

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMLC0061374A
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No. BELL LAKE / NMNM 068292X
2. Name of Operator KAISER FRANCIS OIL COMPANY [12361]		8. Lease Name and Well No. BELL LAKE UNIT SOUTH [316706] 413H
3a. Address 6733 S. Yale Ave., Tulsa, OK 74121	3b. Phone No. (include area code) (918) 491-0000	9. API Well No. 30-025-48212
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SENE / 2276 FNL / 487 FEL / LAT 32.247581 / LONG -103.502125 At proposed prod. zone SWSW / 330 FSL / 350 FWL / LAT 32.225737 / LONG -103.499364		10. Field and Pool, or Exploratory [98266] OJO CHISO/WOLFCAMP, SOUTHWEST
14. Distance in miles and direction from nearest town or post office* 20 miles		11. Sec., T, R, M. or Blk. and Survey or Area SEC 6/T24S/R34E/NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 364 feet	16. No of acres in lease 440	17. Spacing Unit dedicated to this well 480.0
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet	19. Proposed Depth 11852 feet / 20242 feet	20. BLM/BIA Bond No. in file FED: WYB000055
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3599 feet	22. Approximate date work will start* 03/01/2020	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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) MELANIE WILSON / Ph: (918) 491-0000	Date 11/06/2019
Title Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 11/23/2020
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field Office		

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

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

GCP Rec 12/08/2020

SL

(Continued on page 2)

APPROVED WITH CONDITIONS
Approval Date: 11/23/2020

KZ
12/20/2020

*(Instructions on page 2)

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

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

Additional Operator Remarks

Location of Well

0. SHL: SENE / 2276 FNL / 487 FEL / TWSP: 24S / RANGE: 34E / SECTION: 6 / LAT: 32.247581 / LONG: -103.502125 (TVD: 0 feet, MD: 0 feet)

PPP: NWSW / 2640 FSL / 350 FWL / TWSP: 24S / RANGE: 34E / SECTION: 8 / LAT: 32.232079 / LONG: -103.49926 (TVD: 11852 feet, MD: 17935 feet)

PPP: SWNW / 1320 FNL / 350 FWL / TWSP: 24S / RANGE: 34E / SECTION: 8 / LAT: 32.235707 / LONG: -103.499201 (TVD: 11852 feet, MD: 16615 feet)

PPP: NWSW / 2600 FSL / 470 FWL / TWSP: 24S / RANGE: 34E / SECTION: 5 / LAT: 32.246481 / LONG: -103.499026 (TVD: 11852 feet, MD: 12695 feet)

BHL: SWSW / 330 FSL / 350 FWL / TWSP: 24S / RANGE: 34E / SECTION: 8 / LAT: 32.225737 / LONG: -103.499364 (TVD: 11852 feet, MD: 20242 feet)

BLM Point of Contact

Name: Deborah Ham

Title: Legal Landlaw Examiner

Phone: (575) 234-5965

Email: dham@blm.gov

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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.

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

Application Data Report

11/24/2020

APD ID: 10400050652

Submission Date: 11/06/2019

Highlighted data
reflects the most
recent changes

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH

Well Number: 413H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400050652

Tie to previous NOS? N

Submission Date: 11/06/2019

BLM Office: CARLSBAD

User: Melanie Wilson

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: BELL LAKE

Keep application confidential? Y

Permitting Agent? YES

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: 413H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: OJO CHISO

Pool Name: WOLFCAMP,
SOUTHWEST

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

Operator Name: KAISER FRANCIS OIL COMPANY**Well Name:** BELL LAKE UNIT SOUTH**Well Number:** 413H**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** N**New surface disturbance?****Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:****Number:** 10

SOUTH BELL LAKE UNIT

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:** 30 FT**Distance to lease line:** 364 FT**Reservoir well spacing assigned acres Measurement:** 480 Acres**Well plat:** BLUS_413H_C102_20191105152908.pdf

BLUS_413H_Pymt_20191106095350.pdf

Well work start Date: 03/01/2020**Duration:** 40 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:** 6750**Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	2276	FNL	487	FEL	24S	34E	6	Aliquot SENE	32.247581	-103.502125	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	3599	0	0	N
KOP Leg #1	2276	FNL	487	FEL	24S	34E	6	Aliquot SENE	32.247581	-103.502125	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	-7503	11105	11102	N

Operator Name: KAISER FRANCIS OIL COMPANY**Well Name:** BELL LAKE UNIT SOUTH**Well Number:** 413H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-1	260 0	FSL	470	FW L	24S	34E	5	Aliquot NWS W	32.24648 1	- 103.4990 26	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 061374 A	- 825 3	126 95	118 52	Y
PPP Leg #1-2	132 0	FNL	350	FW L	24S	34E	8	Aliquot SWN W	32.23570 7	- 103.4992 01	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 100594	- 825 3	166 15	118 52	Y
PPP Leg #1-3	264 0	FSL	350	FW L	24S	34E	8	Aliquot NWS W	32.23207 9	- 103.4992 6	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 069109	- 825 3	179 35	118 52	Y
EXIT Leg #1	330	FSL	350	FW L	24S	34E	8	Aliquot SWS W	32.22573 7	- 103.4993 64	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 069109	- 825 3	202 42	118 52	Y
BHL Leg #1	330	FSL	350	FW L	24S	34E	8	Aliquot SWS W	32.22573 7	- 103.4993 64	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 069109	- 825 3	202 42	118 52	Y

Melanie Wilson

From: notification@pay.gov
Sent: Wednesday, November 6, 2019 9:52 AM
To: mjp1692@gmail.com
Subject: Pay.gov Payment Confirmation: BLM Oil and Gas Online Payment



An official email of the United States government



Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact BLM OC CBS Customer Service at (303) 236-6795 or BLM_OC_CBS_Customer_Service@blm.gov.

Application Name: BLM Oil and Gas Online Payment

Pay.gov Tracking ID: 26LBK0FK

Agency Tracking ID: 75878800624

Transaction Type: Sale

Transaction Date: 11/06/2019 11:52:16 AM EST

Account Holder Name: GEORGE B KAISER

Transaction Amount: \$10,230.00

Card Type: Visa

Card Number: *****0061

Company: Kaiser-Francis Oil Company

APD IDs: 10400050652

Lease Numbers: NMLC-0061374A

Well Numbers: 413H

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.

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.



