Form 3160-3 (June 2015) UNITED STATES		FORM AP OMB No. 1 Expires: Janua	004-0137		
DEPARTMENT OF THE INT		5. Lease Serial No.			
BUREAU OF LAND MANAG		NMNM125400	Taila Niana		
APPLICATION FOR PERMIT TO DRI	LL OR REENTER	6. If Indian, Allotee or Tribe Name			
1a. Type of work:	NTER	7. If Unit or CA Agreement, Name and No.			
1b. Type of Well:     ✓     Oil Well     Gas Well     Other					
1c. Type of Completion:     ☐ Hydraulic Fracturing	8. Lease Name and We EL CAMPEON FEDE				
2. Name of Operator PERMIAN RESOURCES OPERATING LLC		9. API Well No. 30-025-54603			
3a. Address     3b       300 N MARIENFELD ST SUITE 1000, MIDLAND, TX 7970 (4	o. Phone No. (include area code) (32) 695-4222	10. Field and Pool, or E WC-025 G-08 S2634			
4. Location of Well (Report location clearly and in accordance with At surface SWSE / 354 FSL / 1993 FEL / LAT 32.022493 At proposed prod. zone LOT 2 / 0 FSL / 1980 FEL / LAT 32	/ LONG -103.38734	11. Sec., T. R. M. or Bl SEC 20/T26S/R35E/N			
14. Distance in miles and direction from nearest town or post office*	*	12. County or Parish LEA	13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)       100 feet	6. No of acres in lease 17. Spacin 234.0	ng Unit dedicated to this	well		
to nearest well, drilling, completed,	,	BIA Bond No. in file IB001841			
	2. Approximate date work will start* 4/01/2024	t* 23. Estimated duration 30 days			
	24. Attachments				
The following, completed in accordance with the requirements of Or (as applicable)	nshore Oil and Gas Order No. 1, and the H	lydraulic Fracturing rule	per 43 CFR 3162.3-3		
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest System I SUPO must be filed with the appropriate Forest Service Office).</li> </ol>	<ul> <li>A. Bond to cover the operation Item 20 above).</li> <li>5. Operator certification.</li> <li>6. Such other site specific infor BLM.</li> </ul>	ŗ	C (		
25. Signature (Electronic Submission)	Name (Printed/Typed) JENNIFER ELROD / Ph: (432) 69		ate 3/19/2024		
Title Senior Regulatory Analyst					
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) CODY LAYTON / Ph: (575) 234-59		ate 4/01/2025		
Title Assistant Field Manager Lands & Minerals	Office Carlsbad Field Office				
Application approval does not warrant or certify that the applicant he applicant to conduct operations thereon. Conditions of approval, if any, are attached.	olds legal or equitable title to those rights	in the subject lease which	h would entitle the		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make of the United States any false, fictitious or fraudulent statements or r			department or agency		



(Continued on page 2)

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## INSTRUCTIONS

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

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

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

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

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

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

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

# NOTICES

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

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

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

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

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

The Paperwork Reduction Act of 1995 requires us to inform you that:

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

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

## **Additional Operator Remarks**

## Location of Well

0. SHL: SWSE / 354 FSL / 1993 FEL / TWSP: 26S / RANGE: 35E / SECTION: 20 / LAT: 32.022493 / LONG: -103.38734 ( TVD: 0 feet, MD: 0 feet ) PPP: NWNE / 100 FNL / 1980 FEL / TWSP: 26S / RANGE: 35E / SECTION: 29 / LAT: 32.021243 / LONG: -103.387297 ( TVD: 11200 feet, MD: 11472 feet ) BHL: LOT 2 / 0 FSL / 1980 FEL / TWSP: 26S / RANGE: 35E / SECTION: 32 / LAT: 32.00294 / LONG: -103.387277 ( TVD: 11200 feet, MD: 19149 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.

Received by OCD: 4/3/2025 10:36:00 AM

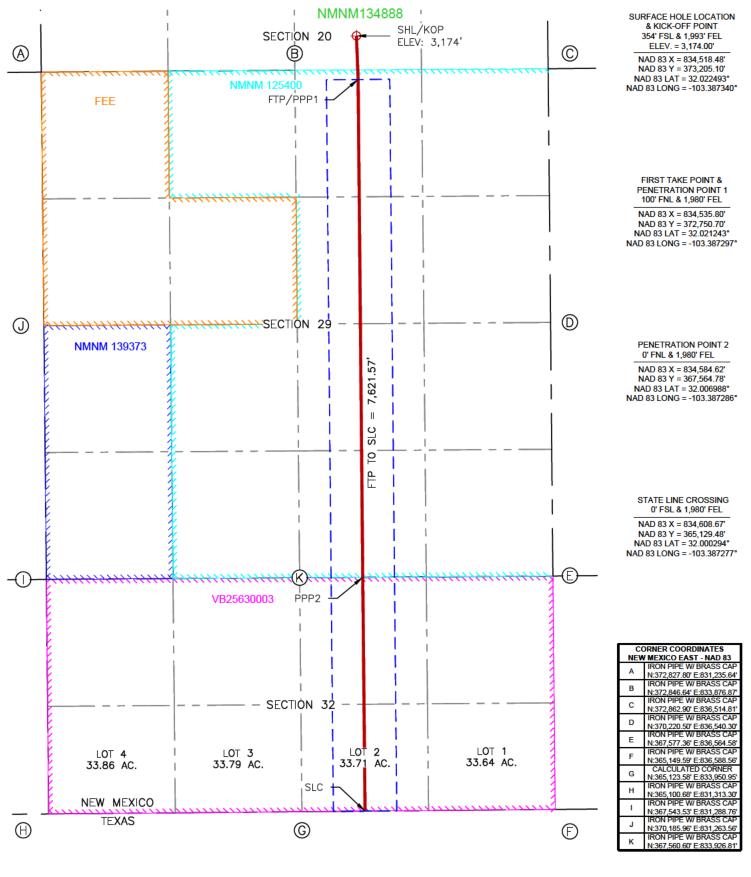
Submit Electronically OIL CONSERVATION DIV	Revised July 9, 20								
	SION								
	Submittal Type:								
	As Drilled								
WELL LOCATION INFORM									
	WC-025 G-08 S263412K; Bone Spring								
Property Code 337197 Property Name EL CAMPEON FED COI	Well Number 123H								
OGRID No. Operator Name	Ground Level Elevation								
372165     PERMIAN RESOURCES OPE       Surface Owner: □ State □ Fee □ Tribal ☑ Federal     I	RATING, LLC     3,174'       lineral Owner:								
	ineral Owner. 🖌 State 🗆 Fee 🗀 Indal 🖌 Federal								
Surface Location									
UL Section Township Range Lot Ft. from N/S Ft. from									
O 20 26 S 35 E 354' FSL 1,993	FEL 32.022493 -103.387340 LEA								
State Line Crossing									
UL Section Township Range Lot Ft. from N/S Ft. from									
-OT 2 32 26 S 35 E 0' FSL 1,980	FEL 32.000294 -103.387277 LEA								
Dedicated Acres Infill or Defining Well Defining Well API Overlapp	a Specing Unit (V/N) Consolidation Code								
233.71 Infill 30-025-48110	Overlapping Spacing Unit (Y/N) Consolidation Code								
	Y       Well setbacks are under Common Ownership:								
Kick Off Point (KOP									
UL Section Township Range Lot Ft. from N/S Ft. from	····   ······   ····   ···   ···   ···   ···   ···   ···   ····   ···								
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UL     Section     Township     Range     Lot     Ft. from N/S     Ft. from 1,980       B     29     26 S     35 E     100' FNL     1,980       Last Take Point (LT)	Image: Weight of the second system     Latitude     Longitude     County       FEL     32.021243     -103.387297     LEA								
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UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from 1,980         B       29       26 S       35 E       Lot       Ft. from N/S       100' FNL       1,980         Last Take Point (LT       Last Take Point (LT       Lot       Ft. from N/S       Ft. from         UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from         Unitized Area or Area of Uniform Interest       Spacing Unit Type X       Horizontal □ V         OPERATOR CERTIFICATIONS       SurVeyo       I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.       SURVEYO         If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be focated or obtained a compulsory pooling order from the tivision.       Signature an         Signature       Date       Signature an	W       Latitude       Longitude       County         FEL       32.021243       -103.387297       LEA         P)       Latitude       Longitude       County         EW       Latitude       Longitude       County         EW       Latitude       Longitude       County         ertical       Ground Floor Elevation:       3204         R CERTIFICATIONS       y that the well location shown on this plat was plotted from field notes of s made by me or under my supervision, and that the same is true and best of my belief.       P         Image: Apprendice of the state of th								
UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from 1,980         B       29       26 S       35 E       100' FNL       1,980         Last Take Point (LT       UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from         UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from         UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from         UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from         Unitized Area or Area of Uniform Interest       Spacing Unit Type X       Horizontal       V         OPERATOR CERTIFICATIONS       SURVEYO       I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.       SURVEYO         If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be ocaled o	W       Latitude       Longitude       County         FEL       32.021243       -103.387297       LEA         P)       Latitude       Longitude       County         ZW       Latitude       Longitude       County         ZW       Latitude       Longitude       County         P)       Email       Ground Floor Elevation:       3204         R CERTIFICATIONS       Sy that the well location shown on this plat was plotted from field notes of s made by me or under my supervision, and that the same is true and best of my belief.       MEHOONS         W       Latitude       Latitude       Latitude       Latitude         Seal of Professional Surveyor       Date: 8/1/2024       Base of Professional Surveyor								
UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from 1,980         B       29       26 S       35 E       Lot       Ft. from N/S       Ft. from 1,980         Last Take Point (LT       Lot       Section       Township       Range       Lot       Ft. from N/S       Ft. from 1,980         UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from N/S       Ft. from N/S         UL       Section       Township       Range       Lot       Ft. from N/S       Ft. from N/S       Ft. from N/S         Unitized Area or Area of Uniform Interest       Spacing Unit Type X Horizontal       V         OPERATOR CERTIFICATIONS       SURVEYO       I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.       SURVEYO         If this well is a horizontal well, I further certify that this organization has received the consent of at teast one lessee or owner of a working interest or unleased mineral interest or to a voluntary pooling agreement or	Image: Weak of the second state of the second sta								

Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division. Released to Imaging: 4/24/2025 9:58:35 AM

#### Received by OCD: 4/3/2025 10:36:00 AM ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



Eı	nergy, Minerals a	e of New Mez nd Natural Res				Subm	it Electronically
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	1220 \$	onservation Di South St. Fran ta Fe, NM 87	cis Dr.				
N	ATURAL G	AS MANA	GEMENT P	LAN			
ement Plan m	ust be submitted w	ith each Applicat	tion for Permit to I	Drill (A	PD) for a ne	ew or	recompleted well.
Resources	<u>operating, Ll</u>	<u>_C</u> ogrid:	372165		Date: (	<u>)7/2</u>	<u>23 / 202</u> 4
Amendment	due to $\Box$ 19.15.27.	9.D(6)(a) NMA	C 🗆 19.15.27.9.D(	6)(b) N	MAC 🗆 O	ther.	
				vells pr	roposed to b	oe dril	led or proposed to
API	ULSTR	Footages	Anticipated Oil BBL/D				Anticipated oduced Water BBL/D
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<b>ces:</b> ☐ Attac f 19.15.27.8∃	h a complete descr NMAC. I Attach a comple	ription of the ac	tions Operator wil	l take to	o comply w	vith th	ne requirements of
	Amendment following inf ngle well pad API VELL LIST int Name: _E : Provide the ed from a sing API WELL LIS ent: _X Attach ces: _ Attach f 19.15.27.8 ] Practices: K	Section         Ef         Resources Operating, LI         Amendment due to □ 19.15.27.         following information for each radius well pad or connected to a congle well pad or connected to a congle well pad or context of the following informated from a single well pad or context of the followi	Section 1 – Plan Deffective May 25,         Resources Operating, LLC oGRID:         Amendment due to □ 19.15.27.9.D(6)(a) NMA         following information for each new or recompleagle well pad or connected to a central delivery p         API       ULSTR         Footages         VELL LIST         int Name:       El Campeon CTB 20         :       Provide the following information for each new ed from a single well pad or connected to a central delivery p         API       Spud Date         TD Reached Date         WELL LIST         ent:       Attach a complete description of how Operation of the act of 19.15.27.8 NMAC.         Practices:       K Attach a complete description of the act of 19.15.27.8 NMAC.	Section 1 – Plan Description Effective May 25, 2021         Resources Operating, LLC OGRID:	Section 1 – Plan Description Effective May 25, 2021         Resources Operating, LLC OGRID:	Section 1 – Plan Description Effective May 25, 2021         Resources Operating, LLC OGRID:	Effective May 25, 2021         Resources Operating, LLC OGRID: 372165

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## 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.

 $\Box$  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
SEE ATTACHED WELL LIST	-		

## X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering	Available Maximum Daily Capacity
			Start Date	of System Segment Tie-in
Targa	Targa Northern	39-26S-35E	8/1/2025	15 mmcf/d
Resources	Delaware	00 200 002		

**XI. Map.**  $\searrow$  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  $\mathbf{x}$  will  $\Box$  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  $\square$  does  $\square$  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).

 $\square$  Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:**  $\searrow$  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.

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## Section 3 - Certifications Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

 $\Box$  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

 $\Box$  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.  $\Box$  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.  $\Box$  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.

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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:
Printed Name: Jennifer Elrod
Title: Sr. Regulatory Analyst
E-mail Address: jennifer.elrod@permianres.com
Date: 7/24/2024
Phone: 940-452-6214
OIL CONSERVATION DIVISION
OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)
(Only applicable when submitted as a standalone form)
(Only applicable when submitted as a standalone form) Approved By:
(Only applicable when submitted as a standalone form) Approved By: Title:
(Only applicable when submitted as a standalone form)   Approved By:   Title:   Approval Date:
(Only applicable when submitted as a standalone form)   Approved By:   Title:   Approval Date:
(Only applicable when submitted as a standalone form)   Approved By:   Title:   Approval Date:

#### Permian Resources Operating, LLC (372165)

#### **Natural Gas Management Plan Descriptions**

#### VI. Separation Equipment:

Permian 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 Permian'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, Permian routes gas though 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, Permian'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

Permian 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.

Permian'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

- 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

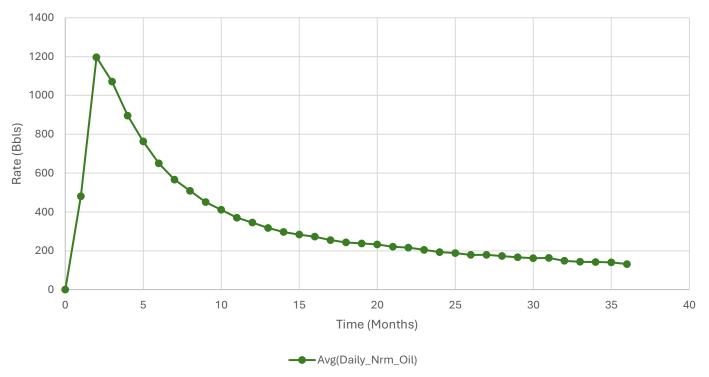
### Measurement or estimation

Permian 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:

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

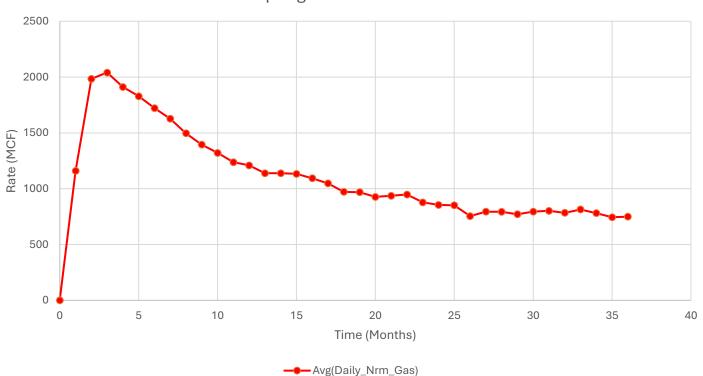
- Use a closed-loop process wherever possible during planned maintenance activities, such as blowdowns, liquid removal, and work over operations.
- Employ low-emitting or electric engines for equipment, such as compressors
- Adhere to a strict preventative maintenance program which includes routine facility 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



## Bone Spring Oil Decline Curve

- 1. Represented curve is generic based on 3-Years available information for the Bone Spring formation and may not be representative of forecasted production or actual volumes.
- 2. Decline curves are based on an average 10,000ft lateral length. Multiple factors may influence production and decline curves, including but not limited to: lateral length and completion type.

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Bone Spring Oil-Gas Decline Curve

- 1. Represented curve is generic based on 3-Years available information for the Bone Spring formation and may not be representative of forecasted production or actual volumes.
- 2. Decline curves are based on an average 10,000ft lateral length. Multiple factors may influence production and decline curves, including but not limited to: lateral length and completion type.

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## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
15330991	RUSTLER	2427	1040	1040	SANDSTONE	USEABLE WATER	N
15330992	TOP SALT	927	1500	1500	SALT	NONE	N
15330994	LAMAR	-2907	5334	5334	SANDSTONE	NONE	N
15330996	CHERRY CANYON	-2951	5378	5378	SANDSTONE	NATURAL GAS, OIL	N
15330998	BONE SPRING LIME	-6847	9274	9274	LIMESTONE, SHALE	NATURAL GAS, OIL	N
15330999	BONE SPRING 1ST	-7973	10400	10420	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
15331006	BONE SPRING 2ND	-8423	10850	10850	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

## **Section 2 - Blowout Prevention**

Pressure Rating (PSI): 5M

Rating Depth: 12200

**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 intermedicate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose) from the BOP to choke manifold.

#### Requesting Variance? YES

Variance request: 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:

Operator Name: PERMIAN RESOURCES OPERATING LLC

Well Name: EL CAMPEON FEDERAL COM

Well Number: 123H

## 5M\_Choke\_Manifold\_20240621114516.pdf

### **BOP** Diagram Attachment:

5M\_BOP\_20240621114521.pdf

## **Section 3 - Casing**

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1065	0	1065	3174	2109	1065	J-55	54.5	BUTT	2.15	1.68	DRY	5.75	DRY	5.4
2	INTERMED IATE	12.2 5	9.625	NEW	API	N	0	5284	0	5284	3533	-2110	5284	J-55	40	BUTT	2.6	1.54	DRY	2.29	DRY	2.02
3	PRODUCTI ON	8.75	5.5	NEW	non Api	N	0	21091	0	11200	3533	-8026	21091	oth Er		other - Geoconn	1.28	1.34	DRY	1.88	DRY	1.88

#### **Casing Attachments**

Casing ID: 1 String SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

## Casing Design Assumptions and Worksheet(s):

El\_Campeon\_Fed\_123H\_Csg\_Assumptions\_20240818193044.pdf

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Operator Name: PERMIAN RESOURCES OPERATING LLC

Well Name: EL CAMPEON FEDERAL COM

Well Number: 123H

### **Casing Attachments**

Casing ID: 2	String	INTERMEDIATE
Inspection Document:		
Spec Document:		
Tapered String Spec:		
Casing Design Assump	otions and W	/orksheet(s):
El_Campeon_Fed_	_123H_Csg_	Assumptions_20240818193009.pdf
Casing ID: 3	String	PRODUCTION
	j	
Inspection Document:		
Spec Document:		
17_GeoConn_Proc	d_SpecShee	t_20240726103620.pdf
Tapered String Spec:		

## Casing Design Assumptions and Worksheet(s):

El\_Campeon\_Fed\_123H\_Csg\_Assumptions\_20240818192942.pdf

Section	4 - Ce	emen	ι								
String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	852	640	1.88	12.7	1190	100	CLASS C	ECONOCEM-HLC + 5% SALT + 5% KOL- SEAL
SURFACE	Tail		852	1065	830	1.34	14.8	1110	50	Class C	ACCELERATOR
INTERMEDIATE	Lead		0	4220	900	2.08	12.7	1870	50	CLASS C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
INTERMEDIATE	Tail		4220	5284	380	1.34	14.8	500	50	CLASS C	Retarder
PRODUCTION	Lead		4784	1071 8	860	2.41	11.5	2060	40	Class H	POZ, Extender, Fluid Loss, Dispersant,

# Section 4 - Cement

Operator Name: PERMIAN RESOURCES OPERATING LLC Well Name: EL CAMPEON FEDERAL COM

Well Number: 123H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	savitives Additives Retarder
PRODUCTION	Tail		1071 8	2109 1	1350	1.73	12.5	2330	25		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 43 CFR 3172:

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

**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 (Ibs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	Н	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1065	SPUD MUD	8.6	9.5							
1065	5284	SALT SATURATED	10	10							
5284	2109 1	OTHER : WATER BASED MUD - 5284'- 11472' OBM-11472' - 21091'	9	10							

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Operator Name: PERMIAN RESOURCES OPERATING LLC Well Name: EL CAMPEON FEDERAL COM

Well Number: 123H

## Section 6 - Test, Logging, Coring

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

Will utilize MWD/LWD from intermediate hole to TD of the well

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

Coring operation description for the well:

N/A

## Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5830

Anticipated Surface Pressure: 3365

Anticipated Bottom Hole Temperature(F): 166

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

Describe:

Contingency Plans geoharzards description:

**Contingency Plans geohazards** 

## Hydrogen Sulfide drilling operations plan required? YES

## Hydrogen sulfide drilling operations

El\_Campeon\_H2S\_20240816102229.pdf

## **Section 8 - Other Information**

## Proposed horizontal/directional/multi-lateral plan submission:

El\_Champeon\_Fed\_Com\_123H\_DD\_20240818193356.pdf

El\_Champeon\_Fed\_Com\_123H\_AC\_20240818193357.pdf

## Other proposed operations facets description:

WASTE MANAGEMENT PLAN

## Other proposed operations facets attachment:

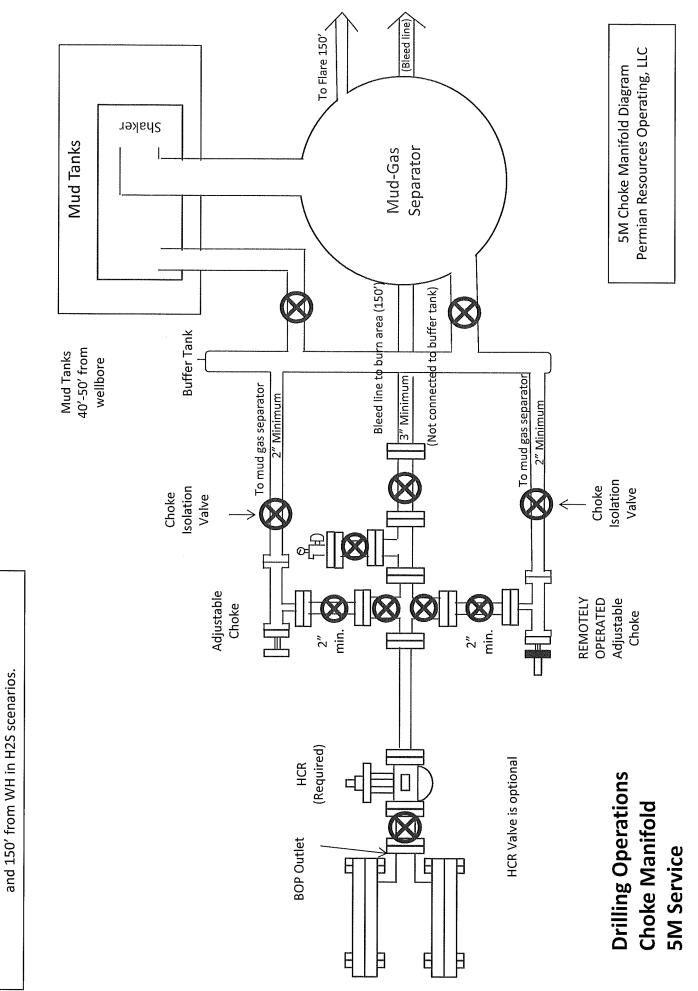
El\_Camp\_NGMP\_20240816123908.pdf

## Other Variance attachment:

El\_Camp\_BOP\_Break\_20240816102305.pdf

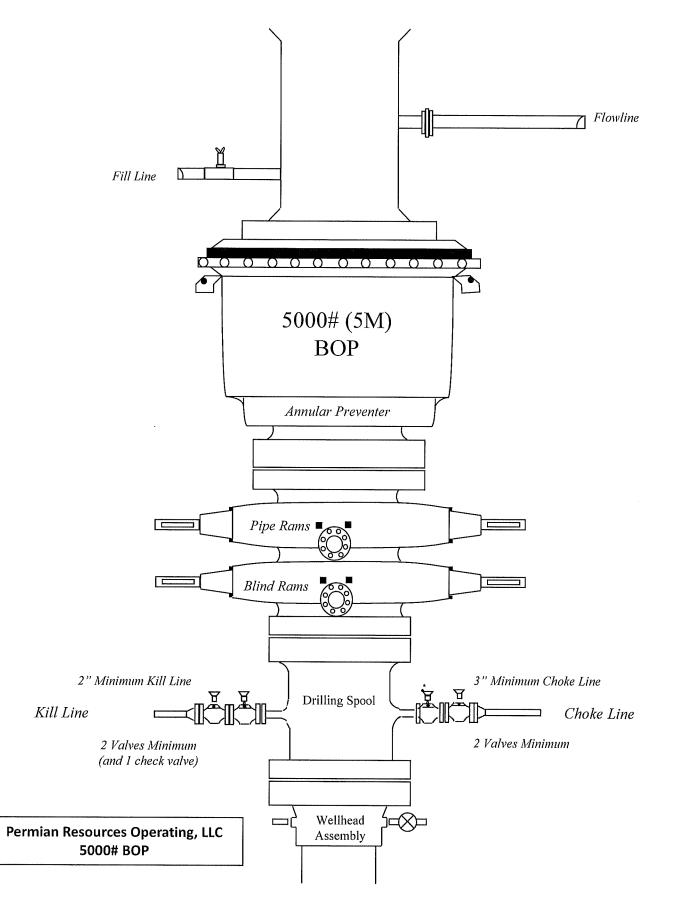
El\_Camp\_Batch\_20240816102335.pdf

- El\_Camp\_FH\_20240816102352.pdf
- El\_Camp\_OLCV\_20240816102415.pdf
- El\_Camp\_MBS\_20241108133654.pdf



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



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

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al One Corp.	GEOCONN Pipe: SeAH P110RY 95%PBW	and the second	Page	MAI GC 5.5 17 SeAH P110R 95%RBW+SC-Cplg6.050 P110				
Metal One	Coupling: P110RY (SN		Date	3-Feb-21				
Menne Vie	Connection Dat	020484520203030123	Rev.					
		a Sheet	Rev.	-	0			
	Geometry	Impe	erial	S.	<u>S.I.</u>			
	Pipe Body							
	Grade *1	P110RY		P110RY	1 <del>.</del>			
	SMYS	110	ksi	110	ksi			
	Pipe OD ( D )	5.500	in	139.70	mm			
GEOCONN-SC	Weight	17.00	lb/ft	25.33	kg/m			
	Wall Thickness (t)	0.304	in	7.72	mm			
	Pipe ID ( d )	4.892	ín	124.26	mm			
Wsc1	Drift Dia.	4.767	in	121.08	mm			
D	Connection							
	Coupling SMYS	110	ksi	110	ksi			
t 1	SC-Coupling OD (Wsc1)	6.050	in	153.67	mm			
}d	Coupling Length ( NL )	8.350	in	212.09	mm			
5	Make up Loss	4.125	in	104.78	mm			
8	Pipe Critical Area	4.96	in <sup>2</sup>	3.202	mm <sup>2</sup>			
3	Box Critical Area	6.10	in <sup>2</sup>	3,937	mm <sup>2</sup>			
3	Thread Taper			6 ( 3/4" per ft )				
3	Number of Threads			5 TPI				
2	Performance Properties for F			<u>s.</u>				
	S.M.Y.S. *1	546	kips	2,428	kN			
Ę	M.I.Y.P. *1	11,550	psi	79.66	MPa			
¥ \$	Collapse Strength *1	7,480	psi	51.59	MPa			
			essure of Pipe b					
5	Min. Connection Joint Strength	connection	100%	of S.M.Y.S.				
3	Min. Compression Yield		100%	of S.M.Y.S.				
3	Internal Pressure		100% of M.I.					
3	External Pressure		100% of Colla					
	Max. DLS ( deg. /100ft)		>90					
t -> <								
t> <	Recommended Torque							
t ->	Min.	10,800	ft-lb	14,600	N-m			
t ->	Min. Opti.	12,000	ft-lb	16,200	N-m			
t -> -	Min. Opti. Max.	12,000 13,200	ft-lb ft-lb	16,200 17,800	N-m N-m			
t → ←	Min. Opti. Max. Operational Max.	12,000 13,200 15,600	ft-lb ft-lb ft-lb	16,200	N-m			
	Min. Opti. Max.	12,000 13,200 15,600	ft-lb ft-lb ft-lb	16,200 17,800	N-m N-m			

Statements regarding the suitability of products for oertain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the outsomer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application The products described in his Connection Data Sneet are not recommended for use in deep water offshore applications. For more information, please refer to <u>http://www.mto.co.jo/mo-con/\_Images/top/WebsiteTerms\_Active\_20333287\_1.pdf</u> the contents of which are incorporated by reference into this Connection Data Sneet.

# 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	17.5	13.375	0	1065	0	1065	1065	J55	54.5	BTC	2.15	1.68	Dry	5.75	Dry	5.40
Intermediate	12.25	9.625	0	5284	0	5284	5284	J55	40	BTC	2.60	1.54	Dry	2.29	Dry	2.02
Production	8.75	5.5	0	11472	0	11200	11472	P110RY	17	GeoConn	1.28	1.34	Dry	1.88	Dry	1.88
Production	7.875	5.5	11472	21091	11200	11200	9619	P110RY	17	GeoConn	1.28	1.34	Dry	1.88	Dry	1.88
						BLM M	lin Safe	ety Factor	1.125	1		1.6		1.6		

Non API casing spec sheets and casing design assumptions attached.

# Permian Resources BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Permian Resources 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.

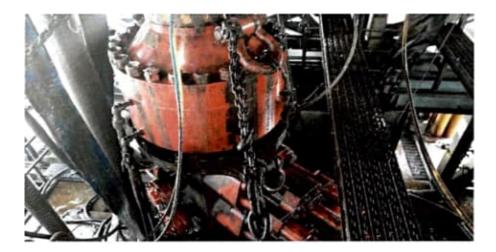
## Background

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 <u>§§ 3172.6</u> through <u>3172.12</u>. 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).". Permian Resources feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Permian Resources 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 Permian Resources 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.

Component to be Pressure Tested	Pressure Test-Low	Pressure Test-High Pressure*						
	Pressure** psig (MPa)	Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket					
Annular preventer*	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∞	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*	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP					
Choke manifold—downstream of chokes*	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or N whichever is lower	ASP for the well program,					
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program						
<ul> <li>Annular(s) and VBR(s) shall be pre- For pad drilling operations, moving pressure-controlling connections</li> <li>For surface offshore operations, th</li> </ul>	during the evaluation period. The p issure tested on the largest and sm: from one wellhead to another within when the integray of a pressure set is non BOPs shall be pressure test land operations, the ram BOPs sha	ressure shall not decrease below the allest OD drill pipe to be used in well in the 21 days, pressure testing is req al is broken. led with the ram locks engaged and ill be pressure tested with the ram loc	program. ured for pressure-containing and the closing and locking pressure					

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.

Permian Resources 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. Permian Resources 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, Permian Resources 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) Permian Resources 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) Permian Resources 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.

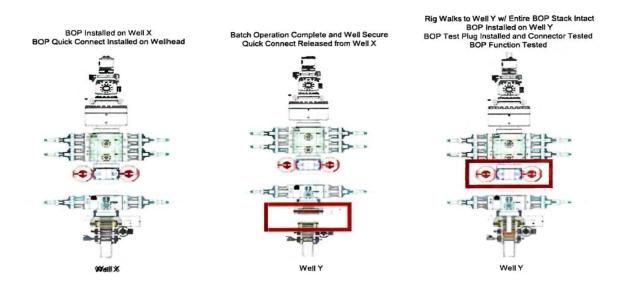
9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).

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.

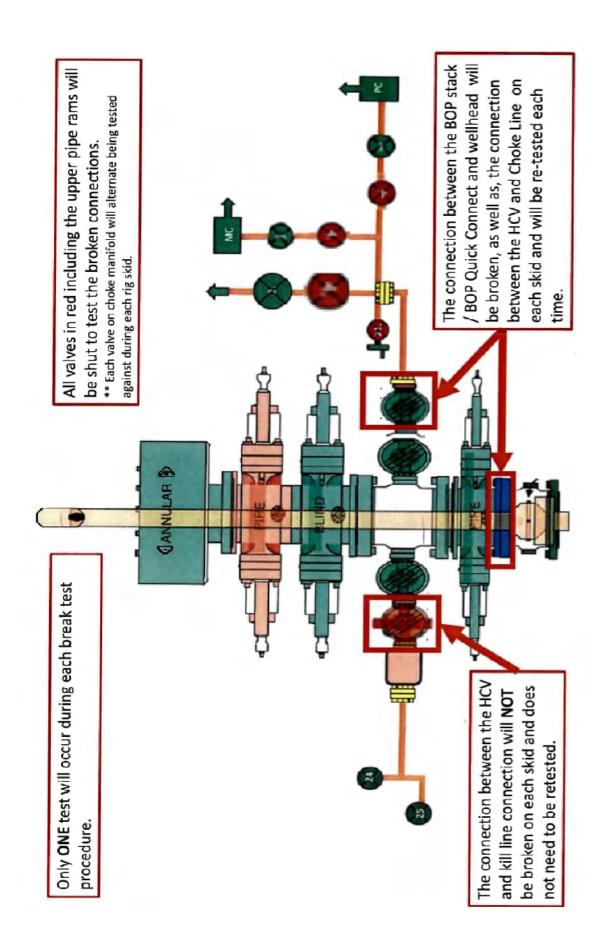
Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

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.



## Permian Resources Multi-Well Pad Batch Drilling Procedure

<u>Surface Casing</u> - PR 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.

