F/S (H)

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
APR 22 2019
RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMLC0061374A
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other	6. If Indian, Allotee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone	7. If Unit or CA Agreement, Name and No. BELL LAKE / NMNM068292X
	8. Lease Name and Well No. BELL LAKE UNIT SOUTH 210H (316706)
2. Name of Operator KAISER FRANCIS OIL COMPANY (12361)	9. API Well No. 30-025-45861
3a. Address 6733 S. Yale Ave. Tulsa OK 74121	3b. Phone No. *(include area code)* (918)491-0000
	10. Field and Pool, or Exploratory ~~BELL LAKE SOUTH~~ / BONE SPRING (98259)
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface SWNE / 1490 FNL / 2445 FEL / LAT 32.249742 / LONG -103.508465 At proposed prod. zone SWSE / 330 FSL / 2290 FEL / LAT 32.225732 / LONG -103.507898	11. Sec., T. R. M. or Blk. and Survey or Area SEC 6 / T24S / R34E / NMP

14. Distance in miles and direction from nearest town or post office* 20 miles	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) 0 feet	16. No of acres in lease 440	17. Spacing Unit dedicated to this well 240
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1500 feet	19. Proposed Depth 10862 feet / 18720 feet	20. BLM/BIA Bond No. in file FED: WYB000055
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3608 feet	22. Approximate date work will start* 04/01/2019	23. Estimated duration 40 days

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature (Electronic Submission)	Name *(Printed/Typed)* Stormi Davis / Ph: (575)308-3765	Date 12/07/2018
Title Regulatory Analyst		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 04/05/2019
Title Assistant Field Manager Lands & Minerals	Office CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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

Rec GCP 04/22/19

KZ 04/29/19

APPROVED WITH CONDITIONS

Approval Date: 04/05/2019

(Continued on page 2)

*(Instructions on page 2)

INSTRUCTIONS

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

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

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

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the 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 OE 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.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SWNE / 1490 FNL / 2445 FEL / TWSP: 24S / RANGE: 34E / SECTION: 6 / LAT: 32.249742 / LONG: -103.508465 (TVD: 0 feet, MD: 0 feet)
   PPP: NWSE / 2640 FNL / 2200 FEL / TWSP: 24S / RANGE: 34E / SECTION: 7 / LAT: 32.2320713 / LONG: -103.5078231 (TVD: 10862 feet, MD: 16400 feet)
   PPP: SWNE / 1320 FNL / 2200 FEL / TWSP: 24S / RANGE: 34E / SECTION: 7 / LAT: 32.2357104 / LONG: -103.5077898 (TVD: 10862 feet, MD: 15090 feet)
   PPP: NWSE / 2600 FSL / 2200 FEL / TWSP: 24S / RANGE: 34E / SECTION: 6 / LAT: 32.246485 / LONG: -103.507659 (TVD: 10862 feet, MD: 11170 feet)
   PPP: NWNE / 0 FNL / 2200 FEL / TWSP: 24S / RANGE: 34E / SECTION: 7 / LAT: 32.2393297 / LONG: -103.5077413 (TVD: 10862 feet, MD: 13770 feet)
   BHL: SWSE / 330 FSL / 2290 FEL / TWSP: 24S / RANGE: 34E / SECTION: 7 / LAT: 32.225732 / LONG: -103.507898 (TVD: 10862 feet, MD: 18720 feet)

BLM Point of Contact

Name: Tanja Baca
Title: Admin Support Assistant
Phone: 5752345940
Email: tabaca@blm.gov

Approval Date: 04/05/2019

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.

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Kaiser Francis Oil Company
LEASE NO.:	NMLC0061374A
WELL NAME & NO.:	Bell Lake Unit South 210H
SURFACE HOLE FOOTAGE:	1490'/N & 2445'/E
BOTTOM HOLE FOOTAGE	330'/S & 2290'/E
LOCATION:	Section 6, T.24 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☑ Unit

A. HYDROGEN SULFIDE

1. 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 Onshore Order 6 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"** surface casing shall be set at approximately **1350'** (a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
   a. **If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after completing the cement job.
   b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
   c. If cement falls back, remedial cementing will be done prior to drilling out that string.
   d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

2. The **9-5/8"** intermediate casing shall be set at approximately **5200'** and cemented to surface.
   a. **If cement does not circulate to surface,** see B.1.a, b & d.
3. The minimum required fill of cement behind the **5-1/2"** production casing is:
   a. Cement shall tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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. 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.

D. SPECIAL REQUIREMENTS

1. The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number once it has been established.
2. A commercial well determination shall be submitted after production has been established for at least six months.

DR 3/29/2019

GENERAL REQUIREMENTS

1. 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)
      ☒ Chaves and Roosevelt Counties
      Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
      During office hours call (575) 627-0272.
      After office hours call (575)
      ☒ Eddy County
      Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822
      ☒ Lea County
      Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

2. 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
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

3. 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.

4. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity 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-P 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 Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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:
   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 OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
   a. 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 when specified), 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).

b. 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
d. 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.
e. 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.
f. 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. This test shall be performed prior to the test at full stack pressure.
g. 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 Onshore Order No. 2.

C. DRILLING MUD

1. 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

2. 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.

3. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

AFMSS

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

Operator Certification Data Report

04/11/2019

Operator Certification

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

NAME: Stormi Davis **Signed on:** 12/07/2018

Title: Regulatory Analyst

Street Address: 106 W. Riverside Drive

City: Carlsbad **State:** NM **Zip:** 88220

Phone: (575)308-3765

Email address: nmogrservices@gmail.com

Field Representative

Representative Name: Eric Hanson

Street Address: 6733 S Yale Ave

City: Tulsa **State:** OK **Zip:** 74136

Phone: (918)770-2682

Email address: erich@kfoc.net

APD ID: 10400036925 **Submission Date:** 12/07/2018

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400036925 **Tie to previous NOS?** **Submission Date:** 12/07/2018

BLM Office: CARLSBAD **User:** Stormi Davis **Title:** Regulatory Analyst

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMLC0061374A **Lease Acres:** 440

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? YES **Federal or Indian agreement:** FEDERAL

Agreement number: NMNM068292X

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** KAISER FRANCIS OIL COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: KAISER FRANCIS OIL COMPANY

Operator Address: 6733 S. Yale Ave. **Zip:** 74121

Operator PO Box: PO Box 21468

Operator City: Tulsa **State:** OK

Operator Phone: (918)491-0000

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Master Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** BELL LAKE SOUTH **Pool Name:** BONE SPRING

Is the proposed well in an area containing other mineral resources? POTASH

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** SOUTH BELL LAKE UNIT **Number:** 8

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 20 Miles **Distance to nearest well:** 1500 FT **Distance to lease line:** 0 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: BLSU_210H_Pymt_Receipt_20181207152945.pdf

BLUS_210H_C102_20190220094524.pdf

Well work start Date: 04/01/2019 **Duration:** 40 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 17110785

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	1490	FNL	2445	FEL	24S	34E	6	Aliquot SWNE	32.249742	-103.508465	LEA	NEW MEXICO	NEW MEXICO	S	STATE	3608	0	0
KOP Leg #1	2196	FNL	2186	FEL	24S	34E	6	Aliquot SWNE	32.247759	-103.507645 3	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-6782	10425	10390
PPP Leg #1	2600	FSL	2200	FEL	24S	34E	6	Aliquot NWSE	32.246485	-103.507659	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-7254	11170	10862

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	0	FNL	2200	FEL	24S	34E	7	Aliquot NWNE	32.2393297	-103.5077413	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0061374A	-7254	13770	10862
PPP Leg #1	2640	FNL	2200	FEL	24S	34E	7	Aliquot NWSE	32.2320713	-103.5078231	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-7254	16400	10862
PPP Leg #1	1320	FNL	2200	FEL	24S	34E	7	Aliquot SWNE	32.2357104	-103.5077838	LEA	NEW MEXICO	NEW MEXICO	F	NMNM100594	-7254	15090	10862
EXIT Leg #1	330	FSL	2290	FEL	24S	34E	7	Aliquot SWSE	32.225732	-103.507898	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-7254	18720	10862
BHL Leg #1	330	FSL	2290	FEL	24S	34E	7	Aliquot SWSE	32.225732	-103.507898	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-7254	18720	10862

Pay.gov

Receipt

Tracking Information

Pay.gov Tracking ID: 26E0278R

Agency Tracking ID: 75631812888

Form Name: Bureau of Land Management (BLM) Application for Permit to Drill (APD) Fee

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Debit or credit card

Payment Amount: $10,050.00

Transaction Date: 12/07/2018 05:28:38 PM EST

Payment Date: 12/07/2018

Company: Kaiser-Francis Oil Company

APD IDs: 10400036925

Lease Numbers: NMLC-0061374A

Well Numbers: 210H

Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

Account Information

Cardholder Name: GEORGE B KAISER

Card Type: Visa

Card Number: **********0061

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	98264	Bell Lake; Bone Spring, South

Property Code	Property Name	Well Number
316706	BELL LAKE UNIT SOUTH	210H

OGRID No.	Operator Name	Elevation
12361	KAISER-FRANCIS OIL COMPANY	3608'

Surface Location

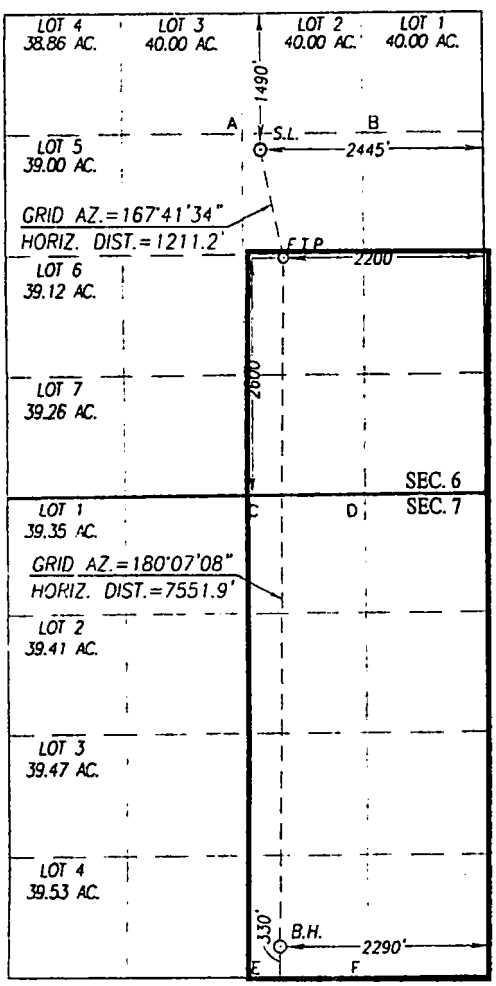
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	6	24-S	34-E		1490	NORTH	2445	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	7	24-S	34-E		330	SOUTH	2290	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
480			

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



SCALE: 1"=2000'

GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION	GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION
Y= 455510.1 N	Y= 455569.1 N
X= 755161.3 E	X= 796345.1 E
LAT.=32.249618° N	LAT.=32.249742° N
LONG.=103.507987° W	LONG.=103.508465° W

FIRST TAKE POINT NAD 27 NME	FIRST TAKE POINT NAD 83 NME
Y= 454327.0 N	Y= 454385.9 N
X= 755419.4 E	X= 796603.3 E
LAT.=32.246361° N	LAT.=32.246485° N
LONG.=103.507181° W	LONG.=103.507659° W

CORNER COORDINATES TABLE
NAD 27 NME

A - Y= 455681.2 N, X= 754965.3 E
B - Y= 455691.7 N, X= 756284.6 E
C - Y= 451723.9 N, X= 755007.4 E
D - Y= 451735.2 N, X= 756327.3 E
E - Y= 446443.7 N, X= 755048.4 E
F - Y= 446455.2 N, X= 756372.0 E

CORNER COORDINATES TABLE
NAD 83 NME

A - Y= 455740.2 N, X= 796149.1 E
B - Y= 455750.7 N, X= 797468.4 E
C - Y= 451782.8 N, X= 796191.4 E
D - Y= 451794.1 N, X= 797511.3 E
E - Y= 446502.4 N, X= 796232.7 E
F - Y= 446514.0 N, X= 797556.3 E

BOTTOM HOLE LOCATION NAD 27 NME	BOTTOM HOLE LOCATION NAD 83 NME
Y= 446776.7 N	Y= 446835.5 N
X= 755403.3 E	X= 796587.6 E
LAT.=32.225608° N	LAT.=32.225732° N
LONG.=103.507421° W	LONG.=103.507898° W

OPERATOR CERTIFICATION

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

Stormi Davis — 02/20/19
Signature — Date

Stormi Davis
Printed Name

ssdavis104@gmail.com
E-mail Address

SURVEYOR CERTIFICATION

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

OCTOBER 13, 2017
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 10/16/2017

Certificate Number: Gary O. Eidson 12641
Ronald J. Eidson 3239

ACK REL. W.O.: 17110785 JWSC W.O.: 17.11.0992

APD ID: 10400036925 **Submission Date:** 12/07/2018

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3608	0	0		NONE	No
2	RUSTLER	2208	1400	1400		NONE	No
3	SALADO	1808	1800	1800		NONE	No
4	TOP SALT	1483	2125	2125		NONE	No
5	BASE OF SALT	-1492	5100	5100		NONE	No
6	LAMAR	-1667	5275	5275		NATURAL GAS,OIL	No
7	BELL CANYON	-1742	5350	5350		NATURAL GAS,OIL	No
8	CHERRY CANYON	-2617	6225	6225		NATURAL GAS,OIL	No
9	BRUSHY CANYON	-4092	7700	7700		NATURAL GAS,OIL	No
10	BONE SPRING	-5192	8800	8800		NATURAL GAS,OIL	No
11	AVALON SAND	-5365	8973	8973		NATURAL GAS,OIL	No
12	BONE SPRING 1ST	-6292	9900	9900		NATURAL GAS,OIL	No
13	BONE SPRING 2ND	-6877	10485	10485		NATURAL GAS,OIL	Yes
14	BONE SPRING LIME	-7352	10960	10960		NATURAL GAS,OIL	No
15	BONE SPRING 3RD	-7662	11270	11270		NATURAL GAS,OIL	No
16	WOLFCAMP	-7767	11375	11375		NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Pressure Rating (PSI): 5M **Rating Depth:** 18000

Equipment: A 10M system will be installed according to Onshore Order #2 consisting of an Annular Preventer, BOP with two rams and a blind ram. BOP will be equipped with 2 side outlets (choke side shall be a minimum 3" line, and kill side will be a minimum 2" line). Kill line will be installed with (2) valves and a check valve (2" min) of proper pressure rating for the system. Remote kill line (2' min) will be installed and ran to the outer edge of the substructure and be unobstructed. A manual and hydraulic valve (3" min) will be installed on the choke line, 3 chokes will be used with one being remotely controlled. Fill up line will be installed above the uppermost preventer. Pressure gauge of proper pressure rating will be installed on choke manifold. Upper and lower kelly cocks will be utilized with handles readily available in plain sight. A float sub will be available at all times. All connections subject to well pressure will be flanged, welded, or clamped.
Requesting Variance? YES

Variance request: Flex Hose Variance

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. 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 and tested.

Choke Diagram Attachment:

BLUS_210H_Choke_Manifold_20181207132943.pdf

BOP Diagram Attachment:

BLUS_210H_Cactus_10K_BOP_Choke_5K_annular_20181207133008.pdf

BLUS_210H_FlexHose_Data_20190206110305.pdf

BLUS_210H__Wellhead_Diagram_20190206110331.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	1350	0	1350			1350	J-55	54.5	STC	1.8	4.3	DRY	12.4	DRY	11.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5200	0	5200			5200	HCP-110	40	LTC	1.8	3.3	DRY	6.1	DRY	6.1
3	PRODUCTION	8.75	5.5	NEW	API	N	0	18720	0	10862			18720	P-110	20	OTHER - GBCD	2.2	2.5	DRY	3.1	DRY	2.9

Casing Attachments

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLUS_210H_Casing_Assumptions_20181207095612.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLUS_210H_Casing_Assumptions_20181207095633.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLUS_210H_5_1_2_P110_GBCD_Csg_20181207095736.pdf

BLUS_210H_Casing_Assumptions_20181207095737.pdf

Section 4 - Cement

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1350	730	1.75	13.5	1275	75	Halcem	4% Bentonite
INTERMEDIATE	Lead		0	5200	1000	2.09	12.5	2089	75	Econocem	KolSeal
INTERMEDIATE	Tail		0	5200	380	1.33	14.8	506	75	Halcem	none
PRODUCTION	Lead		4000	18720	228	3.49	10.5	795	10	Class H	KolSeal
PRODUCTION	Tail		4000	18720	2675	1.22	14.5	3273	10	Class H	none

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
5200	18720	OIL-BASED MUD	8.7	8.9							
1350	5200	OIL-BASED MUD	8.7	8.9							
0	1350	OTHER : Fresh Water	8.4	9							

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Section 6 - Test, Logging, Coring

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

Top of cement on production casing will be determined by calculation.

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

GR,MUDLOG

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5045 **Anticipated Surface Pressure:** 2655.36

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

BLUS_210H_H2S_Contingency_Plan_20181207100543.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

BLUS_210H___Well_Plan_v1_20181207100607.pdf

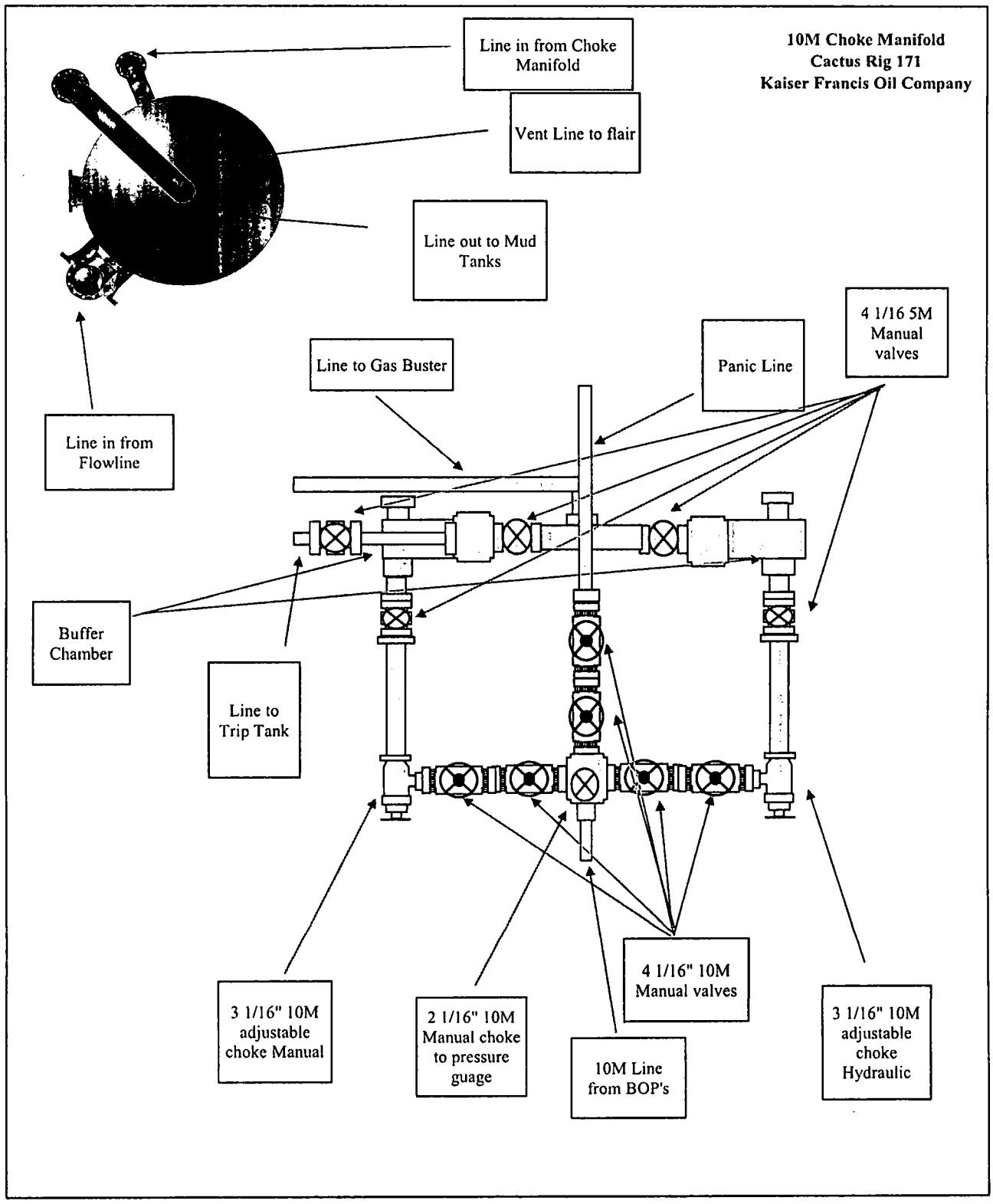
Other proposed operations facets description:

Gas Capture Plan attached

Other proposed operations facets attachment:

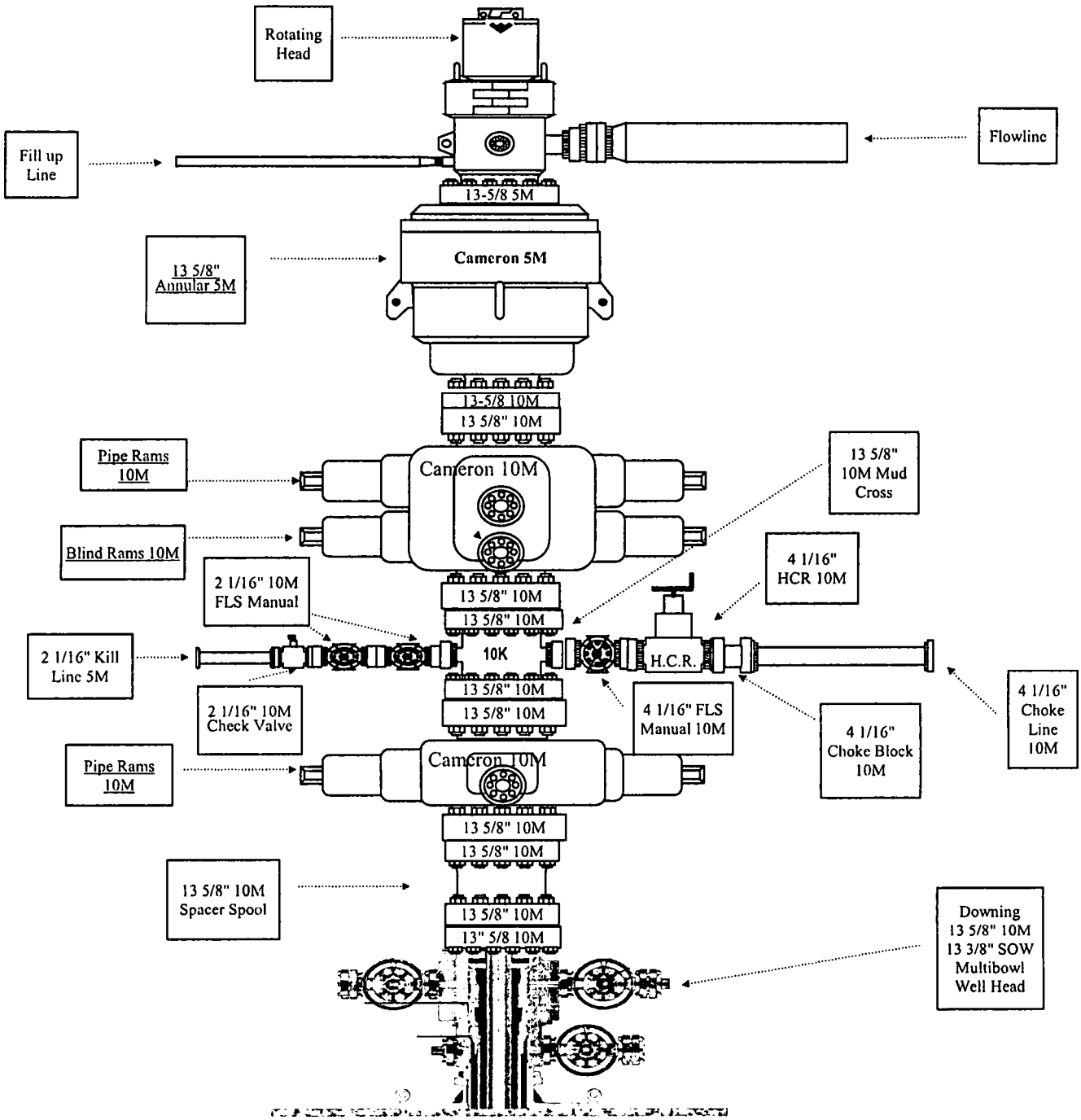
BLUS_210H_Gas_Capture_Plan_20181207100623.pdf

Other Variance attachment:


10M Choke Manifold
Cactus Rig 171
Kaiser Francis Oil Company
Line in from Choke Manifold
Vent Line to flair
Line out to Mud Tanks
4 1/16 5M Manual valves
Panic Line
Line to Gas Buster
Line in from Flowline
Buffer Chamber
Line to Trip Tank
3 1/16" 10M adjustable choke Manual
2 1/16" 10M Manual choke to pressure guage
10M Line from BOP's
4 1/16" 10M Manual valves
3 1/16" 10M adjustable choke Hydraulic

Cactus Rig 171
10M BOP with 5M Annular
Kaiser Francis Oil Company

Hole Sections Utilized
***12 1/4" Hole below Surface Casing**
***8 3/4"-8 1/2" Hole below Intermediate casing**



GATES E & S NORTH AMERICA, INC.
7603 Prairie Oak Dr.
Houston, TX 77086

PHONE: 281-602-4119
FAX:
EMAIL: Troy.Schmidt@gat
WEB: www.gates.com

10K ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	A-7 AUSTIN INC DBA AUSTIN HOSE	Test Date:	10/3/2017
Customer Ref. :	4086301	Hose Serial No.:	H-100317-2
Invoice No. :	508588	Created By:	Irene Pizana

Product Description:	10K3.035.0CM4.1/16FLGE/E

End Fitting 1 :	4 -1/16 10K FLANGE - FIXED	End Fitting 2 :	4 -1/16 10K FLANGE - FLOATING
Gates Part No. :	68603010-9710398	Assembly Code :	L39789092117H-100317-2
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has successfully passed all pressure testing requirements set forth in Section 9.7.7 and Table 10 of API 7K, Sixth Edition (December 2015).

