Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM134866

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
WRIGHT FED 2524 LBC
2H
327056

2. Name of Operator
KAISER FRANCIS OIL COMPANY

9. API Well No.
30-015-46648

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
6733 S. Yale Ave. Tulsa OK 74121	(918)491-0000	LOVING / BRUSHY CANYON

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWNE / 2490 FNL / 1470 FEL / LAT 32.2768141 / LONG -104.0370081
At proposed prod. zone NENE / 330 FNL / 660 FEL / LAT 32.2973037 / LONG -104.034277

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 25 / T23S / R28E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
3.5 miles	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
660 feet	80	240

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
30 feet	6123 feet / 13390 feet	FED: WYB000055

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
2966 feet	01/01/2019	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	Name *(Printed/Typed)*	Date
(Electronic Submission)	Melanie Wilson / Ph: (918)527-5260	11/08/2018

Title
Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	01/06/2020

Title	Office
Petroleum Engineer	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.

APPROVED WITH CONDITIONS

Approval Date: 01/06/2020

(Continued on page 2)

1-27-2020

(Instructions on page 2)

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.:	**NMNM134866**
WELL NAME & NO.:	**Wright Fed 2524 LBC 2H**
SURFACE HOLE FOOTAGE:	**2490' FNL & 1470' FEL**
BOTTOM HOLE FOOTAGE	**330' FNL & 660' FEL**
LOCATION:	**Section 25, T 23S, R 28E, NMPM**
COUNTY:	**Eddy 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 500' (a minimum of 75' into the Rustler Anhydrite and above the salt) and cemented to surface. **Excess cement calculates to -82%, more cement will be needed.**
   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.
   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 the shoe.
   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 cemented to surface.
   a. **If cement does not circulate to surface,** see B.1.a, c & d.
   b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.
3. The **7"** production casing shall cemented with at least **200' tie-back** into the previous casing. Operator shall provide method of verification.
   a. If cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
4. The **4-1/2"** production liner shall be cemented with at least **100' tie-back** into the previous casing. Operator shall provide method of verification. **Excess cement calculates to -65%, more cement will be needed.**

C. PRESSURE CONTROL

1. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
2. Variance to use flex hose between the BOP and choke manifold is approved. Flex hose must meet API 16C certification as shown in the manufacturer certifications attached to the end of these COAs.

D. SPECIAL REQUIREMENTS

1. Submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
   a. The well sign on location shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

DR 1/3/2020

GENERAL REQUIREMENTS

1. The BLM is to be notified in advance for a representative to witness:
   a. Spudding the well (minimum of 24 hours)
   b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
   c. BOP/BOPE tests (minimum of 4 hours)
      ☒ Eddy County: Call the Carlsbad Field Office, (575) 361-2822
      ☒ Lea County: Call the Hobbs Field Station, (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:
      i. Notify the BLM when moving in and removing the Spudder Rig.
      ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      iii. BOP/BOPE test to be conducted per 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 run from TD to surface (horizontal well – vertical portion of hole) shall be available upon request. 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 the portion of 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. 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 Onshore Order 2 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 BOP/BOPE 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 which 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 made available upon request.

   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. 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.

   f. BOP/BOPE must be tested 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

1. 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.
2. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Kaiser-Francis Oil Company
Wright Federal 2524 LBC 2H

Casing Assumptions

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	80	20"	94	J-55	BTC	New	26	80
Surface	500	13-3/8"	61	J55	STC	New	17.500	500
Salt String	2700	9-5/8"	43.5	J55	LTC	New	12.25	2700
Intermediate	6594	7"	26	P110	LTC	New	8.75	6123
Production	13340	4.5"	11.6	HCP110	Eagle SF	New	6.125	6123

Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss
FW	8.4 - 9.0	350	32 - 34	NC
Sat Brine	9.8-10.2	2700	34	NC
Cut Brine	8.8-9.5	6594	32-36	<10
OBM	8.8-9.6	13340	36-42	<11

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
8.5	35	520	2110	1480000	907000
10.2	265	1540	3090	962000	1025000
9.5	1334	5600	8700	1381000	1106000
9.6	3057	8650	10690	367000	385000

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor	Joint Tensile Safety Factor
14.7	59.7	48.5	29.7
5.8	11.7	8.2	8.7
4.2	6.5	8.7	6.9
2.8	3.5	5.2	5.4

APD ID: 10400036095
Operator Name: KAISER FRANCIS OIL COMPANY
Well Name: WRIGHT FED 2524 LBC
Well Type: OIL WELL

Submission Date: 11/08/2018
Federal/Indian APD: FED
Well Number: 2H
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Application

Section 1 - General

APD ID: 10400036095
Tie to previous NOS? N
Submission Date: 11/08/2018
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: NMNM134866
Lease Acres: 80
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
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:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H