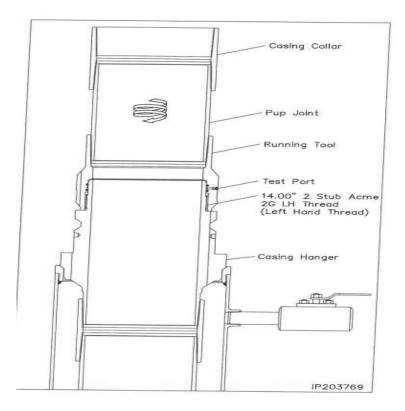


Illustration 1-1

<u>Intermediate Casing</u> – PR 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.

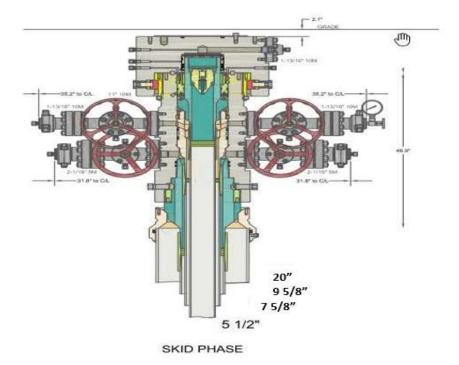
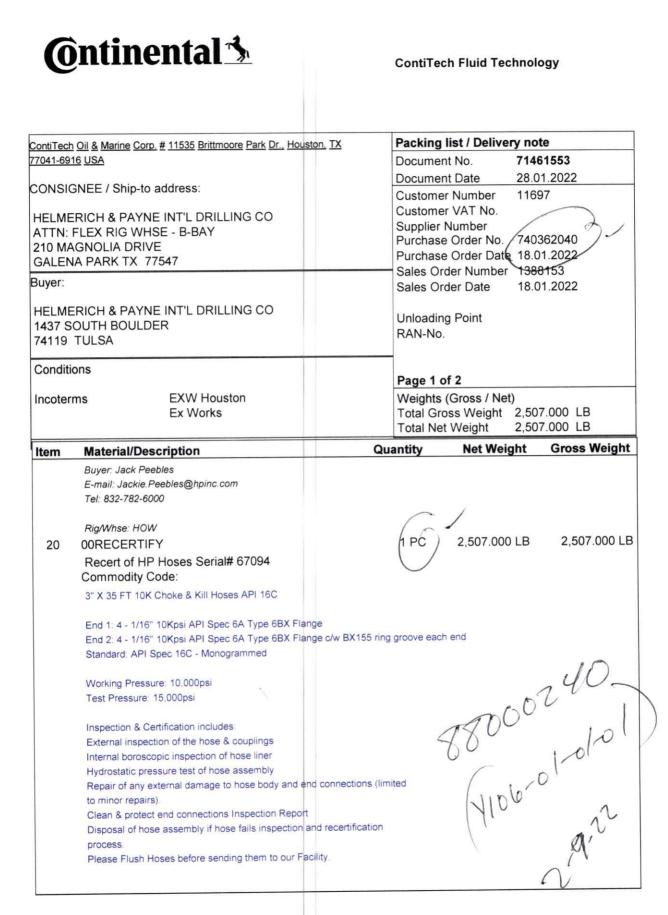


Illustration 2-2

<u>Production Casing</u> – PR 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.



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 Cégbiróság

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COMMERZBANK ZRT. (HUF) H-1054 Budapest, Széchenyi rakpart 8. H-1245 Budapest P.O. Box 1070 Account No. 14220108-26830003 IBAN: HUB 1422 0108 2683 0003 0000 0000 SWIFT: COBA HU HXXXX COMMERZBANK AG Hannover (EUR) 30159 Hannover, Theaterstr. 11-12. Account No: 3 066 156 00 Sort Code: 250 400 66. BIC: COBADEFF250 IBAN: DE41250400660306615600

## 

## Hydrostatic Test Certificate

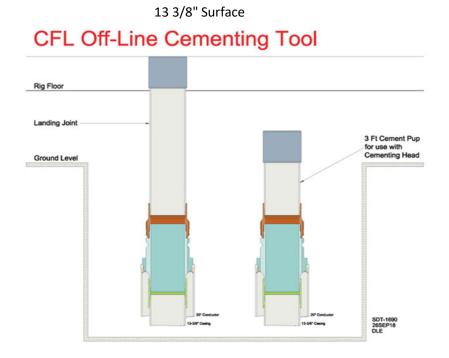
		ContiTech
Certificate Number H100122	COM Order Reference 1388153	Customer Name & Address HELMERICH & PAYNE DRILLING CO
Customer Purchase Order No:	740362040	1434 SOUTH BOULDER AVE TULSA, OK 74119
Project:		USA
Test Center Address	Accepted by COM Inspection	Accepted by Client Inspection
ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Signed: O2/09/22	

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.

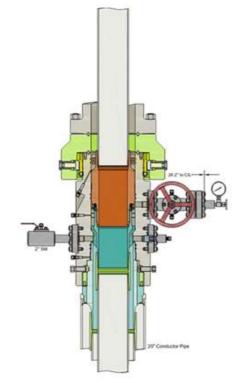
Item	Part No.		Description	Qnty	Serial Number	Work. Press. (psi)	Test Press. (psi)	Test Time (minutes)
20	RECERTIFICATION	3"	ID 10K Choke and Kill Hose x 35ft OAL	1	67094	10,000	15,000	60
	Record In	formation		Pressure	e Chart			
	Start Time	1/27/2022 13:21:21	· 8 16000	-				
	End Time	1/27/2022 14:38:28	a (				Pressure	
	Interval	00:01:00	14000-					
	Number	78	12000		01			
	MaxValue	15849		(se	ch Oll &			
	MinValue	-3	10000-	181	131			
	AvgValue	14240		181	12	1		
	RecordName	67094-sh	-0008	17	in the second se			
	RecordNumber	199	6000	G	10	1		
	Gauge Int	formation	4000	11		/		
	Model	ADT680			-/			
	SN	21817380014	2000-		QC			
	Range	(0-40000)psi					L	
	Unit	psi	· · · · · · · · · · · · · · · · · · ·					

#### Permian Resources Offline Cementing Procedure Surface & Intermediate Casing

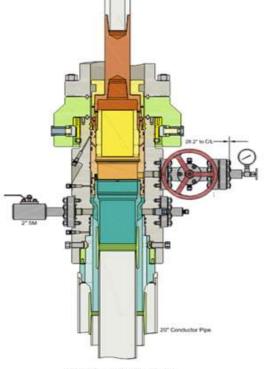
- 1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
- 2. Run and casing to Depth.
- 3. Land casing with mandrel.
- 4. Circulate 1.5 csg capacity.
- 5. Flow test Confirm well is static and floats are holding.
- 6. Set Annular packoff and pressure test. Test to 5k.
- 7. Nipple 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.



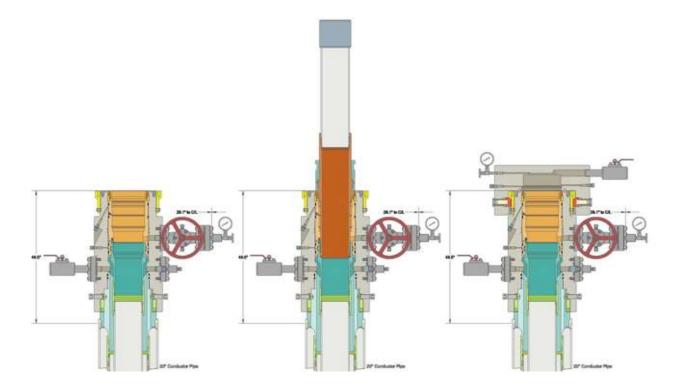
#### Intermediate

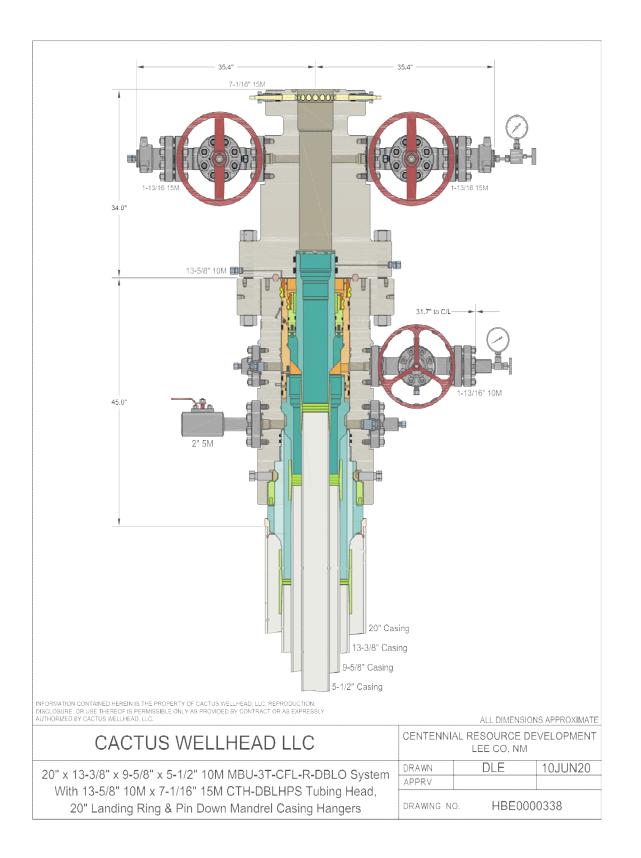


Run 7 5/8" Casing Land Casing on 7 5/8" Mandrel Hanger Cement 7 5/8" Casing Retrieve Running Tool



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





# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:Permian Resources Operating LLCWELL NAME & NO.:El Campeon Federal Com 123HLOCATION:Sec 20-26S-35E-NMPCOUNTY:Lea County, New Mexico

# COA

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

# A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

# **B. CASING**

- 1. The **13-3/8** inch surface casing shall be set at approximately **1100** feet (a minimum of 25 feet (Lea 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 <u>8 hours</u> or <u>500</u> <u>pounds compressive strength</u>, 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 **9-5/8** 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.
- 3. 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. <u>When the</u> <u>Communitization Agreement number is known, it shall also be on the sign.</u>

# **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 (575-689-5981 Lea 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.

**Approval Date: 04/01/2025** 

# **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 Lea County Petroleum Engineering Inspection Staff:**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981

- 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 2<sup>nd</sup> 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 2<sup>nd</sup> 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. <u>Wait on cement (WOC) for Potash Areas:</u> 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 <u>8 hours</u>. 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. <u>Wait on cement (WOC) for Water Basin:</u> 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 <u>8 hours</u>. 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.

**Approval Date: 04/01/2025** 

# NEW MEXICO

(SP) LEA EL CAMPEON FED COM PROJECT EL CAMPEON FED STATE COM 123H

OWB

Plan: PWP0

# **Standard Planning Report - Geographic**

05 August, 2024

Planning Report - Geographic

Database: Company: Project: Site: Well: Wellbore: Design:	NE (SF EL	_			Local Co-ordinate Reference:Well EL CAMPEON FED STATE COTVD Reference:KB @ 3204.0usftMD Reference:KB @ 3204.0usftNorth Reference:GridSurvey Calculation Method:Minimum Curvature					ATE COM 123H
Project	(SP)	LEA								
Map System: Geo Datum: Map Zone:	North	tate Plane 1983 American Datu Mexico Eastern	ım 1983		System D	atum:	M	ean Sea Level		
Site	EL (	AMPEON FEE	COM PROJ	ECT						
Site Position: From: Position Unc	N	lap 0.0	North Easti usft Slot I	-	831,9	005.08 usft 976.77 usft 3-3/16 "	Latitude: Longitude:			32° 0' 59.423 N 103° 23' 44.166 W
Well	EL C	AMPEON FED	STATE CON	123H						
Well Position Position Unco Grid Converg	+E/-\ ertainty	<b>v</b> 0	).0 usft Ea	orthing: asting: ellhead Elev	vation:	373,205.10 834,518.48	usfi Lo	titude: ngitude: ound Level:		32° 1' 20.974 N 103° 23' 14.423 W 3,174.0 usfl
Wellbore	OW	В								
Magnetics	N	lodel Name	Sampl		Declina (°)		Dip / ('		Field Str (nT	")
		IGRF200510	1.	2/31/2009		7.65		60.09	48,693	.69147109
Design	PW	P0								
Audit Notes: Version:			Phas	se: f	PROTOTYPE	Tie	e On Depth:		0.0	
Vertical Secti	ion:	D	epth From (T (usft)	VD)	+N/-S (usft)		:/-W sft)		ection (°)	
			0.0		0.0	C	).0	17	9.37	
Plan Survey Depth Fr (usft)	om Dej (I	oth To Jsft) Surve	8/5/2024 y (Wellbore)		Tool Name	ı	Remarks			
1	0.0 2	1,091.8 PWP0	(OWB)		MWD OWSG_Rev	/2_ MWD - Si	tar			
Plan Sections	S									
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 2,000.0 2,025.8 10,718.6 11,472.9	0.00 0.52 0.52	0 0.00 2 8.82 2 8.82	0.0 2,000.0 2,025.8 10,718.3 11,200.0	0.0 0.0 0.1 77.4 -400.0	0.0 0.0 0.0 12.0 17.3	0.00 0.00 2.00 0.00 12.00	0.00 0.00 2.00 0.00 11.86	0.00 0.00 22.62	0.00 0.00 8.82 0.00 170.62	
21,091.8	90.00	) 179.45	11,200.0	-10,018.5	109.9	0.00	0.00	0.00	0.00 B	HL-EL CAMP 123

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Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Company:	NEW MEXICO	TVD Reference:	KB @ 3204.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3204.0usft
Site:	EL CAMPEON FED COM PROJECT	North Reference:	Grid
Well:	EL CAMPEON FED STATE COM 123H	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	0.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
100.0		0.00 0.00	100.0 200.0	0.0	0.0 0.0	373,205.10 373,205.10	834,518.48 834,518.48	32° 1' 20.974 N 32° 1' 20.974 N	103° 23' 14.423 W 103° 23' 14.423 W
300.0		0.00	300.0	0.0 0.0	0.0	373,205.10	834,518.48	32° 1′ 20.974 N 32° 1′ 20.974 N	103°23' 14.423 W
400.0		0.00	400.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
500.0		0.00	500.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
600.0		0.00	600.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
700.0		0.00	700.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
800.0		0.00	800.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
900.0		0.00	900.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,100.0		0.00	1,100.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,200.0		0.00	1,200.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,300.0		0.00	1,300.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,500.0		0.00	1,500.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,600.0		0.00	1,600.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,700.0		0.00	1,700.0	0.0	0.0	373,205.10	834,518.48	32° 1' 20.974 N	103° 23' 14.423 W
1,800.0		0.00 0.00	1,800.0 1,900.0	0.0 0.0	0.0 0.0	373,205.10 373,205.10	834,518.48 834,518.48	32° 1' 20.974 N 32° 1' 20.974 N	103° 23' 14.423 W 103° 23' 14.423 W
1,900.0			2,000.0	0.0	0.0	373,205.10	834,518.48	32° 1′ 20.974 N 32° 1′ 20.974 N	103° 23' 14.423 W
	uild 2.00	0.00	2,000.0	0.0	0.0	575,205.10	054,510.40	JZ 1 20.314 N	103 23 14.423 W
2,025.8		8.82	2,025.8	0.1	0.0	373,205.21	834,518.50	32° 1' 20.975 N	103° 23' 14.423 W
	692.9 hold a		,	0.1	0.0	010,200.21	004,010.00	02 1 20.01011	100 20 14.420 11
2,100.0			2,100.0	0.8	0.1	373,205.87	834,518.60	32° 1' 20.981 N	103° 23' 14.422 W
2,200.0			2,200.0	1.7	0.3	373,206.76	834,518.74	32° 1' 20.990 N	103° 23' 14.420 W
2,300.0			2,300.0	2.6	0.4	373,207.65	834,518.88	32° 1' 20.999 N	103° 23' 14.418 W
2,400.0			2,400.0	3.4	0.5	373,208.54	834,519.01	32° 1' 21.008 N	103° 23' 14.417 W
2,500.0			2,500.0	4.3	0.7	373,209.43	834,519.15	32° 1' 21.016 N	103° 23' 14.415 W
2,600.0		8.82	2,600.0	5.2	0.8	373,210.32	834,519.29	32° 1' 21.025 N	103° 23' 14.413 W
2,700.0	0.52	8.82	2,700.0	6.1	0.9	373,211.21	834,519.43	32° 1' 21.034 N	103° 23' 14.412 W
2,800.0			2,800.0	7.0	1.1	373,212.10	834,519.57	32° 1' 21.043 N	103° 23' 14.410 W
2,900.0			2,900.0	7.9	1.2	373,212.99	834,519.70	32° 1' 21.051 N	103° 23' 14.408 W
3,000.0		8.82	3,000.0	8.8	1.4	373,213.88	834,519.84	32° 1' 21.060 N	103° 23' 14.406 W
3,100.0			3,100.0	9.7	1.5	373,214.77	834,519.98	32° 1' 21.069 N	103° 23' 14.405 W
3,200.0			3,200.0	10.6	1.6	373,215.65	834,520.12	32° 1' 21.078 N	103° 23' 14.403 W
3,300.0			3,299.9	11.4	1.8	373,216.54 373,217.43	834,520.26 834,520.39	32° 1' 21.087 N	103° 23' 14.401 W 103° 23' 14.400 W
3,400.0 3,500.0		8.82 8.82	3,399.9 3,499.9	12.3 13.2	1.9 2.1	373,217.43	834,520.59 834,520.53	32° 1' 21.095 N 32° 1' 21.104 N	103°23' 14.400 W
3,600.0		8.82	3,599.9	14.1	2.2	373,219.21	834,520.55	32° 1' 21.104 N	103° 23' 14.396 W
3,700.0			3,699.9	15.0	2.2	373,220.10	834,520.81	32° 1' 21.122 N	103° 23' 14.395 W
3,800.0		8.82	3,799.9	15.9	2.5	373,220.99	834,520.95	32° 1' 21.131 N	103° 23' 14.393 W
3,900.0			3,899.9	16.8	2.6	373,221.88	834,521.08	32° 1' 21.139 N	103° 23' 14.391 W
4,000.0			3,999.9	17.7	2.7	373,222.77	834,521.22	32° 1' 21.148 N	103° 23' 14.390 W
4,100.0			4,099.9	18.6	2.9	373,223.66	834,521.36	32° 1' 21.157 N	103° 23' 14.388 W
4,200.0	0.52	8.82	4,199.9	19.4	3.0	373,224.55	834,521.50	32° 1' 21.166 N	103° 23' 14.386 W
4,300.0			4,299.9	20.3	3.2	373,225.44	834,521.64	32° 1' 21.175 N	103° 23' 14.384 W
4,400.0			4,399.9	21.2	3.3	373,226.33	834,521.77	32° 1' 21.183 N	103° 23' 14.383 W
4,500.0			4,499.9	22.1	3.4	373,227.22	834,521.91	32° 1' 21.192 N	103° 23' 14.381 W
4,600.0			4,599.9	23.0	3.6	373,228.10	834,522.05	32° 1' 21.201 N	103° 23' 14.379 W
4,700.0			4,699.9	23.9	3.7	373,228.99	834,522.19	32° 1' 21.210 N	103° 23' 14.378 W
4,800.0			4,799.9	24.8	3.8	373,229.88	834,522.33	32° 1' 21.218 N	103° 23' 14.376 W
4,900.0 5,000.0			4,899.9 4,999.9	25.7 26.6	4.0 4.1	373,230.77 373,231.66	834,522.46 834,522.60	32° 1' 21.227 N 32° 1' 21.236 N	103° 23' 14.374 W 103° 23' 14.373 W
3,000.0	0.JZ	0.02	ч,000.0	20.0	4.1	515,251.00	007,022.00	JZ 1 21.2JU N	105 25 14.575 W

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Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Company:	NEW MEXICO	TVD Reference:	KB @ 3204.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3204.0usft
Site:	EL CAMPEON FED COM PROJECT	North Reference:	Grid
Well:	EL CAMPEON FED STATE COM 123H	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
						• •			
5,100.0		8.82 8.82	5,099.9	27.5 28.3	4.3 4.4	373,232.55	834,522.74	32° 1' 21.245 N	103° 23' 14.371 W 103° 23' 14.369 W
5,200.0 5,300.0		8.82	5,199.9 5,299.9	20.5	4.4	373,233.44 373,234.33	834,522.88 834,523.02	32° 1' 21.254 N 32° 1' 21.262 N	103° 23' 14.367 W
5,400.0		8.82	5,399.9	30.1	4.5	373,235.22	834,523.15	32° 1' 21.202 N 32° 1' 21.271 N	103° 23' 14.366 W
5,500.0			5,499.9	31.0	4.8	373,236.11	834,523.29	32° 1' 21.280 N	103° 23' 14.364 W
5,600.0		8.82	5,599.9	31.9	5.0	373,237.00	834,523.43	32° 1' 21.289 N	103° 23' 14.362 W
5,700.0		8.82	5,699.9	32.8	5.1	373,237.89	834,523.57	32° 1' 21.298 N	103° 23' 14.361 W
5,800.0		8.82	5,799.8	33.7	5.2	373,238.78	834,523.71	32° 1' 21.306 N	103° 23' 14.359 W
5,900.0		8.82	5,899.8	34.6	5.4	373,239.66	834,523.85	32° 1' 21.315 N	103° 23' 14.357 W
6,000.0		8.82	5,999.8	35.5	5.5	373,240.55	834,523.98	32° 1' 21.324 N	103° 23' 14.356 W
6,100.0		8.82	6,099.8	36.3	5.6	373,241.44	834,524.12	32° 1' 21.333 N	103° 23' 14.354 W
6,200.0		8.82	6,199.8	37.2	5.8	373,242.33	834,524.26	32° 1' 21.341 N	103° 23' 14.352 W
6,300.0		8.82	6,299.8	38.1	5.9	373,243.22	834,524.40	32° 1' 21.350 N	103° 23' 14.351 W
6,400.0		8.82	6,399.8	39.0	6.1	373,244.11	834,524.54	32° 1' 21.359 N	103° 23' 14.349 W
6,500.0 6,600.0		8.82 8.82	6,499.8 6,599.8	39.9 40.8	6.2 6.3	373,245.00 373,245.89	834,524.67 834,524.81	32° 1' 21.368 N 32° 1' 21.377 N	103° 23' 14.347 W 103° 23' 14.345 W
6,700.0		8.82	6,699.8	40.0	6.5	373,246.78	834,524.95	32° 1' 21.385 N	103° 23' 14.344 W
6,800.0		8.82	6,799.8	42.6	6.6	373,247.67	834,525.09	32° 1' 21.394 N	103° 23' 14.342 W
6,900.0		8.82	6,899.8	43.5	6.7	373,248.56	834,525,23	32° 1' 21.403 N	103° 23' 14.340 W
7,000.0		8.82	6,999.8	44.3	6.9	373,249.45	834,525.36	32° 1' 21.412 N	103° 23' 14.339 W
7,100.0			7,099.8	45.2	7.0	373,250.34	834,525.50	32° 1' 21.421 N	103° 23' 14.337 W
7,200.0		8.82	7,199.8	46.1	7.2	373,251.23	834,525.64	32° 1' 21.429 N	103° 23' 14.335 W
7,300.0	0.52	8.82	7,299.8	47.0	7.3	373,252.11	834,525.78	32° 1' 21.438 N	103° 23' 14.334 W
7,400.0		8.82	7,399.8	47.9	7.4	373,253.00	834,525.92	32° 1' 21.447 N	103° 23' 14.332 W
7,500.0		8.82	7,499.8	48.8	7.6	373,253.89	834,526.05	32° 1' 21.456 N	103° 23' 14.330 W
7,600.0		8.82	7,599.8	49.7	7.7	373,254.78	834,526.19	32° 1' 21.464 N	103° 23' 14.329 W
7,700.0		8.82	7,699.8	50.6	7.9	373,255.67	834,526.33	32° 1' 21.473 N	103° 23' 14.327 W
7,800.0		8.82	7,799.8	51.5	8.0	373,256.56	834,526.47	32° 1' 21.482 N	103° 23' 14.325 W
7,900.0 8,000.0		8.82 8.82	7,899.8 7,999.8	52.4 53.2	8.1 8.3	373,257.45 373,258.34	834,526.61 834,526.74	32° 1' 21.491 N 32° 1' 21.500 N	103° 23' 14.323 W 103° 23' 14.322 W
8,100.0		8.82	8,099.8	54.1	8.4	373,259.23	834,526.88	32° 1' 21.500 N 32° 1' 21.508 N	103° 23' 14.320 W
8,200.0		8.82	8,199.7	55.0	8.5	373,260.12	834,527.02	32° 1' 21.517 N	103° 23' 14.318 W
8,300.0		8.82	8,299.7	55.9	8.7	373,261.01	834,527.16	32° 1' 21.526 N	103° 23' 14.317 W
8,400.0		8.82	8,399.7	56.8	8.8	373,261.90	834,527.30	32° 1' 21.535 N	103° 23' 14.315 W
8,500.0		8.82	8,499.7	57.7	9.0	373,262.79	834,527.43	32° 1' 21.544 N	103° 23' 14.313 W
8,600.0	0.52	8.82	8,599.7	58.6	9.1	373,263.68	834,527.57	32° 1' 21.552 N	103° 23' 14.312 W
8,700.0			8,699.7	59.5	9.2	373,264.56	834,527.71	32° 1' 21.561 N	103° 23' 14.310 W
8,800.0		8.82	8,799.7	60.4	9.4	373,265.45	834,527.85	32° 1' 21.570 N	103° 23' 14.308 W
8,900.0		8.82	8,899.7	61.2	9.5	373,266.34	834,527.99	32° 1' 21.579 N	103° 23' 14.307 W
9,000.0		8.82	8,999.7	62.1	9.6	373,267.23	834,528.12	32° 1' 21.588 N	103° 23' 14.305 W
9,100.0		8.82	9,099.7	63.0 63.0	9.8	373,268.12	834,528.26	32° 1' 21.596 N	103° 23' 14.303 W
9,200.0		8.82	9,199.7	63.9	9.9	373,269.01 373,269.90	834,528.40	32° 1' 21.605 N	103° 23' 14.301 W
9,300.0 9,400.0		8.82 8.82	9,299.7 9,399.7	64.8 65.7	10.1 10.2	373,270.79	834,528.54 834,528.68	32° 1' 21.614 N 32° 1' 21.623 N	103° 23' 14.300 W 103° 23' 14.298 W
9,500.0			9,499.7	66.6	10.2	373,271.68	834,528.82	32° 1' 21.631 N	103° 23' 14.296 W
9,600.0			9,599.7	67.5	10.5	373,272.57	834,528.95	32° 1' 21.640 N	103° 23' 14.295 W
9,700.0			9,699.7	68.4	10.6	373,273.46	834,529.09	32° 1' 21.649 N	103° 23' 14.293 W
9,800.0		8.82	9,799.7	69.2	10.8	373,274.35	834,529.23	32° 1' 21.658 N	103° 23' 14.291 W
9,900.0	0.52		9,899.7	70.1	10.9	373,275.24	834,529.37	32° 1' 21.667 N	103° 23' 14.290 W
10,000.0	0.52	8.82	9,999.7	71.0	11.0	373,276.12	834,529.51	32° 1' 21.675 N	103° 23' 14.288 W
10,100.0		8.82	10,099.7	71.9	11.2	373,277.01	834,529.64	32° 1' 21.684 N	103° 23' 14.286 W
10,200.0		8.82	10,199.7	72.8	11.3	373,277.90	834,529.78	32° 1' 21.693 N	103° 23' 14.284 W
10,300.0			10,299.7	73.7	11.4	373,278.79	834,529.92	32° 1' 21.702 N	103° 23' 14.283 W
10,400.0		8.82	10,399.7	74.6	11.6	373,279.68	834,530.06	32° 1' 21.711 N	103° 23' 14.281 W
10,500.0	0.52	8.82	10,499.7	75.5	11.7	373,280.57	834,530.20	32° 1' 21.719 N	103° 23' 14.279 W

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COMPASS 5000.17 Build 03

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Company:	NEW MEXICO	TVD Reference:	KB @ 3204.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3204.0usft
Site:	EL CAMPEON FED COM PROJECT	North Reference:	Grid
Well:	EL CAMPEON FED STATE COM 123H	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
10,600.0		8.82	10,599.7	76.4	11.9	373,281.46	834,530.33	32° 1' 21.728 N	103° 23' 14.278 W
10,000.0		8.82	10,599.7	70.4	12.0	373,282.35	834,530.47	32° 1' 21.720 N 32° 1' 21.737 N	103° 23' 14.276 W
10,718.6		8.82	10,718.3	77.4	12.0	373,282.52	834,530.50	32° 1' 21.739 N	103° 23' 14.276 W
	LS 12.00 TF					,			
10,725.0		161.11	10,724.6	77.4	12.0	373,282.53	834,530.51	32° 1' 21.739 N	103° 23' 14.276 W
10,750.0	3.25	177.97	10,749.6	76.7	12.1	373,281.77	834,530.55	32° 1' 21.731 N	103° 23' 14.275 W
10,775.0		178.68	10,774.5	74.6	12.1	373,279.69	834,530.61	32° 1' 21.711 N	103° 23' 14.275 W
10,800.0		178.93	10,799.3	71.2	12.2	373,276.32	834,530.68	32° 1' 21.677 N	103° 23' 14.274 W
10,825.0		179.06	10,823.9	66.6	12.3	373,271.66	834,530.76	32° 1' 21.631 N	103° 23' 14.274 W
10,850.0		179.14	10,848.2	60.6	12.4	373,265.72	834,530.85	32° 1' 21.572 N	103° 23' 14.273 W
10,875.0		179.19 179.23	10,872.1 10,895.6	53.4 45.0	12.5 12.6	373,258.51 373,250.06	834,530.95 834,531.07	32° 1' 21.501 N 32° 1' 21.417 N	103° 23' 14.273 W 103° 23' 14.272 W
10,925.0		179.26	10,918.7	35.3	12.0	373,240.40	834,531.20	32° 1' 21.322 N	103° 23' 14.272 W
10,950.0		179.29	10,941.2	24.4	12.9	373,229.54	834,531.33	32° 1' 21.214 N	103° 23' 14.271 W
10,975.0		179.30	10,963.1	12.4	13.0	373,217.51	834,531.48	32° 1' 21.095 N	103° 23' 14.271 W
11,000.0		179.32	10,984.3	-0.7	13.2	373,204.36	834,531.64	32° 1' 20.965 N	103° 23' 14.270 W
11,025.0	36.25	179.33	11,004.9	-15.0	13.3	373,190.11	834,531.81	32° 1' 20.824 N	103° 23' 14.270 W
11,050.0		179.35	11,024.7	-30.3	13.5	373,174.81	834,531.98	32° 1' 20.673 N	103° 23' 14.269 W
11,075.0		179.36	11,043.6	-46.6	13.7	373,158.49	834,532.17	32° 1' 20.511 N	103° 23' 14.269 W
11,100.0		179.37	11,061.6	-63.9	13.9	373,141.20	834,532.36	32° 1' 20.340 N	103° 23' 14.268 W
11,125.0		179.37	11,078.8	-82.1	14.1	373,123.00	834,532.56	32° 1' 20.160 N	103° 23' 14.268 W
11,150.0 11,175.0		179.38 179.39	11,094.9 11,110.0	-101.2 -121.1	14.3 14.5	373,103.92 373,084.02	834,532.77 834,532.98	32° 1' 19.971 N 32° 1' 19.774 N	103° 23' 14.267 W 103° 23' 14.267 W
11,200.0		179.39	11,124.1	-121.1	14.5	373,063.36	834,533.20	32° 1' 19.774 N 32° 1' 19.570 N	103° 23' 14.267 W
11,225.0		179.40	11,137.1	-163.1	14.9	373,041.99	834,533.43	32° 1' 19.358 N	103° 23' 14.266 W
11,250.0		179.41	11,148.9	-185.1	15.2	373,019.97	834,533.66	32° 1' 19.140 N	103° 23' 14.266 W
11,275.0		179.41	11,159.6	-207.7	15.4	372,997.36	834,533.89	32° 1' 18.917 N	103° 23' 14.265 W
11,300.0		179.42	11,169.0	-230.9	15.6	372,974.22	834,534.13	32° 1' 18.688 N	103° 23' 14.265 W
11,325.0		179.42	11,177.3	-254.5	15.9	372,950.63	834,534.36	32° 1' 18.454 N	103° 23' 14.265 W
11,350.0		179.43	11,184.3	-278.5	16.1	372,926.63	834,534.61	32° 1' 18.217 N	103° 23' 14.264 W
11,375.0		179.43	11,190.0	-302.8	16.4	372,902.30	834,534.85	32° 1' 17.976 N	103° 23' 14.264 W
11,400.0		179.44	11,194.4	-327.4	16.6	372,877.70	834,535.09	32° 1' 17.732 N	103° 23' 14.264 W
11,425.0 11,428.0		179.44 179.44	11,197.6 11,197.9	-352.2 -355.2	16.9 16.9	372,852.90 372,849.94	834,535.34 834,535.36	32° 1' 17.487 N 32° 1' 17.458 N	103° 23' 14.263 W 103° 23' 14.263 W
	125400 Entr			-333.2	10.5	572,045.54	054,555.50	JZ 1 17.4J0 N	103 23 14.203 W
11,450.0		179.44	11,199.5	-377.1	17.1	372,827.98	834,535.58	32° 1' 17.240 N	103° 23' 14.263 W
11,472.9		179.45	11,200.0	-400.0	17.3	372,805.10	834,535.80	32° 1' 17.014 N	103° 23' 14.263 W
	618.9 hold at						,		
11,500.0		179.45	11,200.0	-427.1	17.6	372,777.99	834,536.06	32° 1' 16.746 N	103° 23' 14.262 W
11,600.0	90.00	179.45	11,200.0	-527.1	18.5	372,677.99	834,537.02	32° 1' 15.756 N	103° 23' 14.261 W
11,700.0		179.45	11,200.0	-627.1	19.5	372,578.00	834,537.98	32° 1' 14.767 N	103° 23' 14.260 W
11,800.0		179.45	11,200.0	-727.1	20.5	372,478.00	834,538.95	32° 1' 13.777 N	103° 23' 14.259 W
11,900.0		179.45	11,200.0	-827.1	21.4	372,378.01	834,539.91	32° 1' 12.788 N	103° 23' 14.258 W
12,000.0		179.45	11,200.0	-927.1	22.4	372,278.01	834,540.87	32° 1' 11.798 N	103° 23' 14.257 W
12,100.0 12,200.0		179.45 179.45	11,200.0 11,200.0	-1,027.1 -1,127.1	23.4 24.3	372,178.02 372,078.02	834,541.83 834,542.80	32° 1' 10.808 N 32° 1' 9.819 N	103° 23' 14.256 W 103° 23' 14.255 W
12,200.0		179.45	11,200.0	-1,127.1	24.3	371,978.02	834,543.76	32° 1' 8.829 N	103° 23' 14.254 W
12,300.0		179.45	11,200.0	-1,327.1	26.2	371,878.03	834,544.72	32° 1' 7.840 N	103° 23' 14.254 W
12,500.0		179.45	11,200.0	-1,427.1	27.2	371,778.03	834,545.68	32° 1' 6.850 N	103° 23' 14.252 W
12,600.0		179.45	11,200.0	-1,527.1	28.2	371,678.04	834,546.65	32° 1' 5.861 N	103° 23' 14.251 W
12,700.0		179.45	11,200.0	-1,627.1	29.1	371,578.04	834,547.61	32° 1' 4.871 N	103° 23' 14.250 W
12,800.0	90.00	179.45	11,200.0	-1,727.1	30.1	371,478.05	834,548.57	32° 1' 3.882 N	103° 23' 14.249 W
12,900.0		179.45	11,200.0	-1,827.0	31.1	371,378.05	834,549.53	32° 1' 2.892 N	103° 23' 14.248 W
13,000.0	90.00	179.45	11,200.0	-1,927.0	32.0	371,278.06	834,550.50	32° 1' 1.903 N	103° 23' 14.247 W