Pay.gov is a program of the U.S. Department of the Treasury, Bureau of the Fiscal Service



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

Drilling Plan Data Report

11/24/2020

APD ID: 10400050652

Submission Date: 11/06/2019

Highlighted data
reflects the most
recent changes

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH

Well Number: 413H

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Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
580820	---	3599	0	0	OTHER : Surface	NONE	N
580821	RUSTLER	2227	1372	1372	SANDSTONE	NONE	N
580822	SALADO	1852	1747	1747	SALT	NONE	N
580823	TOP SALT	1527	2072	2072	SALT	NONE	N
580824	BASE OF SALT	-1448	5047	5047	SALT	NONE	N
580825	LAMAR	-1673	5272	5272	SANDSTONE	NATURAL GAS, OIL	N
580826	BELL CANYON	-1748	5347	5347	SANDSTONE	NATURAL GAS, OIL	N
580827	CHERRY CANYON	-2598	6197	6197	SANDSTONE	NATURAL GAS, OIL	N
580828	BRUSHY CANYON	-4048	7647	7647	SANDSTONE	NATURAL GAS, OIL	N
580829	BONE SPRING	-5173	8772	8772	LIMESTONE	NATURAL GAS, OIL	N
580830	AVALON SAND	-5443	9042	9042	SANDSTONE	NATURAL GAS, OIL	N
580831	BONE SPRING 1ST	-6323	9922	9922	SANDSTONE	NATURAL GAS, OIL	N
580838	BONE SPRING 2ND	-6853	10452	10452	SANDSTONE	NATURAL GAS, OIL	N
580842	BONE SPRING LIME	-7323	10922	10922	LIMESTONE	NATURAL GAS, OIL	N
580843	BONE SPRING 3RD	-7813	11412	11412	SANDSTONE	NATURAL GAS, OIL	N
580844	WOLFCAMP	-8053	11652	11652	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: KAISER FRANCIS OIL COMPANY**Well Name:** BELL LAKE UNIT SOUTH**Well Number:** 413H**Pressure Rating (PSI):** 5M**Rating Depth:** 13000

Equipment: A 5M system will be installed according to Onshore Order #2 consisting of an Annular Preventer, BOP with two rams, a blind ram and safety valves and appropriate handles located on the rig floor. 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 MultiBowl Wellhead

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_413H_Choke_Manifold_20191106092817.pdf

BOP Diagram Attachment:

BLUS_413H_Multi_Bowl_Wellhead_20191106092835.pdf

BLUS_413H_Flex_Hose_Data_20191106092835.pdf

BLUS_413H_BOP_20191106092836.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	14.75	10.75	NEW	API	N	0	1397	0	1397	3599	2202	1397	J-55	40.5	ST&C	2.4	4.8	DRY	7.4	DRY	11.1
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11104	0	11102		-7503	11104	HCP-110	29.7	LT&C	1.3	1.8	DRY	2.3	DRY	2.9
3	PRODUCTION	6.75	5.5	NEW	API	N	0	20242	0	11852		-8253	20242	P-110	20	OTHER - USS Eagle SFH	1.8	1.9	DRY	2.7	DRY	3.1

Casing Attachments

Operator Name: KAISER FRANCIS OIL COMPANY**Well Name:** BELL LAKE UNIT SOUTH**Well Number:** 413H**Casing Attachments**

Casing ID: 1 **String Type:** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**BLUS_413H_Csg_Assumptions_20191106093347.pdf

Casing ID: 2 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**BLUS_413H_Csg_Assumptions_20191106093207.pdf

Casing ID: 3 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**BLUS_413H_Prod_Csg_Specs_20191106093256.pdf

Section 4 - Cement

Operator Name: KAISER FRANCIS OIL COMPANY**Well Name:** BELL LAKE UNIT SOUTH**Well Number:** 413H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1397	673	1.7	13.5	1164	50	ExtendaCem	Poly E Flake

INTERMEDIATE	Lead		0	1110 4	840	2.7	11	2294	25	NeoCem	Extender
INTERMEDIATE	Tail		0	1110 4	573	1.2	15.6	686	25	Halcem	none
PRODUCTION	Lead		9000	2024 2	929	1.2	14.5	1135	15	Versacem	Halad

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 time.

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
1110 2	1185 2	OIL-BASED MUD	10	12							
1347	1110 2	OTHER : Diesel- Brine Emulsion	8.7	9							
0	1397	OTHER : Fresh Water	8.4	9							

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT SOUTH

Well Number: 413H

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:

DIRECTIONAL SURVEY, GAMMA RAY LOG, MUD LOG/GEOLOGIC LITHOLOGY LOG, MUD LOG/GEOLOGICAL LITHOLOGY LOG,

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7396

Anticipated Surface Pressure: 4788

Anticipated Bottom Hole Temperature(F): 199

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

BLUS_Pad_10_H2S_Plan_20191101153126.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

BLUS_413H_Directional_Plan_20191106093750.pdf

Other proposed operations facets description:

Gas Capture Plan attached

Other proposed operations facets attachment:

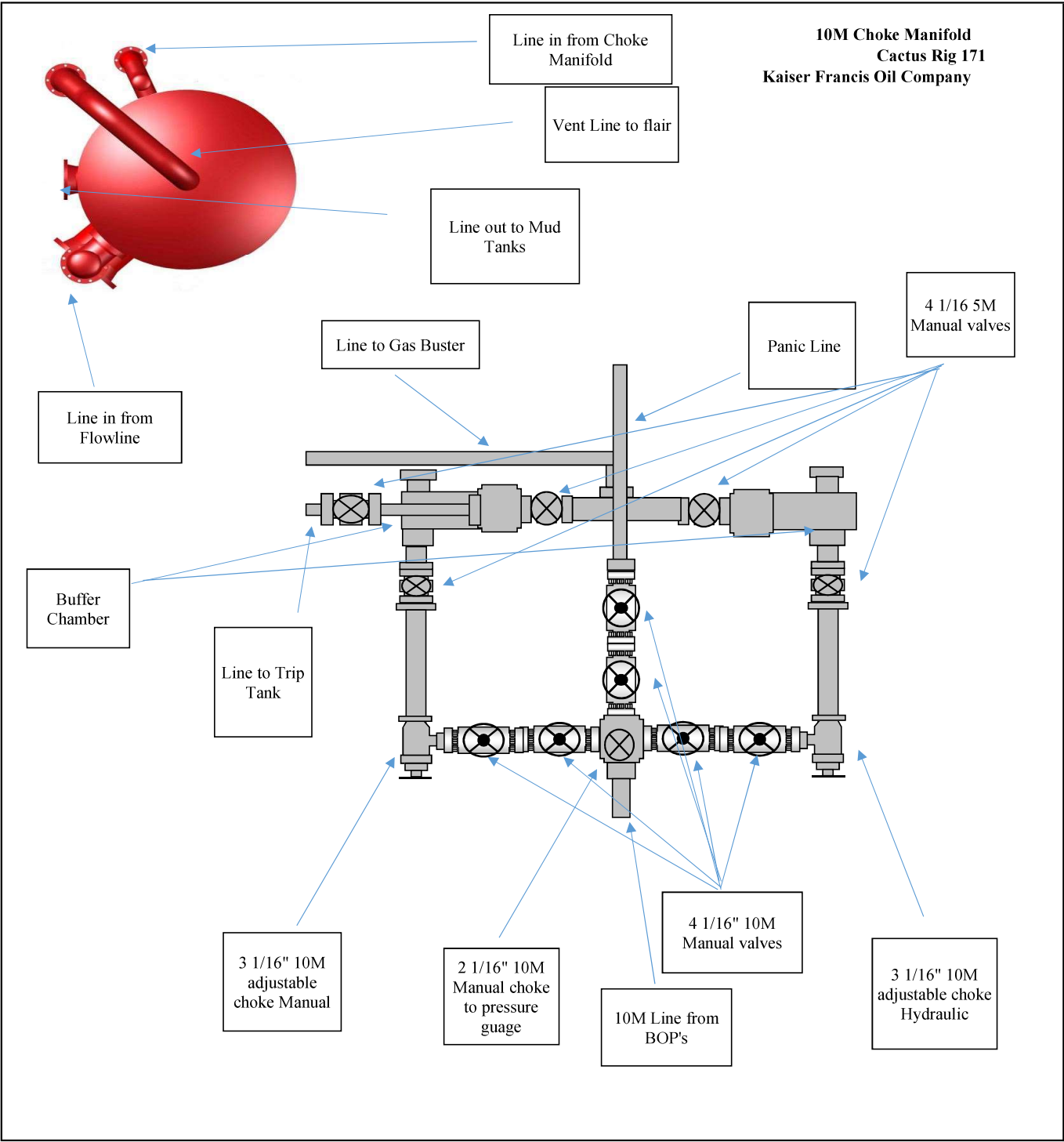
BLUS_Pad_10_GCP_20191101153200.pdf

Other Variance attachment:

BLUS_413H_Well_Control_Plan_20191106093817.pdf

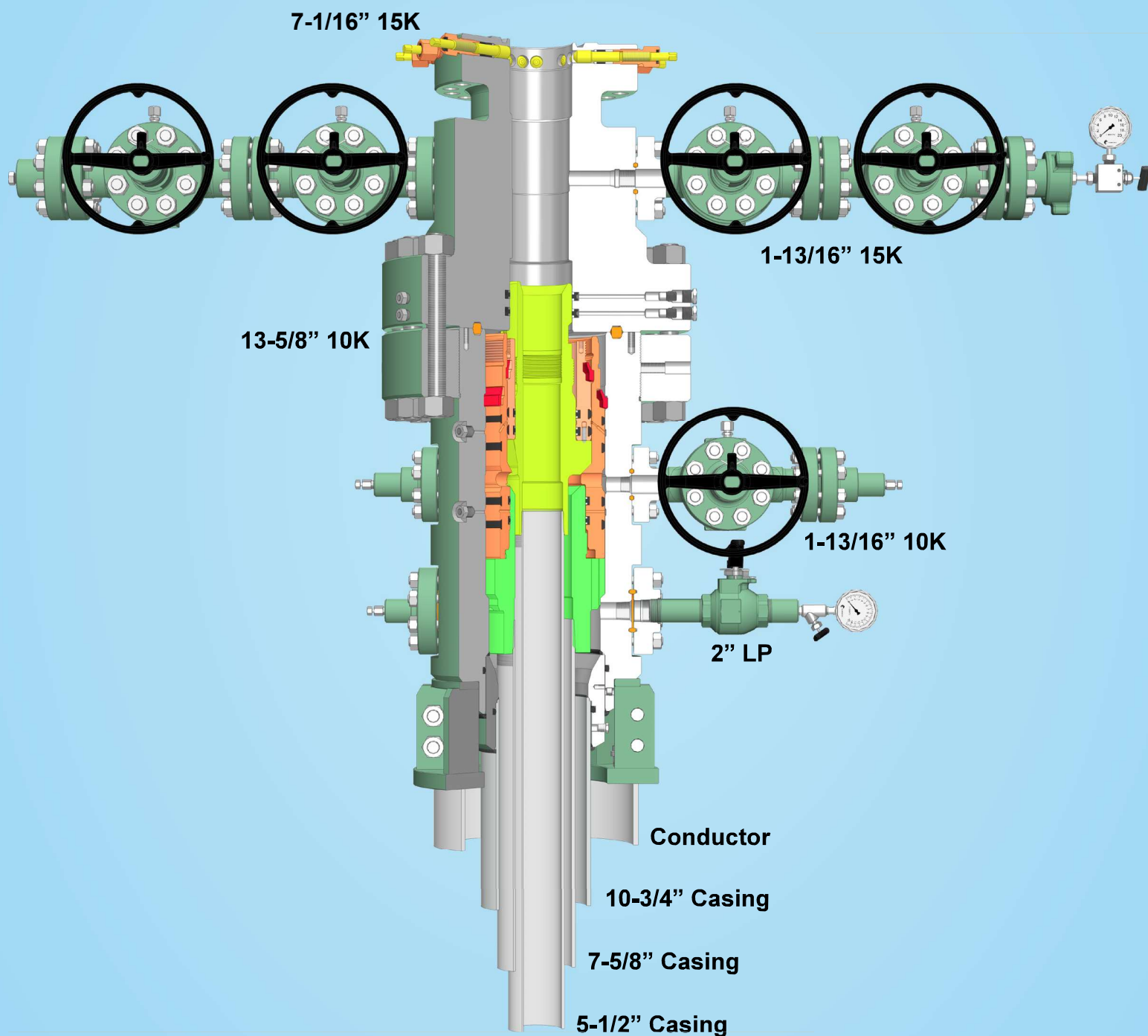
BLUS_413H_Multi_Bowl_Wellhead_20191106093818.pdf

BLUS_413H_Flex_Hose_Data_20191106093819.pdf





13-5/8" 10K MN-DS Wellhead



Kaiser-Francis Oil Company

1678248

NOTE: All dimensions on this drawing are estimated measurements and should be evaluated by engineering.

Kaiser-Francis Oil Company
Bell Lake Unit South 413H
Casing Assumptions

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)	Mud Type	Mud Weight Hole Control	Depth	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 (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
Conductor	120	20"				New		120															
Surface	1397	10-3/4"	40.5	J-55	STC	New	14-3/4"	1397	FW	8.4 - 9.0	1350'	32 - 34	NC	9	654	1580	3130	629000	420000	2.4	4.8	11.1	7.4
Intermediate	11104	7-5/8"	29.7	HCP110	LTC	New	9-7/8"	11102	Brine	8.7 - 9.0	11426'	28-29	NC	9	5196	6700	9460	940000	769000	1.3	1.8	2.9	2.3
Production	20242	5-1/2"	20	P110	USS Eagle SFH	New	6-3/4"	11852	OBM	10.0-12.0	19882'	55-70		12	7396	13150	14360	729000	629000	1.8	1.9	3.1	2.7

**KAISER-FRANCIS OIL COMPANY
HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN
FOR DRILLING/COMPLETION WORKOVER/FACILITY**

**Bell Lake Unit South
SECTION 1 -T24S-R33E
SECTION 6 -T24S-R34E
SECTION 5 -T24S-R34E**

LEA COUNTY, NM

This well/facility is not expected to have H₂S, but due to the sensitive location, the following is submitted as requested.

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Emergency Response Activation and General Responsibilities	3
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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 H₂S 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 H₂S RELEASE

The following procedures and responsibilities will be implemented on activation of the H₂S 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 (SO₂). 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 H₂S, 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)

	<u>OFFICE</u>	<u>MOBILE</u>
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 H₂S, 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:

$$X = [(1.589)(\text{concentration})(Q)]^{(0.6258)} \quad \text{(H}_2\text{S concentrations in decimal form)}$$

10,000 ppm +=1.+

1,000 ppm +=.1+

100 ppm +=.01+

10 ppm +=.001+

Calculation for the 500 ppm ROE:

$$X+[(0.4546)(\text{concentration})(Q)]^{(0.6258)}$$

EXAMPLE: If a well/facility has been determined to have 150 ppm H₂S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFPD then:

$$\text{ROE for 100 PPM} \quad X=[(1.589)(.0150)(200)]^{(0.6258)}$$

$$X=2.65'$$

$$\text{ROE for 500 PPM} \quad X=[(.4546)(.0150)(200)]^{(0.6258)}$$

$$X=1.2'$$

(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 H₂S safety, shall monitor with detection equipment the H₂S 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 H₂S, 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 H₂S AND SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	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 H₂S 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 H₂S 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.