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

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** LOVING **Pool Name:** BRUSHY CANYON

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

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:** WRIGHT FED **Number:** 0

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: 3.5 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 660 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: WRIGHT_FED_2524_LBC_2H_C102_20181107090830.pdf

Wright_Fed_2524_LBC__2H_Pymt_Receipt_20181108133956.pdf

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

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 5748 **Reference Datum:**

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	2490	FNL	1470	FEL	23S	28E	25	Aliquot SWNE	32.2768141	-104.0370081	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	2966	0	0	
KOP Leg #1	2435	FNL	662	FEL	23S	28E	25	Aliquot SENE	32.2769582	-104.0343944	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-2680	5716	5646	

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H

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	2640	FNL	660	FEL	23S	28E	24	Aliquot SENE	32.2909252	-104.0344118	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 134866	-3157	11064	6123	
PPP Leg #1-2	1958	FNL	662	FEL	23S	28E	25	Aliquot SENE	32.2782707	-104.0343868	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-3157	6466	6123	
EXIT Leg #1	330	FNL	660	FEL	23S	28E	24	Aliquot NENE	32.2973037	-104.034277	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 134866	-3157	13390	6123	
BHL Leg #1	330	FNL	660	FEL	23S	28E	24	Aliquot NENE	32.2973037	-104.034277	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 134866	-3157	13390	6123	

Drilling Plan

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
339028	---	2966	0	0		NONE	N
399828	TOP SALT	1966	1000	1000		NONE	N
339029	BASE OF SALT	287	2679	2679		NONE	N
399829	BELL CANYON	249	2717	2717		NATURAL GAS, OIL	N
339035	CHERRY CANYON	-511	3477	3477		NATURAL GAS, OIL	N
339036	BRUSHY CANYON	-1841	4807	4807		NATURAL GAS, OIL	N
339044	BRUSHY CANYON LOWER	-3086	6052	6052		NATURAL GAS, OIL	Y
339045	BONE SPRING LIME	-3383	6349	6349		NATURAL GAS, OIL	N
339047	2ND BONE SPRING LIME	-4713	7679	7679		NATURAL GAS, OIL	N
339051	BONE SPRING 3RD	-6380	9346	9346		NATURAL GAS, OIL	N

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M **Rating Depth:** 7000

Equipment: BOP consisting of three rams, including one blind ram and two pipe rams, and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

Requesting Variance? YES

Variance request: Request variance for use of flex hose between the BOP and choke manifold. Certification for proposed flex hose is attached.

Testing Procedure: After running the 13-3/8" surface casing, a 13 3/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. All BOP equipment will be tested utilizing a conventional test plug.

Choke Diagram Attachment:

Wright_Fed_2524_LBC__2H_3M_CHOKE_20190320143218.pdf

BOP Diagram Attachment:

Wright_Fed_2524_LBC_2H_FlexHose_Specs_Cactus_171_20190320133727.pdf

Wright_Fed_2524_LBC__2H_3M_BOP_20190320143236.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
1	SURFACE	17.5	13.375	NEW	API	N	0	500	0	500			500	J-55	61	ST&C	14.7	59.7	DRY	29.7	DRY
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2700	0	2700			2700	J-55	43.5	LT&C	5.8	11.7	DRY	8.7	DRY
3	PRODUCTION	8.75	7.0	NEW	API	N	0	6594	0	6123			6594	P-110	26	LT&C	4.2	6.5	DRY	6.9	DRY
4	LINER	6.125	4.5	NEW	API	N	5500	13340	5500	6123			7840	HCP-110	11.6	OTHER - EAGLE SF	2.8	3.5	DRY	5.4	DRY

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_LBC_2H_Casing_Specs_amended_20190213101844.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_LBC_2H_Casing_Specs_amended_20190213101900.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_LBC_2H_Casing_Specs_amended_20190213101912.pdf

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H

Casing Attachments

Casing ID: 4 **String Type:** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_LBC_2H_Casing_Specs_amended_20190213101923.pdf

Wright_Fed_2524_LBC_2H_4.5_CSG_DATA_20190310163249.PDF

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	500	47	1.34	14.8	63	50	Premium C	Accelerator
INTERMEDIATE	Lead		0	2700	260	2.45	12	637	50	Premium C	Extender
INTERMEDIATE	Tail		0	2700	475	1.34	14.8	634	50	Premium C	Accelerator
PRODUCTION	Lead		0	6594	223	1.29	14.2	287	25	Premium C	Extender
PRODUCTION	Tail		0	6594	23	2.44	10.5	56	25	Premium C	Accelerator
LINER	Lead		5500	13340	771	1.91	13.2	1472	25	Class H	Extender

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 LBC **Well Number:** 2H

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
500	2700	OTHER : BRINE	9.8	10.2							
2700	6123	OTHER : CUT BRINE	8.8	9.5							
0	500	OTHER : FRESH WATER	8.4	9							
6123	6123	OIL-BASED MUD	8.8	9.6							