Quality:	QUALITY	Produciton:	PRODUCTION
Date :	10/3/2017	Date :	10/3/2017
Signature :		Signature :	

Form PTC - 01 Rev.0 2

POWERING PROGRESS™

Gates E&S North America, Inc.
7603 Prairie Oak Dr.
Houston, TX. 77086
PHONE :
FAX:
Troy.Schmidt@gates.com

CERTIFICATE OF CONFORMANCE

This is to verify that all Parts and/or Materials included in this shipment have been manufactured and/or processed in Conformance with applicable drawings and specifications, and that Records of Required Tests are on file and subject to examination. The following items were assembled at **Gates E & S, North America Inc.**, facilities in Houston, TX, USA. This hose assembly was designed and manufactured to meet requirements of API Spec 7K.

CUSTOMER: A-7 AUSTIN INC DBA AUSTIN HOSE
CUSTOMERS P.O.#: 4086301
PART DESCRIPTION: 10K3.035.0CM4.1/16FLGE/E
SALES ORDER #: 508588
QUANTITY: 1
SERIAL #: H-100317-2

SIGNATURE: _____

TITLE: QUALITY ASSURANCE

DATE: 10/3/2017

JOB REPORT

COMPANY DETAILS

Company: Austin
Contact:
Phone:

Email: Irene.pizana@gates.com

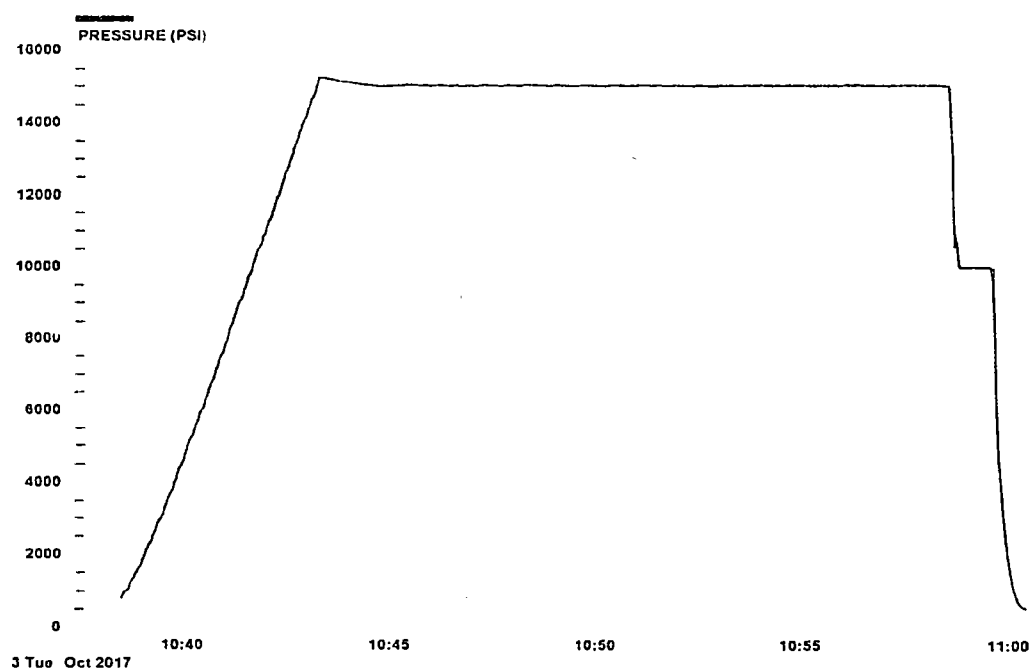
JOB DETAILS

DATE October 03, 2017
START TIME 10:38:29
END TIME 11:00:25
Gates Rep: Chris Olivo
Recommendation: H-100317-2
Working Pressure: 10000
Ext Inspection: Pass
Fitting Inspection: Pass
Test pressure: 15000
Serial No: H-100317-2

Length: 35'
Inner Diameter: 3.0"
Pressure Test: Pass
Internal Inspection: N/A
Fitting Type: 10K Flange ExE

GATES ENGINEERING & SERVICES NA
QA/QC
OCT 03 2017
APPROVED

SUMMARY GRAPH



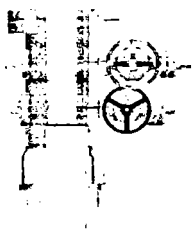
Report Created: 3-Oct-17

CAMERON

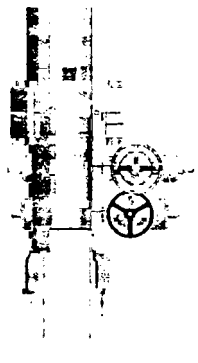
13-5/8" 10M MN-DS Wellhead System
Installation Sequence

Kaiser-Francis Oil Company

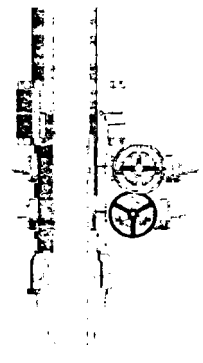
Step 1
- Install 13-5/8"-10K MD-DS housing (13" capping flange will be pre-installed).
- Weld and test to 500 psi.



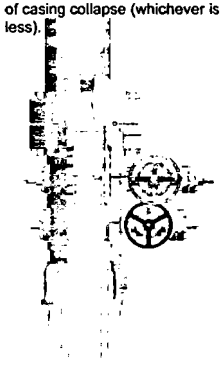
Step 2
- Run the 13-5/8" long wear bushing to protect all sealing areas in housing.
- Drill 12.25" surface hole.
- Retrieve the 13-5/8" long wear bushing before running casing.



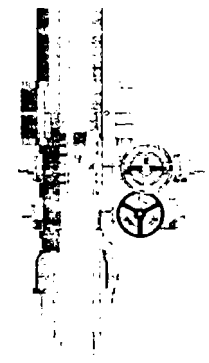
Step 3
- Hang off 9-5/8" casing on mandrel hanger and verify that it is landed via annular outlet valve.
- Run the 13" wash tool.



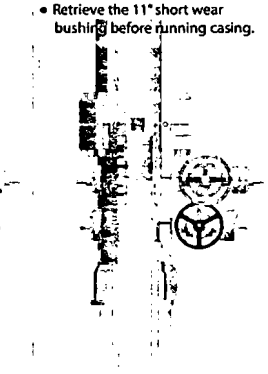
Step 4
- Install the 13-5/8" x 9-5/8" pack-off assembly with joint of drill pipe made up under running tool for weighted assistance.
- Perform 20K over pull to verify lock ring engagement.
- Test seals to 5,000 psi or 80% of casing collapse (whichever is less).



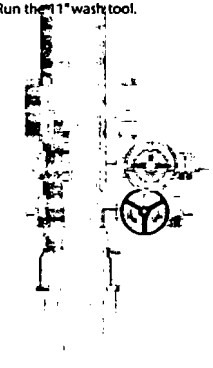
Step 5
- Make up 11" test plug to drill pipe joint and check OD seals for damage, replacing as needed. Land in pack-off assembly, verifying it has landed properly and perform BOP pressure test.



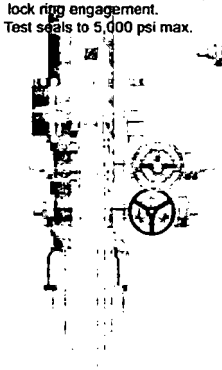
Step 6
- Make up 11" wear bushing running tool to drill pipe. Make up short wear bushing into running tool and check seals for damage, replacing as needed. Land short wear bushing in pack off assembly.
- Drill 8.75" intermediate hole.
- Retrieve the 11" short wear bushing before running casing.



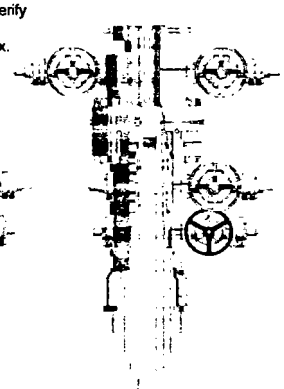
Step 7
- Hang 5-1/2" casing on mandrel Use RKB measurements to verify hanger is landed properly (not able to visually verify landed via annular outlet valve due to nested pack-off).
- Run the 11" wash tool.



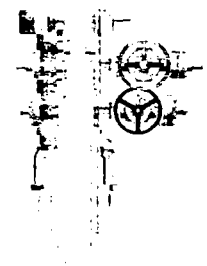
Step 8
- Install the pack-off assembly with joint of drill pipe made up under running tool for weighted assistance.
- Perform 50K over pull to verify lock ring engagement.
- Test seals to 5,000 psi max.

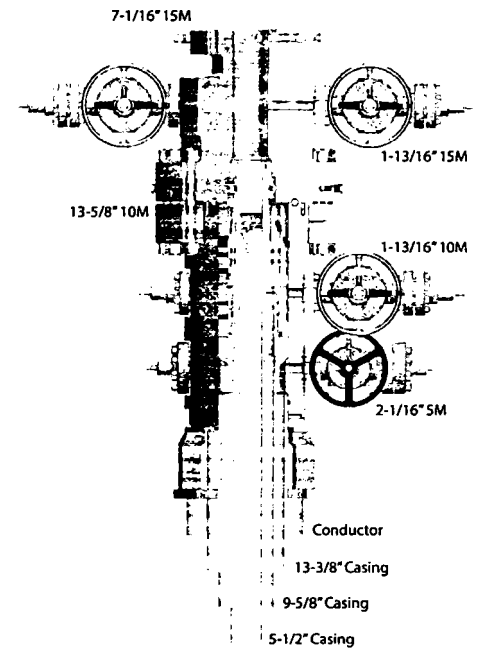


Step 11
- Install 13-5/8"-5K x 7-1/16"-15K tubing spool



Emergency Slips
- Emergency slips for 9-5/8" (casing slips and pack-off) and 5-1/2" casing (casing slips and no pack-off).





2018-089-01
Rev: 01

BLUS 210H Casing Assumptions

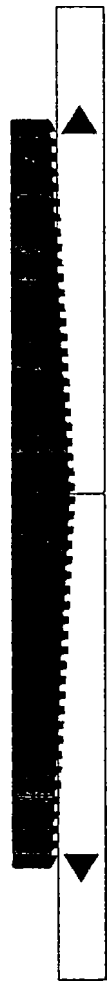
Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)	Mud Type	Mud Weight Hole Control	Viscosity	Fluid Loss	Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength	Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor	Joint Tensile Safety Factor
Conductor	120'	20"				New		120														
Surface	1350'	13-3/8"	54.5	J-55	BTC	New	17-1/2"	1350	FW	8.4 - 9.0	32 - 34	NC	9	632	1130	2730	853000	912330	1.8	4.3	11.6	12.4
Intermediate	5200'	9-5/8"	40	HCP-110	LTC	New	12-1/4"	5200	OBM	8.7 - 8.9	28-29	NC	8.9	2407	4230	7900	1260000	1266000	1.8	3.3	6.1	6.1
Production	18720'	5-1/2"	20	P110	GBCD	New	8-3/4"	10862	OBM	8.7 - 8.9	28-29	NC	8.9	5027	11100	12640	629996	673444	2.2	2.5	2.9	3.1

GB tubulars
Casings & Connections

GB Connection Performance Properties Sheet

Rev. 3 (10/07/2015)

ENGINEERING THE RIGHT CONNECTIONS™



Casing: 5.5 OD, 20 ppf
Casing Grade: P-110

Connection: GB CD Butt 6.200
Coupling Grade: API P-110

PIPE BODY GEOMETRY					
Nominal OD (in.)	5 1/2	Wall Thickness (in.)	0.361	Drift Diameter (in.)	4.653
Nominal Weight (ppf)	20.00	Nominal ID (in.)	4.778	API Alternate Drift Dia. (in.)	N/A
Plain End Weight (ppf)	19.83	Plain End Area (in.^{2})	5.828		

PIPE BODY PERFORMANCE					
Material Specification	P-110	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Collapse		**Tension**		**Pressure**	
API (psi)	11,100	Pl. End Yield Str. (kips)	641	Min. Int. Yield Press. (psi)	12,640
High Collapse (psi)	N/A	**Torque**		**Bending**	
		Yield Torque (ft-lbs)	74,420	Build Rate to Yield (°/100 ft)	91.7

GB CD Butt 6.200 COUPLING GEOMETRY			
Coupling OD (in.)	6.200	Makeup Loss (in.)	4.2500
Coupling Length (in.)	8.500	Critical Cross-Sect. (in.^{2})	7.545

GB CD Butt 6.200 CONNECTION PERFORMANCE RATINGS/EFFICIENCIES					
Material Specification	API P-110	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Tension		**Efficiency**		**Bending**	
Thread Str. (kips)	667	Internal Pressure (%)	100%	Build Rate to Yield (°/100 ft)	81.3
Min. Tension Yield (kips)	788	External Pressure (%)	100%	**Yield Torque**	
Min. Tension Ult. (kips)	896	Tension (%)	100%	Yield Torque (ft-lbs)	31,180
Joint Str. (kips)	667	Compression (%)	100%		
		Ratio of Areas (Cplg/Pipe)	1.29		

MAKEUP TORQUE					
Min. MU Tq. (ft-lbs)	10,000	Max. MU Tq. (ft-lbs)	20,000	Running Tq. (ft-lbs)	See GBT RP
				Max. Operating Tq. (ft-lbs)*	29,620

Units: US Customary (lbm, in., °F, lbf)
1 kip = 1,000 lbs
* See Running Procedure for description and limitations.
See attached: Notes for GB Connection Performance Properties.
GBT Running Procedure (GBT RP): www.gbtubulars.com/pdf/RP-GB-DWC-Connections.pdf
Blanking Dimensions: www.gbtubulars.com/pdf/GB-DWC-Blanking-Dimensions.pdf
Connection yield torque rating based on physical testing or extrapolation therefrom

GB tubulars
Casings & Connections

Notes for GB Connection Performance Properties

Rev. 0; (Oct., 2013)

ENGINEERING THE RIGHT CONNECTIONS™

1. All dimensions shown are nominal. Plain end weight is calculated in accordance with API TR 5C3. Performance properties are empirical, based on nominal dimensions, minimum material yield and ultimate strengths, and calculated in general accordance with industry standard formula(s) assuming uniaxial loading. All properties are calculated on the basis of materials at room temperature. NOTE: Material properties change with temperature.
2. Joint strength is the lesser of pipe thread strength and minimum coupling tension as calculated in accordance with API TR 5C3. Tensile efficiency is calculated using coupling strength based on ultimate material strength per API TR 5C3 divided by plain end yield strength of the casing. Minimum Coupling Tension based on material *yield* strength is provided *for information only*. Performance values presented for tension do not account for failure by pull-out (which can occur for casing with larger D/t ratios), effects of internal and external pressure, thermally induced axial loads, casing curvature (bending), and/or other static and dynamic loads that may occur singularly or in combination during downhole deployment and with subsequent well operations.
3. Drift diameters are based on Standard and Alternate drift sizes per API 5CT. Drift diameters are not specified for API 5L pipe. Drift diameters shown on GB Connection Performance Property Sheets represent the diameter of the drift mandrel used for end-drifting after coupling buck on. When shown, the alternate drift diameter is used for end drifting. Drift testing is performed in accordance with currently applicable API Specifications.
4. Minimum Internal Yield Pressure Performance values for Casing (API 5CT), Line Pipe (API 5L), and mill casing proprietary grades are based on API TR 5C3 formulas and assume 87.5% minimum wall thicknesses. Minimum Internal Yield Pressure efficiency for GB Connections is the lesser of the Minimum Internal Yield Pressure of the coupling and Leak Resistance divided by pipe body Minimum Internal Yield Pressure (all based on API TR 5C3 formulas). GB Connections typically demonstrate pressure resistance exceeding the mating pipe body unless otherwise noted with a pressure efficiency < 100%. Pressure efficiency can only be achieved when connections are properly assembled in strict accordance with GB Tubulars' Running Procedures (www.gbtubulars.com/pdf/RP-GB-DWC-Connections.pdf and www.gbtubulars.com/pdf/RP-20-GB-Butt-and-GB-3P.pdf.
5. Compression efficiency of the Casing/Connection combinations does not consider the axial load that causes pipe body buckling. The compressive load that causes buckling is usually less than the pipe body compressive yield strength and is dependent on a number of factors including, but not limited to, string length (or slenderness ratio; L/D), thermally induced axial loads, and annular clearance that may (or may not) lend side support to the casing string.
6. Bending values assume a constant radius of curvature where the casing is in uniformly intimate contact with the wall of the wellbore (i.e. when the upset at the coupling OD is small compared with wellbore wall irregularities). When the radius of curvature is not constant due to large wellbore wall irregularities, varying trajectory, micro doglegs, wash-outs, rock ledges, and other downhole conditions, unpredictable excessive bending stresses can occur that may be detrimental to casing and connection performance.
7. Fatigue failures are a function of material properties, stress range, and number of stress reversal cycles. API 5CT, API 5L, and mill proprietary casing/coupling materials have a finite fatigue life. Higher stress ranges yield lower fatigue life. So as a general rule of thumb, casing should never be rotated at higher RPMs than needed for task accomplishment. For the same stress range, casing rotated at 25 RPMs will generally last 4 times longer (more rotating hours) than casing rotated at 100 RPMs. However with fatigue, there are opportunities for unexpected higher stress reversal levels associated with vibration, thermally induced axial loads, and bending (see above) in addition to all other stress reversals imparted during running, rotating, reciprocating, pressure testing, pumping, etc. The extent and quality of the cement job is also a factor. Under aggressive, high-volume, multi-stage hydraulic fracturing operations, the casing string (including the connections) is severely taxed such that local stress range(s) and actual number of applied cycles cannot be precisely determined without full string instrumentation.
8. External pressure efficiency (expressed in percent) is the ratio of the lesser of Minimum Internal Yield Pressure and Leak Resistance for coupling (calculated per API TR 5C3) divided by the API collapse rating of the casing. External pressure efficiency has not been verified by testing and does not consider other applied loads. External pressure efficiency does not account for any high collapse rating that may be shown on GB Connection Performance Property Sheets.
9. Maximum Makeup Torque is provided for guidance only. This value is not the same as the Connection Yield Torque shown. Connection Yield Torque is the lesser of yield torque rating for the critical cross-section of pipe body, connector body, and pin nose and the threadform load flank bearing area. Connection Yield Torque does not consider radial buckling of the pipe or connection due to excessive jaw pressure during torque application. Torque in connections can increase or decrease over that applied at makeup (connection tightening/loosening) with rotating and stimulation operations due to slip-stick, shock loads, bending, tight spots, vibration(s), temperature, and other downhole factors that may occur individually or in combination. Due to circumstances beyond the control of GB Tubulars, User accepts all risks associated with casing and connection related issues that occur during and after rotating operations.
10. **Every** GB Connection requires the proper amount and distribution of thread compound to all pin and coupling threads and careful field make up in strict accordance with GB Tubulars' Running Procedures to provide expected levels of performance in service.
11. Reactions among water, drilling muds and other fluids, and chemicals introduced by User with downhole formation fluids may result in an environment detrimental to casing and connection performance. User should carefully consider all aspects of the string design including material compatibility with respect to possible corrosion, sour conditions, and other factors that may result in unexpected casing and/or connection failure at or below published ratings.
12. Performance Properties are subject to change without notice. User is advised to obtain the current GB Connection Performance Property Sheet for each application.

Limitations

Data presented in GB Performance Property Sheets and Running Procedures ("GB Information") is provided for informational purposes only and intended to be supplemented by the professional judgment of qualified personnel during design, field handling, deployment, and all subsequent well operations. The use of GB Information is at the User's sole risk.

GB Tubulars, Inc.'s Terms and Conditions of Sale, including, but not limited to, Paragraph 10 ("Warranty; Disclaimer"), Paragraph 11 ("Limitation of Remedies"), and Paragraph 18 ("Subsequent Buyers") thereof, are incorporated into the GB Information for all purposes. By using GB Information, the User represents and warrants to GB Tubulars, Inc. that the User has read and understands GB Tubulars, Inc.'s Terms and Conditions of Sale and agrees to be bound thereby. GB Tubulars, Inc.'s Terms and Conditions of Sale are posted on its website and available for viewing and downloading at the following link: www.gbtubulars.com/pdf/Terms-and-Conditions.pdf.

All sales made by GB Tubulars, Inc. are subject to its Terms and Conditions of Sale, reference to which is hereby made for all purposes. GB Tubulars, Inc.'s Terms and Conditions of Sale are posted on its website and available for viewing and downloading at the following link: www.gbtubulars.com/pdf/Terms-and-Conditions.pdf. Purchasers and users of any product(s) from GB Tubulars, Inc. automatically agree to be bound by GB Tubulars, Inc.'s Terms and Conditions of Sale.

