.38	402.3	45.2	796.4	765.1	31.31	25.434		
4,600.0	4,565.6	4,538.7	4,526.5	17.1	16.1	-178.92	406.0	52.2	818.4	786.4	32.01	25.568		
4,700.0	4,664.0	4,634.4	4,621.8	17.5	16.5	-178.43	410.0	60.0	840.7	808.0	32.71	25.702		
4,800.0	4,762.5	4,725.4	4,712.5	17.9	16.8	-178.04	414.2	66.8	863.4	830.1	33.38	25.864		
4,900.0	4,861.0	4,819.2	4,805.9	18.4	17.1	-177.69	419.2	73.2	886.8	852.7	34.07	26.026		
5,000.0	4,959.5	4,916.4	4,902.7	18.8	17.5	-177.38	424.6	79.4	910.4	875.6	34.79	26.171		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,100.0	5,058.0	5,013.2	4,999.3	19.2	17.8	-177.11	429.9	85.3	934.0	898.5	35.50	26.310		
5,200.0	5,156.4	5,111.7	5,097.4	19.7	18.2	-176.90	435.6	90.3	957.5	921.3	36.22	26.437		
5,300.0	5,254.9	5,212.7	5,198.2	20.1	18.6	-176.76	441.1	94.5	980.8	943.9	36.96	26.541		
5,400.0	5,353.4	5,312.1	5,297.4	20.6	18.9	-176.67	446.4	97.9	1,003.8	966.1	37.68	26.639		
5,500.0	5,451.9	5,418.3	5,403.4	21.0	19.3	-176.64	451.8	100.2	1,026.4	987.9	38.45	26.695		
5,600.0	5,550.4	5,519.6	5,504.6	21.4	19.7	-176.70	456.4	100.9	1,048.2	1,009.0	39.18	26.754		
5,700.0	5,648.9	5,625.8	5,610.7	21.9	20.0	-176.80	460.7	100.8	1,069.5	1,029.5	39.94	26.778		
5,800.0	5,747.3	5,713.0	5,697.9	22.3	20.4	-176.86	464.3	100.9	1,090.8	1,050.2	40.59	26.873		
5,900.0	5,845.8	5,797.4	5,782.1	22.8	20.7	-176.85	468.9	102.6	1,113.7	1,072.4	41.23	27.013		
6,000.0	5,944.3	5,900.5	5,885.1	23.2	21.0	-176.84	474.4	104.7	1,136.5	1,094.5	41.98	27.074		
6,100.0	6,042.8	6,003.1	5,987.5	23.6	21.4	-176.85	479.3	106.1	1,158.7	1,116.0	42.72	27.121		
6,200.0	6,141.3	6,083.6	6,067.9	24.1	21.7	-176.86	483.6	107.4	1,181.4	1,138.1	43.33	27.263		
6,300.0	6,239.7	6,172.9	6,157.0	24.5	22.0	-176.79	489.7	110.6	1,205.9	1,161.9	44.00	27.405		
6,400.0	6,338.2	6,321.8	6,305.6	25.0	22.5	-176.77	496.2	113.3	1,227.5	1,182.5	45.02	27.266		
6,500.0	6,436.7	6,403.6	6,387.4	25.4	22.8	-176.81	498.6	113.7	1,247.9	1,202.2	45.65	27.337		
6,600.0	6,535.2	6,508.0	6,491.7	25.9	23.2	-176.84	502.3	114.7	1,268.8	1,222.4	46.40	27.344		
6,700.0	6,633.7	6,590.6	6,574.3	26.3	23.5	-176.86	505.3	115.4	1,289.8	1,242.8	47.03	27.425		
6,800.0	6,732.1	6,720.2	6,703.7	26.8	24.0	-176.75	508.7	119.7	1,310.1	1,262.2	47.93	27.336		
6,900.0	6,830.6	6,778.1	6,761.6	27.2	24.2	-176.66	510.2	122.6	1,330.8	1,282.4	48.42	27.484		
6,925.7	6,855.9	6,795.3	6,778.8	27.3	24.2	-176.62	510.9	123.7	1,336.6	1,288.0	48.56	27.527		
7,000.0	6,929.3	6,863.3	6,846.4	27.6	24.5	-176.48	514.3	128.6	1,352.9	1,303.8	49.06	27.575		
7,100.0	7,028.4	6,917.1	6,899.9	28.1	24.7	-176.36	517.7	133.1	1,373.5	1,324.0	49.48	27.761		
7,200.0	7,127.9	7,006.0	6,988.2	28.4	25.0	-176.14	525.5	140.8	1,393.0	1,342.9	50.12	27.792		
7,300.0	7,227.7	7,082.0	7,063.6	28.8	25.3	-176.01	533.2	145.9	1,410.1	1,359.4	50.66	27.834		
7,400.0	7,327.7	7,179.3	7,160.2	29.1	25.6	-175.89	543.9	151.5	1,424.5	1,373.2	51.36	27.738		
7,425.7	7,353.4	7,205.0	7,185.6	29.2	25.7	9.37	546.8	152.8	1,427.7	1,376.1	51.54	27.702		
7,500.0	7,427.7	7,263.8	7,244.0	29.4	25.9	9.42	553.6	155.3	1,436.7	1,384.8	51.93	27.668		
7,600.0	7,527.7	7,387.1	7,366.4	29.7	26.4	9.49	568.2	159.6	1,449.0	1,396.2	52.81	27.438		
7,700.0	7,627.7	7,506.0	7,484.6	30.0	26.8	9.55	580.0	163.0	1,459.3	1,405.6	53.65	27.202		
7,800.0	7,727.7	7,632.1	7,610.2	30.3	27.3	9.52	591.9	164.3	1,468.9	1,414.3	54.52	26.941		
7,900.0	7,827.7	7,716.6	7,694.4	30.6	27.6	9.51	598.6	165.0	1,476.9	1,421.8	55.11	26.802		
8,000.0	7,927.7	7,821.7	7,799.0	30.9	27.9	9.48	608.4	166.0	1,486.3	1,430.5	55.83	26.620		
8,100.0	8,027.7	7,917.1	7,948.6	31.2	28.5	9.41	619.4	166.1	1,493.7	1,436.8	56.84	26.277		
8,200.0	8,127.7	8,094.6	8,071.3	31.5	28.9	9.32	625.4	164.7	1,498.3	1,440.6	57.66	25.987		
8,218.8	8,146.5	8,123.7	8,100.4	31.6	29.0	9.31	626.5	164.4	1,499.0	1,441.1	57.84	25.916		
8,225.0	8,152.7	8,133.4	8,110.1	31.6	29.1	-80.97	626.8	164.2	1,499.1	1,441.2	57.90	25.892		
8,250.0	8,177.7	8,170.2	8,146.9	31.7	29.2	-80.99	627.8	163.8	1,499.6	1,441.5	58.13	25.798		
8,275.0	8,202.6	8,199.8	8,176.5	31.8	29.3	-81.09	628.5	163.5	1,499.7	1,441.4	58.32	25.715		
8,300.0	8,227.3	8,226.7	8,203.4	31.8	29.4	-81.26	629.0	163.3	1,499.6	1,441.1	58.50	25.634		
8,325.0	8,251.8	8,248.6	8,225.3	31.9	29.5	-81.47	629.4	163.1	1,499.3	1,440.7	58.66	25.561		
8,350.0	8,276.1	8,273.9	8,250.6	32.0	29.5	-81.77	629.9	163.0	1,498.9	1,440.0	58.83	25.480		
8,375.0	8,299.9	8,304.1	8,280.7	32.1	29.7	-82.19	630.4	162.8	1,498.2	1,439.2	59.02	25.385		
8,400.0	8,323.4	8,336.6	8,313.2	32.1	29.8	-82.74	630.7	162.6	1,497.2	1,438.0	59.22	25.283		
8,425.0	8,346.3	8,367.3	8,344.0	32.2	29.9	-83.35	630.9	162.3	1,496.1	1,436.7	59.41	25.183		
8,450.0	8,368.8	8,400.6	8,377.3	32.3	30.0	-84.09	630.9	162.0	1,494.7	1,435.1	59.60	25.078		
8,475.0	8,390.6	8,438.8	8,415.5	32.3	30.1	-85.02	630.6	161.4	1,493.1	1,433.3	59.81	24.965		
8,500.0	8,411.7	8,472.9	8,449.5	32.4	30.2	-85.96	630.0	160.6	1,491.2	1,431.2	59.99	24.856		
8,525.0	8,432.1	8,498.2	8,474.9	32.4	30.3	-86.78	629.4	159.8	1,489.3	1,429.2	60.15	24.760		
8,550.0	8,451.8	8,518.4	8,495.0	32.5	30.4	-87.52	628.9	158.4	1,487.4	1,427.1	60.29	24.671		
8,575.0	8,470.6	8,534.0	8,510.5	32.5	30.4	-88.17	628.6	156.7	1,485.7	1,425.3	60.42	24.590		
8,600.0	8,488.5	8,546.2	8,522.5	32.6	30.4	-88.72	628.5	155.1	1,484.2	1,423.7	60.54	24.518		
8,625.0	8,505.4	8,556.6	8,532.8	32.6	30.5	-89.20	628.3	153.5	1,483.0	1,422.3	60.65	24.452		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD													Offset Site Error:	0.0 usft
Survey Program: Reference		14-MWD+IFR1+MS Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
8,650.0	8,521.4	8,563.0	8,539.2	32.7	30.5	-89.53	628.3	152.4	1,482.1	1,421.3	60.75	24.398		
8,675.0	8,536.4	8,569.4	8,545.4	32.7	30.5	-89.81	628.2	151.3	1,481.5	1,420.7	60.85	24.349		
8,694.4	8,547.2	8,572.7	8,548.7	32.7	30.5	-89.95	628.2	150.6	1,481.4	1,420.5	60.92	24.317		
8,700.0	8,550.3	8,576.6	8,552.5	32.8	30.5	-90.09	628.3	149.9	1,481.4	1,420.4	60.95	24.304		
8,725.0	8,563.1	8,576.6	8,552.5	32.8	30.5	-90.06	628.3	149.9	1,481.6	1,420.6	61.03	24.277		
8,750.0	8,574.7	8,580.9	8,556.7	32.8	30.6	-90.14	628.3	149.0	1,482.3	1,421.1	61.13	24.248		
8,775.0	8,585.2	8,583.8	8,559.5	32.9	30.6	-90.12	628.3	148.4	1,483.3	1,422.1	61.23	24.227		
8,800.0	8,594.4	8,585.9	8,561.6	32.9	30.6	-90.03	628.3	148.0	1,484.8	1,423.5	61.32	24.213		
8,825.0	8,602.5	8,590.1	8,565.8	33.0	30.6	-89.96	628.4	147.0	1,486.7	1,425.2	61.44	24.199		
8,850.0	8,609.3	8,590.1	8,565.8	33.0	30.6	-89.69	628.4	147.0	1,489.0	1,427.4	61.53	24.198		
8,875.0	8,614.8	8,590.1	8,565.8	33.1	30.6	-89.36	628.4	147.0	1,491.7	1,430.0	61.63	24.202		
8,900.0	8,619.0	8,590.1	8,565.8	33.2	30.6	-88.99	628.4	147.0	1,494.8	1,433.0	61.74	24.210		
8,925.0	8,622.0	8,586.3	8,562.0	33.3	30.6	-88.42	628.3	147.9	1,498.3	1,436.4	61.83	24.231		
8,950.0	8,623.6	8,584.6	8,560.4	33.3	30.6	-87.88	628.3	148.2	1,502.1	1,440.2	61.94	24.251		
8,968.8	8,624.0	8,583.1	8,558.8	33.4	30.6	-87.44	628.3	148.6	1,505.2	1,443.2	62.02	24.270		
9,000.0	8,624.0	8,576.6	8,552.5	33.6	30.5	-87.20	628.3	149.9	1,510.9	1,448.8	62.14	24.314		
9,100.0	8,624.0	8,576.6	8,552.5	34.2	30.5	-87.20	628.3	149.9	1,533.1	1,470.4	62.69	24.455		
9,200.0	8,624.0	8,563.0	8,539.2	35.0	30.5	-86.68	628.3	152.4	1,561.4	1,498.2	63.22	24.698		
9,300.0	8,624.0	8,563.0	8,539.2	36.1	30.5	-86.68	628.3	152.4	1,595.3	1,531.5	63.86	24.982		
9,400.0	8,624.0	8,555.2	8,531.5	37.3	30.5	-86.39	628.3	153.7	1,634.6	1,570.2	64.46	25.357		
9,500.0	8,624.0	8,549.6	8,525.9	38.6	30.5	-86.17	628.4	154.6	1,679.0	1,613.9	65.08	25.799		
9,600.0	8,624.0	8,545.0	8,521.4	40.0	30.4	-86.00	628.5	155.2	1,727.9	1,662.2	65.68	26.308		
9,700.0	8,624.0	8,536.1	8,512.6	41.5	30.4	-85.66	628.6	156.4	1,781.1	1,714.8	66.23	26.891		
9,800.0	8,624.0	8,536.1	8,512.6	43.1	30.4	-85.66	628.6	156.4	1,838.1	1,771.3	66.80	27.516		
9,900.0	8,624.0	8,536.1	8,512.6	44.8	30.4	-85.66	628.6	156.4	1,898.6	1,831.3	67.33	28.198		
10,000.0	8,624.0	8,529.7	8,506.2	46.6	30.4	-85.42	628.7	157.2	1,962.4	1,894.6	67.79	28.947		
10,100.0	8,624.0	8,522.7	8,499.3	48.4	30.4	-85.15	628.9	157.9	2,029.1	1,960.9	68.21	29.746		
10,200.0	8,624.0	8,522.7	8,499.3	50.3	30.4	-85.15	628.9	157.9	2,098.4	2,029.8	68.64	30.573		
10,300.0	8,624.0	8,522.7	8,499.3	52.2	30.4	-85.15	628.9	157.9	2,170.1	2,101.1	69.02	31.441		
10,400.0	8,624.0	8,522.7	8,499.3	54.1	30.4	-85.15	628.9	157.9	2,244.0	2,174.6	69.38	32.345		
10,500.0	8,624.0	8,522.7	8,499.3	56.1	30.4	-85.15	628.9	157.9	2,319.8	2,250.1	69.70	33.283		
10,600.0	8,624.0	8,516.1	8,492.7	58.1	30.3	-84.90	629.0	158.6	2,397.4	2,327.4	69.97	34.265		
10,700.0	8,624.0	8,509.3	8,485.9	60.2	30.3	-84.64	629.1	159.1	2,476.6	2,406.4	70.21	35.276		
10,800.0	8,624.0	8,509.3	8,485.9	62.3	30.3	-84.64	629.1	159.1	2,557.2	2,486.7	70.46	36.295		
10,900.0	8,624.0	8,509.3	8,485.9	64.4	30.3	-84.64	629.1	159.1	2,639.1	2,568.5	70.68	37.337		
11,000.0	8,624.0	8,509.3	8,485.9	66.5	30.3	-84.64	629.1	159.1	2,722.3	2,651.4	70.89	38.399		
11,100.0	8,624.0	8,509.3	8,485.9	68.6	30.3	-84.64	629.1	159.1	2,806.5	2,735.5	71.09	39.480		
11,200.0	8,624.0	8,509.3	8,485.9	70.8	30.3	-84.64	629.1	159.1	2,891.8	2,820.5	71.27	40.577		
11,300.0	8,624.0	8,509.3	8,485.9	73.0	30.3	-84.64	629.1	159.1	2,978.0	2,906.5	71.43	41.690		
11,400.0	8,624.0	8,509.3	8,485.9	75.2	30.3	-84.64	629.1	159.1	3,065.0	2,993.4	71.58	42.816		
11,500.0	8,624.0	8,509.3	8,485.9	77.4	30.3	-84.64	629.1	159.1	3,152.8	3,081.0	71.73	43.955		
11,600.0	8,624.0	8,509.3	8,485.9	79.6	30.3	-84.64	629.1	159.1	3,241.3	3,169.4	71.86	45.106		
11,700.0	8,624.0	8,503.2	8,479.8	81.8	30.3	-84.41	629.3	159.5	3,330.4	3,258.4	71.96	46.280		
11,800.0	8,624.0	8,502.4	8,479.0	84.1	30.3	-84.38	629.3	159.6	3,420.1	3,348.0	72.07	47.452		
11,900.0	8,624.0	8,495.9	8,472.5	86.3	30.3	-84.13	629.4	159.9	3,510.4	3,438.3	72.16	48.648		
12,000.0	8,624.0	8,495.9	8,472.5	88.6	30.3	-84.13	629.4	159.9	3,601.2	3,528.9	72.26	49.834		
12,100.0	8,624.0	8,495.9	8,472.5	90.8	30.3	-84.13	629.4	159.9	3,692.5	3,620.1	72.36	51.028		
12,200.0	8,624.0	8,495.9	8,472.5	93.1	30.3	-84.13	629.4	159.9	3,784.2	3,711.7	72.46	52.228		
12,300.0	8,624.0	8,495.9	8,472.5	95.4	30.3	-84.13	629.4	159.9	3,876.3	3,803.8	72.54	53.434		
12,400.0	8,624.0	8,495.9	8,472.5	97.7	30.3	-84.13	629.4	159.9	3,968.8	3,896.2	72.63	54.645		
12,500.0	8,624.0	8,495.9	8,472.5	100.0	30.3	-84.13	629.4	159.9	4,061.7	3,988.9	72.71	55.862		
12,600.0	8,624.0	8,495.9	8,472.5	102.3	30.3	-84.13	629.4	159.9	4,154.8	4,082.0	72.79	57.082		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD													Offset Site Error: 0.0 usft	
Survey Program: Reference		14-MWD+IFR1+MS Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
12,700.0	8,624.0	8,495.9	8,472.5	104.6	30.3	-84.13	629.4	159.9	4,248.3	4,175.5	72.86	58.307		
12,800.0	8,624.0	8,495.9	8,472.5	106.9	30.3	-84.13	629.4	159.9	4,342.1	4,269.2	72.93	59.535		
12,900.0	8,624.0	8,495.9	8,472.5	109.2	30.3	-84.13	629.4	159.9	4,436.2	4,363.2	73.00	60.767		
13,000.0	8,624.0	8,495.9	8,472.5	111.5	30.3	-84.13	629.4	159.9	4,530.5	4,457.4	73.07	62.001		
13,100.0	8,624.0	8,495.9	8,472.5	113.9	30.3	-84.13	629.4	159.9	4,625.0	4,551.9	73.14	63.238		
13,200.0	8,624.0	8,495.9	8,472.5	116.2	30.3	-84.13	629.4	159.9	4,719.8	4,646.6	73.20	64.478		
13,300.0	8,624.0	8,495.9	8,472.5	118.5	30.3	-84.13	629.4	159.9	4,814.8	4,741.5	73.26	65.719		
13,400.0	8,624.0	8,495.9	8,472.5	120.9	30.3	-84.13	629.4	159.9	4,910.0	4,836.7	73.32	66.962		
13,500.0	8,624.0	8,495.9	8,472.5	123.2	30.3	-84.13	629.4	159.9	5,005.4	4,932.0	73.39	68.207		
13,600.0	8,624.0	8,495.9	8,472.5	125.5	30.3	-84.13	629.4	159.9	5,100.9	5,027.5	73.44	69.453		
13,700.0	8,624.0	8,495.9	8,472.5	127.9	30.3	-84.13	629.4	159.9	5,196.6	5,123.1	73.50	70.700		
13,800.0	8,624.0	8,495.9	8,472.5	130.2	30.3	-84.13	629.4	159.9	5,292.5	5,218.9	73.56	71.948		
13,900.0	8,624.0	8,489.8	8,466.4	132.6	30.3	-83.90	629.6	160.1	5,388.5	5,314.9	73.60	73.215		
14,000.0	8,624.0	8,489.3	8,465.9	134.9	30.3	-83.88	629.6	160.2	5,484.7	5,411.0	73.65	74.466		
14,100.0	8,624.0	8,488.9	8,465.5	137.3	30.3	-83.86	629.6	160.2	5,581.0	5,507.3	73.71	75.717		
14,200.0	8,624.0	8,488.4	8,465.1	139.7	30.3	-83.84	629.6	160.2	5,677.4	5,603.6	73.76	76.969		
14,300.0	8,624.0	8,482.4	8,459.1	142.0	30.2	-83.62	629.7	160.4	5,774.0	5,700.2	73.80	78.239		
14,400.0	8,624.0	8,482.4	8,459.1	144.4	30.2	-83.62	629.7	160.4	5,870.6	5,796.8	73.85	79.489		
14,500.0	8,624.0	8,482.4	8,459.1	146.7	30.2	-83.62	629.7	160.4	5,967.4	5,893.5	73.91	80.740		
14,600.0	8,624.0	8,482.4	8,459.1	149.1	30.2	-83.62	629.7	160.4	6,064.3	5,990.3	73.96	81.990		
14,700.0	8,624.0	8,482.4	8,459.1	151.5	30.2	-83.62	629.7	160.4	6,161.2	6,087.2	74.02	83.240		
14,800.0	8,624.0	8,482.4	8,459.1	153.8	30.2	-83.62	629.7	160.4	6,258.3	6,184.2	74.07	84.489		
14,900.0	8,624.0	8,482.4	8,459.1	156.2	30.2	-83.62	629.7	160.4	6,355.5	6,281.3	74.13	85.738		
15,000.0	8,624.0	8,482.4	8,459.1	158.6	30.2	-83.62	629.7	160.4	6,452.7	6,378.5	74.18	86.986		
15,100.0	8,624.0	8,482.4	8,459.1	161.0	30.2	-83.62	629.7	160.4	6,550.1	6,475.8	74.24	88.234		
15,200.0	8,624.0	8,482.4	8,459.1	163.3	30.2	-83.62	629.7	160.4	6,647.5	6,573.2	74.29	89.480		
15,300.0	8,624.0	8,482.4	8,459.1	165.7	30.2	-83.62	629.7	160.4	6,744.9	6,670.6	74.34	90.726		
15,400.0	8,624.0	8,482.4	8,459.1	168.1	30.2	-83.62	629.7	160.4	6,842.5	6,768.1	74.40	91.970		
15,500.0	8,624.0	8,482.4	8,459.1	170.5	30.2	-83.62	629.7	160.4	6,940.1	6,865.7	74.45	93.214		
15,600.0	8,624.0	8,482.4	8,459.1	172.9	30.2	-83.62	629.7	160.4	7,037.8	6,963.3	74.51	94.456		
15,700.0	8,624.0	8,482.4	8,459.1	175.2	30.2	-83.62	629.7	160.4	7,135.6	7,061.0	74.56	95.697		
15,800.0	8,624.0	8,482.4	8,459.1	177.6	30.2	-83.62	629.7	160.4	7,233.4	7,158.8	74.62	96.936		
15,900.0	8,624.0	8,482.4	8,459.1	180.0	30.2	-83.62	629.7	160.4	7,331.3	7,256.6	74.68	98.174		
16,000.0	8,624.0	8,482.4	8,459.1	182.4	30.2	-83.62	629.7	160.4	7,429.2	7,354.5	74.73	99.411		
16,100.0	8,624.0	8,482.4	8,459.1	184.8	30.2	-83.62	629.7	160.4	7,527.2	7,452.4	74.79	100.646		
16,200.0	8,624.0	8,482.4	8,459.1	187.2	30.2	-83.62	629.7	160.4	7,625.2	7,550.4	74.85	101.880		
16,300.0	8,624.0	8,482.4	8,459.1	189.6	30.2	-83.62	629.7	160.4	7,723.3	7,648.4	74.90	103.112		
16,400.0	8,624.0	8,478.0	8,454.7	191.9	30.2	-83.45	629.8	160.5	7,821.5	7,746.5	74.95	104.359		
16,500.0	8,624.0	8,476.9	8,453.6	194.3	30.2	-83.41	629.9	160.5	7,919.7	7,844.7	75.00	105.592		
16,600.0	8,624.0	8,475.8	8,452.5	196.7	30.2	-83.37	629.9	160.6	8,017.9	7,942.8	75.06	106.823		
16,700.0	8,624.0	8,474.8	8,451.4	199.1	30.2	-83.33	629.9	160.6	8,116.2	8,041.0	75.11	108.052		
16,800.0	8,624.0	8,473.7	8,450.4	201.5	30.2	-83.29	629.9	160.6	8,214.5	8,139.3	75.17	109.279		
16,900.0	8,624.0	8,469.0	8,445.6	203.9	30.2	-83.11	630.0	160.7	8,312.8	8,237.6	75.22	110.520		
17,000.0	8,624.0	8,469.0	8,445.6	206.3	30.2	-83.11	630.0	160.7	8,411.2	8,335.9	75.28	111.739		
17,100.0	8,624.0	8,469.0	8,445.6	208.7	30.2	-83.11	630.0	160.7	8,509.6	8,434.3	75.34	112.956		
17,200.0	8,624.0	8,469.0	8,445.6	211.1	30.2	-83.11	630.0	160.7	8,608.1	8,532.7	75.40	114.171		
17,300.0	8,624.0	8,469.0	8,445.6	213.5	30.2	-83.11	630.0	160.7	8,706.6	8,631.2	75.46	115.384		
17,400.0	8,624.0	8,469.0	8,445.6	215.9	30.2	-83.11	630.0	160.7	8,805.1	8,729.6	75.52	116.595		
17,500.0	8,624.0	8,469.0	8,445.6	218.3	30.2	-83.11	630.0	160.7	8,903.7	8,828.1	75.58	117.804		
17,600.0	8,624.0	8,469.0	8,445.6	220.7	30.2	-83.11	630.0	160.7	9,002.3	8,926.7	75.64	119.010		
17,700.0	8,624.0	8,464.3	8,440.9	223.1	30.2	-82.93	630.1	160.8	9,100.9	9,025.2	75.69	120.234		
17,800.0	8,624.0	8,463.2	8,439.8	225.5	30.2	-82.89	630.2	160.9	9,199.6	9,123.8	75.75	121.441		