Section 6 - Test, Logging, Coring

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

None planned

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

DS,GR,MUDLOG

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3056 **Anticipated Surface Pressure:** 1708.94

Anticipated Bottom Hole Temperature(F): 170

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:

Wright_Fed_2524_LBC_2H_H2S_Contingency_Plan_20181107141025.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Wright_Fed_2524_LBC_2H___Well_Plan_20181107141135.pdf

Other proposed operations facets description:

Gas Capture Plan attached

Other proposed operations facets attachment:

Wright_Fed_2524_LBC_2H_Gas_Capture_Plan_20181107141151.pdf

SPCC_Plan_Wright_Fed_Pad_20190223103511.pdf

Other Variance attachment:

Wright_Fed_2524_LBC_2H_FlexHose_Specs_Cactus_171_20181107141211.pdf

Kaiser-Francis Oil Company

Company: Kaiser-Francis
Site: Wright Fed 2524 LBC
Well: Wright Fed 2524 LBC 2H
Project: Eddy County, New Mexico (NAD83)
Rig: Cactus 171

MS Directional

T G M

Azimuths to Grid North
True North: -0.16°
Magnetic North: 6.93°

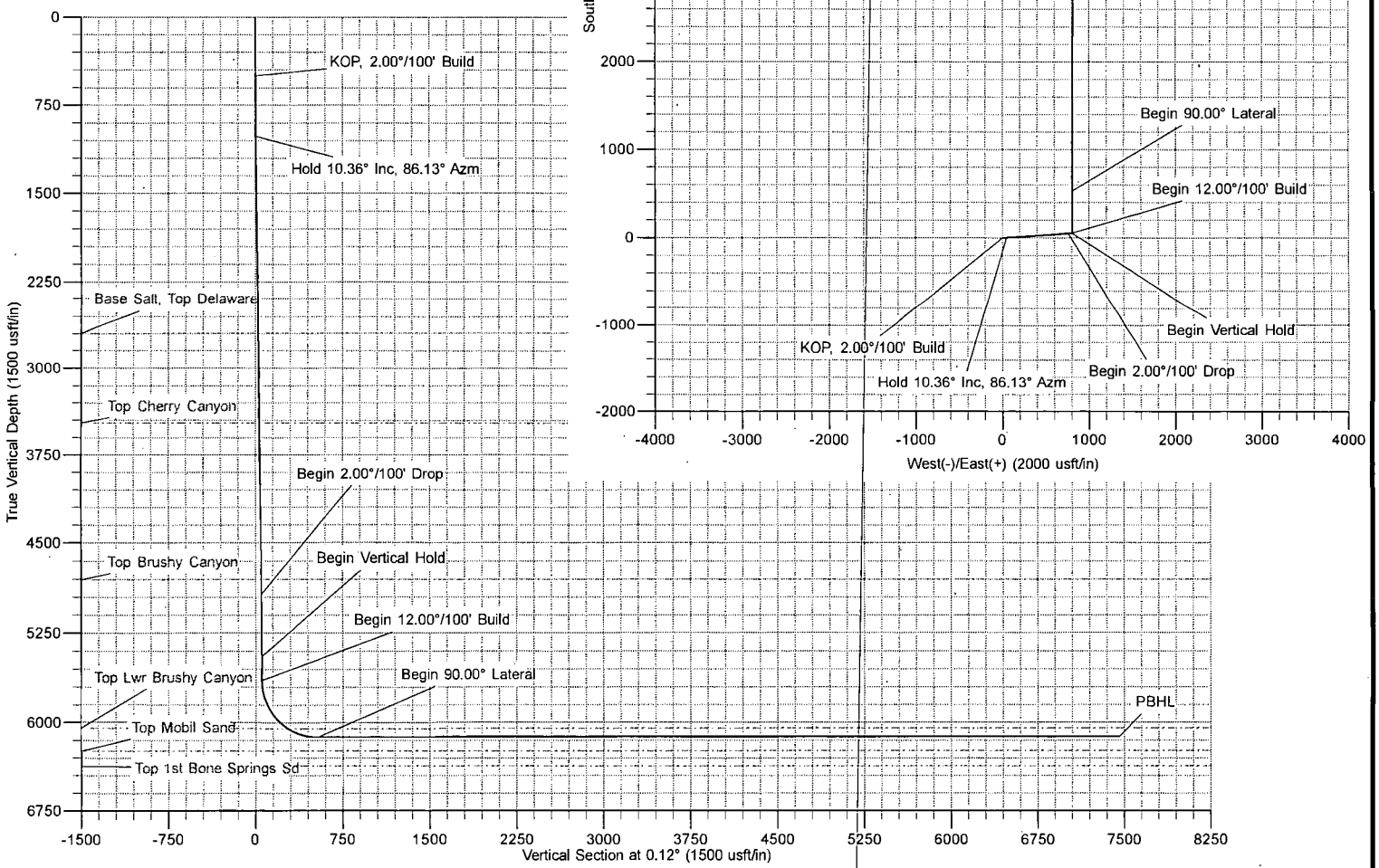
Magnetic Field
Strength: 47833.6nT
Dip Angle: 59.96°
Date: 10/31/2018
Model: BGGM2018