Kaiser Francis

Bell Lake Unit South 413H
Bell Lake Unit South 413H
Bell Lake Unit South 413H
Bell Lake Unit South 413H

Plan: 191007 Bell Lake Unit South

Morcor Standard Plan

05 November, 2019

Morcor Engineering

Morcor Standard Plan



Company:	Kaiser Francis	Local Co-ordinate Reference:	Well Bell Lake Unit South 413H
Project:	Bell Lake Unit South 413H	TVD Reference:	WELL @ 3621.4usft (Original Well Elev)
Site:	Bell Lake Unit South 413H	MD Reference:	WELL @ 3621.4usft (Original Well Elev)
Well:	Bell Lake Unit South 413H	North Reference:	Grid
Wellbore:	Bell Lake Unit South 413H	Survey Calculation Method:	Minimum Curvature
Design:	191007 Bell Lake Unit South	Database:	EDM 5000.1 Single User Db

Project	Bell Lake Unit South 413H		
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 413H		
Site Position:		Northing:	454,798.09 usft
From:	Map	Easting:	798,311.22 usft
Position Uncertainty:	1.0 usft	Slot Radius:	17-1/2 "
		Latitude:	32° 14' 51.293 N
		Longitude:	103° 30' 7.651 W
		Grid Convergence:	0.44 °

Well	Bell Lake Unit South 413H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	1.0 usft		Wellhead Elevation:
			usft
			Latitude:
			32° 14' 51.293 N
			Longitude:
			103° 30' 7.651 W
			Ground Level:
			3,599.4 usft

Wellbore	Bell Lake Unit South 413H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/7/2019	6.52	60.01	47,805

Design	191007 Bell Lake Unit South			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	173.42

Survey Tool Program	Date	11/5/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,242.6	191007 Bell Lake Unit South (Bell Lake Un	MWD	MWD - Standard

Morcor Engineering
Morcor Standard Plan

Kaiser-Francis Oil Company

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Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	-3,621.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
100.0	0.00	0.00	100.0	-3,521.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
120.0	0.00	0.00	120.0	-3,501.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
20" Conductor										
200.0	0.00	0.00	200.0	-3,421.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
300.0	0.00	0.00	300.0	-3,321.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
400.0	0.00	0.00	400.0	-3,221.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
500.0	0.00	0.00	500.0	-3,121.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
600.0	0.00	0.00	600.0	-3,021.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
700.0	0.00	0.00	700.0	-2,921.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
800.0	0.00	0.00	800.0	-2,821.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
900.0	0.00	0.00	900.0	-2,721.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,000.0	0.00	0.00	1,000.0	-2,621.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,100.0	0.00	0.00	1,100.0	-2,521.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,200.0	0.00	0.00	1,200.0	-2,421.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,300.0	0.00	0.00	1,300.0	-2,321.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,372.0	0.00	0.00	1,372.0	-2,249.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Rustler										
1,397.0	0.00	0.00	1,397.0	-2,224.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
13 3/8" Surface Casing										
1,400.0	0.00	0.00	1,400.0	-2,221.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,500.0	0.00	0.00	1,500.0	-2,121.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,600.0	0.00	0.00	1,600.0	-2,021.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,700.0	0.00	0.00	1,700.0	-1,921.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,747.0	0.00	0.00	1,747.0	-1,874.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Salado										
1,800.0	0.00	0.00	1,800.0	-1,821.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1,900.0	0.00	0.00	1,900.0	-1,721.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00

Morcor Engineering
Morcor Standard Plan



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Well: Bell Lake Unit South 413H
Wellbore: Bell Lake Unit South 413H
Design: 191007 Bell Lake Unit South

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
2,000.0	0.00	0.00	2,000.0	-1,621.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,072.0	0.00	0.00	2,072.0	-1,549.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Top of Salt										
2,100.0	0.00	0.00	2,100.0	-1,521.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,200.0	0.00	0.00	2,200.0	-1,421.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,300.0	0.00	0.00	2,300.0	-1,321.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,400.0	0.00	0.00	2,400.0	-1,221.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,500.0	0.00	0.00	2,500.0	-1,121.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,600.0	0.00	0.00	2,600.0	-1,021.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,700.0	0.00	0.00	2,700.0	-921.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,800.0	0.00	0.00	2,800.0	-821.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2,900.0	0.00	0.00	2,900.0	-721.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,000.0	0.00	0.00	3,000.0	-621.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,100.0	0.00	0.00	3,100.0	-521.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,200.0	0.00	0.00	3,200.0	-421.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,300.0	0.00	0.00	3,300.0	-321.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,400.0	0.00	0.00	3,400.0	-221.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,500.0	0.00	0.00	3,500.0	-121.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,600.0	0.00	0.00	3,600.0	-21.4	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,700.0	0.00	0.00	3,700.0	78.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,800.0	0.00	0.00	3,800.0	178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3,900.0	0.00	0.00	3,900.0	278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,000.0	0.00	0.00	4,000.0	378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,100.0	0.00	0.00	4,100.0	478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,200.0	0.00	0.00	4,200.0	578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,300.0	0.00	0.00	4,300.0	678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,400.0	0.00	0.00	4,400.0	778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00

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4,500.0	0.00	0.00	4,500.0	878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,600.0	0.00	0.00	4,600.0	978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,700.0	0.00	0.00	4,700.0	1,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,800.0	0.00	0.00	4,800.0	1,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
4,900.0	0.00	0.00	4,900.0	1,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,000.0	0.00	0.00	5,000.0	1,378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,047.0	0.00	0.00	5,047.0	1,425.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Base of Salt										
5,100.0	0.00	0.00	5,100.0	1,478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,200.0	0.00	0.00	5,200.0	1,578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,272.0	0.00	0.00	5,272.0	1,650.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Lamar										
5,300.0	0.00	0.00	5,300.0	1,678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,322.0	0.00	0.00	5,322.0	1,700.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10 3/4" Intermediate Casing										
5,347.0	0.00	0.00	5,347.0	1,725.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Bell Canyon										
5,400.0	0.00	0.00	5,400.0	1,778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,500.0	0.00	0.00	5,500.0	1,878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,600.0	0.00	0.00	5,600.0	1,978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,700.0	0.00	0.00	5,700.0	2,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,800.0	0.00	0.00	5,800.0	2,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
5,900.0	0.00	0.00	5,900.0	2,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,000.0	0.00	0.00	6,000.0	2,378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,100.0	0.00	0.00	6,100.0	2,478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,197.0	0.00	0.00	6,197.0	2,575.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Cherry Canyon										
6,200.0	0.00	0.00	6,200.0	2,578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00

Morcor Engineering
Morcor Standard Plan



Company: Kaiser Francis
Project: Bell Lake Unit South 413H
Site: Bell Lake Unit South 413H
Well: Bell Lake Unit South 413H
Wellbore: Bell Lake Unit South 413H
Design: 191007 Bell Lake Unit South