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD												Offset Site Error:	0.0 usft
Survey Program: 14-MWD+IFR1+MS												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Minimum		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	
17,900.0	8,624.0	8,462.1	8,438.8	227.9	30.2	-82.85	630.2	160.9	9,298.3	9,222.5	75.81	122.645	
18,000.0	8,624.0	8,461.1	8,437.8	230.3	30.2	-82.81	630.2	160.9	9,397.0	9,321.1	75.88	123.847	
18,100.0	8,624.0	8,460.1	8,436.7	232.6	30.2	-82.77	630.2	160.9	9,495.7	9,419.8	75.94	125.046	
18,200.0	8,624.0	8,455.6	8,432.3	235.0	30.2	-82.60	630.3	161.0	9,594.5	9,518.5	75.99	126.259	
18,300.0	8,624.0	8,455.6	8,432.3	237.4	30.2	-82.60	630.3	161.0	9,693.3	9,617.2	76.06	127.449	
18,400.0	8,624.0	8,455.6	8,432.3	239.8	30.2	-82.60	630.3	161.0	9,792.1	9,716.0	76.12	128.636	
18,500.0	8,624.0	8,455.6	8,432.3	242.3	30.2	-82.60	630.3	161.0	9,890.9	9,814.7	76.19	129.821	
18,600.0	8,624.0	8,455.6	8,432.3	244.7	30.2	-82.60	630.3	161.0	9,989.8	9,913.5	76.26	131.004	
18,700.0	8,624.0	8,455.6	8,432.3	247.1	30.2	-82.60	630.3	161.0	10,088.7	10,012.4	76.32	132.184	
18,800.0	8,624.0	8,455.6	8,432.3	249.5	30.2	-82.60	630.3	161.0	10,187.6	10,111.2	76.39	133.361	
18,900.0	8,624.0	8,455.6	8,432.3	251.9	30.2	-82.60	630.3	161.0	10,286.5	10,210.1	76.46	134.535	
19,000.0	8,624.0	8,455.6	8,432.3	254.3	30.2	-82.60	630.3	161.0	10,385.5	10,308.9	76.53	135.707	
19,100.0	8,624.0	8,451.0	8,427.6	256.7	30.1	-82.42	630.4	161.1	10,484.4	10,407.8	76.59	136.899	
19,200.0	8,624.0	8,450.1	8,426.8	259.1	30.1	-82.39	630.4	161.2	10,583.4	10,506.8	76.65	138.069	
19,235.6	8,624.0	8,449.8	8,426.5	259.9	30.1	-82.38	630.4	161.2	10,618.6	10,542.0	76.68	138.485	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD												Offset Site Error:	0.0 usft
Survey Program: 15-MWD+IFR1+MS												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	-59.30	60.1	-101.3	117.8				
100.0	100.0	101.4	101.4	0.1	0.3	-59.57	59.3	-101.0	117.2	116.8	0.38	304.311	
200.0	200.0	202.7	202.7	0.5	0.6	-60.37	57.0	-100.2	115.3	114.2	1.11	104.173	
300.0	300.0	303.0	302.9	0.8	1.0	-61.50	53.8	-99.2	112.9	111.0	1.83	61.829	
400.0	400.0	403.1	403.0	1.2	1.3	-62.83	50.3	-98.0	110.2	107.6	2.54	43.315	
500.0	500.0	502.4	502.2	1.6	1.7	-64.09	47.1	-96.9	107.8	104.5	3.26	33.070	
600.0	600.0	602.0	601.8	1.9	2.1	-64.94	44.9	-96.0	106.0	102.0	3.97	26.671	
700.0	700.0	702.3	702.0	2.3	2.4	-65.64	43.0	-94.9	104.2	99.5	4.69	22.198	
800.0	800.0	802.4	802.1	2.6	2.8	-65.88	41.7	-93.2	102.2	96.7	5.41	18.890	
900.0	900.0	903.1	902.7	3.0	3.1	-65.56	41.3	-90.8	99.8	93.7	6.12	16.310	
1,000.0	1,000.0	1,004.7	1,004.3	3.4	3.5	-64.84	40.9	-87.1	96.3	89.5	6.83	14.091	
1,100.0	1,100.0	1,105.5	1,104.9	3.7	3.8	-63.84	40.1	-81.6	91.0	83.5	7.55	12.063	
1,200.0	1,200.0	1,203.8	1,203.2	4.1	4.2	-62.79	39.6	-77.0	86.6	78.4	8.26	10.496	
1,300.0	1,300.0	1,302.7	1,302.0	4.4	4.5	-61.83	39.7	-74.1	84.0	75.1	8.96	9.375	
1,400.0	1,400.0	1,401.3	1,400.6	4.8	4.9	-61.52	39.4	-72.6	82.5	72.9	9.67	8.534	
1,487.9	1,487.9	1,488.6	1,487.9	5.1	5.2	-60.41	40.6	-71.6	82.3	72.0	10.28	8.003	
1,500.0	1,500.0	1,500.7	1,500.0	5.1	5.2	-60.21	40.9	-71.4	82.3	71.9	10.37	7.939	
1,600.0	1,600.0	1,600.4	1,599.6	5.5	5.6	-58.06	43.7	-70.1	82.6	71.5	11.07	7.465	
1,700.0	1,700.0	1,701.1	1,700.2	5.9	5.9	-55.91	46.4	-68.5	82.8	71.0	11.77	7.031	
1,800.0	1,800.0	1,802.4	1,801.6	6.2	6.3	-55.95	45.5	-67.4	81.3	68.8	12.49	6.511	
1,900.0	1,900.0	1,904.7	1,903.8	6.6	6.6	-57.23	42.3	-65.7	78.3	65.1	13.21	5.926	
2,000.0	2,000.0	2,005.8	2,004.3	6.9	7.0	-63.33	32.3	-64.3	72.0	58.1	13.92	5.177	
2,100.0	2,100.0	2,105.2	2,103.3	7.3	7.4	105.94	22.4	-62.9	67.3	52.7	14.62	4.603	
2,200.0	2,199.8	2,205.4	2,203.0	7.6	7.7	103.75	13.6	-60.8	63.6	48.3	15.30	4.160	
2,300.0	2,299.5	2,306.4	2,303.2	7.9	8.1	102.13	1.7	-58.1	59.4	43.4	15.98	3.716	
2,400.0	2,398.7	2,406.4	2,402.3	8.3	8.4	102.06	-11.7	-55.4	55.4	38.7	16.67	3.323	
2,500.0	2,497.5	2,506.1	2,501.1	8.6	8.8	105.20	-25.5	-53.0	52.3	34.9	17.37	3.011	
2,600.0	2,595.9	2,605.7	2,599.7	9.0	9.2	110.49	-39.2	-51.0	50.4	32.3	18.07	2.787	
2,700.0	2,694.4	2,705.3	2,698.4	9.3	9.5	116.16	-52.5	-49.4	49.5	30.7	18.78	2.633	
2,745.6	2,739.4	2,750.8	2,743.5	9.5	9.7	118.79	-58.6	-48.8	49.4	30.3	19.11	2.583 CC	
2,800.0	2,792.9	2,805.1	2,797.3	9.7	9.9	121.85	-65.8	-48.2	49.5	30.0	19.49	2.537	
2,900.0	2,891.4	2,905.1	2,896.3	10.1	10.2	126.98	-79.4	-47.3	49.9	29.7	20.20	2.472	
3,000.0	2,989.9	3,005.1	2,995.3	10.4	10.6	131.52	-93.4	-46.6	50.6	29.7	20.91	2.419 ES	
3,100.0	3,088.3	3,105.1	3,094.3	10.8	11.0	135.89	-107.7	-45.7	51.3	29.7	21.61	2.374	
3,200.0	3,186.8	3,205.0	3,193.2	11.2	11.3	140.11	-121.9	-44.8	52.3	29.9	22.32	2.341	
3,300.0	3,285.3	3,304.8	3,292.0	11.6	11.7	143.97	-136.1	-44.2	53.7	30.7	23.03	2.332	
3,400.0	3,383.8	3,404.7	3,390.9	12.0	12.1	147.44	-150.2	-43.7	55.5	31.8	23.74	2.338	
3,500.0	3,482.3	3,504.7	3,489.9	12.4	12.4	150.53	-164.6	-43.4	57.3	32.9	24.45	2.345	
3,600.0	3,580.8	3,604.4	3,588.6	12.8	12.8	153.20	-178.9	-43.2	59.4	34.3	25.17	2.361	
3,700.0	3,679.2	3,703.7	3,687.0	13.3	13.2	156.90	-191.9	-42.1	62.5	36.6	25.88	2.413	
3,800.0	3,777.7	3,803.5	3,785.9	13.7	13.5	160.92	-204.3	-40.4	66.3	39.7	26.59	2.495	
3,900.0	3,876.2	3,901.7	3,883.5	14.1	13.9	164.32	-215.6	-39.1	71.4	44.1	27.31	2.615	
4,000.0	3,974.7	3,998.8	3,980.2	14.5	14.3	168.29	-223.4	-36.7	80.1	52.0	28.01	2.858	
4,100.0	4,073.2	4,097.5	4,078.8	14.9	14.6	171.36	-229.6	-34.6	90.8	62.1	28.71	3.161	
4,200.0	4,171.6	4,196.6	4,177.6	15.4	15.0	173.74	-235.5	-32.6	102.0	72.6	29.42	3.467	
4,300.0	4,270.1	4,295.5	4,276.3	15.8	15.3	175.65	-241.1	-30.6	113.7	83.6	30.13	3.773	
4,400.0	4,368.6	4,393.9	4,374.6	16.2	15.7	177.28	-246.3	-28.5	125.9	95.1	30.84	4.082	
4,500.0	4,467.1	4,493.2	4,473.8	16.6	16.0	178.91	-250.6	-25.5	139.1	107.5	31.56	4.407	
4,600.0	4,565.6	4,591.1	4,571.4	17.1	16.4	-179.04	-255.3	-20.8	152.2	119.9	32.27	4.717	
4,700.0	4,664.0	4,694.9	4,674.7	17.5	16.8	-176.25	-262.4	-13.3	163.7	130.7	33.03	4.956	
4,800.0	4,762.5	4,792.7	4,771.8	17.9	17.1	-173.39	-269.9	-4.6	175.1	141.4	33.76	5.188	
4,900.0	4,861.0	4,891.1	4,869.5	18.4	17.5	-170.67	-276.9	5.0	187.6	153.1	34.49	5.438	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD												Offset Site Error:	0.0 usft
Survey Program: 15-MWD+IFR1+MS												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)					
5,000.0	4,959.5	4,994.2	4,971.9	18.8	17.9	-168.20	-284.8	14.8	199.9	164.7	35.27	5.668	
5,100.0	5,058.0	5,095.9	5,072.6	19.2	18.2	-166.18	-294.8	23.2	210.1	174.0	36.04	5.828	
5,200.0	5,156.4	5,203.0	5,178.9	19.7	18.6	-164.39	-306.6	31.1	219.1	182.3	36.82	5.952	
5,300.0	5,254.9	5,302.3	5,277.1	20.1	19.0	-163.04	-319.6	36.8	225.8	188.2	37.59	6.007	
5,400.0	5,353.4	5,398.8	5,372.9	20.6	19.3	-162.08	-331.2	41.5	233.2	194.8	38.34	6.081	
5,500.0	5,451.9	5,495.0	5,468.5	21.0	19.7	-161.68	-340.5	45.0	242.2	203.2	39.07	6.200	
5,600.0	5,550.4	5,594.6	5,567.7	21.4	20.1	-161.52	-349.1	47.9	252.0	212.2	39.81	6.330	
5,700.0	5,648.9	5,698.3	5,670.8	21.9	20.4	-161.30	-359.5	50.7	260.5	219.9	40.58	6.420	
5,800.0	5,747.3	5,798.7	5,770.6	22.3	20.8	-161.12	-369.7	53.2	268.7	227.3	41.32	6.502	
5,900.0	5,845.8	5,908.8	5,879.7	22.8	21.2	-160.46	-384.8	56.7	273.8	231.8	42.09	6.506	
6,000.0	5,944.3	6,006.1	5,975.9	23.2	21.6	-160.02	-398.6	58.9	278.3	235.4	42.85	6.494	
6,100.0	6,042.8	6,101.5	6,070.6	23.6	21.9	-159.94	-410.4	60.1	284.1	240.5	43.60	6.516	
6,200.0	6,141.3	6,196.7	6,165.3	24.1	22.3	-160.09	-420.2	60.9	291.4	247.1	44.32	6.575	
6,300.0	6,239.7	6,302.0	6,269.9	24.5	22.7	-159.89	-432.6	63.1	298.1	253.0	45.09	6.611	
6,400.0	6,338.2	6,398.0	6,365.2	25.0	23.0	-159.91	-443.1	64.4	305.1	259.3	45.83	6.657	
6,500.0	6,436.7	6,503.4	6,470.0	25.4	23.4	-159.99	-454.3	65.6	312.3	265.7	46.58	6.705	
6,600.0	6,535.2	6,604.1	6,569.5	25.9	23.8	-159.29	-469.4	69.4	316.7	269.4	47.36	6.688	
6,700.0	6,633.7	6,695.7	6,660.5	26.3	24.1	-159.14	-479.7	71.6	323.9	275.8	48.09	6.736	
6,800.0	6,732.1	6,817.4	6,781.2	26.8	24.6	-159.04	-494.6	73.4	330.2	281.3	48.84	6.760	
6,884.9	6,815.8	6,906.9	6,869.0	27.1	24.9	-158.42	-511.8	75.0	329.8	280.4	49.49	6.665	
6,900.0	6,830.6	6,921.1	6,883.0	27.2	25.0	-158.35	-514.5	75.2	329.9	280.3	49.61	6.649	
6,925.7	6,855.9	6,945.3	6,906.7	27.3	25.0	-158.24	-518.8	75.4	330.0	280.2	49.81	6.625	
7,000.0	6,929.3	7,014.1	6,974.7	27.6	25.3	-158.03	-530.2	75.6	330.2	279.8	50.40	6.553	
7,100.0	7,028.4	7,108.9	7,068.5	28.1	25.6	-157.88	-543.5	74.9	329.5	278.3	51.15	6.441	
7,200.0	7,127.9	7,205.4	7,164.2	28.4	26.0	-157.62	-555.7	74.0	326.8	274.9	51.89	6.297	
7,300.0	7,227.7	7,301.5	7,259.7	28.8	26.4	-157.21	-566.7	73.2	321.9	269.2	52.62	6.116	
7,400.0	7,327.7	7,396.8	7,354.3	29.1	26.7	-156.12	-577.9	74.8	314.8	261.4	53.36	5.900	
7,425.7	7,353.4	7,420.3	7,377.7	29.2	26.8	-155.94	-580.4	75.4	312.8	259.3	53.54	5.843	
7,500.0	7,427.7	7,493.1	7,450.1	29.4	27.1	-155.77	-587.7	77.2	307.3	253.2	54.09	5.682	
7,600.0	7,527.7	7,595.4	7,551.6	29.7	27.4	-155.61	-599.3	81.0	299.5	244.7	54.86	5.460	
7,700.0	7,627.7	7,698.7	7,653.6	30.0	27.8	-155.46	-614.4	87.1	290.4	234.7	55.67	5.216	
7,800.0	7,727.7	7,788.0	7,742.0	30.3	28.2	-155.31	-625.8	92.2	283.4	227.0	56.41	5.024	
7,900.0	7,827.7	7,884.0	7,837.4	30.6	28.5	-155.16	-635.1	97.9	279.3	222.2	57.16	4.887	
8,000.0	7,927.7	7,986.6	7,938.9	30.9	28.9	-155.01	-647.9	106.3	275.1	217.1	58.02	4.742	
8,100.0	8,027.7	8,089.0	8,040.2	31.2	29.3	-154.86	-660.8	113.7	271.0	212.1	58.87	4.603	
8,200.0	8,127.7	8,191.6	8,142.0	31.5	29.6	-154.71	-672.5	117.9	266.0	206.3	59.69	4.457	
8,218.8	8,146.5	8,210.9	8,161.1	31.6	29.7	-154.56	-674.6	118.4	265.0	205.2	59.84	4.428	
8,225.0	8,152.7	8,217.2	8,167.5	31.6	29.7	-154.41	-675.3	118.5	264.6	204.7	59.89	4.419	
8,250.0	8,177.7	8,242.7	8,192.8	31.7	29.8	-154.26	-678.0	119.1	262.5	202.4	60.08	4.369	
8,275.0	8,202.6	8,268.0	8,217.9	31.8	29.9	-154.11	-680.7	119.5	259.3	199.1	60.27	4.303	
8,300.0	8,227.3	8,293.3	8,243.1	31.8	30.0	-153.96	-683.8	120.2	255.1	194.7	60.45	4.220	
8,325.0	8,251.8	8,317.3	8,266.8	31.9	30.1	-153.81	-687.1	121.1	250.0	189.4	60.63	4.124	
8,350.0	8,276.1	8,340.8	8,290.1	32.0	30.2	-153.66	-690.4	122.2	244.0	183.2	60.80	4.013	
8,375.0	8,299.9	8,363.9	8,312.8	32.1	30.3	-153.51	-693.5	123.3	237.2	176.2	60.95	3.891	
8,400.0	8,323.4	8,386.7	8,335.5	32.1	30.4	-153.36	-696.5	124.4	229.6	168.5	61.09	3.758	
8,425.0	8,346.3	8,409.3	8,357.9	32.2	30.5	-153.21	-699.3	125.4	221.2	160.0	61.22	3.614	
8,450.0	8,368.8	8,431.7	8,380.1	32.3	30.5	-153.06	-702.1	126.5	212.2	150.9	61.33	3.460	
8,475.0	8,390.6	8,453.9	8,402.1	32.3	30.6	-152.91	-704.7	127.5	202.6	141.2	61.43	3.298	
8,500.0	8,411.7	8,475.9	8,423.9	32.4	30.7	-152.76	-707.3	128.4	192.5	131.0	61.51	3.129	
8,525.0	8,432.1	8,497.3	8,445.2	32.4	30.8	-152.61	-709.8	129.2	182.0	120.4	61.56	2.956	
8,550.0	8,451.8	8,517.9	8,465.6	32.5	30.9	-152.46	-712.3	129.8	171.4	109.8	61.58	2.783	
8,575.0	8,470.6	8,543.3	8,490.7	32.5	31.0	-152.31	-715.6	130.4	160.7	99.2	61.55	2.611	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD												Offset Site Error:	0.0 usft
Survey Program: 15-MWD+IFR1+MS												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)					
8,600.0	8,488.5	8,571.7	8,518.7	32.6	31.1	-80.37	-720.7	130.2	149.7	88.4	61.28	2.443	
8,625.0	8,505.4	8,595.7	8,542.0	32.6	31.1	-89.35	-726.4	129.2	138.9	78.1	60.86	2.283	
8,650.0	8,521.4	8,615.2	8,560.7	32.7	31.2	-97.73	-731.8	127.8	129.6	69.1	60.50	2.142	
8,675.0	8,536.4	8,631.2	8,575.9	32.7	31.3	-105.01	-736.7	126.3	122.9	62.5	60.36	2.036	
8,700.0	8,550.3	8,644.2	8,588.0	32.8	31.3	-110.93	-740.9	124.8	120.1	59.5	60.57	1.982	
8,703.1	8,551.9	8,645.6	8,589.3	32.8	31.3	-111.55	-741.4	124.6	120.0	59.4	60.63	1.980 SF	
8,725.0	8,563.1	8,654.6	8,597.7	32.8	31.4	-115.33	-744.5	123.4	121.9	60.8	61.11	1.995	
8,750.0	8,574.7	8,662.7	8,605.2	32.8	31.4	-118.26	-747.3	122.2	128.6	66.8	61.78	2.081	
8,775.0	8,585.2	8,669.0	8,610.9	32.9	31.4	-119.86	-749.6	121.2	139.7	77.3	62.38	2.239	
8,800.0	8,594.4	8,673.9	8,615.5	32.9	31.4	-120.30	-751.5	120.4	154.4	91.5	62.82	2.457	
8,825.0	8,602.5	8,677.5	8,618.7	33.0	31.5	-119.47	-752.8	119.8	171.8	108.7	63.12	2.722	
8,850.0	8,609.3	8,679.6	8,620.6	33.0	31.5	-117.24	-753.6	119.5	191.3	128.0	63.29	3.022	
8,875.0	8,614.8	8,680.4	8,621.4	33.1	31.5	-113.51	-753.9	119.3	212.2	148.8	63.39	3.348	
8,900.0	8,619.0	8,680.1	8,621.1	33.2	31.5	-108.13	-753.8	119.4	234.2	170.7	63.43	3.692	
8,925.0	8,622.0	8,678.6	8,619.7	33.3	31.5	-101.05	-753.2	119.6	256.9	193.4	63.44	4.049	
8,950.0	8,623.6	8,676.1	8,617.5	33.3	31.4	-92.38	-752.3	120.0	280.0	216.6	63.44	4.414	
8,968.8	8,624.0	8,673.7	8,615.2	33.4	31.4	-85.09	-751.4	120.5	297.6	234.2	63.43	4.692	
9,000.0	8,624.0	8,670.4	8,612.3	33.6	31.4	-83.52	-750.2	121.0	327.1	263.7	63.43	5.156	
9,100.0	8,624.0	8,657.0	8,599.9	34.2	31.4	-77.42	-745.3	123.1	422.9	359.5	63.37	6.674	
9,200.0	8,624.0	8,649.4	8,592.8	35.0	31.4	-74.25	-742.7	124.1	520.0	456.6	63.38	8.204	
9,300.0	8,624.0	8,643.6	8,587.5	36.1	31.3	-71.99	-740.7	124.9	617.8	554.4	63.40	9.745	
9,400.0	8,624.0	8,635.9	8,580.3	37.3	31.3	-69.17	-738.2	125.8	716.2	652.8	63.39	11.298	
9,500.0	8,624.0	8,630.1	8,574.8	38.6	31.3	-67.18	-736.3	126.4	814.8	751.4	63.40	12.853	
9,600.0	8,624.0	8,625.7	8,570.7	40.0	31.3	-65.72	-734.9	126.9	913.7	850.3	63.41	14.410	
9,700.0	8,624.0	8,621.4	8,566.6	41.5	31.2	-64.34	-733.6	127.3	1,012.8	949.4	63.42	15.969	
9,800.0	8,624.0	8,616.7	8,562.1	43.1	31.2	-62.89	-732.2	127.7	1,112.0	1,048.6	63.43	17.532	
9,900.0	8,624.0	8,616.7	8,562.1	44.8	31.2	-62.89	-732.2	127.7	1,211.3	1,147.8	63.47	19.086	
10,000.0	8,624.0	8,610.8	8,556.5	46.6	31.2	-61.16	-730.5	128.2	1,310.7	1,247.2	63.46	20.654	
10,100.0	8,624.0	8,607.8	8,553.6	48.4	31.2	-60.32	-729.7	128.4	1,410.2	1,346.7	63.47	22.217	
10,200.0	8,624.0	8,603.3	8,549.3	50.3	31.2	-59.07	-728.4	128.7	1,509.7	1,446.2	63.47	23.784	
10,300.0	8,624.0	8,603.3	8,549.3	52.2	31.2	-59.07	-728.4	128.7	1,609.2	1,545.7	63.51	25.340	
10,400.0	8,624.0	8,603.3	8,549.3	54.1	31.2	-59.07	-728.4	128.7	1,708.9	1,645.3	63.54	26.895	
10,500.0	8,624.0	8,603.3	8,549.3	56.1	31.2	-59.07	-728.4	128.7	1,808.5	1,744.9	63.57	28.450	
10,600.0	8,624.0	8,597.0	8,543.2	58.1	31.2	-57.42	-726.7	129.1	1,908.2	1,844.6	63.56	30.022	
10,700.0	8,624.0	8,595.4	8,541.7	60.2	31.1	-57.00	-726.3	129.2	2,007.9	1,944.3	63.58	31.581	
10,800.0	8,624.0	8,589.9	8,536.4	62.3	31.1	-55.64	-724.9	129.5	2,107.6	2,044.0	63.58	33.150	
10,900.0	8,624.0	8,589.9	8,536.4	64.4	31.1	-55.64	-724.9	129.5	2,207.4	2,143.8	63.61	34.702	
11,000.0	8,624.0	8,589.9	8,536.4	66.5	31.1	-55.64	-724.9	129.5	2,307.1	2,243.5	63.64	36.254	
11,100.0	8,624.0	8,589.9	8,536.4	68.6	31.1	-55.64	-724.9	129.5	2,406.9	2,343.2	63.67	37.804	
11,200.0	8,624.0	8,589.9	8,536.4	70.8	31.1	-55.64	-724.9	129.5	2,506.7	2,443.0	63.70	39.352	
11,300.0	8,624.0	8,589.9	8,536.4	73.0	31.1	-55.64	-724.9	129.5	2,606.5	2,542.8	63.73	40.899	
11,400.0	8,624.0	8,589.9	8,536.4	75.2	31.1	-55.64	-724.9	129.5	2,706.3	2,642.6	63.76	42.445	
11,500.0	8,624.0	8,589.9	8,536.4	77.4	31.1	-55.64	-724.9	129.5	2,806.2	2,742.4	63.79	43.989	
11,600.0	8,624.0	8,589.9	8,536.4	79.6	31.1	-55.64	-724.9	129.5	2,906.0	2,842.2	63.83	45.531	
11,700.0	8,624.0	8,583.8	8,530.5	81.8	31.1	-54.19	-723.4	129.8	3,005.9	2,942.0	63.83	47.093	
11,800.0	8,624.0	8,583.0	8,529.7	84.1	31.1	-54.00	-723.2	129.8	3,105.7	3,041.9	63.86	48.635	
11,900.0	8,624.0	8,582.2	8,528.9	86.3	31.1	-53.81	-723.1	129.8	3,205.6	3,141.7	63.89	50.175	
12,000.0	8,624.0	8,576.4	8,523.3	88.6	31.1	-52.52	-721.8	130.1	3,305.5	3,241.6	63.90	51.732	
12,100.0	8,624.0	8,576.4	8,523.3	90.8	31.1	-52.52	-721.8	130.1	3,405.4	3,341.5	63.93	53.265	
12,200.0	8,624.0	8,576.4	8,523.3	93.1	31.1	-52.52	-721.8	130.1	3,505.3	3,441.3	63.97	54.796	
12,300.0	8,624.0	8,576.4	8,523.3	95.4	31.1	-52.52	-721.8	130.1	3,605.2	3,541.2	64.01	56.325	
12,400.0	8,624.0	8,576.4	8,523.3	97.7	31.1	-52.52	-721.8	130.1	3,705.1	3,641.0	64.04	57.852	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD												Offset Site Error:	0.0 usft
Survey Program: 15-MWD+IFR1+MS Offset												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,500.0	8,624.0	8,576.4	8,523.3	100.0	31.1	-52.52	-721.8	130.1	3,805.0	3,740.9	64.08	59.376	
12,600.0	8,624.0	8,576.4	8,523.3	102.3	31.1	-52.52	-721.8	130.1	3,904.9	3,840.7	64.12	60.898	
12,700.0	8,624.0	8,576.4	8,523.3	104.6	31.1	-52.52	-721.8	130.1	4,004.8	3,940.6	64.16	62.417	
12,800.0	8,624.0	8,576.4	8,523.3	106.9	31.1	-52.52	-721.8	130.1	4,104.7	4,040.5	64.20	63.934	
12,900.0	8,624.0	8,576.4	8,523.3	109.2	31.1	-52.52	-721.8	130.1	4,204.6	4,140.4	64.24	65.448	
13,000.0	8,624.0	8,576.4	8,523.3	111.5	31.1	-52.52	-721.8	130.1	4,304.5	4,240.3	64.29	66.959	
13,100.0	8,624.0	8,576.4	8,523.3	113.9	31.1	-52.52	-721.8	130.1	4,404.5	4,340.1	64.33	68.468	
13,200.0	8,624.0	8,576.4	8,523.3	116.2	31.1	-52.52	-721.8	130.1	4,504.4	4,440.0	64.37	69.974	
13,300.0	8,624.0	8,576.4	8,523.3	118.5	31.1	-52.52	-721.8	130.1	4,604.3	4,539.9	64.42	71.477	
13,400.0	8,624.0	8,576.4	8,523.3	120.9	31.1	-52.52	-721.8	130.1	4,704.3	4,639.8	64.46	72.977	
13,500.0	8,624.0	8,576.4	8,523.3	123.2	31.1	-52.52	-721.8	130.1	4,804.2	4,739.7	64.51	74.474	
13,600.0	8,624.0	8,576.4	8,523.3	125.5	31.1	-52.52	-721.8	130.1	4,904.2	4,839.6	64.56	75.968	
13,700.0	8,624.0	8,576.4	8,523.3	127.9	31.1	-52.52	-721.8	130.1	5,004.1	4,939.5	64.60	77.460	
13,800.0	8,624.0	8,576.4	8,523.3	130.2	31.1	-52.52	-721.8	130.1	5,104.0	5,039.4	64.65	78.948	
13,900.0	8,624.0	8,576.4	8,523.3	132.6	31.1	-52.52	-721.8	130.1	5,204.0	5,139.3	64.70	80.433	
14,000.0	8,624.0	8,576.4	8,523.3	134.9	31.1	-52.52	-721.8	130.1	5,303.9	5,239.2	64.75	81.914	
14,100.0	8,624.0	8,576.4	8,523.3	137.3	31.1	-52.52	-721.8	130.1	5,403.9	5,339.1	64.80	83.393	
14,200.0	8,624.0	8,576.4	8,523.3	139.7	31.1	-52.52	-721.8	130.1	5,503.8	5,439.0	64.85	84.868	
14,300.0	8,624.0	8,576.4	8,523.3	142.0	31.1	-52.52	-721.8	130.1	5,603.8	5,538.9	64.90	86.340	
14,400.0	8,624.0	8,576.4	8,523.3	144.4	31.1	-52.52	-721.8	130.1	5,703.8	5,638.8	64.96	87.809	
14,500.0	8,624.0	8,576.4	8,523.3	146.7	31.1	-52.52	-721.8	130.1	5,803.7	5,738.7	65.01	89.274	
14,600.0	8,624.0	8,570.3	8,517.3	149.1	31.1	-51.19	-720.5	130.2	5,903.7	5,838.6	65.04	90.771	
14,700.0	8,624.0	8,570.1	8,517.1	151.5	31.1	-51.14	-720.4	130.2	6,003.6	5,938.5	65.09	92.231	
14,800.0	8,624.0	8,569.8	8,516.8	153.8	31.1	-51.09	-720.4	130.2	6,103.6	6,038.4	65.15	93.687	
14,900.0	8,624.0	8,569.6	8,516.6	156.2	31.1	-51.04	-720.3	130.2	6,203.5	6,138.3	65.20	95.140	
15,000.0	8,624.0	8,569.4	8,516.4	158.6	31.1	-50.99	-720.3	130.2	6,303.5	6,238.2	65.26	96.589	
15,100.0	8,624.0	8,569.1	8,516.2	161.0	31.0	-50.94	-720.2	130.2	6,403.5	6,338.1	65.32	98.035	
15,200.0	8,624.0	8,563.0	8,510.2	163.3	31.0	-49.68	-719.0	130.4	6,503.5	6,438.1	65.35	99.514	
15,300.0	8,624.0	8,563.0	8,510.2	165.7	31.0	-49.68	-719.0	130.4	6,603.4	6,538.0	65.41	100.951	
15,400.0	8,624.0	8,563.0	8,510.2	168.1	31.0	-49.68	-719.0	130.4	6,703.4	6,637.9	65.47	102.385	
15,500.0	8,624.0	8,563.0	8,510.2	170.5	31.0	-49.68	-719.0	130.4	6,803.3	6,737.8	65.53	103.814	
15,600.0	8,624.0	8,563.0	8,510.2	172.9	31.0	-49.68	-719.0	130.4	6,903.3	6,837.7	65.60	105.240	
15,700.0	8,624.0	8,563.0	8,510.2	175.2	31.0	-49.68	-719.0	130.4	7,003.3	6,937.6	65.66	106.662	
15,800.0	8,624.0	8,563.0	8,510.2	177.6	31.0	-49.68	-719.0	130.4	7,103.3	7,037.5	65.72	108.080	
15,900.0	8,624.0	8,563.0	8,510.2	180.0	31.0	-49.68	-719.0	130.4	7,203.2	7,137.4	65.79	109.495	
16,000.0	8,624.0	8,563.0	8,510.2	182.4	31.0	-49.68	-719.0	130.4	7,303.2	7,237.3	65.85	110.905	
16,100.0	8,624.0	8,563.0	8,510.2	184.8	31.0	-49.68	-719.0	130.4	7,403.2	7,337.2	65.92	112.311	
16,200.0	8,624.0	8,563.0	8,510.2	187.2	31.0	-49.68	-719.0	130.4	7,503.1	7,437.2	65.98	113.713	
16,300.0	8,624.0	8,563.0	8,510.2	189.6	31.0	-49.68	-719.0	130.4	7,603.1	7,537.1	66.05	115.112	
16,400.0	8,624.0	8,563.0	8,510.2	191.9	31.0	-49.68	-719.0	130.4	7,703.1	7,637.0	66.12	116.506	
16,500.0	8,624.0	8,563.0	8,510.2	194.3	31.0	-49.68	-719.0	130.4	7,803.1	7,736.9	66.19	117.896	
16,600.0	8,624.0	8,563.0	8,510.2	196.7	31.0	-49.68	-719.0	130.4	7,903.0	7,836.8	66.26	119.282	
16,700.0	8,624.0	8,563.0	8,510.2	199.1	31.0	-49.68	-719.0	130.4	8,003.0	7,936.7	66.33	120.663	
16,800.0	8,624.0	8,563.0	8,510.2	201.5	31.0	-49.68	-719.0	130.4	8,103.0	8,036.6	66.40	122.041	
16,900.0	8,624.0	8,563.0	8,510.2	203.9	31.0	-49.68	-719.0	130.4	8,203.0	8,136.5	66.47	123.414	
17,000.0	8,624.0	8,563.0	8,510.2	206.3	31.0	-49.68	-719.0	130.4	8,302.9	8,236.4	66.54	124.784	
17,100.0	8,624.0	8,563.0	8,510.2	208.7	31.0	-49.68	-719.0	130.4	8,402.9	8,336.3	66.61	126.148	
17,200.0	8,624.0	8,563.0	8,510.2	211.1	31.0	-49.68	-719.0	130.4	8,502.9	8,436.2	66.68	127.509	
17,300.0	8,624.0	8,563.0	8,510.2	213.5	31.0	-49.68	-719.0	130.4	8,602.9	8,536.1	66.76	128.865	
17,400.0	8,624.0	8,563.0	8,510.2	215.9	31.0	-49.68	-719.0	130.4	8,702.8	8,636.0	66.83	130.218	
17,500.0	8,624.0	8,563.0	8,510.2	218.3	31.0	-49.68	-719.0	130.4	8,802.8	8,735.9	66.91	131.565	
17,600.0	8,624.0	8,563.0	8,510.2	220.7	31.0	-49.68	-719.0	130.4	8,902.8	8,835.8	66.98	132.909	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD													Offset Site Error:	0.0 usft		
Survey Program:		15-MWD+IFR1+MS		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Distance		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
17,700.0	8,624.0	8,563.0	8,510.2	223.1	31.0	-49.68	-719.0	130.4	9,002.8	8,935.7	67.06	134.248				
17,800.0	8,624.0	8,563.0	8,510.2	225.5	31.0	-49.68	-719.0	130.4	9,102.8	9,035.6	67.14	135.582				
17,900.0	8,624.0	8,563.0	8,510.2	227.9	31.0	-49.68	-719.0	130.4	9,202.8	9,135.5	67.22	136.913				
18,000.0	8,624.0	8,563.0	8,510.2	230.3	31.0	-49.68	-719.0	130.4	9,302.7	9,235.4	67.29	138.239				
18,100.0	8,624.0	8,563.0	8,510.2	232.6	31.0	-49.68	-719.0	130.4	9,402.7	9,335.3	67.37	139.560				
18,200.0	8,624.0	8,563.0	8,510.2	235.0	31.0	-49.68	-719.0	130.4	9,502.7	9,435.2	67.45	140.877				
18,300.0	8,624.0	8,563.0	8,510.2	237.4	31.0	-49.68	-719.0	130.4	9,602.7	9,535.1	67.53	142.190				
18,400.0	8,624.0	8,563.0	8,510.2	239.8	31.0	-49.68	-719.0	130.4	9,702.7	9,635.1	67.62	143.498				
18,500.0	8,624.0	8,563.0	8,510.2	242.3	31.0	-49.68	-719.0	130.4	9,802.7	9,735.0	67.70	144.802				
18,600.0	8,624.0	8,563.0	8,510.2	244.7	31.0	-49.68	-719.0	130.4	9,902.6	9,834.9	67.78	146.101				
18,700.0	8,624.0	8,563.0	8,510.2	247.1	31.0	-49.68	-719.0	130.4	10,002.6	9,934.8	67.86	147.395				
18,800.0	8,624.0	8,563.0	8,510.2	249.5	31.0	-49.68	-719.0	130.4	10,102.6	10,034.7	67.95	148.686				
18,900.0	8,624.0	8,563.0	8,510.2	251.9	31.0	-49.68	-719.0	130.4	10,202.6	10,134.6	68.03	149.971				
19,000.0	8,624.0	8,563.0	8,510.2	254.3	31.0	-49.68	-719.0	130.4	10,302.6	10,234.5	68.12	151.252				
19,100.0	8,624.0	8,563.0	8,510.2	256.7	31.0	-49.68	-719.0	130.4	10,402.6	10,334.4	68.20	152.529				
19,200.0	8,624.0	8,563.0	8,510.2	259.1	31.0	-49.68	-719.0	130.4	10,502.5	10,434.3	68.29	153.801				
19,235.6	8,624.0	8,563.0	8,510.2	259.9	31.0	-49.68	-719.0	130.4	10,538.1	10,469.8	68.32	154.253				

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.12	165.0	0.3	165.0					
100.0	100.0	100.0	100.0	0.1	0.1	0.12	165.0	0.3	165.0	164.7	0.25	657.554		
200.0	200.0	200.0	200.0	0.5	0.5	0.12	165.0	0.3	165.0	164.0	0.97	170.477		
300.0	300.0	300.0	300.0	0.8	0.8	0.12	165.0	0.3	165.0	163.3	1.68	97.934		
400.0	400.0	400.0	400.0	1.2	1.2	0.12	165.0	0.3	165.0	162.6	2.40	68.700		
500.0	500.0	500.0	500.0	1.6	1.6	0.12	165.0	0.3	165.0	161.9	3.12	52.907		
600.0	600.0	600.0	600.0	1.9	1.9	0.12	165.0	0.3	165.0	161.2	3.84	43.018		
700.0	700.0	700.0	700.0	2.3	2.3	0.12	165.0	0.3	165.0	160.4	4.55	36.243		
800.0	800.0	800.0	800.0	2.6	2.6	0.12	165.0	0.3	165.0	159.7	5.27	31.312		
900.0	900.0	900.0	900.0	3.0	3.0	0.12	165.0	0.3	165.0	159.0	5.99	27.562		
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	165.0	0.3	165.0	158.3	6.70	24.614		
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	165.0	0.3	165.0	157.6	7.42	22.236		
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	165.0	0.3	165.0	156.9	8.14	20.277		
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	165.0	0.3	165.0	156.1	8.85	18.635		
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	165.0	0.3	165.0	155.4	9.57	17.239		
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	165.0	0.3	165.0	154.7	10.29	16.038		
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	165.0	0.3	165.0	154.0	11.01	14.993		
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	165.0	0.3	165.0	153.3	11.72	14.076	CC, ES	
1,800.0	1,800.0	1,794.5	1,794.5	6.2	6.2	0.08	166.6	0.2	166.6	154.2	12.41	13.424		
1,900.0	1,900.0	1,888.9	1,888.7	6.6	6.5	-0.03	171.2	-0.1	171.6	158.5	13.09	13.104		
2,000.0	2,000.0	1,982.8	1,982.3	6.9	6.9	-0.21	179.8	-0.7	179.8	166.0	13.76	13.067		
2,100.0	2,100.0	2,075.9	2,074.8	7.3	7.2	174.36	189.6	-1.4	193.0	178.6	14.39	13.409		
2,200.0	2,199.8	2,167.4	2,165.4	7.6	7.5	174.21	202.9	-2.4	212.7	197.7	14.99	14.195		
2,300.0	2,299.5	2,256.9	2,253.4	7.9	7.9	174.10	218.8	-3.6	238.9	223.4	15.56	15.354		
2,400.0	2,398.7	2,347.9	2,342.5	8.3	8.2	174.03	237.4	-4.9	271.0	254.9	16.17	16.760		
2,500.0	2,497.5	2,441.3	2,433.8	8.6	8.6	174.01	256.7	-6.3	306.8	289.9	16.83	18.228		
2,600.0	2,595.9	2,534.0	2,524.6	9.0	9.0	174.10	276.0	-7.7	344.1	326.6	17.48	19.681		
2,700.0	2,694.4	2,626.8	2,615.3	9.3	9.3	174.17	295.2	-9.1	381.4	363.3	18.14	21.029		
2,800.0	2,792.9	2,719.6	2,706.0	9.7	9.7	174.22	314.4	-10.5	418.8	400.0	18.80	22.277		
2,900.0	2,891.4	2,812.3	2,796.8	10.1	10.1	174.27	333.7	-11.9	456.1	436.7	19.46	23.436		
3,000.0	2,989.9	2,905.1	2,887.5	10.4	10.5	174.31	352.9	-13.3	493.5	473.3	20.13	24.514		
3,100.0	3,088.3	2,997.9	2,978.3	10.8	10.9	174.34	372.2	-14.7	530.8	510.0	20.80	25.518		
3,200.0	3,186.8	3,090.6	3,069.0	11.2	11.3	174.37	391.4	-16.1	568.1	546.7	21.47	26.457		
3,300.0	3,285.3	3,183.4	3,159.7	11.6	11.7	174.40	410.6	-17.5	605.5	583.3	22.15	27.334		
3,400.0	3,383.8	3,276.2	3,250.5	12.0	12.1	174.42	429.9	-18.9	642.8	620.0	22.83	28.157		
3,500.0	3,482.3	3,368.9	3,341.2	12.4	12.5	174.44	449.1	-20.3	680.2	656.6	23.51	28.929		
3,600.0	3,580.8	3,461.7	3,431.9	12.8	12.9	174.46	468.3	-21.7	717.5	693.3	24.19	29.655		
3,700.0	3,679.2	3,554.5	3,522.7	13.3	13.4	174.47	487.6	-23.1	754.8	730.0	24.88	30.339		
3,800.0	3,777.7	3,647.2	3,613.4	13.7	13.8	174.49	506.8	-24.5	792.2	766.6	25.57	30.984		
3,900.0	3,876.2	3,740.0	3,704.2	14.1	14.2	174.50	526.0	-25.9	829.5	803.3	26.26	31.593		
4,000.0	3,974.7	3,832.8	3,794.9	14.5	14.6	174.52	545.3	-27.3	866.9	839.9	26.95	32.170		
4,100.0	4,073.2	3,925.5	3,885.6	14.9	15.0	174.53	564.5	-28.7	904.2	876.6	27.64	32.715		
4,200.0	4,171.6	4,018.3	3,976.4	15.4	15.5	174.54	583.8	-30.1	941.5	913.2	28.33	33.233		
4,300.0	4,270.1	4,111.1	4,067.1	15.8	15.9	174.55	603.0	-31.5	978.9	949.9	29.03	33.724		
4,400.0	4,368.6	4,203.8	4,157.9	16.2	16.3	174.56	622.2	-32.9	1,016.2	986.5	29.72	34.191		
4,500.0	4,467.1	4,296.6	4,248.6	16.6	16.7	174.56	641.5	-34.3	1,053.6	1,023.1	30.42	34.635		
4,600.0	4,565.6	4,389.4	4,339.3	17.1	17.2	174.57	660.7	-35.7	1,090.9	1,059.8	31.12	35.058		
4,700.0	4,664.0	4,482.1	4,430.1	17.5	17.6	174.58	679.9	-37.1	1,128.2	1,096.4	31.82	35.461		
4,800.0	4,762.5	4,574.9	4,520.8	17.9	18.0	174.59	699.2	-38.5	1,165.6	1,133.1	32.52	35.846		
4,900.0	4,861.0	4,667.7	4,611.6	18.4	18.4	174.59	718.4	-39.9	1,202.9	1,169.7	33.22	36.214		
5,000.0	4,959.5	4,760.4	4,702.3	18.8	18.9	174.60	737.6	-41.3	1,240.3	1,206.3	33.92	36.566		
5,100.0	5,058.0	4,853.2	4,793.0	19.2	19.3	174.60	756.9	-42.7	1,277.6	1,243.0	34.62	36.902		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,156.4	4,946.0	4,883.8	19.7	19.7	174.61	776.1	-44.1	1,314.9	1,279.6		35.32	37.225	
5,300.0	5,254.9	5,038.7	4,974.5	20.1	20.2	174.61	795.4	-45.5	1,352.3	1,316.3		36.03	37.534	
5,400.0	5,353.4	5,131.5	5,065.3	20.6	20.6	174.62	814.6	-46.9	1,389.6	1,352.9		36.73	37.830	
5,500.0	5,451.9	5,224.3	5,156.0	21.0	21.0	174.62	833.8	-48.3	1,427.0	1,389.5		37.44	38.115	
5,600.0	5,550.4	5,317.0	5,246.7	21.4	21.5	174.63	853.1	-49.7	1,464.3	1,426.2		38.14	38.388	
5,700.0	5,648.9	5,409.8	5,337.5	21.9	21.9	174.63	872.3	-51.1	1,501.6	1,462.8		38.85	38.651	
5,800.0	5,747.3	5,502.6	5,428.2	22.3	22.3	174.64	891.5	-52.5	1,539.0	1,499.4		39.56	38.904	
5,900.0	5,845.8	5,595.3	5,519.0	22.8	22.8	174.64	910.8	-53.9	1,576.3	1,536.1		40.27	39.147	
6,000.0	5,944.3	5,688.1	5,609.7	23.2	23.2	174.64	930.0	-55.3	1,613.7	1,572.7		40.98	39.382	
6,100.0	6,042.8	5,780.9	5,700.4	23.6	23.6	174.65	949.2	-56.7	1,651.0	1,609.3		41.68	39.608	
6,200.0	6,141.3	5,873.6	5,791.2	24.1	24.1	174.65	968.5	-58.1	1,688.4	1,646.0		42.39	39.825	
6,300.0	6,239.7	5,966.4	5,881.9	24.5	24.5	174.65	987.7	-59.5	1,725.7	1,682.6		43.10	40.036	
6,400.0	6,338.2	6,059.2	5,972.7	25.0	25.0	174.66	1,007.0	-60.9	1,763.0	1,719.2		43.81	40.239	
6,500.0	6,436.7	6,151.9	6,063.4	25.4	25.4	174.66	1,026.2	-62.3	1,800.4	1,755.8		44.53	40.435	
6,600.0	6,535.2	6,244.7	6,154.1	25.9	25.8	174.66	1,045.4	-63.7	1,837.7	1,792.5		45.24	40.624	
6,700.0	6,633.7	6,338.4	6,245.8	26.3	26.3	174.66	1,064.9	-65.1	1,875.1	1,829.1		45.96	40.801	
6,800.0	6,732.1	6,431.5	6,318.8	26.8	27.5	174.70	1,109.0	-68.3	1,907.9	1,860.0		47.89	39.839	
6,900.0	6,830.6	6,528.3	6,411.3	27.2	28.5	174.80	1,126.9	-69.6	1,931.2	1,881.7		49.48	39.032	
6,925.7	6,855.9	6,552.9	6,435.9	27.3	28.6	174.82	1,127.0	-69.6	1,935.7	1,885.9		49.72	38.931	
7,000.0	6,929.3	7,026.2	6,929.3	27.6	28.9	174.88	1,127.0	-69.6	1,947.6	1,897.3		50.24	38.762	
7,100.0	7,028.4	7,125.4	7,028.4	28.1	29.2	174.94	1,127.0	-69.6	1,960.6	1,909.6		50.95	38.482	
7,200.0	7,127.9	7,224.9	7,127.9	28.4	29.5	174.98	1,127.0	-69.6	1,970.2	1,918.5		51.65	38.146	
7,300.0	7,227.7	7,324.7	7,227.7	28.8	29.8	175.00	1,127.0	-69.6	1,976.3	1,923.9		52.34	37.755	
7,400.0	7,327.7	7,424.7	7,327.7	29.1	30.1	175.01	1,127.0	-69.6	1,978.9	1,925.9		53.04	37.313	
7,425.7	7,353.4	7,450.3	7,353.4	29.2	30.2	0.24	1,127.0	-69.6	1,979.0	1,925.8		53.21	37.193	
7,500.0	7,427.7	7,524.7	7,427.7	29.4	30.4	0.24	1,127.0	-69.6	1,979.0	1,925.3		53.71	36.848	
7,600.0	7,527.7	7,624.7	7,527.7	29.7	30.7	0.24	1,127.0	-69.6	1,979.0	1,924.6		54.38	36.393	
7,700.0	7,627.7	7,724.7	7,627.7	30.0	31.0	0.24	1,127.0	-69.6	1,979.0	1,924.0		55.05	35.948	
7,800.0	7,727.7	7,824.7	7,727.7	30.3	31.3	0.24	1,127.0	-69.6	1,979.0	1,923.3		55.73	35.514	
7,900.0	7,827.7	7,924.7	7,827.7	30.6	31.6	0.24	1,127.0	-69.6	1,979.0	1,922.6		56.40	35.089	
8,000.0	7,927.7	8,024.7	7,927.7	30.9	31.9	0.24	1,127.0	-69.6	1,979.0	1,921.9		57.08	34.673	
8,100.0	8,027.7	8,124.7	8,027.7	31.2	32.2	0.24	1,127.0	-69.6	1,979.0	1,921.3		57.75	34.267	
8,200.0	8,127.7	8,224.7	8,127.7	31.5	32.6	0.24	1,127.0	-69.6	1,979.0	1,920.6		58.43	33.870	
8,218.8	8,146.5	8,243.5	8,146.5	31.6	32.6	0.24	1,127.0	-69.6	1,979.0	1,920.5		58.56	33.796	
8,225.0	8,152.7	8,249.7	8,152.7	31.6	32.6	-90.05	1,127.0	-69.6	1,979.0	1,920.4		58.60	33.772	
8,250.0	8,177.7	8,274.6	8,177.7	31.7	32.7	-90.08	1,127.0	-69.6	1,979.0	1,920.2		58.77	33.674	
8,275.0	8,202.6	8,299.5	8,202.6	31.8	32.8	-90.14	1,127.0	-69.6	1,979.0	1,920.1		58.94	33.578	
8,300.0	8,227.3	8,324.3	8,227.3	31.8	32.9	-90.24	1,127.0	-69.6	1,979.0	1,919.9		59.10	33.484	
8,325.0	8,251.8	8,348.8	8,251.8	31.9	33.0	-90.38	1,127.0	-69.6	1,979.1	1,919.8		59.27	33.391	
8,350.0	8,276.1	8,373.0	8,276.1	32.0	33.0	-90.55	1,127.0	-69.6	1,979.1	1,919.7		59.43	33.301	
8,375.0	8,299.9	8,396.9	8,299.9	32.1	33.1	-90.74	1,127.0	-69.6	1,979.2	1,919.6		59.59	33.213	
8,400.0	8,323.4	8,420.3	8,323.4	32.1	33.2	-90.96	1,127.0	-69.6	1,979.3	1,919.6		59.75	33.129	
8,425.0	8,346.3	8,443.3	8,346.3	32.2	33.3	-91.20	1,127.0	-69.6	1,979.5	1,919.6		59.90	33.047	
8,450.0	8,368.8	8,465.7	8,368.8	32.3	33.3	-91.45	1,127.0	-69.6	1,979.8	1,919.8		60.05	32.969	
8,475.0	8,390.6	8,487.5	8,390.6	32.3	33.4	-91.71	1,127.0	-69.6	1,980.2	1,920.0		60.20	32.895	
8,500.0	8,411.7	8,508.7	8,411.7	32.4	33.5	-91.98	1,127.0	-69.6	1,980.7	1,920.4		60.34	32.824	
8,525.0	8,432.1	8,529.1	8,432.1	32.4	33.5	-92.24	1,127.0	-69.6	1,981.4	1,920.9		60.49	32.758	
8,550.0	8,451.8	8,548.7	8,451.8	32.5	33.6	-92.49	1,127.0	-69.6	1,982.2	1,921.6		60.63	32.696	
8,575.0	8,470.6	8,567.5	8,470.6	32.5	33.6	-92.73	1,127.0	-69.6	1,983.2	1,922.4		60.76	32.638	
8,600.0	8,488.5	8,585.4	8,488.5	32.6	33.7	-92.95	1,127.0	-69.6	1,984.4	1,923.5		60.90	32.585	
8,625.0	8,505.4	8,602.4	8,505.4	32.6	33.8	-93.13	1,127.0	-69.6	1,985.8	1,924.8		61.03	32.536	
8,650.0	8,521.4	8,618.4	8,521.4	32.7	33.8	-93.29	1,127.0	-69.6	1,987.5	1,926.3		61.17	32.493	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWPO													Offset Site Error:	0.0 usft	
Survey Program:		0-MWD		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.0 usft
Reference	Vertical	Measured	Vertical	Reference	Offset	Highside				Distance					
Measured	Vertical	Measured	Vertical	Reference	Offset	Toolface	+N/-S	+E/-W	Between	Between	Minimum	Separation		Warning	
Depth	Depth	Depth	Depth	(usft)	(usft)	(°)	(usft)	(usft)	Centres	Ellipses	Separation	Factor			
(usft)	(usft)	(usft)	(usft)						(usft)	(usft)	(usft)				
8,675.0	8,536.4	8,633.4	8,536.4	32.7	33.9	-93.40	1,127.0	-69.6	1,989.5	1,928.2	61.30	32.454			
8,700.0	8,550.3	8,647.2	8,550.3	32.8	33.9	-93.46	1,127.0	-69.6	1,991.7	1,930.3	61.43	32.420			
8,725.0	8,563.1	8,660.0	8,563.1	32.8	33.9	-93.47	1,127.0	-69.6	1,994.2	1,932.7	61.57	32.390			
8,750.0	8,574.7	8,671.7	8,574.7	32.8	34.0	-93.43	1,127.0	-69.6	1,997.1	1,935.4	61.70	32.366			
8,775.0	8,585.2	8,682.1	8,585.2	32.9	34.0	-93.32	1,127.0	-69.6	2,000.2	1,938.4	61.84	32.347			
8,800.0	8,594.4	8,691.4	8,594.4	32.9	34.0	-93.14	1,127.0	-69.6	2,003.7	1,941.8	61.97	32.333			
8,825.0	8,602.5	8,699.4	8,602.5	33.0	34.1	-92.90	1,127.0	-69.6	2,007.6	1,945.5	62.11	32.324			
8,850.0	8,609.3	8,706.2	8,609.3	33.0	34.1	-92.58	1,127.0	-69.6	2,011.8	1,949.5	62.25	32.320			
8,875.0	8,614.8	8,711.8	8,614.8	33.1	34.1	-92.18	1,127.0	-69.6	2,016.3	1,953.9	62.38	32.322			
8,900.0	8,619.0	8,716.0	8,619.0	33.2	34.1	-91.71	1,127.0	-69.6	2,021.2	1,958.6	62.52	32.329			
8,925.0	8,622.0	8,718.9	8,622.0	33.3	34.1	-91.15	1,127.0	-69.6	2,026.3	1,963.7	62.65	32.342			
8,950.0	8,623.6	8,720.6	8,623.6	33.3	34.1	-90.52	1,127.0	-69.6	2,031.9	1,969.1	62.79	32.360			
8,968.8	8,624.0	8,720.9	8,624.0	33.4	34.1	-90.00	1,127.0	-69.6	2,036.2	1,973.3	62.89	32.378			
9,000.0	8,624.0	8,720.9	8,624.0	33.6	34.1	-90.00	1,127.0	-69.6	2,043.8	1,980.7	63.06	32.411			
9,100.0	8,624.0	9,696.2	9,194.0	34.2	36.9	-106.07	1,124.0	540.5	2,059.5	1,993.1	66.47	30.984			
9,200.0	8,624.0	9,796.2	9,194.0	35.0	37.7	-106.07	1,123.5	640.5	2,059.5	1,991.2	68.32	30.144			
9,300.0	8,624.0	9,896.2	9,194.0	36.1	38.7	-106.07	1,123.0	740.5	2,059.5	1,989.1	70.44	29.239			
9,400.0	8,624.0	9,996.2	9,194.0	37.3	39.8	-106.07	1,122.5	840.5	2,059.5	1,986.8	72.79	28.294			
9,500.0	8,624.0	10,096.2	9,194.0	38.6	41.0	-106.07	1,122.0	940.5	2,059.6	1,984.2	75.36	27.329			
9,600.0	8,624.0	10,196.2	9,194.0	40.0	42.4	-106.07	1,121.5	1,040.5	2,059.6	1,981.4	78.12	26.362			
9,700.0	8,624.0	10,296.2	9,194.0	41.5	43.8	-106.07	1,121.0	1,140.5	2,059.6	1,978.5	81.06	25.407			
9,800.0	8,624.0	10,396.2	9,194.0	43.1	45.4	-106.07	1,120.5	1,240.5	2,059.6	1,975.4	84.16	24.472			
9,900.0	8,624.0	10,496.2	9,194.0	44.8	47.0	-106.07	1,120.0	1,340.5	2,059.6	1,972.2	87.40	23.566			
10,000.0	8,624.0	10,596.2	9,194.0	46.6	48.7	-106.07	1,119.6	1,440.5	2,059.6	1,968.8	90.76	22.693			
10,100.0	8,624.0	10,696.2	9,194.0	48.4	50.4	-106.07	1,119.1	1,540.5	2,059.6	1,965.4	94.23	21.857			
10,200.0	8,624.0	10,796.2	9,194.0	50.3	52.2	-106.07	1,118.6	1,640.5	2,059.6	1,961.8	97.80	21.059			
10,300.0	8,624.0	10,896.2	9,194.0	52.2	54.1	-106.07	1,118.1	1,740.5	2,059.6	1,958.2	101.47	20.299			
10,400.0	8,624.0	10,996.2	9,194.0	54.1	55.9	-106.07	1,117.6	1,840.5	2,059.6	1,954.4	105.21	19.577			
10,500.0	8,624.0	11,096.2	9,194.0	56.1	57.9	-106.07	1,117.1	1,940.5	2,059.6	1,950.6	109.02	18.892			
10,600.0	8,624.0	11,196.2	9,194.0	58.1	59.8	-106.07	1,116.6	2,040.5	2,059.6	1,946.7	112.90	18.243			
10,700.0	8,624.0	11,296.2	9,194.0	60.2	61.8	-106.07	1,116.1	2,140.5	2,059.7	1,942.8	116.84	17.628			
10,800.0	8,624.0	11,396.2	9,194.0	62.3	63.9	-106.07	1,115.6	2,240.5	2,059.7	1,938.8	120.83	17.047			
10,900.0	8,624.0	11,496.2	9,194.0	64.4	65.9	-106.07	1,115.1	2,340.5	2,059.7	1,934.8	124.86	16.496			
11,000.0	8,624.0	11,596.2	9,194.0	66.5	68.0	-106.07	1,114.6	2,440.5	2,059.7	1,930.7	128.94	15.974			
11,100.0	8,624.0	11,696.2	9,194.0	68.6	70.1	-106.07	1,114.1	2,540.5	2,059.7	1,926.6	133.06	15.480			
11,200.0	8,624.0	11,796.2	9,194.0	70.8	72.2	-106.07	1,113.6	2,640.5	2,059.7	1,922.5	137.21	15.011			
11,300.0	8,624.0	11,896.2	9,194.0	73.0	74.4	-106.07	1,113.1	2,740.5	2,059.7	1,918.3	141.40	14.567			
11,400.0	8,624.0	11,996.2	9,194.0	75.2	76.5	-106.07	1,112.7	2,840.5	2,059.7	1,914.1	145.61	14.145			
11,500.0	8,624.0	12,096.2	9,194.0	77.4	78.7	-106.07	1,112.2	2,940.5	2,059.7	1,909.9	149.86	13.745			
11,600.0	8,624.0	12,196.2	9,194.0	79.6	80.9	-106.07	1,111.7	3,040.5	2,059.7	1,905.6	154.12	13.364			
11,700.0	8,624.0	12,296.2	9,194.0	81.8	83.1	-106.07	1,111.2	3,140.5	2,059.7	1,901.3	158.41	13.002			
11,800.0	8,624.0	12,396.2	9,194.0	84.1	85.3	-106.07	1,110.7	3,240.5	2,059.8	1,897.0	162.72	12.658			
11,900.0	8,624.0	12,496.2	9,194.0	86.3	87.5	-106.07	1,110.2	3,340.5	2,059.8	1,892.7	167.06	12.330			
12,000.0	8,624.0	12,596.2	9,194.0	88.6	89.8	-106.07	1,109.7	3,440.5	2,059.8	1,888.4	171.40	12.017			
12,100.0	8,624.0	12,696.2	9,194.0	90.8	92.0	-106.07	1,109.2	3,540.5	2,059.8	1,884.0	175.77	11.719			
12,200.0	8,624.0	12,796.2	9,194.0	93.1	94.3	-106.07	1,108.7	3,640.5	2,059.8	1,879.6	180.15	11.434			
12,300.0	8,624.0	12,896.2	9,194.0	95.4	96.5	-106.06	1,108.2	3,740.5	2,059.8	1,875.3	184.54	11.162			
12,400.0	8,624.0	12,996.2	9,194.0	97.7	98.8	-106.06	1,107.7	3,840.5	2,059.8	1,870.9	188.95	10.901			
12,500.0	8,624.0	13,096.2	9,194.0	100.0	101.1	-106.06	1,107.2	3,940.5	2,059.8	1,866.4	193.37	10.652			
12,600.0	8,624.0	13,196.2	9,194.0	102.3	103.3	-106.06	1,106.7	4,040.5	2,059.8	1,862.0	197.80	10.413			
12,700.0	8,624.0	13,296.2	9,194.0	104.6	105.6	-106.06	1,106.2	4,140.5	2,059.8	1,857.6	202.25	10.185			
12,800.0	8,624.0	13,396.2	9,194.0	106.9	107.9	-106.06	1,105.8	4,240.5	2,059.8	1,853.1	206.70	9.965			