US State Plane 1983
New Mexico Eastern Zone

Created By: JA
Date: 9:21, November 02 2018
Plan: Design #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	KOP, 2.00°/100' Build
1018.24	10.36	86.13	1015.42	3.16	46.64	3.26	46.75	Hold 10.36° Inc, 86.13° Azm
4997.88	10.36	86.13	4930.12	51.52	761.00	53.11	762.75	Begin 2.00°/100' Drop
5516.12	0.00	0.00	5445.54	54.68	807.65	56.37	809.49	Begin Vertical Hold
5716.12	0.00	0.00	5645.54	54.68	807.65	56.37	809.49	Begin 12.00°/100' Build
6466.12	90.00	0.12	6123.00	532.14	808.65	533.83	1286.96	Begin 90.00° Lateral
13390.18	90.00	0.12	6123.00	7456.19	823.28	7457.89	8211.02	PBHL



Kaiser-Francis Oil Company

Kaiser-Francis

Eddy County, New Mexico (NAD83)
Wright Fed 2524 LBC
Wright Fed 2524 LBC 2H

Wellbore #1

Plan: Design #2

Standard Planning Report

02 November, 2018

MS Directional

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project Eddy County, New Mexico (NAD83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Wright Fed 2524 LBC

Site Position:		**Northing:**	464,564.33 usft	**Latitude:**	32° 16' 36.531 N
From:	Lat/Long	**Easting:**	632,917.92 usft	**Longitude:**	104° 2' 13.229 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well Wright Fed 2524 LBC 2H

Well Position	**+N/-S**	0.00 usft	**Northing:**	464,564.33 usft	**Latitude:**	32° 16' 36.531 N
	+E/-W	0.00 usft	**Easting:**	632,917.92 usft	**Longitude:**	104° 2' 13.229 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,966.10 usft
Grid Convergence:		0.158 °				

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	10/31/2018	7.093	59.965	47,833.63

Design Design #2

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	0.12

Plan Survey Tool Program **Date** 11/2/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,390.18	Design #2 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,018.24	10.36	86.13	1,015.42	3.16	46.64	2.00	2.00	0.00	86.127	
4,997.88	10.36	86.13	4,930.11	51.52	761.00	0.00	0.00	0.00	0.000	
5,516.12	0.00	0.00	5,445.54	54.68	807.65	2.00	-2.00	0.00	180.000	VP v2 Wright 2524 LE
5,716.12	0.00	0.00	5,645.54	54.68	807.65	0.00	0.00	0.00	0.000	
6,466.12	90.00	0.12	6,123.00	532.14	808.65	12.00	12.00	0.00	0.121	
13,390.18	90.00	0.12	6,123.00	7,456.19	823.28	0.00	0.00	0.00	0.000	PBHL v2 Wright 2524