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MD Reference: WELL @ 3621.4usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
6,300.0	0.00	0.00	6,300.0	2,678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,400.0	0.00	0.00	6,400.0	2,778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,500.0	0.00	0.00	6,500.0	2,878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,600.0	0.00	0.00	6,600.0	2,978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,700.0	0.00	0.00	6,700.0	3,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,800.0	0.00	0.00	6,800.0	3,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
6,900.0	0.00	0.00	6,900.0	3,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,000.0	0.00	0.00	7,000.0	3,378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,100.0	0.00	0.00	7,100.0	3,478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,200.0	0.00	0.00	7,200.0	3,578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,300.0	0.00	0.00	7,300.0	3,678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,400.0	0.00	0.00	7,400.0	3,778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,500.0	0.00	0.00	7,500.0	3,878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,600.0	0.00	0.00	7,600.0	3,978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,647.0	0.00	0.00	7,647.0	4,025.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Brushy Canyon										
7,700.0	0.00	0.00	7,700.0	4,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,800.0	0.00	0.00	7,800.0	4,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
7,900.0	0.00	0.00	7,900.0	4,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,000.0	0.00	0.00	8,000.0	4,378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,100.0	0.00	0.00	8,100.0	4,478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,200.0	0.00	0.00	8,200.0	4,578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,300.0	0.00	0.00	8,300.0	4,678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,400.0	0.00	0.00	8,400.0	4,778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,500.0	0.00	0.00	8,500.0	4,878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,600.0	0.00	0.00	8,600.0	4,978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,700.0	0.00	0.00	8,700.0	5,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00

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Morcor Standard Plan



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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
8,772.0	0.00	0.00	8,772.0	5,150.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Bone Spring										
8,800.0	0.00	0.00	8,800.0	5,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
8,900.0	0.00	0.00	8,900.0	5,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,000.0	0.00	0.00	9,000.0	5,378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,042.0	0.00	0.00	9,042.0	5,420.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
Avalon										
9,100.0	0.00	0.00	9,100.0	5,478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,200.0	0.00	0.00	9,200.0	5,578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,300.0	0.00	0.00	9,300.0	5,678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,400.0	0.00	0.00	9,400.0	5,778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,500.0	0.00	0.00	9,500.0	5,878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,600.0	0.00	0.00	9,600.0	5,978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,700.0	0.00	0.00	9,700.0	6,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,800.0	0.00	0.00	9,800.0	6,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,900.0	0.00	0.00	9,900.0	6,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
9,922.0	0.00	0.00	9,922.0	6,300.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
1st BS Sand										
10,000.0	0.00	0.00	10,000.0	6,378.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,100.0	0.00	0.00	10,100.0	6,478.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,200.0	0.00	0.00	10,200.0	6,578.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,300.0	0.00	0.00	10,300.0	6,678.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,400.0	0.00	0.00	10,400.0	6,778.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,452.0	0.00	0.00	10,452.0	6,830.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
2nd BS Sand										
10,500.0	0.00	0.00	10,500.0	6,878.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,600.0	0.00	0.00	10,600.0	6,978.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
10,700.0	0.00	0.00	10,700.0	7,078.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,800.0	0.00	0.00	10,800.0	7,178.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,900.0	0.00	0.00	10,900.0	7,278.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
10,922.0	0.00	0.00	10,922.0	7,300.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
3rd BS Lime										
10,935.0	0.00	0.00	10,935.0	7,313.6	0.0	0.0	798,311.22	454,798.09	0.00	0.00
11,000.0	6.50	63.33	10,999.9	7,378.5	1.7	3.3	798,314.51	454,799.74	-1.27	10.00
11,100.0	16.50	63.33	11,097.7	7,476.3	10.6	21.1	798,332.30	454,808.68	-8.11	10.00
11,104.5	16.94	63.33	11,102.0	7,480.6	11.2	22.2	798,333.45	454,809.26	-8.55	10.00
7 5/8" 2nd Intermediate Casing										
11,200.0	26.50	63.33	11,190.7	7,569.3	27.0	53.8	798,365.01	454,825.11	-20.68	10.00
11,300.0	36.50	63.33	11,275.8	7,654.4	50.4	100.4	798,411.63	454,848.53	-38.61	10.00
11,400.0	46.49	63.33	11,350.6	7,729.2	80.1	159.5	798,470.76	454,878.23	-61.34	10.00
11,498.5	56.35	63.33	11,412.0	7,790.6	114.7	228.3	798,539.52	454,912.77	-87.78	10.00
3rd BS Sand										
11,500.0	56.49	63.33	11,412.8	7,791.4	115.2	229.4	798,540.60	454,913.31	-88.20	10.00
11,556.5	62.14	63.33	11,441.6	7,820.2	137.0	272.8	798,584.00	454,935.11	-104.88	10.00
11,600.0	61.22	68.15	11,462.3	7,840.9	152.8	307.7	798,618.90	454,950.85	-116.52	9.99
11,700.0	59.77	79.51	11,511.6	7,890.2	177.0	391.0	798,702.26	454,975.08	-131.05	9.99
11,800.0	59.32	91.09	11,562.5	7,941.1	184.1	476.7	798,787.95	454,982.15	-128.26	9.99
11,900.0	59.90	102.65	11,613.2	7,991.8	173.8	562.1	798,873.37	454,971.84	-108.23	9.99
11,978.7	61.06	111.58	11,652.0	8,030.6	153.6	627.5	798,938.69	454,951.70	-80.74	9.99
Wolfcamp										
12,000.0	61.47	113.96	11,662.3	8,040.9	146.4	644.7	798,955.93	454,944.46	-71.57	9.99
12,100.0	63.94	124.85	11,708.2	8,086.8	102.7	721.9	799,033.12	454,900.84	-19.40	9.99
12,200.0	67.20	135.23	11,749.7	8,128.3	44.2	791.4	799,102.62	454,842.30	46.71	9.99
12,300.0	71.09	145.07	11,785.3	8,163.9	-27.5	851.1	799,162.32	454,770.62	124.76	9.99