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWPO													Offset Site Error:	0.0 usft	
Survey Program:		0-MWD		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.0 usft
Reference	Vertical	Measured	Vertical	Reference	Offset	Highside				Distance					
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
12,900.0	8,624.0	13,496.2	9,194.0	109.2	110.2	-106.06	1,105.3	4,340.5	2,059.8	1,848.7	211.16	9.755			
13,000.0	8,624.0	13,596.2	9,194.0	111.5	112.5	-106.06	1,104.8	4,440.5	2,059.9	1,844.2	215.63	9.553			
13,100.0	8,624.0	13,696.2	9,194.0	113.9	114.8	-106.06	1,104.3	4,540.5	2,059.9	1,839.8	220.11	9.358			
13,200.0	8,624.0	13,796.2	9,194.0	116.2	117.1	-106.06	1,103.8	4,640.5	2,059.9	1,835.3	224.60	9.171			
13,300.0	8,624.0	13,896.2	9,194.0	118.5	119.5	-106.06	1,103.3	4,740.5	2,059.9	1,830.8	229.09	8.991			
13,400.0	8,624.0	13,996.2	9,194.0	120.9	121.8	-106.06	1,102.8	4,840.5	2,059.9	1,826.3	233.60	8.818			
13,500.0	8,624.0	14,096.2	9,194.0	123.2	124.1	-106.06	1,102.3	4,940.5	2,059.9	1,821.8	238.10	8.651			
13,600.0	8,624.0	14,196.2	9,194.0	125.5	126.4	-106.06	1,101.8	5,040.5	2,059.9	1,817.3	242.62	8.490			
13,700.0	8,624.0	14,296.2	9,194.0	127.9	128.8	-106.06	1,101.3	5,140.4	2,059.9	1,812.8	247.14	8.335			
13,800.0	8,624.0	14,396.2	9,194.0	130.2	131.1	-106.06	1,100.8	5,240.4	2,059.9	1,808.3	251.66	8.185			
13,900.0	8,624.0	14,496.2	9,194.0	132.6	133.4	-106.06	1,100.3	5,340.4	2,059.9	1,803.7	256.19	8.041			
14,000.0	8,624.0	14,596.2	9,194.0	134.9	135.8	-106.06	1,099.8	5,440.4	2,059.9	1,799.2	260.73	7.901			
14,100.0	8,624.0	14,696.2	9,194.0	137.3	138.1	-106.06	1,099.3	5,540.4	2,059.9	1,794.7	265.27	7.765			
14,200.0	8,624.0	14,796.2	9,194.0	139.7	140.5	-106.06	1,098.9	5,640.4	2,060.0	1,790.1	269.82	7.635			
14,300.0	8,624.0	14,896.2	9,194.0	142.0	142.8	-106.06	1,098.4	5,740.4	2,060.0	1,785.6	274.37	7.508			
14,400.0	8,624.0	14,996.2	9,194.0	144.4	145.2	-106.06	1,097.9	5,840.4	2,060.0	1,781.1	278.92	7.386			
14,500.0	8,624.0	15,096.2	9,194.0	146.7	147.5	-106.06	1,097.4	5,940.4	2,060.0	1,776.5	283.48	7.267			
14,600.0	8,624.0	15,196.2	9,194.0	149.1	149.9	-106.06	1,096.9	6,040.4	2,060.0	1,772.0	288.04	7.152			
14,700.0	8,624.0	15,296.2	9,194.0	151.5	152.2	-106.06	1,096.4	6,140.4	2,060.0	1,767.4	292.60	7.040			
14,800.0	8,624.0	15,396.2	9,194.0	153.8	154.6	-106.06	1,095.9	6,240.4	2,060.0	1,762.8	297.17	6.932			
14,900.0	8,624.0	15,496.2	9,194.0	156.2	157.0	-106.06	1,095.4	6,340.4	2,060.0	1,758.3	301.74	6.827			
15,000.0	8,624.0	15,596.2	9,194.0	158.6	159.3	-106.06	1,094.9	6,440.4	2,060.0	1,753.7	306.31	6.725			
15,100.0	8,624.0	15,696.2	9,194.0	161.0	161.7	-106.06	1,094.4	6,540.4	2,060.0	1,749.1	310.89	6.626			
15,200.0	8,624.0	15,796.2	9,194.0	163.3	164.1	-106.06	1,093.9	6,640.4	2,060.0	1,744.6	315.47	6.530			
15,300.0	8,624.0	15,896.2	9,194.0	165.7	166.4	-106.06	1,093.4	6,740.4	2,060.1	1,740.0	320.05	6.437			
15,400.0	8,624.0	15,996.2	9,194.0	168.1	168.8	-106.06	1,092.9	6,840.4	2,060.1	1,735.4	324.64	6.346			
15,500.0	8,624.0	16,096.2	9,194.0	170.5	171.2	-106.06	1,092.4	6,940.4	2,060.1	1,730.8	329.22	6.257			
15,600.0	8,624.0	16,196.2	9,194.0	172.9	173.5	-106.06	1,092.0	7,040.4	2,060.1	1,726.3	333.81	6.171			
15,700.0	8,624.0	16,296.2	9,194.0	175.2	175.9	-106.06	1,091.5	7,140.4	2,060.1	1,721.7	338.41	6.088			
15,800.0	8,624.0	16,396.2	9,194.0	177.6	178.3	-106.06	1,091.0	7,240.4	2,060.1	1,717.1	343.00	6.006			
15,900.0	8,624.0	16,496.2	9,194.0	180.0	180.7	-106.06	1,090.5	7,340.4	2,060.1	1,712.5	347.60	5.927			
16,000.0	8,624.0	16,596.2	9,194.0	182.4	183.0	-106.06	1,090.0	7,440.4	2,060.1	1,707.9	352.19	5.849			
16,100.0	8,624.0	16,696.2	9,194.0	184.8	185.4	-106.06	1,089.5	7,540.4	2,060.1	1,703.3	356.79	5.774			
16,200.0	8,624.0	16,796.2	9,194.0	187.2	187.8	-106.06	1,089.0	7,640.4	2,060.1	1,698.7	361.40	5.700			
16,300.0	8,624.0	16,896.2	9,194.0	189.6	190.2	-106.06	1,088.5	7,740.4	2,060.1	1,694.1	366.00	5.629			
16,400.0	8,624.0	16,996.2	9,194.0	191.9	192.6	-106.06	1,088.0	7,840.4	2,060.1	1,689.5	370.61	5.559			
16,500.0	8,624.0	17,096.2	9,194.0	194.3	195.0	-106.06	1,087.5	7,940.4	2,060.2	1,684.9	375.21	5.491			
16,600.0	8,624.0	17,196.2	9,194.0	196.7	197.3	-106.06	1,087.0	8,040.4	2,060.2	1,680.3	379.82	5.424			
16,700.0	8,624.0	17,296.2	9,194.0	199.1	199.7	-106.06	1,086.5	8,140.4	2,060.2	1,675.7	384.43	5.359			
16,800.0	8,624.0	17,396.2	9,194.0	201.5	202.1	-106.06	1,086.0	8,240.4	2,060.2	1,671.1	389.04	5.296			
16,900.0	8,624.0	17,496.2	9,194.0	203.9	204.5	-106.06	1,085.5	8,340.4	2,060.2	1,666.5	393.66	5.233			
17,000.0	8,624.0	17,596.2	9,194.0	206.3	206.9	-106.06	1,085.1	8,440.4	2,060.2	1,661.9	398.27	5.173			
17,100.0	8,624.0	17,696.2	9,194.0	208.7	209.3	-106.06	1,084.6	8,540.4	2,060.2	1,657.3	402.89	5.114			
17,200.0	8,624.0	17,796.2	9,194.0	211.1	211.7	-106.06	1,084.1	8,640.4	2,060.2	1,652.7	407.50	5.056			
17,300.0	8,624.0	17,896.2	9,194.0	213.5	214.1	-106.06	1,083.6	8,740.4	2,060.2	1,648.1	412.12	4.999			
17,400.0	8,624.0	17,996.2	9,194.0	215.9	216.4	-106.06	1,083.1	8,840.4	2,060.2	1,643.5	416.74	4.944			
17,500.0	8,624.0	18,096.2	9,194.0	218.3	218.8	-106.06	1,082.6	8,940.4	2,060.2	1,638.9	421.36	4.889			
17,600.0	8,624.0	18,196.2	9,194.0	220.7	221.2	-106.06	1,082.1	9,040.4	2,060.2	1,634.3	425.98	4.836			
17,700.0	8,624.0	18,296.2	9,194.0	223.1	223.6	-106.06	1,081.6	9,140.4	2,060.3	1,629.7	430.61	4.785			
17,800.0	8,624.0	18,396.2	9,194.0	225.5	226.0	-106.06	1,081.1	9,240.4	2,060.3	1,625.0	435.23	4.734			
17,900.0	8,624.0	18,496.2	9,194.0	227.9	228.4	-106.06	1,080.6	9,340.4	2,060.3	1,620.4	439.85	4.684			
18,000.0	8,624.0	18,596.2	9,194.0	230.3	230.8	-106.06	1,080.1	9,440.4	2,060.3	1,615.8	444.48	4.635			

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
18,100.0	8,624.0	18,696.2	9,194.0	232.6	233.2	-106.06	1,079.6	9,540.4	2,060.3	1,611.2	449.11	4.588		
18,200.0	8,624.0	18,796.2	9,194.0	235.0	235.6	-106.06	1,079.1	9,640.4	2,060.3	1,606.6	453.73	4.541		
18,300.0	8,624.0	18,896.2	9,194.0	237.4	238.0	-106.06	1,078.6	9,740.4	2,060.3	1,601.9	458.36	4.495		
18,400.0	8,624.0	18,996.2	9,194.0	239.8	240.4	-106.06	1,078.2	9,840.4	2,060.3	1,597.3	462.99	4.450		
18,500.0	8,624.0	19,096.2	9,194.0	242.3	242.8	-106.06	1,077.7	9,940.4	2,060.3	1,592.7	467.62	4.406		
18,600.0	8,624.0	19,196.2	9,194.0	244.7	245.2	-106.06	1,077.2	10,040.4	2,060.3	1,588.1	472.25	4.363		
18,700.0	8,624.0	19,296.2	9,194.0	247.1	247.6	-106.06	1,076.7	10,140.4	2,060.3	1,583.5	476.89	4.320		
18,800.0	8,624.0	19,396.2	9,194.0	249.5	250.0	-106.06	1,076.2	10,240.4	2,060.4	1,578.8	481.52	4.279		
18,900.0	8,624.0	19,496.2	9,194.0	251.9	252.4	-106.06	1,075.7	10,340.4	2,060.4	1,574.2	486.15	4.238		
19,000.0	8,624.0	19,596.2	9,194.0	254.3	254.8	-106.06	1,075.2	10,440.4	2,060.4	1,569.6	490.79	4.198		
19,100.0	8,624.0	19,696.2	9,194.0	256.7	257.2	-106.06	1,074.7	10,540.4	2,060.4	1,565.0	495.42	4.159		
19,200.0	8,624.0	19,796.2	9,194.0	259.1	259.6	-106.06	1,074.2	10,640.4	2,060.4	1,560.3	500.06	4.120		
19,200.0	8,624.0	19,796.2	9,194.0	259.1	259.6	-106.06	1,074.2	10,640.4	2,060.4	1,560.3	500.06	4.120		
19,235.6	8,624.0	19,818.1	9,194.0	259.9	260.1	-106.06	1,074.1	10,662.3	2,060.4	1,559.1	501.38	4.110 SF		

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

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COMPASS 5000.15 Build 91E

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 132H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.12	99.0	0.2	99.0					
100.0	100.0	100.0	100.0	0.1	0.1	0.12	99.0	0.2	99.0	98.7	0.25	394.533		
200.0	200.0	200.0	200.0	0.5	0.5	0.12	99.0	0.2	99.0	98.0	0.97	102.286		
300.0	300.0	300.0	300.0	0.8	0.8	0.12	99.0	0.2	99.0	97.3	1.68	58.760		
400.0	400.0	400.0	400.0	1.2	1.2	0.12	99.0	0.2	99.0	96.6	2.40	41.220		
500.0	500.0	500.0	500.0	1.6	1.6	0.12	99.0	0.2	99.0	95.9	3.12	31.744		
600.0	600.0	600.0	600.0	1.9	1.9	0.12	99.0	0.2	99.0	95.2	3.84	25.811		
700.0	700.0	700.0	700.0	2.3	2.3	0.12	99.0	0.2	99.0	94.4	4.55	21.746		
800.0	800.0	800.0	800.0	2.6	2.6	0.12	99.0	0.2	99.0	93.7	5.27	18.787		
900.0	900.0	900.0	900.0	3.0	3.0	0.12	99.0	0.2	99.0	93.0	5.99	16.537		
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	99.0	0.2	99.0	92.3	6.70	14.769		
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	99.0	0.2	99.0	91.6	7.42	13.342		
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	99.0	0.2	99.0	90.9	8.14	12.166		
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	99.0	0.2	99.0	90.1	8.85	11.181		
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	99.0	0.2	99.0	89.4	9.57	10.344		
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	99.0	0.2	99.0	88.7	10.29	9.623		
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	99.0	0.2	99.0	88.0	11.01	8.996		
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	99.0	0.2	99.0	87.3	11.72	8.446		
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	0.12	99.0	0.2	99.0	86.6	12.44	7.959		
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	0.12	99.0	0.2	99.0	85.8	13.16	7.525		
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	0.12	99.0	0.2	99.0	85.1	13.87	7.136 CC, ES		
2,100.0	2,100.0	2,100.0	2,100.0	7.3	7.3	174.98	99.0	0.2	100.7	86.2	14.57	6.913		
2,200.0	2,199.8	2,199.8	2,199.8	7.6	7.7	175.22	99.0	0.2	106.0	90.7	15.25	6.946		
2,300.0	2,299.5	2,299.5	2,299.5	7.9	8.0	175.57	99.0	0.2	114.6	98.7	15.94	7.192		
2,400.0	2,398.7	2,398.7	2,398.7	8.3	8.4	175.98	99.0	0.2	126.8	110.2	16.63	7.627		
2,500.0	2,497.5	2,497.5	2,497.5	8.6	8.7	176.40	99.0	0.2	142.4	125.1	17.31	8.226		
2,600.0	2,595.9	2,595.9	2,595.9	9.0	9.1	176.79	99.0	0.2	159.7	141.7	18.00	8.877		
2,700.0	2,694.4	2,694.4	2,694.4	9.3	9.4	177.11	99.0	0.2	177.1	158.4	18.68	9.479		
2,800.0	2,792.9	2,792.9	2,792.9	9.7	9.8	177.36	99.0	0.2	194.4	175.1	19.37	10.037		
2,900.0	2,891.4	2,897.7	2,897.7	10.1	10.1	177.37	97.6	-0.7	210.4	190.3	20.07	10.484		
3,000.0	2,989.9	3,003.9	3,003.7	10.4	10.5	176.90	92.8	-3.6	223.2	202.5	20.74	10.760		
3,100.0	3,088.3	3,106.5	3,106.0	10.8	10.8	176.10	85.5	-8.0	233.3	211.9	21.42	10.894		
3,200.0	3,186.8	3,206.0	3,205.0	11.2	11.2	175.35	78.1	-12.6	243.2	221.1	22.10	11.005		
3,300.0	3,285.3	3,305.4	3,304.1	11.6	11.5	174.65	70.7	-17.1	253.1	230.3	22.78	11.109		
3,400.0	3,383.8	3,404.9	3,403.2	12.0	11.8	174.01	63.3	-21.6	263.0	239.6	23.47	11.207		
3,500.0	3,482.3	3,504.3	3,502.3	12.4	12.2	173.42	55.9	-26.1	273.0	248.8	24.16	11.298		
3,600.0	3,580.8	3,603.8	3,601.4	12.8	12.5	172.87	48.5	-30.7	283.0	258.1	24.86	11.384		
3,700.0	3,679.2	3,703.3	3,700.5	13.3	12.8	172.35	41.1	-35.2	293.0	267.5	25.56	11.465		
3,800.0	3,777.7	3,802.7	3,799.6	13.7	13.2	171.87	33.7	-39.7	303.1	276.8	26.26	11.540		
3,900.0	3,876.2	3,902.2	3,898.6	14.1	13.5	171.43	26.3	-44.2	313.1	286.1	26.96	11.612		
4,000.0	3,974.7	4,001.7	3,997.7	14.5	13.9	171.00	18.9	-48.8	323.2	295.5	27.67	11.679		
4,100.0	4,073.2	4,101.1	4,096.8	14.9	14.2	170.61	11.5	-53.3	333.3	304.9	28.38	11.742		
4,200.0	4,171.6	4,200.6	4,195.9	15.4	14.6	170.24	4.2	-57.8	343.4	314.3	29.10	11.802		
4,300.0	4,270.1	4,300.1	4,295.0	15.8	15.0	169.88	-3.2	-62.3	353.5	323.7	29.81	11.859		
4,400.0	4,368.6	4,399.5	4,394.1	16.2	15.3	169.55	-10.6	-66.8	363.6	333.1	30.53	11.912		
4,500.0	4,467.1	4,499.0	4,493.1	16.6	15.7	169.24	-18.0	-71.4	373.8	342.5	31.25	11.963		
4,600.0	4,565.6	4,598.4	4,592.2	17.1	16.0	168.94	-25.4	-75.9	384.0	352.0	31.97	12.011		
4,700.0	4,664.0	4,697.9	4,691.3	17.5	16.4	168.66	-32.8	-80.4	394.1	361.4	32.69	12.056		
4,800.0	4,762.5	4,797.4	4,790.4	17.9	16.8	168.39	-40.2	-84.9	404.3	370.9	33.41	12.100		
4,900.0	4,861.0	4,896.8	4,889.5	18.4	17.1	168.14	-47.6	-89.5	414.5	380.3	34.14	12.141		
5,000.0	4,959.5	4,996.3	4,988.6	18.8	17.5	167.90	-55.0	-94.0	424.7	389.8	34.87	12.180		
5,100.0	5,058.0	5,095.8	5,087.7	19.2	17.8	167.66	-62.4	-98.5	434.9	399.3	35.60	12.217		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 132H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,156.4	5,195.2	5,186.7	19.7	18.2	167.44	-69.8	-103.0	445.1	408.7	36.33	12.252	
5,300.0	5,254.9	5,294.7	5,285.8	20.1	18.6	167.23	-77.2	-107.6	455.3	418.2	37.06	12.286	
5,400.0	5,353.4	5,394.2	5,384.9	20.6	18.9	167.03	-84.6	-112.1	465.5	427.7	37.79	12.319	
5,500.0	5,451.9	5,493.6	5,484.0	21.0	19.3	166.84	-92.0	-116.6	475.7	437.2	38.52	12.349	
5,600.0	5,550.4	5,593.1	5,583.1	21.4	19.7	166.66	-99.4	-121.1	486.0	446.7	39.26	12.379	
5,700.0	5,648.9	5,692.5	5,682.2	21.9	20.0	166.48	-106.8	-125.7	496.2	456.2	39.99	12.407	
5,800.0	5,747.3	5,792.0	5,781.3	22.3	20.4	166.31	-114.2	-130.2	506.4	465.7	40.73	12.434	
5,900.0	5,845.8	5,891.5	5,880.3	22.8	20.8	166.15	-121.6	-134.7	516.7	475.2	41.47	12.460	
6,000.0	5,944.3	5,990.9	5,979.4	23.2	21.2	165.99	-129.0	-139.2	526.9	484.7	42.20	12.485	
6,100.0	6,042.8	6,090.4	6,078.5	23.6	21.5	165.84	-136.4	-143.7	537.2	494.2	42.94	12.509	
6,200.0	6,141.3	6,189.9	6,177.6	24.1	21.9	165.69	-143.8	-148.3	547.4	503.7	43.68	12.532	
6,300.0	6,239.7	6,289.3	6,276.7	24.5	22.3	165.55	-151.1	-152.8	557.7	513.2	44.42	12.553	
6,400.0	6,338.2	6,388.8	6,375.8	25.0	22.6	165.42	-158.5	-157.3	567.9	522.8	45.16	12.575	
6,500.0	6,436.7	6,488.3	6,474.9	25.4	23.0	165.29	-165.9	-161.8	578.2	532.3	45.91	12.595	
6,600.0	6,535.2	6,587.7	6,573.9	25.9	23.4	165.16	-173.3	-166.4	588.5	541.8	46.65	12.614	
6,700.0	6,633.7	6,687.2	6,673.0	26.3	23.8	165.04	-180.7	-170.9	598.7	551.3	47.39	12.633	
6,800.0	6,732.1	6,778.4	6,764.0	26.8	24.1	164.96	-187.1	-174.8	609.4	561.3	48.09	12.671	
6,900.0	6,830.6	6,863.8	6,849.2	27.2	24.4	165.04	-191.1	-177.2	622.1	573.4	48.74	12.763	
6,925.7	6,855.9	6,885.6	6,871.0	27.3	24.5	165.08	-191.8	-177.6	625.7	576.8	48.90	12.795	
7,000.0	6,929.3	6,948.7	6,934.0	27.6	24.7	165.29	-192.9	-178.3	636.1	586.8	49.36	12.889	
7,100.0	7,028.4	7,043.0	7,028.4	28.1	25.0	165.62	-193.0	-178.4	648.7	598.7	50.02	12.970	
7,200.0	7,127.9	7,142.6	7,127.9	28.4	25.4	165.88	-193.0	-178.4	658.0	607.3	50.71	12.976	
7,300.0	7,227.7	7,242.4	7,227.7	28.8	25.7	166.04	-193.0	-178.4	663.9	612.5	51.40	12.917	
7,400.0	7,327.7	7,342.3	7,327.7	29.1	26.0	166.10	-193.0	-178.4	666.5	614.4	52.09	12.795	
7,425.7	7,353.4	7,368.0	7,353.4	29.2	26.1	-8.67	-193.0	-178.4	666.6	614.4	52.26	12.755	
7,500.0	7,427.7	7,442.3	7,427.7	29.4	26.4	-8.67	-193.0	-178.4	666.6	613.9	52.76	12.635	
7,600.0	7,527.7	7,542.3	7,527.7	29.7	26.7	-8.67	-193.0	-178.4	666.6	613.2	53.43	12.477	
7,700.0	7,627.7	7,642.3	7,627.7	30.0	27.1	-8.67	-193.0	-178.4	666.6	612.5	54.10	12.322	
7,800.0	7,727.7	7,742.3	7,727.7	30.3	27.4	-8.67	-193.0	-178.4	666.6	611.8	54.77	12.171	
7,900.0	7,827.7	7,842.3	7,827.7	30.6	27.7	-8.67	-193.0	-178.4	666.6	611.2	55.44	12.023	
8,000.0	7,927.7	7,942.3	7,927.7	30.9	28.1	-8.67	-193.0	-178.4	666.6	610.5	56.12	11.879	
8,100.0	8,027.7	8,042.3	8,027.7	31.2	28.4	-8.67	-193.0	-178.4	666.6	609.8	56.79	11.738	
8,200.0	8,127.7	8,142.3	8,127.7	31.5	28.8	-8.67	-193.0	-178.4	666.6	609.1	57.47	11.600	
8,218.8	8,146.5	8,161.1	8,146.5	31.6	28.8	-8.67	-193.0	-178.4	666.6	609.0	57.60	11.574	
8,225.0	8,152.7	8,167.3	8,152.7	31.6	28.8	-98.96	-193.0	-178.4	666.6	609.0	57.64	11.566	
8,250.0	8,177.7	8,192.3	8,177.7	31.7	28.9	-99.03	-193.0	-178.4	666.8	609.0	57.81	11.534	
8,275.0	8,202.6	8,217.2	8,202.6	31.8	29.0	-99.18	-193.0	-178.4	667.1	609.2	57.98	11.506	
8,300.0	8,227.3	8,241.9	8,227.3	31.8	29.1	-99.41	-193.0	-178.4	667.7	609.6	58.15	11.482	
8,325.0	8,251.8	8,266.4	8,251.8	31.9	29.2	-99.71	-193.0	-178.4	668.5	610.2	58.33	11.462	
8,350.0	8,276.1	8,290.7	8,276.1	32.0	29.3	-100.09	-193.0	-178.4	669.6	611.1	58.50	11.446	
8,375.0	8,299.9	8,314.6	8,299.9	32.1	29.4	-100.52	-193.0	-178.4	671.0	612.4	58.68	11.436	
8,400.0	8,323.4	8,338.0	8,323.4	32.1	29.4	-101.00	-193.0	-178.4	672.7	613.9	58.85	11.432	
8,425.0	8,346.3	8,361.0	8,346.3	32.2	29.5	-101.51	-193.0	-178.4	674.8	615.8	59.02	11.434	
8,450.0	8,368.8	8,383.4	8,368.8	32.3	29.6	-102.04	-193.0	-178.4	677.3	618.1	59.19	11.443	
8,475.0	8,390.6	8,405.2	8,390.6	32.3	29.7	-102.57	-193.0	-178.4	680.3	620.9	59.36	11.461	
8,500.0	8,411.7	8,426.3	8,411.7	32.4	29.7	-103.10	-193.0	-178.4	683.8	624.2	59.53	11.487	
8,525.0	8,432.1	8,446.8	8,432.1	32.4	29.8	-103.59	-193.0	-178.4	687.8	628.1	59.69	11.523	
8,550.0	8,451.8	8,466.4	8,451.8	32.5	29.9	-104.04	-193.0	-178.4	692.4	632.6	59.85	11.569	
8,575.0	8,470.6	8,485.2	8,470.6	32.5	29.9	-104.42	-193.0	-178.4	697.7	637.7	60.01	11.626	
8,600.0	8,488.5	8,503.1	8,488.5	32.6	30.0	-104.73	-193.0	-178.4	703.7	643.5	60.17	11.695	
8,625.0	8,505.4	8,520.1	8,505.4	32.6	30.1	-104.94	-193.0	-178.4	710.3	650.0	60.32	11.776	
8,650.0	8,521.4	8,536.1	8,521.4	32.7	30.1	-105.03	-193.0	-178.4	717.8	657.3	60.47	11.869	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 132H - OWB - PWP0													Offset Site Error:	0.0 usft	
Survey Program: Reference		0-MWD		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
8,675.0	8,536.4	8,551.0	8,536.4	32.7	30.2	-105.00	-193.0	-178.4	726.0	665.3	60.62	11.976			
8,700.0	8,550.3	8,564.9	8,550.3	32.8	30.2	-104.82	-193.0	-178.4	735.0	674.2	60.76	12.096			
8,725.0	8,563.1	8,577.7	8,563.1	32.8	30.3	-104.48	-193.0	-178.4	744.7	683.9	60.89	12.230			
8,750.0	8,574.7	8,589.3	8,574.7	32.8	30.3	-103.96	-193.0	-178.4	755.3	694.3	61.02	12.378			
8,775.0	8,585.2	8,599.8	8,585.2	32.9	30.3	-103.25	-193.0	-178.4	766.7	705.6	61.15	12.539			
8,800.0	8,594.4	8,609.1	8,594.4	32.9	30.4	-102.34	-193.0	-178.4	778.9	717.6	61.26	12.714			
8,825.0	8,602.5	8,617.1	8,602.5	33.0	30.4	-101.20	-193.0	-178.4	791.8	730.4	61.37	12.902			
8,850.0	8,609.3	8,623.9	8,609.3	33.0	30.4	-99.84	-193.0	-178.4	805.4	743.9	61.47	13.102			
8,875.0	8,614.8	8,629.4	8,614.8	33.1	30.4	-98.23	-193.0	-178.4	819.6	758.1	61.56	13.315			
8,900.0	8,619.0	8,633.6	8,619.0	33.2	30.4	-96.38	-193.0	-178.4	834.5	772.9	61.64	13.539			
8,925.0	8,622.0	8,636.6	8,622.0	33.3	30.5	-94.28	-193.0	-178.4	850.0	788.3	61.71	13.774			
8,950.0	8,623.6	8,638.2	8,623.6	33.3	30.5	-91.93	-193.0	-178.4	866.0	804.2	61.77	14.019			
8,968.8	8,624.0	9,584.8	9,194.0	33.4	34.0	-130.88	-195.8	402.8	871.0	814.6	56.42	15.436			
9,000.0	8,624.0	9,616.0	9,194.0	33.6	34.3	-130.88	-196.0	434.0	871.0	814.2	56.82	15.330			
9,100.0	8,624.0	9,716.0	9,194.0	34.2	35.2	-130.88	-196.5	534.0	871.0	812.8	58.22	14.961			
9,200.0	8,624.0	9,816.0	9,194.0	35.0	36.2	-130.88	-197.0	634.0	871.0	811.2	59.83	14.559			
9,300.0	8,624.0	9,916.0	9,194.0	36.1	37.4	-130.87	-197.5	734.0	871.0	809.4	61.63	14.133			
9,400.0	8,624.0	10,016.0	9,194.0	37.3	38.7	-130.87	-197.9	834.0	871.0	807.4	63.61	13.694			
9,500.0	8,624.0	10,116.0	9,194.0	38.6	40.1	-130.87	-198.4	934.0	871.0	805.3	65.75	13.249			
9,600.0	8,624.0	10,216.0	9,194.0	40.0	41.6	-130.87	-198.9	1,034.0	871.0	803.0	68.03	12.804			
9,700.0	8,624.0	10,316.0	9,194.0	41.5	43.2	-130.87	-199.4	1,134.0	871.1	800.6	70.44	12.365			
9,800.0	8,624.0	10,416.0	9,194.0	43.1	44.8	-130.87	-199.9	1,234.0	871.1	798.1	72.98	11.936			
9,900.0	8,624.0	10,516.0	9,194.0	44.8	46.6	-130.87	-200.4	1,334.0	871.1	795.5	75.61	11.520			
10,000.0	8,624.0	10,616.0	9,194.0	46.6	48.3	-130.87	-200.9	1,434.0	871.1	792.7	78.35	11.118			
10,100.0	8,624.0	10,716.0	9,194.0	48.4	50.2	-130.87	-201.4	1,534.0	871.1	789.9	81.17	10.732			
10,200.0	8,624.0	10,816.0	9,194.0	50.3	52.1	-130.87	-201.8	1,634.0	871.1	787.0	84.06	10.362			
10,300.0	8,624.0	10,916.0	9,194.0	52.2	54.0	-130.87	-202.3	1,733.9	871.1	784.1	87.03	10.009			
10,400.0	8,624.0	11,016.0	9,194.0	54.1	55.9	-130.87	-202.8	1,833.9	871.1	781.1	90.06	9.673			
10,500.0	8,624.0	11,116.0	9,194.0	56.1	57.9	-130.87	-203.3	1,933.9	871.1	778.0	93.14	9.353			
10,600.0	8,624.0	11,216.0	9,194.0	58.1	60.0	-130.87	-203.8	2,033.9	871.2	774.9	96.28	9.048			
10,700.0	8,624.0	11,316.0	9,194.0	60.2	62.0	-130.87	-204.3	2,133.9	871.2	771.7	99.46	8.759			
10,800.0	8,624.0	11,416.0	9,194.0	62.3	64.1	-130.87	-204.8	2,233.9	871.2	768.5	102.69	8.484			
10,900.0	8,624.0	11,516.0	9,194.0	64.4	66.2	-130.87	-205.3	2,333.9	871.2	765.2	105.95	8.223			
11,000.0	8,624.0	11,616.0	9,194.0	66.5	68.3	-130.86	-205.7	2,433.9	871.2	762.0	109.25	7.975			
11,100.0	8,624.0	11,716.0	9,194.0	68.6	70.5	-130.86	-206.2	2,533.9	871.2	758.6	112.57	7.739			
11,200.0	8,624.0	11,816.0	9,194.0	70.8	72.7	-130.86	-206.7	2,633.9	871.2	755.3	115.93	7.515			
11,300.0	8,624.0	11,916.0	9,194.0	73.0	74.8	-130.86	-207.2	2,733.9	871.2	751.9	119.32	7.302			
11,400.0	8,624.0	12,016.0	9,194.0	75.2	77.0	-130.86	-207.7	2,833.9	871.2	748.5	122.72	7.099			
11,500.0	8,624.0	12,116.0	9,194.0	77.4	79.2	-130.86	-208.2	2,933.9	871.2	745.1	126.15	6.906			
11,600.0	8,624.0	12,216.0	9,194.0	79.6	81.5	-130.86	-208.7	3,033.9	871.3	741.7	129.61	6.722			
11,700.0	8,624.0	12,316.0	9,194.0	81.8	83.7	-130.86	-209.2	3,133.9	871.3	738.2	133.08	6.547			
11,800.0	8,624.0	12,416.0	9,194.0	84.1	85.9	-130.86	-209.7	3,233.9	871.3	734.7	136.56	6.380			
11,900.0	8,624.0	12,516.0	9,194.0	86.3	88.2	-130.86	-210.1	3,333.9	871.3	731.2	140.07	6.220			
12,000.0	8,624.0	12,616.0	9,194.0	88.6	90.4	-130.86	-210.6	3,433.9	871.3	727.7	143.59	6.068			
12,100.0	8,624.0	12,716.0	9,194.0	90.8	92.7	-130.86	-211.1	3,533.9	871.3	724.2	147.12	5.922			
12,200.0	8,624.0	12,816.0	9,194.0	93.1	95.0	-130.86	-211.6	3,633.9	871.3	720.7	150.67	5.783			
12,300.0	8,624.0	12,916.0	9,194.0	95.4	97.3	-130.86	-212.1	3,733.9	871.3	717.1	154.23	5.650			
12,400.0	8,624.0	13,016.0	9,194.0	97.7	99.5	-130.86	-212.6	3,833.9	871.3	713.5	157.79	5.522			
12,500.0	8,624.0	13,116.0	9,194.0	100.0	101.8	-130.86	-213.1	3,933.9	871.4	710.0	161.37	5.400			
12,600.0	8,624.0	13,216.0	9,194.0	102.3	104.1	-130.85	-213.6	4,033.9	871.4	706.4	164.96	5.282			
12,700.0	8,624.0	13,316.0	9,194.0	104.6	106.4	-130.85	-214.0	4,133.9	871.4	702.8	168.56	5.169			
12,800.0	8,624.0	13,416.0	9,194.0	106.9	108.8	-130.85	-214.5	4,233.9	871.4	699.2	172.17	5.061			

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 132H - OWB - PWP0													Offset Site Error:	0.0 usft	
Survey Program: Reference		0-MWD		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned: Distance			Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
12,900.0	8,624.0	13,516.0	9,194.0	109.2	111.1	-130.85	-215.0	4,333.9	871.4	695.6	175.79	4.957			
13,000.0	8,624.0	13,616.0	9,194.0	111.5	113.4	-130.85	-215.5	4,433.9	871.4	692.0	179.41	4.857			
13,100.0	8,624.0	13,716.0	9,194.0	113.9	115.7	-130.85	-216.0	4,533.9	871.4	688.4	183.04	4.761			
13,200.0	8,624.0	13,816.0	9,194.0	116.2	118.0	-130.85	-216.5	4,633.9	871.4	684.7	186.68	4.668			
13,300.0	8,624.0	13,916.0	9,194.0	118.5	120.4	-130.85	-217.0	4,733.9	871.4	681.1	190.32	4.579			
13,400.0	8,624.0	14,016.0	9,194.0	120.9	122.7	-130.85	-217.5	4,833.9	871.4	677.5	193.97	4.493			
13,500.0	8,624.0	14,116.0	9,194.0	123.2	125.1	-130.85	-217.9	4,933.9	871.5	673.8	197.63	4.410			
13,600.0	8,624.0	14,216.0	9,194.0	125.5	127.4	-130.85	-218.4	5,033.9	871.5	670.2	201.29	4.329			
13,700.0	8,624.0	14,316.0	9,194.0	127.9	129.7	-130.85	-218.9	5,133.9	871.5	666.5	204.96	4.252			
13,800.0	8,624.0	14,416.0	9,194.0	130.2	132.1	-130.85	-219.4	5,233.9	871.5	662.9	208.63	4.177			
13,900.0	8,624.0	14,516.0	9,194.0	132.6	134.4	-130.85	-219.9	5,333.9	871.5	659.2	212.30	4.105			
14,000.0	8,624.0	14,616.0	9,194.0	134.9	136.8	-130.85	-220.4	5,433.9	871.5	655.5	215.98	4.035			
14,100.0	8,624.0	14,716.0	9,194.0	137.3	139.1	-130.85	-220.9	5,533.9	871.5	651.9	219.67	3.967			
14,200.0	8,624.0	14,816.0	9,194.0	139.7	141.5	-130.85	-221.4	5,633.9	871.5	648.2	223.36	3.902			
14,300.0	8,624.0	14,916.0	9,194.0	142.0	143.9	-130.84	-221.8	5,733.9	871.5	644.5	227.05	3.839			
14,400.0	8,624.0	15,016.0	9,194.0	144.4	146.2	-130.84	-222.3	5,833.9	871.6	640.8	230.74	3.777			
14,500.0	8,624.0	15,116.0	9,194.0	146.7	148.6	-130.84	-222.8	5,933.9	871.6	637.1	234.44	3.718			
14,600.0	8,624.0	15,216.0	9,194.0	149.1	150.9	-130.84	-223.3	6,033.9	871.6	633.4	238.14	3.660			
14,700.0	8,624.0	15,316.0	9,194.0	151.5	153.3	-130.84	-223.8	6,133.9	871.6	629.7	241.85	3.604			
14,800.0	8,624.0	15,416.0	9,194.0	153.8	155.7	-130.84	-224.3	6,233.9	871.6	626.0	245.56	3.549			
14,900.0	8,624.0	15,516.0	9,194.0	156.2	158.1	-130.84	-224.8	6,333.9	871.6	622.3	249.27	3.497			
15,000.0	8,624.0	15,616.0	9,194.0	158.6	160.4	-130.84	-225.3	6,433.9	871.6	618.6	252.98	3.445			
15,100.0	8,624.0	15,716.0	9,194.0	161.0	162.8	-130.84	-225.8	6,533.9	871.6	614.9	256.70	3.396			
15,200.0	8,624.0	15,816.0	9,194.0	163.3	165.2	-130.84	-226.2	6,633.9	871.6	611.2	260.42	3.347			
15,300.0	8,624.0	15,916.0	9,194.0	165.7	167.5	-130.84	-226.7	6,733.9	871.6	607.5	264.14	3.300			
15,400.0	8,624.0	16,016.0	9,194.0	168.1	169.9	-130.84	-227.2	6,833.9	871.7	603.8	267.86	3.254			
15,500.0	8,624.0	16,116.0	9,194.0	170.5	172.3	-130.84	-227.7	6,933.9	871.7	600.1	271.59	3.210			
15,600.0	8,624.0	16,216.0	9,194.0	172.9	174.7	-130.84	-228.2	7,033.9	871.7	596.4	275.31	3.166			
15,700.0	8,624.0	16,316.0	9,194.0	175.2	177.1	-130.84	-228.7	7,133.9	871.7	592.6	279.04	3.124			
15,800.0	8,624.0	16,416.0	9,194.0	177.6	179.4	-130.84	-229.2	7,233.9	871.7	588.9	282.78	3.083			
15,900.0	8,624.0	16,516.0	9,194.0	180.0	181.8	-130.84	-229.7	7,333.9	871.7	585.2	286.51	3.043			
16,000.0	8,624.0	16,616.0	9,194.0	182.4	184.2	-130.83	-230.1	7,433.9	871.7	581.5	290.24	3.003			
16,100.0	8,624.0	16,716.0	9,194.0	184.8	186.6	-130.83	-230.6	7,533.9	871.7	577.8	293.98	2.965			
16,200.0	8,624.0	16,816.0	9,194.0	187.2	189.0	-130.83	-231.1	7,633.9	871.7	574.0	297.72	2.928			
16,300.0	8,624.0	16,916.0	9,194.0	189.6	191.4	-130.83	-231.6	7,733.9	871.8	570.3	301.46	2.892			
16,400.0	8,624.0	17,016.0	9,194.0	191.9	193.8	-130.83	-232.1	7,833.9	871.8	566.6	305.20	2.856			
16,500.0	8,624.0	17,116.0	9,194.0	194.3	196.1	-130.83	-232.6	7,933.9	871.8	562.8	308.95	2.822			
16,600.0	8,624.0	17,216.0	9,194.0	196.7	198.5	-130.83	-233.1	8,033.9	871.8	559.1	312.69	2.788			
16,700.0	8,624.0	17,316.0	9,194.0	199.1	200.9	-130.83	-233.6	8,133.9	871.8	555.4	316.44	2.755			
16,800.0	8,624.0	17,416.0	9,194.0	201.5	203.3	-130.83	-234.0	8,233.9	871.8	551.6	320.19	2.723			
16,900.0	8,624.0	17,516.0	9,194.0	203.9	205.7	-130.83	-234.5	8,333.9	871.8	547.9	323.94	2.691			
17,000.0	8,624.0	17,616.0	9,194.0	206.3	208.1	-130.83	-235.0	8,433.9	871.8	544.1	327.69	2.661			
17,100.0	8,624.0	17,716.0	9,194.0	208.7	210.5	-130.83	-235.5	8,533.9	871.8	540.4	331.44	2.630			
17,200.0	8,624.0	17,816.0	9,194.0	211.1	212.9	-130.83	-236.0	8,633.9	871.8	536.7	335.19	2.601			
17,300.0	8,624.0	17,916.0	9,194.0	213.5	215.3	-130.83	-236.5	8,733.9	871.9	532.9	338.94	2.572			
17,400.0	8,624.0	18,016.0	9,194.0	215.9	217.7	-130.83	-237.0	8,833.9	871.9	529.2	342.70	2.544			
17,500.0	8,624.0	18,116.0	9,194.0	218.3	220.1	-130.83	-237.5	8,933.9	871.9	525.4	346.46	2.517			
17,600.0	8,624.0	18,216.0	9,194.0	220.7	222.5	-130.83	-238.0	9,033.9	871.9	521.7	350.21	2.490			
17,700.0	8,624.0	18,316.0	9,194.0	223.1	224.9	-130.82	-238.4	9,133.9	871.9	517.9	353.97	2.463			
17,800.0	8,624.0	18,416.0	9,194.0	225.5	227.3	-130.82	-238.9	9,233.9	871.9	514.2	357.73	2.437			
17,900.0	8,624.0	18,516.0	9,194.0	227.9	229.7	-130.82	-239.4	9,333.9	871.9	510.4	361.49	2.412			
18,000.0	8,624.0	18,616.0	9,194.0	230.3	232.1	-130.82	-239.9	9,433.9	871.9	506.7	365.25	2.387			

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 132H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
18,100.0	8,624.0	18,716.0	9,194.0	232.6	234.4	-130.82	-240.4	9,533.9	871.9	502.9	369.01	2.363		
18,200.0	8,624.0	18,816.0	9,194.0	235.0	236.8	-130.82	-240.9	9,633.9	872.0	499.2	372.78	2.339		
18,300.0	8,624.0	18,916.0	9,194.0	237.4	239.2	-130.82	-241.4	9,733.9	872.0	495.4	376.54	2.316		
18,400.0	8,624.0	19,016.0	9,194.0	239.8	241.6	-130.82	-241.9	9,833.9	872.0	491.7	380.30	2.293		
18,500.0	8,624.0	19,116.0	9,194.0	242.3	244.0	-130.82	-242.3	9,933.9	872.0	487.9	384.07	2.270		
18,600.0	8,624.0	19,216.0	9,194.0	244.7	246.4	-130.82	-242.8	10,033.9	872.0	484.2	387.84	2.248		
18,700.0	8,624.0	19,316.0	9,194.0	247.1	248.8	-130.82	-243.3	10,133.8	872.0	480.4	391.60	2.227		
18,800.0	8,624.0	19,416.0	9,194.0	249.5	251.2	-130.82	-243.8	10,233.8	872.0	476.6	395.37	2.206		
18,900.0	8,624.0	19,516.0	9,194.0	251.9	253.7	-130.82	-244.3	10,333.8	872.0	472.9	399.14	2.185		
19,000.0	8,624.0	19,616.0	9,194.0	254.3	256.1	-130.82	-244.8	10,433.8	872.0	469.1	402.91	2.164		
19,100.0	8,624.0	19,716.0	9,194.0	256.7	258.5	-130.82	-245.3	10,533.8	872.0	465.4	406.68	2.144		
19,200.0	8,624.0	19,816.0	9,194.0	259.1	260.9	-130.82	-245.8	10,633.8	872.1	461.6	410.45	2.125		
19,201.8	8,624.0	19,817.8	9,194.0	259.1	260.9	-130.82	-245.8	10,635.6	872.1	461.5	410.52	2.124		
19,235.6	8,624.0	19,847.1	9,194.0	259.9	261.6	-130.82	-245.9	10,664.9	872.1	460.4	411.64	2.119 SF		