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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
KOP, 2.00°/100' Build									
600.00	2.00	86.13	599.98	0.12	1.74	0.12	2.00	2.00	0.00
700.00	4.00	86.13	699.84	0.47	6.96	0.49	2.00	2.00	0.00
800.00	6.00	86.13	799.45	1.06	15.66	1.09	2.00	2.00	0.00
900.00	8.00	86.13	898.70	1.88	27.82	1.94	2.00	2.00	0.00
1,000.00	10.00	86.13	997.47	2.94	43.42	3.03	2.00	2.00	0.00
1,018.24	10.36	86.13	1,015.42	3.16	46.64	3.26	2.00	2.00	0.00
Hold 10.36° Inc, 86.13° Azm									
1,100.00	10.36	86.13	1,095.84	4.15	61.32	4.28	0.00	0.00	0.00
1,200.00	10.36	86.13	1,194.21	5.37	79.27	5.53	0.00	0.00	0.00
1,300.00	10.36	86.13	1,292.58	6.58	97.22	6.79	0.00	0.00	0.00
1,400.00	10.36	86.13	1,390.95	7.80	115.17	8.04	0.00	0.00	0.00
1,500.00	10.36	86.13	1,489.32	9.01	133.12	9.29	0.00	0.00	0.00
1,600.00	10.36	86.13	1,587.68	10.23	151.07	10.54	0.00	0.00	0.00
1,700.00	10.36	86.13	1,686.05	11.44	169.02	11.80	0.00	0.00	0.00
1,800.00	10.36	86.13	1,784.42	12.66	186.97	13.05	0.00	0.00	0.00
1,900.00	10.36	86.13	1,882.79	13.87	204.92	14.30	0.00	0.00	0.00
2,000.00	10.36	86.13	1,981.16	15.09	222.87	15.55	0.00	0.00	0.00
2,100.00	10.36	86.13	2,079.53	16.30	240.82	16.81	0.00	0.00	0.00
2,200.00	10.36	86.13	2,177.89	17.52	258.77	18.06	0.00	0.00	0.00
2,300.00	10.36	86.13	2,276.26	18.73	276.72	19.31	0.00	0.00	0.00
2,400.00	10.36	86.13	2,374.63	19.95	294.67	20.57	0.00	0.00	0.00
2,500.00	10.36	86.13	2,473.00	21.16	312.62	21.82	0.00	0.00	0.00
2,600.00	10.36	86.13	2,571.37	22.38	330.57	23.07	0.00	0.00	0.00
2,700.00	10.36	86.13	2,669.74	23.59	348.52	24.32	0.00	0.00	0.00
2,732.80	10.36	86.13	2,702.00	23.99	354.41	24.74	0.00	0.00	0.00
Base Salt, Top Delaware									
2,800.00	10.36	86.13	2,768.10	24.81	366.47	25.58	0.00	0.00	0.00
2,900.00	10.36	86.13	2,866.47	26.03	384.43	26.83	0.00	0.00	0.00
3,000.00	10.36	86.13	2,964.84	27.24	402.38	28.08	0.00	0.00	0.00
3,100.00	10.36	86.13	3,063.21	28.46	420.33	29.34	0.00	0.00	0.00
3,200.00	10.36	86.13	3,161.58	29.67	438.28	30.59	0.00	0.00	0.00
3,300.00	10.36	86.13	3,259.94	30.89	456.23	31.84	0.00	0.00	0.00
3,400.00	10.36	86.13	3,358.31	32.10	474.18	33.09	0.00	0.00	0.00
3,500.00	10.36	86.13	3,456.68	33.32	492.13	34.35	0.00	0.00	0.00
3,520.66	10.36	86.13	3,477.00	33.57	495.84	34.61	0.00	0.00	0.00
Top Cherry Canyon									
3,600.00	10.36	86.13	3,555.05	34.53	510.08	35.60	0.00	0.00	0.00
3,700.00	10.36	86.13	3,653.42	35.75	528.03	36.85	0.00	0.00	0.00
3,800.00	10.36	86.13	3,751.79	36.96	545.98	38.11	0.00	0.00	0.00
3,900.00	10.36	86.13	3,850.15	38.18	563.93	39.36	0.00	0.00	0.00
4,000.00	10.36	86.13	3,948.52	39.39	581.88	40.61	0.00	0.00	0.00
4,100.00	10.36	86.13	4,046.89	40.61	599.83	41.86	0.00	0.00	0.00
4,200.00	10.36	86.13	4,145.26	41.82	617.78	43.12	0.00	0.00	0.00
4,300.00	10.36	86.13	4,243.63	43.04	635.73	44.37	0.00	0.00	0.00
4,400.00	10.36	86.13	4,341.99	44.25	653.68	45.62	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
4,500.00	10.36	86.13	4,440.36	45.47	671.63	46.88	0.00	0.00	0.00
4,600.00	10.36	86.13	4,538.73	46.68	689.58	48.13	0.00	0.00	0.00
4,700.00	10.36	86.13	4,637.10	47.90	707.53	49.38	0.00	0.00	0.00
4,800.00	10.36	86.13	4,735.47	49.11	725.48	50.63	0.00	0.00	0.00
4,872.72	10.36	86.13	4,807.00	50.00	738.54	51.54	0.00	0.00	0.00
Top Brushy Canyon									
4,900.00	10.36	86.13	4,833.84	50.33	743.44	51.89	0.00	0.00	0.00
4,997.88	10.36	86.13	4,930.12	51.52	761.00	53.11	0.00	0.00	0.00
Begin 2.00°/100' Drop									
5,000.00	10.32	86.13	4,932.20	51.54	761.38	53.14	2.00	-2.00	0.00
5,100.00	8.32	86.13	5,030.88	52.64	777.55	54.27	2.00	-2.00	0.00
5,200.00	6.32	86.13	5,130.06	53.50	790.26	55.15	2.00	-2.00	0.00
5,300.00	4.32	86.13	5,229.62	54.13	799.52	55.80	2.00	-2.00	0.00
5,400.00	2.32	86.13	5,329.45	54.52	805.30	56.20	2.00	-2.00	0.00
5,500.00	0.32	86.13	5,429.42	54.67	807.60	56.36	2.00	-2.00	0.00