Morcor Engineering
Morcor Standard Plan

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12,400.0	75.47	154.45	11,814.2	8,192.8	-110.1	899.2	799,210.40	454,687.96	212.38	9.99
12,500.0	80.21	163.44	11,835.3	8,213.9	-201.3	934.2	799,245.41	454,596.84	306.91	9.99
12,600.0	85.18	172.17	11,848.0	8,226.6	-298.1	955.1	799,266.29	454,500.00	405.50	9.99
12,695.0	90.00	180.35	11,852.0	8,230.6	-392.7	961.2	799,272.46	454,405.44	500.15	9.99
12,700.0	90.00	180.35	11,852.0	8,230.6	-397.7	961.2	799,272.43	454,400.40	505.15	0.00
12,800.0	90.00	180.35	11,852.0	8,230.6	-497.7	960.6	799,271.82	454,300.40	604.42	0.00
12,900.0	90.00	180.35	11,852.0	8,230.6	-597.7	960.0	799,271.21	454,200.40	703.70	0.00
13,000.0	90.00	180.35	11,852.0	8,230.6	-697.7	959.4	799,270.60	454,100.40	802.97	0.00
13,100.0	90.00	180.35	11,852.0	8,230.6	-797.7	958.8	799,270.00	454,000.41	902.24	0.00
13,200.0	90.00	180.35	11,852.0	8,230.6	-897.7	958.2	799,269.39	453,900.41	1,001.51	0.00
13,300.0	90.00	180.35	11,852.0	8,230.6	-997.7	957.6	799,268.78	453,800.41	1,100.78	0.00
13,400.0	90.00	180.35	11,852.0	8,230.6	-1,097.7	957.0	799,268.17	453,700.41	1,200.05	0.00
13,500.0	90.00	180.35	11,852.0	8,230.6	-1,197.7	956.3	799,267.56	453,600.41	1,299.32	0.00
13,600.0	90.00	180.35	11,852.0	8,230.6	-1,297.7	955.7	799,266.96	453,500.42	1,398.59	0.00
13,700.0	90.00	180.35	11,852.0	8,230.6	-1,397.7	955.1	799,266.35	453,400.42	1,497.86	0.00
13,800.0	90.00	180.35	11,852.0	8,230.6	-1,497.7	954.5	799,265.74	453,300.42	1,597.13	0.00
13,900.0	90.00	180.35	11,852.0	8,230.6	-1,597.7	953.9	799,265.13	453,200.42	1,696.40	0.00
14,000.0	90.00	180.35	11,852.0	8,230.6	-1,697.7	953.3	799,264.52	453,100.42	1,795.67	0.00
14,100.0	90.00	180.35	11,852.0	8,230.6	-1,797.7	952.7	799,263.92	453,000.42	1,894.94	0.00
14,200.0	90.00	180.35	11,852.0	8,230.6	-1,897.7	952.1	799,263.31	452,900.43	1,994.21	0.00
14,300.0	90.00	180.35	11,852.0	8,230.6	-1,997.7	951.5	799,262.70	452,800.43	2,093.48	0.00
14,400.0	90.00	180.35	11,852.0	8,230.6	-2,097.7	950.9	799,262.09	452,700.43	2,192.75	0.00
14,500.0	90.00	180.35	11,852.0	8,230.6	-2,197.7	950.3	799,261.48	452,600.43	2,292.03	0.00
14,600.0	90.00	180.35	11,852.0	8,230.6	-2,297.7	949.7	799,260.87	452,500.43	2,391.30	0.00
14,700.0	90.00	180.35	11,852.0	8,230.6	-2,397.7	949.0	799,260.27	452,400.44	2,490.57	0.00
14,800.0	90.00	180.35	11,852.0	8,230.6	-2,497.7	948.4	799,259.66	452,300.44	2,589.84	0.00
14,900.0	90.00	180.35	11,852.0	8,230.6	-2,597.7	947.8	799,259.05	452,200.44	2,689.11	0.00

Morcor Engineering
Morcor Standard Plan



Company:	Kaiser Francis	Local Co-ordinate Reference:	Well Bell Lake Unit South 413H
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Site:	Bell Lake Unit South 413H	MD Reference:	WELL @ 3621.4usft (Original Well Elev)
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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
15,000.0	90.00	180.35	11,852.0	8,230.6	-2,697.6	947.2	799,258.44	452,100.44	2,788.38	0.00
15,100.0	90.00	180.35	11,852.0	8,230.6	-2,797.6	946.6	799,257.83	452,000.44	2,887.65	0.00
15,200.0	90.00	180.35	11,852.0	8,230.6	-2,897.6	946.0	799,257.23	451,900.44	2,986.92	0.00
15,300.0	90.00	180.35	11,852.0	8,230.6	-2,997.6	945.4	799,256.62	451,800.45	3,086.19	0.00
15,400.0	90.00	180.35	11,852.0	8,230.6	-3,097.6	944.8	799,256.01	451,700.45	3,185.46	0.00
15,500.0	90.00	180.35	11,852.0	8,230.6	-3,197.6	944.2	799,255.40	451,600.45	3,284.73	0.00
15,600.0	90.00	180.35	11,852.0	8,230.6	-3,297.6	943.6	799,254.79	451,500.45	3,384.00	0.00
15,700.0	90.00	180.35	11,852.0	8,230.6	-3,397.6	943.0	799,254.19	451,400.45	3,483.27	0.00
15,800.0	90.00	180.35	11,852.0	8,230.6	-3,497.6	942.4	799,253.58	451,300.46	3,582.54	0.00
15,900.0	90.00	180.35	11,852.0	8,230.6	-3,597.6	941.7	799,252.97	451,200.46	3,681.81	0.00
16,000.0	90.00	180.35	11,852.0	8,230.6	-3,697.6	941.1	799,252.36	451,100.46	3,781.08	0.00
16,100.0	90.00	180.35	11,852.0	8,230.6	-3,797.6	940.5	799,251.75	451,000.46	3,880.35	0.00
16,200.0	90.00	180.35	11,852.0	8,230.6	-3,897.6	939.9	799,251.14	450,900.46	3,979.63	0.00
16,300.0	90.00	180.35	11,852.0	8,230.6	-3,997.6	939.3	799,250.54	450,800.46	4,078.90	0.00
16,400.0	90.00	180.35	11,852.0	8,230.6	-4,097.6	938.7	799,249.93	450,700.47	4,178.17	0.00
16,500.0	90.00	180.35	11,852.0	8,230.6	-4,197.6	938.1	799,249.32	450,600.47	4,277.44	0.00
16,600.0	90.00	180.35	11,852.0	8,230.6	-4,297.6	937.5	799,248.71	450,500.47	4,376.71	0.00
16,700.0	90.00	180.35	11,852.0	8,230.6	-4,397.6	936.9	799,248.10	450,400.47	4,475.98	0.00
16,800.0	90.00	180.35	11,852.0	8,230.6	-4,497.6	936.3	799,247.50	450,300.47	4,575.25	0.00
16,900.0	90.00	180.35	11,852.0	8,230.6	-4,597.6	935.7	799,246.89	450,200.48	4,674.52	0.00
17,000.0	90.00	180.35	11,852.0	8,230.6	-4,697.6	935.1	799,246.28	450,100.48	4,773.79	0.00
17,100.0	90.00	180.35	11,852.0	8,230.6	-4,797.6	934.5	799,245.67	450,000.48	4,873.06	0.00
17,200.0	90.00	180.35	11,852.0	8,230.6	-4,897.6	933.8	799,245.06	449,900.48	4,972.33	0.00
17,300.0	90.00	180.35	11,852.0	8,230.6	-4,997.6	933.2	799,244.45	449,800.48	5,071.60	0.00
17,400.0	90.00	180.35	11,852.0	8,230.6	-5,097.6	932.6	799,243.85	449,700.49	5,170.87	0.00
17,500.0	90.00	180.35	11,852.0	8,230.6	-5,197.6	932.0	799,243.24	449,600.49	5,270.14	0.00
17,600.0	90.00	180.35	11,852.0	8,230.6	-5,297.6	931.4	799,242.63	449,500.49	5,369.41	0.00