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

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COMPASS 5000.15 Build 91E

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.12	132.0	0.3	132.0					
100.0	100.0	100.0	100.0	0.1	0.1	0.12	132.0	0.3	132.0	131.7	0.25	526.043		
200.0	200.0	200.0	200.0	0.5	0.5	0.12	132.0	0.3	132.0	131.0	0.97	136.382		
300.0	300.0	300.0	300.0	0.8	0.8	0.12	132.0	0.3	132.0	130.3	1.68	78.347		
400.0	400.0	400.0	400.0	1.2	1.2	0.12	132.0	0.3	132.0	129.6	2.40	54.960		
500.0	500.0	500.0	500.0	1.6	1.6	0.12	132.0	0.3	132.0	128.9	3.12	42.325		
600.0	600.0	600.0	600.0	1.9	1.9	0.12	132.0	0.3	132.0	128.2	3.84	34.414		
700.0	700.0	700.0	700.0	2.3	2.3	0.12	132.0	0.3	132.0	127.4	4.55	28.995		
800.0	800.0	800.0	800.0	2.6	2.6	0.12	132.0	0.3	132.0	126.7	5.27	25.050		
900.0	900.0	900.0	900.0	3.0	3.0	0.12	132.0	0.3	132.0	126.0	5.99	22.050		
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	132.0	0.3	132.0	125.3	6.70	19.691		
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	132.0	0.3	132.0	124.6	7.42	17.789		
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	132.0	0.3	132.0	123.9	8.14	16.222		
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	132.0	0.3	132.0	123.1	8.85	14.908		
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	132.0	0.3	132.0	122.4	9.57	13.791		
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	132.0	0.3	132.0	121.7	10.29	12.830		
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	132.0	0.3	132.0	121.0	11.01	11.994		
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	132.0	0.3	132.0	120.3	11.72	11.261		
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	0.12	132.0	0.3	132.0	119.6	12.44	10.612		
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	0.12	132.0	0.3	132.0	118.8	13.16	10.034		
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	0.12	132.0	0.3	132.0	118.1	13.87	9.515 CC, ES		
2,100.0	2,100.0	2,096.0	2,096.0	7.3	7.3	174.63	133.4	-0.5	135.2	120.7	14.55	9.292		
2,200.0	2,199.8	2,191.4	2,191.2	7.6	7.6	173.90	137.6	-2.7	144.9	129.7	15.20	9.529		
2,300.0	2,299.5	2,285.6	2,285.1	7.9	8.0	172.88	144.5	-6.4	160.9	145.1	15.84	10.159		
2,400.0	2,398.7	2,378.0	2,376.9	8.3	8.3	171.75	154.0	-11.5	183.2	166.8	16.45	11.138		
2,500.0	2,497.5	2,468.1	2,466.0	8.6	8.6	170.63	165.6	-17.7	211.8	194.7	17.05	12.424		
2,600.0	2,595.9	2,560.4	2,557.0	9.0	9.0	169.66	179.6	-25.2	244.2	226.5	17.68	13.815		
2,700.0	2,694.4	2,654.9	2,650.0	9.3	9.3	168.88	194.1	-32.9	276.8	258.5	18.34	15.095		
2,800.0	2,792.9	2,749.3	2,743.0	9.7	9.7	168.27	208.6	-40.7	309.5	290.5	19.01	16.284		
2,900.0	2,891.4	2,843.8	2,836.0	10.1	10.0	167.77	223.0	-48.4	342.2	322.5	19.68	17.389		
3,000.0	2,989.9	2,938.3	2,929.1	10.4	10.4	167.36	237.5	-56.1	374.9	354.6	20.36	18.418		
3,100.0	3,088.3	3,032.7	3,022.1	10.8	10.8	167.02	252.0	-63.9	407.6	386.6	21.04	19.378		
3,200.0	3,186.8	3,127.2	3,115.1	11.2	11.2	166.72	266.4	-71.6	440.4	418.7	21.72	20.276		
3,300.0	3,285.3	3,221.7	3,208.2	11.6	11.6	166.47	280.9	-79.3	473.1	450.7	22.41	21.115		
3,400.0	3,383.8	3,316.1	3,301.2	12.0	11.9	166.25	295.4	-87.1	505.9	482.8	23.10	21.903		
3,500.0	3,482.3	3,410.6	3,394.2	12.4	12.3	166.06	309.8	-94.8	538.7	514.9	23.79	22.642		
3,600.0	3,580.8	3,505.1	3,487.3	12.8	12.7	165.89	324.3	-102.5	571.4	546.9	24.49	23.338		
3,700.0	3,679.2	3,599.5	3,580.3	13.3	13.1	165.74	338.8	-110.3	604.2	579.0	25.18	23.993		
3,800.0	3,777.7	3,694.0	3,673.3	13.7	13.5	165.60	353.2	-118.0	637.0	611.1	25.88	24.611		
3,900.0	3,876.2	3,788.5	3,766.4	14.1	13.9	165.48	367.7	-125.7	669.8	643.2	26.58	25.194		
4,000.0	3,974.7	3,882.9	3,859.4	14.5	14.3	165.36	382.2	-133.5	702.5	675.2	27.29	25.747		
4,100.0	4,073.2	3,977.4	3,952.4	14.9	14.7	165.26	396.6	-141.2	735.3	707.3	27.99	26.270		
4,200.0	4,171.6	4,071.9	4,045.4	15.4	15.1	165.17	411.1	-148.9	768.1	739.4	28.70	26.765		
4,300.0	4,270.1	4,166.3	4,138.5	15.8	15.5	165.08	425.6	-156.7	800.9	771.5	29.41	27.236		
4,400.0	4,368.6	4,289.1	4,259.7	16.2	16.0	165.03	442.8	-165.9	832.4	802.1	30.35	27.428		
4,500.0	4,467.1	4,422.6	4,392.3	16.6	16.5	165.10	456.3	-173.1	859.9	828.5	31.33	27.448		
4,600.0	4,565.6	4,559.2	4,528.5	17.1	17.0	165.30	464.5	-177.5	883.0	850.7	32.26	27.368		
4,700.0	4,664.0	4,694.7	4,664.0	17.5	17.5	165.63	467.0	-178.8	901.7	868.6	33.14	27.212		
4,800.0	4,762.5	4,793.2	4,762.5	17.9	17.8	165.90	467.0	-178.8	918.6	884.7	33.85	27.138		
4,900.0	4,861.0	4,891.7	4,861.0	18.4	18.2	166.16	467.0	-178.8	935.4	900.9	34.56	27.066		
5,000.0	4,959.5	4,990.2	4,959.5	18.8	18.5	166.41	467.0	-178.8	952.3	917.0	35.27	26.998		
5,100.0	5,058.0	5,088.7	5,058.0	19.2	18.8	166.65	467.0	-178.8	969.2	933.2	35.99	26.932		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)						
5,200.0	5,156.4	5,187.1	5,156.4	19.7	19.2	166.88	467.0	-178.8	986.1	949.4	36.70	26.869		
5,300.0	5,254.9	5,285.6	5,254.9	20.1	19.5	167.11	467.0	-178.8	1,003.1	965.7	37.42	26.809		
5,400.0	5,353.4	5,384.1	5,353.4	20.6	19.8	167.32	467.0	-178.8	1,020.0	981.9	38.13	26.751		
5,500.0	5,451.9	5,482.6	5,451.9	21.0	20.2	167.53	467.0	-178.8	1,037.0	998.1	38.85	26.695		
5,600.0	5,550.4	5,581.1	5,550.4	21.4	20.5	167.74	467.0	-178.8	1,054.0	1,014.4	39.56	26.641		
5,700.0	5,648.9	5,679.5	5,648.9	21.9	20.8	167.93	467.0	-178.8	1,070.9	1,030.7	40.28	26.589		
5,800.0	5,747.3	5,778.0	5,747.3	22.3	21.2	168.13	467.0	-178.8	1,087.9	1,046.9	40.99	26.539		
5,900.0	5,845.8	5,876.5	5,845.8	22.8	21.5	168.31	467.0	-178.8	1,104.9	1,063.2	41.71	26.491		
6,000.0	5,944.3	5,975.0	5,944.3	23.2	21.9	168.49	467.0	-178.8	1,122.0	1,079.5	42.43	26.444		
6,100.0	6,042.8	6,073.5	6,042.8	23.6	22.2	168.66	467.0	-178.8	1,139.0	1,095.9	43.15	26.399		
6,200.0	6,141.3	6,171.9	6,141.3	24.1	22.5	168.83	467.0	-178.8	1,156.0	1,112.2	43.86	26.356		
6,300.0	6,239.7	6,270.4	6,239.7	24.5	22.9	169.00	467.0	-178.8	1,173.1	1,128.5	44.58	26.314		
6,400.0	6,338.2	6,368.9	6,338.2	25.0	23.2	169.16	467.0	-178.8	1,190.2	1,144.9	45.30	26.273		
6,500.0	6,436.7	6,467.4	6,436.7	25.4	23.6	169.31	467.0	-178.8	1,207.2	1,161.2	46.02	26.234		
6,600.0	6,535.2	6,565.9	6,535.2	25.9	23.9	169.46	467.0	-178.8	1,224.3	1,177.6	46.74	26.195		
6,700.0	6,633.7	6,664.3	6,633.7	26.3	24.2	169.61	467.0	-178.8	1,241.4	1,193.9	47.46	26.158		
6,800.0	6,732.1	6,762.8	6,732.1	26.8	24.6	169.75	467.0	-178.8	1,258.5	1,210.3	48.18	26.123		
6,900.0	6,830.6	6,861.3	6,830.6	27.2	24.9	169.89	467.0	-178.8	1,275.6	1,226.7	48.90	26.088		
6,925.7	6,855.9	6,886.6	6,855.9	27.3	25.0	169.93	467.0	-178.8	1,280.0	1,230.9	49.08	26.079		
7,000.0	6,929.3	6,959.9	6,929.3	27.6	25.3	170.06	467.0	-178.8	1,291.7	1,242.1	49.61	26.036		
7,100.0	7,028.4	7,059.1	7,028.4	28.1	25.6	170.20	467.0	-178.8	1,304.6	1,254.3	50.33	25.921		
7,200.0	7,127.9	7,158.6	7,127.9	28.4	26.0	170.31	467.0	-178.8	1,314.1	1,263.1	51.04	25.745		
7,300.0	7,227.7	7,258.4	7,227.7	28.8	26.3	170.37	467.0	-178.8	1,320.1	1,268.4	51.75	25.510		
7,400.0	7,327.7	7,358.4	7,327.7	29.1	26.7	170.40	467.0	-178.8	1,322.7	1,270.3	52.45	25.218		
7,425.7	7,353.4	7,384.0	7,353.4	29.2	26.7	-4.38	467.0	-178.8	1,322.9	1,270.2	52.63	25.135		
7,500.0	7,427.7	7,458.4	7,427.7	29.4	27.0	-4.38	467.0	-178.8	1,322.9	1,269.7	53.14	24.896		
7,600.0	7,527.7	7,558.4	7,527.7	29.7	27.4	-4.38	467.0	-178.8	1,322.9	1,269.0	53.82	24.580		
7,700.0	7,627.7	7,658.4	7,627.7	30.0	27.7	-4.38	467.0	-178.8	1,322.9	1,268.4	54.50	24.273		
7,800.0	7,727.7	7,758.4	7,727.7	30.3	28.1	-4.38	467.0	-178.8	1,322.9	1,267.7	55.18	23.972		
7,900.0	7,827.7	7,858.4	7,827.7	30.6	28.4	-4.38	467.0	-178.8	1,322.9	1,267.0	55.87	23.678		
8,000.0	7,927.7	7,958.4	7,927.7	30.9	28.8	-4.38	467.0	-178.8	1,322.9	1,266.3	56.55	23.392		
8,100.0	8,027.7	8,058.4	8,027.7	31.2	29.1	-4.38	467.0	-178.8	1,322.9	1,265.6	57.24	23.111		
8,200.0	8,127.7	8,158.4	8,127.7	31.5	29.5	-4.38	467.0	-178.8	1,322.9	1,264.9	57.92	22.837		
8,218.8	8,146.5	8,177.2	8,146.5	31.6	29.5	-4.38	467.0	-178.8	1,322.9	1,264.8	58.05	22.787		
8,225.0	8,152.7	8,183.4	8,152.7	31.6	29.5	-94.66	467.0	-178.8	1,322.9	1,264.8	58.10	22.770		
8,250.0	8,177.7	8,208.4	8,177.7	31.7	29.6	-94.70	467.0	-178.8	1,322.9	1,264.7	58.27	22.704		
8,275.0	8,202.6	8,233.3	8,202.6	31.8	29.7	-94.77	467.0	-178.8	1,323.1	1,264.7	58.44	22.641		
8,300.0	8,227.3	8,258.0	8,227.3	31.8	29.8	-94.89	467.0	-178.8	1,323.4	1,264.8	58.61	22.581		
8,325.0	8,251.8	8,282.5	8,251.8	31.9	29.9	-95.04	467.0	-178.8	1,323.9	1,265.1	58.77	22.524		
8,350.0	8,276.1	8,306.7	8,276.1	32.0	30.0	-95.23	467.0	-178.8	1,324.4	1,265.5	58.94	22.471		
8,375.0	8,299.9	8,330.6	8,299.9	32.1	30.1	-95.45	467.0	-178.8	1,325.2	1,266.1	59.10	22.422		
8,400.0	8,323.4	8,354.1	8,323.4	32.1	30.1	-95.69	467.0	-178.8	1,326.0	1,266.8	59.26	22.377		
8,425.0	8,346.3	8,377.0	8,346.3	32.2	30.2	-95.95	467.0	-178.8	1,327.1	1,267.7	59.41	22.337		
8,450.0	8,368.8	8,399.5	8,368.8	32.3	30.3	-96.22	467.0	-178.8	1,328.4	1,268.9	59.56	22.303		
8,475.0	8,390.6	8,421.3	8,390.6	32.3	30.4	-96.49	467.0	-178.8	1,330.0	1,270.3	59.71	22.273		
8,500.0	8,411.7	8,442.4	8,411.7	32.4	30.5	-96.76	467.0	-178.8	1,331.8	1,272.0	59.86	22.250		
8,525.0	8,432.1	8,462.8	8,432.1	32.4	30.5	-97.01	467.0	-178.8	1,333.9	1,273.9	60.00	22.232		
8,550.0	8,451.8	8,482.5	8,451.8	32.5	30.6	-97.24	467.0	-178.8	1,336.4	1,276.2	60.14	22.222		
8,575.0	8,470.6	8,501.3	8,470.6	32.5	30.7	-97.44	467.0	-178.8	1,339.1	1,278.9	60.27	22.218		
8,600.0	8,488.5	8,519.2	8,488.5	32.6	30.7	-97.59	467.0	-178.8	1,342.3	1,281.9	60.40	22.222		
8,625.0	8,505.4	8,536.1	8,505.4	32.6	30.8	-97.69	467.0	-178.8	1,345.9	1,285.3	60.53	22.234		
8,650.0	8,521.4	8,552.1	8,521.4	32.7	30.8	-97.74	467.0	-178.8	1,349.9	1,289.2	60.66	22.253		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Rule Assigned: Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
+N/-S (usft)	+E/-W (usft)													
8,675.0	8,536.4	8,567.1	8,536.4	32.7	30.9	-97.71	467.0	-178.8	1,354.3	1,293.5		60.78	22.280	
8,700.0	8,550.3	8,581.0	8,550.3	32.8	30.9	-97.61	467.0	-178.8	1,359.2	1,298.3		60.91	22.316	
8,725.0	8,563.1	8,593.7	8,563.1	32.8	31.0	-97.43	467.0	-178.8	1,364.6	1,303.5		61.03	22.360	
8,750.0	8,574.7	8,605.4	8,574.7	32.8	31.0	-97.15	467.0	-178.8	1,370.4	1,309.3		61.14	22.413	
8,775.0	8,585.2	8,615.9	8,585.2	32.9	31.1	-96.77	467.0	-178.8	1,376.8	1,315.5		61.26	22.475	
8,800.0	8,594.4	8,625.1	8,594.4	32.9	31.1	-96.29	467.0	-178.8	1,383.7	1,322.3		61.37	22.545	
8,825.0	8,602.5	8,633.2	8,602.5	33.0	31.1	-95.70	467.0	-178.8	1,391.0	1,329.5		61.48	22.624	
8,850.0	8,609.3	8,639.9	8,609.3	33.0	31.1	-94.99	467.0	-178.8	1,398.9	1,337.3		61.59	22.712	
8,875.0	8,614.8	8,645.5	8,614.8	33.1	31.2	-94.16	467.0	-178.8	1,407.2	1,345.5		61.70	22.808	
8,900.0	8,619.0	8,649.7	8,619.0	33.2	31.2	-93.22	467.0	-178.8	1,416.0	1,354.2		61.80	22.914	
8,925.0	8,622.0	8,652.6	8,622.0	33.3	31.2	-92.15	467.0	-178.8	1,425.3	1,363.4		61.89	23.027	
8,950.0	8,623.6	8,654.3	8,623.6	33.3	31.2	-90.97	467.0	-178.8	1,434.9	1,372.9		61.99	23.149	
8,968.8	8,624.0	8,654.7	8,624.0	33.4	31.2	-90.00	467.0	-178.8	1,442.4	1,380.4		62.05	23.246	
9,000.0	8,624.0	8,654.7	8,624.0	33.6	31.2	-90.00	467.0	-178.8	1,455.4	1,393.2		62.16	23.413	
9,100.0	8,624.0	8,654.7	8,624.0	34.2	31.2	-90.00	467.0	-178.8	1,500.4	1,437.9		62.54	23.991	
9,200.0	8,624.0	10,042.7	9,400.3	35.0	37.6	-120.49	463.0	637.7	1,530.1	1,465.2		64.91	23.571	
9,300.0	8,624.0	10,142.7	9,400.2	36.1	38.8	-120.48	462.5	737.7	1,530.1	1,463.2		66.90	22.870	
9,400.0	8,624.0	10,242.7	9,400.1	37.3	40.1	-120.48	462.0	837.7	1,530.1	1,461.0		69.10	22.144	
9,500.0	8,624.0	10,342.7	9,400.1	38.6	41.4	-120.48	461.6	937.7	1,530.1	1,458.6		71.48	21.406	
9,600.0	8,624.0	10,442.7	9,400.0	40.0	42.9	-120.48	461.1	1,037.7	1,530.1	1,456.0		74.02	20.670	
9,700.0	8,624.0	10,542.7	9,399.9	41.5	44.4	-120.47	460.6	1,137.7	1,530.0	1,453.3		76.72	19.943	
9,800.0	8,624.0	10,642.7	9,399.9	43.1	46.1	-120.47	460.1	1,237.7	1,530.0	1,450.5		79.55	19.233	
9,900.0	8,624.0	10,742.7	9,399.8	44.8	47.7	-120.47	459.6	1,337.7	1,530.0	1,447.5		82.51	18.544	
10,000.0	8,624.0	10,842.7	9,399.8	46.6	49.5	-120.47	459.1	1,437.7	1,530.0	1,444.4		85.57	17.880	
10,100.0	8,624.0	10,942.7	9,399.7	48.4	51.3	-120.47	458.6	1,537.7	1,530.0	1,441.2		88.73	17.243	
10,200.0	8,624.0	11,042.7	9,399.6	50.3	53.1	-120.46	458.1	1,637.7	1,529.9	1,438.0		91.98	16.634	
10,300.0	8,624.0	11,142.7	9,399.6	52.2	55.0	-120.46	457.6	1,737.7	1,529.9	1,434.6		95.30	16.053	
10,400.0	8,624.0	11,242.7	9,399.5	54.1	57.0	-120.46	457.2	1,837.7	1,529.9	1,431.2		98.70	15.500	
10,500.0	8,624.0	11,342.7	9,399.4	56.1	58.9	-120.46	456.7	1,937.7	1,529.9	1,427.7		102.16	14.975	
10,600.0	8,624.0	11,442.7	9,399.4	58.1	61.0	-120.45	456.2	2,037.7	1,529.9	1,424.2		105.68	14.476	
10,700.0	8,624.0	11,542.7	9,399.3	60.2	63.0	-120.45	455.7	2,137.6	1,529.8	1,420.6		109.25	14.003	
10,800.0	8,624.0	11,642.7	9,399.3	62.3	65.0	-120.45	455.2	2,237.6	1,529.8	1,416.9		112.87	13.554	
10,900.0	8,624.0	11,742.7	9,399.2	64.4	67.1	-120.45	454.7	2,337.6	1,529.8	1,413.3		116.53	13.128	
11,000.0	8,624.0	11,842.7	9,399.1	66.5	69.2	-120.45	454.2	2,437.6	1,529.8	1,409.6		120.23	12.724	
11,100.0	8,624.0	11,942.7	9,399.1	68.6	71.4	-120.44	453.7	2,537.6	1,529.8	1,405.8		123.96	12.341	
11,200.0	8,624.0	12,042.7	9,399.0	70.8	73.5	-120.44	453.3	2,637.6	1,529.7	1,402.0		127.73	11.977	
11,300.0	8,624.0	12,142.7	9,398.9	73.0	75.7	-120.44	452.8	2,737.6	1,529.7	1,398.2		131.52	11.631	
11,400.0	8,624.0	12,242.7	9,398.9	75.2	77.8	-120.44	452.3	2,837.6	1,529.7	1,394.4		135.35	11.302	
11,500.0	8,624.0	12,342.7	9,398.8	77.4	80.0	-120.43	451.8	2,937.6	1,529.7	1,390.5		139.19	10.990	
11,600.0	8,624.0	12,442.7	9,398.8	79.6	82.2	-120.43	451.3	3,037.6	1,529.7	1,386.6		143.06	10.692	
11,700.0	8,624.0	12,542.7	9,398.7	81.8	84.5	-120.43	450.8	3,137.6	1,529.6	1,382.7		146.96	10.409	
11,800.0	8,624.0	12,642.7	9,398.6	84.1	86.7	-120.43	450.3	3,237.6	1,529.6	1,378.8		150.87	10.139	
11,900.0	8,624.0	12,742.7	9,398.6	86.3	88.9	-120.42	449.8	3,337.6	1,529.6	1,374.8		154.80	9.881	
12,000.0	8,624.0	12,842.7	9,398.5	88.6	91.2	-120.42	449.4	3,437.6	1,529.6	1,370.8		158.74	9.636	
12,100.0	8,624.0	12,942.7	9,398.4	90.8	93.4	-120.42	448.9	3,537.6	1,529.6	1,366.9		162.70	9.401	
12,200.0	8,624.0	13,042.7	9,398.4	93.1	95.7	-120.42	448.4	3,637.6	1,529.5	1,362.9		166.68	9.177	
12,300.0	8,624.0	13,142.7	9,398.3	95.4	97.9	-120.42	447.9	3,737.6	1,529.5	1,358.9		170.67	8.962	
12,400.0	8,624.0	13,242.7	9,398.3	97.7	100.2	-120.41	447.4	3,837.6	1,529.5	1,354.8		174.67	8.757	
12,500.0	8,624.0	13,342.7	9,398.2	100.0	102.5	-120.41	446.9	3,937.6	1,529.5	1,350.8		178.68	8.560	
12,600.0	8,624.0	13,442.7	9,398.1	102.3	104.8	-120.41	446.4	4,037.6	1,529.5	1,346.8		182.70	8.371	
12,700.0	8,624.0	13,542.7	9,398.1	104.6	107.1	-120.41	445.9	4,137.6	1,529.4	1,342.7		186.74	8.190	
12,800.0	8,624.0	13,642.7	9,398.0	106.9	109.4	-120.40	445.5	4,237.6	1,529.4	1,338.6		190.78	8.017	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWPO												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,900.0	8,624.0	13,742.7	9,397.9	109.2	111.7	-120.40	445.0	4,337.6	1,529.4	1,334.6	194.84	7.850	
13,000.0	8,624.0	13,842.7	9,397.9	111.5	114.0	-120.40	444.5	4,437.6	1,529.4	1,330.5	198.90	7.689	
13,100.0	8,624.0	13,942.7	9,397.8	113.9	116.3	-120.40	444.0	4,537.6	1,529.4	1,326.4	202.97	7.535	
13,200.0	8,624.0	14,042.7	9,397.8	116.2	118.7	-120.39	443.5	4,637.6	1,529.3	1,322.3	207.04	7.387	
13,300.0	8,624.0	14,142.7	9,397.7	118.5	121.0	-120.39	443.0	4,737.6	1,529.3	1,318.2	211.13	7.244	
13,400.0	8,624.0	14,242.7	9,397.6	120.9	123.3	-120.39	442.5	4,837.6	1,529.3	1,314.1	215.22	7.106	
13,500.0	8,624.0	14,342.7	9,397.6	123.2	125.6	-120.39	442.0	4,937.6	1,529.3	1,310.0	219.31	6.973	
13,600.0	8,624.0	14,442.7	9,397.5	125.5	128.0	-120.39	441.5	5,037.6	1,529.3	1,305.8	223.41	6.845	
13,700.0	8,624.0	14,542.7	9,397.4	127.9	130.3	-120.38	441.1	5,137.6	1,529.2	1,301.7	227.52	6.721	
13,800.0	8,624.0	14,642.7	9,397.4	130.2	132.6	-120.38	440.6	5,237.6	1,529.2	1,297.6	231.64	6.602	
13,900.0	8,624.0	14,742.7	9,397.3	132.6	135.0	-120.38	440.1	5,337.6	1,529.2	1,293.5	235.75	6.486	
14,000.0	8,624.0	14,842.7	9,397.3	134.9	137.3	-120.38	439.6	5,437.6	1,529.2	1,289.3	239.88	6.375	
14,100.0	8,624.0	14,942.7	9,397.2	137.3	139.7	-120.37	439.1	5,537.6	1,529.2	1,285.2	244.01	6.267	
14,200.0	8,624.0	15,042.7	9,397.1	139.7	142.0	-120.37	438.6	5,637.6	1,529.1	1,281.0	248.14	6.162	
14,300.0	8,624.0	15,142.7	9,397.1	142.0	144.4	-120.37	438.1	5,737.6	1,529.1	1,276.9	252.28	6.061	
14,400.0	8,624.0	15,242.7	9,397.0	144.4	146.7	-120.37	437.6	5,837.6	1,529.1	1,272.7	256.42	5.963	
14,500.0	8,624.0	15,342.7	9,396.9	146.7	149.1	-120.37	437.2	5,937.6	1,529.1	1,268.5	260.56	5.868	
14,600.0	8,624.0	15,442.7	9,396.9	149.1	151.5	-120.36	436.7	6,037.6	1,529.1	1,264.4	264.71	5.776	
14,700.0	8,624.0	15,542.7	9,396.8	151.5	153.8	-120.36	436.2	6,137.6	1,529.0	1,260.2	268.86	5.687	
14,800.0	8,624.0	15,642.7	9,396.8	153.8	156.2	-120.36	435.7	6,237.6	1,529.0	1,256.0	273.01	5.601	
14,900.0	8,624.0	15,742.7	9,396.7	156.2	158.6	-120.36	435.2	6,337.6	1,529.0	1,251.8	277.17	5.516	
15,000.0	8,624.0	15,842.7	9,396.6	158.6	160.9	-120.35	434.7	6,437.6	1,529.0	1,247.7	281.33	5.435	
15,100.0	8,624.0	15,942.7	9,396.6	161.0	163.3	-120.35	434.2	6,537.6	1,529.0	1,243.5	285.50	5.355	
15,200.0	8,624.0	16,042.7	9,396.5	163.3	165.7	-120.35	433.7	6,637.6	1,528.9	1,239.3	289.66	5.278	
15,300.0	8,624.0	16,142.7	9,396.4	165.7	168.0	-120.35	433.3	6,737.6	1,528.9	1,235.1	293.83	5.203	
15,400.0	8,624.0	16,242.7	9,396.4	168.1	170.4	-120.34	432.8	6,837.6	1,528.9	1,230.9	298.01	5.130	
15,500.0	8,624.0	16,342.7	9,396.3	170.5	172.8	-120.34	432.3	6,937.6	1,528.9	1,226.7	302.18	5.060	
15,600.0	8,624.0	16,442.7	9,396.3	172.9	175.2	-120.34	431.8	7,037.6	1,528.9	1,222.5	306.36	4.990	
15,700.0	8,624.0	16,542.7	9,396.2	175.2	177.5	-120.34	431.3	7,137.6	1,528.9	1,218.3	310.54	4.923	
15,800.0	8,624.0	16,642.7	9,396.1	177.6	179.9	-120.34	430.8	7,237.6	1,528.8	1,214.1	314.72	4.858	
15,900.0	8,624.0	16,742.7	9,396.1	180.0	182.3	-120.33	430.3	7,337.6	1,528.8	1,209.9	318.90	4.794	
16,000.0	8,624.0	16,842.7	9,396.0	182.4	184.7	-120.33	429.8	7,437.6	1,528.8	1,205.7	323.09	4.732	
16,100.0	8,624.0	16,942.7	9,395.9	184.8	187.1	-120.33	429.4	7,537.6	1,528.8	1,201.5	327.27	4.671	
16,200.0	8,624.0	17,042.7	9,395.9	187.2	189.4	-120.33	428.9	7,637.6	1,528.8	1,197.3	331.46	4.612	
16,300.0	8,624.0	17,142.7	9,395.8	189.6	191.8	-120.32	428.4	7,737.6	1,528.7	1,193.1	335.66	4.554	
16,400.0	8,624.0	17,242.7	9,395.8	191.9	194.2	-120.32	427.9	7,837.6	1,528.7	1,188.9	339.85	4.498	
16,500.0	8,624.0	17,342.7	9,395.7	194.3	196.6	-120.32	427.4	7,937.6	1,528.7	1,184.7	344.04	4.443	
16,600.0	8,624.0	17,442.7	9,395.6	196.7	199.0	-120.32	426.9	8,037.6	1,528.7	1,180.4	348.24	4.390	
16,700.0	8,624.0	17,542.7	9,395.6	199.1	201.4	-120.31	426.4	8,137.6	1,528.7	1,176.2	352.44	4.337	
16,800.0	8,624.0	17,642.7	9,395.5	201.5	203.8	-120.31	425.9	8,237.6	1,528.6	1,172.0	356.64	4.286	
16,900.0	8,624.0	17,742.7	9,395.5	203.9	206.1	-120.31	425.4	8,337.6	1,528.6	1,167.8	360.84	4.236	
17,000.0	8,624.0	17,842.7	9,395.4	206.3	208.5	-120.31	425.0	8,437.6	1,528.6	1,163.6	365.04	4.187	
17,100.0	8,624.0	17,942.7	9,395.3	208.7	210.9	-120.31	424.5	8,537.6	1,528.6	1,159.3	369.25	4.140	
17,200.0	8,624.0	18,042.7	9,395.3	211.1	213.3	-120.30	424.0	8,637.6	1,528.6	1,155.1	373.45	4.093	
17,300.0	8,624.0	18,142.7	9,395.2	213.5	215.7	-120.30	423.5	8,737.6	1,528.5	1,150.9	377.66	4.047	
17,400.0	8,624.0	18,242.7	9,395.1	215.9	218.1	-120.30	423.0	8,837.6	1,528.5	1,146.7	381.87	4.003	
17,500.0	8,624.0	18,342.7	9,395.1	218.3	220.5	-120.30	422.5	8,937.6	1,528.5	1,142.4	386.08	3.959	
17,600.0	8,624.0	18,442.7	9,395.0	220.7	222.9	-120.29	422.0	9,037.6	1,528.5	1,138.2	390.29	3.916	
17,700.0	8,624.0	18,542.7	9,395.0	223.1	225.3	-120.29	421.5	9,137.6	1,528.5	1,134.0	394.50	3.874	
17,800.0	8,624.0	18,642.7	9,394.9	225.5	227.7	-120.29	421.1	9,237.6	1,528.4	1,129.7	398.71	3.833	
17,900.0	8,624.0	18,742.7	9,394.8	227.9	230.1	-120.29	420.6	9,337.6	1,528.4	1,125.5	402.93	3.793	
18,000.0	8,624.0	18,842.7	9,394.8	230.3	232.5	-120.28	420.1	9,437.6	1,528.4	1,121.3	407.14	3.754	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance			Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)			
18,100.0	8,624.0	18,942.7	9,394.7	232.6	234.9	-120.28	419.6	9,537.6	1,528.4	1,117.0	411.36	3.715		
18,200.0	8,624.0	19,042.7	9,394.6	235.0	237.3	-120.28	419.1	9,637.6	1,528.4	1,112.8	415.58	3.678		
18,300.0	8,624.0	19,142.7	9,394.6	237.4	239.7	-120.28	418.6	9,737.6	1,528.3	1,108.5	419.79	3.641		
18,400.0	8,624.0	19,242.7	9,394.5	239.8	242.0	-120.28	418.1	9,837.6	1,528.3	1,104.3	424.01	3.604		
18,500.0	8,624.0	19,342.7	9,394.5	242.3	244.4	-120.27	417.6	9,937.6	1,528.3	1,100.1	428.23	3.569		
18,600.0	8,624.0	19,442.7	9,394.4	244.7	246.8	-120.27	417.2	10,037.6	1,528.3	1,095.8	432.46	3.534		
18,700.0	8,624.0	19,542.7	9,394.3	247.1	249.2	-120.27	416.7	10,137.6	1,528.3	1,091.6	436.68	3.500		
18,800.0	8,624.0	19,642.7	9,394.3	249.5	251.6	-120.27	416.2	10,237.6	1,528.2	1,087.3	440.90	3.466		
18,900.0	8,624.0	19,742.7	9,394.2	251.9	254.0	-120.26	415.7	10,337.5	1,528.2	1,083.1	445.13	3.433		
19,000.0	8,624.0	19,842.7	9,394.1	254.3	256.4	-120.26	415.2	10,437.5	1,528.2	1,078.9	449.35	3.401		
19,100.0	8,624.0	19,942.7	9,394.1	256.7	258.8	-120.26	414.7	10,537.5	1,528.2	1,074.6	453.58	3.369		
19,200.0	8,624.0	20,042.7	9,394.0	259.1	261.2	-120.26	414.2	10,637.5	1,528.2	1,070.4	457.80	3.338		
19,226.4	8,624.0	20,068.8	9,394.0	259.7	261.9	-120.26	414.1	10,663.6	1,528.2	1,069.2	458.91	3.330		
19,235.6	8,624.0	20,068.8	9,394.0	259.9	261.9	-120.26	414.1	10,663.6	1,528.2	1,069.1	459.06	3.329 SF		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	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		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	0.12	33.0	0.1	33.0					
100.0	100.0	100.0	100.0	0.1	0.1	0.12	33.0	0.1	33.0	32.7	0.25	131.511		
200.0	200.0	200.0	200.0	0.5	0.5	0.12	33.0	0.1	33.0	32.0	0.97	34.095		
300.0	300.0	300.0	300.0	0.8	0.8	0.12	33.0	0.1	33.0	31.3	1.68	19.587		
400.0	400.0	400.0	400.0	1.2	1.2	0.12	33.0	0.1	33.0	30.6	2.40	13.740		
500.0	500.0	500.0	500.0	1.6	1.6	0.12	33.0	0.1	33.0	29.9	3.12	10.581		
600.0	600.0	600.0	600.0	1.9	1.9	0.12	33.0	0.1	33.0	29.2	3.84	8.604		
700.0	700.0	700.0	700.0	2.3	2.3	0.12	33.0	0.1	33.0	28.4	4.55	7.249		
800.0	800.0	800.0	800.0	2.6	2.6	0.12	33.0	0.1	33.0	27.7	5.27	6.262		
900.0	900.0	900.0	900.0	3.0	3.0	0.12	33.0	0.1	33.0	27.0	5.99	5.512		
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	33.0	0.1	33.0	26.3	6.70	4.923		
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	33.0	0.1	33.0	25.6	7.42	4.447		
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	33.0	0.1	33.0	24.9	8.14	4.055		
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	33.0	0.1	33.0	24.1	8.85	3.727		
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	33.0	0.1	33.0	23.4	9.57	3.448		
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	33.0	0.1	33.0	22.7	10.29	3.208		
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	33.0	0.1	33.0	22.0	11.01	2.999		
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	33.0	0.1	33.0	21.3	11.72	2.815		
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	0.12	33.0	0.1	33.0	20.6	12.44	2.653		
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	0.12	33.0	0.1	33.0	19.8	13.16	2.508		
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	0.12	33.0	0.1	33.0	19.1	13.87	2.379 CC, ES, SF		
2,100.0	2,100.0	2,100.0	2,100.0	7.3	7.3	175.15	33.0	0.1	34.7	20.2	14.57	2.384		
2,200.0	2,199.8	2,199.8	2,199.8	7.6	7.7	175.78	33.0	0.1	40.0	24.7	15.25	2.619		
2,300.0	2,299.5	2,299.5	2,299.5	7.9	8.0	176.52	33.0	0.1	48.7	32.7	15.94	3.052		
2,400.0	2,398.7	2,398.7	2,398.7	8.3	8.4	177.21	33.0	0.1	60.8	44.2	16.63	3.658		
2,500.0	2,497.5	2,497.5	2,497.5	8.6	8.7	177.77	33.0	0.1	76.4	59.1	17.31	4.416		
2,600.0	2,595.9	2,595.9	2,595.9	9.0	9.1	178.18	33.0	0.1	93.8	75.8	18.00	5.213		
2,700.0	2,694.4	2,694.4	2,694.4	9.3	9.4	178.46	33.0	0.1	111.2	92.5	18.68	5.950		
2,800.0	2,792.9	2,792.9	2,792.9	9.7	9.8	178.67	33.0	0.1	128.5	109.1	19.37	6.635		
2,900.0	2,891.4	2,891.4	2,891.4	10.1	10.1	178.83	33.0	0.1	145.9	125.8	20.06	7.271		
3,000.0	2,989.9	2,989.9	2,989.9	10.4	10.5	178.95	33.0	0.1	163.2	142.5	20.76	7.864		
3,100.0	3,088.3	3,085.7	3,085.7	10.8	10.8	179.00	33.6	0.0	181.2	159.8	21.44	8.454		
3,200.0	3,186.8	3,180.7	3,180.7	11.2	11.2	178.92	35.8	-0.4	200.8	178.7	22.11	9.083		
3,300.0	3,285.3	3,275.1	3,275.0	11.6	11.5	178.76	39.5	-1.1	222.0	199.2	22.77	9.746		
3,400.0	3,383.8	3,368.8	3,368.5	12.0	11.8	178.53	44.7	-2.0	244.7	221.2	23.43	10.442		
3,500.0	3,482.3	3,461.7	3,461.2	12.4	12.2	178.26	51.3	-3.2	268.9	244.8	24.08	11.167		
3,600.0	3,580.8	3,554.0	3,553.1	12.8	12.5	177.97	59.3	-4.7	294.7	269.9	24.72	11.921		
3,700.0	3,679.2	3,645.4	3,644.0	13.3	12.8	177.66	68.7	-6.4	321.9	296.6	25.35	12.700		
3,800.0	3,777.7	3,735.9	3,733.9	13.7	13.2	177.34	79.4	-8.4	350.7	324.7	25.97	13.504		
3,900.0	3,876.2	3,827.3	3,824.4	14.1	13.5	177.02	91.6	-10.6	380.9	354.3	26.61	14.317		
4,000.0	3,974.7	3,922.5	3,918.7	14.5	13.8	176.72	104.6	-12.9	411.5	384.2	27.29	15.076		
4,100.0	4,073.2	4,017.7	4,013.0	14.9	14.2	176.47	117.7	-15.3	442.0	414.1	27.98	15.796		
4,200.0	4,171.6	4,112.9	4,107.2	15.4	14.5	176.24	130.7	-17.7	472.6	443.9	28.68	16.482		
4,300.0	4,270.1	4,208.1	4,201.5	15.8	14.9	176.05	143.7	-20.0	503.2	473.8	29.37	17.135		
4,400.0	4,368.6	4,303.3	4,295.8	16.2	15.3	175.87	156.8	-22.4	533.8	503.7	30.06	17.756		
4,500.0	4,467.1	4,398.5	4,390.0	16.6	15.6	175.72	169.8	-24.7	564.4	533.6	30.76	18.349		
4,600.0	4,565.6	4,493.7	4,484.3	17.1	16.0	175.58	182.9	-27.1	595.0	563.5	31.46	18.916		
4,700.0	4,664.0	4,588.9	4,578.6	17.5	16.4	175.46	195.9	-29.5	625.6	593.5	32.15	19.457		
4,800.0	4,762.5	4,684.1	4,672.9	17.9	16.7	175.34	208.9	-31.8	656.2	623.4	32.85	19.974		
4,900.0	4,861.0	4,779.2	4,767.1	18.4	17.1	175.24	222.0	-34.2	686.8	653.3	33.55	20.469		
5,000.0	4,959.5	4,874.4	4,861.4	18.8	17.5	175.14	235.0	-36.6	717.4	683.2	34.25	20.944		
5,100.0	5,058.0	4,969.6	4,955.7	19.2	17.8	175.06	248.0	-38.9	748.0	713.1	34.96	21.399		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	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		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)					
5,200.0	5,156.4	5,064.8	5,049.9	19.7	18.2	174.98	261.1	-41.3	778.7	743.0	35.66	21.835	
5,300.0	5,254.9	5,160.0	5,144.2	20.1	18.6	174.90	274.1	-43.7	809.3	772.9	36.36	22.255	
5,400.0	5,353.4	5,255.2	5,238.5	20.6	18.9	174.83	287.1	-46.0	839.9	802.8	37.07	22.658	
5,500.0	5,451.9	5,350.4	5,332.7	21.0	19.3	174.77	300.2	-48.4	870.5	832.7	37.77	23.045	
5,600.0	5,550.4	5,445.6	5,427.0	21.4	19.7	174.71	313.2	-50.8	901.1	862.6	38.48	23.418	
5,700.0	5,648.9	5,540.8	5,521.3	21.9	20.1	174.66	326.2	-53.1	931.7	892.5	39.19	23.777	
5,800.0	5,747.3	5,636.0	5,615.5	22.3	20.4	174.60	339.3	-55.5	962.4	922.5	39.89	24.123	
5,900.0	5,845.8	5,731.2	5,709.8	22.8	20.8	174.56	352.3	-57.8	993.0	952.4	40.60	24.456	
6,000.0	5,944.3	5,826.4	5,804.1	23.2	21.2	174.51	365.4	-60.2	1,023.6	982.3	41.31	24.778	
6,100.0	6,042.8	5,921.6	5,898.3	23.6	21.6	174.47	378.4	-62.6	1,054.2	1,012.2	42.02	25.089	
6,200.0	6,141.3	6,016.8	5,992.6	24.1	21.9	174.43	391.4	-64.9	1,084.8	1,042.1	42.73	25.389	
6,300.0	6,239.7	6,112.0	6,086.9	24.5	22.3	174.39	404.5	-67.3	1,115.5	1,072.0	43.44	25.679	
6,400.0	6,338.2	6,215.0	6,188.9	25.0	22.7	174.35	418.4	-69.8	1,146.0	1,101.8	44.22	25.916	
6,500.0	6,436.7	6,334.5	6,307.5	25.4	23.2	174.32	432.8	-72.4	1,175.0	1,129.8	45.13	26.035	
6,600.0	6,535.2	6,455.5	6,427.9	25.9	23.7	174.32	444.8	-74.6	1,202.0	1,155.9	46.03	26.110	
6,700.0	6,633.7	6,577.9	6,549.9	26.3	24.1	174.34	454.4	-76.4	1,227.0	1,180.0	46.93	26.145	
6,800.0	6,732.1	6,701.6	6,673.4	26.8	24.6	174.38	461.6	-77.7	1,249.9	1,202.1	47.81	26.141	
6,900.0	6,830.6	6,826.4	6,798.1	27.2	25.0	174.44	466.1	-78.5	1,270.7	1,222.1	48.68	26.103	
6,925.7	6,855.9	6,858.6	6,830.3	27.3	25.1	174.46	466.8	-78.6	1,275.8	1,226.9	48.90	26.087	
7,000.0	6,929.3	6,952.5	6,924.2	27.6	25.5	174.54	468.0	-78.8	1,288.5	1,239.0	49.54	26.012	
7,100.0	7,028.4	7,056.7	7,028.4	28.1	25.8	174.63	468.0	-78.8	1,301.6	1,251.3	50.28	25.889	
7,200.0	7,127.9	7,156.2	7,127.9	28.4	26.2	174.68	468.0	-78.8	1,311.2	1,260.2	50.99	25.715	
7,300.0	7,227.7	7,256.0	7,227.7	28.8	26.5	174.72	468.0	-78.8	1,317.3	1,265.6	51.70	25.481	
7,400.0	7,327.7	7,356.0	7,327.7	29.1	26.9	174.73	468.0	-78.8	1,319.9	1,267.5	52.40	25.189	
7,425.7	7,353.4	7,381.7	7,353.4	29.2	27.0	-0.04	468.0	-78.8	1,320.0	1,267.4	52.58	25.107	
7,500.0	7,427.7	7,456.0	7,427.7	29.4	27.2	-0.04	468.0	-78.8	1,320.0	1,266.9	53.08	24.867	
7,600.0	7,527.7	7,556.0	7,527.7	29.7	27.6	-0.04	468.0	-78.8	1,320.0	1,266.2	53.77	24.551	
7,700.0	7,627.7	7,656.0	7,627.7	30.0	27.9	-0.04	468.0	-78.8	1,320.0	1,265.6	54.45	24.243	
7,800.0	7,727.7	7,756.0	7,727.7	30.3	28.3	-0.04	468.0	-78.8	1,320.0	1,264.9	55.13	23.942	
7,900.0	7,827.7	7,856.0	7,827.7	30.6	28.6	-0.04	468.0	-78.8	1,320.0	1,264.2	55.82	23.649	
8,000.0	7,927.7	7,956.0	7,927.7	30.9	28.9	-0.04	468.0	-78.8	1,320.0	1,263.5	56.50	23.362	
8,100.0	8,027.7	8,056.0	8,027.7	31.2	29.3	-0.04	468.0	-78.8	1,320.0	1,262.8	57.19	23.081	
8,200.0	8,127.7	8,156.0	8,127.7	31.5	29.6	-0.04	468.0	-78.8	1,320.0	1,262.1	57.88	22.807	
8,218.8	8,146.5	8,174.8	8,146.5	31.6	29.7	-0.04	468.0	-78.8	1,320.0	1,262.0	58.01	22.756	
8,225.0	8,152.7	8,181.1	8,152.8	31.6	29.7	-90.33	468.0	-78.8	1,320.0	1,262.0	58.05	22.740	
8,250.0	8,177.7	8,206.5	8,178.2	31.7	29.8	-90.33	468.0	-77.8	1,320.0	1,261.8	58.22	22.673	
8,275.0	8,202.6	8,231.9	8,203.5	31.8	29.9	-90.33	468.0	-75.4	1,320.0	1,261.6	58.39	22.608	
8,300.0	8,227.3	8,257.3	8,228.6	31.8	30.0	-90.32	468.0	-71.7	1,320.0	1,261.4	58.55	22.544	
8,325.0	8,251.8	8,282.7	8,253.5	31.9	30.1	-90.32	467.9	-66.7	1,320.0	1,261.3	58.71	22.482	
8,350.0	8,276.1	8,308.1	8,278.1	32.0	30.1	-90.32	467.9	-60.3	1,320.0	1,261.1	58.87	22.420	
8,375.0	8,299.9	8,333.5	8,302.3	32.1	30.2	-90.31	467.9	-52.7	1,320.0	1,261.0	59.03	22.360	
8,400.0	8,323.4	8,358.8	8,326.0	32.1	30.3	-90.30	467.8	-43.8	1,320.0	1,260.8	59.19	22.301	
8,425.0	8,346.3	8,384.2	8,349.3	32.2	30.4	-90.30	467.8	-33.6	1,320.0	1,260.7	59.34	22.243	
8,450.0	8,368.8	8,409.6	8,371.9	32.3	30.4	-90.29	467.7	-22.3	1,320.0	1,260.5	59.50	22.186	
8,475.0	8,390.6	8,434.9	8,393.9	32.3	30.5	-90.28	467.7	-9.7	1,320.0	1,260.3	59.65	22.129	
8,500.0	8,411.7	8,460.3	8,415.2	32.4	30.5	-90.27	467.6	4.0	1,320.0	1,260.2	59.80	22.072	
8,525.0	8,432.1	8,485.6	8,435.8	32.4	30.6	-90.26	467.5	18.8	1,320.0	1,260.0	59.96	22.015	
8,550.0	8,451.8	8,510.9	8,455.5	32.5	30.7	-90.25	467.4	34.6	1,320.0	1,259.9	60.12	21.957	
8,575.0	8,470.6	8,536.2	8,474.4	32.5	30.7	-90.24	467.3	51.5	1,320.0	1,259.7	60.28	21.899	
8,600.0	8,488.5	8,561.5	8,492.3	32.6	30.8	-90.23	467.3	69.4	1,320.0	1,259.5	60.44	21.839	
8,625.0	8,505.4	8,586.7	8,509.2	32.6	30.8	-90.21	467.2	88.1	1,320.0	1,259.4	60.61	21.777	
8,650.0	8,521.4	8,612.0	8,525.1	32.7	30.9	-90.20	467.1	107.7	1,320.0	1,259.2	60.79	21.713	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,675.0	8,536.4	8,637.2	8,539.9	32.7	30.9	-90.19	467.0	128.1	1,320.0	1,259.0		60.98	21.645	
8,700.0	8,550.3	8,662.4	8,553.7	32.8	31.0	-90.17	466.9	149.3	1,320.0	1,258.8		61.18	21.575	
8,725.0	8,563.1	8,687.6	8,566.3	32.8	31.0	-90.16	466.7	171.1	1,320.0	1,258.6		61.39	21.500	
8,750.0	8,574.7	8,712.8	8,577.7	32.8	31.1	-90.14	466.6	193.5	1,320.0	1,258.4		61.62	21.422	
8,775.0	8,585.2	8,738.0	8,587.9	32.9	31.2	-90.13	466.5	216.5	1,320.0	1,258.1		61.86	21.340	
8,800.0	8,594.4	8,763.1	8,596.9	32.9	31.4	-90.11	466.4	240.0	1,320.0	1,257.9		62.11	21.253	
8,825.0	8,602.5	8,788.3	8,604.6	33.0	31.5	-90.09	466.3	263.9	1,320.0	1,257.6		62.38	21.161	
8,850.0	8,609.3	8,813.4	8,611.0	33.0	31.6	-90.08	466.2	288.2	1,320.0	1,257.3		62.66	21.065	
8,875.0	8,614.8	8,838.4	8,616.2	33.1	31.8	-90.06	466.0	312.7	1,320.0	1,257.0		62.96	20.965	
8,900.0	8,619.0	8,863.5	8,620.0	33.2	32.0	-90.04	465.9	337.5	1,320.0	1,256.7		63.27	20.861	
8,925.0	8,622.0	8,888.5	8,622.6	33.3	32.1	-90.03	465.8	362.4	1,320.0	1,256.4		63.60	20.754	
8,950.0	8,623.6	8,913.6	8,623.8	33.3	32.3	-90.01	465.7	387.4	1,320.0	1,256.0		63.94	20.644	
8,959.2	8,623.9	8,922.8	8,624.0	33.4	32.4	-90.00	465.6	396.6	1,320.0	1,255.9		64.07	20.602	
8,968.8	8,624.0	8,932.4	8,624.0	33.4	32.4	-90.00	465.6	406.2	1,320.0	1,255.8		64.21	20.558	
9,000.0	8,624.0	8,963.6	8,624.0	33.6	32.7	-90.00	465.4	437.4	1,320.0	1,255.3		64.68	20.408	
9,100.0	8,624.0	9,063.6	8,624.0	34.2	33.5	-90.00	464.9	537.4	1,320.0	1,253.6		66.38	19.885	
9,200.0	8,624.0	9,163.6	8,624.0	35.0	34.5	-90.00	464.4	637.4	1,320.0	1,251.6		68.38	19.305	
9,300.0	8,624.0	9,263.6	8,624.0	36.1	35.7	-90.00	463.9	737.4	1,320.0	1,249.3		70.65	18.684	
9,400.0	8,624.0	9,363.6	8,624.0	37.3	36.9	-90.00	463.4	837.4	1,320.0	1,246.8		73.17	18.040	
9,500.0	8,624.0	9,463.6	8,624.0	38.6	38.3	-90.00	462.9	937.4	1,320.0	1,244.1		75.92	17.386	
9,600.0	8,624.0	9,563.6	8,624.0	40.0	39.8	-90.00	462.4	1,037.4	1,320.0	1,241.1		78.87	16.736	
9,700.0	8,624.0	9,663.6	8,624.0	41.5	41.3	-90.00	461.9	1,137.4	1,320.0	1,238.0		82.00	16.097	
9,800.0	8,624.0	9,763.6	8,624.0	43.1	43.0	-90.00	461.4	1,237.4	1,320.0	1,234.7		85.29	15.476	
9,900.0	8,624.0	9,863.6	8,624.0	44.8	44.7	-90.00	460.9	1,337.4	1,320.0	1,231.3		88.72	14.877	
10,000.0	8,624.0	9,963.6	8,624.0	46.6	46.5	-90.00	460.4	1,437.4	1,320.0	1,227.7		92.28	14.303	
10,100.0	8,624.0	10,063.6	8,624.0	48.4	48.3	-90.00	459.9	1,537.4	1,320.0	1,224.0		95.96	13.756	
10,200.0	8,624.0	10,163.6	8,624.0	50.3	50.2	-90.00	459.4	1,637.4	1,320.0	1,220.3		99.73	13.236	
10,300.0	8,624.0	10,263.6	8,624.0	52.2	52.1	-90.00	458.9	1,737.4	1,320.0	1,216.4		103.59	12.742	
10,400.0	8,624.0	10,363.6	8,624.0	54.1	54.1	-90.00	458.4	1,837.4	1,320.0	1,212.5		107.53	12.275	
10,500.0	8,624.0	10,463.6	8,624.0	56.1	56.1	-90.00	457.9	1,937.4	1,320.0	1,208.4		111.54	11.834	
10,600.0	8,624.0	10,563.6	8,624.0	58.1	58.1	-90.00	457.4	2,037.4	1,320.0	1,204.4		115.62	11.417	
10,700.0	8,624.0	10,663.6	8,624.0	60.2	60.2	-90.00	456.9	2,137.4	1,320.0	1,200.2		119.75	11.023	
10,800.0	8,624.0	10,763.6	8,624.0	62.3	62.2	-90.00	456.4	2,237.4	1,320.0	1,196.0		123.94	10.651	
10,900.0	8,624.0	10,863.6	8,624.0	64.4	64.4	-90.00	455.9	2,337.4	1,320.0	1,191.8		128.17	10.299	
11,000.0	8,624.0	10,963.6	8,624.0	66.5	66.5	-90.00	455.4	2,437.4	1,320.0	1,187.5		132.44	9.967	
11,100.0	8,624.0	11,063.6	8,624.0	68.6	68.6	-90.00	454.9	2,537.3	1,320.0	1,183.2		136.75	9.653	
11,200.0	8,624.0	11,163.6	8,624.0	70.8	70.8	-90.00	454.4	2,637.3	1,320.0	1,178.9		141.10	9.355	
11,300.0	8,624.0	11,263.6	8,624.0	73.0	73.0	-90.00	453.9	2,737.3	1,320.0	1,174.5		145.47	9.074	
11,400.0	8,624.0	11,363.6	8,624.0	75.2	75.2	-90.00	453.4	2,837.3	1,320.0	1,170.1		149.88	8.807	
11,500.0	8,624.0	11,463.6	8,624.0	77.4	77.4	-90.00	452.9	2,937.3	1,320.0	1,165.7		154.31	8.554	
11,600.0	8,624.0	11,563.6	8,624.0	79.6	79.6	-90.00	452.4	3,037.3	1,320.0	1,161.2		158.76	8.314	
11,700.0	8,624.0	11,663.6	8,624.0	81.8	81.9	-90.00	451.9	3,137.3	1,320.0	1,156.7		163.24	8.086	
11,800.0	8,624.0	11,763.6	8,624.0	84.1	84.1	-90.00	451.4	3,237.3	1,320.0	1,152.2		167.74	7.869	
11,900.0	8,624.0	11,863.6	8,624.0	86.3	86.4	-90.00	450.9	3,337.3	1,320.0	1,147.7		172.26	7.663	
12,000.0	8,624.0	11,963.6	8,624.0	88.6	88.6	-90.00	450.4	3,437.3	1,320.0	1,143.2		176.79	7.466	
12,100.0	8,624.0	12,063.6	8,624.0	90.8	90.9	-90.00	449.9	3,537.3	1,320.0	1,138.6		181.34	7.279	
12,200.0	8,624.0	12,163.6	8,624.0	93.1	93.2	-90.00	449.4	3,637.3	1,320.0	1,134.1		185.91	7.100	
12,300.0	8,624.0	12,263.6	8,624.0	95.4	95.5	-90.00	448.9	3,737.3	1,320.0	1,129.5		190.49	6.930	
12,400.0	8,624.0	12,363.6	8,624.0	97.7	97.8	-90.00	448.4	3,837.3	1,320.0	1,124.9		195.08	6.766	
12,500.0	8,624.0	12,463.6	8,624.0	100.0	100.1	-90.00	447.8	3,937.3	1,320.0	1,120.3		199.68	6.610	
12,600.0	8,624.0	12,563.6	8,624.0	102.3	102.4	-90.00	447.3	4,037.3	1,320.0	1,115.7		204.29	6.461	
12,700.0	8,624.0	12,663.6	8,624.0	104.6	104.7	-90.00	446.8	4,137.3	1,320.0	1,111.1		208.92	6.318	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	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		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)						
12,800.0	8,624.0	12,763.6	8,624.0	106.9	107.0	-90.00	446.3	4,237.3	1,320.0	1,106.4	213.55	6.181		
12,900.0	8,624.0	12,863.6	8,624.0	109.2	109.3	-90.00	445.8	4,337.3	1,320.0	1,101.8	218.20	6.050		
13,000.0	8,624.0	12,963.6	8,624.0	111.5	111.6	-90.00	445.3	4,437.3	1,320.0	1,097.1	222.85	5.923		
13,100.0	8,624.0	13,063.6	8,624.0	113.9	114.0	-90.00	444.8	4,537.3	1,320.0	1,092.5	227.51	5.802		
13,200.0	8,624.0	13,163.6	8,624.0	116.2	116.3	-90.00	444.3	4,637.3	1,320.0	1,087.8	232.18	5.685		
13,300.0	8,624.0	13,263.6	8,624.0	118.5	118.6	-90.00	443.8	4,737.3	1,320.0	1,083.1	236.85	5.573		
13,400.0	8,624.0	13,363.6	8,624.0	120.9	121.0	-90.00	443.3	4,837.3	1,320.0	1,078.5	241.53	5.465		
13,500.0	8,624.0	13,463.6	8,624.0	123.2	123.3	-90.00	442.8	4,937.3	1,320.0	1,073.8	246.22	5.361		
13,600.0	8,624.0	13,563.6	8,624.0	125.5	125.7	-90.00	442.3	5,037.3	1,320.0	1,069.1	250.91	5.261		
13,700.0	8,624.0	13,663.6	8,624.0	127.9	128.0	-90.00	441.8	5,137.3	1,320.0	1,064.4	255.61	5.164		
13,800.0	8,624.0	13,763.6	8,624.0	130.2	130.3	-90.00	441.3	5,237.3	1,320.0	1,059.7	260.32	5.071		
13,900.0	8,624.0	13,863.6	8,624.0	132.6	132.7	-90.00	440.8	5,337.3	1,320.0	1,055.0	265.02	4.981		
14,000.0	8,624.0	13,963.6	8,624.0	134.9	135.1	-90.00	440.3	5,437.3	1,320.0	1,050.2	269.74	4.894		
14,100.0	8,624.0	14,063.6	8,624.0	137.3	137.4	-90.00	439.8	5,537.3	1,320.0	1,045.5	274.46	4.809		
14,200.0	8,624.0	14,163.6	8,624.0	139.7	139.8	-90.00	439.3	5,637.3	1,320.0	1,040.8	279.18	4.728		
14,300.0	8,624.0	14,263.6	8,624.0	142.0	142.1	-90.00	438.8	5,737.3	1,320.0	1,036.1	283.91	4.649		
14,400.0	8,624.0	14,363.6	8,624.0	144.4	144.5	-90.00	438.3	5,837.3	1,320.0	1,031.3	288.64	4.573		
14,500.0	8,624.0	14,463.6	8,624.0	146.7	146.9	-90.00	437.8	5,937.3	1,320.0	1,026.6	293.37	4.499		
14,600.0	8,624.0	14,563.6	8,624.0	149.1	149.2	-90.00	437.3	6,037.3	1,320.0	1,021.9	298.11	4.428		
14,700.0	8,624.0	14,663.6	8,624.0	151.5	151.6	-90.00	436.8	6,137.3	1,320.0	1,017.1	302.85	4.359		
14,800.0	8,624.0	14,763.6	8,624.0	153.8	154.0	-90.00	436.3	6,237.3	1,320.0	1,012.4	307.59	4.291		
14,900.0	8,624.0	14,863.6	8,624.0	156.2	156.3	-90.00	435.8	6,337.3	1,320.0	1,007.6	312.34	4.226		
15,000.0	8,624.0	14,963.6	8,624.0	158.6	158.7	-90.00	435.3	6,437.3	1,320.0	1,002.9	317.09	4.163		
15,100.0	8,624.0	15,063.6	8,624.0	161.0	161.1	-90.00	434.8	6,537.3	1,320.0	998.1	321.85	4.101		
15,200.0	8,624.0	15,163.6	8,624.0	163.3	163.5	-90.00	434.3	6,637.3	1,320.0	993.4	326.60	4.042		
15,300.0	8,624.0	15,263.6	8,624.0	165.7	165.9	-90.00	433.8	6,737.3	1,320.0	988.6	331.36	3.984		
15,400.0	8,624.0	15,363.6	8,624.0	168.1	168.2	-90.00	433.3	6,837.3	1,320.0	983.9	336.12	3.927		
15,500.0	8,624.0	15,463.6	8,624.0	170.5	170.6	-90.00	432.8	6,937.3	1,320.0	979.1	340.88	3.872		
15,600.0	8,624.0	15,563.6	8,624.0	172.9	173.0	-90.00	432.3	7,037.3	1,320.0	974.3	345.65	3.819		
15,700.0	8,624.0	15,663.6	8,624.0	175.2	175.4	-90.00	431.8	7,137.3	1,320.0	969.6	350.41	3.767		
15,800.0	8,624.0	15,763.6	8,624.0	177.6	177.8	-90.00	431.3	7,237.3	1,320.0	964.8	355.18	3.716		
15,900.0	8,624.0	15,863.6	8,624.0	180.0	180.1	-90.00	430.8	7,337.3	1,320.0	960.0	359.96	3.667		
16,000.0	8,624.0	15,963.6	8,624.0	182.4	182.5	-90.00	430.3	7,437.3	1,320.0	955.3	364.73	3.619		
16,100.0	8,624.0	16,063.6	8,624.0	184.8	184.9	-90.00	429.8	7,537.3	1,320.0	950.5	369.50	3.572		
16,200.0	8,624.0	16,163.6	8,624.0	187.2	187.3	-90.00	429.3	7,637.3	1,320.0	945.7	374.28	3.527		
16,300.0	8,624.0	16,263.6	8,624.0	189.6	189.7	-90.00	428.8	7,737.3	1,320.0	940.9	379.06	3.482		
16,400.0	8,624.0	16,363.6	8,624.0	191.9	192.1	-90.00	428.3	7,837.3	1,320.0	936.1	383.84	3.439		
16,500.0	8,624.0	16,463.6	8,624.0	194.3	194.5	-90.00	427.8	7,937.3	1,320.0	931.4	388.62	3.397		
16,600.0	8,624.0	16,563.6	8,624.0	196.7	196.9	-90.00	427.3	8,037.3	1,320.0	926.6	393.40	3.355		
16,700.0	8,624.0	16,663.6	8,624.0	199.1	199.3	-90.00	426.8	8,137.3	1,320.0	921.8	398.19	3.315		
16,800.0	8,624.0	16,763.6	8,624.0	201.5	201.6	-90.00	426.3	8,237.3	1,320.0	917.0	402.97	3.276		
16,900.0	8,624.0	16,863.6	8,624.0	203.9	204.0	-90.00	425.8	8,337.3	1,320.0	912.2	407.76	3.237		
17,000.0	8,624.0	16,963.6	8,624.0	206.3	206.4	-90.00	425.3	8,437.3	1,320.0	907.4	412.55	3.200		
17,100.0	8,624.0	17,063.6	8,624.0	208.7	208.8	-90.00	424.8	8,537.3	1,320.0	902.6	417.34	3.163		
17,200.0	8,624.0	17,163.6	8,624.0	211.1	211.2	-90.00	424.3	8,637.3	1,320.0	897.9	422.13	3.127		
17,300.0	8,624.0	17,263.6	8,624.0	213.5	213.6	-90.00	423.8	8,737.3	1,320.0	893.1	426.92	3.092		
17,400.0	8,624.0	17,363.6	8,624.0	215.9	216.0	-90.00	423.3	8,837.3	1,320.0	888.3	431.72	3.058		
17,500.0	8,624.0	17,463.6	8,624.0	218.3	218.4	-90.00	422.8	8,937.3	1,320.0	883.5	436.51	3.024		
17,600.0	8,624.0	17,563.6	8,624.0	220.7	220.8	-90.00	422.3	9,037.3	1,320.0	878.7	441.31	2.991		
17,700.0	8,624.0	17,663.6	8,624.0	223.1	223.2	-90.00	421.8	9,137.3	1,320.0	873.9	446.10	2.959		
17,800.0	8,624.0	17,763.6	8,624.0	225.5	225.6	-90.00	421.3	9,237.3	1,320.0	869.1	450.90	2.927		
17,900.0	8,624.0	17,863.6	8,624.0	227.9	228.0	-90.00	420.8	9,337.3	1,320.0	864.3	455.70	2.897		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	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		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
+N/-S (usft)	+E/-W (usft)													
18,000.0	8,624.0	17,963.6	8,624.0	230.3	230.4	-90.00	420.3	9,437.3	1,320.0	859.5	460.50	2.866		
18,100.0	8,624.0	18,063.6	8,624.0	232.6	232.8	-90.00	419.8	9,537.3	1,320.0	854.7	465.30	2.837		
18,200.0	8,624.0	18,163.6	8,624.0	235.0	235.2	-90.00	419.2	9,637.3	1,320.0	849.9	470.10	2.808		
18,300.0	8,624.0	18,263.6	8,624.0	237.4	237.6	-90.00	418.7	9,737.3	1,320.0	845.1	474.90	2.779		
18,400.0	8,624.0	18,363.6	8,624.0	239.8	240.0	-90.00	418.2	9,837.3	1,320.0	840.3	479.70	2.752		
18,500.0	8,624.0	18,463.6	8,624.0	242.3	242.4	-90.00	417.7	9,937.3	1,320.0	835.5	484.51	2.724		
18,600.0	8,624.0	18,563.6	8,624.0	244.7	244.8	-90.00	417.2	10,037.3	1,320.0	830.7	489.31	2.698		
18,700.0	8,624.0	18,663.6	8,624.0	247.1	247.2	-90.00	416.7	10,137.3	1,320.0	825.9	494.12	2.671		
18,800.0	8,624.0	18,763.6	8,624.0	249.5	249.6	-90.00	416.2	10,237.3	1,320.0	821.1	498.92	2.646		
18,900.0	8,624.0	18,863.6	8,624.0	251.9	252.0	-90.00	415.7	10,337.3	1,320.0	816.3	503.73	2.620		
19,000.0	8,624.0	18,963.6	8,624.0	254.3	254.4	-90.00	415.2	10,437.3	1,320.0	811.5	508.54	2.596		
19,100.0	8,624.0	19,063.6	8,624.0	256.7	256.8	-90.00	414.7	10,537.2	1,320.0	806.6	513.35	2.571		
19,200.0	8,624.0	19,163.6	8,624.0	259.1	259.2	-90.00	414.2	10,637.2	1,320.0	801.8	518.15	2.547		
19,200.2	8,624.0	19,163.8	8,624.0	259.1	259.2	-90.00	414.2	10,637.5	1,320.0	801.8	518.17	2.547		
19,235.6	8,624.0	19,190.6	8,624.0	259.9	259.9	-90.00	414.1	10,664.3	1,320.0	800.4	519.62	2.540		