5,516.12	0.00	0.00	5,445.54	54.68	807.65	56.37	2.00	-2.00	-534.33
Begin Vertical Hold - VP v2 Wright 2524 LBC 2H									
5,600.00	0.00	0.00	5,529.42	54.68	807.65	56.37	0.00	0.00	0.00
5,700.00	0.00	0.00	5,629.42	54.68	807.65	56.37	0.00	0.00	0.00
5,716.12	0.00	0.00	5,645.54	54.68	807.65	56.37	0.00	0.00	0.00
Begin 12.00°/100' Build									
5,725.00	1.07	0.12	5,654.42	54.76	807.65	56.45	12.00	12.00	0.00
5,750.00	4.07	0.12	5,679.39	55.88	807.65	57.57	12.00	12.00	0.00
5,775.00	7.07	0.12	5,704.27	58.30	807.65	59.99	12.00	12.00	0.00
5,800.00	10.07	0.12	5,728.99	62.03	807.66	63.72	12.00	12.00	0.00
5,825.00	13.07	0.12	5,753.48	67.04	807.67	68.73	12.00	12.00	0.00
5,850.00	16.07	0.12	5,777.67	73.32	807.68	75.02	12.00	12.00	0.00
5,875.00	19.07	0.12	5,801.50	80.87	807.70	82.56	12.00	12.00	0.00
5,900.00	22.07	0.12	5,824.90	89.65	807.72	91.34	12.00	12.00	0.00
5,925.00	25.07	0.12	5,847.82	99.64	807.74	101.33	12.00	12.00	0.00
5,950.00	28.07	0.12	5,870.18	110.82	807.76	112.51	12.00	12.00	0.00
5,975.00	31.07	0.12	5,891.92	123.16	807.79	124.85	12.00	12.00	0.00
6,000.00	34.07	0.12	5,912.98	136.61	807.82	138.30	12.00	12.00	0.00
6,025.00	37.07	0.12	5,933.32	151.15	807.85	152.84	12.00	12.00	0.00
6,050.00	40.07	0.12	5,952.86	166.73	807.88	168.43	12.00	12.00	0.00
6,075.00	43.07	0.12	5,971.57	183.32	807.92	185.01	12.00	12.00	0.00
6,100.00	46.07	0.12	5,989.38	200.86	807.95	202.55	12.00	12.00	0.00
6,125.00	49.07	0.12	6,006.24	219.31	807.99	221.00	12.00	12.00	0.00
6,150.00	52.07	0.12	6,022.12	238.62	808.03	240.31	12.00	12.00	0.00
6,175.00	55.07	0.12	6,036.97	258.73	808.08	260.42	12.00	12.00	0.00
6,200.00	58.07	0.12	6,050.74	279.59	808.12	281.28	12.00	12.00	0.00
6,202.39	58.35	0.12	6,052.00	281.62	808.12	283.32	12.00	12.00	0.00
Top Lwr Brushy Canyon									
6,225.00	61.07	0.12	6,063.40	301.14	808.17	302.83	12.00	12.00	0.00
6,250.00	64.07	0.12	6,074.92	323.33	808.21	325.02	12.00	12.00	0.00
6,275.00	67.07	0.12	6,085.26	346.08	808.26	347.78	12.00	12.00	0.00
6,300.00	70.07	0.12	6,094.39	369.35	808.31	371.05	12.00	12.00	0.00
6,325.00	73.07	0.12	6,102.30	393.07	808.36	394.76	12.00	12.00	0.00
6,350.00	76.07	0.12	6,108.95	417.16	808.41	418.86	12.00	12.00	0.00
6,375.00	79.07	0.12	6,114.33	441.57	808.46	443.27	12.00	12.00	0.00
6,400.00	82.07	0.12	6,118.43	466.23	808.51	467.93	12.00	12.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
6,425.00	85.07	0.12	6,121.23	491.07	808.57	492.76	12.00	12.00	0.00
VP Wright 2524 LBC 2H									
6,450.00	88.07	0.12	6,122.73	516.02	808.62	517.72	12.00	12.00	0.00
6,466.12	90.00	0.12	6,123.00	532.14	808.65	533.83	12.00	12.00	0.00
Begin 90.00° Lateral - FTP 2 Wright 2524 LBC 2H									
6,500.00	90.00	0.12	6,123.00	566.02	808.73	567.71	0.00	0.00	0.00
6,600.00	90.00	0.12	6,123.00	666.02	808.94	667.71	0.00	0.00	0.00
6,700.00	90.00	0.12	6,123.00	766.02	809.15	767.71	0.00	0.00	0.00
6,800.00	90.00	0.12	6,123.00	866.02	809.36	867.71	0.00	0.00	0.00
6,900.00	90.00	0.12	6,123.00	966.02	809.57	967.71	0.00	0.00	0.00
7,000.00	90.00	0.12	6,123.00	1,066.02	809.78	1,067.71	0.00	0.00	0.00
7,100.00	90.00	0.12	6,123.00	1,166.02	809.99	1,167.71	0.00	0.00	0.00
7,200.00	90.00	0.12	6,123.00	1,266.02	810.20	1,267.71	0.00	0.00	0.00
7,300.00	90.00	0.12	6,123.00	1,366.02	810.41	1,367.71	0.00	0.00	0.00
7,400.00	90.00	0.12	6,123.00	1,466.02	810.63	1,467.71	0.00	0.00	0.00
7,500.00	90.00	0.12	6,123.00	1,566.02	810.84	1,567.71	0.00	0.00	0.00
7,600.00	90.00	0.12	6,123.00	1,666.02	811.05	1,667.71	0.00	0.00	0.00
7,700.00	90.00	0.12	6,123.00	1,766.02	811.26	1,767.71	0.00	0.00	0.00
7,800.00	90.00	0.12	6,123.00	1,866.02	811.47	1,867.71	0.00	0.00	0.00
7,900.00	90.00	0.12	6,123.00	1,966.02	811.68	1,967.71	0.00	0.00	0.00
8,000.00	90.00	0.12	6,123.00	2,066.02	811.89	2,067.71	0.00	0.00	0.00
8,100.00	90.00	0.12	6,123.00	2,166.02	812.10	2,167.71	0.00	0.00	0.00