GB tubulars	**Running Procedure for Casing with GB *Drilling with Casing* Connections**	October 29, 2007 Rev. 12 (11/25/2013)

OVERVIEW

This field running procedure applies to makeup of **GB *Drilling with Casing*** (GB DwC) Connections which include GB CD, GB WS, GB HB, GB CDE, GB WSE, and GB HBE Connections with GB Butt (Buttress), GB 4P, and GB 3P thread forms. All of these connections are suitable for ***Running*** (standard casing applications), ***Rotating*** (to aid string advancement), ***Drilling*** (Drilling with Casing/Drilling with Liners) and ***Driving***. This procedure also applies to the legacy GB Connections known as GB Butt and GB 3P.

Numerous factors impact the makeup torque of Buttress (GB Butt) and Modified Buttress Threads (such as GB 4P and GB 3P). Some of these factors include but are not limited to: allowable threading tolerances, joint characteristics (OD, straightness, and weight), vertical alignment (derrick, top drive, and elevator alignment relative to rotary table), thread compound (amount and distribution), snub line (location and orientation), distance between tongs and backups, temperature/weather, equipment type, efficiencies (electrical, hydraulic and mechanical), grips/dies (type, orientation, location, contact area, and distribution), measurement equipment, gauge calibration, personnel, etc. The nature of these types of connections makes it impossible to provide makeup torque values that will yield proper power tight makeup on every rig under all circumstances with the wide variety of existing connection makeup equipment. This procedure has been designed to determine the ***Running Torque*** required for proper power tight makeup of GB Connections under the circumstances and with the actual equipment, set up conditions, weather, etc. that exist at the time of running. With proper execution of this procedure, GB Connections will be properly and consistently assembled. This GB Running Procedure provides the basic recommended practices and is intended to be supplemented by the professional judgment of qualified personnel based on observation of actual makeups throughout the casing run.

DEFINITIONS

1. Minimum Makeup (MU) Torque: Connections must have at least this amount of torque applied.
2. Shoulder Torque: MU torque required to achieve shoulder engagement.
3. Running Torque: Developed at start of casing run per GB Running Procedure and once established, used for the rest of the joints in the string. The ***Running Torque*** will likely vary with each job due to the factors listed in the Overview section.
4. Delta Torque: Difference between shoulder torque and final makeup torque.
5. Maximum MU Torque: Assembly torque shall not exceed the Maximum Makeup Torque shown on size, weight, and grade-specific GB Performance Property Sheets during routine assembly.
6. Yield Torque: Torque that causes yielding in the connection (usually yielding of the pin nose). Yield torque rating does **NOT** consider the torque that may radially buckle the pipe body at the grip points.
7. Maximum Operating Torque: Yield Torque with 5% Safety Factor. The Maximum Operating Torque is **NOT** the Maximum Makeup Torque and is **NOT** a sustainable rotating torque. Operating at the Maximum Operating Torque for any length of time may damage the connection. User should carefully consider this value to determine if more than a 5% Safety Factor on yield torque is suitable for the application.

KEY INFORMATION

Thread Compound: Best-O-Life 2000, API Modified, API Modified Hi-Pressure, or any industry recognized equivalent to these products. Thread compound may also be referred to as "dope".

Torque Values: See individual GB Connection Performance Property Sheets available at the following link; http://www.gbtubulars.com/connection_selector.php.

Continuous Makeup: Makeup of GB Connections **SHALL START AND CONTINUE WITHOUT STOPPING** until full power tight makeup is achieved.

Makeup Speed: Use of high gear at no more than 20 RPMs is permissible once proper starting thread engagement has occurred. **THE FINAL TWO (2) TURNS, AT A MINIMUM, SHALL BE COMPLETED IN LOW GEAR AT LESS THAN 6 RPMS**.

Shoulder Engagement: Pin nose engagement. Shoulder engagement is indicated by a spike on an analog torque gauge or a sharp vertical spike on a torque vs. turn plot. As a secondary check, proper power tight makeup is achieved when the coupling covers approximately half of the API Triangle Stamp on the pin.

Acceptance Criteria: All GB Connections must exhibit shoulder engagement (achieve pin-to-pin or pin-to-shoulder engagement) with a minimum delta torque ≥ 10% of the shoulder torque.

It is imperative that the following procedure be executed carefully at the beginning of the run to determine the ***Running Torque*** (torque to be used for the rest of the string). The ***Running Torque*** is determined while running the first 10 joints exclusive of joints assembled with threadlocking compounds. Sometimes more than the first 10 joints will be needed to establish the ***Running Torque*** due to erratic results and/or rig-specific conditions. The ***Running Torque*** may have to be re-established during the casing run under certain conditions[1]. Use the size-specific GB Connection Performance Property Sheets (http://www.gbtubulars.com/connection_selector.php) for physical properties and torque values.

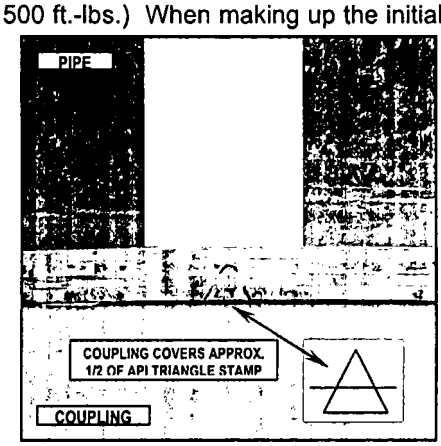
Each GB Connection Performance Property Sheet presents calculated Yield Torque values for the pipe body and connection which are based on nominal dimensions and minimum material yield strength. The Maximum Operating Torque shown on the GB Connection Performance Property Sheets includes a 5% safety factor on Yield Torque. As such, it represents the limiting torque ***spike*** that can be applied to the connection during rotating operations. The Maximum Operating Torque is **NOT** the Maximum Makeup Torque and is **NOT** a sustainable rotating torque. Operating at the Maximum Operating Torque for any length of time will likely damage the connection.

Connections shall be made up until shoulder engagement with delta torque ≥ 10% of the shoulder torque (not to exceed the maximum makeup torque, see procedure below) using the ***Running Torque*** value established in this procedure. The Maximum Makeup Torque at the beginning and throughout the run shall be limited to the value shown on the applicable GB Connection Performance Property Sheet. The maximum torque value is given as a practical limit for avoidance of thread galling, connection damage, and possible tube damage due to excessive jaw pressure that can occur with application of extreme makeup torque. Contact GB Tubulars if more than the Maximum Makeup Torque value is required for shoulder engagement and/or final make up, or if torque exceeding the Maximum Operating Torque value is required for the intended service.

[1] Examples include but are not limited to more than an occasional low delta torque, string of mixed mills, equipment change, large temperature change, and wobbling or noticeable vibration when joint is turning.

PROCEDURE FOR ESTABLISHING *RUNNING TORQUE*

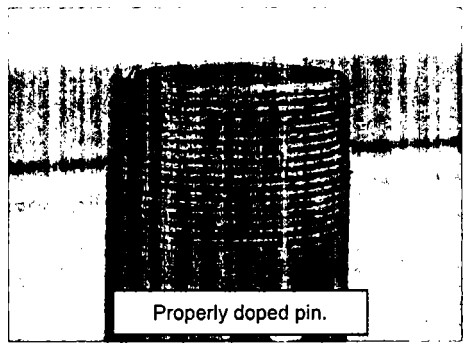
1. Remove coupling thread protectors only after casing is set in V-Door.
2. ***Always apply fresh thread compound to coupling threads and internal shoulder (where applicable).*** See Comment No. 1 (below) for discussion on proper amount of thread compound.
3. Remove pin thread protectors only after joint is raised in the derrick. Visually inspect pin threads for sufficient thread compound as described in Comment No. 1; ***add fresh compound to pin threads and pin nose.***
4. Fresh thread compound should **NEVER** be added on top of dope contaminated with dust, dirt, and/or debris. Threads observed to have contaminated thread compound shall be thoroughly cleaned and dried before applying fresh thread compound.
5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus delta torque ≥ 10% of the shoulder torque without exceeding the Maximum Makeup Torque. Record the shoulder torque observed for the first 10 joints (excluding threadlocked accessory joints). The ***Running Torque*** is (a) the Minimum Makeup Torque shown on the GB Connection Performance Property Sheets ***or*** (b) the Maximum Shoulder Torque recorded from the first 10 makeups + 10%, ***whichever is higher*** (rounded to the next highest 500 ft.-lbs.) When making up the initial joints for establishing the ***Running Torque*** carefully watch the torque gauge for the shoulder torque and try to manually shut down the tongs before reaching Maximum Makeup Torque shown on the GB Connection Performance Property Sheets. Alternately, the dump valve should be set to the Maximum Makeup Torque during this initial process.



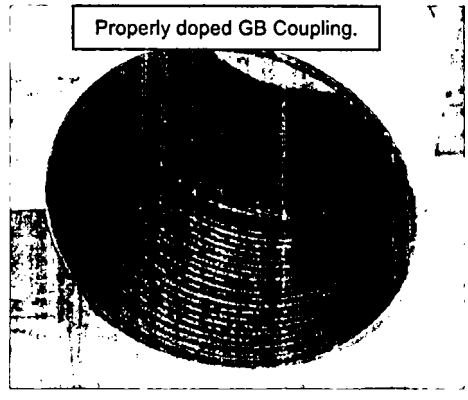
6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the ***"Running Torque"*** established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established ***Running Torque*** is achieved.
7. All connections made up with the established ***Running Torque*** should achieve shoulder engagement with the minimum amount of delta torque. Carefully watch for the spike on the torque gauge during each makeup to verify shoulder engagement. As a ***secondary*** verification, randomly check the makeup position relative to the API Triangle Stamp during the run. Proper power tight makeup position is achieved when the coupling covers approximately half of the API Triangle Stamp on the pin (see accompanying photo).

COMMENTS, TROUBLESHOOTING

1. GB Connections are thread compound friendly. Thread compounds shall be handled, mixed, and applied in strict accordance with the manufacturer's instructions. **THREAD COMPOUND SHALL BE APPLIED TO BOTH PIN AND COUPLING THREADS AND SHOULDER OF EVERY CONNECTION**. Sufficient thread compound has been applied when all threads (pin and coupling), pin nose, and coupling ID surfaces are completely covered **WITH NO GAPS OR BARE SPOTS**. The thread form should be discernible beneath the compound; i.e. when the thread valleys appear half full. Be generous with the thread compound; but avoid over-doping to the point where ***excessive*** amounts are squeezed out during assembly.


Properly doped pin.

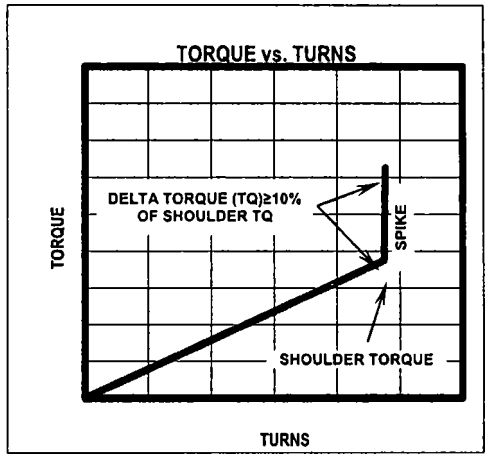
Use of a mustache brush is the preferred method for applying and distributing thread compounds to GB Connections.


Properly doped GB Coupling.

2. If threads are cleaned on racks, new dope shall be applied in a light, even coat to both pin and coupling threads. See Comment No. 1 above for description of sufficient thread compound. Clean thread protectors shall be re-applied to freshly doped pin and coupling threads unless the casing run is imminent (no more than a few hours) to avoid contaminating exposed thread compound.
3. All connections should achieve shoulder engagement before reaching the "***Running Torque***" value determined by this procedure. Any connection that does not achieve shoulder engagement at the established "***Running Torque***" value shall be visually inspected for position relative to the API Triangle Stamp.
   a) If the coupling is shy of the API Triangle Stamp Base, the connection shall be broken out, cleaned and inspected visually for thread damage, re-doped, and made-up again (or laid down if threads are damaged). Connections that have not achieved shoulder engagement **SHALL NEVER** be backed up a couple of turns and remade. They shall be completely broken out, cleaned and inspected as described above.
   b) If the coupling covers the API Triangle base but does not cover approximately half of the Triangle Stamp, add additional torque to achieve shouldering and finish the makeup. It is common to see high torque (possibly exceeding the recommended maximum torque) to initiate connection turning. This is acceptable as long as the torque drops off once movement starts and then spikes with shoulder engagement. If acceptable makeup doesn't occur with one additional torque application, the connection shall be broken out (as described in 3a above).
   c) Any connection not properly assembled (i.e. not meeting the acceptance criteria) in two (2) attempts (provided threads pass a visual inspection each time) is reject and shall be laid down.
4. At the established ***Running Torque***, the connections will generally shoulder with at least 10% delta torque. High interference connections will tend to have a higher shoulder torque and less delta torque (at least 10% of the shoulder torque is required). Low interference connections will tend to have lower shoulder torque and more delta torque. In general, the GB Connections makeup consistently but will vary due to any of the factors enumerated in the second paragraph of the Overview section of this procedure. However, wide variability on more than a few joints should be investigated for a root cause and, if necessary, a new ***Running Torque*** should be established following the same procedure used at the start of the casing run.
5. It is recommended to have a few spare, loose couplings available in the event coupling threads become damaged on the rig. This allows changing out a coupling without having to lay a joint(s) down. Pin threads shall be cleaned and inspected visually for thread damage and re-doped before installing a replacement coupling (or the joint shall be laid down if pin threads under the removed coupling are damaged and cannot be field repaired).
   - For GB CDE (and other GB Connections with internal shoulders) install the coupling hand tight (use of strap wrenches to assist is permitted) and then make up with power tongs to shoulder engagement using the above established ***Running Torque***.
   - GB CD Connections are made up to a precise position at the threading plant (mill side). Prior to removing a damaged coupling, a radial paint band should be applied to the pipe body to mark the position of the existing coupling. After removal, install the new coupling hand tight (use of strap wrenches to assist is permitted) and then make

up with power tongs to the exact same position using the previously applied paint band as the indicator.

6. ***Torque vs. Turn monitoring systems are recommended for field makeup of GB Connections.*** While Torque vs. Turn plots provide good information about makeup, they **SHALL NOT BE SUBSTITUTED FOR DIRECT VISUAL OBSERVATION OF THE CONNECTION DURING ASSEMBLY**. There is no second chance to watch field assembly of a connection. Torque vs. Turn plots can always be viewed for verification purposes once a makeup is finished. When available, torque vs. turn plots shall finish with a clearly defined spike as shown in the graphic to the right. The general character of torque vs. turn plots for good makeups will become evident after the first ten (10) makeups (again, more may be necessary due to rig- and/or equipment-specific conditions). Any makeup that results in a plot that is "out-of-character"[2] when compared with the majority of plots from previous good makeups should be checked carefully.



When using Torque vs. Turn monitoring equipment, GB recommends setting a reference torque value of 500 ft.-lbs. or 10% of the minimum makeup torque (whichever is lower) to normalize the resulting plots. Plot scales should be set so data spans at least 2/3 of the turns scale on each plot (10 turns will usually be sufficient at the start and can be reduced based on data from the first few joints). **UNDER NO CIRCUMSTANCE SHOULD MAKEUP BE STARTED UNTIL THE MONITORING SYSTEM IS READY TO RECORD DATA**.

7. Occasionally the mill side of a GB Connection may turn during field makeup. When observed, the makeup should continue without stopping per this procedure. It may be helpful to scribe a vertical line across the coupling-pipe interface to aid estimation of mill side turning if it is observed with some frequency. The amount of mill side turn should be carefully observed and estimated. If the mill side turns less than ½ turn and all other aspects of the makeup are good, the connection is acceptable. If the mill side turns more than ½ turn trouble-shooting should be initiated paying particular attention to amount and distribution of thread compound, vertical alignment, weight of joint, hooked end on pipe, and other possible factors that may contribute to possible high torque during field makeup. It should be noted that mill side turning during field makeup occurs occasionally and should not be concerning. Frequent or persistent mill side turning is a symptom that needs troubleshooting and appropriate corrective action.
8. A double wrap of the pick-up sling should be used when raising casing into the derrick when single joint, side-door, or slip elevators are not being used.
9. Higher torque may be required to achieve shoulder engagement when threadlock compounds are applied. User is advised to carefully follow the manufacturer's instructions with respect to mixing, application, temperature, and time. Torque ranges with threadlock compounds cannot be estimated due to many variables including but not limited to temperature, time, connection tolerances, and surface finish. In these cases, carefully monitor makeup to be sure shouldering occurs. The only exception to the shouldering requirement is with float equipment (float shoe and float collar) that will be assembled with a threadlocking compound. In this case, makeup to a position that covers the base of API Triangle Stamp is considered satisfactory.
10. Manual and automated dump valves can miss the established ***Running Torque*** due to a number of factors. Slightly overshooting the ***Running Torque*** is not cause for concern as long as the final "dump" torque is not excessive and the equipment used is generally consistent joint-to-joint.

[2] An "out-of-character" plot may initiate with a high torque, show significantly steeper slope from the start of makeup, wide torque undulations as makeup progresses, no clearly defined spike, insufficient/inconsistent turns, etc.

11. Attached is a "Worksheet for determining GB Connection ***Running Torque*** at the beginning of a Casing Run" for use at the start of any casing run using GB Connections. GB recommends that this worksheet be filled out and maintained with the casing run records.

PROCEDURE SUMMARY

1. Remove coupling protectors after casing is set in V-Door and apply fresh thread compound to coupling threads.
2. Raise joint in derrick, remove pin protectors, and apply fresh thread compound to pin threads and pin nose.
3. Carefully stab pin into coupling and makeup to pin nose engagement. Try to stop makeup without exceeding the Maximum Makeup Torque (shown on GB Connection Performance Property Sheets). Carefully watch for and note the Shoulder Torque.
4. Record Shoulder Torque and Final Torque values, and position relative to API Triangle Stamp for first ten (10) connections, more if necessary due to run/rig-specific conditions.
5. The ***Running Torque*** is (a) the Minimum Makeup Torque shown on the GB Connection Performance Property Sheet or (b) the Maximum Torque required for shoulder engagement + 10% delta torque determined from the first 10 makeups, ***whichever is higher***. Use the attached Worksheet to record this data and determine the ***Running Torque***.
6. Make up the rest of the string at the ***Running Torque*** determined in the previous step.

NOTES:

- *This summary is provided for quick reference and is not a substitute for the comprehensive procedure provided above.*
- *Does not apply to threadlock connections.*

DO's and DONT's

1. **DO** check vertical alignment.
2. **DO** apply thread compound to all pin and coupling threads, pin nose and coupling shoulder area.
3. **DO** establish the ***Running Torque*** in accordance with GB Procedures.
4. **DO** make adjustments to ***Running Torque*** if indicated by inconsistent makeups during the casing run.
5. **DO** check every makeup for a clear indication of shouldering with a minimum delta torque ≥ 10% of the shoulder torque.
6. **DO** reject any coupling that is not properly made up after two (2) attempts.
7. **DO** carefully stab pins into coupling (use a stabbing guide for casing smaller than 9 5/8" OD).
8. **DO** finish the makeup with at least two (2) full turns in low gear at 6 RPMs or less.
9. **DO** make up every connection continuously to pin nose engagement without stopping.
10. **DO NOT** over dope.
11. **DO NOT** exceed the Maximum Makeup Torque as shown on the GB Connection Performance Property Sheets during assembly.

12. **DO NOT** make up any misaligned connection.
13. **DO NOT** exceed 20 RPMs in high gear and 6 RPMs in low gear.
14. **DO NOT** remove pin thread protectors until pipe is hanging in the derrick.
15. **DO NOT** ever back a connection up a couple of turns and remake. Any connection requiring this type of attention **SHALL** be broken out completely, cleaned, visually inspected, and if OK, re-doped and remade.
16. **DO NOT** hesitate to contact GB Tubulars with questions before and during any casing run.

RECOMMENDED EQUIPMENT

- Stabbing Guide
- Mustache Brush
- Torque vs. Turn Monitoring Equipment or Dump Valve

Worksheet for determining GB Connection Running Torque at the beginning of a Casing Run

Ignore joints that are assembled with threadlock compounds. See "Addendum Procedure for GB Connections Assembled with Threadlocking Compounds" available at www.gbtubulars.com.

Pertinent Excerpt from GB Running Procedure

5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus delta torque ≥ 10% of the shoulder torque without exceeding the Maximum Makeup Torque. Record the shoulder torque observed for the first 10 joints (excluding threadlocked accessory joints). The Running Torque is (a) the Minimum Makeup Torque shown on the GB Connection Performance Property Sheets or (b) the Maximum Shoulder Torque recorded from the first 10 makeups + 10%, whichever is higher (rounded to the next highest 500 ft.-lbs.) When making up the initial joints for establishing the Running Torque carefully watch the torque gauge for the shoulder torque and try to manually shut down the tongs before reaching Maximum Makeup Torque shown on the GB Connection Performance Property Sheets. Alternately, the dump valve should be set to the Maximum Makeup Torque during this initial process.

6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the "Running Torque" established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established Running Torque is achieved.

Casing Data		Comment
OD (in)		See GB Connection Data Sheet
Weight (ppf)		See GB Connection Data Sheet
Grade		See GB Connection Data Sheet
Min MU Torque (ft-lbs)		See GB Connection Data Sheet
Max MU Torque (ft-lbs)		(2 X Min MU Tq)
Max Operating Torque (ft-lbs)		The Maximum Operating Torque is **NOT** the Maximum Makeup Torque and is **NOT** a sustainable rotating torque. Operating at the Maximum Operating Torque for any length of time will likely damage the connection.

Notes	Joint No.	Shoulder Torque (ft-lbs)	Final Torque (ft-lbs)	Triangle Stamp Position Sketch (△)
Required	1			
Required	2			
Required	3			
Required	4			
Required	5			
Required	6			
Required	7			
Required	8			
Required	9			
Required	10			
Optional	11			
Optional	12			
Optional	13			
Optional	14			
Optional	15			
Max. Shoulder Torque				
A Max. Shoulder Torque + 10%				
B Min. Makeup Torque (from GB Conn. Data Sheet)				
Running Torque (ft-lbs)			**A** or **B**, whichever is greater.	

Optional joints should be added if there is wide variability in shoulder torques recorded during the initial 10 joints. Judgement should be used to determine if more than 10 joints are needed for the purpose of establishing the Running Torque and, if so, how many more should be added.

Wide variations in Shoulder Torque during the first ten (10) joints suggest other issues requiring attention such as poor alignment, improper amount and distribution of thread compound, etc. Refer to 2nd paragraph of GB Running Procedure for possible contributing factors to aid troubleshooting.