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

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COMPASS 5000.15 Build 91E

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	0.12	66.0	0.1	66.0				
100.0	100.0	100.0	100.0	0.1	0.1	0.12	66.0	0.1	66.0	65.7	0.25	263.022	
200.0	200.0	200.0	200.0	0.5	0.5	0.12	66.0	0.1	66.0	65.0	0.97	68.191	
300.0	300.0	300.0	300.0	0.8	0.8	0.12	66.0	0.1	66.0	64.3	1.68	39.173	
400.0	400.0	400.0	400.0	1.2	1.2	0.12	66.0	0.1	66.0	63.6	2.40	27.480	
500.0	500.0	500.0	500.0	1.6	1.6	0.12	66.0	0.1	66.0	62.9	3.12	21.163	
600.0	600.0	600.0	600.0	1.9	1.9	0.12	66.0	0.1	66.0	62.2	3.84	17.207	
700.0	700.0	700.0	700.0	2.3	2.3	0.12	66.0	0.1	66.0	61.4	4.55	14.497	
800.0	800.0	800.0	800.0	2.6	2.6	0.12	66.0	0.1	66.0	60.7	5.27	12.525	
900.0	900.0	900.0	900.0	3.0	3.0	0.12	66.0	0.1	66.0	60.0	5.99	11.025	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	66.0	0.1	66.0	59.3	6.70	9.846	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	66.0	0.1	66.0	58.6	7.42	8.894	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	66.0	0.1	66.0	57.9	8.14	8.111	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	66.0	0.1	66.0	57.1	8.85	7.454	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	66.0	0.1	66.0	56.4	9.57	6.896	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	66.0	0.1	66.0	55.7	10.29	6.415	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	66.0	0.1	66.0	55.0	11.01	5.997	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	66.0	0.1	66.0	54.3	11.72	5.630	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	0.12	66.0	0.1	66.0	53.6	12.44	5.306	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	0.12	66.0	0.1	66.0	52.8	13.16	5.017	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	0.12	66.0	0.1	66.0	52.1	13.87	4.758	
2,100.0	2,100.0	2,102.3	2,102.3	7.3	7.3	174.70	64.2	-0.2	66.0	51.4	14.55	4.534	
2,200.0	2,199.8	2,204.6	2,204.4	7.6	7.6	174.11	58.9	-1.4	66.0	50.8	15.19	4.344	
2,298.5	2,297.9	2,305.3	2,304.7	7.9	7.9	173.14	50.1	-3.3	66.0	50.2	15.80	4.175 CC	
2,300.0	2,299.5	2,306.9	2,306.3	7.9	8.0	173.12	50.0	-3.4	66.0	50.2	15.81	4.172	
2,303.5	2,302.9	2,310.4	2,309.8	7.9	8.0	173.08	49.6	-3.4	66.0	50.1	15.83	4.166	
2,400.0	2,398.7	2,408.9	2,407.6	8.3	8.3	171.75	37.5	-6.1	66.0	49.6	16.43	4.017 ES	
2,500.0	2,497.5	2,508.9	2,506.6	8.6	8.6	170.54	24.0	-9.0	68.1	51.0	17.10	3.983	
2,600.0	2,595.9	2,608.8	2,605.5	9.0	9.0	169.66	10.4	-12.0	71.9	54.2	17.77	4.047	
2,700.0	2,694.4	2,708.8	2,704.4	9.3	9.3	168.87	-3.2	-15.0	75.8	57.3	18.45	4.107	
2,800.0	2,792.9	2,808.7	2,803.4	9.7	9.7	168.15	-16.8	-17.9	79.7	60.5	19.14	4.161	
2,900.0	2,891.4	2,908.6	2,902.3	10.1	10.1	167.50	-30.4	-20.9	83.5	63.7	19.83	4.211	
3,000.0	2,989.9	3,008.5	3,001.3	10.4	10.4	166.91	-44.0	-23.9	87.4	66.9	20.53	4.257	
3,100.0	3,088.3	3,108.4	3,100.2	10.8	10.8	166.37	-57.6	-26.8	91.3	70.1	21.24	4.300	
3,200.0	3,186.8	3,208.4	3,199.2	11.2	11.2	165.88	-71.1	-29.8	95.2	73.3	21.95	4.339	
3,300.0	3,285.3	3,308.3	3,298.1	11.6	11.6	165.42	-84.7	-32.8	99.1	76.5	22.66	4.375	
3,400.0	3,383.8	3,408.2	3,397.1	12.0	12.0	165.00	-98.3	-35.7	103.0	79.7	23.37	4.408	
3,500.0	3,482.3	3,508.1	3,496.0	12.4	12.3	164.61	-111.9	-38.7	107.0	82.9	24.09	4.439	
3,600.0	3,580.8	3,608.0	3,595.0	12.8	12.7	164.25	-125.5	-41.7	110.9	86.1	24.82	4.468	
3,700.0	3,679.2	3,708.0	3,693.9	13.3	13.1	163.91	-139.1	-44.7	114.8	89.3	25.54	4.495	
3,800.0	3,777.7	3,807.9	3,792.9	13.7	13.5	163.59	-152.7	-47.6	118.7	92.5	26.27	4.520	
3,900.0	3,876.2	3,907.8	3,891.8	14.1	13.9	163.29	-166.3	-50.6	122.7	95.7	27.00	4.543	
4,000.0	3,974.7	4,007.7	3,990.8	14.5	14.3	163.02	-179.8	-53.6	126.6	98.9	27.74	4.565	
4,100.0	4,073.2	4,107.6	4,089.7	14.9	14.7	162.76	-193.4	-56.5	130.6	102.1	28.48	4.585	
4,200.0	4,171.6	4,207.6	4,188.7	15.4	15.1	162.51	-207.0	-59.5	134.5	105.3	29.21	4.604	
4,300.0	4,270.1	4,307.5	4,287.6	15.8	15.5	162.28	-220.6	-62.5	138.4	108.5	29.96	4.622	
4,400.0	4,368.6	4,407.4	4,386.6	16.2	15.9	162.06	-234.2	-65.4	142.4	111.7	30.70	4.639	
4,500.0	4,467.1	4,507.3	4,485.5	16.6	16.3	161.85	-247.8	-68.4	146.3	114.9	31.44	4.654	
4,600.0	4,565.6	4,607.2	4,584.5	17.1	16.7	161.66	-261.4	-71.4	150.3	118.1	32.19	4.669	
4,700.0	4,664.0	4,707.2	4,683.4	17.5	17.1	161.47	-274.9	-74.3	154.3	121.3	32.94	4.683	
4,800.0	4,762.5	4,807.1	4,782.4	17.9	17.5	161.30	-288.5	-77.3	158.2	124.5	33.69	4.697	
4,900.0	4,861.0	4,907.0	4,881.3	18.4	17.9	161.13	-302.1	-80.3	162.2	127.7	34.44	4.709	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.0	4,959.5	5,006.9	4,980.3	18.8	18.3	160.97	-315.7	-83.2	166.1	130.9	35.19	4.721		
5,100.0	5,058.0	5,106.8	5,079.2	19.2	18.7	160.81	-329.3	-86.2	170.1	134.1	35.94	4.732		
5,200.0	5,156.4	5,206.8	5,178.2	19.7	19.2	160.67	-342.9	-89.2	174.0	137.4	36.69	4.743		
5,300.0	5,254.9	5,306.7	5,277.1	20.1	19.6	160.53	-356.5	-92.1	178.0	140.6	37.45	4.753		
5,400.0	5,353.4	5,406.6	5,376.0	20.6	20.0	160.40	-370.0	-95.1	182.0	143.8	38.21	4.763		
5,500.0	5,451.9	5,506.5	5,475.0	21.0	20.4	160.27	-383.6	-98.1	185.9	147.0	38.96	4.772		
5,600.0	5,550.4	5,606.4	5,573.9	21.4	20.8	160.15	-397.2	-101.0	189.9	150.2	39.72	4.781		
5,700.0	5,648.9	5,706.4	5,672.9	21.9	21.2	160.03	-410.8	-104.0	193.9	153.4	40.48	4.789		
5,800.0	5,747.3	5,806.3	5,771.8	22.3	21.6	159.92	-424.4	-107.0	197.8	156.6	41.24	4.797		
5,900.0	5,845.8	5,906.2	5,870.8	22.8	22.0	159.81	-438.0	-109.9	201.8	159.8	42.00	4.805		
6,000.0	5,944.3	6,006.1	5,969.7	23.2	22.5	159.71	-451.6	-112.9	205.8	163.0	42.76	4.812		
6,100.0	6,042.8	6,106.1	6,068.7	23.6	22.9	159.61	-465.1	-115.9	209.7	166.2	43.52	4.819		
6,200.0	6,141.3	6,206.0	6,167.6	24.1	23.3	159.51	-478.7	-118.8	213.7	169.4	44.28	4.826		
6,300.0	6,239.7	6,305.9	6,266.6	24.5	23.7	159.42	-492.3	-121.8	217.7	172.6	45.05	4.832		
6,400.0	6,338.2	6,405.8	6,365.5	25.0	24.1	159.33	-505.9	-124.8	221.6	175.8	45.81	4.838		
6,500.0	6,436.7	6,505.7	6,464.5	25.4	24.5	159.24	-519.5	-127.7	225.6	179.0	46.58	4.844		
6,600.0	6,535.2	6,605.7	6,563.4	25.9	24.9	159.16	-533.1	-130.7	229.6	182.2	47.34	4.850		
6,700.0	6,633.7	6,705.6	6,662.4	26.3	25.4	159.08	-546.7	-133.7	233.6	185.5	48.11	4.855		
6,800.0	6,732.1	6,805.5	6,761.3	26.8	25.8	159.00	-560.2	-136.6	237.5	188.7	48.87	4.860		
6,900.0	6,830.6	6,905.4	6,860.3	27.2	26.2	158.92	-573.8	-139.6	241.5	191.9	49.64	4.865		
6,925.7	6,855.9	6,931.1	6,885.7	27.3	26.3	158.91	-577.3	-140.4	242.5	192.7	49.84	4.867		
7,000.0	6,929.3	7,005.4	6,959.2	27.6	26.6	158.79	-587.4	-142.6	244.6	194.2	50.41	4.852		
7,100.0	7,028.4	7,105.3	7,058.3	28.1	27.0	158.35	-601.0	-145.5	244.5	193.3	51.19	4.777		
7,200.0	7,127.9	7,205.2	7,157.2	28.4	27.4	157.57	-614.6	-148.5	241.2	189.3	51.98	4.641		
7,300.0	7,227.7	7,304.9	7,255.9	28.8	27.9	156.42	-628.1	-151.5	234.8	182.0	52.79	4.447		
7,400.0	7,327.7	7,404.3	7,354.3	29.1	28.3	154.80	-641.7	-154.4	225.3	171.7	53.63	4.201		
7,425.7	7,353.4	7,429.7	7,379.4	29.2	28.4	-20.48	-645.1	-155.2	222.4	168.5	53.84	4.130		
7,500.0	7,427.7	7,503.3	7,452.3	29.4	28.7	-21.98	-655.1	-157.4	213.7	159.3	54.47	3.924		
7,600.0	7,527.7	7,602.3	7,550.4	29.7	29.1	-24.19	-668.6	-160.3	202.3	147.0	55.35	3.656		
7,700.0	7,627.7	7,701.4	7,648.5	30.0	29.5	-26.66	-682.1	-163.2	191.3	135.1	56.25	3.401		
7,800.0	7,727.7	7,800.4	7,746.5	30.3	29.9	-29.43	-695.5	-166.2	180.7	123.5	57.18	3.159		
7,900.0	7,827.7	7,899.4	7,844.6	30.6	30.3	-32.53	-709.0	-169.1	170.5	112.3	58.15	2.932		
8,000.0	7,927.7	7,998.3	7,942.5	30.9	30.8	-36.00	-722.4	-172.1	160.9	101.7	59.16	2.719		
8,100.0	8,027.7	8,094.1	8,037.6	31.2	31.1	-39.25	-733.7	-174.5	153.0	92.9	60.15	2.544		
8,200.0	8,127.7	8,190.7	8,133.8	31.5	31.5	-41.82	-742.0	-176.3	147.7	86.7	61.04	2.420		
8,218.8	8,146.5	8,208.9	8,152.0	31.6	31.6	-42.21	-743.2	-176.6	147.0	85.8	61.20	2.402		
8,225.0	8,152.7	8,214.9	8,158.0	31.6	31.6	-132.65	-743.6	-176.7	146.8	85.6	61.25	2.397		
8,241.5	8,169.2	8,230.9	8,173.9	31.7	31.7	-133.11	-744.5	-176.9	146.6	85.2	61.39	2.388		
8,250.0	8,177.7	8,239.1	8,182.2	31.7	31.7	-133.38	-744.9	-177.0	146.6	85.2	61.47	2.386 SF		
8,275.0	8,202.6	8,263.3	8,206.3	31.8	31.8	-134.31	-746.1	-177.2	147.5	85.8	61.71	2.391		
8,300.0	8,227.3	8,287.3	8,230.3	31.8	31.9	-135.41	-747.1	-177.4	149.5	87.5	61.97	2.413		
8,325.0	8,251.8	8,311.1	8,254.1	31.9	31.9	-136.63	-747.8	-177.6	152.6	90.4	62.23	2.452		
8,350.0	8,276.1	8,334.6	8,277.6	32.0	32.0	-137.94	-748.4	-177.7	156.9	94.4	62.50	2.510		
8,375.0	8,299.9	8,357.9	8,300.8	32.1	32.1	-139.29	-748.8	-177.8	162.4	99.6	62.78	2.587		
8,400.0	8,323.4	8,380.7	8,323.7	32.1	32.2	-140.64	-749.0	-177.9	169.1	106.0	63.04	2.682		
8,425.0	8,346.3	8,403.4	8,346.3	32.2	32.2	-141.97	-749.0	-177.9	177.0	113.7	63.31	2.796		
8,450.0	8,368.8	8,425.8	8,368.8	32.3	32.3	-143.30	-749.0	-177.9	186.1	122.6	63.56	2.928		
8,475.0	8,390.6	8,447.6	8,390.6	32.3	32.4	-144.56	-749.0	-177.9	196.4	132.6	63.80	3.079		
8,500.0	8,411.7	8,468.8	8,411.7	32.4	32.4	-145.73	-749.0	-177.9	207.9	143.9	64.02	3.248		
8,525.0	8,432.1	8,489.2	8,432.1	32.4	32.5	-146.78	-749.0	-177.9	220.6	156.4	64.23	3.434		
8,550.0	8,451.8	8,508.8	8,451.8	32.5	32.6	-147.69	-749.0	-177.9	234.4	170.0	64.42	3.639		
8,575.0	8,470.6	8,527.6	8,470.6	32.5	32.6	-148.45	-749.0	-177.9	249.3	184.7	64.59	3.860		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	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		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)						
8,600.0	8,488.5	8,545.5	8,488.5	32.6	32.7	-149.03	-749.0	-177.9	265.3	200.6	64.74	4.098		
8,625.0	8,505.4	8,562.5	8,505.4	32.6	32.7	-149.43	-749.0	-177.9	282.3	217.5	64.88	4.352		
8,650.0	8,521.4	8,578.5	8,521.4	32.7	32.8	-149.61	-749.0	-177.9	300.3	235.3	65.00	4.621		
8,675.0	8,536.4	8,593.4	8,536.4	32.7	32.8	-149.57	-749.0	-177.9	319.2	254.1	65.11	4.903		
8,700.0	8,550.3	8,607.3	8,550.3	32.8	32.9	-149.27	-749.0	-177.9	339.0	273.8	65.20	5.199		
8,725.0	8,563.1	8,620.1	8,563.1	32.8	32.9	-148.67	-749.0	-177.9	359.5	294.2	65.28	5.507		
8,750.0	8,574.7	8,631.7	8,574.7	32.8	32.9	-147.72	-749.0	-177.9	380.8	315.4	65.35	5.826		
8,775.0	8,585.2	8,642.2	8,585.2	32.9	33.0	-146.31	-749.0	-177.9	402.7	337.3	65.41	6.156		
8,800.0	8,594.4	8,651.5	8,594.4	32.9	33.0	-144.34	-749.0	-177.9	425.2	359.7	65.46	6.495		
8,825.0	8,602.5	8,659.5	8,602.5	33.0	33.0	-141.62	-749.0	-177.9	448.2	382.7	65.50	6.842		
8,850.0	8,609.3	8,666.3	8,609.3	33.0	33.0	-137.88	-749.0	-177.9	471.6	406.1	65.54	7.197		
8,875.0	8,614.8	8,671.8	8,614.8	33.1	33.1	-132.71	-749.0	-177.9	495.5	429.9	65.56	7.557		
8,900.0	8,619.0	8,676.0	8,619.0	33.2	33.1	-125.51	-749.0	-177.9	519.6	454.0	65.58	7.923		
8,925.0	8,622.0	8,679.0	8,622.0	33.3	33.1	-115.52	-749.0	-177.9	543.9	478.4	65.59	8.293		
8,950.0	8,623.6	8,680.6	8,623.6	33.3	33.1	-102.12	-749.0	-177.9	568.5	502.9	65.59	8.667		
8,968.8	8,624.0	8,681.0	8,624.0	33.4	33.1	-90.00	-749.0	-177.9	587.0	521.4	65.59	8.949		
9,000.0	8,624.0	8,681.0	8,624.0	33.6	33.1	-90.00	-749.0	-177.9	617.7	552.1	65.58	9.418		
9,100.0	8,624.0	8,681.0	8,624.0	34.2	33.1	-90.00	-749.0	-177.9	716.5	650.9	65.57	10.927		
9,200.0	8,624.0	10,062.1	9,394.0	35.0	38.4	-179.93	-854.7	630.8	770.0	735.3	34.67	22.211		
9,235.4	8,624.0	10,097.5	9,394.0	35.4	38.8	180.00	-855.7	666.1	770.0	735.1	34.86	22.091		
9,300.0	8,624.0	10,162.1	9,394.0	36.1	39.5	179.96	-856.6	730.7	770.0	734.8	35.23	21.854		
9,383.4	8,624.0	10,245.5	9,394.0	37.1	40.5	179.96	-857.0	814.1	770.0	734.2	35.78	21.522		
9,400.0	8,624.0	10,262.1	9,394.0	37.3	40.7	179.96	-857.1	830.7	770.0	734.1	35.89	21.456		
9,500.0	8,624.0	10,362.1	9,394.0	38.6	42.0	179.96	-857.6	930.7	770.0	733.4	36.59	21.042		
9,600.0	8,624.0	10,462.1	9,394.0	40.0	43.4	179.96	-858.1	1,030.7	770.0	732.6	37.35	20.614		
9,700.0	8,624.0	10,562.1	9,394.0	41.5	44.9	179.96	-858.6	1,130.7	770.0	731.8	38.16	20.177		
9,800.0	8,624.0	10,662.1	9,394.0	43.1	46.5	179.96	-859.1	1,230.7	770.0	731.0	39.02	19.735		
9,900.0	8,624.0	10,762.1	9,394.0	44.8	48.2	179.96	-859.6	1,330.7	770.0	730.1	39.92	19.290		
10,000.0	8,624.0	10,862.1	9,394.0	46.6	49.9	179.96	-860.1	1,430.7	770.0	729.1	40.86	18.847		
10,100.0	8,624.0	10,962.1	9,394.0	48.4	51.6	179.96	-860.6	1,530.7	770.0	728.2	41.83	18.406		
10,200.0	8,624.0	11,062.1	9,394.0	50.3	53.5	179.96	-861.0	1,630.7	770.0	727.2	42.85	17.971		
10,300.0	8,624.0	11,162.1	9,394.0	52.2	55.3	179.97	-861.5	1,730.7	770.0	726.1	43.89	17.543		
10,400.0	8,624.0	11,262.1	9,394.0	54.1	57.3	179.97	-862.0	1,830.7	770.0	725.0	44.97	17.124		
10,500.0	8,624.0	11,362.1	9,394.0	56.1	59.2	179.97	-862.5	1,930.7	770.0	723.9	46.07	16.713		
10,600.0	8,624.0	11,462.1	9,394.0	58.1	61.2	179.97	-863.0	2,030.7	770.0	722.8	47.20	16.313		
10,700.0	8,624.0	11,562.1	9,394.0	60.2	63.2	179.97	-863.5	2,130.7	770.0	721.6	48.36	15.923		
10,800.0	8,624.0	11,662.1	9,394.0	62.3	65.3	179.97	-864.0	2,230.7	770.0	720.5	49.53	15.545		
10,900.0	8,624.0	11,762.1	9,394.0	64.4	67.3	179.97	-864.5	2,330.7	770.0	719.3	50.73	15.177		
11,000.0	8,624.0	11,862.1	9,394.0	66.5	69.4	179.97	-865.0	2,430.7	770.0	718.0	51.95	14.821		
11,100.0	8,624.0	11,962.1	9,394.0	68.6	71.5	179.97	-865.5	2,530.7	770.0	716.8	53.19	14.476		
11,200.0	8,624.0	12,062.1	9,394.0	70.8	73.7	179.97	-866.0	2,630.7	770.0	715.6	54.44	14.143		
11,300.0	8,624.0	12,162.1	9,394.0	73.0	75.8	179.97	-866.5	2,730.7	770.0	714.3	55.71	13.821		
11,400.0	8,624.0	12,262.1	9,394.0	75.2	78.0	179.97	-867.0	2,830.7	770.0	713.0	57.00	13.509		
11,500.0	8,624.0	12,362.1	9,394.0	77.4	80.1	179.97	-867.5	2,930.7	770.0	711.7	58.30	13.208		
11,600.0	8,624.0	12,462.1	9,394.0	79.6	82.3	179.97	-868.0	3,030.7	770.0	710.4	59.61	12.917		
11,700.0	8,624.0	12,562.1	9,394.0	81.8	84.5	179.97	-868.5	3,130.7	770.0	709.1	60.93	12.636		
11,800.0	8,624.0	12,662.1	9,394.0	84.1	86.8	179.97	-869.0	3,230.7	770.0	707.7	62.27	12.365		
11,900.0	8,624.0	12,762.1	9,394.0	86.3	89.0	179.97	-869.5	3,330.7	770.0	706.4	63.62	12.104		
12,000.0	8,624.0	12,862.1	9,394.0	88.6	91.2	179.97	-870.0	3,430.7	770.0	705.0	64.97	11.851		
12,100.0	8,624.0	12,962.1	9,394.0	90.8	93.5	179.97	-870.5	3,530.7	770.0	703.7	66.34	11.607		
12,200.0	8,624.0	13,062.1	9,394.0	93.1	95.7	179.97	-871.0	3,630.7	770.0	702.3	67.71	11.372		
12,300.0	8,624.0	13,162.1	9,394.0	95.4	98.0	179.97	-871.5	3,730.7	770.0	700.9	69.10	11.144		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0													Offset Site Error:	0.0 usft	
Survey Program: Reference		0-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:		0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
12,400.0	8,624.0	13,262.1	9,394.0	97.7	100.3	179.97	-872.0	3,830.7	770.0	699.5	70.49	10.924			
12,500.0	8,624.0	13,362.1	9,394.0	100.0	102.5	179.97	-872.5	3,930.7	770.0	698.1	71.88	10.712			
12,600.0	8,624.0	13,462.1	9,394.0	102.3	104.8	179.97	-873.0	4,030.7	770.0	696.7	73.29	10.506			
12,700.0	8,624.0	13,562.1	9,394.0	104.6	107.1	179.97	-873.5	4,130.7	770.0	695.3	74.70	10.308			
12,800.0	8,624.0	13,662.1	9,394.0	106.9	109.4	179.97	-874.0	4,230.7	770.0	693.9	76.12	10.116			
12,900.0	8,624.0	13,762.1	9,394.0	109.2	111.7	179.98	-874.5	4,330.7	770.0	692.5	77.54	9.930			
13,000.0	8,624.0	13,862.1	9,394.0	111.5	114.0	179.98	-875.0	4,430.7	770.0	691.0	78.97	9.750			
13,100.0	8,624.0	13,962.1	9,394.0	113.9	116.3	179.98	-875.5	4,530.7	770.0	689.6	80.41	9.576			
13,200.0	8,624.0	14,062.1	9,394.0	116.2	118.6	179.98	-875.9	4,630.7	770.0	688.2	81.84	9.408			
13,300.0	8,624.0	14,162.1	9,394.0	118.5	121.0	179.98	-876.4	4,730.7	770.0	686.7	83.29	9.245			
13,400.0	8,624.0	14,262.1	9,394.0	120.9	123.3	179.98	-876.9	4,830.7	770.0	685.3	84.74	9.087			
13,500.0	8,624.0	14,362.1	9,394.0	123.2	125.6	179.98	-877.4	4,930.7	770.0	683.8	86.19	8.934			
13,600.0	8,624.0	14,462.1	9,394.0	125.5	127.9	179.98	-877.9	5,030.7	770.0	682.4	87.65	8.785			
13,700.0	8,624.0	14,562.1	9,394.0	127.9	130.3	179.98	-878.4	5,130.7	770.0	680.9	89.11	8.641			
13,800.0	8,624.0	14,662.1	9,394.0	130.2	132.6	179.98	-878.9	5,230.7	770.0	679.4	90.57	8.502			
13,900.0	8,624.0	14,762.1	9,394.0	132.6	134.9	179.98	-879.4	5,330.7	770.0	678.0	92.04	8.366			
14,000.0	8,624.0	14,862.1	9,394.0	134.9	137.3	179.98	-879.9	5,430.7	770.0	676.5	93.51	8.234			
14,100.0	8,624.0	14,962.1	9,394.0	137.3	139.6	179.98	-880.4	5,530.7	770.0	675.0	94.98	8.107			
14,200.0	8,624.0	15,062.1	9,394.0	139.7	142.0	179.98	-880.9	5,630.7	770.0	673.5	96.46	7.983			
14,300.0	8,624.0	15,162.1	9,394.0	142.0	144.3	179.98	-881.4	5,730.7	770.0	672.1	97.94	7.862			
14,400.0	8,624.0	15,262.1	9,394.0	144.4	146.7	179.98	-881.9	5,830.7	770.0	670.6	99.42	7.745			
14,500.0	8,624.0	15,362.1	9,394.0	146.7	149.0	179.98	-882.4	5,930.7	770.0	669.1	100.91	7.631			
14,600.0	8,624.0	15,462.1	9,394.0	149.1	151.4	179.98	-882.9	6,030.7	770.0	667.6	102.40	7.520			
14,700.0	8,624.0	15,562.1	9,394.0	151.5	153.8	179.98	-883.4	6,130.7	770.0	666.1	103.89	7.412			
14,800.0	8,624.0	15,662.1	9,394.0	153.8	156.1	179.98	-883.9	6,230.7	770.0	664.6	105.38	7.307			
14,900.0	8,624.0	15,762.1	9,394.0	156.2	158.5	179.98	-884.4	6,330.7	770.0	663.1	106.87	7.205			
15,000.0	8,624.0	15,862.1	9,394.0	158.6	160.8	179.98	-884.9	6,430.7	770.0	661.6	108.37	7.105			
15,100.0	8,624.0	15,962.1	9,394.0	161.0	163.2	179.98	-885.4	6,530.7	770.0	660.1	109.87	7.008			
15,200.0	8,624.0	16,062.1	9,394.0	163.3	165.6	179.98	-885.9	6,630.7	770.0	658.6	111.37	6.914			
15,300.0	8,624.0	16,162.1	9,394.0	165.7	167.9	179.98	-886.4	6,730.7	770.0	657.1	112.87	6.822			
15,400.0	8,624.0	16,262.1	9,394.0	168.1	170.3	179.99	-886.9	6,830.7	770.0	655.6	114.38	6.732			
15,500.0	8,624.0	16,362.1	9,394.0	170.5	172.7	179.99	-887.4	6,930.7	770.0	654.1	115.88	6.645			
15,600.0	8,624.0	16,462.1	9,394.0	172.9	175.1	179.99	-887.9	7,030.7	770.0	652.6	117.39	6.559			
15,700.0	8,624.0	16,562.1	9,394.0	175.2	177.4	179.99	-888.4	7,130.7	770.0	651.1	118.90	6.476			
15,800.0	8,624.0	16,662.1	9,394.0	177.6	179.8	179.99	-888.9	7,230.7	770.0	649.6	120.41	6.395			
15,900.0	8,624.0	16,762.1	9,394.0	180.0	182.2	179.99	-889.4	7,330.7	770.0	648.1	121.92	6.315			
16,000.0	8,624.0	16,862.1	9,394.0	182.4	184.6	179.99	-889.9	7,430.7	770.0	646.6	123.44	6.238			
16,100.0	8,624.0	16,962.1	9,394.0	184.8	186.9	179.99	-890.3	7,530.7	770.0	645.0	124.95	6.162			
16,200.0	8,624.0	17,062.1	9,394.0	187.2	189.3	179.99	-890.8	7,630.7	770.0	643.5	126.47	6.088			
16,300.0	8,624.0	17,162.1	9,394.0	189.6	191.7	179.99	-891.3	7,730.7	770.0	642.0	127.99	6.016			
16,400.0	8,624.0	17,262.1	9,394.0	191.9	194.1	179.99	-891.8	7,830.7	770.0	640.5	129.51	5.946			
16,500.0	8,624.0	17,362.1	9,394.0	194.3	196.5	179.99	-892.3	7,930.7	770.0	639.0	131.03	5.877			
16,600.0	8,624.0	17,462.1	9,394.0	196.7	198.9	179.99	-892.8	8,030.7	770.0	637.5	132.55	5.809			
16,700.0	8,624.0	17,562.1	9,394.0	199.1	201.2	179.99	-893.3	8,130.7	770.0	635.9	134.07	5.743			
16,800.0	8,624.0	17,662.1	9,394.0	201.5	203.6	179.99	-893.8	8,230.7	770.0	634.4	135.60	5.679			
16,900.0	8,624.0	17,762.1	9,394.0	203.9	206.0	179.99	-894.3	8,330.7	770.0	632.9	137.12	5.615			
17,000.0	8,624.0	17,862.1	9,394.0	206.3	208.4	179.99	-894.8	8,430.6	770.0	631.4	138.65	5.554			
17,100.0	8,624.0	17,962.1	9,394.0	208.7	210.8	179.99	-895.3	8,530.6	770.0	629.8	140.17	5.493			
17,200.0	8,624.0	18,062.1	9,394.0	211.1	213.2	179.99	-895.8	8,630.6	770.0	628.3	141.70	5.434			
17,300.0	8,624.0	18,162.1	9,394.0	213.5	215.6	179.99	-896.3	8,730.6	770.0	626.8	143.23	5.376			
17,400.0	8,624.0	18,262.1	9,394.0	215.9	218.0	179.99	-896.8	8,830.6	770.0	625.2	144.76	5.319			
17,500.0	8,624.0	18,362.1	9,394.0	218.3	220.4	179.99	-897.3	8,930.6	770.0	623.7	146.29	5.264			