Morcor Engineering
Morcor Standard Plan



Company:	Kaiser Francis	Local Co-ordinate Reference:	Well Bell Lake Unit South 413H
Project:	Bell Lake Unit South 413H	TVD Reference:	WELL @ 3621.4usft (Original Well Elev)
Site:	Bell Lake Unit South 413H	MD Reference:	WELL @ 3621.4usft (Original Well Elev)
Well:	Bell Lake Unit South 413H	North Reference:	Grid
Wellbore:	Bell Lake Unit South 413H	Survey Calculation Method:	Minimum Curvature
Design:	191007 Bell Lake Unit South	Database:	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
17,700.0	90.00	180.35	11,852.0	8,230.6	-5,397.6	930.8	799,242.02	449,400.49	5,468.68	0.00
17,800.0	90.00	180.35	11,852.0	8,230.6	-5,497.6	930.2	799,241.41	449,300.49	5,567.95	0.00
17,900.0	90.00	180.35	11,852.0	8,230.6	-5,597.6	929.6	799,240.81	449,200.49	5,667.23	0.00
18,000.0	90.00	180.35	11,852.0	8,230.6	-5,697.6	929.0	799,240.20	449,100.50	5,766.50	0.00
18,100.0	90.00	180.35	11,852.0	8,230.6	-5,797.6	928.4	799,239.59	449,000.50	5,865.77	0.00
18,200.0	90.00	180.35	11,852.0	8,230.6	-5,897.6	927.8	799,238.98	448,900.50	5,965.04	0.00
18,300.0	90.00	180.35	11,852.0	8,230.6	-5,997.6	927.2	799,238.37	448,800.50	6,064.31	0.00
18,400.0	90.00	180.35	11,852.0	8,230.6	-6,097.6	926.5	799,237.77	448,700.50	6,163.58	0.00
18,500.0	90.00	180.35	11,852.0	8,230.6	-6,197.6	925.9	799,237.16	448,600.51	6,262.85	0.00
18,600.0	90.00	180.35	11,852.0	8,230.6	-6,297.6	925.3	799,236.55	448,500.51	6,362.12	0.00
18,700.0	90.00	180.35	11,852.0	8,230.6	-6,397.6	924.7	799,235.94	448,400.51	6,461.39	0.00
18,800.0	90.00	180.35	11,852.0	8,230.6	-6,497.6	924.1	799,235.33	448,300.51	6,560.66	0.00
18,900.0	90.00	180.35	11,852.0	8,230.6	-6,597.6	923.5	799,234.72	448,200.51	6,659.93	0.00
19,000.0	90.00	180.35	11,852.0	8,230.6	-6,697.6	922.9	799,234.12	448,100.51	6,759.20	0.00
19,100.0	90.00	180.35	11,852.0	8,230.6	-6,797.6	922.3	799,233.51	448,000.52	6,858.47	0.00
19,200.0	90.00	180.35	11,852.0	8,230.6	-6,897.6	921.7	799,232.90	447,900.52	6,957.74	0.00
19,300.0	90.00	180.35	11,852.0	8,230.6	-6,997.6	921.1	799,232.29	447,800.52	7,057.01	0.00
19,400.0	90.00	180.35	11,852.0	8,230.6	-7,097.6	920.5	799,231.68	447,700.52	7,156.28	0.00
19,500.0	90.00	180.35	11,852.0	8,230.6	-7,197.6	919.9	799,231.08	447,600.52	7,255.55	0.00
19,600.0	90.00	180.35	11,852.0	8,230.6	-7,297.6	919.2	799,230.47	447,500.53	7,354.83	0.00
19,700.0	90.00	180.35	11,852.0	8,230.6	-7,397.6	918.6	799,229.86	447,400.53	7,454.10	0.00
19,800.0	90.00	180.35	11,852.0	8,230.6	-7,497.6	918.0	799,229.25	447,300.53	7,553.37	0.00
19,900.0	90.00	180.35	11,852.0	8,230.6	-7,597.6	917.4	799,228.64	447,200.53	7,652.64	0.00
20,000.0	90.00	180.35	11,852.0	8,230.6	-7,697.6	916.8	799,228.04	447,100.53	7,751.91	0.00
20,100.0	90.00	180.35	11,852.0	8,230.6	-7,797.6	916.2	799,227.43	447,000.54	7,851.18	0.00
20,200.0	90.00	180.35	11,852.0	8,230.6	-7,897.6	915.6	799,226.82	446,900.54	7,950.45	0.00
20,242.6	90.00	180.35	11,852.0	8,230.6	-7,940.1	915.3	799,226.56	446,857.95	7,992.73	0.00

Morcor Engineering

Morcor Standard Plan



Company:	Kaiser Francis	Local Co-ordinate Reference:	Well Bell Lake Unit South 413H
Project:	Bell Lake Unit South 413H	TVD Reference:	WELL @ 3621.4usft (Original Well Elev)
Site:	Bell Lake Unit South 413H	MD Reference:	WELL @ 3621.4usft (Original Well Elev)
Well:	Bell Lake Unit South 413H	North Reference:	Grid
Wellbore:	Bell Lake Unit South 413H	Survey Calculation Method:	Minimum Curvature
Design:	191007 Bell Lake Unit South	Database:	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
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Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
11,104.5	11,102.0	7 5/8" 2nd Intermediate Casing	7-5/8	9-7/8
20,242.6	11,852.0	5 1/2" Production Casing	5-1/2	6-3/4
5,322.0	5,322.0	10 3/4" Intermediate Casing	10-3/4	12-1/4
1,397.0	1,397.0	13 3/8" Surface Casing	13-3/8	17-1/2
120.0	120.0	20" Conductor	20	26

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,647.0	7,647.0	Brushy Canyon		0.00	
11,498.5	11,412.0	3rd BS Sand		0.00	
9,042.0	9,042.0	Avalon		0.00	
1,747.0	1,747.0	Salado		0.00	
5,047.0	5,047.0	Base of Salt		0.00	
10,452.0	10,452.0	2nd BS Sand		0.00	
2,072.0	2,072.0	Top of Salt		0.00	
9,922.0	9,922.0	1st BS Sand		0.00	
5,347.0	5,347.0	Bell Canyon		0.00	
8,772.0	8,772.0	Bone Spring		0.00	
1,372.0	1,372.0	Rustler		0.00	
10,922.0	10,922.0	3rd BS Lime		0.00	
11,978.7	11,652.0	Wolfcamp		0.00	
5,272.0	5,272.0	Lamar		0.00	
6,197.0	6,197.0	Cherry Canyon		0.00	



Morcor Engineering
Morcor Standard Plan

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Site:	Bell Lake Unit South 413H	MD Reference:	WELL @ 3621.4usft (Original Well Elev)
Well:	Bell Lake Unit South 413H	North Reference:	Grid
Wellbore:	Bell Lake Unit South 413H	Survey Calculation Method:	Minimum Curvature
Design:	191007 Bell Lake Unit South	Database:	EDM 5000.1 Single User Db

Checked By:	_____	Approved By:	_____	Date:	_____
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KFOC Well Control Plan

A. Component and Preventer Compatibility Table

Component	OD	Preventer	RWP
Drill Pipe	4 1/2"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Heavyweight Drill Pipe	4 1/2"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Drill Collars & MWD Tools	6 1/4"-4 3/4"	Annular Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	5M 10M 10M
Mud Motor	8"-4 3/4"	Annular Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	5M 10M 10M
Production Casing	5 1/2"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
All	0 – 13 5/8"	Annular	5M
Open Hole		Blind Rams	10M

B. Well Control Procedures

- I. General Procedures While Drilling:
 - a. Sound alarm – alert crew
 - b. Space out drill string
 - c. Shut down pumps and stop rotary
 - d. Open HCR
 - e. Shut well in, utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and KFOC, Inc. company representative
 - i. Call KFOC, Inc. engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan
- II. General Procedures While Tripping:
 - a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string
 - d. Open HCR
 - e. Shut well in, utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and KFOC. company representative
 - i. Call KFOC. engineer

KFOC Well Control Plan

- j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan
- III. General Procedures While Running Casing:
- a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string
 - d. Open HCR
 - e. Shut well in, utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and KFOC company representative
 - i. Call KFOC engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan
- IV. General Procedures With No Pipe in Hole (Open Hole):
- a. Sound alarm – alert crew
 - b. Open HCR
 - c. Shut well in with blind rams
 - d. Close choke
 - e. Confirm shut in
 - f. Notify rig manager and KFOC company representative
 - g. Call KFOC engineer
 - h. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - j. Regroup, identify forward plan
- V. General Procedures While Pulling BHL Through BOP Stack:
- 1. Prior to pulling last joint of drill pipe through stack A.
 - Perform flow check and if flowing:
 - a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string with tool joint just beneath upper pipe ram
 - d. Open HCR
 - e. Shut well in utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and KFOC company representative
 - i. Call KFOC engineer