8,200.00	90.00	0.12	6,123.00	2,266.02	812.32	2,267.71	0.00	0.00	0.00
8,300.00	90.00	0.12	6,123.00	2,366.02	812.53	2,367.71	0.00	0.00	0.00
8,400.00	90.00	0.12	6,123.00	2,466.02	812.74	2,467.71	0.00	0.00	0.00
8,500.00	90.00	0.12	6,123.00	2,566.02	812.95	2,567.71	0.00	0.00	0.00
8,600.00	90.00	0.12	6,123.00	2,666.02	813.16	2,667.71	0.00	0.00	0.00
8,700.00	90.00	0.12	6,123.00	2,766.02	813.37	2,767.71	0.00	0.00	0.00
8,800.00	90.00	0.12	6,123.00	2,866.02	813.58	2,867.71	0.00	0.00	0.00
8,900.00	90.00	0.12	6,123.00	2,966.02	813.79	2,967.71	0.00	0.00	0.00
9,000.00	90.00	0.12	6,123.00	3,066.02	814.01	3,067.71	0.00	0.00	0.00
9,100.00	90.00	0.12	6,123.00	3,166.02	814.22	3,167.71	0.00	0.00	0.00
9,200.00	90.00	0.12	6,123.00	3,266.02	814.43	3,267.71	0.00	0.00	0.00
9,300.00	90.00	0.12	6,123.00	3,366.02	814.64	3,367.71	0.00	0.00	0.00
9,400.00	90.00	0.12	6,123.00	3,466.02	814.85	3,467.71	0.00	0.00	0.00
9,500.00	90.00	0.12	6,123.00	3,566.01	815.06	3,567.71	0.00	0.00	0.00
9,600.00	90.00	0.12	6,123.00	3,666.01	815.27	3,667.71	0.00	0.00	0.00
9,700.00	90.00	0.12	6,123.00	3,766.01	815.48	3,767.71	0.00	0.00	0.00
9,800.00	90.00	0.12	6,123.00	3,866.01	815.70	3,867.71	0.00	0.00	0.00
9,900.00	90.00	0.12	6,123.00	3,966.01	815.91	3,967.71	0.00	0.00	0.00
10,000.00	90.00	0.12	6,123.00	4,066.01	816.12	4,067.71	0.00	0.00	0.00
10,100.00	90.00	0.12	6,123.00	4,166.01	816.33	4,167.71	0.00	0.00	0.00
10,200.00	90.00	0.12	6,123.00	4,266.01	816.54	4,267.71	0.00	0.00	0.00
10,300.00	90.00	0.12	6,123.00	4,366.01	816.75	4,367.71	0.00	0.00	0.00
10,400.00	90.00	0.12	6,123.00	4,466.01	816.96	4,467.71	0.00	0.00	0.00
10,500.00	90.00	0.12	6,123.00	4,566.01	817.17	4,567.71	0.00	0.00	0.00
10,600.00	90.00	0.12	6,123.00	4,666.01	817.38	4,667.71	0.00	0.00	0.00
10,700.00	90.00	0.12	6,123.00	4,766.01	817.60	4,767.71	0.00	0.00	0.00
10,800.00	90.00	0.12	6,123.00	4,866.01	817.81	4,867.71	0.00	0.00	0.00
10,900.00	90.00	0.12	6,123.00	4,966.01	818.02	4,967.71	0.00	0.00	0.00
11,000.00	90.00	0.12	6,123.00	5,066.01	818.23	5,067.71	0.00	0.00	0.00
11,100.00	90.00	0.12	6,123.00	5,166.01	818.44	5,167.71	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
11,200.00	90.00	0.12	6,123.00	5,266.01	818.65	5,267.71	0.00	0.00	0.00
11,300.00	90.00	0.12	6,123.00	5,366.01	818.86	5,367.71	0.00	0.00	0.00
11,400.00	90.00	0.12	6,123.00	5,466.01	819.07	5,467.71	0.00	0.00	0.00
11,500.00	90.00	0.12	6,123.00	5,566.01	819.29	5,567.71	0.00	0.00	0.00
11,600.00	90.00	0.12	6,123.00	5,666.01	819.50	5,667.71	0.00	0.00	0.00
11,700.00	90.00	0.12	6,123.00	5,766.01	819.71	5,767.71	0.00	0.00	0.00
11,800.00	90.00	0.12	6,123.00	5,866.01	819.92	5,867.71	0.00	0.00	0.00
11,900.00	90.00	0.12	6,123.00	5,966.01	820.13	5,967.71	0.00	0.00	0.00
12,000.00	90.00	0.12	6,123.00	6,066.01	820.34	6,067.71	0.00	0.00	0.00
12,100.00	90.00	0.12	6,123.00	6,166.01	820.55	6,167.71	0.00	0.00	0.00
12,200.00	90.00	0.12	6,123.00	6,266.01	820.76	6,267.71	0.00	0.00	0.00
12,300.00	90.00	0.12	6,123.00	6,366.01	820.98	6,367.71	0.00	0.00	0.00
12,400.00	90.00	0.12	6,123.00	6,466.01	821.19	6,467.71	0.00	0.00	0.00
12,500.00	90.00	0.12	6,123.00	6,566.01	821.40	6,567.71	0.00	0.00	0.00
12,600.00	90.00	0.12	6,123.00	6,666.01	821.61	6,667.71	0.00	0.00	0.00
12,700.00	90.00	0.12	6,123.00	6,766.01	821.82	6,767.71	0.00	0.00	0.00
12,800.00	90.00	0.12	6,123.00	6,866.01	822.03	6,867.71	0.00	0.00	0.00
12,900.00	90.00	0.12	6,123.00	6,966.01	822.24	6,967.71	0.00	0.00	0.00
13,000.00	90.00	0.12	6,123.00	7,066.01	822.45	7,067.71	0.00	0.00	0.00
13,100.00	90.00	0.12	6,123.00	7,166.01	822.67	7,167.71	0.00	0.00	0.00
13,200.00	90.00	0.12	6,123.00	7,266.01	822.88	7,267.71	0.00	0.00	0.00
13,300.00	90.00	0.12	6,123.00	7,366.01	823.09	7,367.71	0.00	0.00	0.00
13,390.18	90.00	0.12	6,123.00	7,456.19	823.28	7,457.89	0.00	0.00	0.00
PBHL - PBHL v2 Wright 2524 LBC 2H - PBHL Wright 2524 LBC 2H									