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program:	0-MWD											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Rule Assigned:	Distance	Minimum	Separation	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	
17,600.0	8,624.0	18,462.1	9,394.0	220.7	222.7	179.99	-897.8	9,030.6	770.0	622.2	147.82	5.209	
17,700.0	8,624.0	18,562.1	9,394.0	223.1	225.1	179.99	-898.3	9,130.6	770.0	620.6	149.35	5.156	
17,800.0	8,624.0	18,662.1	9,394.0	225.5	227.5	179.99	-898.8	9,230.6	770.0	619.1	150.88	5.103	
17,900.0	8,624.0	18,762.1	9,394.0	227.9	229.9	179.99	-899.3	9,330.6	770.0	617.6	152.42	5.052	
18,000.0	8,624.0	18,862.1	9,394.0	230.3	232.3	180.00	-899.8	9,430.6	770.0	616.0	153.95	5.002	
18,100.0	8,624.0	18,962.1	9,394.0	232.6	234.7	180.00	-900.3	9,530.6	770.0	614.5	155.49	4.952	
18,200.0	8,624.0	19,062.1	9,394.0	235.0	237.1	180.00	-900.8	9,630.6	770.0	613.0	157.02	4.904	
18,300.0	8,624.0	19,162.1	9,394.0	237.4	239.5	180.00	-901.3	9,730.6	770.0	611.4	158.56	4.856	
18,400.0	8,624.0	19,262.1	9,394.0	239.8	241.9	180.00	-901.8	9,830.6	770.0	609.9	160.10	4.810	
18,500.0	8,624.0	19,362.1	9,394.0	242.3	244.3	180.00	-902.3	9,930.6	770.0	608.4	161.63	4.764	
18,600.0	8,624.0	19,462.1	9,394.0	244.7	246.7	180.00	-902.8	10,030.6	770.0	606.8	163.17	4.719	
18,700.0	8,624.0	19,562.1	9,394.0	247.1	249.1	180.00	-903.3	10,130.6	770.0	605.3	164.71	4.675	
18,800.0	8,624.0	19,662.1	9,394.0	249.5	251.5	180.00	-903.8	10,230.6	770.0	603.8	166.25	4.632	
18,900.0	8,624.0	19,762.1	9,394.0	251.9	253.9	180.00	-904.3	10,330.6	770.0	602.2	167.79	4.589	
19,000.0	8,624.0	19,862.1	9,394.0	254.3	256.3	180.00	-904.8	10,430.6	770.0	600.7	169.33	4.547	
19,100.0	8,624.0	19,962.1	9,394.0	256.7	258.7	180.00	-905.2	10,530.6	770.0	599.1	170.87	4.506	
19,200.0	8,624.0	20,062.1	9,394.0	259.1	261.1	180.00	-905.7	10,630.6	770.0	597.6	172.41	4.466	
19,235.6	8,624.0	20,097.7	9,394.0	259.9	261.9	180.00	-905.9	10,666.2	770.0	597.0	172.96	4.452	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY													Offset Site Error: 0.0 usft		
Survey Program: 355-INC-ONLY				Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.0	0.0	8.3	8.3	0.0	0.1	94.32	-563.3	7,457.3	7,478.6						
100.0	100.0	108.3	108.3	0.1	1.0	94.32	-563.3	7,457.3	7,478.6	7,477.4	1.13	6,605.925			
200.0	200.0	208.3	208.3	0.5	1.9	94.32	-563.3	7,457.3	7,478.6	7,476.1	2.42	3,090.242			
300.0	300.0	308.3	308.3	0.8	2.9	94.32	-563.3	7,457.3	7,478.6	7,474.9	3.71	2,016.864			
400.0	400.0	408.3	408.3	1.2	4.4	94.32	-563.3	7,457.3	7,478.6	7,473.0	5.59	1,337.862			
500.0	500.0	508.3	508.3	1.6	6.4	94.32	-563.3	7,457.3	7,478.6	7,470.6	7.99	935.770			
531.0	531.0	538.7	538.7	1.7	7.1	94.32	-562.8	7,457.3	7,478.5	7,469.8	8.72	857.285			
600.0	600.0	606.0	606.0	1.9	8.4	94.32	-563.0	7,457.3	7,478.5	7,468.2	10.35	722.774			
700.0	700.0	708.3	708.3	2.3	10.8	94.32	-563.3	7,457.3	7,478.6	7,465.5	13.11	570.347			
800.0	800.0	808.3	808.3	2.6	13.6	94.32	-563.3	7,457.3	7,478.6	7,462.3	16.23	460.890			
829.5	829.5	836.9	836.8	2.7	14.4	94.32	-562.7	7,457.3	7,478.5	7,461.4	17.12	436.871			
900.0	900.0	905.1	905.1	3.0	16.3	94.32	-563.0	7,457.3	7,478.5	7,459.3	19.25	388.458			
1,000.0	1,000.0	1,008.5	1,008.3	3.4	19.6	94.32	-563.3	7,457.3	7,478.6	7,455.7	22.91	326.453			
1,068.9	1,068.9	1,077.4	1,077.2	3.6	22.0	94.31	-561.9	7,457.3	7,478.5	7,452.8	25.63	291.756			
1,100.0	1,100.0	1,105.5	1,105.2	3.7	23.0	94.31	-561.9	7,457.3	7,478.5	7,451.7	26.75	279.544			
1,200.0	1,200.0	1,208.8	1,208.3	4.1	26.7	94.32	-563.3	7,457.3	7,478.6	7,447.8	30.79	242.866			
1,281.1	1,281.1	1,289.9	1,289.4	4.4	29.3	94.31	-562.3	7,457.3	7,478.5	7,444.8	33.69	221.977			
1,300.0	1,300.0	1,306.4	1,305.8	4.4	29.9	94.31	-562.3	7,457.3	7,478.5	7,444.2	34.29	218.125			
1,400.0	1,400.0	1,408.9	1,408.3	4.8	32.9	94.32	-563.3	7,457.3	7,478.6	7,440.9	37.67	198.510			
1,500.0	1,500.0	1,508.9	1,508.3	5.1	35.2	94.32	-563.3	7,457.3	7,478.6	7,438.2	40.33	185.453			
1,531.8	1,531.8	1,539.7	1,539.0	5.3	35.9	94.31	-562.3	7,457.3	7,478.5	7,437.3	41.15	181.758			
1,600.0	1,600.0	1,604.1	1,603.4	5.5	37.4	94.31	-562.6	7,457.3	7,478.5	7,435.6	42.87	174.460			
1,700.0	1,700.0	1,709.0	1,708.3	5.9	39.7	94.32	-563.3	7,457.3	7,478.6	7,433.0	45.54	164.228			
1,800.0	1,800.0	1,809.0	1,808.3	6.2	41.8	94.32	-563.3	7,457.3	7,478.6	7,430.6	47.97	155.886			
1,832.1	1,832.1	1,840.5	1,839.8	6.3	42.4	94.32	-562.8	7,457.3	7,478.5	7,429.8	48.74	153.423			
1,900.0	1,900.0	1,906.9	1,906.1	6.6	43.8	94.32	-563.0	7,457.3	7,478.5	7,428.2	50.37	148.481			
2,000.0	2,000.0	2,009.1	2,008.3	6.9	45.9	94.32	-563.3	7,457.3	7,478.6	7,425.7	52.86	141.492			
2,100.0	2,100.0	2,109.0	2,108.3	7.3	48.0	-90.92	-563.3	7,457.3	7,478.6	7,423.3	55.29	135.269			
2,154.5	2,154.4	2,163.5	2,162.7	7.5	49.1	-90.94	-562.3	7,457.3	7,478.6	7,422.0	56.60	132.125			
2,200.0	2,199.8	2,207.5	2,206.8	7.6	50.1	-90.96	-562.3	7,457.3	7,478.6	7,420.9	57.67	129.677			
2,300.0	2,299.5	2,304.2	2,303.4	7.9	52.1	-91.02	-562.8	7,457.3	7,478.8	7,418.8	60.02	124.602			
2,400.0	2,398.7	2,407.8	2,407.0	8.3	54.2	-91.11	-563.3	7,457.3	7,479.1	7,416.6	62.47	119.713			
2,500.0	2,497.5	2,506.6	2,505.8	8.6	56.2	-91.22	-563.3	7,457.3	7,479.4	7,414.6	64.79	115.440			
2,600.0	2,595.9	2,604.1	2,603.3	9.0	58.1	-91.35	-562.8	7,457.3	7,479.7	7,412.6	67.09	111.487			
2,700.0	2,694.4	2,701.0	2,700.2	9.3	60.1	-91.48	-563.1	7,457.3	7,480.2	7,410.8	69.39	107.801			
2,800.0	2,792.9	2,802.1	2,801.2	9.7	62.1	-91.61	-563.3	7,457.3	7,480.7	7,408.9	71.79	104.209			
2,900.0	2,891.4	2,900.5	2,899.7	10.1	64.1	-91.74	-563.3	7,457.3	7,481.2	7,407.1	74.14	100.904			
3,000.0	2,989.9	2,999.0	2,998.2	10.4	66.1	-91.88	-562.2	7,457.3	7,481.7	7,405.2	76.50	97.795			
3,100.0	3,088.3	3,096.2	3,095.3	10.8	68.0	-92.01	-562.4	7,457.3	7,482.3	7,403.5	78.85	94.898			
3,200.0	3,186.8	3,193.4	3,192.6	11.2	70.0	-92.14	-562.8	7,457.3	7,483.0	7,401.8	81.19	92.161			
3,300.0	3,285.3	3,294.5	3,293.6	11.6	72.0	-92.27	-563.3	7,457.3	7,483.7	7,400.0	83.63	89.489			
3,400.0	3,383.8	3,393.0	3,392.1	12.0	74.0	-92.40	-563.3	7,457.3	7,484.4	7,398.4	86.02	87.012			
3,500.0	3,482.3	3,490.3	3,489.4	12.4	75.9	-92.53	-563.0	7,457.3	7,485.1	7,396.7	88.39	84.687			
3,600.0	3,580.8	3,590.0	3,589.1	12.8	78.0	-92.66	-563.3	7,457.3	7,485.9	7,395.1	90.81	82.438			
3,700.0	3,679.2	3,688.5	3,687.5	13.3	80.0	-92.79	-563.3	7,457.3	7,486.8	7,393.6	93.21	80.321			
3,800.0	3,777.7	3,787.0	3,786.0	13.7	81.9	-92.92	-563.3	7,457.3	7,487.7	7,392.0	95.62	78.308			
3,900.0	3,876.2	3,884.6	3,883.7	14.1	83.9	-93.06	-562.4	7,457.3	7,488.5	7,390.5	98.01	76.406			
4,000.0	3,974.7	3,982.2	3,981.3	14.5	85.9	-93.18	-562.9	7,457.3	7,489.5	7,389.1	100.40	74.594			
4,100.0	4,073.2	4,082.5	4,081.5	14.9	87.8	-93.31	-563.3	7,457.3	7,490.5	7,387.8	102.77	72.884			
4,200.0	4,171.6	4,181.0	4,179.9	15.4	89.6	-93.44	-563.3	7,457.3	7,491.6	7,386.6	105.01	71.344			
4,300.0	4,270.1	4,279.2	4,278.2	15.8	91.5	-93.58	-562.7	7,457.3	7,492.6	7,385.4	107.24	69.870			
4,400.0	4,368.6	4,377.1	4,376.1	16.2	93.3	-93.71	-563.0	7,457.3	7,493.8	7,384.3	109.46	68.460			

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY													Offset Site Error:	0.0 usft
Survey Program: 355-INC-ONLY													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
4,500.0	4,467.1	4,476.4	4,475.4	16.6	95.0	-93.83	-563.3	7,457.3	7,494.9	7,383.3	111.66	67.120		
4,600.0	4,565.6	4,574.9	4,573.9	17.1	96.7	-93.96	-563.3	7,457.3	7,496.1	7,382.4	113.74	65.906		
4,700.0	4,664.0	4,673.4	4,672.3	17.5	98.3	-94.09	-563.3	7,457.3	7,497.4	7,381.5	115.82	64.735		
4,800.0	4,762.5	4,771.9	4,770.8	17.9	100.0	-94.22	-563.3	7,457.3	7,498.6	7,380.8	117.89	63.605		
4,900.0	4,861.0	4,870.2	4,869.2	18.4	101.6	-94.36	-562.7	7,457.3	7,500.0	7,380.0	119.97	62.515		
5,000.0	4,959.5	4,968.6	4,967.6	18.8	103.2	-94.49	-562.9	7,457.3	7,501.3	7,379.3	122.05	61.462		
5,100.0	5,058.0	5,067.1	5,066.0	19.2	104.9	-94.62	-563.2	7,457.3	7,502.7	7,378.6	124.13	60.443		
5,200.0	5,156.4	5,165.8	5,164.7	19.7	106.7	-94.75	-563.3	7,457.3	7,504.2	7,377.8	126.33	59.401		
5,300.0	5,254.9	5,264.3	5,263.2	20.1	108.5	-94.88	-563.3	7,457.3	7,505.6	7,377.0	128.60	58.362		
5,400.0	5,353.4	5,362.8	5,361.7	20.6	110.3	-95.01	-563.1	7,457.3	7,507.2	7,376.3	130.88	57.359		
5,500.0	5,451.9	5,461.2	5,460.2	21.0	112.2	-95.14	-563.1	7,457.3	7,508.7	7,375.6	133.16	56.391		
5,600.0	5,550.4	5,559.8	5,558.7	21.4	114.0	-95.27	-563.2	7,457.3	7,510.3	7,374.9	135.43	55.454		
5,700.0	5,648.9	5,658.2	5,657.2	21.9	116.0	-95.40	-563.3	7,457.3	7,512.0	7,374.1	137.89	54.476		
5,800.0	5,747.3	5,756.7	5,755.6	22.3	118.2	-95.53	-563.3	7,457.3	7,513.6	7,373.1	140.52	53.472		
5,900.0	5,845.8	5,855.2	5,854.1	22.8	120.4	-95.66	-562.3	7,457.3	7,515.4	7,372.2	143.14	52.504		
6,000.0	5,944.3	5,954.1	5,953.0	23.2	122.6	-95.79	-562.6	7,457.3	7,517.1	7,371.3	145.77	51.569		
6,100.0	6,042.8	6,053.0	6,051.9	23.6	124.8	-95.92	-563.2	7,457.3	7,518.9	7,370.5	148.40	50.666		
6,200.0	6,141.3	6,150.7	6,149.6	24.1	127.3	-96.04	-563.3	7,457.3	7,520.7	7,369.4	151.35	49.691		
6,300.0	6,239.7	6,249.2	6,248.0	24.5	129.9	-96.17	-563.3	7,457.3	7,522.6	7,368.2	154.41	48.718		
6,400.0	6,338.2	6,348.0	6,346.8	25.0	132.5	-96.31	-562.1	7,457.3	7,524.6	7,367.1	157.48	47.781		
6,500.0	6,436.7	6,447.3	6,446.1	25.4	135.2	-96.44	-562.5	7,457.3	7,526.5	7,365.9	160.57	46.875		
6,600.0	6,535.2	6,546.8	6,545.6	25.9	137.8	-96.57	-563.4	7,457.3	7,528.5	7,364.8	163.66	46.002		
6,700.0	6,633.7	6,643.4	6,642.0	26.3	140.8	-96.69	-563.3	7,457.3	7,530.5	7,363.5	167.04	45.081		
6,800.0	6,732.1	6,743.2	6,741.8	26.8	143.8	-96.83	-562.0	7,457.3	7,532.6	7,362.1	170.53	44.173		
6,900.0	6,830.6	6,845.1	6,843.6	27.2	146.9	-96.96	-563.2	7,457.3	7,534.7	7,360.6	174.07	43.285		
6,925.7	6,855.9	6,865.8	6,864.2	27.3	147.6	-96.98	-563.3	7,457.3	7,535.3	7,360.4	174.87	43.092		
7,000.0	6,929.3	6,939.2	6,937.6	27.6	150.0	-97.10	-563.3	7,457.3	7,536.7	7,359.1	177.65	42.425		
7,100.0	7,028.4	7,041.6	7,039.9	28.1	153.5	-97.24	-562.6	7,457.3	7,538.4	7,356.9	181.50	41.535		
7,200.0	7,127.9	7,140.1	7,138.1	28.4	156.8	-97.33	-562.8	7,457.3	7,539.6	7,354.4	185.19	40.712		
7,300.0	7,227.7	7,238.0	7,236.0	28.8	159.8	-97.39	-563.3	7,457.3	7,540.4	7,351.9	188.54	39.994		
7,400.0	7,327.7	7,338.0	7,336.0	29.1	162.7	-97.42	-563.3	7,457.3	7,540.7	7,349.0	191.77	39.321		
7,425.7	7,353.4	7,363.6	7,361.7	29.2	163.4	87.81	-563.3	7,457.3	7,540.7	7,348.2	192.60	39.153		
7,500.0	7,427.7	7,439.9	7,437.9	29.4	165.6	87.79	-561.6	7,457.3	7,540.8	7,345.8	195.03	38.665		
7,600.0	7,527.7	7,542.9	7,540.8	29.7	168.6	87.80	-562.7	7,457.3	7,540.8	7,342.5	198.31	38.024		
7,700.0	7,627.7	7,638.2	7,636.0	30.0	171.6	87.81	-563.3	7,457.3	7,540.7	7,339.2	201.57	37.410		
7,800.0	7,727.7	7,738.2	7,736.0	30.3	174.8	87.81	-563.3	7,457.3	7,540.7	7,335.7	205.09	36.768		
7,900.0	7,827.7	7,838.7	7,836.4	30.6	178.0	87.79	-561.5	7,457.3	7,540.8	7,332.2	208.62	36.146		
8,000.0	7,927.7	7,940.6	7,938.3	30.9	181.3	87.80	-562.0	7,457.3	7,540.8	7,328.6	212.20	35.535		
8,100.0	8,027.7	8,042.6	8,040.3	31.2	184.6	87.80	-563.2	7,457.3	7,540.8	7,325.0	215.79	34.945		
8,146.6	8,074.3	8,085.3	8,082.6	31.4	186.1	87.81	-563.3	7,457.3	7,540.7	7,323.3	217.47	34.675		
8,200.0	8,127.7	8,138.6	8,136.0	31.5	188.1	87.81	-563.3	7,457.3	7,540.7	7,321.1	219.63	34.333		
8,218.8	8,146.5	8,158.6	8,155.9	31.6	188.9	87.80	-562.2	7,457.3	7,540.8	7,320.4	220.44	34.208		
8,225.0	8,152.7	8,165.3	8,162.7	31.6	189.1	-2.49	-562.2	7,457.3	7,540.8	7,320.0	220.71	34.166		
8,250.0	8,177.7	8,192.7	8,190.0	31.7	190.2	-2.49	-562.5	7,457.3	7,539.8	7,317.9	221.81	33.991		
8,275.0	8,202.6	8,219.9	8,217.2	31.8	191.2	-2.50	-563.0	7,457.3	7,537.5	7,314.5	222.92	33.813		
8,300.0	8,227.3	8,238.5	8,235.6	31.8	191.9	-2.52	-563.3	7,457.3	7,533.9	7,310.2	223.69	33.680		
8,325.0	8,251.8	8,263.0	8,260.1	31.9	192.8	-2.55	-563.3	7,457.3	7,529.0	7,304.3	224.69	33.508		
8,350.0	8,276.1	8,287.2	8,284.4	32.0	193.7	-2.58	-563.3	7,457.3	7,522.9	7,297.2	225.68	33.333		
8,375.0	8,299.9	8,311.1	8,308.2	32.1	194.6	-2.63	-563.3	7,457.3	7,515.4	7,288.8	226.66	33.157		
8,400.0	8,323.4	8,335.9	8,332.9	32.1	195.6	-2.69	-562.2	7,457.3	7,506.9	7,279.2	227.67	32.973		
8,425.0	8,346.3	8,361.1	8,358.2	32.2	196.5	-2.76	-562.5	7,457.3	7,497.0	7,268.3	228.69	32.782		
8,450.0	8,368.8	8,385.8	8,382.8	32.3	197.5	-2.83	-562.9	7,457.3	7,485.9	7,256.2	229.69	32.592		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY													Offset Site Error:	0.0 usft
Survey Program: 355-INC-ONLY													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
8,475.0	8,390.6	8,409.8	8,406.8	32.3	198.4	-2.91	-563.4	7,457.3	7,473.7	7,243.1	230.66	32.401		
8,500.0	8,411.7	8,423.1	8,420.0	32.4	198.9	-3.02	-563.3	7,457.3	7,460.4	7,229.2	231.21	32.266		
8,525.0	8,432.1	8,443.6	8,440.4	32.4	199.6	-3.13	-563.3	7,457.3	7,446.0	7,213.9	232.03	32.091		
8,550.0	8,451.8	8,463.2	8,460.1	32.5	200.3	-3.27	-563.3	7,457.3	7,430.5	7,197.7	232.81	31.917		
8,575.0	8,470.6	8,482.0	8,478.9	32.5	201.0	-3.43	-563.3	7,457.3	7,414.1	7,180.5	233.56	31.744		
8,600.0	8,488.5	8,499.9	8,496.8	32.6	201.7	-3.62	-563.3	7,457.3	7,396.6	7,162.4	234.27	31.573		
8,625.0	8,505.4	8,516.9	8,513.7	32.6	202.3	-3.84	-563.3	7,457.3	7,378.3	7,143.4	234.94	31.405		
8,650.0	8,521.4	8,532.9	8,529.7	32.7	202.9	-4.10	-563.3	7,457.3	7,359.1	7,123.5	235.58	31.239		
8,675.0	8,536.4	8,547.8	8,544.7	32.7	203.5	-4.41	-563.3	7,457.3	7,339.1	7,102.9	236.17	31.076		
8,700.0	8,550.3	8,561.7	8,558.6	32.8	204.0	-4.78	-563.3	7,457.3	7,318.3	7,081.6	236.72	30.916		
8,725.0	8,563.1	8,574.5	8,571.4	32.8	204.4	-5.24	-563.3	7,457.3	7,296.9	7,059.6	237.22	30.760		
8,750.0	8,574.7	8,586.1	8,583.0	32.8	204.9	-5.80	-563.3	7,457.3	7,274.8	7,037.1	237.68	30.607		
8,775.0	8,585.2	8,596.6	8,593.5	32.9	205.3	-6.51	-563.3	7,457.3	7,252.1	7,014.0	238.09	30.459		
8,800.0	8,594.4	8,605.9	8,602.7	32.9	205.6	-7.44	-563.3	7,457.3	7,228.9	6,990.4	238.46	30.315		
8,825.0	8,602.5	8,613.9	8,610.8	33.0	205.9	-8.69	-563.3	7,457.3	7,205.3	6,966.5	238.78	30.176		
8,850.0	8,609.3	8,620.7	8,617.6	33.0	206.2	-10.47	-563.3	7,457.3	7,181.2	6,942.2	239.04	30.041		
8,875.0	8,614.8	8,626.2	8,623.1	33.1	206.4	-13.17	-563.3	7,457.3	7,156.9	6,917.6	239.26	29.912		
8,900.0	8,619.0	8,630.4	8,627.3	33.2	206.5	-17.70	-563.3	7,457.3	7,132.3	6,892.8	239.43	29.788		
8,925.0	8,622.0	8,633.4	8,630.3	33.3	206.6	-26.65	-563.3	7,457.3	7,107.5	6,867.9	239.55	29.670		
8,950.0	8,623.6	8,635.0	8,631.9	33.3	206.7	-49.53	-563.3	7,457.3	7,082.5	6,842.9	239.62	29.557		
8,968.8	8,624.0	8,635.4	8,632.2	33.4	206.7	-89.98	-560.3	7,457.3	7,063.9	6,824.2	239.64	29.477		
9,000.0	8,624.0	8,635.4	8,632.2	33.6	206.7	-89.98	-560.3	7,457.3	7,032.7	6,793.1	239.65	29.345		
9,100.0	8,624.0	8,635.4	8,632.2	34.2	206.7	-89.98	-560.3	7,457.3	6,932.8	6,693.1	239.69	28.924		
9,200.0	8,624.0	8,635.4	8,632.2	35.0	206.7	-89.98	-560.3	7,457.3	6,832.9	6,593.2	239.73	28.503		
9,300.0	8,624.0	8,635.4	8,632.2	36.1	206.7	-89.98	-560.3	7,457.3	6,733.1	6,493.3	239.77	28.082		
9,400.0	8,624.0	8,635.4	8,632.2	37.3	206.7	-89.98	-560.3	7,457.3	6,633.2	6,393.4	239.81	27.660		
9,500.0	8,624.0	8,635.4	8,632.2	38.6	206.7	-89.98	-560.3	7,457.3	6,533.3	6,293.5	239.85	27.239		
9,600.0	8,624.0	8,635.4	8,632.2	40.0	206.7	-89.98	-560.3	7,457.3	6,433.4	6,193.5	239.90	26.817		
9,700.0	8,624.0	8,635.4	8,632.2	41.5	206.7	-89.98	-560.3	7,457.3	6,333.6	6,093.6	239.95	26.395		
9,800.0	8,624.0	8,635.4	8,632.2	43.1	206.7	-89.98	-560.3	7,457.3	6,233.7	5,993.7	240.00	25.973		
9,900.0	8,624.0	8,635.4	8,632.2	44.8	206.7	-89.98	-560.3	7,457.3	6,133.9	5,893.8	240.06	25.551		
10,000.0	8,624.0	8,635.4	8,632.2	46.6	206.7	-89.98	-560.3	7,457.3	6,034.0	5,793.9	240.12	25.129		
10,100.0	8,624.0	8,635.4	8,632.2	48.4	206.7	-89.98	-560.3	7,457.3	5,934.2	5,694.0	240.18	24.707		
10,200.0	8,624.0	8,635.4	8,632.2	50.3	206.7	-89.98	-560.3	7,457.3	5,834.3	5,594.1	240.24	24.285		
10,300.0	8,624.0	8,635.4	8,632.2	52.2	206.7	-89.98	-560.3	7,457.3	5,734.5	5,494.2	240.31	23.863		
10,400.0	8,624.0	8,635.4	8,632.2	54.1	206.7	-89.98	-560.3	7,457.3	5,634.6	5,394.3	240.38	23.440		
10,500.0	8,624.0	8,635.4	8,632.2	56.1	206.7	-89.98	-560.3	7,457.3	5,534.8	5,294.4	240.46	23.018		
10,600.0	8,624.0	8,635.4	8,632.2	58.1	206.7	-89.98	-560.3	7,457.3	5,435.0	5,194.5	240.54	22.595		
10,700.0	8,624.0	8,635.4	8,632.2	60.2	206.7	-89.98	-560.3	7,457.3	5,335.2	5,094.6	240.62	22.173		
10,800.0	8,624.0	8,635.4	8,632.2	62.3	206.7	-89.98	-560.3	7,457.3	5,235.4	4,994.7	240.71	21.750		
10,900.0	8,624.0	8,635.4	8,632.2	64.4	206.7	-89.98	-560.3	7,457.3	5,135.6	4,894.8	240.80	21.327		
11,000.0	8,624.0	8,635.4	8,632.2	66.5	206.7	-89.98	-560.3	7,457.3	5,035.8	4,794.9	240.90	20.904		
11,100.0	8,624.0	8,635.4	8,632.2	68.6	206.7	-89.98	-560.3	7,457.3	4,936.0	4,695.0	241.00	20.481		
11,200.0	8,624.0	8,635.4	8,632.2	70.8	206.7	-89.98	-560.3	7,457.3	4,836.2	4,595.1	241.11	20.058		
11,300.0	8,624.0	8,635.4	8,632.2	73.0	206.7	-89.98	-560.3	7,457.3	4,736.5	4,495.3	241.22	19.635		
11,400.0	8,624.0	8,635.4	8,632.2	75.2	206.7	-89.98	-560.3	7,457.3	4,636.7	4,395.4	241.34	19.212		
11,500.0	8,624.0	8,635.4	8,632.2	77.4	206.7	-89.98	-560.3	7,457.3	4,537.0	4,295.5	241.47	18.789		
11,600.0	8,624.0	8,635.4	8,632.2	79.6	206.7	-89.98	-560.3	7,457.3	4,437.3	4,195.6	241.60	18.366		
11,700.0	8,624.0	8,635.4	8,632.2	81.8	206.7	-89.99	-560.3	7,457.3	4,337.5	4,095.8	241.75	17.943		
11,800.0	8,624.0	8,635.4	8,632.2	84.1	206.7	-89.99	-560.3	7,457.3	4,237.8	3,995.9	241.90	17.519		
11,900.0	8,624.0	8,635.4	8,632.2	86.3	206.7	-89.99	-560.3	7,457.3	4,138.1	3,896.1	242.06	17.096		
12,000.0	8,624.0	8,635.4	8,632.2	88.6	206.7	-89.99	-560.3	7,457.3	4,038.5	3,796.2	242.23	16.672		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY												Offset Site Error:	0.0 usft
Survey Program: 355-INC-ONLY												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,100.0	8,624.0	8,635.4	8,632.2	90.8	206.7	-89.99	-560.3	7,457.3	3,938.8	3,696.4	242.41	16.249	
12,200.0	8,624.0	8,635.4	8,632.2	93.1	206.7	-89.99	-560.3	7,457.3	3,839.2	3,596.6	242.60	15.825	
12,300.0	8,624.0	8,635.4	8,632.2	95.4	206.7	-89.99	-560.3	7,457.3	3,739.5	3,496.7	242.80	15.401	
12,400.0	8,624.0	8,635.4	8,632.2	97.7	206.7	-89.99	-560.3	7,457.3	3,639.9	3,396.9	243.02	14.978	
12,500.0	8,624.0	8,635.4	8,632.2	100.0	206.7	-89.99	-560.3	7,457.3	3,540.4	3,297.1	243.26	14.554	
12,600.0	8,624.0	8,635.4	8,632.2	102.3	206.7	-89.99	-560.3	7,457.3	3,440.8	3,197.3	243.51	14.130	
12,700.0	8,624.0	8,635.4	8,632.2	104.6	206.7	-89.99	-560.3	7,457.3	3,341.3	3,097.5	243.78	13.706	
12,800.0	8,624.0	8,635.4	8,632.2	106.9	206.7	-89.99	-560.3	7,457.3	3,241.8	2,997.7	244.07	13.282	
12,900.0	8,624.0	8,635.4	8,632.2	109.2	206.7	-89.99	-560.3	7,457.3	3,142.3	2,897.9	244.39	12.858	
13,000.0	8,624.0	8,635.4	8,632.2	111.5	206.7	-89.99	-560.3	7,457.3	3,042.9	2,798.2	244.73	12.434	
13,100.0	8,624.0	8,635.4	8,632.2	113.9	206.7	-89.99	-560.3	7,457.3	2,943.5	2,698.4	245.10	12.010	
13,200.0	8,624.0	8,635.4	8,632.2	116.2	206.7	-89.99	-560.3	7,457.3	2,844.1	2,598.7	245.50	11.585	
13,300.0	8,624.0	8,635.4	8,632.2	118.5	206.7	-89.99	-560.3	7,457.3	2,744.8	2,498.9	245.94	11.161	
13,400.0	8,624.0	8,635.4	8,632.2	120.9	206.7	-89.99	-560.3	7,457.3	2,645.6	2,399.2	246.42	10.736	
13,500.0	8,624.0	8,635.4	8,632.2	123.2	206.7	-89.99	-560.3	7,457.3	2,546.4	2,299.5	246.94	10.312	
13,600.0	8,624.0	8,635.4	8,632.2	125.5	206.7	-89.99	-560.3	7,457.3	2,447.3	2,199.8	247.52	9.887	
13,700.0	8,624.0	8,635.4	8,632.2	127.9	206.7	-89.99	-560.3	7,457.3	2,348.2	2,100.1	248.16	9.463	
13,800.0	8,624.0	8,635.4	8,632.2	130.2	206.7	-89.99	-560.3	7,457.3	2,249.3	2,000.4	248.87	9.038	
13,900.0	8,624.0	8,635.4	8,632.2	132.6	206.7	-89.99	-560.3	7,457.3	2,150.4	1,900.7	249.66	8.613	
14,000.0	8,624.0	8,635.4	8,632.2	134.9	206.7	-89.99	-560.3	7,457.3	2,051.6	1,801.1	250.55	8.189	
14,100.0	8,624.0	8,635.4	8,632.2	137.3	206.7	-89.99	-560.3	7,457.3	1,953.0	1,701.4	251.55	7.764	
14,200.0	8,624.0	8,635.4	8,632.2	139.7	206.7	-89.99	-560.3	7,457.3	1,854.5	1,601.8	252.67	7.340	
14,300.0	8,624.0	8,635.4	8,632.2	142.0	206.7	-89.99	-560.3	7,457.3	1,756.2	1,502.2	253.95	6.915	
14,400.0	8,624.0	8,635.4	8,632.2	144.4	206.7	-89.99	-560.3	7,457.3	1,658.1	1,402.7	255.41	6.492	
14,500.0	8,624.0	8,635.4	8,632.2	146.7	206.7	-89.99	-560.3	7,457.3	1,560.2	1,303.1	257.10	6.068	
14,600.0	8,624.0	8,635.4	8,632.2	149.1	206.7	-89.99	-560.3	7,457.3	1,462.6	1,203.5	259.04	5.646	
14,700.0	8,624.0	8,635.4	8,632.2	151.5	206.7	-89.99	-560.3	7,457.3	1,365.3	1,104.0	261.32	5.225	
14,800.0	8,624.0	8,635.4	8,632.2	153.8	206.7	-89.99	-560.3	7,457.3	1,268.5	1,004.5	263.99	4.805	
14,900.0	8,624.0	8,635.4	8,632.2	156.2	206.7	-89.99	-560.3	7,457.3	1,172.3	905.1	267.16	4.388	
15,000.0	8,624.0	8,635.4	8,632.2	158.6	206.7	-89.99	-560.3	7,457.3	1,076.7	805.7	270.95	3.974	
15,100.0	8,624.0	8,635.4	8,632.2	161.0	206.7	-89.99	-560.3	7,457.3	981.9	706.4	275.54	3.564	
15,200.0	8,624.0	8,635.4	8,632.2	163.3	206.7	-89.99	-560.3	7,457.3	888.4	607.2	281.16	3.160	
15,300.0	8,624.0	8,635.4	8,632.2	165.7	206.7	-89.99	-560.3	7,457.3	796.4	508.2	288.11	2.764	
15,400.0	8,624.0	8,635.4	8,632.2	168.1	206.7	-89.99	-560.3	7,457.3	706.5	409.7	296.80	2.380	
15,500.0	8,624.0	8,635.4	8,632.2	170.5	206.7	-89.99	-560.3	7,457.3	619.8	312.0	307.77	2.014	
15,600.0	8,624.0	8,635.4	8,632.2	172.9	206.7	-89.99	-560.3	7,457.3	537.7	216.1	321.63	1.672	
15,700.0	8,624.0	8,635.4	8,632.2	175.2	206.7	-89.99	-560.3	7,457.3	462.8	124.0	338.79	1.366 Level 3	
15,800.0	8,624.0	8,635.4	8,632.2	177.6	206.7	-89.99	-560.3	7,457.3	399.0	40.3	358.69	1.112 Level 3	
15,900.0	8,624.0	8,635.4	8,632.2	180.0	206.7	-89.99	-560.3	7,457.3	352.4	-25.5	377.93	0.932 Level 3	
16,000.0	8,624.0	8,635.4	8,632.2	182.4	206.7	-89.99	-560.3	7,457.3	330.4	-58.6	388.99	0.849 Level 3	
16,025.0	8,624.0	8,635.4	8,632.2	183.0	206.7	-89.99	-560.3	7,457.3	329.5	-60.1	389.53	0.846 Level 3, CC, ES, SF	
16,100.0	8,624.0	8,635.4	8,632.2	184.8	206.7	-89.99	-560.3	7,457.3	337.9	-47.3	385.23	0.877 Level 3	
16,200.0	8,624.0	8,635.4	8,632.2	187.2	206.7	-89.99	-560.3	7,457.3	373.1	3.9	369.18	1.011 Level 3	
16,300.0	8,624.0	8,635.4	8,632.2	189.6	206.7	-89.99	-560.3	7,457.3	429.2	80.1	349.07	1.229 Level 3	
16,400.0	8,624.0	8,635.4	8,632.2	191.9	206.7	-89.99	-560.3	7,457.3	499.2	168.7	330.47	1.510	
16,500.0	8,624.0	8,635.4	8,632.2	194.3	206.7	-89.99	-560.3	7,457.3	578.1	263.0	315.09	1.835	
16,600.0	8,624.0	8,635.4	8,632.2	196.7	206.7	-89.99	-560.3	7,457.3	662.7	359.8	302.85	2.188	
16,700.0	8,624.0	8,635.4	8,632.2	199.1	206.7	-89.99	-560.3	7,457.3	751.1	457.9	293.19	2.562	
16,800.0	8,624.0	8,635.4	8,632.2	201.5	206.7	-89.99	-560.3	7,457.3	842.1	556.6	285.52	2.949	
16,900.0	8,624.0	8,635.4	8,632.2	203.9	206.7	-89.99	-560.3	7,457.3	935.0	655.6	279.38	3.347	
17,000.0	8,624.0	8,635.4	8,632.2	206.3	206.7	-89.99	-560.3	7,457.3	1,029.2	754.8	274.41	3.750	
17,100.0	8,624.0	8,635.4	8,632.2	208.7	206.7	-89.99	-560.3	7,457.3	1,124.4	854.0	270.34	4.159	