GB Tubulars
950 Threadneedle, Suite 130
Houston TX 77079
Toll Free: 1-888-245-3848
Main: 713-465-3585
Fax: 713-984-1529

For Techincal Information, contact:
Gene Mannella
genem@gbtubulars.com
Qing Lu
qingl@gbtubulars.com

Rev. 12 (11/25/2013)

GB tubulars

BLUS 210H Casing Assumptions

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120'	20"				New		120
Surface	1350'	13-3/8"	54.5	J-55	BTC	New	17-1/2"	1350
Intermediate	5200'	9-5/8"	40	HCP-110	LTC	New	12-1/4"	5200
Production	18720'	5-1/2"	20	P110	GBCD	New	8-3/4"	10862

Mud Type	Mud Weight Hole Control	Viscosity	Fluid Loss
FW	8.4 - 9.0	32 - 34	NC
OBM	8.7 - 8.9	28-29	NC
OBM	8.7 - 8.9	28-29	NC

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	632	1130	2730	853000	912330
8.9	2407	4230	7900	1260000	1266000
8.9	5027	11100	12640	629996	673444

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor	Joint Tensile Safety Factor
1.8	4.3	11.6	12.4
1.8	3.3	6.1	6.1
2.2	2.5	2.9	3.1

BLUS 210H Casing Assumptions

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120'	20"				New		120
Surface	1350'	13-3/8"	54.5	J-55	BTC	New	17-1/2"	1350
Intermediate	5200'	9-5/8"	40	HCP-110	LTC	New	12-1/4"	5200
Production	18720'	5-1/2"	20	P110	GBCD	New	8-3/4"	10862

Mud Type	Mud Weight Hole Control	Viscosity	Fluid Loss
FW	8.4 - 9.0	32 - 34	NC
OBM	8.7 - 8.9	28-29	NC
OBM	8.7 - 8.9	28-29	NC

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	632	1130	2730	853000	912330
8.9	2407	4230	7900	1260000	1266000
8.9	5027	11100	12640	629996	673444

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor	Joint Tensile Safety Factor
1.8	4.3	11.6	12.4
1.8	3.3	6.1	6.1
2.2	2.5	2.9	3.1

KAISER-FRANCIS OIL COMPANY
HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN
FOR DRILLING/COMPLETION WORKOVER/FACILITY

BELL LAKE UNIT SOUTH Pad 8
SECTION 6 -T24S-R34E
LEA COUNTY, NM

This well/facility is not expected to have H_2S, but due to the sensitive location, the following is submitted as requested.

TABLE OF CONTENTS

EMERGENCY RESPONSE ACTIVATION AND GENERAL RESPONSIBILITIES

Activation of the Emergency Action Plan

In the event of any emergency situation, all personnel on location should first ensure that the following items are initiated. After that, they should refer to the appropriate Specific Emergency Guidance sections below for further responsibilities:

1. Notify the senior ranking contract representative on site.
2. Notify Kaiser-Francis representative in charge.
3. Notify civil authorities if the Kaiser-Francis Representative cannot be contacted and the situation dictates.
4. Perform rescue and first aid as required (without jeopardizing additional personnel).

General Responsibilities

In the event of an H_2S emergency, the following plan will be initiated.

1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".

2) If for any reason a person must enter the hazardous area, they must wear a SCBA (Self contained breathing apparatus).

3) Always use the "buddy system".

4) Isolate the well/problem if possible.

5) Account for all personnel

6) Display the proper colors, warning all unsuspecting personnel of the danger at hand

7) Contact the Company personnel as soon as possible if not at the location. (use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

INDIVIDUAL RESPONSIBILITIES DURING AN H_2S RELEASE

The following procedures and responsibilities will be implemented on activation of the H_2S siren and lights.

All Personnel:

1. On alarm, don escape unit (if available) and report to upwind briefing area.

Rig Manager/Tool Pusher:

1. Check that all personnel are accounted for and their condition.
2. Administer or arrange for first aid treatment, and/or call EMTs as needed.
3. Identify two people best suited to secure well and perform rescue, and instruct them to don SCBA.
4. Notify Contract management and Kaiser-Francis Representative.
5. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.

Two People Responsible for Shut-in and Rescue:

1. Don SCBA and acquire tools to secure well and perform rescue, i.e., wrenches, retrieval ropes, etc.
2. Utilize the buddy system to secure well and perform rescue(s).
3. Return to the briefing area and stand by for further instructions.

All Other Personnel:

1. Isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally, the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

Kaiser-Francis Oil Company Representative:

1. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.
2. Notify company management or Local Incident Commander, and Police, Fire Department, or other local emergency services as required.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:
Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police shall be the Incident Command of any major release.

The decision to ignite a well should be a last resort and one if not both of the following pertain.

1) Human life and/or property are in danger.

2) There is no hope of bringing the situation under control with the prevailing conditions at the site.

INSTRUCTIONS FOR IGNITION:

1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.

2) One of the people will be a qualified safety person who will test the atmosphere for H_2S, Oxygen, & LFL. The other person will be the company supervisor; he is responsible for igniting the well.

3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun shall be used, with a +/-500' range to ignite the gas.

4) Prior to ignition, make a final check for combustible gases.

5) Following ignition, continue with the emergency actions & procedures as before.

CONTACTING AUTHORITIES

Kaiser-Francis personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. This response plan must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	OFFCE	MOBILE
Kaiser-Francis Oil Co.	918/494-0000	
Bill Wilkinson	580/668-2335	580/221-4637
David Zerger	918/491-4350	918/557-6708
Charles Lock	918/491-4337	918/671-6510
Stuart Blake	918/491-4347	918/510-4126
Robert Sanford	918/491-4201	918/770-2682
Eric Hansen	918/491-4339	918/527-5260

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police – Artesia	575/748-9718
State Police – Hobbs	575/392-5580
State Police – Carlsbad	575/885-3138
Lea County Sheriff - Lovington	575/396-3611
Local Emergency Planning Center – Lea County	575/396-8607
Local Emergency Planning Center – Eddy County	575/885-3581
Fire Fighting, Rescue & Ambulance – Carlsbad	911 or 575/885-3125
Fire Fighting, Rescue & Ambulance – Hobbs	911 or 575/397-9308
Fire Fighting – Jal Volunteer Fire Department	911 or 505/395-2221
New Mexico Oil & Gas Commission – Artesia	575/748-1283
New Mexico Oil & Gas Commission – Hobbs	575/393-6161
Air Medical Transport Services – Hobbs	800/550-1025
Med Flight Air Ambulance – Albuquerque	505/842-4433
Angel MedFlight	844/553-9033
DXP	432/580-3770
BJ Services	575/392-5556
Halliburton	575/392-6531 800/844-8451

PROTECTION OF THE GENERAL PUBLIC/ROE:

In the event of a release with a concentration greater than 100 ppm H_2S, the ROE (Radius of Exposure) calculations will be done to determine if the following conditions have been met:

- Does the 100 ppm ROE include any public area (any place not associated with this site)
- Does the 500 ppm ROE include any public road (any road which the general public may travel)
- Is the 100 ppm ROE equal to or greater than 3000 feet

If any one of these conditions have been met, then the Contingency Plan will be implemented. The following shows how to calculate the radius of exposure and an example.

Calculation for the 100 ppm ROE:

X = [(1.589)(concentration)(Q)] (0.6258)

(H2S concentrations in decimal form)
10,000 ppm +=1.+
1,000 ppm +=.1+
100 ppm +=.01+
10 ppm +=.001+

Calculation for the 500 ppm ROE:

X+[(0.4546)(concentration)(Q)] (.06258)

EXAMPLE: If a well/facility has been determined to have 150 ppm H_2S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFPD then:

ROE for 100 PPM X=[(1.589)(.0150)(200)] (0.6258)
X=2.65'

ROE for 500 PPM X=[(.4546)(.0150)(200)] (0.6258)
X=1.2'

(These calculations will be forwarded to the appropriate District NMOCD office when applicable.)

PUBLIC EVACUATION PLAN:

(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

1) Notification of the emergency response agencies of the hazardous condition and Implement evacuation procedures.

2) A trained person in H_2S safety, shall monitor with detection equipment the H_2S Concentration, wind and area of exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. **(All monitoring equipment will be UL approved, for use in class I groups A,B,C & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H_2S, oxygen, and flammable values.)**

3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.

4) The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

CHARACTERISTICS OF H_2S AND SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

TRAINING:

All responders must have training in the detection of H_2S measures for protection against the gas, equipment used for protection and emergency response. Weekly drills by all crews will be conducted and recorded in the IADC daily log. Additionally, responders must be equipped with H_2S monitors at all times.

PUBLIC RELATIONS

Kaiser-Francis recognizes that the news media have a legitimate interest in incidents at Kaiser-Francis facilities that could affect the public. It is to the company's benefit to cooperate with the news media when incidents occur because these media are our best liaison with the public.

Our objective is to see that all reports of any emergency are factual and represent the company's position fairly and accurately. Cooperation with news media representatives is the most reliable guarantee that this objective will be met.

All contract and Kaiser-Francis employees are instructed **NOT** to make any statement to the media concerning the emergency incident. If a media representative contacts any employee, they should refer them to the designated Emergency Command Center where they should contact the Incident Commander or his designated relief for any information concerning the incident.

Company: Kaiser-Francis
Site: Bell Lake Unit South 210H
Well: Bell Lake Unit South 210H
Project: Lea County, New Mexico (NAD 83)
Rig: Cactus 171

MS Directional

T G M

Azimuths to Grid North
True North: -0.44°
Magnetic North: 6.40°

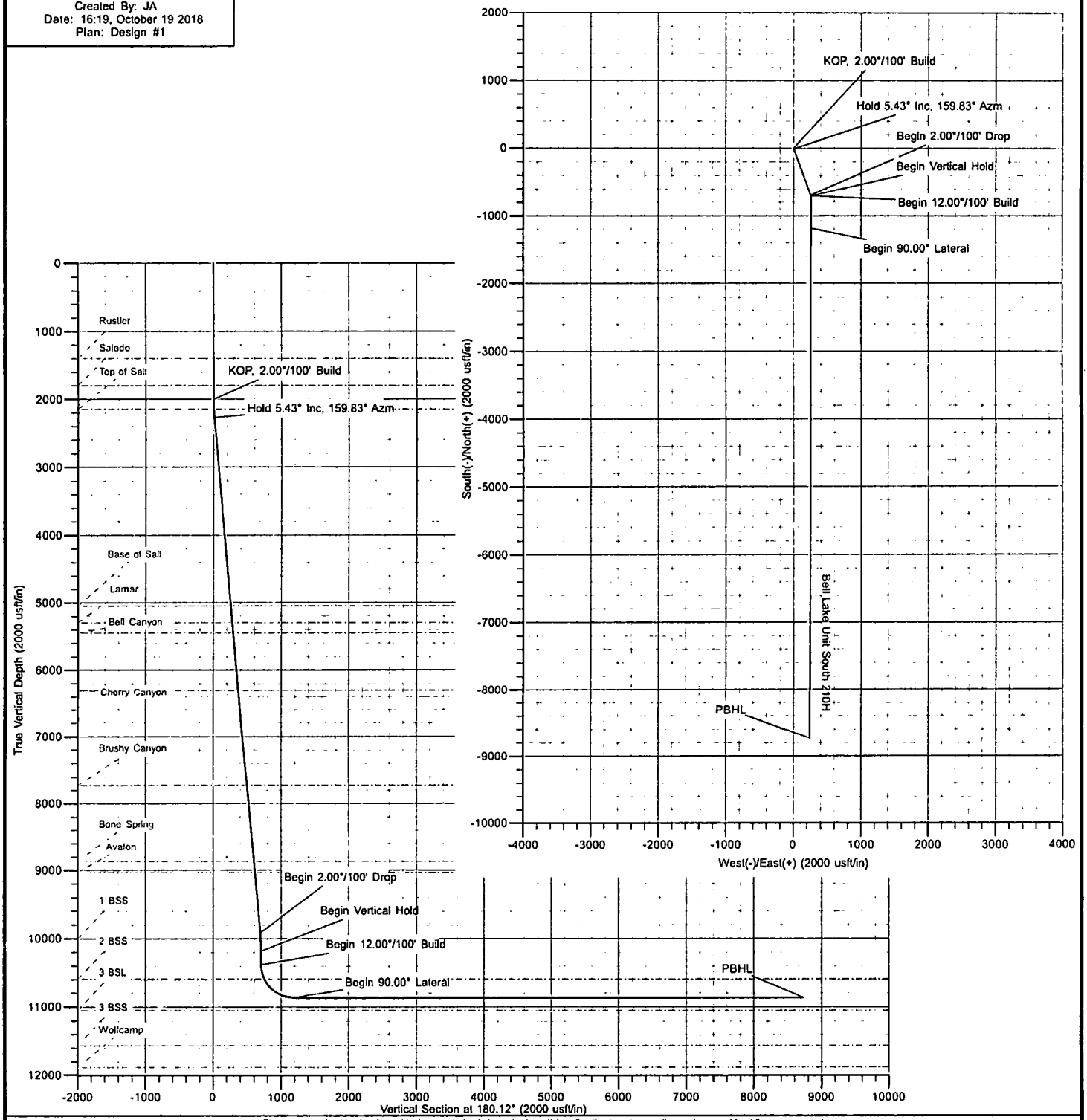
Magnetic Field
Strength: 47849.9nT
Dip Angle: 60.03°
Date: 11/20/2018
Model: BGGM2018

US State Plane 1983
New Mexico Eastern Zone

Created By: JA
Date: 16:19, October 19 2018
Plan: Design #1

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	KOP, 2.00°/100' Build
2271.38	5.43	159.83	2270.97	-12.06	4.43	12.05	12.84	Hold 5.43° Inc, 159.83° Azm
9948.39	5.43	159.83	9913.57	-693.68	254.76	693.14	738.98	Begin 2.00°/100' Drop
10219.77	0.00	0.00	10184.54	-705.74	259.19	705.19	751.83	Begin Vertical Hold
10419.77	0.00	0.00	10384.54	-705.74	259.19	705.19	751.83	Begin 12.00°/100' Build
11169.77	90.00	180.12	10862.00	-1183.20	258.20	1182.66	1229.29	Begin 90.00° Lateral
18720.18	90.00	180.12	10862.00	-8733.60	242.50	8733.07	8779.71	PBHL



Kaiser-Francis Oil Company

Kaiser-Francis

Lea County, New Mexico (NAD 83)
Bell Lake Unit South 210H
Bell Lake Unit South 210H

Wellbore #1

Plan: Design #1

Standard Planning Report

19 October, 2018

MS Directional

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea County, New Mexico (NAD 83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Bell Lake Unit South 210H				
Site Position:		**Northing:**	455,569.10 usft	**Latitude:**	32° 14' 59.072 N
From:	Map	**Easting:**	796,345.10 usft	**Longitude:**	103° 30' 30.475 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well	Bell Lake Unit South 210H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	455,569.10 usft	**Latitude:**	32° 14' 59.072 N
	+E/-W	0.00 usft	**Easting:**	796,345.10 usft	**Longitude:**	103° 30' 30.475 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,608.00 usft
Grid Convergence:		0.440 °				

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	BGGM2018	11/20/2018	6.841	60.034	47,849.95

Design	Design #1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	180.12	

Plan Survey Tool Program **Date** 10/19/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,720.18	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,271.38	5.43	159.83	2,270.97	-12.06	4.43	2.00	2.00	0.00	159.833	
9,948.40	5.43	159.83	9,913.57	-693.68	254.76	0.00	0.00	0.00	0.000	
10,219.77	0.00	0.00	10,184.54	-705.74	259.19	2.00	-2.00	0.00	180.000	VP BLUS 210
10,419.77	0.00	0.00	10,384.54	-705.74	259.19	0.00	0.00	0.00	0.000	
11,169.77	90.00	180.12	10,862.00	-1,183.20	258.20	12.00	12.00	0.00	180.119	
18,720.18	90.00	180.12	10,862.00	-8,733.60	242.50	0.00	0.00	0.00	0.000	PBHL BLUS 210