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 v2 Wright 2524 LBC - plan hits target center - Point	0.00	0.00	5,445.54	54.68	807.65	464,619.01	633,725.57	32° 16' 37.050 N	104° 2' 3.820 W
FTP 2 Wright 2524 LBC - plan hits target center - Point	0.00	0.00	6,123.00	532.14	808.65	465,096.47	633,726.57	32° 16' 41.775 N	104° 2' 3.792 W
PBHL v2 Wright 2524 LE - plan hits target center - Point	0.00	0.00	6,123.00	7,456.19	823.28	472,020.52	633,741.20	32° 17' 50.293 N	104° 2' 3.397 W

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Wright Fed 2524 LBC 2H
Company:	Kaiser-Francis	**TVD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD83)	**MD Reference:**	23 KB + 2966.1 GL @ 2989.10usft (Cactus 171)
Site:	Wright Fed 2524 LBC	**North Reference:**	Grid
Well:	Wright Fed 2524 LBC 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,732.80	2,702.00	Base Salt, Top Delaware		0.000	0.12
3,520.66	3,477.00	Top Cherry Canyon		0.000	0.12
4,872.72	4,807.00	Top Brushy Canyon		0.000	0.12
6,202.39	6,052.00	Top Lwr Brushy Canyon		0.000	0.12

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	KOP, 2.00°/100' Build
1,018.24	1,015.42	3.16	46.64	Hold 10.36° Inc, 86.13° Azm
4,997.88	4,930.12	51.52	761.00	Begin 2.00°/100' Drop
5,516.12	5,445.54	54.68	807.65	Begin Vertical Hold
5,716.12	5,645.54	54.68	807.65	Begin 12.00°/100' Build
6,466.12	6,123.00	532.14	808.65	Begin 90.00° Lateral
13,390.18	6,123.00	7,456.19	823.28	PBHL