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY													Offset Site Error:	0.0 usft
Survey Program: 355-INC-ONLY		Reference Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
17,200.0	8,624.0	8,635.4	8,632.2	211.1	206.7	-89.99	-560.3	7,457.3	1,220.3	953.3	266.99	4.571		
17,300.0	8,624.0	8,635.4	8,632.2	213.5	206.7	-89.99	-560.3	7,457.3	1,316.9	1,052.7	264.20	4.984		
17,400.0	8,624.0	8,635.4	8,632.2	215.9	206.7	-89.99	-560.3	7,457.3	1,413.9	1,152.1	261.85	5.400		
17,500.0	8,624.0	8,635.4	8,632.2	218.3	206.7	-89.99	-560.3	7,457.3	1,511.3	1,251.5	259.87	5.816		
17,600.0	8,624.0	8,635.4	8,632.2	220.7	206.7	-89.99	-560.3	7,457.3	1,609.1	1,350.9	258.18	6.232		
17,700.0	8,624.0	8,635.4	8,632.2	223.1	206.7	-89.99	-560.3	7,457.3	1,707.1	1,450.4	256.73	6.649		
17,800.0	8,624.0	8,635.4	8,632.2	225.5	206.7	-89.99	-560.3	7,457.3	1,805.3	1,549.8	255.49	7.066		
17,900.0	8,624.0	8,635.4	8,632.2	227.9	206.7	-89.99	-560.3	7,457.3	1,903.7	1,649.3	254.41	7.483		
18,000.0	8,624.0	8,635.4	8,632.2	230.3	206.7	-89.99	-560.3	7,457.3	2,002.3	1,748.8	253.48	7.899		
18,100.0	8,624.0	8,635.4	8,632.2	232.6	206.7	-89.99	-560.3	7,457.3	2,101.0	1,848.3	252.67	8.315		
18,200.0	8,624.0	8,635.4	8,632.2	235.0	206.7	-89.99	-560.3	7,457.3	2,199.8	1,947.9	251.96	8.731		
18,300.0	8,624.0	8,635.4	8,632.2	237.4	206.7	-89.99	-560.3	7,457.3	2,298.7	2,047.4	251.34	9.146		
18,400.0	8,624.0	8,635.4	8,632.2	239.8	206.7	-89.99	-560.3	7,457.3	2,397.7	2,147.0	250.79	9.561		
18,500.0	8,624.0	8,635.4	8,632.2	242.3	206.7	-89.99	-560.3	7,457.3	2,496.8	2,246.5	250.31	9.975		
18,600.0	8,624.0	8,635.4	8,632.2	244.7	206.7	-89.99	-560.3	7,457.3	2,596.0	2,346.1	249.89	10.389		
18,700.0	8,624.0	8,635.4	8,632.2	247.1	206.7	-89.99	-560.3	7,457.3	2,695.2	2,445.7	249.52	10.802		
18,800.0	8,624.0	8,635.4	8,632.2	249.5	206.7	-89.99	-560.3	7,457.3	2,794.5	2,545.3	249.19	11.214		
18,900.0	8,624.0	8,635.4	8,632.2	251.9	206.7	-89.99	-560.3	7,457.3	2,893.8	2,644.9	248.90	11.627		
19,000.0	8,624.0	8,635.4	8,632.2	254.3	206.7	-89.99	-560.3	7,457.3	2,993.2	2,744.5	248.64	12.038		
19,100.0	8,624.0	8,635.4	8,632.2	256.7	206.7	-89.99	-560.3	7,457.3	3,092.6	2,844.2	248.42	12.449		
19,200.0	8,624.0	8,635.4	8,632.2	259.1	206.7	-89.99	-560.3	7,457.3	3,192.0	2,943.8	248.22	12.860		
19,235.6	8,624.0	8,635.4	8,632.2	259.9	206.7	-89.99	-560.3	7,457.3	3,227.4	2,979.3	248.15	13.006		

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

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COMPASS 5000.15 Build 91E

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: SILVER BAR - SILVER BAR 35 FED ST COM 203H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+MS Offset													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-176.80	-2,852.8	-159.4	2,857.3					
100.0	100.0	86.0	86.0	0.1	0.3	-176.80	-2,852.8	-159.4	2,857.2	2,856.8	0.43	6,586.837		
200.0	200.0	186.0	186.0	0.5	0.7	-176.80	-2,852.8	-159.4	2,857.2	2,856.1	1.15	2,483.050		
300.0	300.0	286.0	286.0	0.8	1.0	-176.80	-2,852.8	-159.4	2,857.2	2,855.4	1.87	1,529.864		
400.0	400.0	386.0	386.0	1.2	1.4	-176.80	-2,852.8	-159.4	2,857.2	2,854.6	2.58	1,105.491		
500.0	500.0	486.0	486.0	1.6	1.7	-176.80	-2,852.8	-159.4	2,857.2	2,853.9	3.30	865.428		
600.0	600.0	586.0	586.0	1.9	2.1	-176.80	-2,852.8	-159.4	2,857.2	2,853.2	4.02	711.025		
700.0	700.0	686.0	686.0	2.3	2.5	-176.80	-2,852.8	-159.4	2,857.2	2,852.5	4.74	603.375		
800.0	800.0	786.0	786.0	2.6	2.8	-176.80	-2,852.8	-159.4	2,857.2	2,851.8	5.45	524.036		
900.0	900.0	886.0	886.0	3.0	3.2	-176.80	-2,852.8	-159.4	2,857.2	2,851.1	6.17	463.137		
1,000.0	1,000.0	986.0	986.0	3.4	3.5	-176.80	-2,852.8	-159.4	2,857.2	2,850.3	6.89	414.919		
1,100.0	1,100.0	1,086.0	1,086.0	3.7	3.9	-176.80	-2,852.8	-159.4	2,857.2	2,849.6	7.60	375.794		
1,200.0	1,200.0	1,186.0	1,186.0	4.1	4.3	-176.80	-2,852.8	-159.4	2,857.2	2,848.9	8.32	343.412		
1,300.0	1,300.0	1,286.0	1,286.0	4.4	4.6	-176.80	-2,852.8	-159.4	2,857.2	2,848.2	9.04	316.168		
1,400.0	1,400.0	1,386.0	1,386.0	4.8	5.0	-176.80	-2,852.8	-159.4	2,857.2	2,847.5	9.75	292.929		
1,500.0	1,500.0	1,486.0	1,486.0	5.1	5.3	-176.80	-2,852.8	-159.4	2,857.2	2,846.8	10.47	272.872		
1,600.0	1,600.0	1,586.0	1,586.0	5.5	5.7	-176.80	-2,852.8	-159.4	2,857.2	2,846.0	11.19	255.386		
1,700.0	1,700.0	1,686.0	1,686.0	5.9	6.0	-176.80	-2,852.8	-159.4	2,857.2	2,845.3	11.90	240.006		
1,800.0	1,800.0	1,786.0	1,786.0	6.2	6.4	-176.80	-2,852.8	-159.4	2,857.2	2,844.6	12.62	226.373		
1,900.0	1,900.0	1,886.0	1,886.0	6.6	6.8	-176.80	-2,852.8	-159.4	2,857.2	2,843.9	13.34	214.206		
2,000.0	2,000.0	1,986.0	1,986.0	6.9	7.1	-176.80	-2,852.8	-159.4	2,857.2	2,843.2	14.06	203.280		
2,100.0	2,100.0	2,086.0	2,086.0	7.3	7.5	-2.03	-2,852.8	-159.4	2,855.5	2,840.7	14.75	193.533		
2,200.0	2,199.8	2,185.8	2,185.8	7.6	7.8	-2.04	-2,852.8	-159.4	2,850.3	2,834.8	15.44	184.631		
2,300.0	2,299.5	2,285.5	2,285.5	7.9	8.2	-2.05	-2,852.8	-159.4	2,841.5	2,825.4	16.12	176.247		
2,400.0	2,398.7	2,384.7	2,384.7	8.3	8.5	-2.07	-2,852.8	-159.4	2,829.4	2,812.6	16.81	168.334		
2,500.0	2,497.5	2,483.5	2,483.5	8.6	8.9	-2.09	-2,852.8	-159.4	2,813.7	2,796.2	17.49	160.846		
2,600.0	2,595.9	2,581.9	2,581.9	9.0	9.3	-2.10	-2,852.8	-159.4	2,796.4	2,778.2	18.18	153.831		
2,700.0	2,694.4	2,680.4	2,680.4	9.3	9.6	-2.12	-2,852.8	-159.4	2,779.0	2,760.2	18.86	147.313		
2,800.0	2,792.9	2,778.9	2,778.9	9.7	10.0	-2.13	-2,852.8	-159.4	2,761.7	2,742.1	19.55	141.231		
2,900.0	2,891.4	2,877.4	2,877.4	10.1	10.3	-2.14	-2,852.8	-159.4	2,744.3	2,724.1	20.25	135.545		
3,000.0	2,989.9	2,975.9	2,975.9	10.4	10.7	-2.16	-2,852.8	-159.4	2,727.0	2,706.0	20.94	130.220		
3,100.0	3,088.3	3,074.3	3,074.3	10.8	11.0	-2.17	-2,852.8	-159.4	2,709.6	2,688.0	21.64	125.225		
3,200.0	3,186.8	3,172.8	3,172.8	11.2	11.4	-2.18	-2,852.8	-159.4	2,692.3	2,669.9	22.34	120.530		
3,300.0	3,285.3	3,271.3	3,271.3	11.6	11.7	-2.20	-2,852.8	-159.4	2,674.9	2,651.9	23.04	116.110		
3,400.0	3,383.8	3,369.8	3,369.8	12.0	12.1	-2.21	-2,852.8	-159.4	2,657.6	2,633.8	23.74	111.944		
3,500.0	3,482.3	3,468.3	3,468.3	12.4	12.4	-2.23	-2,852.8	-159.4	2,640.2	2,615.8	24.44	108.011		
3,600.0	3,580.8	3,566.8	3,566.8	12.8	12.8	-2.24	-2,852.8	-159.4	2,622.9	2,597.7	25.15	104.292		
3,700.0	3,679.2	3,665.2	3,665.2	13.3	13.1	-2.26	-2,852.8	-159.4	2,605.5	2,579.6	25.86	100.771		
3,800.0	3,777.7	3,763.7	3,763.7	13.7	13.5	-2.27	-2,852.8	-159.4	2,588.2	2,561.6	26.56	97.433		
3,900.0	3,876.2	3,862.2	3,862.2	14.1	13.8	-2.29	-2,852.8	-159.4	2,570.8	2,543.5	27.27	94.264		
4,000.0	3,974.7	3,960.7	3,960.7	14.5	14.2	-2.30	-2,852.8	-159.4	2,553.4	2,525.5	27.98	91.253		
4,100.0	4,073.2	4,059.2	4,059.2	14.9	14.6	-2.32	-2,852.8	-159.4	2,536.1	2,507.4	28.69	88.388		
4,200.0	4,171.6	4,157.6	4,157.6	15.4	14.9	-2.33	-2,852.8	-159.4	2,518.7	2,489.3	29.40	85.659		
4,300.0	4,270.1	4,256.1	4,256.1	15.8	15.3	-2.35	-2,852.8	-159.4	2,501.4	2,471.3	30.12	83.056		
4,400.0	4,368.6	4,354.6	4,354.6	16.2	15.6	-2.37	-2,852.8	-159.4	2,484.0	2,453.2	30.83	80.572		
4,500.0	4,467.1	4,453.1	4,453.1	16.6	16.0	-2.38	-2,852.8	-159.4	2,466.7	2,435.1	31.54	78.198		
4,600.0	4,565.6	4,551.6	4,551.6	17.1	16.3	-2.40	-2,852.8	-159.4	2,449.3	2,417.1	32.26	75.928		
4,700.0	4,664.0	4,650.0	4,650.0	17.5	16.7	-2.42	-2,852.8	-159.4	2,432.0	2,399.0	32.97	73.755		
4,800.0	4,762.5	4,748.5	4,748.5	17.9	17.0	-2.43	-2,852.8	-159.4	2,414.6	2,381.0	33.69	71.673		
4,900.0	4,861.0	4,847.0	4,847.0	18.4	17.4	-2.45	-2,852.8	-159.4	2,397.3	2,362.9	34.41	69.677		
5,000.0	4,959.5	4,945.5	4,945.5	18.8	17.7	-2.47	-2,852.8	-159.4	2,379.9	2,344.8	35.12	67.761		
5,100.0	5,058.0	5,044.0	5,044.0	19.2	18.1	-2.49	-2,852.8	-159.4	2,362.6	2,326.8	35.84	65.921		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: SILVER BAR - SILVER BAR 35 FED ST COM 203H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+MS Offset													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,200.0	5,156.4	5,142.4	5,142.4	19.7	18.4	-2.51	-2,852.8	-159.4	2,345.2	2,308.7	36.56	64.152		
5,300.0	5,254.9	5,240.9	5,240.9	20.1	18.8	-2.53	-2,852.8	-159.4	2,327.9	2,290.6	37.28	62.451		
5,400.0	5,353.4	5,339.4	5,339.4	20.6	19.1	-2.54	-2,852.8	-159.4	2,310.6	2,272.6	37.99	60.813		
5,500.0	5,451.9	5,437.9	5,437.9	21.0	19.5	-2.56	-2,852.8	-159.4	2,293.2	2,254.5	38.71	59.235		
5,600.0	5,550.4	5,536.4	5,536.4	21.4	19.8	-2.58	-2,852.8	-159.4	2,275.9	2,236.4	39.43	57.715		
5,700.0	5,648.9	5,634.9	5,634.9	21.9	20.2	-2.60	-2,852.8	-159.4	2,258.5	2,218.4	40.15	56.248		
5,800.0	5,747.3	5,733.3	5,733.3	22.3	20.6	-2.62	-2,852.8	-159.4	2,241.2	2,200.3	40.87	54.833		
5,900.0	5,845.8	5,831.8	5,831.8	22.8	20.9	-2.64	-2,852.8	-159.4	2,223.8	2,182.2	41.59	53.466		
6,000.0	5,944.3	5,930.3	5,930.3	23.2	21.3	-2.66	-2,852.8	-159.4	2,206.5	2,164.2	42.31	52.145		
6,100.0	6,042.8	6,028.8	6,028.8	23.6	21.6	-2.69	-2,852.8	-159.4	2,189.1	2,146.1	43.03	50.869		
6,200.0	6,141.3	6,127.3	6,127.3	24.1	22.0	-2.71	-2,852.8	-159.4	2,171.8	2,128.0	43.76	49.634		
6,300.0	6,239.7	6,225.7	6,225.7	24.5	22.3	-2.73	-2,852.8	-159.4	2,154.4	2,109.9	44.48	48.439		
6,400.0	6,338.2	6,324.2	6,324.2	25.0	22.7	-2.75	-2,852.8	-159.4	2,137.1	2,091.9	45.20	47.281		
6,500.0	6,436.7	6,422.7	6,422.7	25.4	23.0	-2.77	-2,852.8	-159.4	2,119.7	2,073.8	45.92	46.160		
6,600.0	6,535.2	6,521.2	6,521.2	25.9	23.4	-2.80	-2,852.8	-159.4	2,102.4	2,055.7	46.64	45.073		
6,700.0	6,633.7	6,619.7	6,619.7	26.3	23.7	-2.82	-2,852.8	-159.4	2,085.0	2,037.7	47.37	44.020		
6,800.0	6,732.1	6,718.1	6,718.1	26.8	24.1	-2.84	-2,852.8	-159.4	2,067.7	2,019.6	48.09	42.997		
6,900.0	6,830.6	6,816.6	6,816.6	27.2	24.4	-2.87	-2,852.8	-159.4	2,050.4	2,001.5	48.81	42.005		
6,925.7	6,855.9	6,841.9	6,841.9	27.3	24.5	-2.87	-2,852.8	-159.4	2,045.9	1,996.9	49.00	41.755		
7,000.0	6,929.3	6,915.3	6,915.3	27.6	24.8	-2.88	-2,852.8	-159.4	2,034.0	1,984.4	49.53	41.062		
7,100.0	7,028.4	7,014.4	7,014.4	28.1	25.1	-2.88	-2,852.8	-159.4	2,020.9	1,970.7	50.25	40.214		
7,200.0	7,127.9	7,113.9	7,113.9	28.4	25.5	-2.89	-2,852.8	-159.4	2,011.3	1,960.3	50.97	39.460		
7,300.0	7,227.7	7,213.7	7,213.7	28.8	25.9	-2.89	-2,852.8	-159.4	2,005.2	1,953.5	51.68	38.798		
7,400.0	7,327.7	7,313.7	7,313.7	29.1	26.2	-2.89	-2,852.8	-159.4	2,002.6	1,950.2	52.39	38.224		
7,425.7	7,353.4	7,339.4	7,339.4	29.2	26.3	-177.67	-2,852.8	-159.4	2,002.4	1,949.9	52.57	38.093		
7,500.0	7,427.7	7,413.7	7,413.7	29.4	26.6	-177.67	-2,852.8	-159.4	2,002.4	1,949.4	53.08	37.727		
7,600.0	7,527.7	7,513.7	7,513.7	29.7	26.9	-177.67	-2,852.8	-159.4	2,002.4	1,948.7	53.76	37.245		
7,700.0	7,627.7	7,613.7	7,613.7	30.0	27.3	-177.67	-2,852.8	-159.4	2,002.4	1,948.0	54.45	36.775		
7,800.0	7,727.7	7,713.7	7,713.7	30.3	27.7	-177.67	-2,852.8	-159.4	2,002.4	1,947.3	55.14	36.317		
7,900.0	7,827.7	7,813.7	7,813.7	30.6	28.0	-177.67	-2,852.8	-159.4	2,002.4	1,946.6	55.83	35.869		
8,000.0	7,927.7	7,913.7	7,913.7	30.9	28.4	-177.67	-2,852.8	-159.4	2,002.4	1,945.9	56.52	35.431		
8,100.0	8,027.7	8,013.7	8,013.7	31.2	28.7	-177.67	-2,852.8	-159.4	2,002.4	1,945.2	57.21	35.004		
8,200.0	8,127.7	8,113.7	8,113.7	31.5	29.1	-177.67	-2,852.8	-159.4	2,002.4	1,944.5	57.90	34.586		
8,218.8	8,146.5	8,132.5	8,132.5	31.6	29.2	-177.67	-2,852.8	-159.4	2,002.4	1,944.4	58.03	34.509 CC		
8,225.0	8,152.7	8,138.7	8,138.7	31.6	29.2	92.05	-2,852.8	-159.4	2,002.4	1,944.4	58.07	34.484		
8,250.0	8,177.7	8,163.7	8,163.7	31.7	29.3	92.07	-2,852.8	-159.4	2,002.5	1,944.2	58.24	34.382		
8,275.0	8,202.6	8,188.6	8,188.6	31.8	29.4	92.12	-2,852.8	-159.4	2,002.6	1,944.1	58.41	34.282		
8,300.0	8,227.3	8,213.3	8,213.3	31.8	29.4	92.21	-2,852.8	-159.4	2,002.7	1,944.1	58.58	34.185		
8,325.0	8,251.8	8,237.8	8,237.8	31.9	29.5	92.32	-2,852.8	-159.4	2,002.9	1,944.1	58.75	34.090		
8,350.0	8,276.1	8,262.1	8,262.1	32.0	29.6	92.46	-2,852.8	-159.4	2,003.2	1,944.2	58.92	33.999		
8,375.0	8,299.9	8,285.9	8,285.9	32.1	29.7	92.62	-2,852.8	-159.4	2,003.5	1,944.4	59.08	33.911		
8,400.0	8,323.4	8,309.4	8,309.4	32.1	29.8	92.80	-2,852.8	-159.4	2,003.9	1,944.7	59.24	33.825		
8,425.0	8,346.3	8,332.3	8,332.3	32.2	29.9	93.00	-2,852.8	-159.4	2,004.5	1,945.1	59.40	33.744		
8,450.0	8,368.8	8,354.8	8,354.8	32.3	29.9	93.20	-2,852.8	-159.4	2,005.1	1,945.6	59.56	33.665		
8,475.0	8,390.6	8,376.6	8,376.6	32.3	30.0	93.41	-2,852.8	-159.4	2,006.0	1,946.2	59.72	33.591		
8,500.0	8,411.7	8,397.7	8,397.7	32.4	30.1	93.61	-2,852.8	-159.4	2,006.9	1,947.0	59.87	33.520		
8,525.0	8,432.1	8,418.1	8,418.1	32.4	30.2	93.81	-2,852.8	-159.4	2,008.1	1,948.0	60.03	33.452		
8,550.0	8,451.8	8,437.8	8,437.8	32.5	30.2	94.00	-2,852.8	-159.4	2,009.4	1,949.2	60.18	33.388		
8,575.0	8,470.6	8,456.6	8,456.6	32.5	30.3	94.16	-2,852.8	-159.4	2,011.0	1,950.6	60.34	33.328		
8,600.0	8,488.5	8,474.5	8,474.5	32.6	30.4	94.30	-2,852.8	-159.4	2,012.8	1,952.3	60.50	33.271		
8,625.0	8,505.4	8,491.4	8,491.4	32.6	30.4	94.41	-2,852.8	-159.4	2,014.8	1,954.2	60.66	33.217		
8,650.0	8,521.4	8,507.4	8,507.4	32.7	30.5	94.48	-2,852.8	-159.4	2,017.1	1,956.3	60.82	33.167		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: SILVER BAR - SILVER BAR 35 FED ST COM 203H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+MS Offset													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
8,675.0	8,536.4	8,522.4	8,522.4	32.7	30.6	94.51	-2,852.8	-159.4	2,019.7	1,958.8	60.98	33.119		
8,700.0	8,550.3	8,536.3	8,536.3	32.8	30.6	94.48	-2,852.8	-159.4	2,022.7	1,961.5	61.16	33.074		
8,725.0	8,563.1	8,549.1	8,549.1	32.8	30.6	94.41	-2,852.8	-159.4	2,025.9	1,964.6	61.33	33.032		
8,750.0	8,574.7	8,560.7	8,560.7	32.8	30.7	94.27	-2,852.8	-159.4	2,029.5	1,967.9	61.51	32.993		
8,775.0	8,585.2	8,571.2	8,571.2	32.9	30.7	94.07	-2,852.8	-159.4	2,033.4	1,971.7	61.70	32.956		
8,800.0	8,594.4	8,580.4	8,580.4	32.9	30.8	93.80	-2,852.8	-159.4	2,037.6	1,975.7	61.89	32.922		
8,825.0	8,602.5	8,588.5	8,588.5	33.0	30.8	93.46	-2,852.8	-159.4	2,042.2	1,980.1	62.09	32.891		
8,850.0	8,609.3	8,595.3	8,595.3	33.0	30.8	93.04	-2,852.8	-159.4	2,047.1	1,984.8	62.29	32.862		
8,875.0	8,614.8	8,600.8	8,600.8	33.1	30.8	92.55	-2,852.8	-159.4	2,052.4	1,989.9	62.50	32.837		
8,900.0	8,619.0	8,605.0	8,605.0	33.2	30.8	91.97	-2,852.8	-159.4	2,058.0	1,995.3	62.72	32.814		
8,925.0	8,622.0	8,608.0	8,608.0	33.3	30.9	91.32	-2,852.8	-159.4	2,063.9	2,001.0	62.94	32.795		
8,950.0	8,623.6	8,609.6	8,609.6	33.3	30.9	90.60	-2,852.8	-159.4	2,070.2	2,007.0	63.16	32.779		
8,968.8	8,624.0	9,870.9	9,399.3	33.4	34.4	112.47	-2,763.6	515.1	2,069.1	2,007.8	61.40	33.702		
9,000.0	8,624.0	9,900.0	9,399.9	33.6	34.5	112.50	-2,761.7	544.1	2,067.4	2,005.8	61.64	33.541		
9,100.0	8,624.0	9,949.5	9,400.9	34.2	34.6	112.56	-2,759.3	593.5	2,062.9	2,000.4	62.52	32.997		
9,200.0	8,624.0	10,000.0	9,401.9	35.0	34.7	112.61	-2,757.6	644.0	2,060.4	1,996.8	63.58	32.407		
9,300.0	8,624.0	10,081.0	9,403.5	36.1	34.9	112.66	-2,756.9	725.0	2,059.8	1,995.0	64.84	31.765		
9,303.8	8,624.0	10,081.0	9,403.5	36.1	34.9	112.66	-2,756.9	725.0	2,059.8	1,994.9	64.90	31.740		
9,400.0	8,624.0	10,162.0	9,405.1	37.3	35.2	112.70	-2,757.2	806.0	2,060.4	1,994.2	66.27	31.092		
9,500.0	8,624.0	10,262.0	9,407.1	38.6	35.5	112.75	-2,757.7	905.9	2,061.2	1,993.3	67.85	30.378		
9,600.0	8,624.0	10,361.9	9,409.1	40.0	35.9	112.81	-2,758.2	1,005.9	2,061.9	1,992.4	69.56	29.643		
9,700.0	8,624.0	10,461.9	9,411.2	41.5	36.3	112.86	-2,758.6	1,105.9	2,062.7	1,991.3	71.38	28.896		
9,800.0	8,624.0	10,561.9	9,413.2	43.1	36.7	112.91	-2,759.1	1,205.8	2,063.4	1,990.1	73.31	28.146		
9,900.0	8,624.0	10,661.9	9,415.2	44.8	37.2	112.96	-2,759.5	1,305.8	2,064.2	1,988.8	75.33	27.400		
10,000.0	8,624.0	10,761.9	9,417.2	46.6	37.7	113.01	-2,760.0	1,405.7	2,064.9	1,987.5	77.44	26.664		
10,100.0	8,624.0	10,861.8	9,419.2	48.4	38.2	113.06	-2,760.5	1,505.7	2,065.7	1,986.0	79.63	25.942		
10,200.0	8,624.0	10,961.8	9,421.2	50.3	38.7	113.12	-2,760.9	1,605.7	2,066.4	1,984.5	81.88	25.236		
10,300.0	8,624.0	11,061.8	9,423.2	52.2	39.3	113.17	-2,761.4	1,705.6	2,067.2	1,983.0	84.20	24.550		
10,400.0	8,624.0	11,161.8	9,425.2	54.1	39.8	113.22	-2,761.9	1,805.6	2,067.9	1,981.3	86.58	23.884		
10,500.0	8,624.0	11,261.8	9,427.2	56.1	40.5	113.27	-2,762.3	1,905.5	2,068.7	1,979.7	89.01	23.240		
10,600.0	8,624.0	11,361.7	9,429.2	58.1	41.1	113.32	-2,762.8	2,005.5	2,069.4	1,977.9	91.49	22.618		
10,700.0	8,624.0	11,461.7	9,431.2	60.2	41.7	113.37	-2,763.2	2,105.4	2,070.2	1,976.2	94.02	22.019		
10,800.0	8,624.0	11,561.7	9,433.2	62.3	42.4	113.42	-2,763.7	2,205.4	2,071.0	1,974.4	96.58	21.442		
10,900.0	8,624.0	11,661.7	9,435.2	64.4	43.1	113.48	-2,764.2	2,305.4	2,071.7	1,972.5	99.19	20.887		
11,000.0	8,624.0	11,761.7	9,437.2	66.5	43.8	113.53	-2,764.6	2,405.3	2,072.5	1,970.7	101.82	20.354		
11,100.0	8,624.0	11,861.6	9,439.3	68.6	44.5	113.58	-2,765.1	2,505.3	2,073.2	1,968.8	104.49	19.841		
11,200.0	8,624.0	11,961.6	9,441.3	70.8	45.2	113.63	-2,765.6	2,605.2	2,074.0	1,966.8	107.19	19.348		
11,300.0	8,624.0	12,061.6	9,443.3	73.0	46.0	113.68	-2,766.0	2,705.2	2,074.8	1,964.9	109.92	18.876		
11,400.0	8,624.0	12,161.6	9,445.3	75.2	46.7	113.73	-2,766.5	2,805.2	2,075.6	1,962.9	112.67	18.421		
11,500.0	8,624.0	12,261.6	9,447.3	77.4	47.5	113.78	-2,766.9	2,905.1	2,076.3	1,960.9	115.45	17.985		
11,600.0	8,624.0	12,361.5	9,449.3	79.6	48.3	113.83	-2,767.4	3,005.1	2,077.1	1,958.9	118.24	17.567		
11,700.0	8,624.0	12,461.5	9,451.3	81.8	49.1	113.89	-2,767.9	3,105.0	2,077.9	1,956.8	121.06	17.164		
11,800.0	8,624.0	12,561.5	9,453.3	84.1	49.9	113.94	-2,768.3	3,205.0	2,078.7	1,954.8	123.89	16.778		
11,900.0	8,624.0	12,661.5	9,455.3	86.3	50.7	113.99	-2,768.8	3,304.9	2,079.4	1,952.7	126.75	16.406		
12,000.0	8,624.0	12,761.5	9,457.3	88.6	51.5	114.04	-2,769.3	3,404.9	2,080.2	1,950.6	129.62	16.049		
12,100.0	8,624.0	12,861.4	9,459.3	90.8	52.4	114.09	-2,769.7	3,504.9	2,081.0	1,948.5	132.50	15.706		
12,200.0	8,624.0	12,961.4	9,461.3	93.1	53.2	114.14	-2,770.2	3,604.8	2,081.8	1,946.4	135.40	15.375		
12,300.0	8,624.0	13,061.4	9,463.3	95.4	54.1	114.19	-2,770.6	3,704.8	2,082.6	1,944.3	138.31	15.057		
12,400.0	8,624.0	13,161.4	9,465.3	97.7	55.0	114.24	-2,771.1	3,804.7	2,083.4	1,942.1	141.23	14.751		
12,500.0	8,624.0	13,261.4	9,467.4	100.0	55.9	114.29	-2,771.6	3,904.7	2,084.2	1,940.0	144.17	14.456		
12,600.0	8,624.0	13,361.3	9,469.4	102.3	56.7	114.34	-2,772.0	4,004.7	2,084.9	1,937.8	147.11	14.172		
12,700.0	8,624.0	13,461.3	9,471.4	104.6	57.6	114.39	-2,772.5	4,104.6	2,085.7	1,935.7	150.07	13.899		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: SILVER BAR - SILVER BAR 35 FED ST COM 203H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+MS Offset													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
12,800.0	8,624.0	13,561.3	9,473.4	106.9	58.5	114.44	-2,773.0	4,204.6	2,086.5	1,933.5	153.03	13.634		
12,900.0	8,624.0	13,661.3	9,475.4	109.2	59.4	114.49	-2,773.4	4,304.5	2,087.3	1,931.3	156.01	13.380		
13,000.0	8,624.0	13,761.3	9,477.4	111.5	60.4	114.55	-2,773.9	4,404.5	2,088.1	1,929.1	158.99	13.134		
13,100.0	8,624.0	13,861.2	9,479.4	113.9	61.3	114.60	-2,774.3	4,504.5	2,088.9	1,926.9	161.98	12.896		
13,200.0	8,624.0	13,961.2	9,481.4	116.2	62.2	114.65	-2,774.8	4,604.4	2,089.7	1,924.8	164.98	12.667		
13,300.0	8,624.0	14,061.2	9,483.4	118.5	63.1	114.70	-2,775.3	4,704.4	2,090.5	1,922.6	167.98	12.445		
13,400.0	8,624.0	14,161.2	9,485.4	120.9	64.1	114.75	-2,775.7	4,804.3	2,091.3	1,920.3	170.99	12.231		
13,500.0	8,624.0	14,261.2	9,487.4	123.2	65.0	114.80	-2,776.2	4,904.3	2,092.1	1,918.1	174.01	12.023		
13,600.0	8,624.0	14,361.1	9,489.4	125.5	66.0	114.85	-2,776.7	5,004.2	2,092.9	1,915.9	177.03	11.823		
13,700.0	8,624.0	14,461.1	9,491.4	127.9	66.9	114.90	-2,777.1	5,104.2	2,093.8	1,913.7	180.05	11.629		
13,800.0	8,624.0	14,561.1	9,493.4	130.2	67.9	114.95	-2,777.6	5,204.2	2,094.6	1,911.5	183.08	11.441		
13,900.0	8,624.0	14,661.1	9,495.5	132.6	68.9	115.00	-2,778.1	5,304.1	2,095.4	1,909.3	186.12	11.258		
14,000.0	8,624.0	14,761.1	9,497.5	134.9	69.8	115.05	-2,778.5	5,404.1	2,096.2	1,907.0	189.16	11.082		
14,100.0	8,624.0	14,861.0	9,499.5	137.3	70.8	115.10	-2,779.0	5,504.0	2,097.0	1,904.8	192.20	10.910		
14,200.0	8,624.0	14,961.0	9,501.5	139.7	71.8	115.15	-2,779.4	5,604.0	2,097.8	1,902.6	195.25	10.744		
14,300.0	8,624.0	15,061.0	9,503.5	142.0	72.7	115.20	-2,779.9	5,704.0	2,098.6	1,900.3	198.30	10.583		
14,400.0	8,624.0	15,161.0	9,505.5	144.4	73.7	115.25	-2,780.4	5,803.9	2,099.5	1,898.1	201.35	10.427		
14,500.0	8,624.0	15,261.0	9,507.5	146.7	74.7	115.30	-2,780.8	5,903.9	2,100.3	1,895.9	204.41	10.275		
14,600.0	8,624.0	15,360.9	9,509.5	149.1	75.7	115.35	-2,781.3	6,003.8	2,101.1	1,893.6	207.47	10.127		
14,700.0	8,624.0	15,460.9	9,511.5	151.5	76.7	115.40	-2,781.8	6,103.8	2,101.9	1,891.4	210.53	9.984		
14,800.0	8,624.0	15,560.9	9,513.5	153.8	77.7	115.45	-2,782.2	6,203.7	2,102.8	1,889.2	213.59	9.845		
14,900.0	8,624.0	15,660.9	9,515.5	156.2	78.7	115.50	-2,782.7	6,303.7	2,103.6	1,886.9	216.66	9.709		
15,000.0	8,624.0	15,760.9	9,517.5	158.6	79.7	115.55	-2,783.1	6,403.7	2,104.4	1,884.7	219.73	9.577		
15,100.0	8,624.0	15,860.8	9,519.5	161.0	80.7	115.60	-2,783.6	6,503.6	2,105.3	1,882.5	222.80	9.449		
15,200.0	8,624.0	15,960.8	9,521.5	163.3	81.7	115.65	-2,784.1	6,603.6	2,106.1	1,880.2	225.87	9.324		
15,300.0	8,624.0	16,060.8	9,523.6	165.7	82.7	115.70	-2,784.5	6,703.5	2,106.9	1,878.0	228.94	9.203		
15,400.0	8,624.0	16,160.8	9,525.6	168.1	83.7	115.75	-2,785.0	6,803.5	2,107.8	1,875.7	232.02	9.085		
15,500.0	8,624.0	16,260.8	9,527.6	170.5	84.7	115.80	-2,785.5	6,903.5	2,108.6	1,873.5	235.09	8.969		
15,600.0	8,624.0	16,360.7	9,529.6	172.9	85.8	115.85	-2,785.9	7,003.4	2,109.4	1,871.3	238.17	8.857		
15,700.0	8,624.0	16,460.7	9,531.6	175.2	86.8	115.90	-2,786.4	7,103.4	2,110.3	1,869.0	241.25	8.747		
15,800.0	8,624.0	16,560.7	9,533.6	177.6	87.8	115.95	-2,786.8	7,203.3	2,111.1	1,866.8	244.32	8.641		
15,900.0	8,624.0	16,660.7	9,535.6	180.0	88.8	115.99	-2,787.3	7,303.3	2,112.0	1,864.6	247.40	8.537		
16,000.0	8,624.0	16,760.7	9,537.6	182.4	89.9	116.04	-2,787.8	7,403.3	2,112.8	1,862.3	250.48	8.435		
16,100.0	8,624.0	16,860.6	9,539.6	184.8	90.9	116.09	-2,788.2	7,503.2	2,113.7	1,860.1	253.56	8.336		
16,200.0	8,624.0	16,960.6	9,541.6	187.2	91.9	116.14	-2,788.7	7,603.2	2,114.5	1,857.9	256.64	8.239		
16,300.0	8,624.0	17,060.6	9,543.6	189.6	92.9	116.19	-2,789.2	7,703.1	2,115.4	1,855.6	259.73	8.145		
16,400.0	8,624.0	17,160.6	9,545.6	191.9	94.0	116.24	-2,789.6	7,803.1	2,116.2	1,853.4	262.81	8.052		
16,500.0	8,624.0	17,260.6	9,547.6	194.3	95.0	116.29	-2,790.1	7,903.0	2,117.1	1,851.2	265.89	7.962		
16,600.0	8,624.0	17,360.5	9,549.6	196.7	96.0	116.34	-2,790.5	8,003.0	2,117.9	1,848.9	268.97	7.874		
16,700.0	8,624.0	17,460.5	9,551.7	199.1	97.1	116.39	-2,791.0	8,103.0	2,118.8	1,846.7	272.05	7.788		
16,800.0	8,624.0	17,560.5	9,553.7	201.5	98.1	116.44	-2,791.5	8,202.9	2,119.6	1,844.5	275.13	7.704		
16,900.0	8,624.0	17,660.5	9,555.7	203.9	99.2	116.49	-2,791.9	8,302.9	2,120.5	1,842.3	278.22	7.622		
17,000.0	8,624.0	17,760.5	9,557.7	206.3	100.2	116.54	-2,792.4	8,402.8	2,121.3	1,840.1	281.30	7.541		
17,100.0	8,624.0	17,860.4	9,559.7	208.7	101.2	116.58	-2,792.9	8,502.8	2,122.2	1,837.8	284.38	7.463		
17,200.0	8,624.0	17,960.4	9,561.7	211.1	102.3	116.63	-2,793.3	8,602.8	2,123.1	1,835.6	287.46	7.386		
17,300.0	8,624.0	18,060.4	9,563.7	213.5	103.3	116.68	-2,793.8	8,702.7	2,123.9	1,833.4	290.54	7.310		
17,400.0	8,624.0	18,160.4	9,565.7	215.9	104.4	116.73	-2,794.2	8,802.7	2,124.8	1,831.2	293.62	7.237		
17,500.0	8,624.0	18,260.4	9,567.7	218.3	105.4	116.78	-2,794.7	8,902.6	2,125.7	1,829.0	296.70	7.164		
17,600.0	8,624.0	18,360.3	9,569.7	220.7	106.5	116.83	-2,795.2	9,002.6	2,126.5	1,826.8	299.78	7.094		
17,700.0	8,624.0	18,460.3	9,571.7	223.1	107.5	116.88	-2,795.6	9,102.5	2,127.4	1,824.6	302.86	7.024		
17,800.0	8,624.0	18,560.3	9,573.7	225.5	108.6	116.93	-2,796.1	9,202.5	2,128.3	1,822.4	305.94	6.957		
17,900.0	8,624.0	18,660.3	9,575.7	227.9	109.6	116.97	-2,796.6	9,302.5	2,129.2	1,820.2	309.02	6.890		

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

Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: SILVER BAR - SILVER BAR 35 FED ST COM 203H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,000.0	8,624.0	18,760.3	9,577.7	230.3	110.7	117.02	-2,797.0	9,402.4	2,130.0	1,818.0	312.09	6.825		
18,100.0	8,624.0	18,860.2	9,579.7	232.6	111.7	117.07	-2,797.5	9,502.4	2,130.9	1,815.8	315.17	6.761		
18,200.0	8,624.0	18,960.2	9,581.8	235.0	112.8	117.12	-2,798.0	9,602.3	2,131.8	1,813.6	318.24	6.699		
18,300.0	8,624.0	19,060.2	9,583.8	237.4	113.9	117.17	-2,798.4	9,702.3	2,132.7	1,811.4	321.32	6.637		
18,400.0	8,624.0	19,160.2	9,585.8	239.8	114.9	117.22	-2,798.9	9,802.3	2,133.6	1,809.2	324.39	6.577		
18,500.0	8,624.0	19,260.2	9,587.8	242.3	116.0	117.27	-2,799.3	9,902.2	2,134.5	1,807.0	327.46	6.518		
18,600.0	8,624.0	19,360.1	9,589.8	244.7	117.0	117.31	-2,799.8	10,002.2	2,135.3	1,804.8	330.54	6.460		
18,700.0	8,624.0	19,460.1	9,591.8	247.1	118.1	117.36	-2,800.3	10,102.1	2,136.2	1,802.6	333.61	6.403		
18,800.0	8,624.0	19,560.1	9,593.8	249.5	119.2	117.41	-2,800.7	10,202.1	2,137.1	1,800.4	336.68	6.348		
18,900.0	8,624.0	19,660.1	9,595.8	251.9	120.2	117.46	-2,801.2	10,302.1	2,138.0	1,798.3	339.75	6.293		
19,000.0	8,624.0	19,760.1	9,597.8	254.3	121.3	117.51	-2,801.7	10,402.0	2,138.9	1,796.1	342.81	6.239		
19,100.0	8,624.0	19,860.0	9,599.8	256.7	122.3	117.55	-2,802.1	10,502.0	2,139.8	1,793.9	345.88	6.186		
19,200.0	8,624.0	19,960.0	9,601.8	259.1	123.4	117.60	-2,802.6	10,601.9	2,140.7	1,791.7	348.95	6.135		
19,235.6	8,624.0	19,995.6	9,602.5	259.9	123.8	117.62	-2,802.7	10,637.5	2,141.0	1,791.0	350.04	6.117 ES, SF		

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

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COMPASS 5000.15 Build 91E

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Coordinates are relative to: IRONHORSE 35 FED 172H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.15°



Colgate Operating Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well IRONHORSE 35 FED 172H
Project:	(SP) EDDY	TVD Reference:	KB=30 @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	MD Reference:	KB=30 @ 3344.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	IRONHORSE 35 FED 172H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=30 @ 3344.0usft

Offset Depths are relative to Offset Datum

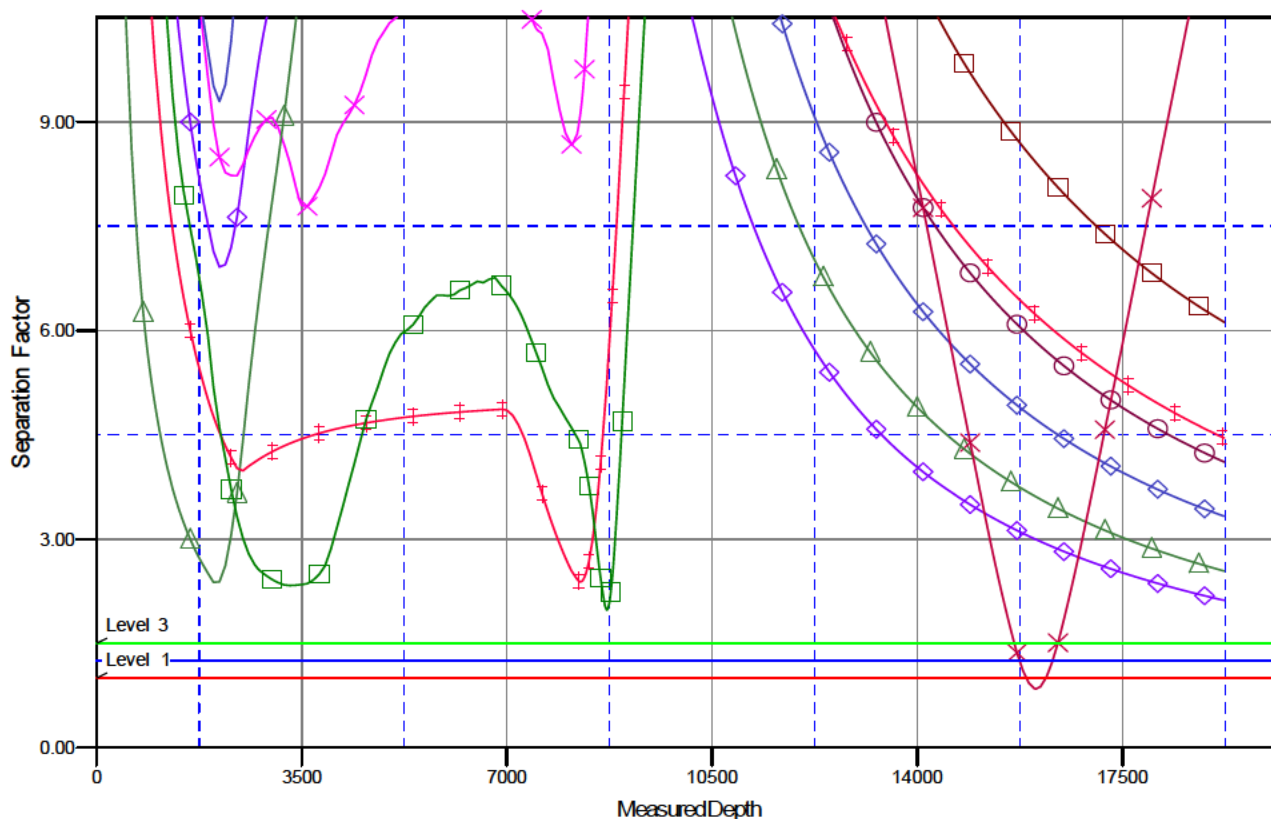
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: IRONHORSE 35 FED 172H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.15°

Separation Factor Plot



LEGEND

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> ■ SILVER BAR 35 FED STOOM 203H, OWB, PWPO VD ■ IRONHORSE 35 FED 132H, OWB, PWPO VD ■ Black Diamond 34 FedCom 122H, AWR/FINAL MWD VD ■ IRONHORSE 35 FED 171H, OWB, PWPO VD | <ul style="list-style-type: none"> ■ Black Diamond 34 FedCom 131H, AWR/FINAL MWD VD ■ IRONHORSE 35 FED 201H, OWB, PWPO VD ■ Black Diamond 34 FedCom 132H, AWR/FINAL MWD VD ■ IRONHORSE 35 FED 131H, OWB, PWPO VD | <ul style="list-style-type: none"> ■ IRONHORSE 35 FED 203H, OWB, PWPO VD ■ Parkway ST 35 #1, AWR/FINAL ONLY VD |
|---|---|---|

PERMIAN

R E S O U R C E S

H₂S CONTINGENCY PLAN

FOR

Colgate Operating LLC

**Ironhorse 35 Fed Com 131H, 132H, 171H, 172H, 200H,
201H**

Eddy County, New Mexico

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Colgate Operating LLC	H ₂ S Contingency Plan Ironhorse 35 Fed Com	Eddy County, New Mexico
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Section 5.0 - Emergency Contact List

EMERGENCY CONTACT LIST				
Colgate Operating LLC.				
POSITION	NAME	OFFICE	CELL	ALT PHONE
Operations				
Operations Superintendent	Rick Lawson		432.530.3188	
TX Operations Superintendent	Josh Graham	432.940.3191	432.940.3191	
NM Operations Superintendent	Manual Mata	432.664.0278	575.408.0216	
Drilling Manager	Jason Fitzgerald	432.315.0146	318.347.3916	
Drilling Engineer	Ronny Hise	432.315.0144	432.770.4786	
Production Manager	Levi Harris	432.219.8568	720.261.4633	
SVP Development Ops	Clayton Smith	720.499.1416	361.215.2494	
SVP Production Ops	Casey McCain	432.695.4239	432.664.6140	
HSE & Regulatory				
H&S Manager	Adam Hicks	720.499.2377	903.426.4556	
Regulatory Manager	Stephanie Rabadue	432.695.4222	432.260.4388	
Environmental Manager	Montgomery Floyd	432-315-0123	432-425-8321	
HSE Consultant	Blake Wisdom		918-323-2343	
Local, State, & Federal Agencies				
Eddy County Sheriff		575-887-7551		911
New Mexico State Highway Patrol		505-757-2297		911
Carlsbad Fire / EMS		575-885-3125		911
Carlsbad Memorial Hospital		575-887-4100		
Secorp – Safety Contractor	Ricky Stephens		(325)-262-0707	
New Mexico Oil Conservation Division – District 1 Office – Hobbs, NM.		575-393-6161		
New Mexico Environment Department – District III Office – Hobbs, NM		575-397-6910		
New Mexico Oil Conservation Division – Hobbs, NM	24 Hour Emergency	575-393-6161		
Bureau of Land Management – Carlsbad, NM		575-234-5972		
U.S. Fish & Wildlife		502-248-6911		

II. H₂S CONTINGENCY PLAN SECTION

Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H₂S).