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 2.00°/100' Build									
2,100.00	2.00	159.83	2,099.98	-1.64	0.60	1.64	2.00	2.00	0.00
2,150.07	3.00	159.83	2,150.00	-3.69	1.35	3.69	2.00	2.00	0.00
Top of Salt									
2,200.00	4.00	159.83	2,199.84	-6.55	2.41	6.55	2.00	2.00	0.00
2,271.38	5.43	159.83	2,270.97	-12.06	4.43	12.05	2.00	2.00	0.00
Hold 5.43° Inc, 159.83° Azm									
2,300.00	5.43	159.83	2,299.47	-14.60	5.36	14.59	0.00	0.00	0.00
2,400.00	5.43	159.83	2,399.02	-23.48	8.62	23.46	0.00	0.00	0.00
2,500.00	5.43	159.83	2,498.57	-32.36	11.88	32.33	0.00	0.00	0.00
2,600.00	5.43	159.83	2,598.12	-41.23	15.14	41.20	0.00	0.00	0.00
2,700.00	5.43	159.83	2,697.67	-50.11	18.40	50.07	0.00	0.00	0.00
2,800.00	5.43	159.83	2,797.22	-58.99	21.67	58.95	0.00	0.00	0.00
2,900.00	5.43	159.83	2,896.78	-67.87	24.93	67.82	0.00	0.00	0.00
3,000.00	5.43	159.83	2,996.33	-76.75	28.19	76.69	0.00	0.00	0.00
3,100.00	5.43	159.83	3,095.88	-85.63	31.45	85.56	0.00	0.00	0.00
3,200.00	5.43	159.83	3,195.43	-94.51	34.71	94.43	0.00	0.00	0.00
3,300.00	5.43	159.83	3,294.98	-103.39	37.97	103.31	0.00	0.00	0.00
3,400.00	5.43	159.83	3,394.53	-112.26	41.23	112.18	0.00	0.00	0.00
3,500.00	5.43	159.83	3,494.09	-121.14	44.49	121.05	0.00	0.00	0.00
3,600.00	5.43	159.83	3,593.64	-130.02	47.75	129.92	0.00	0.00	0.00
3,700.00	5.43	159.83	3,693.19	-138.90	51.01	138.79	0.00	0.00	0.00
3,800.00	5.43	159.83	3,792.74	-147.78	54.27	147.67	0.00	0.00	0.00
3,900.00	5.43	159.83	3,892.29	-156.66	57.54	156.54	0.00	0.00	0.00
4,000.00	5.43	159.83	3,991.84	-165.54	60.80	165.41	0.00	0.00	0.00
4,100.00	5.43	159.83	4,091.40	-174.42	64.06	174.28	0.00	0.00	0.00
4,200.00	5.43	159.83	4,190.95	-183.29	67.32	183.15	0.00	0.00	0.00
4,300.00	5.43	159.83	4,290.50	-192.17	70.58	192.02	0.00	0.00	0.00
4,400.00	5.43	159.83	4,390.05	-201.05	73.84	200.90	0.00	0.00	0.00
4,500.00	5.43	159.83	4,489.60	-209.93	77.10	209.77	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 2.00°/100' Build									
2,100.00	2.00	159.83	2,099.98	-1.64	0.60	1.64	2.00	2.00	0.00
2,150.07	3.00	159.83	2,150.00	-3.69	1.35	3.69	2.00	2.00	0.00
Top of Salt									
2,200.00	4.00	159.83	2,199.84	-6.55	2.41	6.55	2.00	2.00	0.00
2,271.38	5.43	159.83	2,270.97	-12.06	4.43	12.05	2.00	2.00	0.00
Hold 5.43° Inc, 159.83° Azm									
2,300.00	5.43	159.83	2,299.47	-14.60	5.36	14.59	0.00	0.00	0.00
2,400.00	5.43	159.83	2,399.02	-23.48	8.62	23.46	0.00	0.00	0.00
2,500.00	5.43	159.83	2,498.57	-32.36	11.88	32.33	0.00	0.00	0.00
2,600.00	5.43	159.83	2,598.12	-41.23	15.14	41.20	0.00	0.00	0.00
2,700.00	5.43	159.83	2,697.67	-50.11	18.40	50.07	0.00	0.00	0.00
2,800.00	5.43	159.83	2,797.22	-58.99	21.67	58.95	0.00	0.00	0.00
2,900.00	5.43	159.83	2,896.78	-67.87	24.93	67.82	0.00	0.00	0.00
3,000.00	5.43	159.83	2,996.33	-76.75	28.19	76.69	0.00	0.00	0.00
3,100.00	5.43	159.83	3,095.88	-85.63	31.45	85.56	0.00	0.00	0.00
3,200.00	5.43	159.83	3,195.43	-94.51	34.71	94.43	0.00	0.00	0.00
3,300.00	5.43	159.83	3,294.98	-103.39	37.97	103.31	0.00	0.00	0.00
3,400.00	5.43	159.83	3,394.53	-112.26	41.23	112.18	0.00	0.00	0.00
3,500.00	5.43	159.83	3,494.09	-121.14	44.49	121.05	0.00	0.00	0.00
3,600.00	5.43	159.83	3,593.64	-130.02	47.75	129.92	0.00	0.00	0.00
3,700.00	5.43	159.83	3,693.19	-138.90	51.01	138.79	0.00	0.00	0.00
3,800.00	5.43	159.83	3,792.74	-147.78	54.27	147.67	0.00	0.00	0.00
3,900.00	5.43	159.83	3,892.29	-156.66	57.54	156.54	0.00	0.00	0.00
4,000.00	5.43	159.83	3,991.84	-165.54	60.80	165.41	0.00	0.00	0.00
4,100.00	5.43	159.83	4,091.40	-174.42	64.06	174.28	0.00	0.00	0.00
4,200.00	5.43	159.83	4,190.95	-183.29	67.32	183.15	0.00	0.00	0.00
4,300.00	5.43	159.83	4,290.50	-192.17	70.58	192.02	0.00	0.00	0.00
4,400.00	5.43	159.83	4,390.05	-201.05	73.84	200.90	0.00	0.00	0.00
4,500.00	5.43	159.83	4,489.60	-209.93	77.10	209.77	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	5.43	159.83	4,589.15	-218.81	80.36	218.64	0.00	0.00	0.00
4,700.00	5.43	159.83	4,688.71	-227.69	83.62	227.51	0.00	0.00	0.00
4,800.00	5.43	159.83	4,788.26	-236.57	86.88	236.38	0.00	0.00	0.00
4,900.00	5.43	159.83	4,887.81	-245.45	90.14	245.26	0.00	0.00	0.00
5,000.00	5.43	159.83	4,987.36	-254.32	93.40	254.13	0.00	0.00	0.00
5,062.92	5.43	159.83	5,050.00	-259.91	95.46	259.71	0.00	0.00	0.00
Base of Salt									
5,100.00	5.43	159.83	5,086.91	-263.20	96.67	263.00	0.00	0.00	0.00
5,200.00	5.43	159.83	5,186.46	-272.08	99.93	271.87	0.00	0.00	0.00
5,300.00	5.43	159.83	5,286.02	-280.96	103.19	280.74	0.00	0.00	0.00
5,314.05	5.43	159.83	5,300.00	-282.21	103.65	281.99	0.00	0.00	0.00
Lamar									
5,400.00	5.43	159.83	5,385.57	-289.84	106.45	289.62	0.00	0.00	0.00
5,464.72	5.43	159.83	5,450.00	-295.59	108.56	295.36	0.00	0.00	0.00
Bell Canyon									
5,500.00	5.43	159.83	5,485.12	-298.72	109.71	298.49	0.00	0.00	0.00
5,600.00	5.43	159.83	5,584.67	-307.60	112.97	307.36	0.00	0.00	0.00
5,700.00	5.43	159.83	5,684.22	-316.48	116.23	316.23	0.00	0.00	0.00
5,800.00	5.43	159.83	5,783.77	-325.35	119.49	325.10	0.00	0.00	0.00
5,900.00	5.43	159.83	5,883.33	-334.23	122.75	333.98	0.00	0.00	0.00
6,000.00	5.43	159.83	5,982.88	-343.11	126.01	342.85	0.00	0.00	0.00
6,100.00	5.43	159.83	6,082.43	-351.99	129.27	351.72	0.00	0.00	0.00
6,200.00	5.43	159.83	6,181.98	-360.87	132.53	360.59	0.00	0.00	0.00
6,300.00	5.43	159.83	6,281.53	-369.75	135.80	369.46	0.00	0.00	0.00
6,318.55	5.43	159.83	6,300.00	-371.39	136.40	371.11	0.00	0.00	0.00
Cherry Canyon									
6,400.00	5.43	159.83	6,381.08	-378.63	139.06	378.33	0.00	0.00	0.00
6,500.00	5.43	159.83	6,480.64	-387.51	142.32	387.21	0.00	0.00	0.00
6,600.00	5.43	159.83	6,580.19	-396.38	145.58	396.08	0.00	0.00	0.00
6,700.00	5.43	159.83	6,679.74	-405.26	148.84	404.95	0.00	0.00	0.00
6,800.00	5.43	159.83	6,779.29	-414.14	152.10	413.82	0.00	0.00	0.00
6,900.00	5.43	159.83	6,878.84	-423.02	155.36	422.69	0.00	0.00	0.00
7,000.00	5.43	159.83	6,978.39	-431.90	158.62	431.57	0.00	0.00	0.00
7,100.00	5.43	159.83	7,077.95	-440.78	161.88	440.44	0.00	0.00	0.00
7,200.00	5.43	159.83	7,177.50	-449.66	165.14	449.31	0.00	0.00	0.00
7,300.00	5.43	159.83	7,277.05	-458.54	168.40	458.18	0.00	0.00	0.00
7,400.00	5.43	159.83	7,376.60	-467.41	171.67	467.05	0.00	0.00	0.00
7,500.00	5.43	159.83	7,476.15	-476.29	174.93	475.93	0.00	0.00	0.00
7,600.00	5.43	159.83	7,575.70	-485.17	178.19	484.80	0.00	0.00	0.00
7,700.00	5.43	159.83	7,675.26	-494.05	181.45	493.67	0.00	0.00	0.00
7,754.99	5.43	159.83	7,730.00	-498.93	183.24	498.55	0.00	0.00	0.00
Brushy Canyon									
7,800.00	5.43	159.83	7,774.81	-502.93	184.71	502.54	0.00	0.00	0.00
7,900.00	5.43	159.83	7,874.36	-511.81	187.97	511.41	0.00	0.00	0.00
8,000.00	5.43	159.83	7,973.91	-520.69	191.23	520.29	0.00	0.00	0.00
8,100.00	5.43	159.83	8,073.46	-529.57	194.49	529.16	0.00	0.00	0.00
8,200.00	5.43	159.83	8,173.01	-538.44	197.75	538.03	0.00	0.00	0.00
8,300.00	5.43	159.83	8,272.57	-547.32	201.01	546.90	0.00	0.00	0.00
8,400.00	5.43	159.83	8,372.12	-556.20	204.27	555.77	0.00	0.00	0.00
8,500.00	5.43	159.83	8,471.67	-565.08	207.53	564.64	0.00	0.00	0.00
8,600.00	5.43	159.83	8,571.22	-573.96	210.80	573.52	0.00	0.00	0.00
8,700.00	5.43	159.83	8,670.77	-582.84	214.06	582.39	0.00	0.00	0.00
8,800.00	5.43	159.83	8,770.32	-591.72	217.32	591.26	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,900.00	5.43	159.83	8,869.88	-600.60	220.58	600.13	0.00	0.00	0.00
8,900.12	5.43	159.83	8,870.00	-600.61	220.58	600.14	0.00	0.00	0.00
Bone Spring									
9,000.00	5.43	159.83	8,969.43	-609.47	223.84	609.00	0.00	0.00	0.00
9,060.85	5.43	159.83	9,030.00	-614.88	225.82	614.40	0.00	0.00	0.00
Avalon									
9,100.00	5.43	159.83	9,068.98	-618.35	227.10	617.88	0.00	0.00	0.00
9,200.00	5.43	159.83	9,168.53	-627.23	230.36	626.75	0.00	0.00	0.00
9,300.00	5.43	159.83	9,268.08	-636.11	233.62	635.62	0.00	0.00	0.00
9,400.00	5.43	159.83	9,367.63	-644.99	236.88	644.49	0.00	0.00	0.00
9,500.00	5.43	159.83	9,467.19	-653.87	240.14	653.36	0.00	0.00	0.00
9,600.00	5.43	159.83	9,566.74	-662.75	243.40	662.24	0.00	0.00	0.00
9,700.00	5.43	159.83	9,666.29	-671.63	246.67	671.11	0.00	0.00	0.00
9,800.00	5.43	159.83	9,765.84	-680.50	249.93	679.98	0.00	0.00	0.00
9,900.00	5.43	159.83	9,865.39	-689.38	253.19	688.85	0.00	0.00	0.00
9,948.40	5.43	159.83	9,913.57	-693.68	254.76	693.14	0.00	0.00	0.00
Begin 2.00°/100' Drop									
10,000.00	4.40	159.83	9,964.99	-697.83	256.29	697.29	2.00	-2.00	0.00
10,035.10	3.69	159.83	10,000.00	-700.15	257.14	699.61	2.00	-2.00	0.00
1 BSS									
10,100.00	2.40	159.83	10,064.81	-703.39	258.33	702.84	2.00	-2.00	0.00
10,200.00	0.40	159.83	10,164.77	-705.67	259.17	705.13	2.00	-2.00	0.00
10,219.77	0.00	0.00	10,184.54	-705.74	259.19	705.19	2.00	-2.00	0.00
Begin Vertical Hold - VP BLUS 210									
10,300.00	0.00	0.00	10,264.77	-705.74	259.19	705.19	0.00	0.00	0.00
10,400.00	0.00	0.00	10,364.77	-705.74	259.19	705.19	0.00	0.00	0.00
10,419.77	0.00	0.00	10,384.54	-705.74	259.19	705.19	0.00	0.00	0.00
Begin 12.00°/100' Build									
10,425.00	0.63	180.12	10,389.77	-705.76	259.19	705.22	12.00	12.00	0.00
10,450.00	3.63	180.12	10,414.75	-706.69	259.19	706.15	12.00	12.00	0.00
10,475.00	6.63	180.12	10,439.65	-708.93	259.19	708.38	12.00	12.00	0.00
10,500.00	9.63	180.12	10,464.39	-712.46	259.18	711.92	12.00	12.00	0.00
10,525.00	12.63	180.12	10,488.92	-717.29	259.17	716.74	12.00	12.00	0.00
10,550.00	15.63	180.12	10,513.16	-723.39	259.16	722.84	12.00	12.00	0.00
10,575.00	18.63	180.12	10,537.05	-730.75	259.14	730.21	12.00	12.00	0.00
10,600.00	21.63	180.12	10,560.52	-739.35	259.12	738.81	12.00	12.00	0.00
10,625.00	24.63	180.12	10,583.51	-749.17	259.10	748.63	12.00	12.00	0.00
10,632.17	25.49	180.12	10,590.00	-752.21	259.10	751.66	12.00	12.00	0.00
2 BSS									
10,650.00	27.63	180.12	10,605.95	-760.18	259.08	759.63	12.00	12.00	0.00
10,675.00	30.63	180.12	10,627.79	-772.35	259.05	771.80	12.00	12.00	0.00
10,700.00	33.63	180.12	10,648.96	-785.64	259.03	785.10	12.00	12.00	0.00
10,725.00	36.63	180.12	10,669.40	-800.02	259.00	799.48	12.00	12.00	0.00
10,750.00	39.63	180.12	10,689.06	-815.46	258.96	814.91	12.00	12.00	0.00
10,775.00	42.63	180.12	10,707.89	-831.90	258.93	831.36	12.00	12.00	0.00
10,800.00	45.63	180.12	10,725.84	-849.30	258.89	848.76	12.00	12.00	0.00
10,825.00	48.63	180.12	10,742.84	-867.62	258.86	867.08	12.00	12.00	0.00
10,850.00	51.63	180.12	10,758.87	-886.81	258.82	886.26	12.00	12.00	0.00
10,875.00	54.63	180.12	10,773.87	-906.81	258.77	906.26	12.00	12.00	0.00
10,900.00	57.63	180.12	10,787.80	-927.56	258.73	927.02	12.00	12.00	0.00
10,925.00	60.63	180.12	10,800.62	-949.02	258.69	948.47	12.00	12.00	0.00
10,950.00	63.63	180.12	10,812.31	-971.11	258.64	970.57	12.00	12.00	0.00
10,975.00	66.63	180.12	10,822.82	-993.79	258.59	993.25	12.00	12.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,000.00	69.63	180.12	10,832.14	-1,016.99	258.55	1,016.45	12.00	12.00	0.00
11,025.00	72.63	180.12	10,840.22	-1,040.64	258.50	1,040.10	12.00	12.00	0.00
11,050.00	75.63	180.12	10,847.06	-1,064.69	258.45	1,064.14	12.00	12.00	0.00
11,075.00	78.63	180.12	10,852.63	-1,089.06	258.40	1,088.51	12.00	12.00	0.00
11,100.00	81.63	180.12	10,856.91	-1,113.68	258.34	1,113.14	12.00	12.00	0.00
11,125.00	84.63	180.12	10,859.90	-1,138.50	258.29	1,137.96	12.00	12.00	0.00
11,150.00	87.63	180.12	10,861.59	-1,163.44	258.24	1,162.90	12.00	12.00	0.00
11,169.77	90.00	180.12	10,862.00	-1,183.20	258.20	1,182.66	12.00	12.00	0.00
Begin 90.00° Lateral - FTP BLUS 210									
11,200.00	90.00	180.12	10,862.00	-1,213.43	258.14	1,212.89	0.00	0.00	0.00
11,300.00	90.00	180.12	10,862.00	-1,313.43	257.93	1,312.89	0.00	0.00	0.00
11,400.00	90.00	180.12	10,862.00	-1,413.43	257.72	1,412.89	0.00	0.00	0.00
11,500.00	90.00	180.12	10,862.00	-1,513.43	257.51	1,512.89	0.00	0.00	0.00
11,600.00	90.00	180.12	10,862.00	-1,613.43	257.31	1,612.89	0.00	0.00	0.00
11,700.00	90.00	180.12	10,862.00	-1,713.43	257.10	1,712.89	0.00	0.00	0.00
11,800.00	90.00	180.12	10,862.00	-1,813.43	256.89	1,812.89	0.00	0.00	0.00
11,900.00	90.00	180.12	10,862.00	-1,913.43	256.68	1,912.89	0.00	0.00	0.00
12,000.00	90.00	180.12	10,862.00	-2,013.43	256.47	2,012.89	0.00	0.00	0.00
12,100.00	90.00	180.12	10,862.00	-2,113.43	256.27	2,112.89	0.00	0.00	0.00
12,200.00	90.00	180.12	10,862.00	-2,213.43	256.06	2,212.89	0.00	0.00	0.00
12,300.00	90.00	180.12	10,862.00	-2,313.43	255.85	2,312.89	0.00	0.00	0.00
12,400.00	90.00	180.12	10,862.00	-2,413.43	255.64	2,412.89	0.00	0.00	0.00
12,500.00	90.00	180.12	10,862.00	-2,513.43	255.43	2,512.89	0.00	0.00	0.00
12,600.00	90.00	180.12	10,862.00	-2,613.43	255.23	2,612.89	0.00	0.00	0.00
12,700.00	90.00	180.12	10,862.00	-2,713.43	255.02	2,712.89	0.00	0.00	0.00
12,800.00	90.00	180.12	10,862.00	-2,813.43	254.81	2,812.89	0.00	0.00	0.00
12,900.00	90.00	180.12	10,862.00	-2,913.43	254.60	2,912.89	0.00	0.00	0.00
13,000.00	90.00	180.12	10,862.00	-3,013.43	254.39	3,012.89	0.00	0.00	0.00
13,100.00	90.00	180.12	10,862.00	-3,113.43	254.19	3,112.89	0.00	0.00	0.00
13,200.00	90.00	180.12	10,862.00	-3,213.43	253.98	3,212.89	0.00	0.00	0.00
13,300.00	90.00	180.12	10,862.00	-3,313.43	253.77	3,312.89	0.00	0.00	0.00
13,400.00	90.00	180.12	10,862.00	-3,413.43	253.56	3,412.89	0.00	0.00	0.00
13,500.00	90.00	180.12	10,862.00	-3,513.43	253.35	3,512.89	0.00	0.00	0.00
13,600.00	90.00	180.12	10,862.00	-3,613.43	253.15	3,612.89	0.00	0.00	0.00
13,700.00	90.00	180.12	10,862.00	-3,713.43	252.94	3,712.89	0.00	0.00	0.00
13,800.00	90.00	180.12	10,862.00	-3,813.43	252.73	3,812.89	0.00	0.00	0.00
13,900.00	90.00	180.12	10,862.00	-3,913.43	252.52	3,912.89	0.00	0.00	0.00
14,000.00	90.00	180.12	10,862.00	-4,013.43	252.31	4,012.89	0.00	0.00	0.00
14,100.00	90.00	180.12	10,862.00	-4,113.43	252.11	4,112.89	0.00	0.00	0.00
14,200.00	90.00	180.12	10,862.00	-4,213.43	251.90	4,212.89	0.00	0.00	0.00
14,300.00	90.00	180.12	10,862.00	-4,313.43	251.69	4,312.89	0.00	0.00	0.00
14,400.00	90.00	180.12	10,862.00	-4,413.43	251.48	4,412.89	0.00	0.00	0.00
14,500.00	90.00	180.12	10,862.00	-4,513.43	251.28	4,512.89	0.00	0.00	0.00
14,600.00	90.00	180.12	10,862.00	-4,613.43	251.07	4,612.89	0.00	0.00	0.00
14,700.00	90.00	180.12	10,862.00	-4,713.43	250.86	4,712.89	0.00	0.00	0.00
14,800.00	90.00	180.12	10,862.00	-4,813.43	250.65	4,812.89	0.00	0.00	0.00
14,900.00	90.00	180.12	10,862.00	-4,913.43	250.44	4,912.89	0.00	0.00	0.00
15,000.00	90.00	180.12	10,862.00	-5,013.43	250.24	5,012.89	0.00	0.00	0.00
15,100.00	90.00	180.12	10,862.00	-5,113.43	250.03	5,112.89	0.00	0.00	0.00
15,200.00	90.00	180.12	10,862.00	-5,213.43	249.82	5,212.89	0.00	0.00	0.00
15,300.00	90.00	180.12	10,862.00	-5,313.43	249.61	5,312.89	0.00	0.00	0.00
15,400.00	90.00	180.12	10,862.00	-5,413.43	249.40	5,412.89	0.00	0.00	0.00
15,500.00	90.00	180.12	10,862.00	-5,513.43	249.20	5,512.89	0.00	0.00	0.00
15,600.00	90.00	180.12	10,862.00	-5,613.43	248.99	5,612.89	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,700.00	90.00	180.12	10,862.00	-5,713.43	248.78	5,712.89	0.00	0.00	0.00
15,800.00	90.00	180.12	10,862.00	-5,813.43	248.57	5,812.89	0.00	0.00	0.00
15,900.00	90.00	180.12	10,862.00	-5,913.42	248.36	5,912.89	0.00	0.00	0.00
16,000.00	90.00	180.12	10,862.00	-6,013.42	248.16	6,012.89	0.00	0.00	0.00
16,100.00	90.00	180.12	10,862.00	-6,113.42	247.95	6,112.89	0.00	0.00	0.00
16,200.00	90.00	180.12	10,862.00	-6,213.42	247.74	6,212.89	0.00	0.00	0.00
16,300.00	90.00	180.12	10,862.00	-6,313.42	247.53	6,312.89	0.00	0.00	0.00
16,400.00	90.00	180.12	10,862.00	-6,413.42	247.32	6,412.89	0.00	0.00	0.00
16,500.00	90.00	180.12	10,862.00	-6,513.42	247.12	6,512.89	0.00	0.00	0.00
16,600.00	90.00	180.12	10,862.00	-6,613.42	246.91	6,612.89	0.00	0.00	0.00
16,700.00	90.00	180.12	10,862.00	-6,713.42	246.70	6,712.89	0.00	0.00	0.00
16,800.00	90.00	180.12	10,862.00	-6,813.42	246.49	6,812.89	0.00	0.00	0.00
16,900.00	90.00	180.12	10,862.00	-6,913.42	246.28	6,912.89	0.00	0.00	0.00
17,000.00	90.00	180.12	10,862.00	-7,013.42	246.08	7,012.89	0.00	0.00	0.00
17,100.00	90.00	180.12	10,862.00	-7,113.42	245.87	7,112.89	0.00	0.00	0.00
17,200.00	90.00	180.12	10,862.00	-7,213.42	245.66	7,212.89	0.00	0.00	0.00
17,300.00	90.00	180.12	10,862.00	-7,313.42	245.45	7,312.89	0.00	0.00	0.00
17,400.00	90.00	180.12	10,862.00	-7,413.42	245.25	7,412.89	0.00	0.00	0.00
17,500.00	90.00	180.12	10,862.00	-7,513.42	245.04	7,512.89	0.00	0.00	0.00
17,600.00	90.00	180.12	10,862.00	-7,613.42	244.83	7,612.89	0.00	0.00	0.00
17,700.00	90.00	180.12	10,862.00	-7,713.42	244.62	7,712.89	0.00	0.00	0.00
17,800.00	90.00	180.12	10,862.00	-7,813.42	244.41	7,812.89	0.00	0.00	0.00
17,900.00	90.00	180.12	10,862.00	-7,913.42	244.21	7,912.89	0.00	0.00	0.00
18,000.00	90.00	180.12	10,862.00	-8,013.42	244.00	8,012.89	0.00	0.00	0.00
18,100.00	90.00	180.12	10,862.00	-8,113.42	243.79	8,112.89	0.00	0.00	0.00
18,200.00	90.00	180.12	10,862.00	-8,213.42	243.58	8,212.89	0.00	0.00	0.00
18,300.00	90.00	180.12	10,862.00	-8,313.42	243.37	8,312.89	0.00	0.00	0.00
18,400.00	90.00	180.12	10,862.00	-8,413.42	243.17	8,412.89	0.00	0.00	0.00
18,500.00	90.00	180.12	10,862.00	-8,513.42	242.96	8,512.89	0.00	0.00	0.00
18,600.00	90.00	180.12	10,862.00	-8,613.42	242.75	8,612.89	0.00	0.00	0.00
18,700.00	90.00	180.12	10,862.00	-8,713.42	242.54	8,712.89	0.00	0.00	0.00
18,720.18	90.00	180.12	10,862.00	-8,733.60	242.50	8,733.07	0.00	0.00	0.00
PBHL - PBHL BLUS 210									

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
VP BLUS 210 - plan hits target center - Point	0.00	0.01	10,184.54	-705.74	259.19	454,863.36	796,604.29	32° 14' 52.069 N	103° 30' 27.520 W
PBHL BLUS 210 - plan hits target center - Point	0.00	0.00	10,862.00	-8,733.60	242.50	446,835.50	796,587.60	32° 13' 32.634 N	103° 30' 28.432 W
FTP BLUS 210 - plan hits target center - Point	0.00	0.01	10,862.00	-1,183.20	258.20	454,385.90	796,603.30	32° 14' 47.344 N	103° 30' 27.574 W

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Bell Lake Unit South 210H
Company:	Kaiser-Francis	**TVD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Project:	Lea County, New Mexico (NAD 83)	**MD Reference:**	22 KB + 3608 GL @ 3630.00usft (Cactus 171)
Site:	Bell Lake Unit South 210H	**North Reference:**	Grid
Well:	Bell Lake Unit South 210H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,400.00	1,400.00	Rustler		0.000	180.12
1,800.00	1,800.00	Salado		0.000	180.12
2,150.07	2,150.00	Top of Salt		0.000	180.12
5,062.92	5,050.00	Base of Salt		0.000	180.12
5,314.05	5,300.00	Lamar		0.000	180.12
5,464.72	5,450.00	Bell Canyon		0.000	180.12
6,318.55	6,300.00	Cherry Canyon		0.000	180.12
7,754.99	7,730.00	Brushy Canyon		0.000	180.12
8,900.12	8,870.00	Bone Spring		0.000	180.12
9,060.85	9,030.00	Avalon		0.000	180.12
10,035.10	10,000.00	1 BSS		0.000	180.12
10,632.17	10,590.00	2 BSS		0.000	180.12

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000.00	2,000.00	0.00	0.00	KOP, 2.00°/100' Build
2,271.38	2,270.97	-12.06	4.43	Hold 5.43° Inc, 159.83° Azm
9,948.40	9,913.57	-693.68	254.76	Begin 2.00°/100' Drop
10,219.77	10,184.54	-705.74	259.19	Begin Vertical Hold
10,419.77	10,384.54	-705.74	259.19	Begin 12.00°/100' Build
11,169.77	10,862.00	-1,183.20	258.20	Begin 90.00° Lateral
18,720.18	10,862.00	-8,733.60	242.50	PBHL

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 01/26/2018

☒ Original
☐ Amended - Reason for Amendment:

Operator & OGRID No.: Kaiser-Francis Oil Company, 12361

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Bell Lake Unit South 209H		6-24S-34E		2000	0	
Bell Lake Unit South 210H		6-24S-34E		2000	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Targa and will be connected to Targa low/high pressure gathering system located in _Lea_ County, New Mexico. It will require _11,000' of pipeline to connect the facility to low/high pressure gathering system. Kaiser-Francis Oil Company provides (periodically) to Targa a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Kaiser-Francis Oil Company and Targa have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Targa Processing Plant located in Sec._36_, Twn.__19S_, Rng._36E, __Lea__ County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Targa system at that time. Based on current information, it is Kaiser-Francis Oil Company's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

APD ID: 10400036925
Submission Date: 12/07/2018
Operator Name: KAISER FRANCIS OIL COMPANY
Well Name: BELL LAKE UNIT SOUTH
Well Number: 210H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

BLSU_210H_Existing_Roads_20181207100921.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

BLSU_210H_Access_Rd_20181207100955.pdf

New road type: RESOURCE

Length: 420 Feet **Width (ft.):** 25

Max slope (%): 2 **Max grade (%):** 2

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 15

New road access erosion control: Road construction requirements and regular maintenance would alleviate potential impacts to the access road from water erosion damage.
New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: Native caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description: Material will be obtained from BLM caliche pit in SWSW Section 22-T24S-R34E or NENE Section 20-T23S-R33E
Onsite topsoil removal process: The top 6 inches of topsoil is pushed off and stockpiled along the side of the location. An approximate 160' X 160' area is used within the proposed well site to remove caliche. Subsoil is removed and stockpiled within the pad site to build the location and road. Then subsoil is pushed back in the hole and caliche is spread accordingly across proposed access road.
Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Proposed access road will be crowned and ditched and constructed of 6 inch rolled and compacted caliche. Water will be diverted where necessary to avoid ponding, maintain good drainage, and to be consistentwith local drainage patterns.
Road Drainage Control Structures (DCS) description: The ditches will be 3' wide with 3:1 slopes

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

BLUS_210H_1_Mile_Wells_20181207101429.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Production facilities are planned for the west side of pad. Plan for initial wells: 2-1000 bbl water tanks and 5-1000 bbl oil tanks, a temporary 6X20 horizontal 3-phase sep, a 48" X 10' 3-phase sep, a 8 X 20' heater treater and a 48"X 10' 2-phase sep

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING **Water source type:** OTHER

Describe type: BRINE WATER

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: OTHER **Describe transportation land ownership:**

Water source volume (barrels): 20000 **Source volume (acre-feet):** 2.577862

Source volume (gal): 840000

Water source use type: OTHER, STIMULATION, SURFACE CASING **Water source type:** OTHER

Describe type: FRESH WATER

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: OTHER **Describe transportation land ownership:**

Water source volume (barrels): 250000 **Source volume (acre-feet):** 32.223274

Source volume (gal): 10500000

Water source and transportation map:

BLUS_210H_Water_Source_Map_20181207102244.pdf

Water source comments: Source transportation land ownership is a mixture of Federal, State and County.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: On site caliche will be used for construction if sufficient. In the event insufficient quantities of caliche are available onsite, caliche will be trucked in from BLM's caliche pit in SWSW Section 22-T24-R34E or NENE Section 20-T23S-R33E.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and cuttings

Amount of waste: 3900 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling fluids will be stored safely and disposed of properly

Safe containmant attachment:

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

Disposal location description: Cuttings will be hauled to R360's facility on US 62/180 at Halfway, NM

Waste type: SEWAGE

Waste content description: Human waste and grey water

Amount of waste: 1000 gallons

Waste disposal frequency : One Time Only

Safe containment description: Waste material will be stored safely and disposed of properly

Safe containmant attachment:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

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

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: GARBAGE

Waste content description: Miscellaneous trash

Amount of waste: 500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Trash produced during drilling and completion operations will be collected in a trash container and disposed of properly

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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? YES

Description of cuttings location Cuttings will be stored in roll off bins and hauled to R360 on US 62/180 near Halfway.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

BLUS_210H_Well_Pad_Layout_20181207102843.pdf

BLUS_210H_Drilling_Layout_20181207152548.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: SOUTH BELL LAKE UNIT

Multiple Well Pad Number: 8

Recontouring attachment:

Drainage/Erosion control construction: During construction proper erosion control methods will be used to control erosion, runoff and siltation of the surrounding area. As per request of rancher, a berm will be constructed along the east side of well pad.