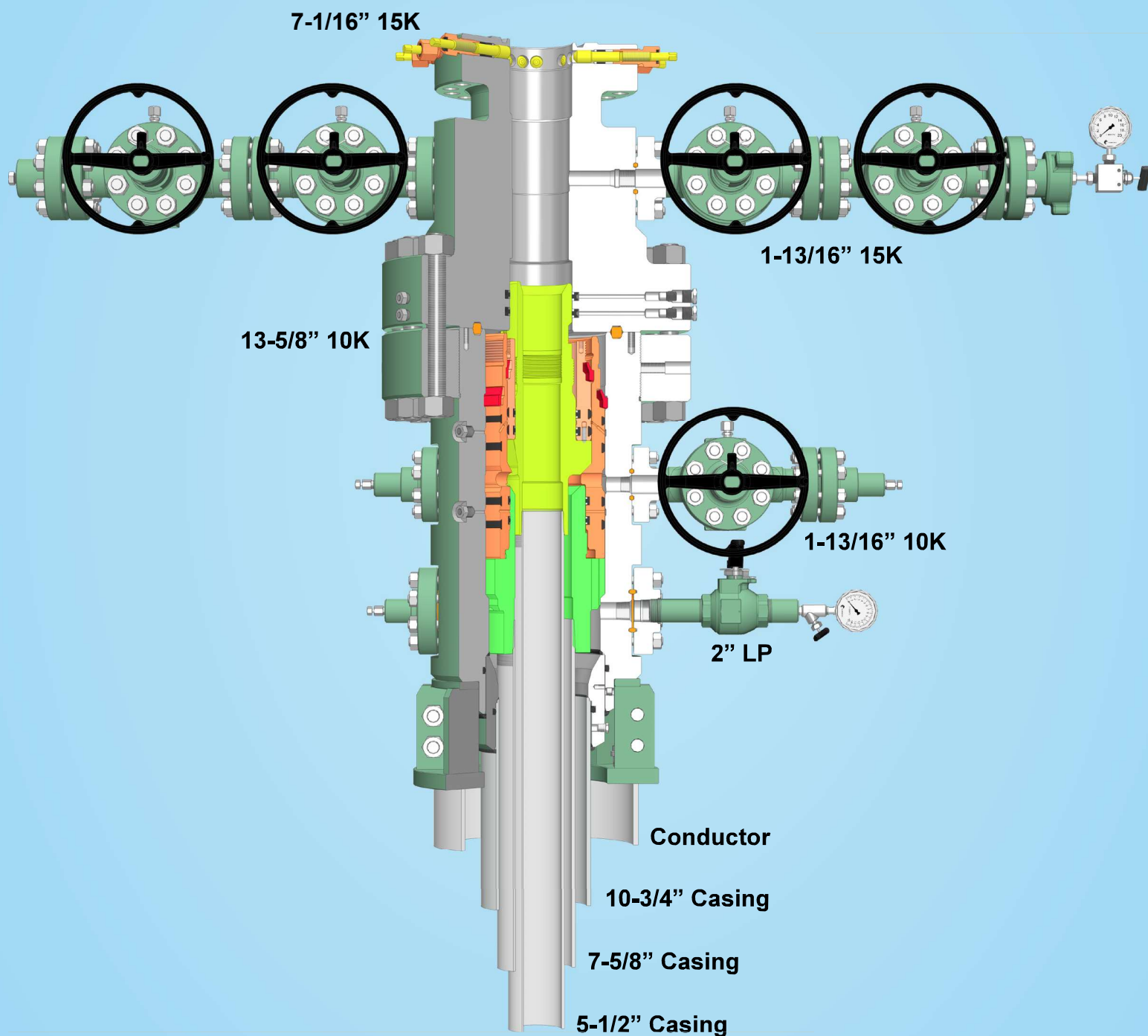
KFOC Well Control Plan

- j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan
2. With BHL in the BOP stack and compatible ram preventer and pipe combo immediately available.
- a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string with tool joint just beneath upper pipe ram
 - d. Open HCR
 - e. Shut well in utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and KFOC. company representative
 - i. Call KFOC engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan
3. With BHA in the BOP stack and no compatible ram preventer and pipe combo immediately available
- a. Sound alarm – alert crew
 - b. If possible to pick up high enough, pull string clear of the stack and follow Open Hole scenario (III)
 - c. If impossible to pick up high enough to pull the string clear of the stack:
 - i. Stab crossover, make up one joint/stand of drill pipe and full opening safety valve and close
 - ii. Space out drill string with tool joint just beneath the upper pipe ram
 - iii. Open HCR
 - iv. Shut in utilizing upper VBRs
 - v. Close choke
 - vi. Confirm shut in
 - vii. Notify rig manager and Mesquite SWD, Inc. company representative
 - viii. Read and record:
 - 1. Shut in drill pipe pressure and shut in casing pressure
 - 2. Pit gain
 - 3. Time
 - d. Regroup and identify forward plan

** If annular is used to shut in well and pressure build to or is expected to get to 50% of RWP, confirm space-out and swap to upper VBRs for shut in.



13-5/8" 10K MN-DS Wellhead



Kaiser-Francis Oil Company

1678248

NOTE: All dimensions on this drawing are estimated measurements and should be evaluated by engineering.

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 87210
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, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025- 30-025-48212	² Pool Code 98266	³ Pool Name BELL LAKE; WOLFCAMP, SOUTH
⁴ Property Code 316706	⁵ Property Name BELL LAKE UNIT SOUTH	⁶ Well Number 413H
⁷ OGRID No. 12361	⁸ Operator Name KAISER-FRANCIS OIL CO.	⁹ Elevation 3599.4

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	6	24 S	34 E		2276	NORTH	487	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	8	24 S	34 E		330	SOUTH	350	WEST	LEA

¹² Dedicated Acres 480	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14601
---------------------------------------------	-------------------------------	----------------------------------	-------------------------------------------

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.

	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Melanie J. Wilson</i> 10/31/2019 Signature Date</p> <p>Melanie Wilson Printed Name</p> <p>mjp1692@gmail.com E-mail Address</p> <p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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.</p> <p>DECEMBER 13, 2018 Date of Survey</p> <p><i>FILMON F. JARAMILLO</i> Signature and Seal of Professional Surveyor</p> <p>Certificate Number: FILMON F. JARAMILLO, PLS 12797 SURVEY NO. 6750</p>
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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: 07/02/2018

☒ Original

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

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple 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	Footages	Expected MCF/D	Flared or Vented		Comments
Bell Lake Unit South 411H				2000	0		
Bell Lake Unit South 412H				2000			
Bell Lake Unit South 413H	30-025-48212			2000			

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

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

CONDITIONS

Action 12850

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
KAISER-FRANCIS OIL CO P.O. Box 21468 Tulsa, OK74121			12361	12850	FORM 3160-3
OCD Reviewer	Condition				
pkautz	Will require a directional survey with the C-104				
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string				
pkautz	Oil base muds are not to be used until freshwater zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.				