Objective:

Prevent any and all accidents and prevent the uncontrolled release of H₂S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Purpose, Distribution and Updating of Contingency Plan:

The Purpose of this contingency plan is to protect the general public from the harmful effects of H₂S accidentally escaping from the subject producing well. This plan is designed to accomplish its purpose by assuring the preparedness necessary to:

1. Minimize the possibility of releasing H₂S into the atmosphere during related operations.
2. Provide for the logical, efficient, and safe emergency actions required to protect the general public in the event of an accidental release of a potentially hazardous quantity of H₂S.

Supplemental information is included with this plan and is intended as reference material for anyone needing a more detailed understanding of the many factors pertinent to H₂S drilling operations safety. The release of a potentially hazardous quantity of H₂S is highly unlikely. If such a release should occur however, obviously the exact time, rate, duration, and other pertinent facts will be known in advance thus, this contingency plan must necessarily be somewhat general. The plan does review in detail, as is reasonably possible, the type of accidental release that could possibly endanger the general public, the probable extent of such danger, and the emergency actions generally appropriate. In the event of such an accidental release, the specific actions to be taken will have to be determined at the time of release by the responsible personnel at the drilling location. Complete familiarity with this plan will help such personnel make the proper decisions rapidly. Familiarity with this plan is so required all operators, operator representatives, and drilling contractor supervisory personnel who could possibly be on duty at the drilling location at the time of an H₂S emergency.

IT IS THE RESPONSIBILITY OF THE OPERATOR TO ASSURE SUCH FAMILIARITY BEFORE DRILLING WITHIN 1000' OR THREE DAYS PRIOR TO PENETRATION OF THE SHALLOWEST FORMATION KNOWN OR SUSPECTED TO CONTAIN H₂S IN POTENTIALLY HAZARDOUS QUANTITIES, AND ALSO TO ASSURE THE TIMELY ACCOMPLISHMENT OF ALL THE OTHER ACTION SPECIFIED HERE IN.

As this contingency plan was prepared considerably in advance of the anticipated H₂S operation, the plan must be kept current if it is to effectively serve its purpose. The operators will be responsible for seeing that all copies are updated. Updating the plan is required when any changes to the personnel Call List (Section) including telephone numbers occur or when any pertinent data or plans for the well are altered. The plan must also be updated when any changes in the general public likely to be within the exposure area in the event of an

accidental release from the well bore of a potentially hazardous quantity of H₂S. Two copies of this plan shall be retained at the office of Colgate Energy. Two copies shall be retained at the drilling location.

Discussion of Plan:

Suspected Problem Zones:

Implementation: This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

Emergency Response Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

Emergency call list: Included are the telephone numbers of all persons that would need to be contacted, should an H₂S emergency occur.

Briefing: This section deals with the briefing of all persons involved with the drilling of this well.

Public Safety: Public Safety Personnel will be made aware of the drilling of this well.

Check Lists: Status check lists and procedural check lists have been included to ensure adherence to the plan.

General Information: A general information section has been included to supply support information.

III. OPERATING PROCEDURES

A. Blowout Preventer Drills

Due to the special piping and Mani folding necessary to handle poisonous gas, particular care will be taken to ensure that all rig personnel are completely familiar with their jobs during the drills. The Drilling Consultant and Tool Pusher (Rig Superintendent) are thoroughly familiar with the additional controls and piping necessary.

B. H₂S Alarm Drills

The Company Man and/ or designee will conduct frequent H₂S alarm drills for each crew by injecting a trace of H₂S where the detector will give an alarm. Under these conditions all personnel on location will put on air equipment and remain masked until all clear is announced.

C. Surface Annular Preventer/ Diverter System Testing

After installation of the surface annular preventer, Hydraulic Control Valve and diverter system, both are to be function tested. They also should be function tested frequently while drilling surface hole.

D. Blowout Preventer

After installation of the Blowout Preventer Stack, the stack will be pressure tested. The Choke manifold is also to be pressure tested at this time. This procedure will be repeated as required by the NMOCD, the BLM, or if any of the stack is nipped down. Also, at this time, the Blind and Pipe Rams are checked for correct operation.

E. Well Control Practice Drills and Safety Meeting for Crew Members

Pit drills are for the purpose of acquainting each member of the drilling crew with his duties in the event of an emergency. Drills will be held with each crew as frequently as required to thoroughly familiarize each man with his duties. Drills are to be held at least weekly from that time forward.

1. BOP Drill while on Bottom Drilling:

A. Signal will be three or more long blast given by driller on the horn.

B. Procedure will be as follows:

1. Tool Pusher: Supervises entire operation.

2. Driller

a. Gives signal.

b. Picks up Kelly.

c. Stops pumps.

d. Observes flow.

e. Signal to close (pipe rams if necessary).

f. Check that Choke Manifold is closed.

g. Record drill pipe pressure, casing pressure and determine mud volume gain.

3. Motorman

a. Go to closing unit and standby for signal to close BOP.

b. Close BOP in signal.

c. Check on BOP closing.

d. Go to floor to assist driller. (NOTE: During test drills the BOP

need not be completely closed at the discretion of the supervisor. Supervisor should make it very clear that it is a test drill only!)

4. Derrickman
 - a. Check pumps.
 - b. Go to floor for directions from the driller.
 5. Floorman
 - a. Go to manifold.
 - b. Observe and record pressure.
 - c. Check manifold and BOP for leaks.
 - d. Check with driller for additional instructions.
2. BOP Drill While Making Trip:
- A. During trip driller will fill hole every five (5) stands and check the pits to be sure hole is taking mud.
 - B. Drill Procedure is as follows:
 1. Driller
 - a. Order Safety valve installed.
 - b. Alert those not on the floor.
 - c. Go to stations as described in above drill.
3. Safety Meetings
- A. Every person involved in the operating will be informed of the characteristics of H₂S, its danger and safety procedures to be used when it is encountered, and recommended first-aid procedure for regular rig personnel. This will be done through a series of talks made before spud.
 - B. The Safety Advisor or Drilling Supervisor will conduct these training sessions and will repeat them as deemed necessary by him or as instructed by Colgate Energy. Talks may include the following subjects:
 1. Dangers of Hydrogen Sulfide (H₂S).
 2. Use and limitations of air equipment.
 3. Use of resuscitator.
 4. Organize Buddy System.
 5. First Aid procedures.
 6. Use of H₂S detection devices.
 7. Designate responsible people.
 8. Explain rig layout and policy to visitors.
 - a. Designate smoking and safety or Muster area.
 - b. Emphasize the importance of wind directions.
 9. Describe and explain operation of BOP stack, manifold, separator, and pit piping. Include maximum allowable pressure for casing procedure.
 10. Explain functions of Safety Supervisor.
 11. Explain organize H₂S Drills.
 12. Explain the overall emergency plan with emphasis given to the evacuation phase of the plans.

- Note: The above talks will be attended by every person involved in the operation. When drilling has reached a depth where H₂S is anticipated, temporary service personnel and visitors will be directed to the Drilling Consultant, who will designate the air equipment to be used by them in case of emergency, acquaint them with the dangers involved and be sure of their safety while they are in the area. He will point out the Briefing Areas, Windsocks, and Smoking Areas. He may refuse entrance to anyone, who in his opinion should not be admitted because of lack of safety equipment, special operations in progress or for other reasons involving personnel safety.

F. Outside Service Personnel

All service people such as cementing crews, logging crews, specialist, mechanics, and welders will furnish their own safety equipment. The Company Man/ or designee will be sure that the number of people on location does not exceed the number of masks on location, and they have been briefed regarding safety procedures. He will also be sure each of these people know about smoking and "Briefing Areas" and know what to do in case of an emergency alert or drill. Visitors will be restricted, except with special permission from the Drilling Consultant, when H₂S might be encountered. They will be briefed as to what to do in case of an alert or drill.

G. Onsite/ off shift workers

All workers that are staying on site must be identified as to where they are staying while off tour. If a drill/ or emergency takes place related to an H₂S release, each crew must have a designated person(s) that will wake them up and ensure that they are cleared to the appropriate muster area immediately.

H. Simultaneous Operations (SIMOPS)

If work is going on adjacent to the location is the responsibility of the Drilling Consultant or designee to communicate any applicable risks that may affect personnel working on that adjacent location. In the case of an H₂S drill or event, there should be a designated crew member that is responsible for contacting personnel on adjacent locations. This could include just communication on potential events or in case of an event, notification to evacuate location. Drilling Consultant or designee are the Point of Contact and oversee all activities at such point of an H₂S event occurrence.

I. Area Residences/ Occupied Locations/ Public Roads

Any occupied residences/ businesses that are within a reasonable perimeter of the location (attached map will identify a 3000' radius around location) should be identified as part of this contingency and a reasonable effort will be made to gain contact information for them. As part of the briefing of the contingency plan, the team reviewing should identify where these potential receptors are and plan on who will contact them in case of a release that may impact that area.

J. Drilling Fluids

Drilling Fluid Monitoring – On Any Hazardous H₂S gas well, the earlier the warning of danger the better chance to control operations. Mud Company will be in daily contact with Colgate Energy Consultant. The Mud Engineer will take samples of the mud, analyze these samples, and make necessary recommendations to prevent H₂S gas from the formation, the pH will be increased as necessary for corrosion control.

pH Control – For normal drilling, pH of 10.5 – 11.5. Would be enough for corrosion protection. If there is an influx of H₂S gas from the formation, the pH will be increased as necessary for corrosion control.

H₂S Scavengers – If necessary H₂S scavengers will be added to the drilling mud.

IV. OPERATING CONDITIONS

A. Posting Well Condition Flags

Post the green, yellow or red well condition flag, as appropriate, on the well condition sign at the location entrance, and take necessary precautions as indicated below:

1. **Green Flag:** Potential Danger- When Drilling in known H₂S zones or when H₂S has been detected in the drilling fluid atmosphere. Protective breathing equipment shall be inspected, and all personnel on duty shall be alerted to be ready to use this equipment.
2. **Yellow Flag:** Potential Danger- When the threshold limit value of H₂S (10 PPM) or of SO₂ (5 PPM) is reached. If the concentration of H₂S or SO₂ reaches 10 PPM, protective breathing equipment shall be worn by all working personnel, and non-working personnel shall go to the upwind Safe Briefing Area.
3. **Red Flag:** Extreme danger*- When the ambient concentration of H₂S or SO₂ is reasonably believed or determined to have exceeded the potentially hazardous level. All non-essential personnel shall leave the drilling location taking the route most likely to exposure to escaping gas.

B. Requiring Air Masks Conditions

1. Whenever air masks are used, the person must be clean shaven as shown in the APC Guidelines
2. When breaking out any line where H₂S can reasonably be expected.
3. When sampling air in areas to determine if toxic concentrations of H₂S exist.
4. When working in areas where 10 PPM or more of H₂S has been detected.
5. At any time, there is doubt as to the H₂S level in the area to be entered.

C. Kick Procedure

1. It is very important that the driller be continuously alert, especially when approaching a gas formation.
2. Should gas come into the well bore, it is very important to be aware of a kick at the earliest time.
3. If a kick is identified, follow appropriate diverter or shut in procedures according to the situation that is presented utilizing appropriate kick procedures.

V. EMERGENCY PROCEDURES

- I. In the event of any evidence of H₂S level above 10ppm, take the following steps immediately:
 - a. Secure breathing apparatus.
 - b. Order non-essential personnel out of the danger zone.
 - c. Take steps to determine if the H₂S level can be corrected or suppressed, and if so, proceed with normal operations.
- II. If uncontrollable conditions occur, proceed with the following:
 - a. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel.
 - b. Remove all personnel to the Safe Briefing Area.
 - c. Notify public safety personnel for help with maintaining roadblocks, thus limiting traffic and implementing evacuation.
 - d. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.
- III. Responsibility
 - a. The Company Approved Supervisor shall be responsible for the total implementation of the plan.
 - b. The Company Approved Supervisor shall be in complete command during any emergency.
 - c. The Company Approved Supervisor shall designate a backup Supervisor if he/she is not available.
- IV. Actions to be taken
 - a. Assign specific tasks to drilling location personnel
 - b. Evacuate the general public from the exposure area
 - c. Cordon off the exposure area to prevent entry by unauthorized persons
 - d. Request assistance if and as needed and initiate emergency notifications
 - e. Stop the dispersion of H₂S
 - f. Complete emergency notifications as required
 - g. Return the situation to normal

EMERGENCY PROCEDURE IMPLEMENTATION**I. Drilling or Tripping****a. All Personnel**

- i. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
- ii. Check status of other personnel (buddy system).
- iii. Secure breathing apparatus.
- iv. Wait for orders from supervisor.

b. Drilling Consultant

- i. Report to the upwind Safe Briefing Area.
- ii. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
- iii. Determine the concentration of H₂S.
- iv. Assess the situation and take appropriate control measures.

c. Tool Pusher

- i. Report to the upwind Safe Briefing Area.
- ii. Don Breathing Apparatus and return to the point of release with the Drilling Consultant or the Driller (buddy system).
- iii. Determine the concentration of H₂S.
- iv. Assess the situation and take appropriate control measures.

d. Driller

- i. Check the status of other personnel (in a rescue attempt, always use the buddy system).
- ii. Assign the least essential person to notify the Drilling Consultant and Tool Pusher, in the event of their absence.
- iii. Assume the responsibility of the Drilling Consultant and the Tool Pusher until they arrive, in the event of their absence.

e. Derrick Man and Floor Hands

- i. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

f. Mud Engineer

- i. Report to the upwind Safe Briefing Area.
- ii. When instructed, begin check of mud for pH level and H₂S level.

g. Safety Personnel

- i. Don Breathing Apparatus.
- ii. Check status of personnel.
- iii. Wait for instructions from Drilling Consultant or Tool Pusher.

II. Taking a Kick

- a.* All Personnel report to the upwind Safe Briefing Area.
- b.* Follow standard BOP/ diverter procedures.

III. Open Hole Logging

- a.* All unnecessary personnel should leave the rig floor.
- b.* Drilling Consultant and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging

- a.* Follow "Drilling or Tripping" procedures.
- b.* Assure that all personnel have access to protective equipment.

VI. POST EMERGENCY ACTIONS

In the event this plan is activated, the following post emergency actions shall be taken in an effort to reduce the possibility of a reoccurrence of the type of problem that required its activation, and/or assure that any future activation of a similar plan will be as effective as possible.

- A. Review the factors that caused or permitted the emergency occur, and if the need is indicated, modify operating, maintenance and/or surveillance procedures.
- B. If the need is indicated, retrain employees in blowout prevention, H₂S emergency procedures and etc.
- C. Clean up, recharge, restock, repair, and/ or replace H₂S emergency equipment as necessary, and return it to its proper place. (For whatever rental equipment is used, this will be the responsibility of Rental Company).
- D. See that future H₂S drilling contingency plans are modified accordingly, if the need is indicated.

VII. IGNITION PROCEDURES

Responsibilities:

The decision to ignite the well is the responsibility of the DRILLING CONSULTANT in concurrence with the STATE POLICE. In the event the Drilling Consultant is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Consultant is responsible for igniting the well.
2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
3. Ignite from upwind and do not approach any closer than is warranted.
4. Select the ignition site best suited for protection and which offers an easy escape route.
5. Before igniting, check for the presence of combustible gases.
6. After igniting, continue emergency actions and procedures as before.
7. All unassigned personnel will limit their actions to those directed by the Drilling Consultant.

Note: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Also, both are heavier than air. Do not assume the area is safe even after the well is ignited.

VIII. TRAINING PROGRAM

When working in an area where Hydrogen Sulfide (H₂S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and characteristics of Hydrogen Sulfide (H₂S).
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H₂S detection, Emergency alarm and sensor location.
5. Don and Doff of SCBA and be clean shaven.
6. Emergency rescue.
7. Resuscitators.
8. First aid and artificial resuscitation.
9. The effects of Hydrogen Sulfide on metals.
10. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H₂S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

IX. EMERGENCY EQUIPMENT

Lease Entrance Sign:

Should be located at the lease entrance with the following information:

CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following:
- Two SCBA's at each briefing area.
- Enough airline units to operate safely, anytime the H₂S concentration reaches the IDLH level (100 ppm).

- Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

Windssocks or Wind Streamers:

- A minimum of two 10" windssocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should always be placed at various locations on the well site to ensure wind consciousness. (Corners of location).

Hydrogen Sulfide Detector and Alarms:

- 1 - Four channel H₂S monitor with alarms.
- Three (3) sensors located as follows: #1 – Rig Floor, #2 – Shale Shaker, #3 – Cellar.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

Well Condition Sign and Flags:

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions
YELLOW – Potential Danger
RED – Danger, H₂S Gas Present

Auxiliary Rescue Equipment:

- Stretcher
- 2 – 100' Rescue lines.
- First Aid kit properly stocked.

Mud Inspection Equipment:

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventer:

- The well shall have hydraulic BOP equipment for the anticipated bottom hole pressure (BHP).
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

Confined Space Monitor:

There should be a portable multi-gas monitor with at least 3 sensors (O₂, LEL H₂S), preferably 4 (O₂, LEL, H₂S, CO). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

Communication Equipment:

- Proper communication equipment such as cell phones or 2-way radios should be available at the rig.
- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

Special Control Equipment:

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

Designated Areas:***Parking and Visitor area:***

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds, or they are at a 180-degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas and if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

Note:

- Additional equipment will be available at the H₂S Provider Safety office.
- Additional personal H₂S monitors are available for all employees on location.
- Automatic Flare Igniters are recommended for installation on the rig.

X. CHECKLISTS**Rig-up & Equipment Status Check List**

Note: Initial & Date each item as they are implemented. Multiple wells require additional Columns to be Dated/ Initialed

	Date & Initial 1 st Well	Date & Initial 2 nd Well	Date & Initial 3 rd Well	Date & Initial 4 th Well
Sign at location entrance.				
Two (2) windsocks (in required locations).				
Wind Streamers (if required).				
SCBA's on location (Minimum of 2 @ each Muster Area)				
Air packs (working packs and escape packs), inspected and ready for use.				
Spare bottles for each air pack (if required).				
Cascade system and hose line hook up.				
Choke manifold hooked-up and tested. (before drilling out surface casing.)				
Remote Hydraulic BOP control tested (before drilling out surface casing).				
BOP tested (before drilling out surface casing).				
Safe Briefing Areas set-up				
Well Condition sign and flags on location and ready.				
Hydrogen Sulfide detection/ alarm system hooked-up & tested.				
Stretcher on location				
2 – 100' Lifelines on location.				
1 – 20# Fire Extinguisher in safety trailer.				
Confined Space monitor on location and tested.				
All rig crews and supervisor trained (as required).				
All rig crews and supervision medically qualified and fit tested on proper respirators				
Access restricted for unauthorized personnel.				
Pre-spud meeting held reviewing Contingencies				
Drills on H ₂ S and well control procedures.				
All outside service contractors advised of potential H ₂ S on the well.				
25mm Flare Gun on location w/flares.				

Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to ensure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
4. Make sure all the Hydrogen Sulfide detection systems are operative.
5. Ensure that all BOP/ Surface Annular/ Diverter systems are functioning and operational.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened, and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
2. BOP skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready for use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability (may be with H₂S Techs On-call):
 - Stretcher
 - Safety Belts and Ropes
 - Spare air Bottles
 - Spare Oxygen Bottles (if resuscitator required)
 - Gas Detector Pump and Tubes
 - Emergency telephone lists
 - Test the Confined Space Monitor to verify the batteries are good.

XI. BRIEFING PROCEDURES

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

Pre-Spud Meeting

Date: Prior to spudding the well.

Attendance: Drilling Supervisor
 Drilling Engineer
 Drilling Consultant
 Rig Tool Pushers
 Rig Drillers
 Mud Engineer
 All Safety Personnel
 Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

XII. EVACUATION PLAN

General Plan

The direct lines of action prepared by Colgate to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Consultant, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the area map.
2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists, and evacuation needs to be implemented.
3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining roadblocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" personnel will determine when the area is safe for re-entry.
6. If a major release is secured, all exposed housing, vehicles, rig buildings, and low-lying areas and other structures downwind must be tested and clear with SCBAs donned to ensure that all residual H₂S is cleared. Fans, or opening of doors is recommended to ensure that areas are cleared out as part of this process.

XIII. APPENDICES AND GENERAL INFORMATION

Radius of Exposure Affected Notification List

(within a 65' radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are known to contain hazardous quantities of H₂S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description:

Residents:

Notification Process:

A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

Evacuation Plan:

All evacuees will migrate lateral to the wind direction.

The Operating Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

Toxic Effects of H₂S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity – 1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen Sulfide and other gases are compared below in Table 1. Toxicity table for H₂S and physical effects are shown in Table 2.

Table 1
Permissible Exposure Limits of Various Gases

<u>Common Name</u>	<u>Symbol</u>	<u>Sp. Gravity</u>	<u>TLV</u>	<u>STEL</u>	<u>IDLH</u>
Hydrogen Cyanide	HCN	.94	4.7 ppm	4.7 ppm	50 ppm
Hydrogen Sulfide	H ₂ S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO ₂	2.21	2 ppm	5 ppm	100 ppm
Chlorine	CL	2.45	.5 ppm	1 ppm	10 ppm
Carbon Monoxide	CO	.97	25 ppm	200 ppm	1200 ppm
Carbon Dioxide	CO ₂	1.52	5000 ppm	30,000 ppm	40,000 ppm
Methane	CH ₄	.55	5% LEL	15% UEL	

Definitions

- A. TLV – Threshold Limit Value is the concentration employees may be exposed based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists) and regulated by OSHA.
- B. STEL – Short Term Exposure Limit is the 15-minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H₂S is 20 PPM.
- C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H₂S is 100 PPM.
- D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed based on a TWA.

Toxicity Table of H₂S

<u>Percent %</u>	<u>PPM</u>	<u>Physical Effects</u>
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure.
.0015	15	STEL for 15 minutes of exposure.
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins in a few minutes .
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H₂S

The properties of all gases are usually described in the context of seven major categories:

- COLOR
- ODOR
- VAPOR DENSITY
- EXPLOSIVE LIMITS
- FLAMMABILITY
- SOLUBILITY (IN WATER)
- BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a complete picture of the properties of the gas.

COLOR – TRANSPARENT

Hydrogen Sulfide is colorless, so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. In fact, that makes this gas extremely dangerous to be around.

ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, like "rotten eggs". For this reason, it earned its common name "sour gas". However, H₂S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air, so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H₂S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.0% TO 44%

Mixed with the right proportion of air or oxygen, H₂S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO₂), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H₂S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H₂S may release the gas into the air.

BOILING POINT – (-77° Fahrenheit)

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

RESPIRATOR USE

The Occupational Safety and Health Administration (OSHA) regulate the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete an OSHA mandated medical evaluation questionnaire. The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gases.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone who may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

- A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H₂S.
- B. When breaking out any line where H₂S can reasonably be expected.
- C. When sampling air in areas where H₂S may be present.
- D. When working in areas where the concentration of H₂S exceeds the Threshold Limit Value for H₂S (10 ppm).
- E. At any time where there is a doubt as to the H₂S level in the area to be entered.

EMERGENCY RESCUE PROCEDURES

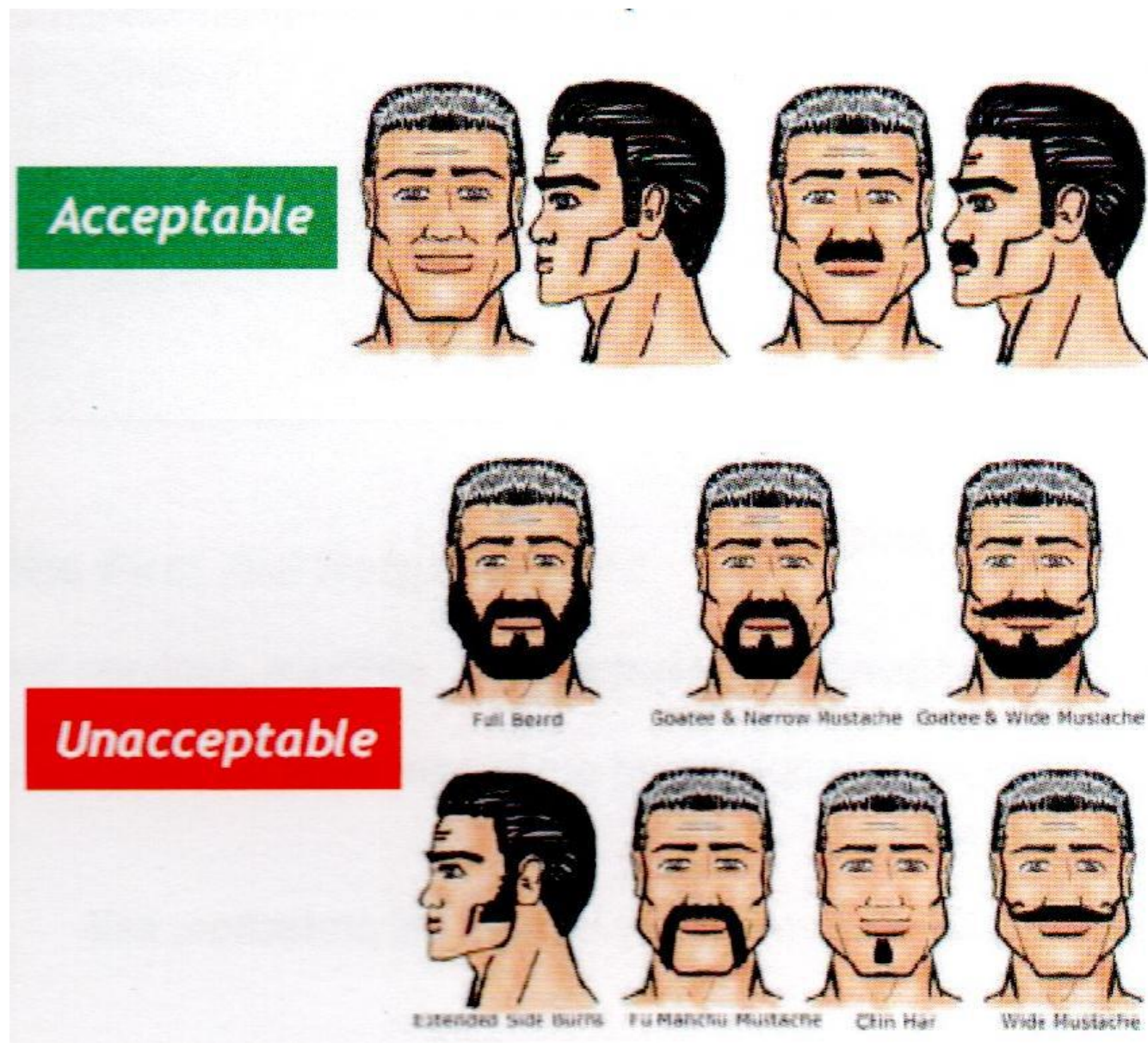
DO NOT PANIC!!!

Remain Calm – Think

1. Before attempting any rescue, you must first get out of the hazardous area yourself. Go to a safe briefing area.
2. Sound alarm and activate the 911 system.
3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.
4. Rescue the victim and return them to a safe briefing area.
5. Perform an initial assessment and begin proper First Aid/CPR procedures.
6. Keep victim lying down with a blanket or coat, etc., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
7. If the eyes are affected by H₂S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
9. Any personnel overcome by H₂S should always be examined by medical personnel. They should always be transported to a hospital or doctor.

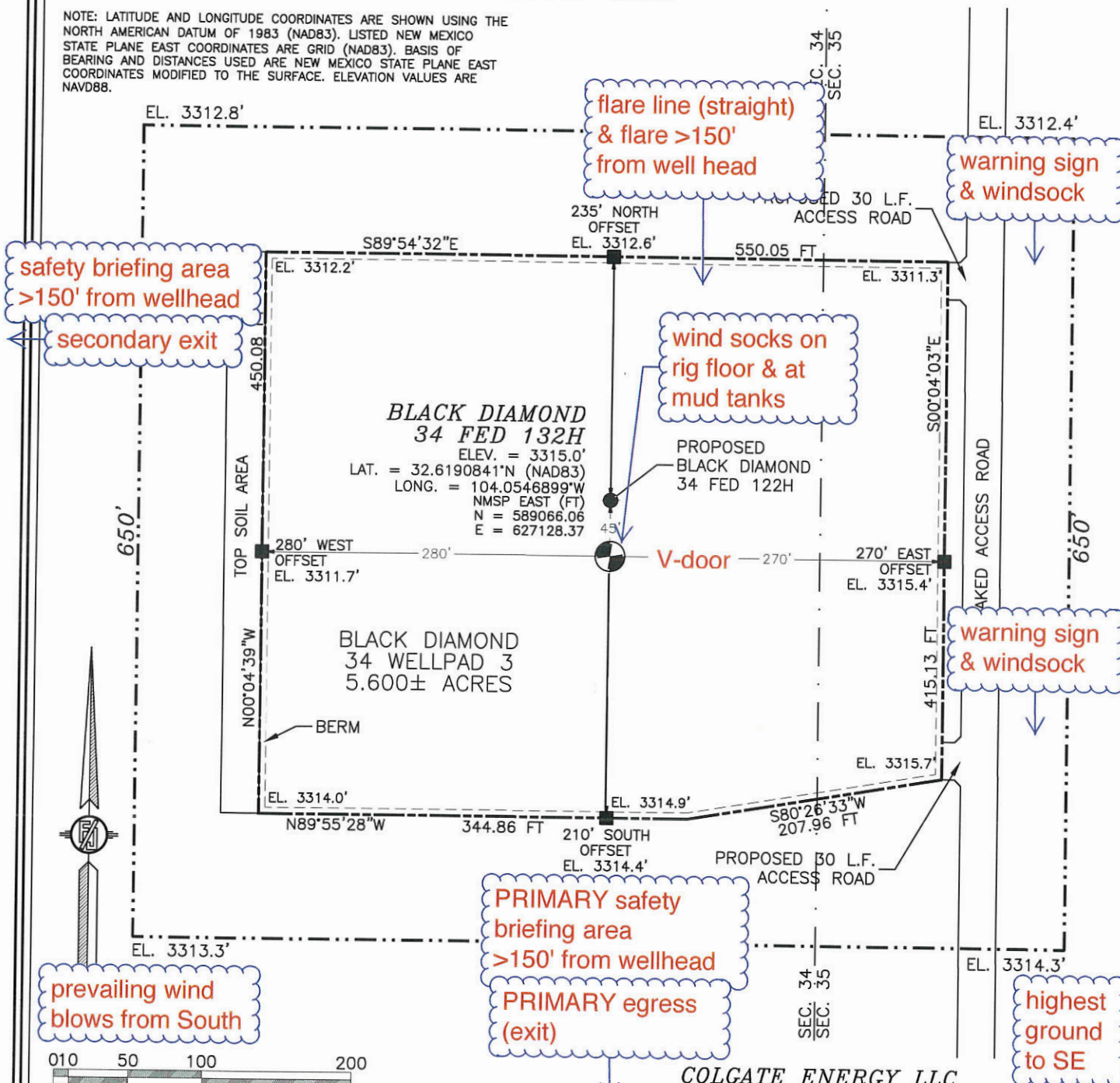
Facial Hair – Clean Shaven Examples

Purpose: To define clean shaven expectations in the field for: 1) Respirator Use, if applicable and 2) First Aid Administration, if situation occurs related to H₂S exposure, having no facial hair can greatly benefit response time and treatment ability.



SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. ELEVATION VALUES ARE NAVD88.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR. 235 (CURRY COMB) AND CR. 210 (OLD LOCO) GO EAST-SOUTHEAST ON CR. 235 3.4 MILES, TURN RIGHT AND GO SOUTH 0.59 MILES, BEND RIGHT AND GO WEST 0.1 MILE, TURN LEFT AND GO SOUTH 0.8 MILES, TURN RIGHT AND GO WEST 1.26 MILES TO ROAD SURVEY AND FOLLOW FLAG NORTH 1271' THEN WEST 30' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILMON E. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR, CERTIFY THAT THE DIRECTIONS AND BEARINGS ON THIS SURVEY, THAT I HAVE MADE, ARE TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT I HAVE COMPLIED WITH THE STANDARDS FOR PROFESSIONAL SURVEYING.

FILMON E. JARAMILLO, SURVEYOR

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

COLGATE ENERGY LLC

BLACK DIAMOND 34 FED 132H
LOCATED 1940 FT. FROM THE NORTH LINE
AND 170 FT. FROM THE EAST LINE OF
SECTION 34, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 8, 2020

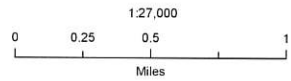
SURVEY NO. 7883A

Colgate Energy, LLC

Black Diamond 34 Fed Com
132H
H2S Contingency Plan:
Radius Map

Section 34, Township 19S, Range 29E
Eddy County, New Mexico

● Pad Center



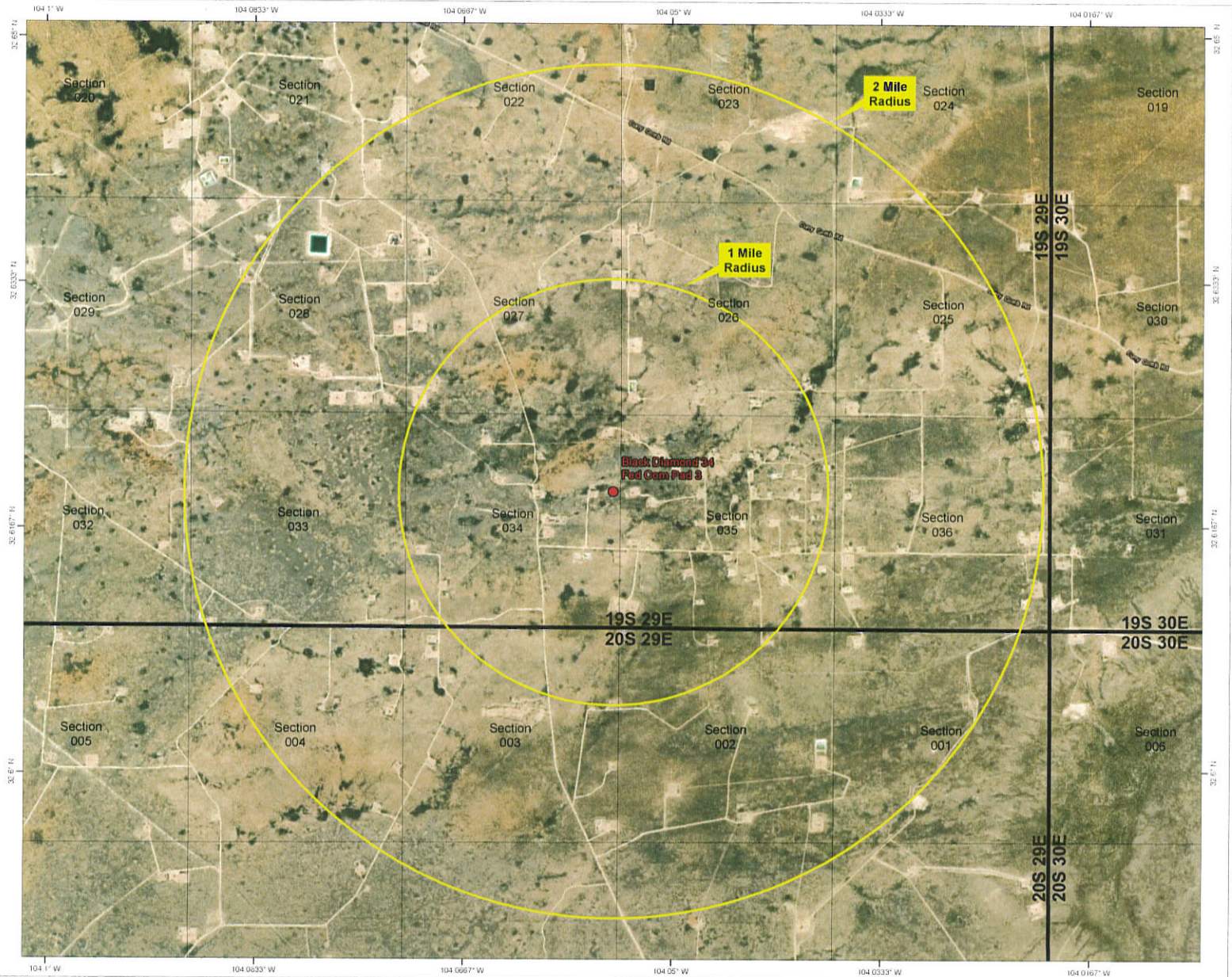
NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., March 10, 2020
for Colgate Energy, LLC

Area of
Detail

Carlsbad



Operator Name: COLGATE OPERATING LLC**Well Name:** IRONHORSE 35 FED COM**Well Number:** 172H**Section 7 - Methods for Handling****Waste type:** DRILLING**Waste content description:** Drill cuttings**Amount of waste:** 5000 pounds**Waste disposal frequency :** Weekly**Safe containment description:** Steel tanks**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** Hauled to state approved commercial facility.**Waste type:** SEWAGE**Waste content description:** Grey water/Human waste**Amount of waste:** 5000 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Plastic holding tanks and chemical toilets**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** A NMOCD approved facility. Carlsbad wastewater treatment plant.**Waste type:** GARBAGE**Waste content description:** Trash**Amount of waste:** 5000 pounds**Waste disposal frequency :** Weekly**Safe containment description:** Portable trash cage**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** Hauled to NMOCD approved location. Eddy County landfill.**Reserve Pit****Reserve Pit being used?** NO

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM

Well Number: 172H

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? Y

Description of cuttings location The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site. 10020 Cu Ft.

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?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Ironhorse_Federal_WSL1_20240729042454.pdf

Comments: There is one (1) multi-well pad required for the Ironhorse 35 Federal anticipated project with no additional surface disturbance. This well pad allows for enough space for cuts and fills, topsoil storage, and storm water control. Interim reclamation of the pad is anticipated after the drilling and completion of all wells on the pad. The well site layout for all pads is attached.: 1. Existing Black Diamond 34 Federal 1 Pad: 451x497 (5.19 Acres)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 388621

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID:
	371449
	Action Number:
	388621
Action Type:	
[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)	

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	10/29/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	10/29/2024
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	10/29/2024
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	10/29/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	10/29/2024
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	10/29/2024
ward.rikala	This well is within the Capitan Reef. The 1st intermediate shall be sat and cemented back to surface immediately on top of the Capitan Reef. The 2nd intermediate string shall be sat and cemented back to surface immediately below the base of the Capitan Reef.	10/29/2024
ward.rikala	May need NSL/NSP	10/29/2024
ward.rikala	Submit C-102 on new C-102 form.	10/29/2024