Drainage/Erosion control reclamation: Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

Well pad proposed disturbance (acres): 5.97

Road proposed disturbance (acres): 0.241047

Powerline proposed disturbance (acres): 0

Pipeline proposed disturbance (acres): 0

Other proposed disturbance (acres): 0

Total proposed disturbance: 6.211047

Well pad interim reclamation (acres): 0

Road interim reclamation (acres): 0

Powerline interim reclamation (acres): 0

Pipeline interim reclamation (acres): 0

Other interim reclamation (acres): 0

Total interim reclamation: 0

Well pad long term disturbance (acres): 5.97

Road long term disturbance (acres): 0.241047

Powerline long term disturbance (acres): 0

Pipeline long term disturbance (acres): 0

Other long term disturbance (acres): 0

Total long term disturbance: 6.211047

Disturbance Comments: Plan to reclaim 130' on the north side and 80' on the west side of well pad.

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations
Soil treatment: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Existing Vegetation at the well pad: The historic climax plant community is a grassland dominated by black grama, dropseeds, and blue stems with sand sage and shinnery oak distributed evenly throughout. Current landscape displays mesquite, shinnery oak, yucca, desert sage, fourwing saltbush, snakeweed, and bunch grasses
Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Refer to "Existing Vegetation at the well pad'

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

PLS pounds per acre:

Proposed seeding season:

Seed Summary	
Seed Type	Pounds/Acre

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: No invasive species present. Standard regular maintenance to maintain a clear location and road.

Weed treatment plan attachment:

Monitoring plan description: Identify areas supporting weeds prior to construction; prevent the introduction and spread of weeds from construction equipment during construction; and contain weed seeds and propagules by preventing segregated topsoil from being spread to adjacent areas. No invasive species present. Standard regular maintenance to maintain a clear location and road.

Monitoring plan attachment:

Success standards: To maintain all disturbed areas as per Gold Book standards

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

DOD Local Office:

NPS Local Office:

State Local Office: COMMISSIONER OF PUBLIC LANDS, PO BOX 1148, SANTA FE, NM 87504

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Fee Owner: Mark T. McCloy & Annette E McCloy **Fee Owner Address:** PO Box 795 Tatum, NM 88267

Phone: (432)940-4459 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Surface Use and Compensation Agreement dated October 4, 2016 between Mark T McCloy and Annette E McCloy Revocable Living Trust and Kaiser-Francis Oil Company

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: COMMISSIONER OF PUBLIC LANDS, PO BOX 1148, SANTA FE, NM 87504-1148

Military Local Office:

USFWS Local Office:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH **Well Number:** 210H

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

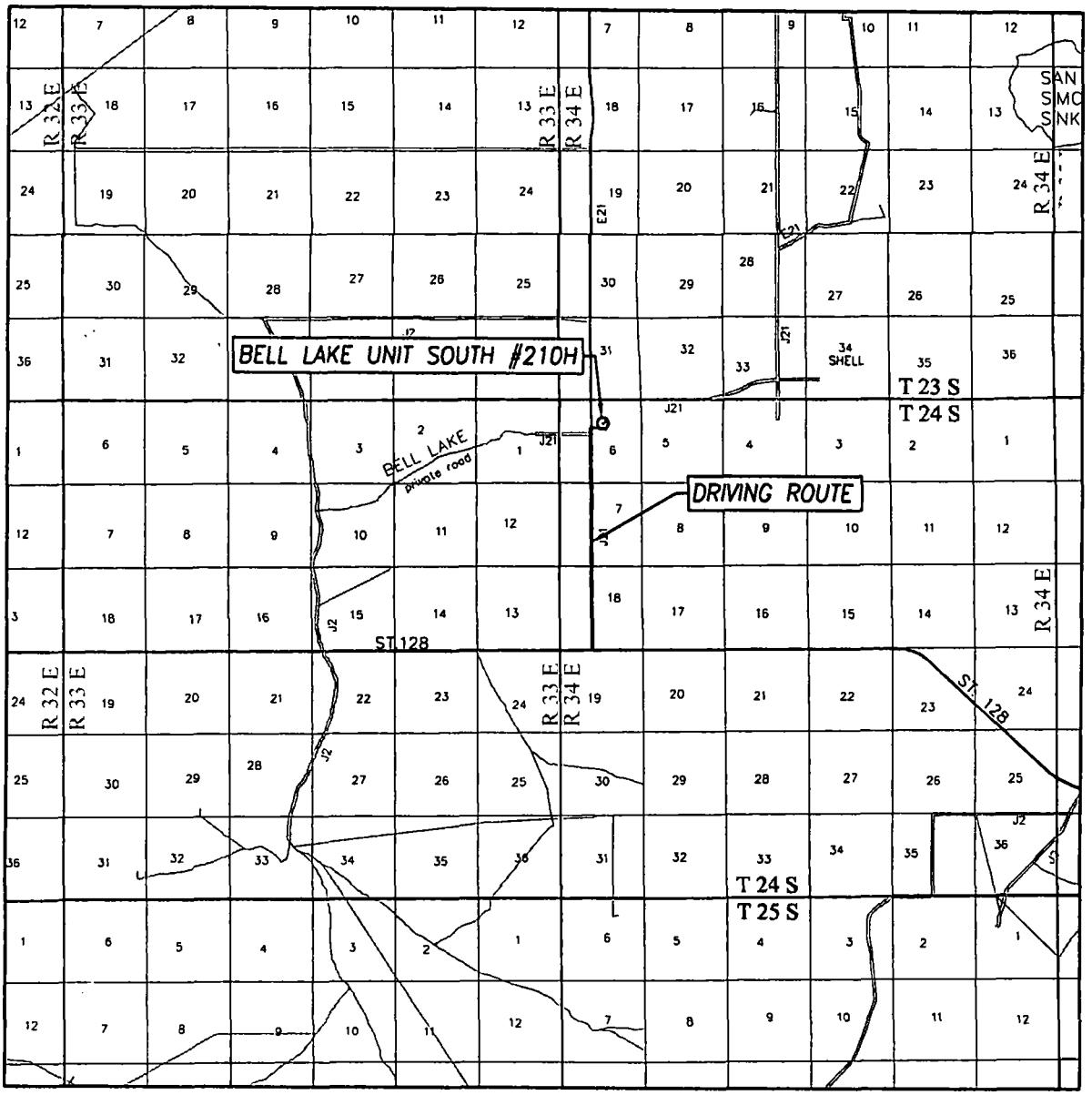
Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

BLUS_210H_Pad_8_SPCC_20181207103843.pdf

VICINITY MAP



SCALE: 1" = 2 MILES

DRIVING ROUTE: SEE TOPOGRAPHICAL AND ACCESS ROAD MAP

SEC. 6 TWP. 24-S RGE. 34-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 1490' FNL & 2445' FEL

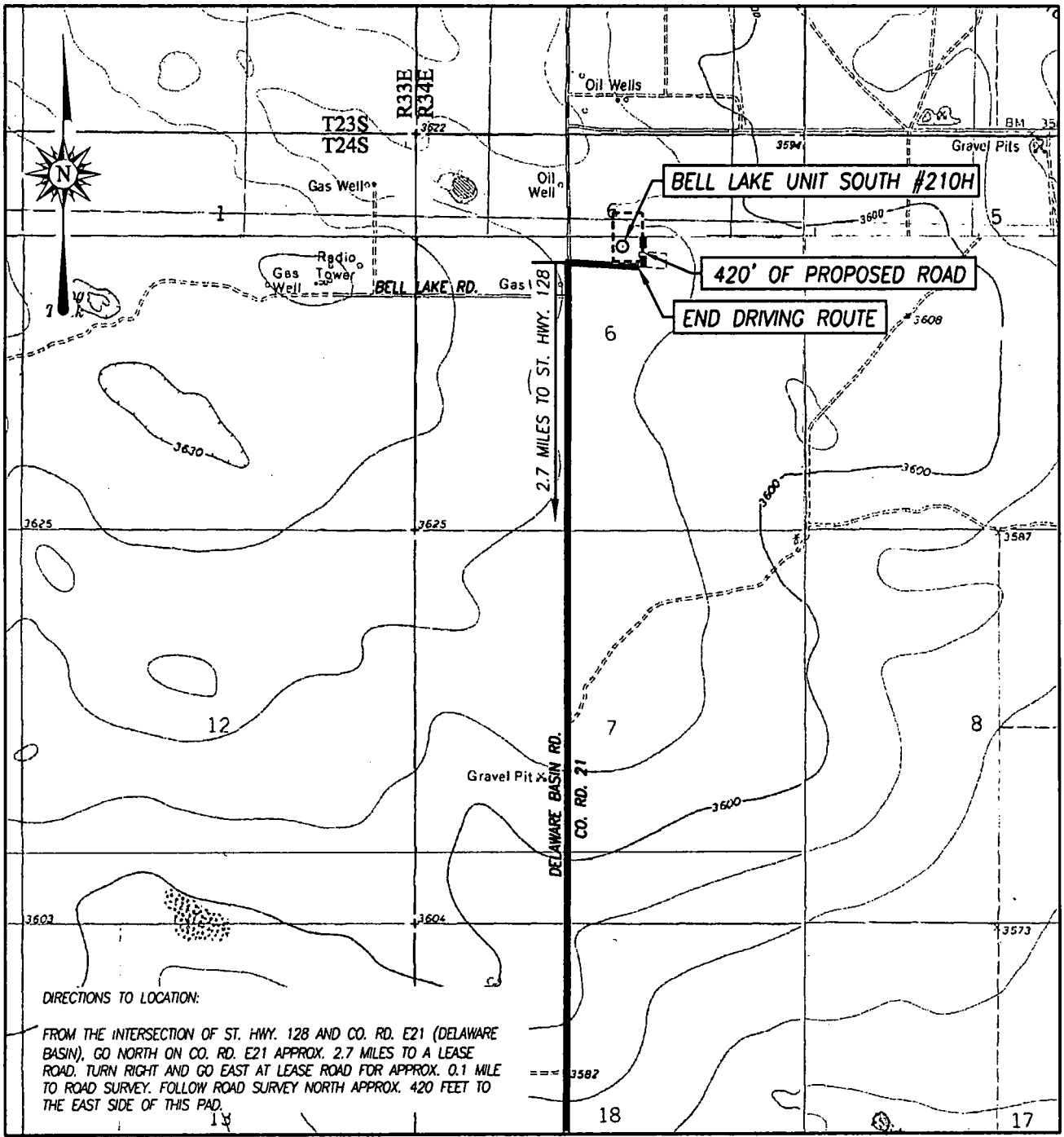
ELEVATION 3608'

OPERATOR KAISER-FRANCIS OIL COMPANY

LEASE BELL LAKE UNIT SOUTH

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

TOPOGRAPHIC AND ACCESS ROAD MAP

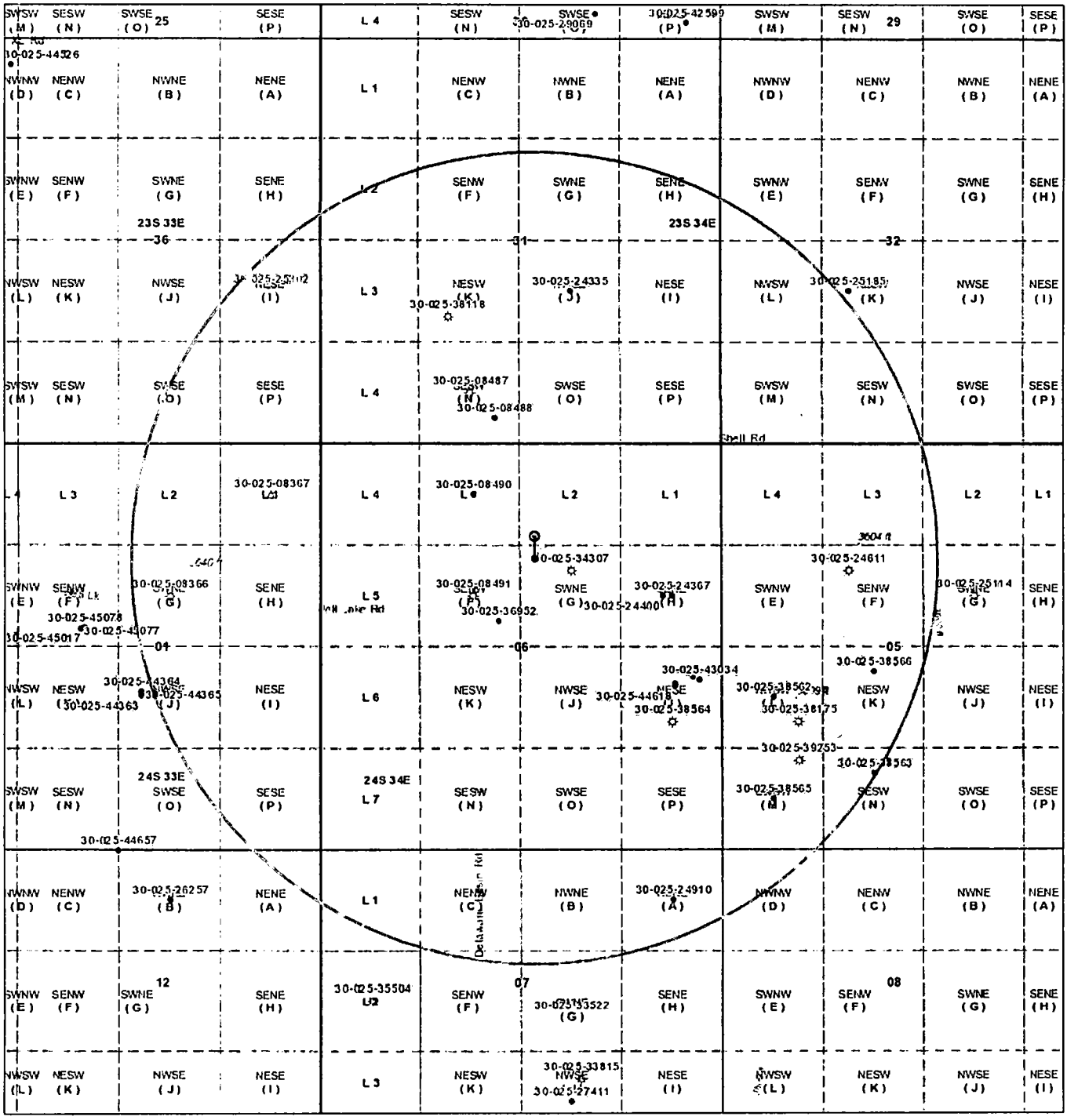


SCALE: 1" = 2000'
SEC. 6 TWP. 24-S RGE. 34-E
SURVEY N.M.P.M.
COUNTY LEA STATE NEW MEXICO
DESCRIPTION 1490' FNL & 2445' FEL
ELEVATION 3608'
OPERATOR KAISER-FRANCIS OIL COMPANY
LEASE BELL LAKE UNIT SOUTH
U.S.G.S. TOPOGRAPHIC MAP
BELL LAKE, N.M.

CONTOUR INTERVAL:
BELL LAKE, N.M. - 10'
WOODLEY FLAT, N.M. - 10'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

BLUS 210H 1-Mile Wells



12/7/2018 10:12:43 AM

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Well Locations - Large Scale

- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas Active
- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water InjectionTemporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned

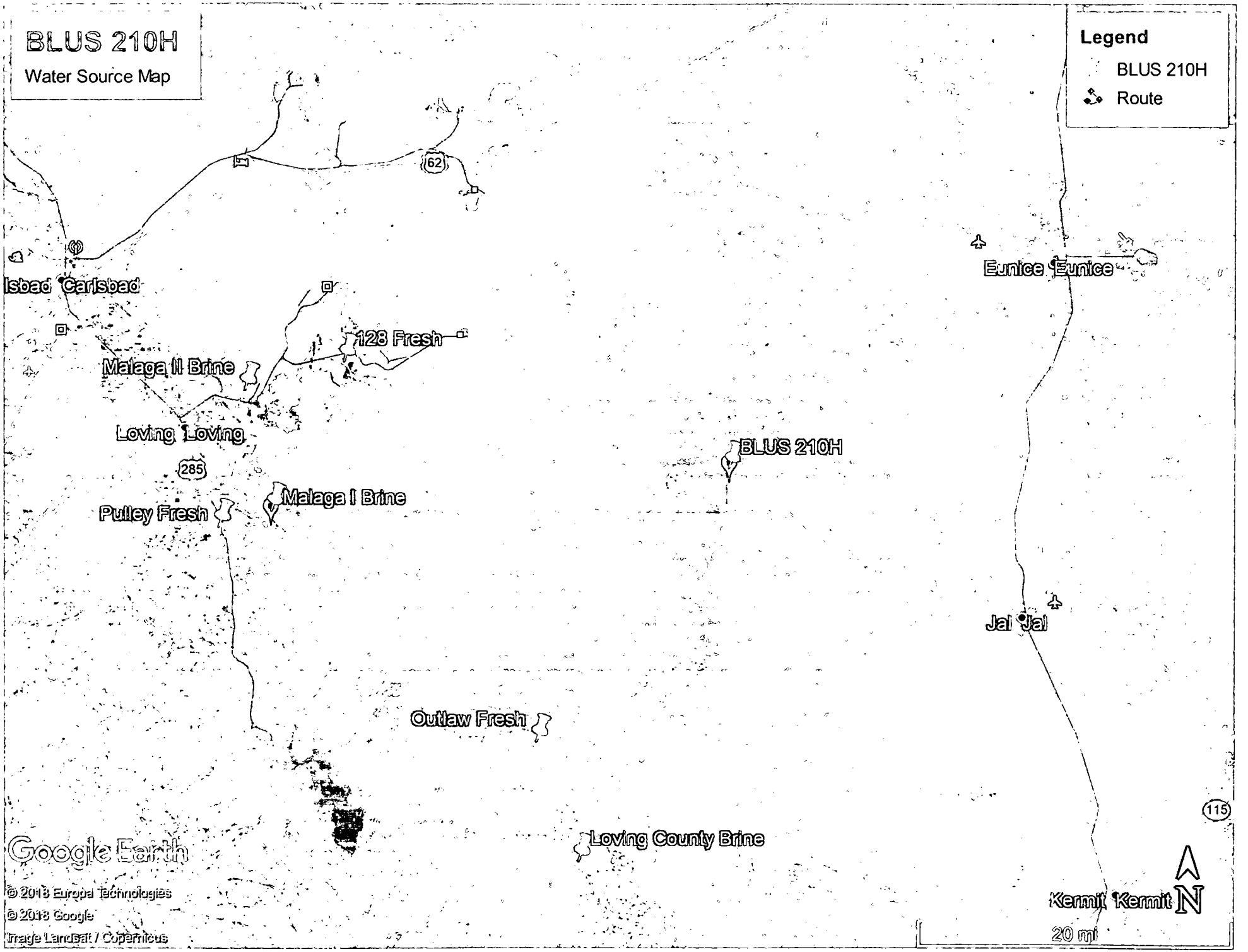
Well Locations - Small Scale

- Active
- New
- Plugged
- Cancelled
- Temporarily Abandoned
- OCD Districts
- OCD District Offices
- PLSS First Division

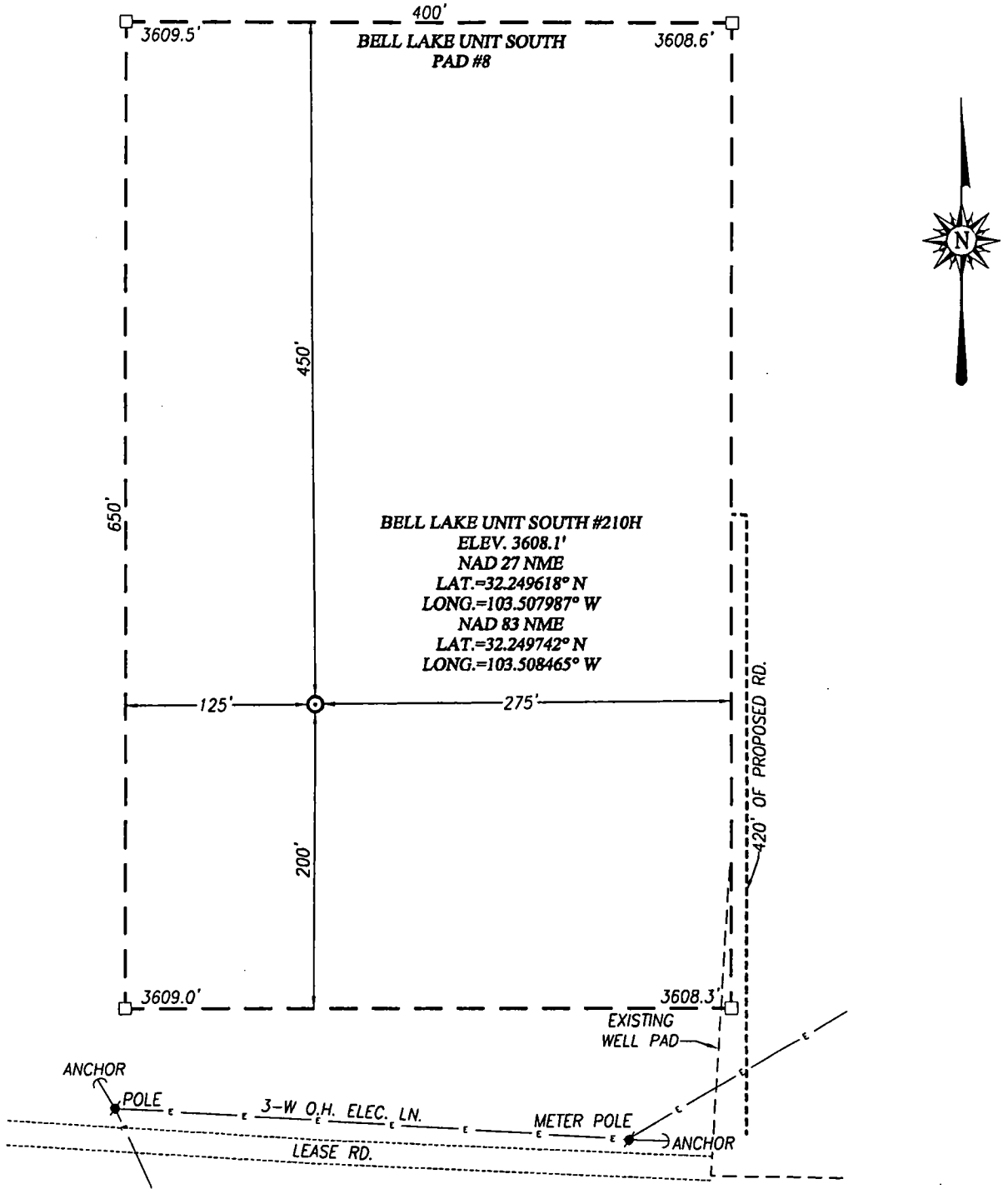
Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, OCD, BLM

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map, http://nm-emnrd.maps.arcgis.com/apps/webappviewer/: New Mexico Oil Conservation Division


BLUS 210H
Water Source Map
Legend
BLUS 210H
Route
62
Carlsbad
Carlsbad
128 Fresh
Malaga II Brine
Loving
Loving
285
Pulley Fresh
Malaga I Brine
BLUS 210H
Eunice
Eunice
Jal
Jal
Outlaw Fresh
Loving County Brine
115
Kermit
Kermit
N
20 mi
Google Earth
© 2018 Europa Technologies
© 2018 Google
Image Landsat / Copernicus

WELL SITE PLAN



NOTE:
SEE "TOPOGRAPHICAL AND ACCESS ROAD MAP"
FOR PROPOSED ROAD LOCATION.