8/5/2024 7:08:47AM

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Company:	NEW MEXICO	TVD Reference:	KB @ 3204.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3204.0usft
Site:	EL CAMPEON FED COM PROJECT	North Reference:	Grid
Well:	EL CAMPEON FED STATE COM 123H	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
12 100 0						274 470 06	024 554 46		
13,100.0 13,200.0		179.45 179.45	11,200.0 11,200.0	-2,027.0 -2,127.0	33.0 33.9	371,178.06 371,078.07	834,551.46 834,552.42	32° 1' 0.913 N 32° 0' 59.924 N	103° 23' 14.246 W 103° 23' 14.245 W
13,300.0		179.45	11,200.0	-2,127.0	34.9	370,978.07	834,553.38	32° 0' 58.934 N	103° 23' 14.244 W
13,400.0		179.45	11,200.0	-2,327.0	35.9	370,878.08	834,554.35	32° 0' 57.944 N	103° 23' 14.244 W
13,500.0		179.45	11,200.0	-2,327.0	36.8	370,778.08	834,555.31	32° 0' 56.955 N	103° 23' 14.242 W
13,600.0		179.45	11,200.0	-2,527.0	37.8	370,678.08	834,556.27	32° 0' 55.965 N	103° 23' 14.242 W
13,700.0		179.45	11,200.0	-2,627.0	38.8	370,578.09	834,557.23	32° 0' 54.976 N	103° 23' 14.240 W
13,800.0		179.45	11,200.0	-2,727.0	39.7	370,478.09	834,558.19	32° 0' 53.986 N	103° 23' 14.239 W
13,900.0		179.45	11,200.0	-2,827.0	40.7	370,378.10	834,559.16	32° 0' 52.997 N	103° 23' 14.238 W
14,000.0		179.45	11,200.0	-2,927.0	41.6	370,278.10	834,560.12	32° 0' 52.007 N	103° 23' 14.237 W
14,100.0		179.45	11,200.0	-3,027.0	42.6	370,178.11	834,561.08	32° 0' 51.018 N	103° 23' 14.236 W
14,200.0		179.45	11,200.0	-3,127.0	43.6	370,078.11	834,562.04	32° 0' 50.028 N	103° 23' 14.235 W
14,300.0		179.45	11,200.0	-3,227.0	44.5	369,978.12	834,563.01	32° 0' 49.039 N	103° 23' 14.234 W
14,400.0		179.45	11,200.0	-3,327.0	45.5	369,878.12	834,563.97	32° 0' 48.049 N	103° 23' 14.233 W
14,500.0	90.00	179.45	11,200.0	-3,427.0	46.5	369,778.13	834,564.93	32° 0' 47.059 N	103° 23' 14.232 W
14,600.0	90.00	179.45	11,200.0	-3,527.0	47.4	369,678.13	834,565.89	32° 0' 46.070 N	103° 23' 14.231 W
14,700.0	90.00	179.45	11,200.0	-3,627.0	48.4	369,578.14	834,566.86	32° 0' 45.080 N	103° 23' 14.230 W
14,800.0	90.00	179.45	11,200.0	-3,727.0	49.3	369,478.14	834,567.82	32° 0' 44.091 N	103° 23' 14.229 W
14,900.0	90.00	179.45	11,200.0	-3,827.0	50.3	369,378.15	834,568.78	32° 0' 43.101 N	103° 23' 14.228 W
15,000.0	90.00	179.45	11,200.0	-3,926.9	51.3	369,278.15	834,569.74	32° 0' 42.112 N	103° 23' 14.227 W
15,100.0		179.45	11,200.0	-4,026.9	52.2	369,178.15	834,570.71	32° 0' 41.122 N	103° 23' 14.226 W
15,200.0		179.45	11,200.0	-4,126.9	53.2	369,078.16	834,571.67	32° 0' 40.133 N	103° 23' 14.225 W
15,300.0		179.45	11,200.0	-4,226.9	54.2	368,978.16	834,572.63	32° 0' 39.143 N	103° 23' 14.224 W
15,400.0		179.45	11,200.0	-4,326.9	55.1	368,878.17	834,573.59	32° 0' 38.154 N	103° 23' 14.223 W
15,500.0		179.45	11,200.0	-4,426.9	56.1	368,778.17	834,574.56	32° 0' 37.164 N	103° 23' 14.222 W
15,600.0		179.45	11,200.0	-4,526.9	57.0	368,678.18	834,575.52	32° 0' 36.175 N	103° 23' 14.221 W
15,700.0		179.45	11,200.0	-4,626.9	58.0	368,578.18	834,576.48	32° 0' 35.185 N	103° 23' 14.220 W
15,800.0		179.45	11,200.0	-4,726.9	59.0	368,478.19	834,577.44	32° 0' 34.195 N	103° 23' 14.219 W
15,900.0		179.45	11,200.0	-4,826.9	59.9	368,378.19	834,578.41	32° 0' 33.206 N	103° 23' 14.218 W
16,000.0		179.45	11,200.0	-4,926.9	60.9	368,278.20	834,579.37	32° 0' 32.216 N	103° 23' 14.217 W
16,100.0		179.45	11,200.0	-5,026.9	61.9	368,178.20	834,580.33	32° 0' 31.227 N	103° 23' 14.216 W
16,200.0		179.45	11,200.0	-5,126.9	62.8	368,078.21	834,581.29	32° 0' 30.237 N	103° 23' 14.215 W
16,300.0		179.45	11,200.0	-5,226.9	63.8	367,978.21	834,582.26	32° 0' 29.248 N	103° 23' 14.214 W
16,400.0		179.45 179.45	11,200.0	-5,326.9	64.7 65.7	367,878.21 367,778.22	834,583.22	32° 0' 28.258 N 32° 0' 27.269 N	103° 23' 14.213 W 103° 23' 14.212 W
16,500.0 16,600.0		179.45	11,200.0 11,200.0	-5,426.9	66.7	367,678.22	834,584.18 834,585.14	32° 0' 26.279 N	103°23' 14.212 W
16,700.0		179.45	11,200.0	-5,526.9 -5,626.9	67.6	367,578.23	834,586.10	32° 0' 25.290 N	103°23'14.211 W
16,714.0		179.45	11,200.0	-5,640.8	67.8	367,564.26	834,586.24	32° 0' 25.151 N	103° 23' 14.210 W
	125400 Exit			-5,040.0	07.0	507,504.20	034,300.24	52 0 25.151 N	105 25 14.210 W
16,800.0		179.45	11,200.0	-5,726.9	68.6	367,478.23	834,587.07	32° 0' 24.300 N	103° 23' 14,209 W
16,900.0		179.45	11,200.0	-5,826.9	69.6	367,378.24	834,588.03	32° 0' 23.310 N	103°23' 14.209 W
17,000.0		179.45	11,200.0	-5,926.9	70.5	367,278.24	834,588,99	32° 0' 22.321 N	103° 23' 14.207 W
17,100.0		179.45	11,200.0	-6,026.9	71.5	367,178.25	834,589.95	32° 0' 21.331 N	103° 23' 14.206 W
17,200.0		179.45	11,200.0	-6,126.8	72.4	367,078.25	834,590.92	32° 0' 20.342 N	103° 23' 14.205 W
17,300.0		179.45	11,200.0	-6,226.8	73.4	366,978.26	834,591.88	32° 0' 19.352 N	103° 23' 14.204 W
17,400.0		179.45	11,200.0	-6,326.8	74.4	366,878.26	834,592.84	32° 0' 18.363 N	103° 23' 14.203 W
17,500.0		179.45	11,200.0	-6,426.8	75.3	366,778.27	834,593.80	32° 0' 17.373 N	103° 23' 14.202 W
17,600.0		179.45	11,200.0	-6,526.8	76.3	366,678.27	834,594.77	32° 0' 16.384 N	103° 23' 14.201 W
17,700.0		179.45	11,200.0	-6,626.8	77.3	366,578.27	834,595.73	32° 0' 15.394 N	103° 23' 14.200 W
17,800.0	90.00	179.45	11,200.0	-6,726.8	78.2	366,478.28	834,596.69	32° 0' 14.405 N	103° 23' 14.199 W
17,900.0	90.00	179.45	11,200.0	-6,826.8	79.2	366,378.28	834,597.65	32° 0' 13.415 N	103° 23' 14.198 W
18,000.0		179.45	11,200.0	-6,926.8	80.1	366,278.29	834,598.62	32° 0' 12.426 N	103° 23' 14.197 W
18,100.0		179.45	11,200.0	-7,026.8	81.1	366,178.29	834,599.58	32° 0' 11.436 N	103° 23' 14.196 W
18,200.0	90.00	179.45	11,200.0	-7,126.8	82.1	366,078.30	834,600.54	32° 0' 10.446 N	103° 23' 14.195 W

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Company:	NEW MEXICO	TVD Reference:	KB @ 3204.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3204.0usft
Site:	EL CAMPEON FED COM PROJECT	North Reference:	Grid
Well:	EL CAMPEON FED STATE COM 123H	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
18,300.0		179.45	11,200.0	-7,226.8	83.0	365,978.30	834,601.50	32° 0' 9.457 N	103° 23' 14.194 W
18,400.0		179.45	11,200.0	-7,326.8	84.0	365,878.31	834,602.47	32° 0' 8.467 N	103° 23' 14.193 W
18,500.0		179.45	11,200.0	-7,426.8	84.9	365,778.31	834,603.43	32° 0' 7.478 N	103° 23' 14.192 W
18,600.0		179.45	11,200.0	-7,526.8	85.9	365,678.32	834,604.39	32° 0' 6.488 N	103° 23' 14.191 W
18,700.0		179.45	11,200.0	-7,626.8	86.9	365,578.32	834,605.35	32° 0' 5.499 N	103° 23' 14.190 W
18,800.0		179.45	11,200.0	-7,726.8	87.8	365,478.33	834,606.32	32° 0' 4.509 N	103° 23' 14.189 W
18,900.0		179.45	11,200.0	-7,826.8	88.8	365,378.33	834,607.28	32° 0' 3.520 N	103° 23' 14.188 W
19,000.0		179.45	11,200.0	-7,926.8	89.8	365,278.33	834,608.24	32° 0' 2.530 N	103° 23' 14.187 W
19,100.0		179.45 179.45	11,200.0	-8,026.8	90.7 91.2	365,178.34 365,129.38	834,609.20 834,609.67	32° 0' 1.541 N 32° 0' 1.056 N	103° 23' 14.186 W 103° 23' 14.185 W
19,149.0			11,200.0	-8,075.7	91.2	303,129.30	054,009.07	32 U 1.030 N	103 23 14.103 W
	30003 Exit a			0 400 0	01.7	265 070 24	834.610.16	32° 0' 0.551 N	400° 00' 44 405 W
19,200.0 19,300.0		179.45 179.45	11,200.0 11,200.0	-8,126.8 -8,226.7	91.7 92.6	365,078.34 364,978.35	834,611.13	31° 59' 59.561 N	103° 23' 14.185 W 103° 23' 14.184 W
19,300.0		179.45	11,200.0	-8,326.7	92.0 93.6	364,878.35	834.612.09	31° 59' 58.572 N	103°23'14.184 W
19,500.0		179.45	11,200.0	-8,426.7	94.6	364,778.36	834,613.05	31° 59' 57.582 N	103° 23' 14.181 W
19,600.0		179.45	11,200.0	-8,526.7	95.5	364,678.36	834.614.01	31° 59' 56.593 N	103° 23' 14.180 W
19,700.0		179.45	11,200.0	-8,626.7	96.5	364,578.37	834,614.98	31° 59' 55.603 N	103° 23' 14.179 W
19,800.0		179.45	11,200.0	-8,726.7	97.5	364,478.37	834,615.94	31° 59' 54.614 N	103° 23' 14.178 W
19,900.0		179.45	11,200.0	-8,826.7	98.4	364,378.38	834,616.90	31° 59' 53.624 N	103° 23' 14.177 W
20,000.0		179.45	11,200.0	-8,926.7	99.4	364,278.38	834,617.86	31° 59' 52.635 N	103° 23' 14.176 W
20,100.0	90.00	179.45	11,200.0	-9,026.7	100.3	364,178.39	834,618.83	31° 59' 51.645 N	103° 23' 14.175 W
20,200.0	90.00	179.45	11,200.0	-9,126.7	101.3	364,078.39	834,619.79	31° 59' 50.656 N	103° 23' 14.174 W
20,300.0	90.00	179.45	11,200.0	-9,226.7	102.3	363,978.40	834,620.75	31° 59' 49.666 N	103° 23' 14.173 W
20,400.0		179.45	11,200.0	-9,326.7	103.2	363,878.40	834,621.71	31° 59' 48.676 N	103° 23' 14.172 W
20,500.0		179.45	11,200.0	-9,426.7	104.2	363,778.40	834,622.68	31° 59' 47.687 N	103° 23' 14.171 W
20,600.0		179.45	11,200.0	-9,526.7	105.2	363,678.41	834,623.64	31° 59' 46.697 N	103° 23' 14.170 W
20,700.0		179.45	11,200.0	-9,626.7	106.1	363,578.41	834,624.60	31° 59' 45.708 N	103° 23' 14.169 W
20,800.0		179.45	11,200.0	-9,726.7	107.1	363,478.42	834,625.56	31° 59' 44.718 N	103° 23' 14.168 W
20,900.0		179.45	11,200.0	-9,826.7	108.0	363,378.42	834,626.53	31° 59' 43.729 N	103° 23' 14.167 W
21,000.0		179.45	11,200.0	-9,926.7	109.0	363,278.43	834,627.49	31° 59' 42.739 N	103° 23' 14.166 W
21,091.8		179.45	11,200.0	-10,018.5	109.9	363,186.59	834,628.37	31° 59' 41.830 N	103° 23' 14.165 W
TD at 2	1091.8								

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL-EL CAMP 123H - plan misses targ - Point			11,200.0 1091.8usft	'	109.4 ) TVD, -1001	363,186.59 18.5 N, 109.9 E)	834,627.85	31° 59' 41.830 N	103° 23' 14.171 W
FTP-EL CAMP 123H - plan misses tary - Point			11,200.0 1527.3usft	-454.4 MD (11200.0	17.3 ) TVD, -454.4	372,750.70 4 N, 17.8 E)	834,535.80	32° 1' 16.476 N	103° 23' 14.268 W

Planning Report - Geographic

Database: Company: Project: Site: Well: Wellbore: Design: Plan Annota	(SP) L EL CA EL CA OWB PWP0	MEXICO EA MPEON FED C MPEON FED S	OM PROJECT TATE COM 123H	TVD Re MD Re North F	Co-ordinate Reference: eference: Reference: Calculation Method:	Well EL CAMPEON FED STATE COM 123H KB @ 3204.0usft KB @ 3204.0usft Grid Minimum Curvature
	Measured Depth (usft)	Vertical Depth (usft)	Local Coor +N/-S (usft)	dinates +E/-W (usft)	Comment	
	2,000.0 2,025.8 10,718.6 11,428.0 11,472.9 16,714.0 19,149.0 21,091.8	2,000.0 2,025.8 10,718.3 11,197.9 11,200.0 11,200.0 11,200.0 11,200.0	0.0 0.1 77.4 -355.2 -400.0 -5,640.8 -8,075.7 -10,018.5	0.0 0.0 12.0 16.9 17.3 67.8 91.2 109.9	Start Build 2.00 Start 8692.9 hold at 20 Start DLS 12.00 TFO 1 NMNM 125400 Entry a Start 9618.9 hold at 11 NMNM 125400 Exit at VB 25630003 Exit at 1 TD at 21091.8	170.62 at 11428.0 MD 472.9 MD 16714.0 MD

# **NEW MEXICO**

(SP) LEA EL CAMPEON FED COM PROJECT EL CAMPEON FED STATE COM 123H

OWB PWP0

# **Anticollision Report**

05 August, 2024

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	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 800.0usft	Error Surface:	Pedal Curve				
Warning Levels Evaluation	ated at: 2.00 Sigma	Casing Method:	Not applied				

Survey Tool Progra	Survey Tool Program Date 8/5/2024				
From (usft)	To (usft)	Survey (Wellbore)	Тос	ol Name	Description
0.0	21,091.0	3 PWP0 (OWB)	MV	VD	OWSG_Rev2_ MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Dista Between Centres (usft)	nce Between Ellipses (usft)	Separation Factor	Warning
EL CAMPEON FED COM PROJECT						
EL CAMPEON FED STATE COM 112H - OWB - PWP0						Out of range
EL CAMPEON FED STATE COM 113H - OWB - PWP0	2,391.0	2,391.0	32.3	15.5	1.919	CC
EL CAMPEON FED STATE COM 113H - OWB - PWP0	3,100.0	3,099.9	34.8	13.1	1.601	ES
EL CAMPEON FED STATE COM 113H - OWB - PWP0	3,700.0	3,699.8	40.3	14.3	1.552	SF
EL CAMPEON FED STATE COM 114H - OWB - PWP0						Out of range
EL CAMPEON FED STATE COM 122H - OWB - PWP0						Out of range
EL CAMPEON FED STATE COM 124H - OWB - PWP0						Out of range
EL CAMPEON FED STATE COM 152H - OWB - PWP0						Out of range
EL CAMPEON FED STATE COM 153H - OWB - PWP0	2,000.0	2,000.0	66.0	51.9	4.673	CC
EL CAMPEON FED STATE COM 153H - OWB - PWP0	2,025.8	2,025.2	66.1	51.8	4.621	ES
EL CAMPEON FED STATE COM 153H - OWB - PWP0	21,000.0	20,609.7	463.0	197.4	1.743	SF
EL CAMPEON FED STATE COM 154H - OWB - PWP0						Out of range

urvey Pro		MWD Off	ant	Comi I	lajor Axis		Offeet Wellb	oro Contro	Diet	Rule Assig	jned:		Offset Well Error:	0.0 ust
Refer leasured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	vertical Depth (usft)	(usft)		Highside Toolface (°)	Offset Wellb +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	tance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	89.24	0.4	33.0	33.0					
100.0	100.0	100.0	100.0	0.3	0.3	89.24	0.4	33.0	33.0	32.5	0.50	65.761		
200.0	200.0	200.0	200.0	0.6	0.6	89.24	0.4	33.0	33.0	31.8	1.22	27.078		
300.0	300.0	300.0	300.0	1.0	1.0	89.24	0.4	33.0	33.0	31.1	1.94	17.049		
400.0	400.0	400.0	400.0	1.3	1.3	89.24	0.4	33.0	33.0	30.4	2.65	12.441		
500.0	500.0	500.0	500.0	1.7	1.7	89.24	0.4	33.0	33.0	29.6	3.37	9.794		
600.0	600.0	600.0	600.0	2.0	2.0	89.24	0.4	33.0	33.0	28.9	4.09	8.076		
700.0	700.0	700.0	700.0	2.4	2.4	89.24	0.4	33.0	33.0	28.2	4.80	6.871		
800.0	800.0	800.0	800.0	2.8	2.8	89.24	0.4	33.0	33.0	27.5	5.52	5.978		
900.0	900.0	900.0	900.0	3.1	3.1	89.24	0.4	33.0	33.0	26.8	6.24	5.291		
1,000.0	1,000.0	1,000.0	1,000.0	3.5	3.5	89.24	0.4	33.0	33.0	26.0	6.95	4.746		
1,100.0	1,100.0	1,100.0	1,100.0	3.8	3.8	89.24	0.4	33.0	33.0	25.3	7.67	4.302		
1,200.0	1,200.0	1,200.0	1,200.0	4.2	4.2	89.24	0.4	33.0	33.0	24.6	8.39	3.934		
1,300.0	1,300.0	1,300.0	1,300.0	4.6	4.6	89.24	0.4	33.0	33.0	23.9	9.11	3.625		
1,400.0	1,400.0	1,400.0	1,400.0	4.9	4.9	89.24	0.4	33.0	33.0	23.2	9.82	3.360		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation 28AM Page 2 COMF

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Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

	-	MWD					ON FED STA			Rule Assig			Offset Site Error: Offset Well Error:	0.0 0.0
Irvey Prog Refer	iram: u⊣ ence	MWD Off	set	Semi I	Major Axis		Offset Wellb	ore Centre	Dist	tance	jnea:		Offset well Error:	0.0
easured 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	
1,500.0	1,500.0	1,500.0	1,500.0	5.3	5.3	89.24	0.4	33.0	33.0	22.5	10.54	3.131		
1,600.0	1,600.0	1,600.0	1,600.0	5.6	5.6	89.24	0.4	33.0	33.0	21.7	11.26	2.932		
1,700.0	1,700.0	1,700.0	1,700.0	6.0	6.0	89.24	0.4	33.0	33.0	21.0	11.97	2.756		
1,800.0	1,800.0	1,800.0	1,800.0	6.3	6.3	89.24	0.4	33.0	33.0	20.3	12.69	2.601		
1,900.0	1,900.0	1,900.0	1,900.0	6.7	6.7	89.24	0.4	33.0	33.0	19.6	13.41	2.462		
2,000.0	2,000.0	2,000.0	2,000.0	7.1	7.1	89.24	0.4	33.0	33.0	18.9	14.12	2.337		
2,025.8	2,025.8	2.025.9	2,025.9	7.2	7.1	80.81	0.3	33.0	33.0	18.7	14.30	2.304		
2,100.0	2,100.0	2,100.1	2,100.1	7.4	7.4	83.16	-0.4	32.8	32.7	17.9	14.81	2.208		
2,200.0	2,200.0	2,200.0	2,200.0	7.8	7.7	86.37	-1.3	32.6	32.5	17.0	15.49	2.094		
2,300.0	2,300.0	2,300.0	2,300.0	8.1	8.0	89.63	-2.2	32.3	32.3	16.1	16.18	1.996		
2,391.0	2,391.0	2,391.0	2,391.0	8.5	8.3	92.61	-3.0	32.1	32.3	15.5	16.81	1.919 CC		
2,400.0	2,400.0	2,400.0	2,400.0	8.5	8.4	92.90	-3.1	32.1	32.3	15.4	16.87	1.912		
2,500.0	2,500.0	2,500.0	2,500.0	8.9	8.7	96.17	-4.0	31.9	32.3	14.8	17.56	1.840		
2,600.0	2,600.0	2,600.0	2,600.0	9.2	9.0	99.42	-5.0	31.7	32.5	14.2	18.26	1.780		
2,700.0	2,700.0	2,700.0	2,699.9	9.6	9.4	102.63	-5.9	31.4	32.8	13.8	18.95	1.729		
2,800.0	2,800.0	2,799.9	2,799.9	9.9	9.7	105.77	-6.8	31.2	33.1	13.5	19.65	1.686		
2,900.0	2,900.0	2,899.9	2,899.9	10.3	10.1	108.84	-7.7	31.0	33.6	13.3	20.35	1.651		
3,000.0	3,000.0	2,999.9	2,999.9	10.6	10.4	111.81	-8.6	30.8	34.2	13.1	21.05	1.623		
3,100.0	3,100.0	3,099.9	3,099.8	11.0	10.7	114.68	-9.5	30.5	34.8	13.1	21.75	1.601 ES		
3,200.0	3,200.0	3,199.9	3,199.8	11.4	11.1	117.44	-10.5	30.3	35.5	13.1	22.45	1.583		
3,300.0	3,299.9	3,299.9	3,299.8	11.7	11.4	120.08	-11.4	30.1	36.4	13.2	23.15	1.570		
3,400.0	3,399.9	3,399.8	3,399.8	12.1	11.8	122.60	-12.3	29.8	37.2	13.4	23.86	1.561		
3,500.0	3,499.9	3,499.8	3,499.8	12.4	12.1	124.99	-13.2	29.6	38.2	13.6	24.56	1.555		
3,600.0	3,599.9	3,599.8	3,599.7	12.8	12.5	127.27	-14.1	29.4	39.2	14.0	25.27	1.552		
3,700.0	3,699.9	3,699.8	3,699.7	13.2	12.5	129.43	-14.1	29.4	40.3	14.0	25.97	1.552 SF		
3,800.0	3,799.9	3,799.8	3,799.7	13.5	13.2	131.47	-16.0	28.9	41.4	14.5	26.68	1.553		
3,900.0	3,899.9	3,899.8	3,899.7	13.9	13.5	133.40	-16.9	28.7	42.6	15.2	27.38	1.556		
4,000.0	3,999.9	3,999.7	3,999.7	14.2	13.9	135.23	-17.8	28.5	43.8	15.8	28.09	1.561		
4,100.0	4,099.9	4,099.7	4,099.6	14.6	14.2	136.95	-18.7	28.3	45.1	16.3	28.80	1.566		
4,200.0	4,199.9	4,199.7	4,199.6	14.9	14.6	138.58	-19.7	28.0	46.4	16.9	29.51	1.573		
4,300.0	4,299.9	4,100.7	4,299.6	15.3	14.9	140.12	-20.6	27.8	47.8	17.5	30.22	1.581		
4,400.0	4,399.9	4,399.7	4,399.6	15.7	15.3	141.57	-21.5	27.6	49.1	18.2	30.93	1.589		
4,500.0	4,499.9	4,499.7	4,499.5	16.0	15.6	142.95	-22.4	27.3	50.5	18.9	31.64	1.598		
4,600.0	4,599.9	4,599.6	4,599.5	16.4	16.0	144.24	-23.3	27.1	52.0	19.6	32.35	1.607		
4,700.0	4,699.9	4,699.6	4,699.5	16.7	16.3	145.47	-24.3	26.9	53.4	20.4	33.06	1.617		
4,800.0	4,799.9	4,799.6	4,799.5	17.1	16.7	146.63	-25.2	26.7	54.9	21.2	33.77	1.627		
4,900.0	4,899.9	4,899.6	4,899.5	17.5	17.0	147.74	-26.1	26.4	56.4	22.0	34.48	1.637		
5,000.0	4,999.9	4,999.6	4,999.4	17.8	17.4	148.78	-27.0	26.2	58.0	22.8	35.19	1.647		
5,100.0	5,099.9	5,099.6	5,099.4	18.2	17.7	149.77	-27.9	26.0	59.5	23.6	35.90	1.657		
5,200.0	5,199.9	5,199.5	5,199.4	18.5	18.1	150.71	-28.9	25.7	61.1	24.4	36.61	1.668		
5,300.0	5,299.9	5,299.5	5,299.4	18.9	18.4	151.60	-29.8	25.5	62.6	25.3	37.32	1.678		
5 <b>,400.0</b>	5,399.9	5,399.5	5,399.4	19.2	18.8	152.45	-30.7	25.3	64.2	26.2	38.03	1.688		
5,500.0	5,499.9	5,499.5	5,499.3	19.6	19.1	153.25	-31.6	25.1	65.8	27.1	38.75	1.699		
5,600.0	5,599.9	5,599.5	5,599.3	20.0	19.5	154.02	-32.5	24.8	67.4	28.0	39.46	1.709		
5,700.0	5,699.9	5,699.5	5,699.3	20.3	19.9	154.76	-33.5	24.6	69.1	28.9	40.17	1.719		
5,800.0	5,799.8	5,799.4	5,799.3	20.7	20.2	155.45	-34.4	24.4	70.7	29.8	40.88	1.729		
5,900.0	5,899.8	5,899.4	5,899.2	21.0	20.6	156.12	-35.3	24.2	72.3	30.7	41.60	1.739		
6,000.0	5,999.8	5,999.4	5,999.2	21.4	20.9	156.76	-36.2	23.9	74.0	31.7	42.31	1.749		
6,100.0	6,099.8	6,099.4	6,099.2	21.8	21.3	157.37	-37.1	23.7	75.7	32.6	43.02	1.759		
6,200.0	6,199.8	6,199.4	6,199.2	22.1	21.6	157.95	-38.0	23.5	77.3	33.6	43.74	1.768		
6,300.0	6,299.8	6,299.3	6,299.2	22.5	22.0	158.51	-39.0	23.2	79.0	34.6	44.45	1.778		
6,400.0	6,399.8	6,399.3	6,399.1	22.8	22.3	159.04	-39.9	23.0	80.7	35.5	45.16	1.787		

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COMPASS 5000.17 Build 03

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 113H - OWB - PWPO Offset Site Error: 0.0 usft Survey Program: Reference Measured Vertical Offset Well Error: 0.0 usft 0-MWD Rule Assigned: Semi Major Axis rence Offset Distance een Between Offset Offset Wellbore Centre Vertical Reference Highside Minimum Separation Warning Measured Between +N/-S +E/-W Depth Depth Depth Depth Toolface Centres Ellipses Separation Factor (usft) (usft) (usft) (usft) (usft) (usft) (usft) (usft) (°) (usft) (usft) (usft) 6,499.3 6,499.1 6,500.0 6,499.8 23.2 22.7 159.56 -40.8 22.8 82.4 36.5 45.88 1.796 6.600.0 6.599.8 6.599.3 6.599.1 23.5 23.1 160.05 -41.7 22.6 84.1 37.5 46.59 1.805 23.4 160.52 85.8 1.814 6.700.0 6.699.8 6.699.3 6.699.1 23.9 -42.6 22.3 38.5 47.30 6 800 0 6.799.8 6.799.3 6.799.0 24 3 23.8 160 98 -436 22 1 875 39.5 48 02 1 823 24.1 6,900.0 6,899.8 6,899.2 6,899.0 24.6 161.41 -44.5 21.9 89.2 40.5 48.73 1.831 7.000.0 6.999.8 6.999.2 6.999.0 25.0 24.5 161.83 -45.4 21.6 91.0 41.5 49.44 1.840 7.100.0 7.099.8 7.099.2 7.099.0 25.3 24.8 162 24 -46.3 214 927 42.5 50 16 1 848 7,199.0 -47.2 1.856 7,200.0 7,199.8 7,199.2 25.7 25.2 162.63 21.2 94.4 43.6 50.87 7,300.0 7,299.8 7,299.2 7,298.9 26.1 25.5 163.00 -48.2 21.0 96.2 44.6 51.59 1.864 7.399.2 25.9 163.36 45.6 52.30 7.400.0 7.399.8 7.398.9 26.4-49.1 20.7 97.9 1.872 7,500.0 7.499.8 7,499.1 7.498.9 26.8 26.3 163.71 -50.0 20.5 99.6 46.6 53.01 1 880 7,599.1 7,598.9 27.1 26.6 -50.9 20.3 47.7 1.887 7.600.0 7.599.8 164.05 101.4 53.73 7,700.0 7.699.8 7,699.1 7.698.9 27.5 27.0 164.38 -51.8 20 1 103.1 487 54.44 1.894 7,799.1 -52.8 7,800.0 7,799.8 7,798.8 27.9 27.3 164.69 19.8 104.9 49.7 55.16 1.902 7,900.0 7,899.8 7,899.1 7,898.8 28.2 27.7 165.00 -53.7 19.6 106.7 50.8 55.87 1.909 8.000.0 28.6 165.29 -54.6 108.4 56.59 1.916 7.999.8 7,999.1 7.998.8 28.0 19.4 51.8 8.100.0 8.099.8 8.099.0 8.098.8 28.9 28.4 165.58 -55.5 19.1 110.2 52.9 57.30 1.923 8,198.7 165.86 8,200.0 8,199.7 8,199.0 29.3 28.8 -56.4 18.9 111.9 53.9 58.02 1.929 8 300 0 8 299 7 8 299 0 8 298 7 296 291 166 12 -574 187 1137 55.0 5873 1 936 8.400.0 8.399.7 8.399.0 8.398.7 30.0 29.5 166 38 -58.3 18.5 115.5 56.0 59.45 1.943 8,500.0 8,499.7 8,499.0 8,498.7 30.4 29.8 166.64 -59.2 18.2 117.3 57.1 60.16 1.949 8 600 0 8 599 7 8 599 0 8 598 7 30.7 30.2 166.88 -60.1 18.0 119.0 58.2 60.88 1.955 8,700.0 8,699.7 8,698.9 8,698.6 30.5 167.12 -61.0 17.8 120.8 59.2 61.59 1.961 31.1 8.800.0 8,799.7 8,798.9 8,798.6 31.4 30.9 167.35 -62.0 17.6 122.6 60.3 62.31 1.967 167.57 8,900.0 8.899.7 8.898.9 8.898.6 31.8 31.3 -62.917.3 124.4 61.3 63.02 1.973 9,000.0 8,999.7 8,998.9 8,998,6 32.2 31.6 167.79 -63.8 17.1 126.2 62.4 63.74 1.979 9,100.0 9,099.7 9,098.9 9,098.6 32.5 32.0 168.00 -64.7 16.9 127.9 63.5 64.45 1.985 9 200 0 9 199 7 9.198.9 9 198 5 32.9 32.3 168 21 -65.6 166 1297 64 6 65 17 1 991 9,300.0 9.299.7 9,298.8 9.298.5 33.2 32.7 168.41 -66.6 16.4 131.5 65.6 65.88 1.996 9,400.0 9,399.7 9,398.8 9,398.5 33.6 33.0 168.60 -67.5 16.2 133.3 66.7 66.60 2.002 9,500.0 9,499,7 9.498.8 9,498.5 33.9 168.79 -68.4 135.1 2.007 33.4 16.0 67.8 67.31 136.9 9,600.0 9,599.7 9,598.8 9,598.4 34.3 33.8 168.97 -69.3 15.7 68.9 68.03 2.012 9,700.0 9,699,7 9,698.8 9,698.4 34.1 169.15 -70.2 15.5 138.7 69.9 68.74 2.017 34.7 9.800.0 9,799,7 9.798.8 9.798.4 35.0 34.5 169.33 -71.1 15.3 140.5 71.0 69.46 2.022 9,900.0 9,899.7 9,898.7 9,898.4 35.4 34.8 169.50 -72.1 15.0 142.3 72.1 70.18 2 0 2 7 10.000.0 9,999.7 9.998.7 9,998.4 35.7 35.2 169.67 -73.0 14.8 144.1 73.2 70.89 2.032 10.100.0 10.099.7 10.098.7 10.098.3 36.1 35.5 169.83 -739 14 6 145.9 743 7161 2 0 3 7 10,200.0 10,199.7 10,198.7 10,198.3 36.5 35.9 169.99 -74.8 14.4 147.7 75.3 72.32 2.042 10,300.0 10,299.7 10,298.7 10,298.3 36.8 36.3 170.14 -75.7 14.1 149.5 76.4 73.04 2.046 10.398.7 10,400.0 10.399.7 10.398.3 37.2 36.6 170.29 -76.7 13.9 151.3 77.5 73.75 2.051 10.500.0 10.499.7 10.481.1 10.480.6 37.5 36.9 170.42 -80.4 13.8 157.1 83.1 74.03 2.122 10,600.0 10,599.7 10,553.6 10,551.6 37.9 37.2 170.53 -94.7 13.7 177.7 104.6 73.10 2.430 10,699,6 10 620 3 10.614.4 38.2 37.4 -117.1 212.3 141.0 10,700,0 170.61 13.8 71.29 2 978 10,718.6 10,718.3 10,632.0 10,625.0 38.3 37.5 170.62 -121.9 220.1 149.2 70.89 3.105 13.8 10,725.0 10.724.6 10.635.9 10.628.5 38.3 37.5 18.34 -123.6 13.8 222.9 152.1 70.74 3.150 10.750.0 10.749.6 10.650.0 10.641.2 38.4 37.5 1.49 -129.913.8 233.3 163.3 70.03 3.332 10,775.0 10,666.5 37.6 -137.7 13.9 243.3 69.52 3.500 10,774.5 10,655.7 38.5 0.80 173.8 10,800.0 10,799.3 10,681.7 10,668.9 38.6 0.56 -145.4 252.8 184.0 68.85 3.672 37.6 13.9 10.825.0 10.823.9 10,700.0 10.684.3 38.7 37.7 0.45 -155.1 14.0 261.9 193.4 68.48 3.825 10 850 0 10 848 2 10.712.0 10 694 2 387 37.8 0.38 -161.8 14.0 270 4 203.0 67.42 4.012 10,725.0 10,704.9 38.8 0.33 -169.3 278.5 66.44 10,875.0 10,872.1 37.8 14.1 212.1 4.192 37.9 -179.6 10,900,0 10,895.6 10,742.0 10,718.4 38.9 0.31 14.1 286.1 220 2 65.85 4.344 CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

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Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 113H - OWB - PWPO Offset Site Error: 0.0 usft Survey Program: Reference Measured Vertical Offset Well Error: 0.0 usft 0-MWD Rule Assigned: Semi Major Axis rence Offset Distance een Between Offset Offset Wellbore Centre Vertical Reference Highside Minimum Separation Warning Measured Between +N/-S +E/-W Depth Depth Depth Depth Toolface Centres Ellipses Separation Factor (usft) (usft) (usft) (usft) (usft) (usft) (usft) (usft) (°) (usft) (usft) (usft) 10,925.0 10,918.7 10,756.9 10,729.9 39.0 37.9 0.28 -189.0 293.2 228.1 65.03 4.508 14.2 10.950.0 10.941.2 10.775.0 10.743.6 39.0 38.0 0.27 -200.9 14.3 299.8 235.2 64.53 4.645 -208.9 305.8 242.5 4.829 10.975.0 10.963.1 10.786.6 10.752.1 39.1 38.0 0.26 63.32 14.3 11.000.0 10.984.3 10.800.0 10.761.6 39.1 38.1 0 25 -218 2 14 4 311 3 249 0 62 28 4 999 10,772.8 11,025.0 11,004.9 10,816.2 39.2 38.1 0.25 -229.9 14.5 316.3 254.8 61.52 5.141 11.050.0 11.024.7 10,830.9 10.782.7 39.3 38.2 0.24 -240.9 14.6 320.8 260.2 60.60 5.293 11.075.0 11.043.6 10.850.0 10,794.9 39.3 38.3 0 24 -255 5 147 324.8 264 7 60.12 5 402 10,860.4 11,100.0 11,061.6 10,801.3 39.4 38.3 0.24 -263.7 14.8 328.2 269.4 58.73 5.588 11,125.0 11,078.8 10,875.0 10,810.0 39.5 38.4 0.23 -275.4 14.8 331.0 273.3 57.78 5 729 10.889.7 39.5 0.23 11.150.0 11.094.9 10.818.5 38.4 -287.514.9 333.4 276.5 56.84 5.865 11,175.0 11,110.0 10,900.0 10,824.1 39.6 38.5 0.23 -296.115.0 335.2 279.8 55 46 6 045 281.5 11.200.0 11.124.1 10.919.1 10.834.1 39.6 38.5 0.24 -312.3 15.1 336.5 54.97 6.121 11,225.0 11,137.1 10.933.7 10,841.3 397 38.6 0.24 -325.1 15.3 337.2 283 1 54.04 6.239 11,250.0 10,950.0 -339.5 11,148.9 10,848.9 39.8 38.7 0.24 15.4 337.4 284.1 53.29 6.331 11,275.0 11,159.6 10,963.0 10.854.6 39.8 38.7 0.24 -351.2 15.5 337.0 284.8 52.25 6.450 10.975.0 10.859.6 0.24 -362.1 285.0 6.571 11.300.0 11.169.0 39.9 38.7 15.6 336.1 51.15 11.325.0 -378.1 11.177.3 10.992.3 10.866.3 39.9 38.8 0.25 15.7 334.7 284.1 50.56 6.620 11,350.0 11,007.0 282.9 11,184.3 10,871.5 40.0 38.9 0.25 -391.8 15.8 332.7 49.77 6.685 11 375 0 11 190 0 11 025 0 10 877 3 40 1 38.9 0 25 -408.8 160 330.2 280.9 49 27 6 702 11,400.0 11,194.4 11,036.4 10.880.6 40.1 39.0 0.26 -419.7 16.1 327.1 278.8 48.31 6.771 11,050.0 11,425.0 11,197.6 10,884.3 40.2 39.0 0.26 -432.8 16.2 323.5 276.0 47.59 6.799 11,065.8 11,450.0 11,199.5 10 888 0 40.3 39.1 0 27 -448 2 16.3 319.4 272 3 47.07 6.786 6.802 11,472.9 11,200.0 11,075.0 10,890.0 40.3 39.1 0.27 -457.1 16.4 315.2 268.9 46.35 11,500.0 11,200.0 11,100.0 10,894.4 40.4 39.2 0.28 -481.7 16.6 310.4 264.1 46.31 6.703 255.4 11.600.0 11.200.0 11.156.2 10.899.7 40.7 39.5 0.28 -537.617.2 300.5 45.07 6.667 11,200.0 11,645.8 11,191.5 10,900.0 40.9 39.6 0.28 -572.9 17.5 300.0 254.9 45.10 6 6 5 2 11,200.0 11,245.7 39.9 0.28 -627.1 18.0 300.0 45.24 11,700.0 10,900.0 41.1 254.8 6.631 11 800 0 11 200 0 11 345 7 10 900 0 41.5 40.3 0.28 -727 1 190 300.0 254 4 45 56 6 585 11.900.0 11,200.0 11,445.7 10.900.0 42.0 40.9 0.28 -827.1 19.9 300.0 254.1 45.92 6.533 12,000.0 11,200.0 11,545.7 10,900.0 42.6 41.5 0.28 -927.1 20.9 300.0 253.7 46.33 6.475 12,100.0 11.645.7 -1.027.1 300.0 46.79 6.411 11.200.0 10.900.0 43.2 42.1 0.28 21.9 253 2 12,200.0 11,200.0 11,745.7 10,900.0 43.8 42.8 0.28 -1,127.1 22.8 300.0 252.7 47.30 6.342 12.300.0 11.200.0 11,845.7 10.900.0 44.5 43.6 0.28 -1.227.1 23.8 300.0 252.1 47.86 6.268 12,400.0 11.200.0 11.945.7 10.900.0 45.3 44.4 0.28 -1.327.124.8 300.0 251.5 48.46 6.191 12,500.0 11,200.0 12,045.7 10,900.0 46.1 45.2 0.28 -1,427.1 25.7 300.0 250.9 49.11 6.109 12.600.0 11.200.0 12.145.7 10.900.0 47.0 46.1 0.28 -1.527.1 26.7 300.0 250.2 49.79 6.025 12,700.0 11.200.0 12.245.7 10 900 0 47 9 47 1 0 28 -1.627.1276 300.0 249 5 50 51 5 939 12,800.0 11,200.0 12,345.7 10,900.0 48.0 -1,727.1 248.7 51.28 48.8 0.28 28.6 300.0 5.851 12,900.0 11,200.0 12,445.7 10,900.0 49.8 49.1 0.28 -1,827.1 29.6 300.0 247.9 52.08 5.761 12.545.7 13.000.0 11.200.0 10.900.0 50.8 50.1 0.28 -1.927.130.5 300.0 247.1 52.91 5.670 13,100.0 11,200.0 12,645.7 10.900.0 51.8 51.2 0.28 -2.027.1 31.5 300.0 246.2 53.77 5.579 13,200.0 11,200.0 12,745.7 10,900.0 52.9 52.3 0.28 -2,127.0 32.5 300.0 245.3 54.67 5.487 11 200 0 12 845 7 10,900,0 300.0 244.4 55.60 13 300 0 54.0 53.4 0.28 -2 227 0 33.4 5.396 54.6 13,400.0 11,200.0 12,945.7 10,900.0 55.1 0.28 -2,327.0 300.0 243.4 56.55 5.305 34.4 13.500.0 11.200.0 13.045.7 10.900.0 56.3 55.8 0.28 -2,427.0 35.3 300.0 242.5 57.54 5.214 13.600.0 11.200.0 13.145.7 10.900.0 57.4 57.0 0.28 -2.527.0 36.3 300.0 241.5 58.55 5.124 13,700.0 13,245.7 58.2 -2,627.0 300.0 240.4 5.036 11,200.0 10,900.0 58.6 0.28 37.3 59.58 13,800.0 11,200.0 13,345.7 10,900.0 59.8 0.28 -2,727.0 38.2 300.0 239.4 60.63 4.948 59.4 13.900.0 11.200.0 13.445.7 10.900.0 61.1 60.7 0.28 -2.827.039.2 300.0 238.3 61.71 4.861 14.000.0 11.200.0 13.545.7 10 900 0 62.3 62.0 0.28 -2.927.0 40.2 300.0 237 2 62.81 4 776 10,900.0 -3,027.0 300.0 14,100.0 11,200.0 13,645.7 63.6 63.3 0.28 41.1 236.1 63.93 4.693 14,200.0 11,200.0 13,745.7 10,900,0 64.9 64.6 0.28 -3,127.0 42.1 300.0 234.9 65.06 4.611

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

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Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Site Error: Survey Program: 0-MWD Reference Measured Vertical Meas Depth Depth Dep (usft) (usft) (us Rule Assigned: Distance Between Between Min Offset Well Error: Offset Measured Vertical Depth Depth (usft) (usft) Semi Major Axis Reference Offset Offset Wellbore Centre Highside Toolface Minimum Separation +N/-S +E/-W Separation Factor (usft) Centres Ellipses (usft) (usft) (usft) (°) (usft) (usft) (usft) -3 227.0 4.531 14 300 0 11 200 0 13 845 7 10 900 0 43.0 233.8 66 22 66.2 66.0 0.28 300.0

Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 113H - OWB - PWPO

14,300.0	11,200.0	13,845.7	10,900.0	66.2	66.0	0.28	-3,227.0	43.0	300.0	233.8	66.22	4.531	
14,400.0	11,200.0	13,945.7	10,900.0	67.6	67.3	0.28	-3,327.0	44.0	300.0	232.6	67.39	4.452	
14,500.0	11,200.0	14,045.7	10,900.0	68.9	68.7	0.28	-3,427.0	45.0	300.0	231.4	68.58	4.375	
14,600.0	11,200.0	14,145.7	10,900.0	70.2	70.0	0.28	-3,527.0	45.9	300.0	230.2	69.78	4.299	
14,700.0	11,200.0	14,245.7	10,900.0	71.6	71.4	0.28	-3,627.0	46.9	300.0	229.0	70.99	4.226	
14,800.0	11,200.0	14,345.7	10,900.0	73.0	72.8	0.28	-3,727.0	47.9	300.0	227.8	72.23	4.154	
14,900.0	11,200.0	14,445.7	10,900.0	74.4	74.2	0.28	-3,827.0	48.8	300.0	226.5	73.47	4.083	
15,000.0	11,200.0	14,545.7	10,900.0	75.8	75.6	0.28	-3,927.0	49.8	300.0	225.3	74.72	4.015	
15,100.0	11,200.0	14,645.7	10,900.0	77.2	77.1	0.28	-4,027.0	50.7	300.0	224.0	75.99	3.948	
15,200.0	11,200.0	14,745.7	10,900.0	78.6	78.5	0.28	-4,127.0	51.7	300.0	222.7	77.27	3.883	
15,300.0	11,200.0	14,845.7	10,900.0	80.0	79.9	0.28	-4,226.9	52.7	300.0	221.4	78.56	3.819	
15,400.0	11,200.0	14,945.7	10,900.0	81.4	81.4	0.28	-4,326.9	53.6	300.0	220.1	79.86	3.757	
15,500.0	11,200.0	15,045.7	10,900.0	82.9	82.8	0.28	-4,426.9	54.6	300.0	218.8	81.16	3.696	
15,600.0	11,200.0	15,145.7	10,900.0	84.3	84.3	0.28	-4,526.9	55.6	300.0	217.5	82.48	3.637	
15,700.0	11,200.0	15,245.7	10,900.0	85.8	85.8	0.28	-4,626.9	56.5	300.0	216.2	83.81	3.580	
15,800.0	11,200.0	15,345.7	10,900.0	87.3	87.3	0.28	-4,726.9	57.5	300.0	214.9	85.14	3.524	
45 000 0										0.40 F		0.400	
15,900.0	11,200.0	15,445.7	10,900.0	88.7	88.7	0.28	-4,826.9	58.4	300.0	213.5	86.49	3.469	
16,000.0	11,200.0	15,545.7	10,900.0	90.2	90.2	0.28	-4,926.9	59.4	300.0	212.2	87.84	3.416	
16,100.0	11,200.0	15,645.7	10,900.0	91.7	91.7	0.28	-5,026.9	60.4	300.0	210.8	89.19	3.364	
16,200.0	11,200.0	15,745.7	10,900.0	93.2	93.2	0.28	-5,126.9	61.3	300.0	209.4	90.56	3.313	
16,300.0	11,200.0	15,845.7	10,900.0	94.7	94.7	0.28	-5,226.9	62.3	300.0	208.1	91.93	3.263	
16,400.0	11,200.0	15,945.7	10,900.0	96.2	96.2	0.28	-5,326.9	63.3	300.0	206.7	93.30	3.215	
16,500.0	11,200.0	16,045.7	10,900.0	97.7	97.7	0.28	-5,426.9	64.2	300.0	205.3	94.69	3.168	
16,600.0	11,200.0	16,145.7	10,900.0	99.2	99.3	0.28	-5,526.9	65.2	300.0	203.9	94.09 96.08	3.123	
16,700.0	11,200.0	16,245.7	10,900.0	100.7	100.8	0.28	-5,626.9	66.1	300.0	202.5	97.47	3.078	
16,800.0	11,200.0	16,345.7	10,900.0	102.2	102.3	0.28	-5,726.9	67.1	300.0	201.1	98.87	3.034	
16,900.0	11,200.0	16,445.7	10,900.0	103.7	103.8	0.28	-5,826.9	68.1	300.0	199.7	100.27	2.992	
17,000.0	11,200.0	16,545.7	10,900.0	105.2	105.4	0.28	-5,926.9	69.0	300.0	198.3	101.68	2.950	
17,100.0	11,200.0	16,645.7	10,900.0	106.8	106.9	0.28	-6,026.9	70.0	300.0	196.9	103.10	2.910	
17,200.0	11,200.0	16,745.7	10,900.0	108.3	108.5	0.28	-6,126.9	71.0	300.0	195.5	104.51	2.870	
17,300.0	11,200.0	16,845.7	10,900.0	109.8	110.0	0.28	-6,226.9	71.9	300.0	194.1	105.94	2.832	
								70.0					
17,400.0	11,200.0	16,945.7	10,900.0	111.4	111.5	0.28	-6,326.9	72.9	300.0	192.6	107.36	2.794	
17,500.0	11,200.0	17,045.7	10,900.0	112.9	113.1	0.28	-6,426.8	73.8	300.0	191.2	108.79	2.758	
17,600.0	11,200.0	17,145.7	10,900.0	114.4	114.6	0.28	-6,526.8	74.8	300.0	189.8	110.23	2.722	
17,700.0	11,200.0	17,245.7	10,900.0	116.0	116.2	0.28	-6,626.8	75.8	300.0	188.3	111.67	2.687	
17,800.0	11,200.0	17,345.7	10,900.0	117.5	117.8	0.28	-6,726.8	76.7	300.0	186.9	113.11	2.652	
17,900.0	11,200.0	17,445.7	10,900.0	119.1	119.3	0.28	-6,826.8	77.7	300.0	185.5	114.55	2.619	
18,000.0	11,200.0	17,545.7	10,900.0	120.7	120.9	0.28	-6,926.8	78.7	300.0	184.0	116.00	2.586	
18,100.0	11,200.0	17,645.7	10,900.0	120.7	120.9	0.28	-7,026.8	79.6	300.0	182.6	117.45	2.554	
-		-	-										
18,200.0	11,200.0	17,745.7	10,900.0	123.8	124.0	0.28	-7,126.8	80.6	300.0 300.0	181.1	118.91	2.523	
18,300.0	11,200.0	17,845.7	10,900.0	125.3	125.6	0.28	-7,226.8	81.5	500.0	179.6	120.36	2.492	
18,400.0	11,200.0	17,945.7	10,900.0	126.9	127.1	0.28	-7,326.8	82.5	300.0	178.2	121.82	2.463	
18,500.0	11,200.0	18,045.7	10,900.0	128.5	128.7	0.28	-7,426.8	83.5	300.0	176.7	123.29	2.433	
18,600.0	11,200.0	18,145.7	10,900.0	130.0	130.3	0.28	-7,526.8	84.4	300.0	175.3	124.75	2.405	
18,700.0	11,200.0	18,245.7	10,900.0	131.6	131.9	0.28	-7,626.8	85.4	300.0	173.8	126.22	2.377	
18,800.0	11,200.0	18,345.7		133.2	133.4	0.28	-7,726.8	86.4	300.0	172.3	127.69	2.349	
			10.055 -		105 -							0.000	
18,900.0		18,445.7		134.7	135.0	0.28	-7,826.8	87.3	300.0	170.8	129.16	2.323	
19,000.0	11,200.0	18,545.7		136.3	136.6	0.28	-7,926.8	88.3	300.0	169.4	130.64	2.296	
19,100.0	11,200.0	18,645.7		137.9	138.2	0.28	-8,026.8	89.2	300.0	167.9	132.11	2.271	
19,200.0	11,200.0	18,745.7	10,900.0	139.5	139.8	0.28	-8,126.8	90.2	300.0	166.4	133.59	2.246	
19,300.0	11,200.0	18,845.7	10,900.0	141.0	141.4	0.28	-8,226.8	91.2	300.0	164.9	135.07	2.221	
	11,200.0	18,945.7	10 900 0	142.6	142.9	0.28	-8,326.8	92.1	300.0	163.4	136.56	2.197	
19 <u>4</u> 00 0	11,200.0	10,340.7	10,000.0	142.0	142.0	0.20	-0,520.0	02.1	300.0	103.4	130.30	2.101	

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0.0 usft

0.0 usft

Warning

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	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: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 113H - OWB - PWP0

													onset site Error.	0.0 0.510
Survey Pro	gram: 0-1 rence	MWD Off	set	Semi M	laior Axis		Offset Wellb	ore Centre	Dist	Rule Assig	gned:		Offset Well Error:	0.0 usft
Measured Depth (usft)		Measured Depth (usft)			Óffset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
19,500.0	11,200.0	19,045.7	10,900.0	144.2	144.5	0.28	-8,426.8	93.1	300.0	162.0	138.04	2.173		
19,600.0	11,200.0	19,145.7	10,900.0	145.8	146.1	0.28	-8,526.7	94.1	300.0	160.5	139.53	2.150		
19,700.0	11,200.0	19,245.7	10,900.0	147.4	147.7	0.28	-8,626.7	95.0	300.0	159.0	141.02	2.127		
19,800.0	11,200.0	19,345.7	10,900.0	149.0	149.3	0.28	-8,726.7	96.0	300.0	157.5	142.51	2.105		
19,900.0	11,200.0	19,445.7	10,900.0	150.6	150.9	0.28	-8,826.7	96.9	300.0	156.0	144.00	2.083		
20,000.0	11,200.0	19,545.7	10,900.0	152.2	152.5	0.28	-8,926.7	97.9	300.0	154.5	145.49	2.062		
20,100.0	11,200.0	19,645.7	10,900.0	153.7	154.1	0.28	-9,026.7	98.9	300.0	153.0	146.99	2.041		
20,200.0	11,200.0	19,745.7	10,900.0	155.3	155.7	0.28	-9,126.7	99.8	300.0	151.5	148.49	2.020		
20,300.0	11,200.0	19,845.7	10,900.0	156.9	157.3	0.28	-9,226.7	100.8	300.0	150.0	149.98	2.000		
20,400.0	11,200.0	19,945.7	10,900.0	158.5	158.9	0.28	-9,326.7	101.7	300.0	148.5	151.48	1.980		
20,500.0	11,200.0	20,045.7	10,900.0	160.1	160.5	0.28	-9,426.7	102.7	300.0	147.0	152.99	1.961		
20,600.0	11,200.0	20,145.7	10,900.0	161.7	162.1	0.28	-9,526.7	103.7	300.0	145.5	154.49	1.942		
20,700.0	11,200.0	20,245.7	10,900.0	163.3	163.7	0.28	-9,626.7	104.6	300.0	144.0	155.99	1.923		
20,800.0	11,200.0	20,345.7	10,900.0	164.9	165.3	0.28	-9,726.7	105.6	300.0	142.5	157.50	1.905		
20,900.0	11,200.0	20,445.7	10,900.0	166.5	166.9	0.28	-9,826.7	106.6	300.0	141.0	159.00	1.887		
21,000.0	11,200.0	20,545.7	10,900.0	168.1	168.5	0.28	-9,926.7	107.5	300.0	139.5	160.51	1.869		
21,061.2	11,200.0	20,606.9	10,900.0	169.1	169.5	0.28	-9,987.9	108.1	300.0	138.6	161.43	1.858		
21,091.8	11,200.0	20,637.5	10,900.0	169.6	170.0	0.28	-10,018.5	108.4	300.0	138.1	161.90	1.853		

Offset Site Error: 0.0 usft

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Interference         Model and any and any and any	rvey Pro	gram: 0-	MWD	set	Somi	laior Axis		Offset Wellb	ore Centre	Diet	Rule Assig	gned:		Offset Well Error:	0.0 (
1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         660         660         641         124         24183           3000         3000         5000         1000         1000         10         10         824         93         660         660         641         124         2483           5000         5000         5000         7000         7000         7000         7000         7000         7000         7000         24         24         824         03         660         660         661         664         1157           7000         7000         7000         7000         10000         31         31         824         03         660         660         661         531         767         664           10000         10000         10000         38         38         824         03         660         660         531         767         864           12000         12000         12000         42         42         824         03 <t< th=""><th>easured Depth</th><th>Vertical Depth</th><th>Measured Depth</th><th>Vertical Depth</th><th>Reference</th><th>Offset</th><th>Toolface</th><th>+N/-S</th><th>+E/-W</th><th>Between Centres</th><th>Between Ellipses</th><th>Separation</th><th></th><th>Warning</th><th></th></t<>	easured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Toolface	+N/-S	+E/-W	Between Centres	Between Ellipses	Separation		Warning	
2000         2000         2000         2000         2000         100         60         660         660         641         142         5416           4000	0.0	0.0	0.0	0.0	0.0	0.0	89.24	0.9	66.0	66.0					
0000         3000         3000         3000         10         10         824         09         660         660         663         463         266         337         1988           5000         5000         5000         5000         5000         5000         5000         600         660         560         660         660         560         660         660         560         660         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         660         560         560         660															
400.0       400.0       400.0       400.0       13       13       88.24       0.9       66.0       66.0       66.0       62.6       33.7       19.58         600.0       600.0       600.0       600.0       700.0       700.0       700.0       700.0       700.0       700.0       2.4       2.4       88.24       0.9       66.0 <td></td>															
500         500         500         17         17         824         0.9         660         660         626         3.37         19.588           600         600         600         600         600         600         600         600         600         612         4.80         13.74           800         900         900         300         9000         31         31         8924         0.9         660         660         552         11577           1000         1000         1000         33         38         8924         0.9         660         660         552         19.57         804           1000         1000         1000         300         42         42         824         0.9         660         660         552         9.82         670           1000         1000         1000         1000         1000         660         660         552         9.82         670           1000         1000         1000         1000         1000         600         660         660         551         117         1128         584           1000         1000         10000         10000         677															
600.0         600.0         600.0         700.0         72.0         2.0         82.4         0.9         66.0         66.0         61.9         4.09         16.152           700.0         700.0         700.0         700.0         2.4         2.4         88.24         0.9         66.0         66.0         66.0         66.0         66.0         55         52.0         11.57           900.0         900.0         1.000.0         1.000.0         3.5         3.5         88.24         0.9         66.0         66.0         56.8         6.0         9.841           1,000.0         1.000.0         1.000.0         4.6         4.6         88.24         0.9         66.0         66.0         55.5         10.54         6.33           1,000.0         1.000.0         1.000.0         5.5         5.8         88.24         0.9         66.0         66.0         55.5         10.54         6.33           1,000.0         1.000.0         1.000.0         5.8         5.8         88.24         0.9         66.0         66.0         55.5         10.54         6.33           1,000.0         1.000.0         5.8         5.8         88.24         0.9         66.0															
NOD0         YOD0         YOD0 <th< td=""><td>500.0</td><td>500.0</td><td>500.0</td><td>500.0</td><td>1.7</td><td>1.7</td><td>89.24</td><td>0.9</td><td>66.0</td><td>66.0</td><td>62.6</td><td>3.37</td><td>19.588</td><td></td><td></td></th<>	500.0	500.0	500.0	500.0	1.7	1.7	89.24	0.9	66.0	66.0	62.6	3.37	19.588		
b000         6000 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>															
900.0         900.0         900.0         100.0         11         3.1         3.1         89.24         0.9         66.0         66.0         59.1         6.24         10.52           1000.0         1,000.0         1,000.0         1,000.0         1,000.0         1,000.0         1,000.0         1,000.0         1,000.0         4.2         4.2         89.24         0.9         66.0         66.0         58.3         7.67         8.64           1,2000         1,2000         1,2000         4.2         4.2         89.24         0.9         66.0         66.0         55.2         9.22         6.72           1,4000         1,400.0         1,400.0         1,600.0         1,600.0         6.5         6.60         66.0         55.5         1.054         6.233           1,0000         1,000.0         1,000.0         6.7         6.7         89.24         0.9         66.0         66.0         5.4         1.127         5.51           1,0000         1,000.0         6.7         6.7         89.24         0.9         66.0         66.0         5.0         1.54         1.43.4         4.623           1,0000         1,000.0         6.7         6.7         89.24         0.															
1,000         4,6         4,6         99,24         0.9         66.0         66.0         56.9         9.11         7,249           1,0000         1,0000         1,000         5.6         5.6         89,24         0.9         66.0         66.0         54.7         11.26         5.664           1,0000         1,000         1,000         6.6         66.0         66.0         54.7         11.26         5.664           1,0000         1,000         1,000         6.7         8.924         0.9         66.0         66.0         53.3         12.02         5.031           1,0000         1,0000         1,0000         6.7         67.8         9.641         66.0         51.9         14.14         4.71 ES           2,0000         2,0001         2,007.2         2,027.7         7.7															
1,000         1,000 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>															
12000       12000 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>															
13000       13000       13000       13000       13000       14000 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>															
1,4000       1,4000       1,4000       1,4000       1,5000       1,5000       1,5000       5,500       5,50       5,50       5,50       5,54       5,22       5,22       6,22       6,263         1,6000       1,5000       1,5000       1,5000       5,60       5,6       89,24       0.9       66,0       66,0       54,7       11,26       5,564         1,7000       1,7000       1,7000       5,000       6,0       89,24       0.9       66,0       66,0       54,0       11,97       5,513         1,9000       1,9000       1,9000       1,9000       1,9000       6,7       6,7       89,24       0.9       66,0       66,0       52,0       1,414       4,232         2,0000       2,0000       2,0000       7,1       7,1       89,24       0.9       66,0       66,0       52,6       1,414       4,232         2,0000       2,0000       2,000,0       7,1       7,4       89,24       0.9       66,0       66,0       52,8       1,414       4,232         2,0000       2,907,9       2,067,7       7,4       7,4       89,24       1,9       7,6       5,7       1,8       1,40,0       4,514															
1,500       1,500       1,500       5.3       5.3       89.24       0.9       66.0       66.0       55.5       10.54       5.283         1,600.0       1,600.0       1,600.0       1,600.0       5.6       66.0       66.0       66.0       54.7       11.26       5.864         1,700.0       1,700.0       1,700.0       6.3       6.3       89.24       0.9       66.0       66.0       53.3       12.99       5.201         1,800.0       1,800.0       1,800.0       6.7       6.7       89.24       0.9       66.0       66.0       51.9       14.12       4.673 CC         2,000.0       2,000.0       2,000.0       7.1       7.1       89.24       0.9       66.0       66.1       51.8       14.30       4.621 ES         2,000.0       2,007.9       7.1       7.1       89.24       0.9       66.1       51.8       14.30       4.621 ES         2,000.0       2,007.9       2,177.9       7.4       7.7       81.45       1.3       7.08       7.73       16.2       4.537         2,000.0       2,497.7       2,497.5       8.9       8.8       82.71       2.2       80.2       7.96       61.9       17.63 <td>-</td> <td>-</td> <td></td> <td>-</td> <td></td>	-	-		-											
1         1															
17000       17000       17000       17000       17000       17000       1000       600       660       660       540       1197       5513         18000       18000       18000       18000       18000       18000       18000       18000       18000       18000       18000       18000       18000       18000       171       71       8924       0.9       660       660       52.6       13.41       4.233         2,000       2,000.0       2,000.7       7.1       7.1       89.24       0.9       66.0       66.0       52.6       13.41       4.233         2,000.2       2,000.2       2,007.8       2,007.7       7.4       7.4       80.51       1.0       67.7       67.6       52.8       1.422       4.500         2,000.0       2,207.8       2,207.7       81.8       81.8       82.71       2.2       80.2       79.6       61.9       17.6.3       4.544         2,000.0       2,507.7       2,507.4       9.6       9.5       83.31       2.7       86.3       86.6       66.9       19.04       4.446         2,000.0       2,507.7       2,507.4       9.6       9.5       83.314       2.7       8															
1,0000       1,0000															
19000       19000       19000       7.1       7.1       89.24       0.9       66.0       66.0       51.9       14.12       4.673 CC         2,000.       2,000.0       2,000.7       7.2       7.2       80.51       0.9       66.0       66.0       51.9       14.12       4.673 CC         2,025.8       2,025.2       2,025.2       7.2       7.2       80.51       0.9       66.1       66.1       51.8       14.30       4.621 ES         2,000.0       2,007.9       2,197.9       7.4       7.4       80.95       1.0       67.7       67.6       52.6       15.8       14.82       4501         2,000.0       2,207.8       2,197.9       2,197.8       7.8       7.7       81.45       1.3       70.6       59.6       16.92       4.524         2,000.0       2,407.0       2,397.8       2,397.6       8.5       8.4       82.33       1.9       77.0       7.6       59.6       16.92       4.524         2,000.0       2,600.0       2,697.7       2,697.4       9.2       9.1       83.07       3.0       89.6       64.3       18.33       4.504         2,000.0       2,807.6       2,497.7       2,497.9 <t< td=""><td>-</td><td>-</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	-	-		-											
2,000         2,000         2,000         2,000         7,1         7,1         89.24         0.9         66.0         66.0         51.9         14.12         4.673 CC           2,025.8         2,025.2         2,025.2         7,2         7,2         7,0         0.9         66.1         66.1         61.1         61.8         14.30         4.621 ES           2,000         2,007.9         2,097.9         2,977.8         7.8         7.7         81.45         1.3         70.8         7.3         1.62         4.547           2,000         2,207.8         2,297.8         2,397.7         8.1         8.1         81.90         1.6         77.9         7.8         5.73         1.622         4.534           2,000         2,600         2,597.7         2,597.4         9.2         9.1         83.06         2.5         83.3         82.6         64.3         18.33         4.504           2,000         2,600         2,597.7         2,597.1         10.3         10.2         84.02         3.3         92.6         9.9         9.8         83.72         3.0         89.6         88.6         68.9         19.75         4.487           2,000.0         2,907.0         2,997															
2025.8         2025.8         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2025.2         2027.2         2007.9         7.4         7.4         80.95         1.0         67.7         67.6         52.8         14.82         4.560           2,2000         2,2000.2         2,97.8         2,297.7         81.8         1.8         1.8         1.0         1.6         73.9         7.3.6         57.3         1.6         2.4.535           2,4000         2,497.7         2,497.5         8.9         8.8         82.71         2.2         80.2         79.6         61.9         1.7.63         4.514           2,5000         2,607.0         2,697.6         2,697.3         9.6         9.5         83.34         2.7         86.4         85.6         66.6         19.04         4.496           2,8000         2,8000.0         2,977.6         2,997.0         10.6         10.5         84.29         3.6         95.8         94.7         7.3.5         21.16         4.472           3,0000         3,097.4         3,096.9         11.0         10.9         84.55         3.9															
2,100.0       2,097.9       2,097.9       7,4       7,4       80.95       1.0       677       67.6       52.8       14.82       4.560         2,200.0       2,200.0       2,297.8       2,197.9       2,197.8       7.8       7.7       81.45       1.3       70.8       70.6       55.0       15.52       4.547         2,000.0       2,207.8       2,297.8       2,397.6       8.5       8.4       82.33       1.9       77.0       76.6       59.6       16.92       4.524         2,000.0       2,607.0       2,697.7       2,597.4       9.2       9.1       83.08       2.5       83.3       82.6       64.3       18.3       4.504         2,000.0       2,607.0       2,697.7       2,897.4       9.9       9.8       83.72       3.0       89.6       88.6       68.9       19.75       4.480         2,000.0       2,607.5       2,977.0       10.6       10.5       84.29       3.6       95.8       94.7       7.3.5       2.1.16       4.472         3,000.0       3,007.4       3,096.5       11.0       10.9       84.55       3.9       99.0       97.7       75.8       2.1.16       4.472         3,000.0															
2,200.0       2,197.9       2,197.8       7.8       7.7       81.45       1.3       70.8       70.6       55.0       15.52       4.547         2,300.0       2,297.8       2,397.7       8.1       8.1       81.90       1.6       77.99       73.6       57.3       16.22       4.535         2,400.0       2,400.0       2,497.7       2,497.5       8.9       8.8       82.71       2.2       80.2       79.6       61.9       17.63       4.514         2,600.0       2,607.0       2,607.4       9.2       9.1       83.08       2.5       83.3       82.6       64.3       18.33       4.504         2,600.0       2,607.6       2,697.7       2,697.1       9.9       9.8       83.72       3.0       89.6       86.6       68.9       19.75       4.487         2,000.0       2,607.4       3,096.7       10.6       10.5       84.29       3.6       95.8       94.7       73.5       2.16.6       4.472         3,000.0       3,097.4       3,096.7       11.0       10.9       84.55       3.9       90.9       97.7       75.8       2.187       4.466         3,000.0       3,097.3       3,296.7       11.7 <t< td=""><td>-</td><td>-</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	-	-		-											
2,200.0       2,207.8       2,297.7       8.1       8.1       81.9       1.6       73.9       73.6       57.3       16.22       4.535         2,400.0       2,307.8       2,397.6       8.5       8.4       82.33       1.9       77.0       76.6       59.6       16.92       4.524         2,500.0       2,607.7       2,497.7       2,497.5       8.9       8.8       82.71       2.2       80.2       79.6       61.9       17.63       4.514         2,700.0       2,607.6       2,697.3       9.6       9.5       83.12       3.0       82.6       66.9       19.04       4.406         2,800.0       2,800.7       2,97.6       2,797.2       9.9       9.8       83.72       3.0       99.6       88.6       68.9       19.75       4.487         2,800.0       2,800.7       2,997.0       10.6       10.5       84.29       3.6       95.8       94.7       73.5       21.16       4.442         3,000.0       3,007.4       3,096.8       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,000.0       3,099.3       3,397.3       3,396.6       12.1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>															
2,400.0       2,397.8       2,397.6       8.5       8.4       82.33       1.9       77.0       76.6       59.6       16.92       4.524         2,500.0       2,600.0       2,697.7       2,497.5       8.9       8.8       82.71       2.2       80.2       79.6       61.9       17.63       4.514         2,600.0       2,697.7       2,597.4       9.2       9.1       83.08       2.5       83.3       82.6       64.3       18.33       4.504         2,600.0       2,697.6       2,697.7       2,997.0       9.9       9.8       83.72       3.0       89.6       88.6       68.9       19.75       4.487         2,900.0       2,907.5       2,997.0       10.6       10.5       84.29       3.6       95.8       94.7       73.5       21.16       4.472         3,000.0       3,007.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,000.0       3,097.4       3,396.6       12.1       10.2       85.23       4.8       106.4       106.8       82.8       24.00       4.433         3,000.0       3,699.9       3,697.2       3,696.4															
25000       2,5000       2,507.7       2,597.4       9.2       9.1       83.08       2.5       83.3       82.6       64.3       18.33       4.504         2,600.0       2,597.7       2,597.4       9.2       9.1       83.08       2.5       83.3       82.6       64.3       18.33       4.504         2,700.0       2,707.0       2,597.6       2,697.3       9.6       9.5       83.41       2.7       86.4       85.6       66.6       19.04       4.496         2,900.0       2,897.5       2,897.1       10.3       10.2       84.02       3.3       92.7       91.6       71.2       20.46       4.480         3,000.0       3,097.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.16       4.472         3,000.0       3,007.4       3,096.8       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,000.0       3,299.9       3,297.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,000.0       3,599.9       3,597.2															
2,600.0       2,597.7       2,597.7       2,597.4       9.2       9.1       83.08       2.5       83.3       82.6       64.3       18.33       4.504         2,700.0       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       2,697.7       4.487         2,000.0       2,797.6       2,977.7       10.3       10.2       84.02       3.3       92.7       91.6       71.2       20.46       4.480         3,000.0       3,007.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,000.0       3,007.4       3,096.7       17.7       11.6       85.01       4.55       3.9       99.0       97.7       75.8       21.87       4.466         3,000.0       3,097.4       3,096.5       11.7       11.6       85.01       4.55       3.9       99.0       97.7       75.8       21.87       4.463         3,000.0       3,999.3       3,97.3       3,966.7       12.7       15.62       5.3       114.6       112.8       82.4       24.00       4.443															
2,700.0       2,697.6       2,697.3       9.6       9.5       83.41       2.7       86.4       85.6       66.6       19.04       4.496         2,800.0       2,807.5       2,797.2       9.9       9.8       83.72       3.0       89.6       88.6       68.9       19.75       4.487         2,900.0       2,807.5       2,897.1       10.3       10.2       84.02       3.3       92.7       91.6       71.2       20.46       4.480         3,000.0       3,000.1       3,097.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.16       4.472         3,200.0       3,200.3       3,097.4       3,096.9       11.0       10.9       84.55       105.2       103.7       80.4       23.29       4.453         3,200.0       3,207.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,000.0       3,699.9       3,497.2       3,966.1       12.4       12.8       85.43       5.1       111.5       109.8       85.1       24.71       4.442         3,000.0       3,699.9       3,697.2       3,66	-	-		-											
2,800.0       2,800.0       2,797.6       2,797.6       2,797.6       2,797.6       2,797.6       2,797.6       2,797.6       2,797.6       2,797.6       2,797.6       2,997.5       2,897.5       2,897.5       2,897.5       2,897.5       2,897.5       2,997.0       10.6       10.5       84.29       3.6       95.8       94.7       73.5       21.16       4.467         3,000.0       3,000.0       3,097.4       3,066.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,000.0       3,097.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,000.0       3,799.9       3,297.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,000.0       3,599.9       3,597.2       3,596.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.433         3,000.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0 <td></td>															
2,900.0       2,807.5       2,897.1       10.3       10.2       84.02       3.3       92.7       91.6       71.2       20.46       4.480         3,000.0       3,000.0       2,997.5       2,997.0       10.6       10.5       84.29       3.6       95.8       94.7       73.5       21.16       4.472         3,100.0       3,007.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,200.0       3,200.0       3,197.4       3,96.6       12.1       12.0       85.23       4.8       106.8       82.8       24.00       4.443         3,400.0       3,399.9       3,397.2       3,366.6       12.1       12.0       85.23       4.8       108.4       106.8       82.8       24.00       4.443         3,600.0       3,699.9       3,697.2       3,566.4       12.4       12.7       85.62       5.3       114.6       112.8       87.4       26.43       4.433         3,000.0       3,699.9       3,697.2       3,696.3       13.2       13.0       85.80       5.6       117.7       115.9       89.7       26.14       4.433         3,000.0       3															
3,000.0       2,997.5       2,997.0       10.6       10.5       84.29       3.6       95.8       94.7       73.5       21.16       4.472         3,100.0       3,097.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,200.0       3,209.0       3,197.4       3,196.8       11.4       11.2       84.79       4.2       102.1       100.7       78.1       22.58       4.453         3,200.0       3,299.9       3,297.3       3,296.6       12.1       12.0       85.23       4.8       106.4       106.8       82.8       24.00       4.448         3,000.0       3,699.9       3,697.2       3,696.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.437         3,000.0       3,699.9       3,697.2       3,696.3       13.2       13.0       88.80       5.6       117.7       115.9       89.7       26.14       4.433         3,000.0       3,699.9       3,697.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0       26.85       4.428	-	-		-											
3,100.0       3,097.4       3,096.9       11.0       10.9       84.55       3.9       99.0       97.7       75.8       21.87       4.466         3,200.0       3,207.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,000.0       3,399.9       3,397.3       3,396.6       12.1       12.0       85.23       4.8       108.4       106.8       82.8       24.00       4.448         3,000.0       3,599.9       3,597.2       3,596.4       12.4       12.3       85.43       5.1       111.5       109.8       85.1       24.71       4.442         3,600.0       3,799.9       3,797.1       3,796.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.433         3,000.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.96       5.9       120.9       118.9       92.0       26.85       4.428         3,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>															
3,200.0       3,197.4       3,196.8       11.4       11.2       84.79       4.2       102.1       100.7       78.1       22.58       4.459         3,300.0       3,299.9       3,297.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,400.0       3,399.9       3,397.3       3,396.6       12.1       12.0       85.23       4.8       108.4       106.8       82.8       24.00       4.448         3,600.0       3,599.9       3,697.2       3,596.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.433         3,700.0       3,699.9       3,697.2       3,596.4       12.8       12.7       85.62       5.6       117.7       115.9       89.7       26.14       4.433         3,700.0       3,699.9       3,697.1       3,796.1       13.9       13.7       86.14       6.2       124.0       121.9       94.4       27.56       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420															
3,300.       3,299.9       3,297.3       3,296.7       11.7       11.6       85.01       4.5       105.2       103.7       80.4       23.29       4.453         3,400.0       3,399.9       3,397.3       3,396.6       12.1       12.0       85.23       4.8       108.4       106.8       82.8       24.00       4.448         3,500.0       3,499.9       3,497.2       3,496.5       12.4       12.3       85.43       5.1       111.5       109.8       85.1       24.71       4.442         3,600.0       3,599.9       3,597.2       3,596.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.433         3,700.0       3,699.9       3,697.2       3,696.3       13.2       13.0       85.80       5.6       117.7       115.9       89.7       26.14       4.433         3,800.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0       26.85       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.99															
3,400.0       3,399.9       3,397.3       3,396.6       12.1       12.0       85.23       4.8       108.4       106.8       82.8       24.00       4.448         3,500.0       3,499.9       3,497.2       3,496.5       12.4       12.3       85.43       5.1       111.5       109.8       85.1       24.71       4.442         3,600.0       3,599.9       3,597.2       3,596.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.437         3,700.0       3,699.9       3,697.2       3,696.3       13.2       13.0       85.80       5.6       117.7       115.9       89.7       26.14       4.433         3,800.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0       26.85       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,100.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99															
3,500.0       3,499.9       3,497.2       3,496.5       12.4       12.3       85.43       5.1       111.5       109.8       85.1       24.71       4.442         3,600.0       3,599.9       3,597.2       3,596.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.437         3,700.0       3,699.9       3,697.2       3,696.3       13.2       13.0       85.80       5.6       117.7       115.9       89.7       26.14       4.433         3,800.0       3,799.9       3,997.1       3,796.1       13.9       13.7       86.14       6.2       124.0       121.9       94.4       27.56       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,100.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70															
3,600.0       3,599.9       3,597.2       3,596.4       12.8       12.7       85.62       5.3       114.6       112.8       87.4       25.43       4.437         3,700.0       3,699.9       3,697.2       3,696.3       13.2       13.0       85.80       5.6       117.7       115.9       89.7       26.14       4.433         3,800.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0       26.85       4.428         3,900.0       3,899.9       3,897.1       3,896.1       13.9       13.7       86.14       6.2       124.0       121.9       94.4       27.56       4.420         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,000.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,195.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412															
3,700.0       3,699.9       3,697.2       3,696.3       13.2       13.0       85.80       5.6       117.7       115.9       89.7       26.14       4.433         3,800.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0       26.85       4.428         3,800.0       3,899.9       3,897.1       3,896.1       13.9       13.7       86.14       6.2       124.0       121.9       94.4       27.56       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,000.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412         4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41 <td></td>															
3,800.0       3,799.9       3,797.1       3,796.2       13.5       13.4       85.98       5.9       120.9       118.9       92.0       26.85       4.428         3,900.0       3,899.9       3,897.1       3,896.1       13.9       13.7       86.14       6.2       124.0       121.9       94.4       27.56       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,100.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412         4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41       4.408         4,400.0       4,399.9       4,396.8       4,395.7       15.7       15.5       86.85       7.6       139.7       137.1       106.0       31.13 <td></td>															
3,900.0       3,899.9       3,897.1       3,896.1       13.9       13.7       86.14       6.2       124.0       121.9       94.4       27.56       4.424         4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,100.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412         4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41       4.408         4,400.0       4,399.9       4,396.8       4,395.7       15.7       15.5       86.85       7.6       139.7       137.1       106.0       31.13       4.405         4,600.0       4,499.9       4,496.8       4,495.6       16.0       15.9       86.97       7.9       142.8       140.1       108.3       31.84 </td <td>-</td> <td>-</td> <td></td> <td>-</td> <td></td>	-	-		-											
4,000.0       3,999.9       3,997.0       3,996.1       14.2       14.1       86.29       6.5       127.1       125.0       96.7       28.27       4.420         4,100.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412         4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41       4.408         4,400.0       4,399.9       4,396.8       4,395.7       15.7       15.5       86.85       7.6       139.7       137.1       106.0       31.13       4.405         4,600.0       4,499.9       4,496.8       4,495.6       16.0       15.9       86.97       7.9       142.8       140.1       108.3       31.84       4.402         4,600.0       4,599.9       4,596.7       4,595.5       16.4       16.2       87.09       8.2       145.9       143.2       110.6       32.55<	· · · · · · · · · · · · · · · · · · ·														
4,100.0       4,099.9       4,097.0       4,096.0       14.6       14.4       86.44       6.8       130.3       128.0       99.0       28.99       4.416         4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412         4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41       4.408         4,400.0       4,399.9       4,396.8       4,395.7       15.7       15.5       86.85       7.6       139.7       137.1       106.0       31.13       4.405         4,600.0       4,599.9       4,596.7       4,595.5       16.4       16.2       87.09       8.2       145.9       143.2       110.6       32.55       4.399         4,600.0       4,699.9       4,696.7       4,695.4       16.7       16.6       87.20       8.5       149.1       146.2       113.0       33.27       4.396         4,800.0       4,799.9       4,796.6       4,795.3       17.1       17.0       87.31       8.8       152.2       149.3       115.3       33.98															
4,200.0       4,199.9       4,196.9       4,195.9       14.9       14.8       86.58       7.1       133.4       131.0       101.3       29.70       4.412         4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41       4.408         4,400.0       4,399.9       4,396.8       4,395.7       15.7       15.5       86.85       7.6       139.7       137.1       106.0       31.13       4.405         4,500.0       4,499.9       4,496.8       4,495.6       16.0       15.9       86.97       7.9       142.8       140.1       108.3       31.84       4.402         4,600.0       4,599.9       4,596.7       4,595.5       16.4       16.2       87.09       8.2       145.9       143.2       110.6       32.55       4.399         4,700.0       4,699.9       4,696.7       4,695.4       16.7       16.6       87.20       8.5       149.1       146.2       113.0       33.27       4.396         4,800.0       4,799.9       4,796.6       4,795.3       17.1       17.0       87.31       8.8       152.2       149.3       115.3       33.9															
4,300.0       4,299.9       4,296.9       4,295.8       15.3       15.2       86.72       7.4       136.5       134.1       103.7       30.41       4.408         4,400.0       4,399.9       4,396.8       4,395.7       15.7       15.5       86.85       7.6       139.7       137.1       106.0       31.13       4.405         4,500.0       4,499.9       4,496.8       4,495.6       16.0       15.9       86.97       7.9       142.8       140.1       108.3       31.84       4.402         4,600.0       4,599.9       4,596.7       4,595.5       16.4       16.2       87.09       8.2       145.9       143.2       110.6       32.55       4.399         4,700.0       4,699.9       4,696.7       4,695.4       16.7       16.6       87.20       8.5       149.1       146.2       113.0       33.27       4.396         4,800.0       4,799.9       4,796.6       4,795.3       17.1       17.0       87.31       8.8       152.2       149.3       115.3       33.98       4.393															
4,400.04,399.94,396.84,395.715.715.586.857.6139.7137.1106.031.134.4054,500.04,499.94,496.84,495.616.015.986.977.9142.8140.1108.331.844.4024,600.04,599.94,596.74,595.516.416.287.098.2145.9143.2110.632.554.3994,700.04,699.94,696.74,695.416.716.687.208.5149.1146.2113.033.274.3964,800.04,799.94,796.64,795.317.117.087.318.8152.2149.3115.333.984.393	-														
4,500.0       4,499.9       4,496.8       4,495.6       16.0       15.9       86.97       7.9       142.8       140.1       108.3       31.84       4.402         4,600.0       4,599.9       4,596.7       4,595.5       16.4       16.2       87.09       8.2       145.9       143.2       110.6       32.55       4.399         4,700.0       4,699.9       4,696.7       4,695.4       16.7       16.6       87.20       8.5       149.1       146.2       113.0       33.27       4.396         4,800.0       4,799.9       4,796.6       4,795.3       17.1       17.0       87.31       8.8       152.2       149.3       115.3       33.98       4.393															
4,600.0 4,599.9 4,596.7 4,595.5 16.4 16.2 87.09 8.2 145.9 143.2 110.6 32.55 4.399 4,700.0 4,699.9 4,696.7 4,695.4 16.7 16.6 87.20 8.5 149.1 146.2 113.0 33.27 4.396 4,800.0 4,799.9 4,796.6 4,795.3 17.1 17.0 87.31 8.8 152.2 149.3 115.3 33.98 4.393															
4,700.0 4,699.9 4,696.7 4,695.4 16.7 16.6 87.20 8.5 149.1 146.2 113.0 33.27 4.396 4,800.0 4,799.9 4,796.6 4,795.3 17.1 17.0 87.31 8.8 152.2 149.3 115.3 33.98 4.393															
4,800.0 4,799.9 4,796.6 4,795.3 17.1 17.0 87.31 8.8 152.2 149.3 115.3 33.98 4.393		-													
5,000.0 4,999.9 4,996.5 4,995.1 17.8 17.7 87.52 9.4 158.4 155.4 119.9 35.41 4.387	-														

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Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 153H - OWB - PWPO Offset Site Error: 0.0 usft Survey Program: Reference Measured Vertical Offset Well Error: 0.0 usft 0-MWD Rule Assigned: Semi Major Axis rence Offset Distance een Between Offset Offset Wellbore Centre Vertical Reference Highside Minimum Separation Warning Measured Between +N/-S +E/-W Depth Depth Depth Depth Toolface Centres Ellipses Separation Factor (usft) (usft) (usft) (usft) (usft) (usft) (usft) (usft) (°) (usft) (usft) (usft) 5,100.0 5,099.9 5,096.5 5,095.0 18.2 18.0 87.61 9.7 161.6 158.4 122.3 36.12 4.385 5.200.0 5.199.9 5.196.5 5,194,9 18.5 18.4 87.71 9.9 164.7 161.4 124.6 36.84 4.382 4.380 5.300.0 5.299.9 5.296.4 5.294.8 18.9 18.7 87.79 10.2 167.8 164.5 126.9 37.55 5 400 0 5.399.9 5 396 4 5.394.7 192 191 87 88 10.5 171 0 167 5 129.3 38 27 4 378 5,500.0 5,499.9 5,496.3 5,494.6 19.6 19.5 87.96 10.8 174.1 170.6 131.6 38.98 4.376 5,600.0 5.599.9 5.596.3 5,594,5 20.0 19.8 88.04 11.1 177.2 173.6 133.9 39.70 4.374 5,700.0 5 699 9 5.696.2 5 694 4 20.3 20.2 88 12 11 4 180 4 176 7 136.2 40 4 1 4 372 5,794.3 5,800.0 5,799.8 5,796.2 20.7 20.5 88.20 11.7 183.5 179.7 138.6 41.13 4.370 5,900.0 5,899.8 5,896.1 5,894.2 21.0 20.9 88 27 12.0 186.6 182.7 140.9 41.84 4.368 5.999.8 5.994.1 88.34 189.8 185.8 143.2 42.56 6.000.0 5.996.1 21.4 21.3 12.3 4.366 6,100.0 6.099.8 6,096.0 6.094.0 21.8 21.6 88.41 12.5 192.9 188.8 145 6 43.27 4 364 22.1 22.0 12.8 147.9 4.362 6.200.0 6.199.8 6.196.0 6.193.9 88.47 196.0 191.9 43.99 6,300.0 6,299.8 6,295.9 6,293.8 22 5 22.3 88 53 13.1 199.1 194.9 150.2 44,70 4.361 6,395.9 4.359 6,400.0 6,399.8 6,393.7 22.8 22.7 88.60 13.4 202.3 198.0 152.6 45.42 6,500.0 6,499.8 6,495.8 6,493.7 23.2 23.1 88.66 13.7 205.4 201.0 154.9 46.13 4.358 6.600.0 6.599.8 6.595.8 6.593.6 23.5 88.71 208.5 157.2 46.85 4.356 23.4 14.0 204.1 6.693.5 6,700.0 6.699.8 6.695.8 23.9 23.8 88.77 14.3 211.7 207.1 159.6 47.56 4.355 6,795.7 6,793.4 4.353 6,800.0 6,799.8 88.82 214.8 210.2 161.9 48.28 24.3 24.1 14.6 6 900 0 6 899 8 6 895 7 6 893 3 24 6 24.5 88 88 148 217 9 213.2 164 2 49 00 4 352 6,999.8 7,000.0 6,995.6 6.993.2 25.0 24.9 88 93 15.1 221.1 216.3 166.6 49.71 4.350 7,100.0 7,099.8 7,095.6 7,093.1 25.3 25.2 88.98 15.4 224.2 219.3 168.9 50.43 4.349 7,200.0 7,199.8 7,195.5 7,193.0 257 25.6 89.03 15.7 227.3 222 4 171 2 51.14 4.348 7,300.0 7,299.8 7,295.5 7,292.9 26.1 25.9 89.07 16.0 230.5 225.4 51.86 4.347 173.6 7,400.0 7,399.8 7,395.4 7,392.8 26.4 26.3 89 12 16.3 233.6 228.5 175.9 52.57 4.345 7.495.4 7.500.0 7.499.8 7.492.7 26.8 26.7 89.17 16.6 236.7 231.5 178.2 53.29 4.344 7,600.0 7,599.8 7,595.3 7,592.6 27.1 27.0 89.21 16.9 239.8 234.6 180.5 54.01 4.343 7,700.0 7,699.8 7,695.3 7,692.5 27.5 27.4 89.25 17.1 243.0 237.6 182.9 54.72 4.342 7.800.0 7.799.8 7.795.2 7 792 4 27 9 277 89 29 174 246 1 240 7 185.2 55 44 4 341 187.5 7.900.0 7.899.8 7,895.2 7.892.3 28.2 28.1 89.33 17.7 249.2 243.7 56.15 4.340 8,000.0 7,999.8 7,995.1 7,992.2 28.6 28.5 89.37 18.0 252.4 246.8 189.9 56.87 4.339 8,100.0 8.099.8 8.095.1 8.092.1 28.9 89 41 255.5 249.8 192.2 57.59 4.338 28.8 18.3 8,200.0 8,199.7 8,195.1 8,192.0 29.3 29.2 89.45 18.6 258.6 252.9 194.5 58.30 4.337 8.300.0 8.299.7 8.295.0 8.291.9 29.6 29.5 89.49 18.9 261.8 255.9 196.9 59.02 4.336 8.400.0 8.399.7 8.395.0 8.391.8 30.0 29.9 89.52 19.2 264.9 259.0 199.2 59.74 4.335 8,500.0 8,499.7 8,494.9 8,491.7 30.4 30.3 89.56 19.4 268.0 262.0 201.5 60.45 4.334 8.600.0 8,599.7 8.594.9 8.591.6 30.7 30.6 89.59 19.7 271.2 265.1 203.9 61.17 4.333 8,700.0 8.699.7 8.694.8 8.691.5 31.1 31.0 89 62 20.0 274 3 268 1 206.2 61.88 4 332 8,800.0 8,799.7 8,794.8 8,791.4 89.66 20.3 277.4 271.2 208.5 62.60 4.331 31.4 31.3 8,900.0 8,899.7 8,894.7 8,891.3 31.8 31.7 89.69 20.6 280.5 274.2 210.9 63.32 4.331 9.000.0 8.999.7 8.994.7 8.991.2 32.2 32.1 89.72 20.9 283.7 277.3 213.2 64.03 4.330 9.100.0 9.099.7 9.094.6 9.091.2 32.5 32.4 89.75 21.2 286.8 280.3 215.6 64.75 4.329 9,200.0 9,199.7 9,194.6 9,191.1 32.9 32.8 89.78 21.5 289.9 283.4 217.9 65.47 4.328 9 294 5 33 2 293.1 286.4 66.18 9 300 0 9 299 7 9 291 0 33.1 89.81 21.8 220.2 4 327 33.5 9,400.0 9,399.7 9,394.5 9,390.9 33.6 89.84 22.0 296.2 289.5 222.6 66.90 4.327 9,500.0 9,499.7 9.494.4 9,490.8 33.9 33.9 89.87 22.3 299.3 292.5 224.9 67.62 4.326 9.600.0 9.599.7 9.594.4 9.590.7 34.3 34.2 89.89 22.6 302.5 295.6 227.2 68.33 4.325 9,700.0 9,694.4 9,690.6 34.6 22.9 305.6 298.6 229.6 69.05 4.325 9,699.7 34.7 89.92 9,800.0 9,799.7 9,794.3 9,790.5 35.0 89.95 23.2 308.7 301.7 231.9 69.77 4.324 34.9 9,900.0 9.899.7 9.894.3 9.890.4 35.4 35.3 89.97 23.5 311.9 304.7 234.2 70.48 4.323 10.000.0 9 999 7 9 994 2 9 990 3 357 357 90.00 23.8 315.0 307.8 236.6 71.20 4 323 10,099.7 10,094.2 10,090.2 36.0 238.9 4.322 10,100.0 36.1 90.02 24.1 318.1 310.8 71.91 241.2 10,200.0 10,199.7 10,194.1 10,190,1 36.5 36.4 90.05 24.3 321.3 313.9 72 63 4 321

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

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 153H - OWB - PWP0

urvey Pro		MWD	ent	Comi I	laior Avic		Offect Malls	oro Contro	Die	Rule Assi	gned:		Offset Well Error:	0.0 us
Measured		Off Measured	Vertical	Reference	lajor Axis Offset	Highside	Offset Wellb +N/-S	ore Centre +E/-W	Between	Between		Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
10,300.0	10,299.7	10,294.1	10,290.0	36.8	36.8	90.07	24.6	324.4	316.9	243.6	73.35	4.321		
10,300.0	10,239.7	10,294.1	10,389.9	37.2	37.1	90.09	24.0	327.5	320.0	245.9	74.06	4.320		
10,500.0	10,499.7	10,483.8	10,479.2	37.5	37.4	91.37	18.0	330.4	324.5	249.8	74.67	4.345		
10,600.0	10,599.7	10,567.2	10,559.7	37.9	37.7	95.05	-3.3	333.1	333.4	258.3	75.06	4.442		
10,700.0	10,699.6	10,641.2	10,627.0	38.2	37.9	100.00	-33.7	335.5	349.6	274.7	74.92	4.667		
10,718.6	10,718.3	10,653.8	10,638.0	38.3	38.0	100.97	-39.9	335.9	353.7	278.9	74.81	4.728		
10,725.0	10,724.6	10,658.0	10,641.6	38.3	38.0	-50.82	-42.0	336.1	355.2	280.4	74.77	4.750		
10,750.0	10,749.6	10,675.0	10,656.1	38.4	38.0	-65.74	-51.0	336.6	361.0	286.5	74.57	4.842		
10,775.0	10,774.5	10,690.8	10,669.3	38.5	38.1	-64.65	-59.8	337.1	367.1	292.8	74.30	4.940		
10,800.0	10,799.3	10,707.0	10,682.4	38.6	38.1	-63.15	-69.2	337.6	373.2	299.2	74.00	5.043		
10,825.0	10,823.9	10,725.0	10,696.6	38.7	38.2	-61.50	-80.2	338.1	379.4	305.6	73.74	5.144		
10,850.0	10,848.2	10,739.1	10,707.5	38.7	38.2	-60.11	-89.2	338.6	385.5	312.2	73.30	5.259		
10,875.0	10,872.1	10,755.0	10,719.4	38.8	38.3	-58.66	-99.6	339.0	391.7	318.8	72.91	5.372		
10,900.0	10,895.6	10,770.7	10,730.8	38.9	38.3	-57.28	-110.5	339.5	397.7	325.2	72.48	5.487		
10,925.0	10,033.0	10,786.4	10,741.9	39.0	38.3	-55.98	-121.6	340.0	403.7	331.6	72.40	5.604		
10,950.0	10,941.2	10,800.0	10,751.1	39.0	38.4	-54.84	-131.5	340.3	409.5	338.0	71.49	5.728		
-,		,												
10,975.0	10,963.1	10,817.5	10,762.7	39.1	38.4	-53.62	-144.7	340.8	415.1	344.0	71.10	5.839		
11,000.0	10,984.3	10,832.9	10,772.4	39.1	38.5	-52.55	-156.6	341.3	420.6	349.9	70.61	5.956		
11,025.0	11,004.9	10,850.0	10,782.7	39.2	38.5	-51.51	-170.2	341.7	425.8	355.6	70.19	6.066		
11,050.0	11,024.7	10,863.7	10,790.6	39.3	38.6	-50.65	-181.3	342.1	430.7	361.1	69.63	6.186		
11,075.0	11,043.6	10,875.0	10,797.0	39.3	38.6	-49.91	-190.8	342.4	435.5	366.5	68.97	6.313		
44 400 0	44.004.0	40.004.0	40.007.4	20.4	20.7	40.05	207.0	242.0	420.0	274.2	60.66	C 400		
11,100.0	11,061.6	10,894.2	10,807.1	39.4	38.7	-49.05	-207.0	342.8	439.8	371.2	68.66	6.406		
11,125.0	11,078.8	10,909.4	10,814.7	39.5	38.7	-48.36	-220.1	343.2	443.9	375.7	68.20	6.510		
11,150.0	11,094.9	10,925.0	10,822.1	39.5	38.7	-47.72	-233.9	343.6	447.7	380.0	67.77	6.607		
11,175.0	11,110.0	10,939.6 10,950.0	10,828.6	39.6	38.8	-47.17	-247.0	343.9 344.1	451.2	383.9	67.32	6.702 6.806		
11,200.0	11,124.1	10,950.0	10,833.0	39.6	38.8	-46.74	-256.4	344.1	454.3	387.6	66.75	0.000		
11,225.0	11,137.1	10,969.8	10,840.7	39.7	38.9	-46.25	-274.6	344.5	457.1	390.5	66.55	6.868		
11,250.0	11,148.9	10,984.8	10,846.1	39.8	38.9	-45.89	-288.7	344.8	459.5	393.3	66.21	6.939		
11,275.0	11,159.6	11,000.0	10,851.1	39.8	39.0	-45.58	-303.0	345.1	461.5	395.6	65.92	7.001		
11,300.0	11,169.0	11,014.8	10,855.5	39.9	39.0	-45.34	-317.2	345.4	463.2	397.5	65.65	7.055		
11,325.0	11,177.3	11,025.0	10,858.2	39.9	39.1	-45.17	-327.0	345.6	464.5	399.2	65.32	7.111		
11,350.0	11,184.3	11,044.8	10,863.0	40.0	39.1	-45.03	-346.2	345.9	465.3	400.1	65.27	7.129		
11,375.0	11,190.0	11,059.8	10,866.1	40.1	39.2	-44.97	-360.8	346.2	465.8	400.7	65.15	7.150		
11,400.0	11,194.4	11,075.0	10,868.8	40.1	39.2	-44.96	-375.8	346.4	466.0	400.9	65.09	7.159		
11,425.0	11,197.6	11,089.8	10,871.0	40.2	39.3	-45.02	-390.4	346.6	465.7	400.6	65.07	7.157		
11,450.0	11,199.5	11,100.0	10,872.2	40.3	39.3	-45.11	-400.6	346.7	465.1	400.0	65.06	7.148		
11,472.9	11,200.0	11,118.5	10,873.8	40.3	39.4	-45.29	-419.0	347.0	464.1	398.9	65.20	7.118		
11,500.0	11,200.0	11,134.8	10,874.7	40.4	39.4	-45.36	-435.2	347.1	463.1	397.8	65.33	7.089		
11,546.6	11,200.0	11,170.0	10,875.0	40.5	39.5	-45.39	-470.5	347.5	462.8	397.2	65.56	7.059		
11,600.0	11,200.0	11,223.5	10,875.0	40.7	39.7	-45.39	-523.9	348.0	462.8	397.0	65.83	7.030		
11,700.0	11,200.0	11,323.5	10,875.0	41.1	40.1	-45.39	-623.9	349.0	462.8	396.4	66.43	6.966		
-														
	11,200.0		10,875.0	41.5	40.6	-45.39	-723.9	349.9	462.8	395.7	67.13	6.895		
-	11,200.0	-	10,875.0	42.0	41.1	-45.39	-823.9	350.9	462.8	394.9	67.91	6.815		
12,000.0	11,200.0	11,623.5	10,875.0	42.6	41.7	-45.39	-923.9	351.9	462.8	394.0	68.79	6.728		
12,100.0	11,200.0	11,723.5	10,875.0	43.2	42.3	-45.39	-1,023.9	352.8	462.8	393.1	69.75	6.636		
12,200.0	11,200.0	11,823.5	10,875.0	43.8	43.0	-45.39	-1,123.9	353.8	462.8	392.0	70.79	6.538		
12,300.0	11,200.0	11,923.5	10,875.0	44.5	12 7	-45.39	-1,223.9	354.7	462.8	390.9	71.01	6.436		
12,300.0	11,200.0	11,923.5	10,875.0	44.5 45.3	43.7 44.5	-45.39 -45.39	-1,223.9	354.7 355.7	462.8	390.9 389.7	71.91 73.10	6.331		
12,400.0	11,200.0		10,875.0	45.3	44.5 45.4	-45.39 -45.39	-1,323.9	355.7	462.8	389.7	73.10	6.223		
12,500.0	11,200.0		10,875.0	40.1	45.4	-45.39	-1,423.9	350.7	462.8	387.1	75.70	6.113		
	11,200.0		10,875.0	47.0	40.2	-45.39	-1,623.9	358.6	462.8	385.7	77.10	6.002		
.2,100.0	11,200.0	12,020.0	10,013.0	-11.0	41.1	43.33	1,020.0	330.0	402.0	303.7	11.10	0.002		
	11,200.0	12.423.5	10,875.0	48.8	48.1	-45.39	-1,723.9	359.6	462.8	384.2	78.56	5.891		
12,800.0	11,200.0													

8/5/2024 7:09:28AM

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Offset Site Error:

0.0 usft

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 153H - OWB - PWP0

Survey Pro	gram: 0-	MWD								Rule Assig	aned:		Offset Well Error:	0.0 us
	rence	Off Measured			lajor Axis Offset	Highside	Offset Wellb	ore Centre		tance Between	-	Separation	Warning	
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor	warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
12,900.0	11,200.0	12,523.5	10,875.0	49.8	49.1	-45.39	-1,823.9	360.5	462.8	382.7	80.08	5.779		
13,000.0	11,200.0	12,623.5	10,875.0	50.8	50.1	-45.39	-1,923.9	361.5	462.8	381.1	81.65	5.668		
13,100.0	11,200.0	12,723.5	10,875.0	51.8	51.2	-45.39	-2,023.9	362.4	462.8	379.5	83.27	5.558		
13,200.0	11,200.0	12,823.5	10,875.0	52.9	52.3	-45.39	-2,123.9	363.4	462.8	377.9	84.94	5.449		
13,300.0	11,200.0	12,923.5	10,875.0	54.0	53.4	-45.39	-2,223.9	364.4	462.8	376.1	86.66	5.341		
13,400.0	11,200.0	13,023.5	10,875.0	55.1	54.5	-45.39	-2,323.9	365.3	462.8	374.4	88.41	5.234		
13,500.0	11,200.0	13,123.5	10,875.0	56.3	55.7	-45.39	-2,423.8	366.3	462.8	372.6	90.21	5.130		
13,600.0	11,200.0	13,223.5	10,875.0	57.4	56.9	-45.39	-2,523.8	367.3	462.8	370.7	92.05	5.028		
13,700.0	11,200.0	13,323.5	10,875.0	58.6	58.1	-45.39	-2,623.8	368.2	462.8	368.9	93.92	4.927		
13,800.0	11,200.0	13,423.5	10,875.0	59.8	59.4	-45.39	-2,723.8	369.2	462.8	367.0	95.83	4.829		
13,900.0	11,200.0	13,523.5	10,875.0	61.1	60.6	-45.39	-2,823.8	370.1	462.8	365.0	97.76	4.734		
14,000.0	11,200.0	13,623.5	10,875.0	62.3	61.9	-45.39	-2,923.8	371.1	462.8	363.1	99.73	4.640		
14,100.0	11,200.0	13,723.5	10,875.0	63.6	63.2	-45.39	-3,023.8	372.1	462.8	361.1	101.73	4.549		
14,200.0	11,200.0	13,823.5	10,875.0	64.9	64.5	-45.39	-3,123.8	373.0	462.8	359.0	103.75	4.461		
14,300.0	11,200.0	13,923.5	10,875.0	66.2	65.8	-45.39	-3,223.8	374.0	462.8	357.0	105.80	4.374		
14,400.0	11,200.0	14,023.5	10,875.0	67.6	67.2	-45.39	-3,323.8	374.9	462.8	354.9	107.87	4.290		
14,500.0	11,200.0	14,123.5	10,875.0	68.9	68.5 69.9	-45.39	-3,423.8	375.9	462.8	352.8	109.96	4.209		
14,600.0	11,200.0	14,223.5	10,875.0	70.2		-45.39	-3,523.8	376.9	462.8	350.7	112.07	4.129		
14,700.0	11,200.0	14,323.5	10,875.0	71.6	71.3	-45.39	-3,623.8	377.8	462.8	348.6	114.21	4.052		
14,800.0	11,200.0	14,423.5	10,875.0	73.0	72.6	-45.39	-3,723.8	378.8	462.8	346.4	116.36	3.977		
14,900.0	11,200.0	14,523.5	10,875.0	74.4	74.0	-45.39	-3,823.8	379.8	462.8	344.3	118.53	3.905		
15,000.0	11,200.0	14,623.5	10,875.0	75.8	75.4	-45.39	-3,923.8	380.7	462.8	342.1	120.71	3.834		
15,100.0	11,200.0	14,723.5	10,875.0	77.2	76.9	-45.39	-4,023.8	381.7	462.8	339.9	122.92	3.765		
15,200.0	11,200.0	14,823.5	10,875.0	78.6	78.3	-45.39	-4,123.8	382.6	462.8	337.7	125.13	3.698		
15,300.0	11,200.0	14,923.5	10,875.0	80.0	79.7	-45.39	-4,223.8	383.6	462.8	335.4	127.36	3.634		
15,400.0	11,200.0	15,023.5	10,875.0	81.4	81.2	-45.39	-4,323.8	384.6	462.8	333.2	129.61	3.571		
15,500.0	11,200.0	15,123.5	10,875.0	82.9	82.6	-45.39	-4,423.8	385.5	462.8	330.9	131.87	3.510		
15,600.0	11,200.0	15,223.5	10,875.0	84.3	84.1	-45.39	-4,523.8	386.5	462.8	328.7	134.14	3.450		
15,700.0	11,200.0	15,323.5	10,875.0	85.8	85.6	-45.39	-4,623.7	387.5	462.8	326.4	136.42	3.392		
15,800.0	11,200.0	15,423.5	10,875.0	87.3	87.0	-45.39	-4,723.7	388.4	462.8	324.1	138.71	3.336		
15,900.0	11,200.0	15,523.5	10,875.0	88.7	88.5	-45.39	-4,823.7	389.4	462.8	321.8	141.01	3.282		
16,000.0	11,200.0	15,623.5	10,875.0	90.2	90.0	-45.39	-4,923.7	390.3	462.8	319.5	143.33	3.229		
16,100.0	11,200.0	15,723.5 15,823.5	10,875.0	91.7	91.5	-45.39	-5,023.7	391.3	462.8	317.1	145.65	3.177		
16,200.0	11,200.0		10,875.0	93.2	93.0	-45.39	-5,123.7	392.3	462.8	314.8	147.98	3.127		
16,300.0 16,400.0	11,200.0 11,200.0	15,923.5 16,023.5	10,875.0 10,875.0	94.7 96.2	94.5 96.0	-45.39 -45.39	-5,223.7 -5,323.7	393.2 394.2	462.8 462.8	312.5 310.1	150.32 152.67	3.079 3.031		
16,500.0	11,200.0	16,123.5	10,875.0	97.7	97.5	-45.39	-5,423.7	395.2	462.8	307.8	155.02	2.985		
16,600.0	11,200.0	16,223.5	10,875.0	99.2	99.0	-45.39	-5,523.7	396.1	462.8	305.4	157.39	2.940		
16,700.0	11,200.0	16,323.5	10,875.0	100.7	100.5	-45.39	-5,623.7	397.1	462.8	303.0	159.76	2.897		
16,800.0	11,200.0	16,423.5	10,875.0	102.2	102.0 103.6	-45.39	-5,723.7	398.0 399.0	462.8	300.7	162.13	2.854		
16,900.0	11,200.0	16,523.5	10,875.0	103.7	103.0	-45.39	-5,823.7	288.0	462.8	298.3	164.52	2.813		
	11,200.0			105.2	105.1	-45.39	-5,923.7	400.0	462.8	295.9	166.91	2.773		
17,100.0	11,200.0	16,723.5	10,875.0	106.8	106.6	-45.39	-6,023.7	400.9	462.8	293.5	169.30	2.733		
17,200.0	11,200.0		10,875.0	108.3	108.2	-45.39	-6,123.7	401.9	462.8	291.1	171.71	2.695		
17,300.0	11,200.0	16,923.5	10,875.0	109.8	109.7	-45.39	-6,223.7	402.9	462.8	288.7	174.11	2.658		
17,400.0	11,200.0	17,023.5	10,875.0	111.4	111.2	-45.39	-6,323.7	403.8	462.8	286.3	176.53	2.622		
17,500.0	11,200.0	17,123.5	10,875.0	112.9	112.8	-45.39	-6,423.7	404.8	462.8	283.8	178.94	2.586		
17,600.0	11,200.0	17,223.5		114.4	114.3	-45.39	-6,523.7	405.7	462.8	281.4	181.37	2.552		
17,700.0	11,200.0	17,323.5		116.0	115.9	-45.39	-6,623.7	406.7	462.8	279.0	183.79	2.518		
17,800.0	11,200.0	17,423.5		117.5	117.4	-45.39	-6,723.6	400.7	462.8	276.6	186.22	2.485		
17,900.0	11,200.0	17,523.5		119.1	119.0	-45.39	-6,823.6	408.6	462.8	274.1	188.66	2.453		
18,000.0	11,200.0	17,623.5	10,875.0	120.7	120.6	-45.39	-6,923.6	409.6	462.8	271.7	191.10	2.422		

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Offset Site Error: 0.0 usft

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	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

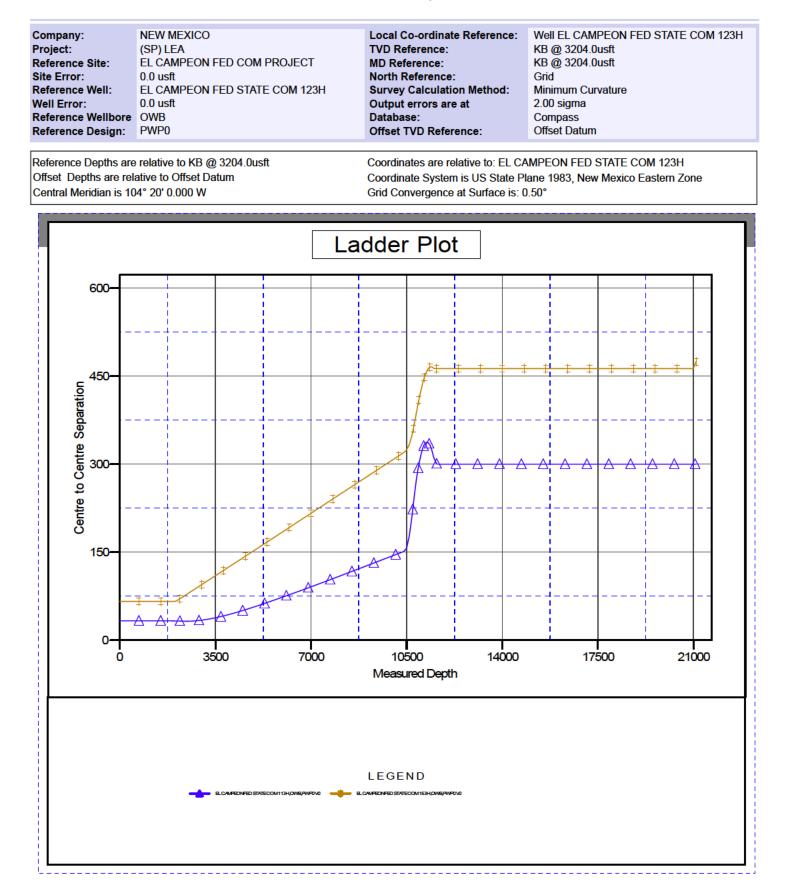
Offset Design: EL CAMPEON FED COM PROJECT - EL CAMPEON FED STATE COM 153H - OWB - PWP0

													Unset Site Error.	0.0 usit
Survey Pro		-MWD								Rule Assig	jned:		Offset Well Error:	0.0 usft
Refe Measured	erence Vertical	Off Measured		Semi N Reference	Major Axis Offset	Highside	Offset Wellb	ore Centre		tance Between	Minimum	Separation	Warning	
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation			
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
18,100.0	11,200.0		10,875.0	122.2	122.1	-45.39	-7,023.6	410.5	462.8	269.2	193.54	2.391		
18,200.0	11,200.0		10,875.0	123.8	123.7	-45.39	-7,123.6	411.5	462.8	266.8	195.99	2.361		
18,300.0	11,200.0		10,875.0	125.3	125.3	-45.39	-7,223.6	412.5	462.8	264.3	198.44	2.332		
18,400.0	11,200.0		10,875.0	126.9	126.8	-45.39	-7,323.6	413.4	462.8	261.9	200.90	2.304		
18,500.0	11,200.0		10,875.0	128.5	128.4	-45.39	-7,423.6	414.4	462.8	259.4	203.36	2.276		
18,600.0	11,200.0	18,223.5	10,875.0	130.0	130.0	-45.39	-7,523.6	415.4	462.8	257.0	205.82	2.249		
18,700.0	11,200.0	18,323.5	10,875.0	131.6	131.5	-45.39	-7,623.6	416.3	462.8	254.5	208.28	2.222		
18,800.0	11,200.0	18,423.5	10,875.0	133.2	133.1	-45.39	-7,723.6	417.3	462.8	252.0	210.75	2.196		
18,900.0	11,200.0	18,523.5	10,875.0	134.7	134.7	-45.39	-7,823.6	418.2	462.8	249.6	213.22	2.170		
19,000.0	11,200.0	18,623.5	10,875.0	136.3	136.3	-45.39	-7,923.6	419.2	462.8	247.1	215.70	2.146		
19,100.0	11,200.0	18,723.5	10,875.0	137.9	137.9	-45.39	-8,023.6	420.2	462.8	244.6	218.18	2.121		
19,200.0	11,200.0	18,823.5	10,875.0	139.5	139.4	-45.39	-8,123.6	421.1	462.8	242.1	220.65	2.097		
19,300.0	11,200.0		10,875.0	141.0	141.0	-45.39	-8,223.6	422.1	462.8	239.6	223.14	2.074		
19,400.0	11,200.0		10,875.0	142.6	142.6	-45.39	-8,323.6	423.1	462.8	237.2	225.62	2.051		
19,500.0	11,200.0		10,875.0	144.2	144.2	-45.39	-8,423.6	424.0	462.8	234.7	228.11	2.029		
19,600.0	11,200.0		10,875.0	145.8	145.8	-45.39	-8,523.6	425.0	462.8	232.2	230.60	2.007		
19,700.0	11,200.0		10,875.0	147.4	147.4	-45.39	-8,623.6	425.9	462.8	229.7	233.09	1.985		
19,800.0	11,200.0		10,875.0	149.0	149.0	-45.39	-8,723.6	426.9	462.8	227.2	235.58	1.964		
19,900.0	11,200.0	19,523.5	10,875.0	150.6	150.5	-45.39	-8,823.6	427.9	462.8	224.7	238.08	1.944		
20,000.0	11,200.0		10,875.0	152.2	152.1	-45.39 -45.39	-8,923.5 -9,023.5	428.8	462.8 462.8	222.2	240.58	1.924		
20,100.0	11,200.0	19,723.5	10,875.0	153.7	153.7	-40.39	-9,023.5	429.8	402.8	219.7	243.08	1.904		
20,200.0	11,200.0	19,823.5	10,875.0	155.3	155.3	-45.39	-9,123.5	430.8	462.8	217.2	245.58	1.884		
20,300.0	11,200.0	19,923.5	10,875.0	156.9	156.9	-45.39	-9,223.5	431.7	462.8	214.7	248.08	1.865		
20,400.0	11,200.0	20,023.5	10,875.0	158.5	158.5	-45.39	-9,323.5	432.7	462.8	212.2	250.59	1.847		
20,500.0	11,200.0	20,123.5	10,875.0	160.1	160.1	-45.39	-9,423.5	433.6	462.8	209.7	253.10	1.828		
20,600.0	11,200.0	20,223.5	10,875.0	161.7	161.7	-45.39	-9,523.5	434.6	462.8	207.2	255.60	1.811		
20,700.0	11,200.0	20,323.5	10,875.0	163.3	163.3	-45.39	-9,623.5	435.6	462.8	204.7	258.12	1.793		
20,800.0	11,200.0		10,875.0	164.9	164.9	-45.39	-9,723.5	436.5	462.8	202.2	260.63	1.776		
20,900.0	11,200.0		10,875.0	166.5	166.5	-45.39	-9,823.5	437.5	462.8	199.6	263.14	1.759		
20,985.3	11,200.0		10,875.0	167.9	167.9	-45.39	-9,908.8	438.3	462.8	197.5	265.29	1.744		
21,000.0	11,200.0		10,875.0	168.1	167.9	-45.39	-9,909.7	438.3	463.0	197.4	265.59	1.743 SF	:	
			-				-							
21,091.8	11,200.0	20,609.7	10,875.0	169.6	167.9	-45.39	-9,909.7	438.3	474.7	212.4	262.27	1.810		

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

Offset Site Error: 0.0 usft

Anticollision Report



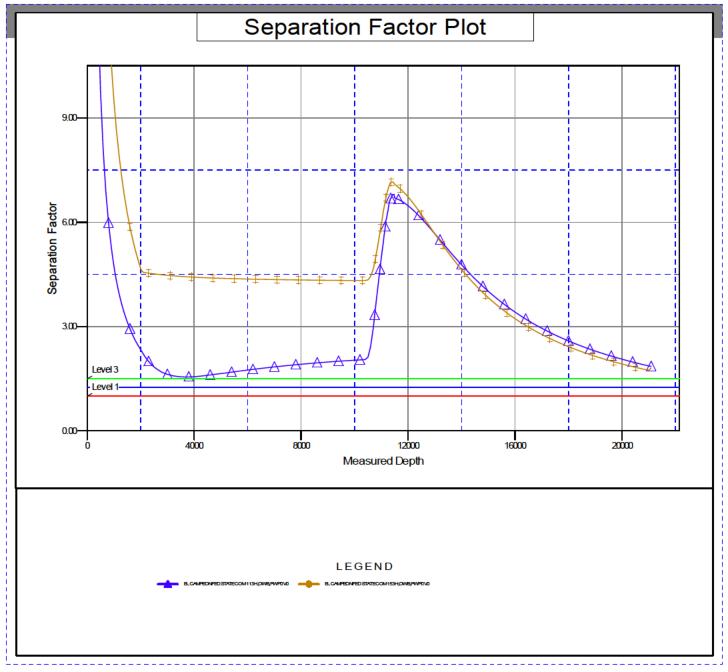
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

8/5/2024 7:09:28AM

COMPASS 5000.17 Build 03

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well EL CAMPEON FED STATE COM 123H
Project:	(SP) LEA	TVD Reference:	KB @ 3204.0usft
Reference Site:	EL CAMPEON FED COM PROJECT	MD Reference:	KB @ 3204.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EL CAMPEON FED STATE COM 123H	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
Poforonco Donthe ar	a relative to KB @ 2204 Queft	Coordinatos aro rolativo to: EL C	
Reference Depths are relative to KB @ 3204.0usft		Coordinates are relative to: EL CAMPEON FED STATE COM 123H	
Offset Depths are relative to Offset Datum		Coordinate System is US State Plane 1983, New Mexico Eastern Zone	
Central Meridian is 104° 20' 0.000 W		Grid Convergence at Surface is: 0.50°	



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

8/5/2024 7:09:28AM



H<sub>2</sub>S CONTINGENCY PLAN

FOR

Permian Resources Corporation El Campeon Fed 111H, 121H, 151H Lea County, New Mexico

> 07-02-2024 This plan is subject to updating

Received by OCD: 4/3/2025 10:36:00 AM

Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
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Section 1.0 – Introduction

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## I. Purpose

The purpose of this contingency plan (Plan) is to provide Permian Resources Corporation. (Permian Resources) with an organized plan of action for alerting and protecting Permian Resources employees, the general public, and any potential first responders prior to any intentional release or immediately following the accidental / unintentional release of a potentially hazardous volume / concentration of Hydrogen Sulfide Gas (H2S).

## II. Scope & Applicability

This Plan applies to all planned, unplanned, uncontrolled and/or unauthorized releases of hazardous concentrations of H<sub>2</sub>S or any associated hazardous byproducts of combustion, occurring at any Permian Resources owned or operated facilities including but not limited to: wells, flowlines, pipelines, tank batteries, production facilities, SWD facilities, compressor stations, gas processing plants, drilling / completions / workover operations, and any other applicable company owned property.

## Section 2.0 - Plan Implementation

#### I. Activation Requirements

In accordance with the requirements of Bureau of Land Management Onshore Order #6 and NMAC 19.15.11, this Plan shall be activated in advance of any authorized, planned, unplanned, uncontrolled, or unauthorized release of a hazardous volume / concentration of  $H_2S$  gas, or  $SO^2$ , which could potentially adversely impact the workers, general public or the environment.

## II. Emergency Evacuation

In the event of an unplanned, uncontrolled, or unauthorized release of a hazardous volume / concentration of  $H_2S$  gas, the first priority is to ensure the safety of the workers and general public. Upon discovery and subsequent determination of an applicable release, which cannot be quickly mitigated, immediately by using 911, notify local authorities to begin the process of alerting the general public, evacuate any residents within the Radius of Exposure (ROE), and limit any general public or employee access to any areas within the ROE of the affected facility.

#### III. Emergency Response Activities

The purpose of emergency response actions is to take steps to quickly mitigate / stop the ongoing release of the hazardous source of  $H_2S$ . Upon discovery of any hazardous release, immediately notify Permian Resources management to activate the Emergency Response Team (ERT). Once Permian Resources supervision arrives and assesses the situation, a work plan identifying the proper procedures shall be developed to stop the release.

## Section 3.0 - Potential Hazardous Conditions & Response Actions

During a planned or unplanned release of H<sub>2</sub>S, there are several hazardous conditions that are presented both to employees, the general public, and emergency responders. These specific hazardous conditions are identified in the tables below.

Permian Resources Corporation	H <sub>2</sub> S Contingency Plan
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H <sub>2</sub> S CONDITION 1: POTENTIAL DANGER TO LIFE AND HEALTH → WARNING SIGGREEN         H <sub>2</sub> S concentration <10 ppm detected by location monitors         General Actions During Condition 1         Notify Site Supervisor / Permian Resources Person-in-Charge (PIC) of any observed increase in ambient H <sub>2</sub> S concentrations         All personnel check safety equipment is in adequate working order & store in accessible location         Sensitize crews with safety meetings.         Limit visitors and non-essential personnel on location         Continuously monitor H <sub>2</sub> S concentrations and check calibration of sensors         Ensure H <sub>2</sub> S scavenger is on location.         H <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:         General Actions During Condition 2         Sound H <sub>2</sub> S alarm and/or display yellow flag.         Account for on-site personnel	
H₂S concentration <10 ppm detected by location monitors         General Actions During Condition 1         Notify Site Supervisor / Permian Resources Person-in-Charge (PIC) of any observed increase in ambient H₂S concentrations         All personnel check safety equipment is in adequate working order & store in accessible location         Sensitize crews with safety meetings.         Limit visitors and non-essential personnel on location         Continuously monitor H₂S concentrations and check calibration of sensors         Ensure H₂S scavenger is on location.         H₂S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:         General Actions During Condition 2         Sound H₂S alarm and/or display yellow flag.         Account for on-site personnel	
General Actions During Condition 1         Notify Site Supervisor / Permian Resources Person-in-Charge (PIC) of any observed increase in ambient H <sub>2</sub> S concentrations         All personnel check safety equipment is in adequate working order & store in accessible location         Sensitize crews with safety meetings.         Limit visitors and non-essential personnel on location         Continuously monitor H <sub>2</sub> S concentrations and check calibration of sensors         Ensure H <sub>2</sub> S scavenger is on location.         H <sub>2</sub> S CONDITION 2: MODERATE DANGER TO LIFE AND HEALTH → WARNING SIGN YELLOW         H <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:         General Actions During Condition 2         Sound H <sub>2</sub> S alarm and/or display yellow flag.         Account for on-site personnel	
Notify Site Supervisor / Permian Resources Person-in-Charge (PIC) of any observed increase in ambient H <sub>2</sub> S concentrations All personnel check safety equipment is in adequate working order & store in accessible location Sensitize crews with safety meetings. Limit visitors and non-essential personnel on location Continuously monitor H <sub>2</sub> S concentrations and check calibration of sensors Ensure H <sub>2</sub> S scavenger is on location. H <sub>2</sub> S CONDITION 2: MODERATE DANGER TO LIFE AND HEALTH → WARNING SIGN YELLOW H <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors: General Actions During Condition 2 Sound H <sub>2</sub> S alarm and/or display yellow flag. Account for on-site personnel	
All personnel check safety equipment is in adequate working order & store in accessible location         Sensitize crews with safety meetings.         Limit visitors and non-essential personnel on location         Continuously monitor H <sub>2</sub> S concentrations and check calibration of sensors         Ensure H <sub>2</sub> S scavenger is on location.         H <sub>2</sub> S CONDITION 2: MODERATE DANGER TO LIFE AND HEALTH → WARNING SIGN YELLOW         H <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:	
Limit visitors and non-essential personnel on location Continuously monitor H <sub>2</sub> S concentrations and check calibration of sensors Ensure H <sub>2</sub> S scavenger is on location. H <sub>2</sub> S CONDITION 2: MODERATE DANGER TO LIFE AND HEALTH → WARNING SIGN YELLOW H <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors: General Actions During Condition 2 Sound H <sub>2</sub> S alarm and/or display yellow flag. Account for on-site personnel	
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H <sub>2</sub> S CONDITION 2: MODERATE DANGER TO LIFE AND HEALTH $\rightarrow$ WARNING SIGN YELLOWH <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:	
SIGN YELLOW         H <sub>2</sub> S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:	
General Actions During Condition 2         Sound H <sub>2</sub> S alarm and/or display yellow flag.         Account for on-site personnel	
Sound H <sub>2</sub> S alarm and/or display yellow flag. Account for on-site personnel	
Account for on-site personnel	
•	
Upon sounding of an area or personal H <sub>2</sub> S monitor alarm when 10 ppm is reached, proceed to a safe briefing area upwind of the location immediately (see MA-4, Figure 5-1).	
Don proper respiratory protection.	
Alert other affected personnel	
If trained and safe to do so undertake measures to control source H2S discharge and eliminate possible ignition sources. Initiate Emergency Shutdown procedures as deemed necessary to correct or control the specific situation.	
Account for on-site personnel at safe briefing area.	
Stay in safe briefing area if not working to correct the situation.	
Keep Site Supervisor / Permian Resources PIC informed. Notify applicable government agencies (Appendix A) If off-site impact; notify any neighbors within Radius of Exposure (ROE), Fig 5.11	
Continuously monitor H <sub>2</sub> S until readings below 10 ppm.	
Evacuated area shall not be re-entered except by trained and authorized personnel utilizing appropriate respiratory protection; or until "all clear" sounded by Permian Resources PIC / Site Supervisor.	

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# Permian Resources Corporation H<sub>2</sub>S Contingency Plan El Campeon Fed 111H, 121H, 151H

> 30 ppm H <sub>2</sub> S concentration in air detected by location monitors: Extreme danger to life	
General Actions During Condition 3	
Sound H <sub>2</sub> S alarm and/or display red flag.	
Account for on-site personnel	
Move away from H <sub>2</sub> S source and get out of the affected area.	
Proceed to designated safe briefing area; alert other affected personnel.	
Account for personnel at safe briefing area.	
If trained and safe to do so undertake measures to control source H2S discharge and eliminate possible ignition sources. Initiate Emergency Shutdown procedures as deemed necessary to correct or control the specific situation.	
Notify vehicles or situation and divert all traffic away from location.	
Permian Resources Peron-in-Charge will make appropriate community notifications.	
Red warning flag must be on display until the situation has been corrected and the Permian Resources Person-in-Charge determines it is safe to resume operations under <b>Condition</b> <b>1</b> .	
Notify management of the condition and action taken. If H <sub>2</sub> S concentration is increasing and steps to correct the situation are not successful – or at any time if well control is questionable – alert all responsible parties for possible activation of the H <sub>2</sub> S Contingency Plan. If well control at the surface is lost, determine if situation warrants igniting the well.	
If uncontrolled flow at the surface occurs, the Permian Resources PIC, with approval, if possible, from those coordinating the emergency (as specified in the site-specific H <sub>2</sub> S Contingency Plan) are responsible for determining if the situation warrants igniting the flow of the uncontrolled well. This decision should be made only as a last resort and in a situation where it is obvious that human life is in danger and there is no hope of controlling the flow under prevailing conditions.	
If the flow is ignited, burning H <sub>2</sub> S will be converted to sulfur dioxide (SO <sub>2</sub> ), which is also highly toxic. Do not assume that area is safe after the flow is ignited. If the well is ignited, evacuation of the area is mandatory, because SO <sub>2</sub> will remain in low-lying places under no-wind conditions.	
<ul> <li>Keep Site Supervisor / Permian Resources PIC informed.</li> <li>Notify applicable government agencies and local law enforcement (Appendix A)</li> <li>If off-site impact; notify any neighbors within the Radius of Exposure (ROE), see example in Figure 5-11.</li> </ul>	
Continuously monitor H <sub>2</sub> S until readings fall below 10 ppm.	
Evacuated area shall not be re-entered except by trained and authorized personnel utilizing appropriate respiratory protection; or until "all clear" sounded by Permian Resources PIC / Site Supervisor.	
IF ABOVE ACTIONS CANNOT BE ACCOMPLISHED IN TIME TO PREVENT EXPOSURE TO THE PUBLIC	
Alert public (directly or through appropriate government agencies) who may be subject to potentially harmful exposure levels.	
Make recommendations to public officials regarding blocking unauthorized access to the unsafe area and assist as appropriate.	

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Permian Resources Corporation	H <sub>2</sub> S Contingency Plan El Campeon Fed 111H, 121H, 151H	Lea County, New Mexico
Make recommendations to put appropriate.	blic officials regarding evacuating the public	e and assist as

Monitor ambient air in the area of exposure (after following abatement measures) to determine when it is safe for re-entry.

#### Section 4.0 - Notification of H<sub>2</sub>S Release Event

#### I. Local & State Law Enforcement

Prior to the planned / controlled release of a hazardous concentration of  $H_2S$  gas or any associated byproducts of the combustion of  $H_2S$  gas, notify local law enforcement agencies regarding the contents of this plan.

In the event of the discovery of an unplanned/uncontrolled release of a hazardous concentration of  $H_2S$  gas or any associated byproducts of combustion, immediately notify local and/or state law enforcement agencies of the situation and ask for their assistance.

#### II. General Public

In the event of a planned or unplanned release of a hazardous concentration of H<sub>2</sub>S gas or any associated byproducts of combustion, notify local law enforcement agencies and ask for their assistance in alerting the general public and limiting access to any public roads that may be impacted by such a release.

#### III. New Mexico Oil Conservation Division

The Permian Resources HSE Department will make any applicable notification to the New Mexico OCD regarding any release of a hazardous concentration of  $H_2S$  Gas or any associated byproducts of combustion.

#### IV. New Mexico Environment Department

The Permian Resources HSE Department will make any applicable notifications to the NMED regarding any release of a hazardous concentration of  $H_2S$  gas or any associated byproducts of combustion.

#### V. Bureau of Land Management

The Permian Resources Regulatory Department will make any applicable notifications to the BLM regarding any release of a hazardous concentration of  $H_2S$  gas or any associated byproducts of combustion.

#### Section 5.0 - Emergency Contact List

# EMERGENCY CONTACT LIST

# PERMIAN RESOURCES CORPORATION.

Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
	El Campeon Fed 111H 121H 151H	

POSITION	NAME	OFFICE	CELL	ALT PHONE
	Opera	itions		
Production Superintendent	Rick Lawson		432.530.3188	
TX Production Superintendent	Josh Graham	432.940.3191	432.940.3191	
NM Production Superintendent	Manual Mata	432.664.0278	575.408.0216	
Drilling Manager	Jason Fitzgerald	432.315.0146	318.347.3916	
Drilling Engineer	Parker Simmons	432.400.1038	281.536.9813	
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 & Re	gulatory		
H&S Manager	Adam Hicks	720.499.2377	903.426.4556	
Regulatory Manager	Stephanie Rabadue		432.260.4388	
Environmental Manager	Montgomery Floyd	432-315-0123	432-425-8321	
•				
HSE Consultant	Blake Wisdom		918-323-2343	
l	Local, State, & Federal Agencies			
Lea County Sheriff		575-396-3611		911
New Mexico State Highway Patrol		505-757-2297		911
Eunice Fire / EMS		575-394-3258		911
Lea County Hospital		575-492-5000		
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		575-706-2779		
Lea County PET Inspector		575-689-5981		
U.S. Fish & Wildlife		502-248-6911		

#### Section 6.0 – Drilling Location Information

#### I. Site Safety Information

- 1. Safe Briefing Area
  - a. There shall be two areas that will be designated as "SAFE BRIEFING AREAs". If H<sub>2</sub>S is detected in concentrations equal to or in excess of 10 ppm all personnel not assigned emergency duties are to assemble in the designated Safe Briefing area for instructions. These two areas shall be positioned in accessible locations to facilitate the availability of self-contained breathing air devices. The briefing areas shall be positioned no less than 250' from the wellhead and in such locations that at least one briefing area will be upwind from the well at all times.

#### 2. Wind Indicators

a. 4 Windsocks will be installed at strategic points on the facility.

- 3. Danger Signs
  - a. A warning sign indicating the possible well conditions will be displayed at the location entrance.

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#### DANGER POISONOUS GAS HYDROGEN SULFIDE DO NOT APPROACH IF AMBER LIGHTS ARE FLASHING

#### 4. <u>H<sub>2</sub>S Detectors and Alarms</u>

a. Continuous monitoring type H<sub>2</sub>S detectors, capable of sensing a minimum of 5ppm H<sub>2</sub>S in air will be located centrally located at the tanks, heater treater, and combustor. Continuous monitoring type SO<sub>2</sub> detector will also be located at the combustor. The automatic H<sub>2</sub>S alarm/flashing light will be located at the site entrance and in front of tank battery.

### 5. <u>Safety Trailer</u>

a. A safety trailer equipped with an emergency cascade breathing air system with 2 ea. Work/escape packs, a stretcher, 2 OSHA approved full body harnesses, and a 20# Class ABC fire extinguisher shall be available at the site in close proximity to the safe briefing area. The cascade system shall be able to be deployed to the drill floor when needed to provide safe breathing air to the workers as needed.

#### 6. Well Control Equipment

- a. The location shall have a flare line to a remote automatic ignitor and back up flare gun, placed 150' from the wellhead.
- b. The location shall be equipped with a remotely operated choke system and a mud gas separator.

#### 7. Mud Program

a. Company shall have a mud program that contains sufficient weight and additives to control  $H_2S$ .

#### 8. Metallurgy

a. All drill strings, casing, tubing, wellhead, BOP, spools, kill lines, choke manifold and lines, and valves shall be suitable for anticipated H<sub>2</sub>S volume and pressure.

#### 9. Communication

a. The location shall be equipped with a means of effective communication such as a cell phones, intercoms, satellite phones or landlines.

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#### II. Directions to Location

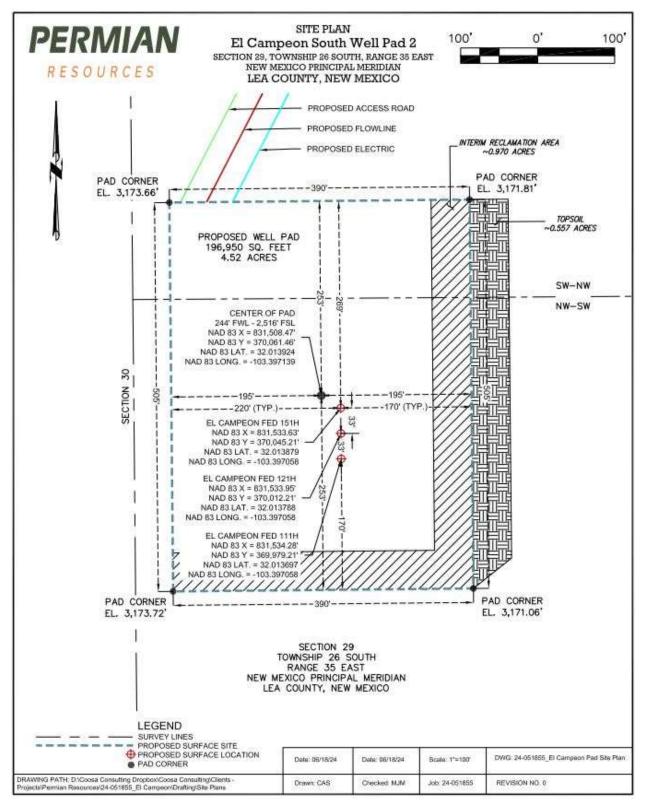
FROM THE INTERSECTION OF CR-C3 AND WHITWORTH DR. IN JAL, NEW MEXICO

1. MOVE SOUTHWEST ON CR-C3 APPROX.7 MILES.

- 2. KEEP RIGHT ONTO NM-322 AND CONTINUE MOVE SOUTHWEST APPROX. 2742 FEET.
- 3. TURN RIGHT ONTO BECKHAM RD. AND MOVE WEST APPROX. 2 MILES.
- 4. KEEP LEFT ONTO LEASE ROAD AND CONTINUE MOVE WEST APPROX. 3 MILES.
- 5. TURN RIGHT AND MOVE NORTH APPROX. 2174 FEET.
- 6. TURN LEFT AND MOVE WEST APPROX. 3 MILES.
- 7. TURN LEFT AND MOVE SOUTH APPROX. 1 MILES.
- 8. TURN RIGHT AND MOVE WEST APPROX. 737 FEET.

9. TURN LEFT ONTO ACCESS ROAD AND MOVE COUTH APPROX. 641 FEET TO SOUTH EAST PAD CORNER





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1. Routes of Ingress & Egress (MAP)



2. Residences in proximity to the 3000' Radius of Exposure (ROE) (MAP)

There are no residences or public gathering places with the 3000' ROE, 100 PPM, 300 PPM, or 500 PPM ROE.

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# Map of 3000' ROE Perimeter



#### 100 PPM, 300 PPM, & 500 PPM Max ROE under worst case scenario

Enter H <sub>2</sub> S in PPM	1500	
Enter Gas flow in mcf/day (maximum worst case conditions)	2500	
500 ppm radius of exposure (public road)	<u>105</u>	feet
300 ppm radius of exposure	<u>146</u>	feet
100 ppm radius of exposure (public area)	<u>230</u>	feet

- Location NAD 83 GPS Coordinates *Lat: 32.013924, Long: -103.397139*
- 3. Public Roads in proximity of the Radius of Exposure (ROE)

There are no public roads that would be within the 500 PPM ROE. The closest public road is New Mexico Road 3, which is 7.8 miles from the location.

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#### Section 7.0 – Hazard Communication

#### I. Physical Characteristics of Hydrogen Sulfide Gas

Hydrogen sulfide (H<sub>2</sub>S) is a colorless, poisonous gas that is soluble in water. It can be present in crude oils, condensates, natural gas and wastewater streams.

 $H_2S$  is heavier than air with a vapor density of 1.189 (air = 1.0); however,  $H_2S$  is most often mixed with other gases. These mixtures of  $H_2S$  and other gases can be heavier or lighter than air. If the  $H_2S$ -containing mixture is heavier, it can collect in low areas such as ditches, ravines, firewalls, and pits; in storage tanks; and in areas of poor ventilation. Please see physical properties in Table 7.0.

With H<sub>2</sub>S the sense of smell is rapidly lost allowing lethal concentrations to be accumulated without warning. The toxicity of hydrogen sulfide at varying concentrations is indicated in the Table 7.1.

**Warning:** Do not use the mouth-to-mouth method if a victim ingested or inhaled hydrogen sulfide. Give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### Table 7.0. Physical Properties of H<sub>2</sub>S

Properties of H2S	Description
Vapor Density > 1 = 1.189 Air = 1	<ul> <li>H2S gas is slightly heavier than air, which can cause it to settle in low places and build in concentration.</li> <li>Produced as a mixture with other gases associated with oil and gas production.</li> </ul>
Flammable Range 4.3%-46% 43000 ppm – 460000 ppm	<ul> <li>H2S can be extremely flammable / explosive when these concentrations are reached by volume in air.</li> </ul>

Although  $H_2S$  is primarily a respiratory hazard, it is also flammable and forms an explosive mixture at concentrations of 4.3%–46.0% (40,000ppm – 460,000 ppm) by volume in air.

#### H<sub>2</sub>S can be encountered when:

- Venting and draining equipment.
- Opening equipment (separators, pumps, and tanks).
- Opening piping connections ("line breaking").
- Gauging and sampling storage tanks.
- Entering confined spaces.
- Working around wastewater pits, skimmers, and treatment facilities.
- II. Human Health Hazards Toxicological Information

#### Table 7.1. Hazards & Toxicity

Concentration	Symptoms/Effects
(ppm)	

Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
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0.00011-0.00033 ppm	Typical background concentrations
0.01-1.5 ppm	Odor threshold (when rotten egg smell is first noticeable to some). Odor becomes more offensive at 3-5 ppm. Above 30 ppm, odor described as sweet or sickeningly sweet.
2-5 ppm	Prolonged exposure may cause nausea, tearing of the eyes, headaches or loss of sleep. Airway problems (bronchial constriction) in some asthma patients.
20 ppm	Possible fatigue, loss of appetite, headache, irritability, poor memory, dizziness.
50-100 ppm	Slight conjunctivitis ("gas eye") and respiratory tract irritation after 1 hour. May cause digestive upset and loss of appetite.
100 ppm	Coughing, eye irritation, loss of smell after 2-15 minutes (olfactory fatigue). Altered breathing, drowsiness after 15-30 minutes. Throat irritation after 1 hour. Gradual increase in severity of symptoms over several hours. Death may occur after 48 hours.
100-150 ppm	Loss of smell (olfactory fatigue or paralysis).
200-300 ppm	Marked conjunctivitis and respiratory tract irritation after 1 hour. Pulmonary edema may occur from prolonged exposure.
500-700 ppm	Staggering, collapse in 5 minutes. Serious damage to the eyes in 30 minutes. Death after 30-60 minutes.
700-1000 ppm	Rapid unconsciousness, "knockdown" or immediate collapse within 1 to 2 breaths, breathing stops, death within minutes.
1000-2000 ppm	Nearly instant death

#### III. Environmental Hazards

H<sub>2</sub>S and its associated byproducts from combustion presents a serious environmental hazard. Sulphur Dioxide SO<sub>2</sub> is produced as a constituent of flaring H<sub>2</sub>S Gas and can present hazards associated, which are similar to H<sub>2</sub>S. Although SO<sub>2</sub> is heavier than air, it will be picked up by a breeze and carried downwind at elevated temperatures. Since Sulfur Dioxide is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect. The following table indicates the toxic nature of the gas. Please see the attached SDS in Appendix B for reference.

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SULFUR DIOXIDE TOXICITY		
Conce	entration	Effects
%SO <sub>2</sub>	PPM	
0.0005	3 to 5	Pungent odor-normally a person can detect SO <sub>2</sub> in this range.
0.0012	12	Throat irritation, coughing, and constriction of the chest tearing and smarting of eyes.
0.15	150	So irritating that it can only be endured for a few minutes.
0.05	500	Causes a sense of suffocation, even with first breath.

#### Section 8.0 - Regulatory Information

I. OSHA & NIOSH Information

#### II. Table 8.0. OSHA & NIOSH H<sub>2</sub>S Information

PEL, IDLH, TLV	Description	
NIOSH PEL 10 PPM	<ul> <li>PEL is the Permissible Exposure Limit that an employee may be exposed up to 8 hr / day.</li> </ul>	
OSHA General Industry Ceiling PEL – 20 PPM	<ul> <li>The maximum exposure limit, which cannot be exceeded for any length of time.</li> </ul>	
IDLH 100 PPM	<ul> <li>Immediately Dangerous to Life and Health</li> </ul>	
Permian Resources PEL 10 PPM	<ul> <li>Permian Resources Policy Regarding H2S for employee safety</li> </ul>	

#### III. New Mexico OCD & BLM - H<sub>2</sub>S Concentration Threshold Requirements

New Mexico NMAC 19.15.11 and Onshore Order #6 identify two Radii of Exposure (ROE) that identify potential danger to the public and require additional compliance measures. Permian Resources is required to install safety devices, establish safety procedures and develop a written  $H_2S$  contingency plan for sites where the  $H_2S$  concentrations are as follows.

H₂S Radius of Exposure	Description	Control and Equipment Requirements
100 ppm	Distance from a release to where the H <sub>2</sub> S concentration in the air will dilute below 100ppm	ROE > 50-ft and includes any part of a "public area" (residence, school, business, etc., or any area that can be expected to be populated). ROE > 3,000-ft
500 ppm	Distance from a release to where the H <sub>2</sub> S concentration in the air will dilute below 500ppm	ROE > 50-ft and includes any part of a public road (public roads are tax supported roads or any road used for public access or use)

#### Calculating H<sub>2</sub>S Radius of Exposure

Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
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The ROE of an H<sub>2</sub>S release is calculated to determine if a potentially hazardous volume of H<sub>2</sub>S gas at 100 or 500 parts per million (ppm) is within a regulated distance requiring further action. If information about the concentration of H<sub>2</sub>S and the potential gas release volume is known, the location of the Muster Areas will be set, and safety measures will be implemented based on the calculated radius of exposure (ROE). NMAC 19.15.11 – Hydrogen Sulfide Safety defines the ROE as the radius constructed with the gas's point of escape as its center and its length calculated by the following Pasquill-Gifford equations:

To determine the extent of the 100 ppm ROE:

 $x = [(1.589) \text{ (mole fraction H}_2S)(Q)]^{(.6258)}$ .

To determine the extent of the 500 ppm ROE:

 $x = [(0.4546) \text{ (mole fraction H}_2S)(Q)]^{(.6258)}$ 

#### Table 8.2. Calculating H2S Radius of Exposure

ROE Variable	Description	
X =	ROE in feet	
Q =	Max volume of gas released determined to be released in cubic feet per day (ft³/d) normalized to standard temperature and pressure, 60°F and 14.65 psia	
Mole fraction H₂S =	Mole fraction of H <sub>2</sub> S in the gaseous mixture released.	

The volume used as the escape rate in determining the ROE is specified in the rule as follows:

- The maximum daily volume rate of gas containing H<sub>2</sub>S handled by that system element for which the ROE is calculated.
- For existing gas wells, the current adjusted open-flow rate, or the operator's estimate of the well's capacity to flow against zero back-pressure at the wellhead.

# New Mexico Oil Conservation Division & BLM Site Requirements under NMAC 19.15.11 & Onshore Order #6

- Two cleared areas will be designated as Safe Briefing Areas. During an emergency, personnel will
  assemble in one of these areas for instructions from the Permian Resources Person-in-Charge.
  Prevailing wind direction should be considered in locating the briefing areas 200' or more on either
  side of the well head. One area should offset the other at an angle of 45° to 90° with respect to
  prevailing wind direction to allow for wind shifts during the work period.
- In the event of either an intentional or accidental releases of hydrogen sulfide, safeguards to protect the general public from the harmful effects of hydrogen sulfide must be in place for operations. A summary of the provisions in each of three H<sub>2</sub>S ROE cases is included in Table 8.3.
  - CASE 1 -100 ppm ROE < 50'</li>
  - CASE 2 100 ppm ROE is 50' or greater, but < 3000' and does not penetrate public area.
  - CASE 3 -100 ppm ROE is 50' or greater and penetrates a public area or 500 ppm ROE includes a
    public road. Also if 100 ppm ROE > 3000' regardless of public area.

#### Table 8.3. NMAC 19.15.11 Compliance Requirements Drilling & Production

NMAC 19.15.11 & BLM COMPLIANCE REQUIREMENTS - DRILLING & PRODUCTION

Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
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PROVISION	CASE 1	CASE 2	CASE 3
H <sub>2</sub> S Concentration Test	Х	Х	Х
Н-9	Х	Х	X
Training	Х	Х	X
District Office Notification	X	Х	X
Drill Stem Tests Restricted	X*	X*	X
BOP Test	X*	X*	X
Materials		Х	X
Warning and Marker		Х	X
Security		Х	X
Contingency Plan			X
Control and Equipment Safety			X
Monitors		X**	X**
Mud (ph Control or Scavenger)			X*
Wind Indicators		X**	X
Protective Breathing Equipment		X**	X
Choke Manifold, Secondary Remote Control, and Mud-Gas Separator			X
Flare Stacks			X*

#### Section 9.0 - Training Requirements

#### Training

The following elements are considered a minimum level of training for personnel assigned to operations who may encounter H<sub>2</sub>S as part of routine or maintenance work.

- The hazards, characteristics, and properties of hydrogen sulfide (H<sub>2</sub>S) and (SO<sub>2</sub>).
- Sources of H<sub>2</sub>S and SO<sub>2</sub>.
- Proper use of H<sub>2</sub>S and SO<sub>2</sub> detection methods used at the workplace.
- Recognition of, and proper response to, the warning signals initiated by H<sub>2</sub>S and SO<sub>2</sub> detection systems in use at the workplace.
- Symptoms of H<sub>2</sub>S exposure; symptoms of SO<sub>2</sub> exposure
- Rescue techniques and first aid to victims of H<sub>2</sub>S and SO<sub>2</sub> exposure.
- Proper use and maintenance of breathing equipment for working in H<sub>2</sub>S and SO<sub>2</sub> atmospheres, as appropriate theory and hands-on practice, with demonstrated proficiency (29 CFR Part 1910.134).
- Workplace practices and relevant maintenance procedures that have been established to protect personnel from the hazards of H<sub>2</sub>S and SO<sub>2</sub>.
- Wind direction awareness and routes of egress.
- Confined space and enclosed facility entry procedures (if applicable).
- Emergency response procedures that have been developed for the facility or operations.
- Locations and use of safety equipment.
- Locations of safe briefing areas.

Refresher training will be conducted annually.

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#### Section 10.0 - Personal Protective Equipment

### I. <u>Personal H<sub>2</sub>S Monitors</u>

All personnel engaged in planned or unplanned work activity to mitigate the release of a hazardous concentration of H<sub>2</sub>S shall have on their person a personal H2S monitor.

- II. Fixed H<sub>2</sub>S Detection and Alarms
  - 4 channel H<sub>2</sub>S monitor
  - 4 wireless H<sub>2</sub>S monitors
  - H<sub>2</sub>S alarm system (Audible/Red strobe)
  - Personal gas monitor for each person on location
  - Gas sample tubes

### III. Flame Resistant Clothing

All personnel engaged in planned or unplanned work activity associated with this Plan shall have on the appropriate level of FRC clothing.

IV. <u>Respiratory Protection</u>

The following respiratory protection equipment shall be available at each drilling location.

- Working cascade system available on rig floor and pit system & 750' of air line hose
- Four (4) breathing air manifolds
- Four (4) 30-minute rescue packs
- Five (5) work/Escape units
- Five (5) escape units
- One (1) filler hose for the work/escape/rescue units

Supplied air (airline or SCBA) respiratory protection against hydrogen sulfide exposure is required in the following situations:

- When routine or maintenance work tasks involve exposure to H<sub>2</sub>S concentrations of 10 ppm or greater.
- When a fixed location area monitor alarms, and re-entry to the work area is required to complete a job.
- When confined spaces are to be entered without knowledge of H<sub>2</sub>S levels present, or if initial measurements are to be taken of H<sub>2</sub>S levels.
- During rescue of employees suspected of H<sub>2</sub>S overexposure.
- For specific tasks identified with significant exposure potential and outlined in local program guidelines.
- All respiratory equipment for hydrogen sulfide must be of the supplied-air type, equipped with pressure-demand regulators and operated in the pressure-demand mode only. This is the only type of respiratory protection recommended for hydrogen sulfide application. Equipment should be approved by NIOSH/MSHA or other recognized national authority as required. If airline units are used, a five-minute egress bottle should also be carried.
- Gas masks or other air-purifying respirators MUST NEVER BE USED FOR HYDROGEN SULFIDE due to the poor warning properties of the gas.
- Use of respiratory protection should be accompanied by a written respiratory protection program.

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# Appendix A H<sub>2</sub>S SDS



Hydrogen sulfide Safety Data Sheet E-4611 according to the Hažardous Products Regulation (February 11, 2015) Date of issue: 10-15-1979 Revision date: 08-10-2016 Su Supersedes: 10-15-2013

1.1	Product identification	
	at form	: Substance
Name	a partit	: Hydrogen sullide
CAS N	lo l	: 7783-06-4
Formu		: H2S
2000	means of identification	: Hydrogen sulfide
	aroup	: Core Products
1.2		and restrictions on use
	mended uses and restric	
1.3.	Supplier	
1200 - Missis T 1-90	r Canada inc. - 1 City Centre Drive sauga - Canada L5B 1M: 6-803-1600 - F 1-905-80 raxair.ca	
1.4.	Emergency telepho	te number
	ency number	: 1-800-363-0042 Call emergency number 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Praxair sales representative.
SECT	TION 2: Hazard ide	nuffeation
	FION 2: Hazard ide	
2/1.	Classification of the	nlification substance or mixture
CHS-C Flam. ( Liques) Aqute	Classification of the CA classification Gas 1 ed gas Tox. 2 (Inhalation: gas)	
2/1. GHS-C Flam. I Liquefi Acute STOT	Classification of the CA classification Gas 1 ied gas Tox. 2 (Inhalation: gas) SE 3	H220 H280 H330
2.1. GHS-C Flam. 1 Liquefi Acute STOT	Classification of the CA classification Gas 1 ied gas Tox. 2 (Inhalation: gas) SE 3	substance or mixture H220 H330 H335
2.1. GHS-C Flam. 0 Liquefi Acute STOT Z.2. GHS-C	Classification of the CA classification Gas 1 ed gas Tox. 2 (inhalation: gas) SE 3 GHS Label elements	substance or mixture H220 H330 H335
2.1. GHS-C Flam. 0 Liquefi Acute STOT Z.2. GHS-C	Classification of the CA classification Gas 1 ed gas Tox. 2 (Inhalation: gas) SE 3 GHS Label element: CA labelling	substance or mixture H220 H330 H335
2/1. GHS-C Liquefi Acute STOT Z.2. GHS-C Hazard	Classification of the CA classification Gas 1 ed gas Tox. 2 (Inhalation: gas) SE 3 GHS Label element: CA labelling	substance or mixture H220 H330 H335 Including precautionary statements $I = \underbrace{i \bigoplus_{GH502} \bigoplus_{GH504} \bigoplus_{GH504} \bigoplus_{GH506} \bigoplus_{GH507} \bigoplus_{GH$

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nian Resources Corporation						
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	<b>PRAXAIR</b>	Hydrogen su Safety Data Shee according to the Hazerdous P Date of issue: 10-15-1979	t E-4611		s: 10-15-2013	
		Tradition of the second se				
		Avoid release Wear protection protection Leaking gas f In case of leal Store locked / Dispose of co Protect from s Close valve a Do not open v When returnin	conly outdoors or in a v to the environment ve gloves, protective de ine: Do not extinguish, u kage, eliminate all igniti ap ritents/container in accr sunlight when ambient t fiter each use and when raive unit connected to ag cylinder, install leak t	othing, eye protection unless leak can be str ion sources ordance with containe emperature exceeds empty equipment prepared ight valve outlet cap	er Supplier/owner instructions .52°C (125°F) I for use	
		Do not depen	d on odour to detect the	e presence of gas		
	2.3. Other hazards Other hazards not contributing to the	: Contact with I	iquid may cause cold b	ums/frostbite		
	classification		quid may couse con s	anna noatane.		
	2.4. Unknown acute toxicity (Gi No data available	HS-GA)				
		ormation on ingredie	nts			
	SECTION 3: Composition/information on ingredients					
	3.1. Substances					
	3.1. Substances Name	CAS No.	% (Vol.)	Common Name (s	ynonyms)	
	Provide the second s	CAS No. (CAS No; 7783-06-4	% (Vol.) 100	Hydrogen sulfide (H25	5) / Hydrogen sulphide / Sulfur hydride /	
	Name Hydrogen suffide (Main constituent)			Hydrogen sulfide (H25	Comment of Contract of an exponential or an exponential and a family for a ferror second second	
	Name Hydrogen sulfide (Main constituent) 3.2. Mixtures			Hydrogen sulfide (H25	5) / Hydrogen sulphide / Sulfur hydride /	
	Name           Hydrogen suffide (Main constituent)           3.2.         Mixtures           Not applicable	(CAS No) 7783-06-4		Hydrogen sulfide (H25	5) / Hydrogen sulphide / Sulfur hydride /	
	Name Hydrogen sulfide (Main constituent) 3.2. Mixtures	(CAS No) 7783-06-4		Hydrogen sulfide (H25	5) / Hydrogen sulphide / Sulfur hydride /	
	Name           Hydrogen sulfide (Main constituent)           3.2         Mixtures           Not applicable           SECTION 4: First-aid measure	ICAS No; 7783-06-4	100	Hydrogen sulfide (H25 Sulfureted hydrogen / in a position comfort	5) / Hydrogen sulphide / Sulfur hydride /	
	Name           Hydrogen suffide (Main constituent)           3.2.         Mixtures           Not applicable           SECTION 4: First-aid measure           4.1.         Description of first aid measure	ICAS No: 7783-06-4	100 esh air and keep at rest espiration. If breathing y cause frostbite. For e of to exceed 105°F (41' a skin watming for at les	Hydrogen sulfide (H25 Sulfureted hydrogen / in a position comfort is difficult, trained per xposure to liquid, imr C). Water temperat ast 15 minutes or unt of massive exposure	5) / Hydrogen sulphide / Suffur hydride / Dihydrogen sulphide / Hydrogensulfide table for breathing. If not breathing, rsonnel should give oxygen. Call a mediately warm frostbile area with ure should be tolerable to normal til normal coloring and sensation have e, remove clothing while showering	
	Name           Hydrogen suffide (Main constituent)           3.2         Mixtures           Not applicable           SECTION 4: First-aid measure           4.1         Description of first aid measure           First-aid measures after inhalation           First-aid measures after skin contact           First-aid measures after eye contact	ICAS No; 7783-06-4	100 esh air and keep at rest espiration. If breathing y cause frostbite. For e of to exceed 105°F (41' h skin watming for at le e affected area. In case ter. Seek medical evalu- lush eyes thoroughly wi e eyeballs to ensure tha ist immediately.	Hydrogen sulfide (H25 Sulfureted hydrogen / in a position comfort is difficult, trained pe xposure to liquid, imm "C). Water temperat ast 15 minutes or unt of massive exposure ablor and treatment it water for at least 1 t all surfaces are flus	5) / Hydrogen sulphide / Suffur hydride / Dihydrogen sulphide / Hydrogensulfide table for breathing. If not breathing, rsonnel should give oxygen. Call a mediately warm frostbile area with ure should be tolerable to normal til normal coloring and sensation have e, remove clothing while showering	
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	Name           Hydrogen suffide (Man constituent)           3.2         Mixtures           Not applicable         SECTION 4: First-aid measures           SECTION 4: First-aid measures         First-aid measures after inhalation           First-aid measures after inhalation         First-aid measures after eye contact           First-aid measures after ingestion         4.2           Most important symptoms         No additional information available           4.3         Immediate medical attention           Other medical advice or treatment         SECTION 5: Fire-fighting medical suitable extinguishing medical	ICAS No; 7783-06-4	100 esh air and keep at rest espiration. If breathing y cause frostbite. For e of to exceed 105°F (41) in skin warming for at le: e affected area. In case ter. Seek medical evalu- lush eyes thoroughly wi e eyeballs to ensure tha ist immediately. of considered a potentia layed) f necessary al assistance. Treat with le, Dry chemical, Water	Hydrogen sulfide (H25 Sulfureted hydrogen / in a position comfort is difficult, trained per xposure to liquid, imm "C). Water temperat ast 15 minutes or unt of massive exposur- ation and treatment it water for at least it all surfaces are flus al route of exposure.	<ul> <li>B) / Hydrogen sulphide / Suffur hydride / Dihydrogen sulphide / Hydrogensuilide</li> <li>Iable for breathing, If not breathing, risonnel should give oxygen. Call a mediately warm frostbile area with ure should be tolerable to normal til normal coloring and sensation have e, remove clothing while showering as soon as possible.</li> <li>15 minutes, Hold the eyelids open and shed thoroughly. Contact an</li> <li>y as soon as possible after inhalation.</li> </ul>	

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Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
	El Campeon Fed 111H, 121H, 151H	

point: Explosive atmospheres may inger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device. Explosive mixtures with a and oxiding agents. Reactivity in case of fire Picefighting instructions Picefighting Picefighting instructions Picefighting Picefighti	Date of	g to the Hazardous Products Regulation (February 11, 2015) issue: 10-15-1979 Revision date: 08-10-2016 Supersedes: 10-15-2013
Fire hazad       EXTREMELY PLANKABLE CAS. If venting or leaking gas catches fine, download an explosive regulation hazad.         Fire hazad       figures. Filaminale vagos may spread from leak, creating an explosive regulation hazad.         Vapors can be ignited by pilot lights, other finanes, moking, aspirs, heaters, electrical equipment, static distance, or other grained volves.         Explosion hazad       :: No reactivity hazad other than the effects described in sub-sections below.         Scatchity       :: No reactivity hazad other than the effects described in sub-sections below.         Scatchity in case of fire       :: No reactivity hazad other than the effects described in sub-sections below.         Scatchity in case of fire       : DAVGER! Toxic, flammable vagos other for fire fights         Firefighting instructions       : DAVGER! Toxic, flammable vagos other for minute swith air and oxitizing agents.         Special protective equipment on fire fights to bo on. Remove containers from maximum distance. Stop flow of gas 8 also to on, while containers with water sprave. For water sprave. The more signature sig	5.3. Specific hazards arising from the h	azardous product
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Reactivity in case of life       : No reactivity hazard other than the effects described in sub-sections below:         5.4.       Special protective equipment and preciautions for fire-fighters:         Firefighting instructions       : DANGERT Toxic, firamable liquefied gas         Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing, immediately cool containers with water from maximum distance. Stop from origin with their provincial and focus free cool regulations.         Special protective equipment for fire fighters:       : Standad protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.         Other information       : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized to y 0 yr C).         SECTION 45: Accidental release measures       : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized to y 0 yr C).         Section 45: Accidental release measures       : Standad protective clothing and equipment (Self Contained Breathing Apparatus where authorized to y 0 yr C).         Section 45: Accidental release measures       : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized to do so, whice containes to work where authorized to do so, whice containes the data or do do so, whice containe	Explosion hazard	: EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.
5.1       Special protective equipment and precautions for fire-digitars         Firefghting instructions       : DANGERT toxic, flammable liquefield gas         Executes all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective equipment for fire flaghters       :: Standard protective equipment (Self Contained breathing apparatus) for fire digitars.         Special protective equipment for fire flaghters       :: Standard protective eduipment (Self Contained Breathing Apparatus) for fire digitars.         Other information       :: Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         SECTION 15: Accidental release measures       :: OANGERT Toxic, flammable liquefield gas. Forms explosive mixtures with air and oxidizing apparatus) for fire water spray. Taking care not to spread liquid with water. Shun off fow 15 as to do so the fire water spray, taking care not so spread liquid with water. Shun off fow 15 as to do so the fire water spray, taking care not so spread liquid with water. Fire may spread from test and oxidizing appendix information and excellence testing area. Use self-contained breathing fog or fire water spray, taking care not so spread liquid with water. Shun off fow 15 as to do so the fire water spray. Taking care not so spread liquid with water fire may spread from test and oxidizing appendix information and cleaning up fog or fire water spray. Prevent waste from containing the surrounding withorment. Prevent so di and water politicols. Contained the apple for any special forquirements.         62.       Methods and materials for containeed materials protections       :: Leak-check system with scapy water, never use a finme <td< td=""><td>Reactivity</td><td>: No reactivity hazard other than the effects described in sub-sections below.</td></td<>	Reactivity	: No reactivity hazard other than the effects described in sub-sections below.
Fire@phing instructions       I DANGER! Toxic, flammable liquefied gas         Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCRA) and protective clothing, immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if the stafe to do so. Containers with water from maximum distance. Stop flow of gas if safe to do so. Containers with water from maximum distance. Stop flow of gas if safe to do so. Containers with water from maximum distance. Stop flow of gas if safe to do so. Containers sources if the stafe to do so. Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         Special protective equipment for the fighters       Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         Section S 4 Accidential release measures       I DANGER! Toxic, flammable liquefied gas. Forms explores minuters with ai and oxidizing agents. In where explored Real pell sources or transactions are explored with a pressure religited with aveter. Stor Maximable is do so Ventilate area or move container to a wetleventilated area. Explosive atmospheres may pread from the explored with explore maximable is do so Ventilate area or move container to a wetleventilated area. Explosive atmospheres may pread from the explosive atmospheres may pread from any explored the section and water pollution. Dispose of contents/ordinater in accordance with local regional/international regulations. Contained stafe handling         C1       Methods and materials for containment and cleaning up precision for any special from any special from any special from any special from any special requirements.         C3.       <	Reactivity in case of fire	: No reactivity hazard other than the effects described in sub-sections below.
Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing, immediately codi containers with water from maximum distance. Stop for of gain is alse to do so. Meria tes containing conjug water spray. Remove infinito sources if safe to do so. Personal protective equipment for the tighters:         Special protective equipment for the tighters:       : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for the fighters:         Other information       : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for the fighters:         Other information       : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         SECTION 5: Accidential release measures       : DANGERT toxic, flammable liquefied gas. Forms explosive mixtures with air and oxidizing apparatus where needed. Remove al sources of lighten fi alse to do so. Reduce vapors with y approximation where needed. Remove al sources of lighten fi alse to do so. Reduce vapors with approximate from test and oxidizing apparatus where needed. Remove al sources of lighten fi alse to do so. Reduce vapors with approximate prevent was from contained the superior may special requiriements.         6.2. Methods and materials for containment and cleaning up       : Try to top release. Reduce vapour with fog or fine water spray. Prevent was from contained the supplier for any special requiriements.         7.1. Precautions for safe handling       : Leak-check system with scapy water; never use a flame         Precautions for safe handling       : Leak-check system with scapy water; never use a flame         Precautions	5.4. Special protective equipment and p	arecautions for fire-lighters
and protective clothing, immediately code containers with water from maximum distance. Step is afe to do so. Remove contrainers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and to call free code regulations.         Special protective equipment for fire fighters       : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.         Other information       : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.         Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         SECTION 5: Accidential release measures         Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         SECTION 5: Accidential release measures         Containers are equipped with a pressure from darger are. Use self-contained breathing apparatus where needed. Remove all sources of ignite if all is to do so. Reliable to do so. Vertilate area armove container to a welf personnel from darger area. Use self-contained breathing apparatus where needed. Remove all sources of ignite if all is to do so. Reliable to do so. Reliable area armove container to a welf-welfalled area. Finanmadie vapors may spread from container to a welf personnel from darger area. Use self-contained the water start is a self-contained breathing approximate device. Before entering area, especially confined areas, check atmosphere with an appropriate device. Before entering area, especially confined areas, check atmosphere with an appropriate device ortenained by appler for any special requirements.         6.2. Methods and materials for containment and cleasing up	Firefighting instructions	: DANGER! Toxic, flammable liquefied gas
Other information       E. Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).         SECTION 6: Accidental release measures       E. DANGERT Toxic, fammable injuefied gas. Forms explosive mixtures with air and oxidizing apparatus where needed. Remove all accurses of ignition if safe to do as. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shur off flow if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shur off flow if safe to do so. Reduce vapors with fog or fine water agents immediately evaluate all personnel from damase. Explosive atmospheres may inger. Before entering area, especially conflined areas, check atmospheres with an appropriate device.         6.2.       Methods and materials for containment and cleaning up.         Methods for cleaning up       Ty to atop release. Reduce vapour with fog or fine water spray. Prevent waste from contembiodrating the surrounding environment. Prevent soli and water poliution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact spray in prevent soli and water poliution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact spray for the to section 8: Exposure controls/personal protection         SECTION 7: Handling and storage       I. Laak-check system with soapy water; never use a flame         All piped systems and associated equipment must be grounded       Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment. Never the wate withe value withe wate withe noting value approx of protecet the valv		and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must
by TC.). SECTION 6: Accidental release measures 6.1 Personal preclutions, protective equipment and emergency procedures General measures DANGERT Toxic, fitamable liquefied gas. Forms explosive mixtures with air and oxidizing agents. Immediately evacuate all personnel from darger area. Use self-contained breathing agents is more container to a well-ventilated area. Fitamable liquefied gas. Forms explosive mixtures with air and oxidizing agents area or move container to a well-ventilate darea. Fitamable induefied gas. Forms explosive atmosphere may linger. Before entering area, especial/confined areas, pathods or allow and materials for containment on a well-ventilate darea. Fitamable supports attracted averagers any special from leak and could explode in traignited by gashs or fitames. Explosive atmosphere with an appropriate device. Before entering area, especial/confined areas, check atmosphere with an appropriate device. Before entering area, especial/confined areas, check atmosphere with an appropriate device. Before entering area, especial/confined areas, check atmosphere with an appropriate device. Before entering area, especial/confined areas, check atmosphere with an appropriate device. Before entering area, especial/confined areas, check atmosphere with an appropriate device. Before ontenins contaminent in accounting entrytonent. Prevent soil and water pollution. Dispose of contentis/container in accounting entrytonent. Prevent soil and water pollution. Contact supplier for any special requirements. Before and storage C1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Special protective equipment for fire fighters	
6.1. Personal precautions, protective equipment and emergency procedures.         General measures       : DANGER! Toxic, flammable liquefied gas. Forms explosive mixtures with air and oxidizing agents, immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of gipmion if safe to do so. Reduce vapors with fog or fine water spray, taking care not to sprad liquid with water. Shut of flow if safe to do so. Ventilate area or move container to a vell-ventilated area. Fammable vapors may spred from leak and could explode if reignified by garks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.         6.2. Methods and materials for containment and cleating up       If y to stop release. Reduce vapour with fog or fine water spray. Prevent waste from contentivicontaining the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with loca/regional/national/international regulations. Contact supplier for any special requirements.         6.3. Reference to other sections       Exposure controls/personal protection         Sectrion 7: Handling and storage       I Leak-check system with scapy water, never use a flame         All piped systems and associated equipment must be grounded       Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking foods. Use only explosion-proof equipment         Vear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not straag, roll, slide or ding. Sourced poen the size, in the da solely to protect the valve. When moving cylinders. Never inset an	Other information	<ul> <li>Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).</li> </ul>
6.1. Personal precautions, protective equipment and emergency procedures.         General measures       : DANGER! Toxic, flammable liquefied gas. Forms explosive mixtures with air and oxidizing agents. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus when needed. Remove all sources of gipition if safe to do so. Reduce vapors with log or fine water sprav, taking care not to spratal liquid with water. Shut of flow if safe to do so. Ventilate area or move container to a vell-ventilated area. Fammable vapors may spread from leak and could explode if reignited by parks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.         6.2. Methods and materials for containment and cleaning up in ortication incling the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with loca/regional/national/international regulations. Contact supplier for any special requirements.         6.3. Reference to other sections       Expressive controls/personal protection         SECTION 7: Handling and storage       7.1. Precautions for safe handling         7.1. Precautions for safe handling       : Leak-check system with scapy water, never use a flame         All piped systems and associated equipment must be grounded       Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. U		
General measures       : DANGER! Toxic, flammable liquefied gas . Forms explosive mixtures with air and oxidizing agents. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread induitive appars may spread from leak and could explode if reignited by spake or all nears. Explosive atmospheres may linger. Before centering area, especially confined areas, check atmospheres may linger.         6.2.       Methods and materials for containment and cleaning up       : Orts obspread from leak and could explode if reignited by spake or line water spray. Prevent waste from contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.         6.3.       Reference to other sections         For further information refer to section 8: Exposure controls/personal protection         SECTION 7: Handling and storage         7.1       Precautions for safe handling         Precautions for safe handling       : Leak-check system with scapy water; never use a flame         All piped systems and associated equipment must be grounded       Keep away from heet, hot surfaces, sparks, open flames and other lightlon sources. No somking. Use only non-sparking tools. Use only explosion-proof equipment         Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place termovable valve cover every for thes a onbidic (e.g.) were thore movine vever-light or used caps. Slovy open the val		
Methods for cleaning up <ul> <li>Try to stop release. Reduce vapour with fog or fine water spray. Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.</li> </ul> <li> <ul> <li>Reference to other sections</li> </ul> </li> <li>             For further information refer to section 8: Exposure controls/personal protection         </li> <li>             Sections for safe handling         <ul> <li>Leak-check system with scapy water; never use a flame</li> <li>                  All piped systems and associated equipment must be grounded</li> <li>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment</li> <li>                 Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, coll, silde or drop. While moving cylinder, always keep in place renovable valve cover. Never insert an object (e.g., wrench, screwdriver, pr bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-light or rusted caps. Slowly open the valve. If the valve is hard to reput explore the valve, when meeting, our spart damage; doing so may damage the container walve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container valve after each use; keep closed even when empty, Never apply flame or localized heat directly to any part of the container walve after each use; keep closed even when empty, Never apply flame or localized heat directly to any part of the cerv</li></ul></li>	General measures	agents. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shut off flow if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable vapors may spread from
contential of the surrounding environment. Prevent soil and water pollution. Dispose of contenta/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements. 6.3. Reference to other sections For further information refer to section 3: Exposure controls/personal protection SECTION 7: Handling and storage 7.1. Precautions for safe handling Precautions for safe handling i : Leak-check system with soapy water; never use a flame All piped systems and associated equipment must be grounded Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only environment, Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, side or drop. While moving cylinder, always keep in place removable valve cover. Never stempt to bits a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders. Never stemed to bits a cylinder sure waite an object (e.g., wrench, sterewdriver, pp. bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable stap wrench to remove over-light to rusted cause. Slowly open the valve. If the valve is hard to contain the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, venting the container and could cause the pressure relied device to fail prematurely, ve	6.2. Methods and materials for contain	ment and cleaning up
For further information refer to section 8: Exposure controls/personal protection         SECTION 7: Handling and storage         7.1 Precautions for safe handling         Precautions for safe handling         I Leak-check system with soapy water; never use a flame         All piped systems and associated equipment must be grounded         Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment         Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to fits a cylinder by the cap; the cap is infended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pr bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized head directly to any years or the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.         This document is only controlled while on the Praxeir Canada Inc. websile and a cogy of this controlled version is available for downtoad. Praxeir cannot assure the	Methods for cleaning up	contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact
For further information refer to section 8: Exposure controls/personal protection         SECTION 7: Handling and storage         7.1 Precautions for safe handling         Precautions for safe handling         Each-check system with scapy water; never use a flame         All piped systems and associated equipment must be grounded         Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment         Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, coll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to fits a cylinder by the cap is infended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pr bar) in to cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove ower-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized head directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.         This document is only controlled while on the Praxeir Canada Inc. websile and a coop of this controlled version is available for do	6.3. Reference to other sections	
7.1.       Precautions for safe handling <ul> <li>Leak-check system with soapy water; never use a flame</li> <li>All piped systems and associated equipment must be grounded</li> <li>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment</li> <li>Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is infended solely to protect the valve. When moving cylinders. Never insert an object (e.g. wrench, screwdriver, pr bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or nusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperaturely, venting the container and could cause the pressure relief device to fail prematurely, venting the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.</li> </ul>	For further information refer to section 8: Ex	posure controls/personal protection
7.1.       Precautions for safe handling <ul> <li>Leak-check system with scapy water; never use a flame</li> <li>All piped systems and associated equipment must be grounded</li> <li>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment</li> <li>Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is infended solely to protect the valve. When moving cylinders. Never insert an object (e.g. wrench, screwdriver, pr bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperaturely, venting the container and could cause the pressure relief device to fail prematurely, venting the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.</li> </ul>	SECTION 7: Handling and storage	
Precautions for safe handling       : Leak-check system with soapy water; never use a flame         All piped systems and associated equipment must be grounded       Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment         Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is infended solely to protect the valve. When moving cylinders. Never insert an object (e.g. wrench, screwdriver, pr bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperaturely, venting the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.         This document is only controlled while on the Praxair Canada Inc. website and a copy of this controlled version is available for downood. Praxair cannot assure the integrity or accuracy of any version of this document after it has been downloaded or removed from our website.	The second s	
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integrity or accuracy of any version of this document after it has been downloaded or removed from our website.		physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pr bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this.

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Hydrogen sulfide

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7.2.	Conditions for safe sto	rage, including any incompatibilities
Storag	e conditions	Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from failing or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16
		OTHER PRECAUTIONS FOR HANDLING STORAGE AND USE: When bandling product

OTHER PRECAUTIONS FOR HANDLING, STORAG E, AND USE: When h under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

8.1. Control para	meters			
Hydrogen sulfide (77	Hydrogen sulfide (7783-06-4)			
USA - ACGIH	ACGIH TLV-TWA (ppm)	1		
LICA ACCILL	ACCILL THE STEL (man)			

SECTION 8: Exposure controls/personal protection

Hydrogen sulfide (7783-06-4	Ð	
USA - ACGIH	ACGIH TLV-TWA (ppm)	1 ppm
USA - ACGIH	ACGIH TLV-STEL (ppm)	5 ppm
USA - OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	21 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	15 ppm
Canada (Quebec)	VEMP (mg/m <sup>a</sup> )	14 mg/m³
Canada (Quebec)	VEMP (ppm)	10 ppm
Alberta	OEL Ceiling (mg/m <sup>3</sup> )	21 mg/m <sup>a</sup>
Alberta	OEL Ceiling (ppm)	15 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	14 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	10 ppm
British Columbia	OEL Ceiling (ppm)	10 ppm
Manitoba	OEL STEL (ppm)	5 ppm
Manitoba	OEL TWA (ppm)	1 ppm
New Brunswick	OEL STEL (mg/m <sup>a</sup> )	21 mg/m <sup>a</sup>
New Brunswick	OEL STEL (ppm)	15 ppm
New Brunswick	OEL TWA (mg/m <sup>o</sup> )	14 mg/m <sup>a</sup>
New Brunswick	OEL TWA (ppm)	10 ppm
New Foundland & Labrador	OEL STEL (ppm)	5 ppm
New Foundland & Labrador	OEL TWA (ppm)	1 ppm
Nova Scotia	OEL STEL (ppm)	5 ppm
Nova Scotia	OEL TWA (ppm)	1 ppm
Nunavut	OEL Ceiling (mg/m <sup>3</sup> )	28 mg/m <sup>a</sup>
Nunavut	OEL Celling (ppm)	20 ppm
Nunavut	OEL STEL (mg/m²)	21 mg/m <sup>a</sup>
Nunavut	OEL STEL (ppm)	15 ppm
Nunavut	OEL TWA (mg/m <sup>2</sup> )	14 mg/m <sup>s</sup>
Nunavut	OEL TWA (ppm)	10 ppm
Northwest Territories	OEL STEL (ppm)	15 ppm

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# Hydrogen sulfide

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Hydrogen sulfide (7783-0	6-4)		
Northwest Territories	OEL TWA (ppm)	10 ppm	
Ontario	OEL STEL (ppm)	15 ppm	
Ontario	OEL TWA (ppm)	10 ppm.	
Prince Edward Island	OEL STEL (ppm)	5 ppm	
Prince Edward Island	OEL TWA (ppm)	1 ppm	
Québec	VECD (mg/m <sup>2</sup> )	21 mg/m <sup>a</sup>	
Québec	VECD (ppm)	15 ppm	
Québec	VEMP (mg/m <sup>a</sup> )	14 mg/m <sup>2</sup>	
Quebec	VEMP (ppm)	10 ppm	
Saskatchewan	OEL STEL (ppm)	15 ppm	
Saskatchewan	OEL TWA (ppm)	10 ppm	
Yukon	OEL STEL (mg/m²)	27 mg/m <sup>3</sup>	
Yukon	OEL STEL (ppm)	15 ppm	
Yukon	OEL TWA (mg/m²)	15 mg/m <sup>a</sup>	
Yukon	OEL TWA (ppm)	10 ppm	

8.2. Appropriate engineering controls

Appropriate engineering controls

 Use corrosion-resistant equipment. Use an explosion-proof local exhaust system. Local exhaust and general ventilation must be adequate to meet exposure standards. MECHANICAL (GENERAL): Inadequate - Use only in a closed system. Use explosion proof equipment and lighting.

B.3. Individual protection measu	res/Personal protective equipment
Personal protective equipment	: Safety glasses. Face shield. Gloves.
Hand protection	: Wear work gloves when handling containers. Wear heavy rubber gloves where contact with product may occur.
Eye protection	Wear goggles and a face shield when transfilling or breaking transfer connections. Select in accordance with the current CSA standard 294.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.
Respiratory protection	: Respiratory protection: Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Thermal hazard protection	: Wear cold insulating gloves when transfilling or breaking transfer connections. Standard EN 511 - Cold insulating gloves.
Other information	Other protection: Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of fiame resistant anti-static safety clothing.
SECTION 9: Physical and che	mical properties
9.1. Information on basic physic	al and chemical properties
Physical state	; Gas
Appearance	: Colorless gas, Colorless liquid at low temperature or under high pressure.

 Molecular mass
 : 34 g/mol

 Colour
 : Colourless.

 Odour
 : Odour can persist. Poor warning properties at low concentrations. Rotten eggs.

 Odour threshold
 : Odour threshold is subjective and inadequate to warn of overexposure.

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# Hydrogen sulfide

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рН	: Not applicable	b:	
pH solution	: No data availa	ble	
Relative evaporation rate (butylacetate=1)	) : No data availa	ible	
Relative evaporation rate (ether=1)	: Not applicable		
Melting point	: -86 °C		
Freezing point	: -82.9 °C		
Boiling point	: -60.3 °C		
Flash point	: Not applicable	ь.	
Critical temperature	: 100.4 °C		
Auto-ignition temperature	: 260 °C		
Decomposition temperature	: No data availa	ible	
Vapour pressure	: 1880 kPa		
Vapour pressure at 50 °C	: No data availa	ible	
Critical pressure	: 8940 kPa		
Relative vapour density at 20 °C	: >=		
Relative density	: No data availa	ible	
Relative density of saturated gas/air mixtu	re : No data availa	ible	
Density	: No data availa	ible	
Relative gas density	: 1.2		
Solubility	: Water: 3980 n	ngA	
Log Pow	: Not applicable	ń.	
Log Kow	: Not applicable	h.	
Viscosity, kinematic	: Not applicable	K.	
Viscosity, dynamic	: Not applicable	n.	
Viscosity, kinematic (calculated value) (40	"C) : No data availa	ible	
Explosive properties	: Not applicable	n,	
Oxidizing properties	: None.		
Flammability (solid, gas)	: 4.3 - 46 vol %		
9.2. Other information			
Gas group	: Liquefied gas		
Additional information	: Gas/vapour he	eavier than air. May accumula	te in confined spaces, particularly at or below

ctivity hazard other than the effects described in sub-sections below. under normal conditions. act violently with oxidants. Can form explosive mixture with air. noisture in installation systems. Keep away from heat/sparks/open flames/hot surfaces moking.
under normal conditions. act violently with oxidants. Can form explosive mixture with air. noisture in installation systems. Keep away from heat/sparka/open flames/hot surfaces
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noisture in installation systems. Keep away from heat/sparks/open flames/hot surfaces
nia, Bases. Bromine pentafluoride, Chlorine trifluoride, chromium trioxide, (and heat), r. (powdered). Fluorine. Lead. Lead oxide. Mercury. Nitric acid. Nitrogen trifluoride. n sulfide. Organic compounds. Oxidizing agents. Oxygen difluoride. Rubber. Sodium, oisture). Water.
al decomposition may produce : Sulfur. Hydrogen.
ssified

ground level

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Acute toxicity (inhalation)	: Inhalation:gas: FATAL IF INHALED.
Hydrogen sulfide ( \f )7783-06-4	
LC50 inhalation rat (mg/l)	0.99 mg/l (Exposure time: 1 h)
LC50 inhalation rat (ppm)	356 ppm/4h
ATE CA (gases)	356.0000000 ppmv/4h
ATE CA (vapours)	0.9900000 mg/V4h
ATE CA (dust,mist)	0.9900000 mg//4h
Skin corrosion/irritation	: Not classified
	pH: Not applicable.
Serious eye damage/irritation	: Not classified
	pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: MAY CAUSE RESPIRATORY IRRITATION.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

12.1. Toxicity	
Ecology - general	: VERY TOXIC TO AQUATIC LIFE.
Hydrogen sulfide (7783-06-4)	
LC50 fish 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
LC50 fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
12.2. Persistence and degradabi	ity
Hydrogen sulfide (7783-06-4)	
Persistence and degradability	Not applicable for inorganic gases.
12.3. Bioaccumulative potential	
Hydrogen sulfide (7783-06-4)	17
BCF fish 1	(no bloaccumulation expected)
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No data available,
12.4. Mobility in soil	
Hydrogen sulfide (7783-06-4)	
Mobility in soil	No data available.
Log Pow	Not applicable.
Log Kow	Not applicable.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution
12.5. Other adverse effects	
Other adverse effects	: May cause pH changes in aqueous ecological systems.
Effect on the ozone layer	: None
Effect on global warming	: No known effects from this product

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SECTION 13: Disposal consideration	S∕
13.1. Disposal methods	
Waste disposal recommendations	: Do not attempt to dispose of residual or unused quantities. Return container to supplier.
SECTION 14: Transport information	
14.1. Basic shipping description	
In accordance with TDG	
TDG	
UN-No. (TDG)	: UN1053
TDG Primary Hazard Classes	: 2.3 - Class 2.3 - Toxic Gas.
TDG Subsidiary Classes	; 2.1
Proper shipping name	: HYDROGEN SULPHIDE
ERAP Index	: 500
Explosive Limit and Limited Quantity Index	: 0
Passenger Carrying Ship Index	: Forbidden
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: Forbidden
14.3. Air and sea transport	
MDG	
UN-No. (IMDG)	: 1053
Proper Shipping Name (IMDG)	: HYDROGEN SULPHIDE
Class (IMDG)	: 2 - Gases
MFAG-No IATA	0.117
UN-No. (IATA)	: 1053
Proper Shipping Name (IATA)	: Hydrogen sulphide
Class (IATA)	2
SECTION 15: Regulatory information	
15.1. National regulations	
Hydrogen sulfide (7783-06-4)	
Listed on the Canadian DSL (Domestic Substan	nces List)
15.2. International regulations	
Hydrogen sulfide (7783-06-4)	
Listed on the AICS (Australian Inventory of Che Listed on IECSC (Inventory of Existing Chemica Listed on the EEC Inventory EINECS (Europea Listed on the Japanese ENCS (Existing & New Listed on the Korean ECL (Existing Chemicals Listed on NZIoC (New Zealand Inventory of Che Listed on PICCS (Philippines Inventory of Chen Listed on the United States TSCA (Toxic Subst Listed on INSQ (Mexican national Inventory of	al Substances Produced or Imported in China) n Inventory of Existing Commercial Chemical Substances) Chemical Substances) Inventory List) emicals) nicals and Chemical Substances) ances Control Act) Inventory
SECTION 16: Other information	
Date of issue Revision date	: 15/10/1979
Supersedes	: 10/08/2016 : 15/10/2013
Indication of changes:	
Training advice	<ul> <li>Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazar Ensure operators understand the flammability hazard.</li> </ul>

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Permian Resources Corporation	H <sub>2</sub> S Contingency Plan	Lea County, New Mexico
	El Campeon Fed 111H, 121H, 151H	



SDS Canada (GHS) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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EN (English)

SDS ID : E-4611

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 $SO_2SDS$ 



Safety Data Sheet Material Name: SULFUR DIOXIDE SDS ID: MAT22290 Section 1 - PRODUCT AND COMPANY IDENTIFICATION Material Name SULFUR DIOXIDE Synonyms MTG MSDS 80; SULFUROUS ACID ANHYDRIDE; SULFUROUS OXIDE; SULPHUR DIOXIDE; SULFUROUS ANHYDRIDE; FERMENTICIDE LIQUID; SULFUR DIOXIDE(SO2); SULFUR OXIDE; SULFUR OXIDE(SO2) **Chemical Family** inorganic, gas **Product Description** Classification determined in accordance with Compressed Gas Association standards. **Product Use** Industrial and Specialty Gas Applications. **Restrictions on Use** None known. Details of the supplier of the safety data sheet MATHESON TRI-GAS, INC. 3 Mountainview Road Warren, NJ 07059 General Information: 1-800-416-2505 Emergency #: 1-800-424-9300 (CHEMTREC) Outside the US: 703-527-3887 (Call collect) Section 2 - HAZARDS IDENTIFICATION Classification in accordance with paragraph (d) of 29 CFR 1910.1200. Gases Under Pressure - Liquefied gas Acute Toxicity - Inhalation - Gas - Category 3 Skin Corrosion/Irritation - Category 1B Serious Eye Damage/Eye Irritation - Category 1 Simple Asphyxiant **GHS Label Elements** Symbol(s)

Signal Word Danger Hazard Statement(s) Contains gas under pressure; may explode if heated. Toxic if inhaled. Causes severe skin burns and eye damage. May displace oxygen and cause rapid suffocation. Precautionary Statement(s) Prevention Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

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#### Material Name: SULFUR DIOXIDE

Wash thoroughly after handling. Do not breathe dusts or mists. Response IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. Specific treatment (see label). Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Disposal Dispose of contents/container in accordance with local/regional/national/international regulations. Other Hazards

Contact with liquified gas may cause frostbite.

CAS	Component Name	Percent
7446-09-5	Sulfur dioxide	100.0

#### Inhalation

IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical attention.

#### Skin

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). If warm water is not available, gently wrap affected parts in blankets. DO NOT induce vomiting. Get immediate medical attention.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get immediate medical attention.

#### Most Important Symptoms/Effects

#### Acute

Toxic if inhaled, frostbite, suffocation, respiratory tract burns, skin burns, eye burns

Delayed

No information on significant adverse effects.

Indication of any immediate medical attention and special treatment needed

- Treat symptomatically and supportively.
- Note to Physicians

For inhalation, consider oxygen.

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#### Material Name: SULFUR DIOXIDE SDS ID: MAT22290 Section 5 - FIRE FIGHTING MEASURES **Extinguishing Media** Suitable Extinguishing Media carbon dioxide, regular dry chemical, Large fires: Use regular foam or flood with fine water spray. **Unsuitable Extinguishing Media** None known. Special Hazards Arising from the Chemical Negligible fire hazard. **Hazardous Combustion Products** sulfur oxides Fire Fighting Measures Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry. Special Protective Equipment and Precautions for Firefighters Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure. Section 6 - ACCIDENTAL RELEASE MEASURES Personal Precautions, Protective Equipment and Emergency Procedures Wear personal protective clothing and equipment, see Section 8. Methods and Materials for Containment and Cleaning Up Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet. Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. **Environmental Precautions** Avoid release to the environment Section 7 - HANDLING AND STORAGE **Precautions for Safe Handling** Do not get in eyes, on skin, or on clothing. Do not breathe gas, fumes, vapor, or spray. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Keep only in original container. Avoid release to the environment, Conditions for Safe Storage, Including any Incompatibilities Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Keep separated from incompatible substances. **Incompatible Materials** bases, combustible materials, halogens, metal carbide, metal oxides, metals, oxidizing materials, peroxides, reducing agents Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION **Component Exposure Limits** Sulfur dioxide 7446-09-5 ACGIH: 0.25 ppm STEL

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#### Material Name: SULFUR DIOXIDE

NIOSH:	2 ppm TWA ; 5 mg/m3 TWA
	5 ppm STEL ; 13 mg/m3 STEL
	100 ppm IDLH
OSHA (US):	5 ppm TWA ; 13 mg/m3 TWA
Mexico:	0.25 ppm STEL [PPT-CT ]

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

#### Individual Protection Measures, such as Personal Protective Equipment

#### Eye/face protection

Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

#### **Skin Protection**

Wear appropriate chemical resistant clothing. Wear chemical resistant clothing to prevent skin contact.

#### **Respiratory Protection**

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other

#### positive-pressure mode.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Sect	ion 9 - PHYSICAL A	AND CHEMICAL PROPERT	TIES
Appearance	colorless gas	Physical State	gas
Odor	irritating odor	Color	colorless
Odor Threshold	3 - 5 ppm	рН	(Acidic in solution )
Melting Point	-73 °C (-99 °F )	Boiling Point	-10 °C (14 °F )
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	>1 (Butyl acetate = 1 )	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	(Not flammable )
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	2432 mmHg @ 20 ℃
Vapor Density (air=1)	2.26	Specific Gravity (water=1)	1.462 at -10 °C

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#### Material Name: SULFUR DIOXIDE

#### SDS ID: MAT22290

Water Solubility	22.8 % (@ 0 °C )	Partition coefficient: n- octanol/water	Not available
Viscosity	Not available	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Physical Form	liquified gas	Molecular Formula	S-02
Molecular Weight	64.06		
Solvent Solubility Soluble alcohol, acetic acid, sulfi	uric acid, ether, chloroforn	n, Benzene, sulfuryl chloride, nitrob	enzenes, Toluene, acetone
	Section 10 - STAI	BILITY AND REACTIVITY	Y
<b>Incompatible Materials</b>	s rials, halogens, metal carbi ion products	pture or explode if exposed to heat. ide, metal oxides, metals, oxidizing	materials <mark>, p</mark> eroxides, reduci
	Section 11 - TOXIC	OLOGICAL INFORMATI	ON
Information on Likely   Inhalation Toxic if inhaled. Causes Skin Contact skin burns	7 11.1 DR1.1 1	em, burns, difficulty breathing	

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Material Name: SULFUR DIOXIDE

#### Safety Data Sheet

SDS ID: MAT22290

 Delayed Effects

 No information on significant adverse effects.

 Irritation/Corrosivity Data

 respiratory tract burns, skin burns, eye burns

 Respiratory Sensitization

 No data available.

 Dermal Sensitization

 No data available.

 Component Carcinogenicity

 Sulfur dioxide
 7446-09-5

 ACGIH:
 A4 - Not Classifiable as a Human Carcinogen

 IARC:
 Monograph 54 [1992] (Group 3 (not classifiable))

Toxic if inhaled, frostbite, suffocation, respiratory tract burns, skin burns, eye burns

Germ Cell Mutagenicity No data available. Tumorigenic Data No data available Reproductive Toxicity No data available. Specific Target Organ Toxicity - Single Exposure No target organs identified. Specific Target Organ Toxicity - Repeated Exposure No target organs identified. Aspiration hazard Not applicable. Medical Conditions Aggravated by Exposure respiratory disorders

#### Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity No LOLI ecotoxicity data are available for this product's components. Persistence and Degradability No data available. Bioaccumulative Potential No data available. Mobility No data available.

Section 13 - DISPOSAL CONSIDERATIONS

#### **Disposal Methods**

Dispose of contents/container in accordance with local/regional/national/international regulations. Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

#### US DOT Information:

Shipping Name: SULFUR DIOXIDE

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Material Name: SULFUR DIOXIDE

Hazard Class: 2.3 UN/NA #: UN1079 Required Label(s): 2.3

IMDG Information: Shipping Name: SULPHUR DIOXIDE Hazard Class: 2.3 UN#: UN1079 Required Label(s): 2.3

TDG Information: Shipping Name: SULFUR DIOXIDE Hazard Class: 2.3 UN#: UN1079 Required Label(s): 2.3 International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

#### U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Sulfur dioxide	7446-09-5
SARA 302:	500 lb TPQ
OSHA (safety):	1000 lb TQ (Liquid )
SARA 304:	500 lb EPCRA RQ

#### SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Gas Under Pressure; Acute toxicity; Skin Corrosion/Irritation; Serious Eye Damage/Eye Irritation; Simple Asphyxiant

**U.S. State Regulations** 

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Sulfur dioxide	7446-09-5	Yes	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)



This product can expose you to chemicals including Sulfur dioxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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	irces Corporatio	n			ingency Plan		Lea County, New Mexico
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6	MATHE ask The Gas Pr						
				fety Data	Sheet		
Ma	Sulfur dioxide	7446-09-5	E				SDS ID: MAT22290
Repro/Dev. Tox developme Component Analysis - Inven Sulfur dioxide (7446-09-5)			ntal toxicity.	7/29/2011			
USCAAUCNEUYesDSLYesYesEI		JP - ENCS	5 JP - ISHL	KR KECI - Anno	x 1 KR K	EC1 - Annex 2	
		Yes EIN	V Yes	Yes	Yes	No	
KR - REACH CCA MX						٦	
No Yes Y				s Yes			
				R INFORMAT	TON		
	Australia; BOD - I California/Massac Comprehensive Er (US); CLP - Class Deutsche Forschun DSL - Domestic S European Inventor Commercial Chem Environmental Pro Exposure Indices); Association; ICAC Immediately Dang Industrial Safety a Kow - Octanol/wa Existing Chemical Existing Chemical - Korea Registratio	= Slight 2 = M ce of Governm Oxygen Dem nesota/New Ja 1 Response, C belling, and P chaft; DOT - 1 ist; EC – Euro ng Commercia nees; ENCS - ncy; EU - Euro enational Ag onal Civil Avi e and Health; aw; IUCLID coefficient; K L); KR KECI L), KR - Kor sation of Cher	loderate 3 = S mental Industri and; C - Cels ersey/Pennsyli ompensation, Packaging; CN Department of opean Commi- al Chemical S Japan Existin ropean Union: ency for Rese ation Organiz IMDG - Inter International CR KECI Ann Annex 2 - Ko rea; LD50/LC mical Substan	erious 4 = Severe al Hygienists; ADI ius; CA - Canada; ( vania*; CAS - Cher and Liability Act; - China; CPR - Co Transportation; Di ssion; EEC - Europ ubstances); EINEC g and New Chemic F - Fahrenheit; F - arch on Cancer; IA ation; IDL - Ingred national Maritime I Uniform Chemica ex 1 - Korea Existi orea Existing Chem 50 - Lethal Dose/ L ces Chemical Cont	C - European CA/MA/MN nical Abstra CFR - Code ntrolled Pro SD - Danger ean Econom S - European al Substance Background TA - Interna ient Disclost Dangerous G Information ng Chemical icals Invento ethal Concer ol Act; LEL	icts Service; CERCLA - of Federal Regulations ducts Regulations; DFG - ous Substance Directive; ic Community; EIN - n Inventory of Existing Inventory; EPA - d (for Venezuela Biological tional Air Transport	

- National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL-Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH-Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA -Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit;

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**Operator Name: PERMIAN RESOURCES OPERATING LLC** 

Well Name: EL CAMPEON FEDERAL COM

Well Number: 123H

disposal site.

#### Waste type: SEWAGE

Waste content description: Portable, self-contained toilets will be provided for human waste disposal. Upon completion of drilling and completion activities, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to the disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

Amount of waste: 250 gallons

#### Waste disposal frequency : Weekly

Safe containment description: Portable, self-contained toilets will be provided for human waste disposal. Upon completion of drilling and completion activities, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to the disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

#### Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: COMMERCIAL FACILITY

# **Disposal type description:**

Disposal location description: A LICENSED 3rd PARTY CONTRACTOR WILL BE USED TO HAUL AND DISPOSE OF HUMAN WASTE

#### Waste type: GARBAGE

Waste content description: All garbage, junk and non-flammable waste materials will be contained in a self-contained, portable dumpster or trash cage, to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

Amount of waste: 250 gallons

Waste disposal frequency : Weekly

Safe containment description: All garbage, junk and non-flammable waste materials will be contained in a self-contained, portable dumpster or trash cage, to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

#### Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: COMMERCIAL FACILITY

# **Disposal type description:**

Disposal location description: A LICENSED 3rd PARTY CONTRACTOR WILL BE UTILIZED TO HAUL AND DISPOSE OF GARBAGE

# **Reserve Pit**

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Operator Name: PERMIAN RESOURCES OPERATING LLC

Well Name: EL CAMPEON FEDERAL COM

Well Number: 123H

Reserve pit length (ft.)Reserve pit width (ft.)Reserve pit depth (ft.)Reserve pit volume (cu. yd.)Is at least 50% of the reserve pit in cut?

**Reserve pit liner** 

Reserve pit liner specifications and installation description

# **Cuttings Area**

Cuttings Area being used? NO Are you storing cuttings on location? N Description of cuttings location Cuttings area length (ft.) Cuttings area depth (ft.) Cuttings area depth (ft.) Is at least 50% of the cuttings area in cut? WCuttings area liner Cuttings area liner

**Section 8 - Ancillary** 

Are you requesting any Ancillary Facilities?: N Ancillary Facilities

# Comments:

Section 9 - Well Site

# Well Site Layout Diagram:

El\_Campeon\_123H\_RL\_20240818193459.pdf El\_Campeon\_Pad\_3\_WSL\_20250130051215.pdf **Comments:**  Sante Fe Main Office Phone: (505) 476-3441

General Information Phone: (505) 629-6116

Online Phone Directory https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Operator:	OGRID:
Permian Resources Operating, LLC	372165
300 N. Marienfeld St Ste 1000	Action Number:
Midland, TX 79701	448409
	Action Type:
	[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

#### CONDITIONS

Created By	Condition	Condition Date
jdoolingpr	Cement is required to circulate on both surface and intermediate1 strings of casing.	4/3/2025
jdoolingpr	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	4/3/2025
matthew.gomez	Notify the OCD 24 hours prior to casing & cement.	4/24/2025
matthew.gomez	A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud.	4/24/2025
matthew.gomez	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.	4/24/2025
matthew.gomez	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.	4/24/2025
matthew.gomez	File As Drilled C-102 and a directional Survey with C-104 completion packet.	4/24/2025

Released to Imaging: 4/24/2025 9:58:35 AM

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#### Action 448409