100 0 100 200 Feet

Scale: 1"=100'

DIRECTIONS TO LOCATION:

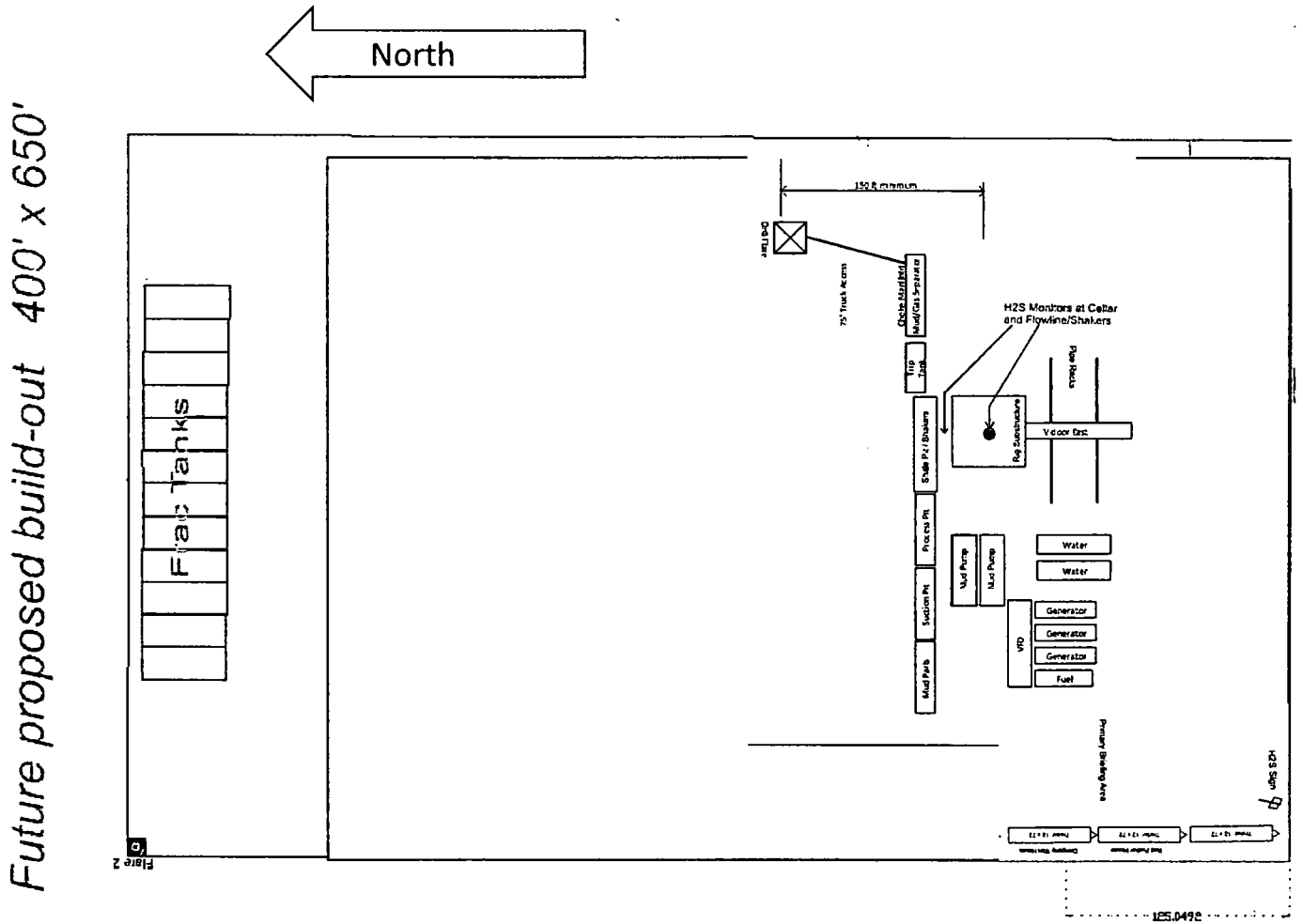
FROM THE INTERSECTION OF ST. HWY. 128 AND CO. RD. E21 (DELAWARE BASIN), GO NORTH ON CO. RD. E21 APPROX. 2.7 MILES TO A LEASE ROAD. TURN RIGHT AND GO EAST AT LEASE ROAD FOR APPROX. 0.1 MILE TO ROAD SURVEY. FOLLOW ROAD SURVEY NORTH APPROX. 420 FEET TO THE EAST SIDE OF THIS PAD.

KAISER-FRANCIS OIL COMPANY

BELL LAKE UNIT SOUTH #210H WELL LOCATED 1490 FEET FROM THE NORTH LINE AND 2445 FEET FROM THE EAST LINE OF SECTION 6, TOWNSHIP 24 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

Survey Date: 10/13/17	CAD Date: 11/15/17	Drawn By: ACK
W.O. No.: 17110992	Rev: .	Rel. W.O.:17110785	Sheet 1 of 1



Bell Lake Unit South Pad 8

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

Kaiser-Francis Oil Company
P.O. Box 21468
Tulsa, Oklahoma 74121-1468

South Bell Lake Unit Pad #8 Production Facility

January 10, 2018

Table of Contents

Page

List of Tables

List of Figures

Cross-Reference with SPCC Rule

Provision*	Plan Section	Page(s)
112.3(d)	Professional Engineer Certification	6
112.3(e)	Location of SPCC Plan	7
112.5	Plan Review	7
112.7	Management Approval	6
112.7	Cross-Reference with SPCC Rule	4
112.7(a)(3)	Part I – General Information and Facility Diagram Appendix A: Facility Diagrams	9-12 Appendix A
112.4 and 112.7(a)(3)	2.1 Discharge Discovery and Reporting Appendix D: Discharge Notification	13-14 Appendix D
112.7(b)	3.1 Potential Discharge Volume and Direction of Flow	16
112.7(c)	3.2 Containment and Diversionary Structures	17
112.7(d)	3.2.3 Practicability of Secondary Containment Appendix F: Written Commitment of manpower, equipment and materials.	18 Appendix F
112.7(e)	3.4 Inspections, Tests, and Records Appendix B: Facility Inspection Checklists	19 Appendix B
112.7(f)	3.5 Personnel, Training, & Discharge Prevention Procedures Appendix D: Discharge Notification	20 Appendix D
112.7(g)	Security – N/A (does not apply to production facilities)	N/A
112.7(h)	Loading/Unloading Rack – N/A (no rack at this facility)	N/A
112.7(i)	3.4.3 Brittle Fracture Evaluation – N/A (no field-erected above-ground tank at this facility)	19
112.7(j)	1.6 Conformance with Applicable State and Local Requirements	12
112.9(b)	3.2.1 Oil Production Facility Drainage Appendix C: Record of Dike Drainage	17 Appendix C
112.9(c)(1)	1.5.1 Production Equipment	11
112.9(c)(2)	3.2.2 Secondary Containment for Bulk Storage Containers	17
112.9(c)(3)	3.4 Inspections, Tests, and Records Appendix B: Monthly Inspection Report	19 Appendix B
112.9(c)(4)	3.3.1 Bulk Storage Containers Overflow Prevention	18
112.9(d)(1)	3.3.2 Transfer Operations and Saltwater Disposal System	18
112.9(d)(2)	3.3.2 Transfer Operations and Saltwater Disposal System	18
112.9(d)(3)	3.4.4 Flowline Maintenance Program	20

*Only relevant rule provisions are indicated. For a complete list of SPCC requirements, refer to the full text of 40 CFR part 112.

Introduction

The purpose of this Spill Prevention Control and Countermeasure (SPCC) Plan is to describe measures implemented by Kaiser-Francis Oil Company "KFOC" to prevent oil discharges from occurring, and to prepare KFOC to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge from the South Bell Lake Unit Pad #4 production facility. This SPCC Plan has been prepared and implemented in accordance with the SPCC requirements contained in 40 CFR part 112.

In addition to fulfilling requirements of 40 CFR 112, this SPCC Plan is used as a reference for oil storage information and testing records, as a tool to communicate practices on preventing and responding to discharges with KFOC employees and contractors, as a guide on facility inspections, and as a resource during emergency response.

Management Approval

40 CFR 112.7

Kaiser-Francis Oil Company ("KFOC") is committed to maintaining the highest standards for preventing discharges of oil to navigable waters and the environment through the implementation of this SPCC Plan. This SPCC Plan has the full approval of KFOC management. KFOC's management has committed the necessary resources to implement the measures described in this Plan.

The Production Superintendent is the Designated Person Accountable for Oil Spill Prevention at this KFOC facility and has the authority to commit the necessary resources to implement the Plan as described.

Authorized Facility Representative: David Zerger

Signature: _____
Title: Operations Engineer

Date: _____

Professional Engineer Certification

40 CFR 112.3(d)

The undersigned Registered Professional Engineer is familiar with the requirements of Part 112 of Title 40 of the *Code of Federal Regulations* (40 CFR part 112) and has visited and examined the facility, or has supervised examination of the facility by appropriately qualified personnel. The undersigned Registered Professional Engineer attests that this Spill Prevention, Control and Countermeasure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR part 112; that procedures for required inspections have been established; and that this Plan is adequate for the facility. [112.3(d)]

This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR part 112.

_____
Signature

_____
Date

Charles W. Lock
Name of Professional Engineer

16241 - OK
Registration Number/Issuing State

Plan Review
40 CFR 112.5

In accordance with 40 CFR 112.5, Kaiser-Francis Oil Company periodically reviews and evaluates this SPCC Plan for any change in the facility design, construction, operation, or maintenance that materially affects the facility's potential for an oil discharge. KFOC reviews this SPCC Plan at least once every five years. Revisions to the Plan, if any are needed, are made within six months of this five-year review. KFOC will implement any amendment as soon as possible, but not later than six months following preparation of any amendment. A registered PE certifies any technical amendment to the Plan, as described above, in accordance with 40 CFR (112.3(3).

Table 0-1: Record of Plan Review and Changes

MANAGEMENT REVIEW

- Management will review this SPCC Plan at least each five (5) years and document the review on the form below.

Review/ Amend Date	Signature	Amend Plan (will/will not)	Description of Review Amendment	Affected Page(s)	P.E. Certification (Y/N)

Location of SPCC Plan
40 CFR 112.3(e)

In accordance with 40 CFR 112.3(e), and because the facility is normally unmanned, a complete copy of this SPCC Plan is maintained at the Corporate Office, which is located at 6733 S. Yale Avenue, Tulsa, OK.

Certification of Substantial Harm Determination

40 CFR 112.20(e), 40 CFR 112.20(f)(1)

Facility Name: **Kaiser-Francis Oil Company, South Bell Lake Unit Pad #4**

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes ☐ No ■

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?
Yes ☐ No ■

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
Yes ☐ No ■

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula) such that a discharge from the facility would shut down a public drinking water intake?
Yes ☐ No ■

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
Yes ☐ No ■

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

_____	EHS Manager
Signature	Title
Charles W. Lock	_____
Name (type or print)	Date

PART I – GENERAL FACILITY INFORMATION

40 CFR 112.7(a)(3)

1.1 Company Information

Name of Facility:	Kaiser-Francis Oil Company South Bell Lake Unit Pad #4
Type	Onshore oil production facility
Location	6-24S-34E Lea County, NM
Name and Address of Owner	Kaiser-Francis Oil Company *Ardmore District Office* Box 197 (Dillard Route) Wilson, OK 73643 *Corporate Office* 6733 S. Yale Avenue Tulsa, OK 74133

1.2 Contact Information

The designated person accountable for overall oil spill prevention and response at the facility, also referred to as the "Response Coordinator" (RC), is the Production Superintendent, Bill Wilkinson. 24 hour contact information is provided in Table 1-1.

The pumper/gauger provides operation support activities for KFOC, including performing informal daily examinations of the facility equipment, as described in Section 3.4 of this SPCC Plan. The pumper regularly visits the facility to record production levels and perform other maintenance/inspection activities as requested by the Kaiser-Francis Operations Engineer. Pumper phone numbers are included in Table 1-1.

Table 1-1: Facility contact information

Name	Title	Telephone
Larry Motes	Pumper	432/238-6996 (cell)
Jeff Pevehouse	Pumper	575/361-2965 (cell)
Bill Wilkinson	Production Superintendent Kaiser-Francis Oil Company Ardmore District	580/668-2335 (office) 580/221-4637 (cell)
David Zerger	Operations Engineer Kaiser-Francis Oil Company Tulsa, OK	918/491-4350 (office)
Charles Lock	EHS Manager Kaiser-Francis Oil Company Tulsa, OK	918/491-4337 (office) 918/671-6510 (cell)

1.3 Facility Layout Diagram

Appendix A, at the end of this Plan, shows a general site plan for the facility. The site plan shows the site topography and the location of the facility relative to waterways, roads, and inhabited areas. Appendix A will also include a detailed facility diagram that shows the wells, tank battery, and transfer areas for the facility. The diagram will show the location, capacity, and contents of all oil storage containers greater than 55 gallons in capacity.

1.4 Facility Location and Operations

KFOC operates the South Bell Lake Unit Pad #8 production facility; directions to the lease are as follows:

From Jal, NM go West on State Hwy 128 for approximately 21 miles to CR E21 (Delaware Basin), turn right and go North on CR E21 approximately 2.6 miles to Bell Lake Road. Turn Right and go East on Bell Lake Road approximately 0.6 miles to proposed location

The production facility is generally unmanned. Field operations personnel from KFOC, or pumpers acting as contractors to KFOC visit the facility daily to record production rates and ensure the proper functioning of wellhead equipment and pumpjacks, storage tanks, flowlines, and separation vessels. This includes performing equipment inspection and maintenance as needed.

The produced water tanks may contain an oil/produced water mixture making it subject to 40 CFR part 112 and is covered by this SPCC Plan.

1.5 Oil Storage and Handling

1.5.1 Production Equipment

All oil storage tanks are shop-built and meet the American Petroleum Institute (API) tank construction standard. Their design and construction are compatible with the oil they contain and the temperature and pressure conditions of storage.

Lubricating oil and other substances, such as solvents and chemicals for downhole treatment, are also sometimes stored at the facility, but in quantities below the 55-gallon threshold for SPCC applicability. Table 1-2 lists all oil containers present at the facility with capacity of 55 gallons or more.

Table 1-2: Characteristics of oil containers

ID	Construction	Primary Content	Capacity (barrels)	Capacity (gallons)
		TOTAL		

1.5.2 Transfer Activities

Wells produce crude oil, produced water (saltwater), and natural gas. Well liquids are then routed via steel flowlines to a separation vessel. Produced saltwater is routed from the separator to the saltwater storage tank. The crude oil is sent to the oil storage tanks.

Crude oil from the lease is purchased by a crude oil purchaser and transported from the facility by the purchaser's tanker truck. Tanker trucks come to the facility to transfer crude oil and produced water, but do not remain at the facility. Sorbent materials in conjunction with drip pans are used to contain spills. All transfer operations are attended by the trucker and meet the minimum requirements of the US Department of Transportation Hazardous Materials Regulations.

1.6 Conformance w/Applicable State and Local Requirements [112.7(j)]

The SPCC regulation of 40 CFR part 112 is more stringent than requirements from the state for this type of facility. This SPCC Plan was written to conform to 40 CFR part 112 requirements. The facility thereby conforms to general requirements for oil pollution facilities in the state. All discharge notifications are made in compliance with local, state, and federal requirements.

PART II. SPILL RESPONSE AND REPORTING
40 CFR 112.7

2.1 Discharge Discovery and Reporting [112.7(a)(3)]

Several individuals and organizations must be contacted in the event of an oil discharge. The Production Superintendent is responsible for ensuring that all required discharge notifications have been made. All discharges should be reported to the Production Superintendent. The summary table included in Appendix D to this SPCC Plan provides a list of agencies to be contacted under different circumstances. Discharges would typically be discovered during the inspections conducted at the facility in accordance with procedures set forth in Section 3.4.1 of this SPCC Plan, and on the checklist of Appendix B. The Form included in Appendix D of this Plan summarizes the information that must be provided when reporting a discharge, including contact lists and phone numbers.

2.1.1 Verbal Notification Requirements (Local, State, and Federal (40 CFR part 110))

For any discharge that reaches navigable waters, or threatens to reach navigable waters, *immediate* notification must be made to the National Response Center Hotline (800-424-8802) and to the Environmental Protection Agency.

In the event of a discharge that threatens to result in an emergency condition, facility field personnel must verbally notify the appropriate state agency immediately, and in no case later than *within one (1) hour* of the discovery of the discharge. An emergency condition is any condition that could reasonably be expected to endanger the health and safety of the public; cause significant adverse impact to the land, water, or air environment; or cause severe damage to property. This notification must be made regardless of the amount of the discharge.

In the event of a discharge that does not present an emergency situation, verbal notification must be made to the appropriate state agency *within twenty-four hours* of the discharge.

2.1.2 Written Notification Requirements (State and Federal (40 CFR part 112))

A written notification will be made to EPA for any single discharge of oil to a navigable water or adjoining shoreline waterway of more than 1,000 gallons, or for two discharges of 1 bbl (42 gallons) of oil to a waterway in any 12-month period. This written notification must be made within 60 days of the qualifying discharge, and a copy will be sent to the appropriate state agency in charge of oil production control activities. This reporting requirement is separate and in addition to reporting under 40 CFR part 110 discussed above.

2.1.3 Submission of SPCC Information

Whenever the facility experiences a discharge into navigable waters of more than 1,000 gallons, or two discharges of 42 gallons or more within a 12-month period, KFOC will provide information in writing to the EPA Region office within 60 days of a qualifying discharge as described above. The required information is described in Appendix D of this SPCC Plan.

2.2 Spill Mitigation Procedures [112.7(a)(5)]

The following is a summary of actions that must be taken in the event of a discharge. It summarizes the distribution of responsibilities among individuals and describes procedures to follow in the event of a discharge.

In the event of a discharge, KFOC or contract field personnel and the Production Superintendent shall be responsible for the following:

2.2.1 Shut off Ignition Sources

Field personnel must shut off all ignition sources, including motors, electrical circuits, and open flames. See Appendix E for more information about shut-off procedures.

2.2.2 Stop Oil Flow

Field personnel should determine the source of the discharge, and if safe to do so, immediately shut off the source of the discharge. Shut in the well(s) if necessary.

2.2.3 Stop Spread of Oil and Call the Production Superintendent

If safe to do so, field personnel must use resources available at the facility to stop the spilled material from spreading. Measures that may be implemented, depending on the location and size of the discharge, include placing sorbent material or other barriers in the path of the discharge (e.g., sand bags), or constructing earthen berms or trenches.

In the event of a significant discharge, field personnel must immediately contact the Production Superintendent, who may obtain assistance from authorized company contractors and direct the response and cleanup activities. Should a discharge reach navigable waters, only physical response and countermeasures should be employed, such as the construction of underflow dams, installation of hard boom and sorbent boom, use of sorbent pads, and use of vacuum trucks to recover oil and oily water from the water. If water flow is low, construction of any underflow dam downstream and ahead of the spill flow may be advantageous. Sorbent material and/or boom should be placed immediately downstream of the dam to recover any sheen from the water. If water flow is normal, floating booms and sorbent boom will be deployed. Vacuum trucks will then be utilized to remove oil and oily water at dams and other access points. At no time shall any surfactants, dispersants, or other chemicals be used to remove oil when the spill is in water.

2.2.4 Gather Spill Information

The Production Superintendent will ensure that the *Discharge Notification Form* is filled out and that notifications have been made to the appropriate authorities. The Production Superintendent may ask for assistance in gathering the spill information on the *Spill Report Form* (Appendix D) of this Plan.

2.2.5 Notify Agencies Verbally

Some notifications must be completed *immediately* upon discovering the discharge. It is important to immediately contact the Production Superintendent so that timely notifications can be made. If the Production Superintendent is not available, or the Production Superintendent requests it, field personnel must designate one person to begin notification. Section 2.1 of this Plan describes the required notifications to government agencies. The Notification List is included in Appendix D of this SPCC Plan. The Production Superintendent must also ensure that written notifications, if needed, are submitted to the appropriate agencies.

2.3 Disposal Plan

The cleanup contractor will handle the disposal of any recovered product, contaminated soil, contaminated materials and equipment, decontamination solutions, sorbents, and spent chemicals collected during a response to a discharge incident.

PART III. SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PROVISIONS

40 CFR 112.7 and 112.9

3.1 Potential Discharge Volume and Direction of Flow [112.7(b)] and Containment [112.7(a)(3)(iii)]

- The potential spills sources at the Facility are summarized in the following table:

Container ID	Substance Stored *(Oil)*	Shell Capacity *(Bbls)*	Potential Failure	Rate of Flow *(Bbls/hr)*	Direction of Flow	Containment System(s)
Bulk Storage Containers						
Operational Equipment						
Truck or Rail Loading/Unloading Rack						
Other Potential Spill Sources						

- The material and construction of bulk storage containers are compatible with the material stored and conditions of storage such as pressure and temperature.
- All bulk storage container installations, if required, are constructed so that a means of secondary containment is provided for the entire capacity of the largest single container plus sufficient freeboard to contain precipitation.
- Diked areas are sufficiently impervious to contain discharged oil.

3.2 Containment and Diversionary Structures [112.7(c)]

The facility is configured to minimize the likelihood of a discharge reaching navigable waters. The following measures are provided:

- Secondary containment for the oil storage tanks and saltwater tanks (which may have small amounts of oil), is provided by an earthen berm or metal containment ring, as described in Section 3.2.2 below. The earthen berm is constructed of native soils and then covered with gravel.

3.2.1 Oil Production Facility Drainage [112.9(b)]

Facility drainage areas in the production/separation area, but outside containment berms, are visually examined by facility personnel on a daily basis during routine facility rounds to detect any discoloration or staining that would indicate the presence of oil from small leaks within the facility. Any accumulation of oil is promptly removed and disposed off site.

3.2.2 Secondary Containment for Bulk Storage Containers [112.9(c)(2)]

In order to further minimize the potential for a discharge to navigable waters, bulk storage containers such as all tank battery, separation, and treating equipment are placed inside a berm (fire wall). It provides secondary containment sufficient for the size of the largest tank, plus enough freeboard to contain precipitation. Per example below: This secondary containment capacity is equivalent to approximately 340 percent of the capacity of the largest tank within the containment area and exceeds the 10 percent freeboard recommended by API for firewalls around production tanks (API-12R1). An example of the berm capacity calculations is provided in Table 3-2.

EXAMPLE **Table 3-2: BERM CAPACITY CALCULATIONS**

BERM CAPACITY	
Berm height	3 ft
Berm dimensions	95 ft x 95 ft = 9025 ft^2
Tank footprint	7 tanks @ 22 ft dia. each = 7 x (π $22^2/4$) = 2660.93 ft^2
Net volume	3 ft x (9025-2660.93) = 19092.21 ft^3
Ratio to largest tank	19092.21 /5614.61= 340 %
CORRESPONDING AMOUNT OF FREEBOARD	
100% volume of largest tank	42,000 gal = 5614.61 ft^3
Net area	9025 – 2660.93 = 6364.07 ft^2
Minimum berm height for 100% of tank volume	5614.61 / 6364.07 ft = .88 ft
Freeboard	3 - .88 = 2.12 ft

Facility personnel inspect the berm daily for the presence of oil. The sides of the earthen berms are capped with gravel to minimize erosion.

3.2.3 Practicability of Secondary Containment [112.7(d)]

Flowlines adjacent to the production equipment and storage tanks are located within the berm, and therefore have secondary containment. Flowlines that go from the wells to the production equipment as well as the tank truck loading area are inspected daily by the pumper, as described in section 3.4 of this Plan. The installation of double-wall piping, berms, or other permanent structures (e.g., remote impoundment) around flowlines and tank truck loading area are impracticable at this facility due to the long distances involved and physical and road/fenceline right-of-way constraints. Sorbent materials in conjunction with drip pans provide adequate secondary containment for equipment and piping outside of the berm. Therefore, sorbent materials will be used when necessary.

3.3 Other Spill Prevention Measures

3.3.1 Bulk Storage Containers Overflow Prevention [112.9(c)(4)]

The tank battery is designed with a fail-safety system to prevent discharge, as follows:

- The capacity of the oil storage tanks is sufficient to ensure that oil storage is adequate in the event where facility personnel are unable to perform the daily visit to unload the tanks or the pumper is delayed in stopping production. The oil tanks are sized to provide sufficient storage for at least two days.
- Where applicable when multiple oil tanks are present the tanks are connected with overflow equalizing lines to ensure the full tank can overflow to an adjacent tank.

3.3.2 Transfer Operations and Saltwater Disposal System [112.9(d)]

Ali aboveground valves and piping associated with transfer operations are inspected daily by the pumper and/or truck driver, as described in Section 3.4 of this Plan. The inspection procedure includes observing flange joints, valve glands and bodies, drip pans, and pipe supports.

3.4 Inspections, Tests, and Records [112.7(e)]

This Plan outlines procedures for inspecting the facility equipment in accordance with SPCC requirements. Records of inspections performed as described in this Plan and signed by the appropriate supervisor are maintained at the Tulsa Corporate Office for a minimum of three years. The reports include a description of the inspection procedure, date of inspection and the inspector's signature.

Each container is inspected monthly by field operation personnel as described in this Plan section and following the checklist provided in Appendix B of this SPCC Plan. The inspection is aimed at identifying signs of deterioration and maintenance needs.

The inspection program is comprised of informal daily examinations, monthly scheduled inspections, and periodic condition inspections. Additional inspections and/or examinations are performed whenever an operation alert, malfunction, shell or deck leak, or potential bottom leak is reported following a scheduled examination. Written examination/inspection procedures and monthly examination/inspection reports are signed by the field inspector and are maintained at the corporate office for a period of at least three years.

3.4.1 Daily Examinations

The facility is visited daily by field operations personnel. The daily visual examination consists of a walk through of the tank battery and around the well. Field operations personnel check the wells and production equipment for leaks and proper operation. They examine all aboveground valves, polished rod stuffing boxes, wellheads, fittings, gauges, and flowline piping at the wellhead. Personnel inspect pumps to verify proper function and check for damage and leakage. They look for accumulation of water within the tank battery berms. The storage tanks are gauged every day. A daily production report is maintained. All malfunctions, improper operation of equipment, evidence of leakage, stained or discolored soil, etc. are logged and communicated to the KFOC Production Superintendent.

3.4.2 Monthly Reports

Leases and equipment are inspected daily. Any problems with the lease or equipment are recorded on the Monthly Inspection Report (Appendix B) and submitted with the gauge report for each month.

3.4.3 Brittle Fracture Evaluation [112.7(i)]

At the present time, none of the bulk storage containers at this site are field-erected, and therefore no brittle fracture evaluation is required.

3.4.4 Flowline Maintenance Program [112.9(d)(3)]

The facility is relying on sorbent materials to address discharges from flowlines. The flowline maintenance program is specifically implemented to maintain the integrity of the primary container (in this case piping) to minimize releases of oil from this part of the production facility. The facility's gathering lines and flowlines are inspected for leaks at connections and on each joint, corrosion (pitting, flaking), and maintained to minimize the potential for a discharge.

3.5 Personnel Training, and Discharge Prevention Procedures [112.7(f)]

The Production Superintendent has been designated as the point of contact for all oil discharge prevention and response at this facility.

All KFOC field personnel receive training on proper handling of oil products and procedures to respond to an oil discharge. The training ensures that all facility personnel understand the procedures described in the SPCC Plan and are informed of the requirements under applicable pollution control laws, rules and regulations. The training also covers risks associated with potential exposure to hydrogen sulfide (H2S) gas.

KFOC ensures that all contractor personnel are familiar with the facility operations, and spill prevention and control procedures described in this Plan.

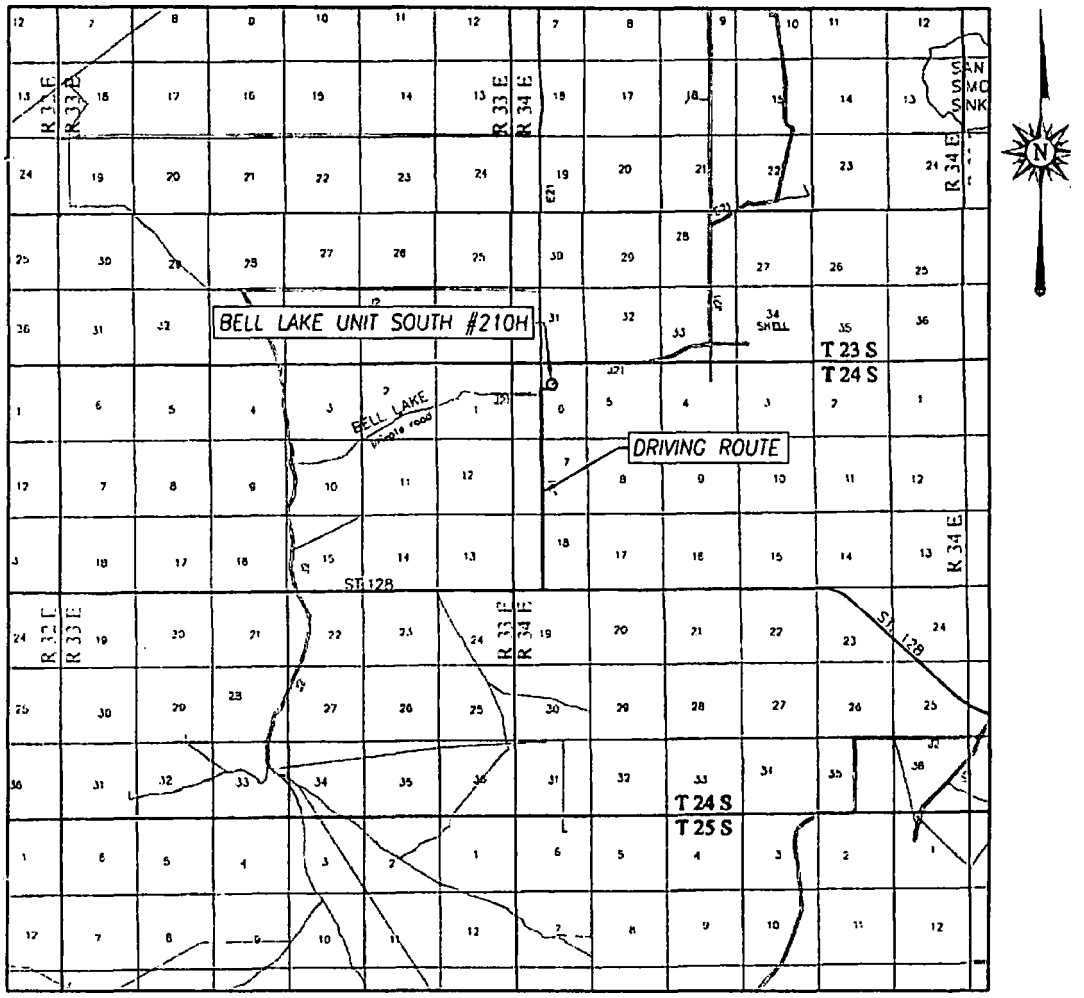
KFOC management holds briefings with company field operations personnel at least once a year, as described below.

3.5.1 Spill Prevention Briefing

The Safety & Environmental Coordinator conducts Spill Prevention Briefings annually to ensure adequate understanding and effective implementation of this SPCC Plan. These briefings highlight and describe known events or failures, malfunctioning components, and recently developed precautionary measures. The briefings are conducted in conjunction with the company safety meetings. Sign-in sheets, which include the topics of discussion at each meeting, are maintained in the Safety Department at KFOC's Corporate Office. The scheduled annual briefing includes a review of KFOC policies and procedures for SPCC inspections and spill prevention procedures; spill reporting procedures; spill response; and recovery, disposal, and treatment of spilled material.

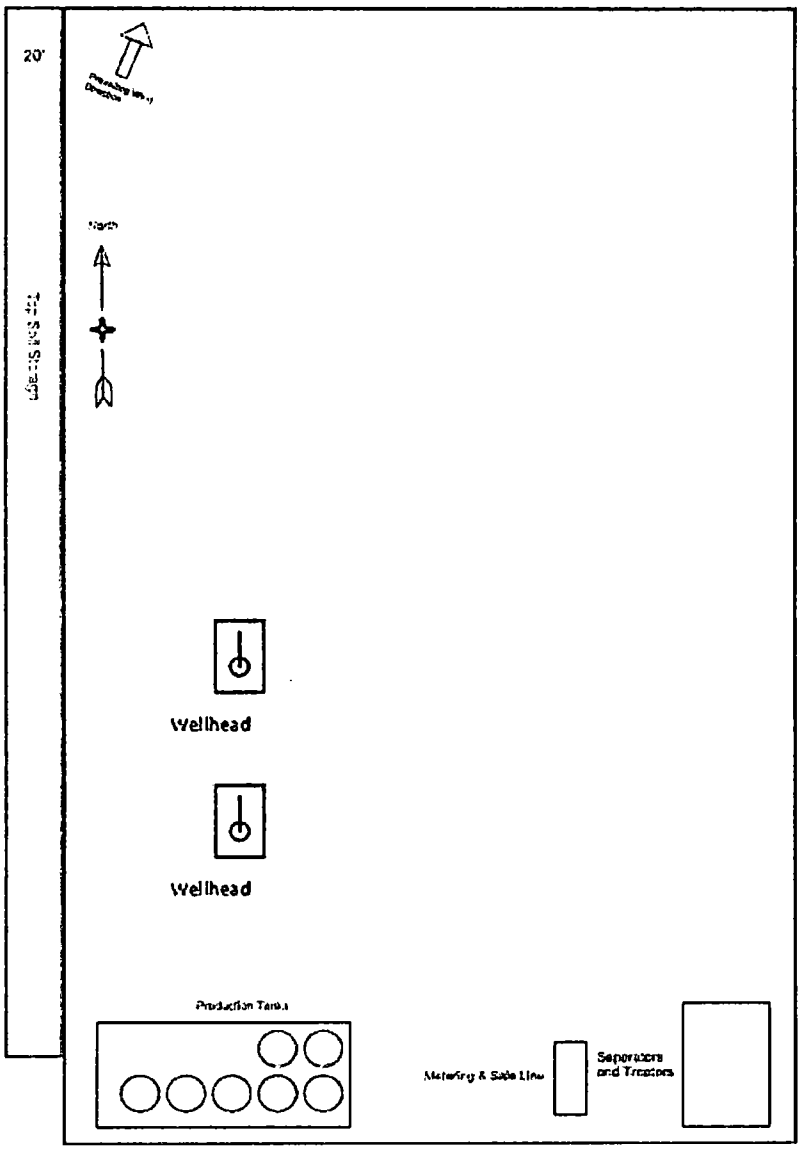
Personnel are instructed in applicable federal, state, and local pollution laws, rules, and regulations. Facility operators and other personnel have an opportunity during the briefings to share recommendations concerning health, safety, and environmental issues encountered during facility operations.

APPENDIX A: Facility Diagrams/ Vicinity / Road



SCALE: 1" = 2 MILES

DRIVING ROUTE: SEE TOPOGRAPHICAL AND ACCESS ROAD MAP



General Production Site Layout

400' x 650'

well: Bell Lake Unit South 210H

Planned equipment – 2-1000 bbl water tanks and 5-1000 bbl oil tanks, a temporary 6X20 horizontal 3-phase sep., a 48" x 10' 3-phase sep., a 8 X 20' heater treater and a 48" X 10' 2-phase sep.

APPENDIX B: Monthly Inspection Report

A record of the completed checklists, with signatures, is maintained at the Tulsa KFOC office. Inspections are conducted using the following checklist in accordance with section 3.4 of this SPCC plan.

SPCC Inspection Checklist			
Pumper:	**District:**		
Facility ID:			
Storage Areas and Separation Equipment	**Y**	**N**	**Description & Comments (Note tank/equipment ID)**
Tank surfaces showing signs of leakage			
Tanks showing signs of damage, rust or deterioration			
Damaged bolts, rivets or seams			
Deteriorated or buckled aboveground tank supports			
Eroded or settled Aboveground tank foundations			
Leaking gaskets			
Level gauges or alarms that are inoperative			
Obstructed vents			
Thief hatch and vent valve does not seal air tight			
Damaged or missing nets on open top vessels			
Containment berm showing discoloration or stains			
Berm that is breached or eroded or has vegetation			
Trash or vegetation inside of berm area			
Missing equipment guards, labels or signs			
Piping/Flowlines and Related Equipment			
Leaking valve seals or gaskets			
Damaged or deteriorated Pipelines or supports			
Buried pipelines that are exposed			
Visible line leaks			
Transfer Equipment			
Damaged or deteriorated loading/unloading lines			
Connections are not capped or blank-flanged			
Secondary Containment is damaged or stained			
Field drainage systems			
Accumulation of oil in drainage ditches or road ditches			
Accumulation of oil in oil traps, sumps, or skimmers			
If yes, you must promptly remove any accumulations of oil			
Response Kit Inventory:			
Discharge response material is missing or damaged or needs replaced			
Signature:	**Date:**		

Monthly Inspection Report

A detailed description of what to inspect is provided on page one of the Checklist

District: _____ Pumper: _____

Facility ID	Problems with Storage tanks & Separation Equipment		Problems with Piping/Flowlines & Related Equipment		Problems with Transfer Equipment		Description & Comments (Note tank/equipment ID)
	Y	N	Y	N	Y	N	

Please make sure all open top vessels are properly netted and the net is not damaged or deteriorated.

Further descriptions and comments, if needed, should be provided on the empty space at the bottom of this page or on a separate sheet of paper and attached to this page. Any item answered "Yes" needs to be promptly reported, repaired, or replaced as it may result in noncompliance with regulatory requirements.

Note: Leases and equipment should be inspected daily. Record any problems on this form and submit it monthly with your gauge report.

Date:_____ Signature:_____

APPENDIX C: Record of Dike Drainage

This record must be completed when rainwater from diked areas is drained into a storm drain or into an open watercourse, lake, or pond, and bypasses the water treatment system. The facility is not equipped with a manual valve of open-and–closed design. All water accumulated within the berm is closely inspected by field operations personnel (who are the persons providing "responsible supervision") to ensure that no free oil is present (i.e. there is no sheen or discoloration upon the surface, or a sludge or emulsion deposit beneath the surface of the water). Free oil is promptly removed and disposed of in accordance with waste regulations.

Date	Area	Presence of oil (y/n)	Time started	Time Finished	Signature

APPENDIX D: Discharge Notification Procedures

- **WHEN REPORTING A DISCHARGE PROVIDE THE FOLLOWING INFORMATION**:
  Exact location;
  Material involved;
  Quantity involved;
  Topographical and environmental conditions;
  Circumstances that may hinder response; and
  Injuries, if any.

- **WARN PERSONNEL.** All personnel on facility will be verbally warned of the oil spill. If an explosion or fire occurs, evacuate personnel from the area until the danger is over.

- **REQUEST ADDITIONAL RESOURCES.** If oil has reached water or could reach water, facility personnel will decide whether the available onsite containment materials are sufficient to contain the spill. If it is estimated that additional materials will be necessary, an Oil Spill Removal Organization will be contacted at this time. An estimate of the amount of oil released shall be relayed to the Oil Spill Removal Organization.

- **CONTAIN THE SPILLED OIL.** Facility personnel will attempt to prevent the spilled oil from spreading. Available containment material will be deployed.

- **GATHER INFORMATION.** Information on the spill will be collected and the "Spill Notification Form" will be completed.

- **MAKE NOTIFICATIONS.** Facility personnel will contact Company Management. Information on the spill along with actions taken will be relayed to Company Management and Company Management will make all necessary notifications. If Company Management is not available facility personnel will make the notifications.

- **CLEAN UP THE SPILLED OIL.** Once the spill is contained to the maximum extent possible, available supplies will be used to proceed with cleanup of the spill. An Oil Spill Removal Organization will be mobilized as required.

- **SPILL RESPONSE.** If immediate cleanup is not considered to be an appropriate remedial measure, the operator will notify the proper agency and give an alternative remedial plan and will promptly implement said plan upon approval.

Spill Report Form

Description of Discharge		
Date/time	Release date: Release time: Duration:	Discovery date: Discovery time:
Reporting Individual	Name:	Tel. #:
Location of discharge (Quarter, Block, Section, Survey, etc.)	County: State:	Description:
Surface Owner	Description of area: ❑ Farming ❑ Grazing ❑ Urban	
Equipment Sources Product	❑ Piping ❑ Flowline ❑ Well ❑ Stock, flare ❑ Unknown ❑ Crude oil ❑ Saltwater ❑ Other*	Description: Equipment ID: *Description other:
Appearance and description of area	❑ Sandy ❑ Sandy Loam ❑ Clay ❑ Rocky ❑ Wet ❑ Dry ❑ Snow	
Environmental conditions	Wind Direction: Wind Speed:	Rainfall: Current:
Site Drainage direction Distance to nearest navigable water		

Impacts		
Quantity	Released:	Recovered:
Receiving Medium	❑ Water** ❑ Land ❑ Other (describe):	❑ Release confined to company property. ❑ Release outside company property ** if water, indicate extent and body of water:
Describe Circumstances of the Release		
Assessment of impacts and remedial actions		
Disposal method for recovered material		
Action taken to prevent incident from reoccurring		
Safety Issues	❑ Fire ❑ Explosion ❑ Injuries ❑ Fatalities ❑ Evacuation ❑ *Other	*Description of other:

Notifications		
Agency	Name	Date/time reported & Comments
Company Spill Response Coordinator	Charles W. Lock (918)491-4337	
National Response Center 1-800-424-8802		
OSRO/cleanup contractor		

Contact List and Phone Numbers

Contact information for reporting a discharge to the National Response Center and other federal, state, and local agencies, and to other affected parties, is provided below. Note that any discharge to water must be reported immediately to the National Response Center.

The following is a contact list and phone number reference for the Facility:

Contacts	Primary	Alternate
Designated Person Accountable For Oil Spill Prevention and/or Facility Response Coordinator		
Name/Title: Larry Motes/Pumper	432/238-6996	
Name/Title: Jeff Pevehouse/Pumper	575/361-2965	
Name/Title: Jeremy Parent/Prod. Foreman	580/504-2593	580/668-2334
Name/Title: Bill Wilkinson/Prod. Superintendent	580/221-4637	
Name/Title: David Zerger/Operations Engineer	918/491-4350	918/671-6510
Name/Title: Charles Lock/EHS Manager	918/491-4337	

Contact List and Phone Numbers

The following is a contact list and phone number reference for the Facility:

Contacts	Primary	Alternate (Cell)
Cleanup Contractors (as necessary):		
Dozers – B&R Trucking – Carlsbad	575/236-6012	
Vacuum & Tank Trucks – Parker Energy – Eunice	575/394-0444	
Misc. Trucks & Labor – J&A Oilfield Svcs.	575/208-9653	
Pump Trucks – Parker Energy – Eunice	575/394-0444	
Frac Tanks – EOS – Hobbs	575/397-0100	
Welder – Custom Welding – Hobbs	575/393-5904	
Federal, State and local agencies (as necessary)		
National Response Center	(800) 424-8802	(202) 267-2675
NMOCC – Hobbs	505/393-6161	
EPA Region 6	866/372-7745	
OSHA – Lubbock	806/472-7681	800/321-OSHA
Other contact references:		
Fire Fighting – Hobbs	575/397-9308	
Police – Hobbs	575/397-9265	
Ambulance – Hobbs	575/397-9308	
Sheriff – Hobbs	575/393-2515	
Highway Patrol – Hobbs	575/392-5588	

APPENDIX E: Equipment Shut-off Procedures

Source	Action
Manifold, transfer pumps or hose failure	Shut in the well supplying oil to the tank battery if appropriate. Immediately close the header/manifold or appropriate valve(s). Shut off transfer pumps.
Tank overflow	Shut in the well supplying oil to the tank battery. Close header/manifold or appropriate valve(s).
Tank failure	Shut in the well supplying oil to the tank battery. Close inlet valve to the storage tanks.
Flowline rupture	Shut in the well supplying oil to the flowline. Immediately close the nearest valve to stop the flow of oil to the leaking section.
Flowline leak	Shut in the well supplying oil to the flowline. Immediately close the nearest valve to stop the flow of oil to the leaking section.
Explosion or fire	Immediately evacuate personnel from the area until the danger is over. Immediately shut in both wells if safe to do so. If possible, close all manifold valves. If the fire is small enough such that it is safe to do so, attempt to extinguish if extinguisher is available.
Equipment failure	Immediately close the nearest valve to stop the flow of oil into the leaking area.

APPENDIX F: Written Commitment of Manpower, Equipment, and Materials

In addition to implementing the preventive measures described in this Plan, Kaiser-Francis Oil Company will also:

In the event of a discharge:

- Make available trained field personnel to perform response actions
- Obtain assistance from additional employees from its main operations contractor.
- Collaborate with local, state, and federal authorities on response and cleanup operations.

Maintain all on-site oil spill control equipment described in this Plan and in the attached Oil Spill Contingency Plan.

Maintain all communications equipment in operating condition at all times.

Ensure that staging areas are accessible by field vehicles.

Review the adequacy of on-site and third party response capacity with pre-established response/cleanup contractors.

Maintain formal agreements/contracts with response and cleanup contractors who will provide assistance in responding to an oil discharge and/or completing cleanup.

AFMSS

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

PWD Data Report
04/11/2019

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

04/11/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: WYB000055

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: