

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM122620
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator KAISER FRANCIS OIL COMPANY [12361]		8. Lease Name and Well No. RED HILLS FEDERAL [5467] 205H
3a. Address 6733 S. Yale Ave., Tulsa, OK 74121	3b. Phone No. (include area code) (918) 491-0000	9. API Well No. 30-025-47228
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNE / 200 FNL / 2390 FEL / LAT 32.09377 / LONG -103.6105714 At proposed prod. zone SWSE / 100 FSL / 1700 FEL / LAT 32.065572 / LONG -103.608336		10. Field and Pool, or Exploratory [97994] WC-025 G-06 S253329E/UPPER BONE S
11. Sec., T, R, M, or Blk. and Survey or Area SEC 31/T25S/R33E/NMP		
14. Distance in miles and direction from nearest town or post office* 25 miles		12. County or Parish LEA
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 200 feet	16. No of acres in lease 440.2	17. Spacing Unit dedicated to this well 320.0
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet	19. Proposed Depth 10940 feet / 21675 feet	20. BLM/BIA Bond No. in file FED: WYB000055
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3410 feet	22. Approximate date work will start* 03/15/2019	23. Estimated duration 40 days
24. Attachments		

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 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 09/19/2019
Title Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Christopher Walls / Ph: (575) 234-2234	Date 05/19/2020
Title Petroleum Engineer		
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 06/02/2020

SL

(Continued on page 2)



KZ
06/05/2020

*(Instructions on page 2)

Additional Operator Remarks

Location of Well

0. SHL: NWN / 200 FNL / 2470 FEL / TWSP: 25S / RANGE: 33E / SECTION: 31 / LAT: 32.0937699 / LONG: -103.6108291 (TVD: 0 feet, MD: 0 feet)

PPP: NWN / 0 FNL / 1320 FEL / TWSP: 26S / RANGE: 33E / SECTION: 6 / LAT: 32.07976 / LONG: -103.6071215 (TVD: 12200 feet, MD: 17789 feet)

PPP: NWN / 100 FNL / 1320 FEL / TWSP: 25S / RANGE: 33E / SECTION: 31 / LAT: 32.0940455 / LONG: -103.6071168 (TVD: 12200 feet, MD: 12609 feet)

BHL: SWSE / 100 FSL / 1320 FEL / TWSP: 26S / RANGE: 33E / SECTION: 6 / LAT: 32.065572 / LONG: -103.60711 (TVD: 12200 feet, MD: 22967 feet)

CONFIDENTIAL

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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APD ID: 10400052980

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Type: OIL WELL

Submission Date:

Well Number: 205H

Well Work Type: Drill

Highlighted data
reflects the most
recent changes

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Section 1 - General

APD ID: 10400052980

BLM Office: CARLSBAD

Federal/Indian APD: FED

Lease number: NMNM122620

Surface access agreement in place?

Agreement in place? NO

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

Operator letter of designation:

Tie to previous NOS? N

User: Stormi Davis

Is the first lease penetrated for production Federal or Indian? FED

Lease Acres: 440.2

Allotted?

Reservation:

Federal or Indian agreement:

Submission Date:

Title: Regulatory Analyst

APD Operator: KAISER FRANCIS OIL COMPANY

Operator Info

Operator Organization Name: KAISER FRANCIS OIL COMPANY

Operator Address: 6733 S. Yale Ave.

Operator PO Box: PO Box 21468

Operator City: Tulsa

State: OK

Operator Phone: (918)491-0000

Operator Internet Address:

Zip: 74121

Section 2 - Well Information

Well in Master Development Plan? NO

Well in Master SUPO? NO

Well in Master Drilling Plan? NO

Well Name: RED HILLS FEDERAL

Field/Pool or Exploratory? Field and Pool

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

Master Development Plan name:

Master SUPO name:

Master Drilling Plan name:

Well Number: 205H

Field Name: WC-025 G-06
S253329E

Well API Number:

Pool Name: UPPER BONE
SPRING

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

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: RED HILLS

Number: 7

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: 25 Miles

Distance to nearest well: 20 FT

Distance to lease line: 200 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: RED_HILLS_205H_C102_20200107114937.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: 7586B

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	200	FNL	247 0	FEL	25S	33E	31	Aliquot NWNE	32.09376 99	- 103.6108 291	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 122620	341 1	0	0	
KOP Leg #1	200	FNL	247 0	FEL	25S	33E	31	Aliquot NWNE	32.09376 99	- 103.6108 291	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 122620	- 827 5	117 64	116 85	
PPP Leg #1-1	100	FNL	132 0	FEL	25S	33E	31	Aliquot NWNE	32.09404 55	- 103.6071 168	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 122620	- 879 0	126 09	122 00	

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

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 #1-2	0	FNL	1320	FEL	26S	33E	6	Aliquot NWNE	32.07976	-103.6071215	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 015321	-8790	17789	12200	
EXIT Leg #1	100	FSL	1320	FEL	26S	33E	6	Aliquot SWSE	32.065572	-103.60711	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 015321	-8790	22967	12200	
BHL Leg #1	100	FSL	1320	FEL	26S	33E	6	Aliquot SWSE	32.065572	-103.60711	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 015321	-8790	22967	12200	



APD ID: 10400052980

Submission Date:

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reflects the most
recent changes

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

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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
628130	---	3411	0	0	OTHER : None	NONE	N
628131	RUSTLER	2430	860	860	SANDSTONE	NONE	N
628132	SALADO	2090	1200	1200	SALT	NONE	N
628133	TOP SALT	1290	2000	2000	SALT	NONE	N
628134	BASE OF SALT	-1160	4450	4450	SALT	NONE	N
628135	LAMAR	-1460	4750	4750	SANDSTONE	NATURAL GAS, OIL	N
628136	BELL CANYON	-1580	4870	4870	SANDSTONE	NATURAL GAS, OIL	N
628137	CHERRY CANYON	-2570	5860	5860	SANDSTONE	NATURAL GAS, OIL	N
628138	BRUSHY CANYON	-5310	8600	8600	SANDSTONE	NATURAL GAS, OIL	N
628146	BONE SPRING	-5510	8800	8800	LIMESTONE	NATURAL GAS, OIL	N
628147	AVALON SAND	-5720	9010	9010	SANDSTONE	NATURAL GAS, OIL	N
628141	BONE SPRING 1ST	-6660	9950	9950	SANDSTONE	NATURAL GAS, OIL	N
628148	BONE SPRING 2ND	-7220	10510	10510	SANDSTONE	NATURAL GAS, OIL	N
628149	BONE SPRING LIME	-7660	10950	10950	LIMESTONE	NATURAL GAS, OIL	N
628150	BONE SPRING 3RD	-8395	11685	11685	SANDSTONE	NATURAL GAS, OIL	N
628151	WOLFCAMP	-8780	12070	12070	SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

Pressure Rating (PSI): 10M

Rating Depth: 15000

Equipment: 10M 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

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and 5000 psi high. The System may be upgraded to a higher pressure but still tested to the working pressure stated. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. The Annular shall be functionally operated at least weekly. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Choke Diagram Attachment:

Red_Hills_405H_Choke_Manifold_20200107083109.pdf

BOP Diagram Attachment:

Red_Hills_405H__BOP_20190305131136.pdf

Red_Hills_405H_Wellhead_Diagram_20200107083251.pdf

Cactus_Flex_Hose_16C_Certification_20200107083316.pdf

Well_Control_Plan_20200107083317.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	950	0	950			950	J-55	40.5	ST&C	3.6	7	DRY	10.9	DRY	16.3
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11570	0	11493			11570	HCP-110	29.7	LT&C	1.3	1.7	DRY	2.7	DRY	2.8
3	PRODUCTION	6.75	5.5	NEW	API	N	0	22967	0	12200			22967	P-110	20	OTHER - Eagle SF	1.5	1.7	DRY	2.6	DRY	2.6

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_405H_Casing_Assumptions_20200107083902.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_405H_Casing_Assumptions_20200107084024.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_405H_5.5_x_20_P110_HP_USS_EAGLE_SFH_Performance_Sheet_20190305100113.pdf

Red_Hills_405H_Casing_Assumptions_20200107084038.pdf

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	950	570	1.34	14.8	761	50	Halcem	Bentonite

INTERMEDIATE	Lead		0	1157 0	830	2.78	12	2303	15	NeoCem	Extender
INTERMEDIATE	Tail		0	1157 0	490	1.22	15.6	598	15	Halcem	Accelerator
PRODUCTION	Lead		1000 0	2296 7	640	1.95	12.5	1248	15	Econocem	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 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
950	1149 3	OTHER : Diesel Brine Emulsion	8.8	9.2							
1149 3	1220 0	OIL-BASED MUD	10	12							
0	950	OTHER : FRESH WATER	8.4	9							

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: RED HILLS FEDERAL

Well Number: 205H

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:

DS,GR,MUDLOG

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7930

Anticipated Surface Pressure: 5245

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:

Red_Hills_H2S_Contingency_Plan_20200107084921.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Red_Hills_405H_Directional_Plan_20200107085048.pdf

Other proposed operations facets description:

Gas Capture Plan attached

Other proposed operations facets attachment:

Red_Hills_Pad_7_Gas_Capture_Plan_20200107085001.pdf

Other Variance attachment:

Cactus_Flex_Hose_16C_Certification_20200107085029.pdf

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												3.6	7.0	16.3	10.9
Surface	950	10-3/4"	40.5	J-55	STC	New	14.75	950	FW	8.4 - 9.0	910	32 - 34	NC	9	445	1580	3130	629000	420000				
Intermediate	11570	7-5/8"	29.7	HCP-110	LTC	New	9.875	11493	DBE	8.8 - 9.2	11700	34	NC	9.2	5498	7150	9470	940000	922000	1.3	1.7	2.8	2.7
Production	22967	5-1/2"	20	P110 HP	Eagle SF	New	6.75	12200	OBM	10.0 - 12.0	19661	48-52	<10	12	7613	11080	12640	641000	629000	1.5	1.7	2.6	2.6



CASING DETAILS

TVD	MD	Name
950.00	950.00	13 3/8"
11493.00	11570.76	7 5/8"



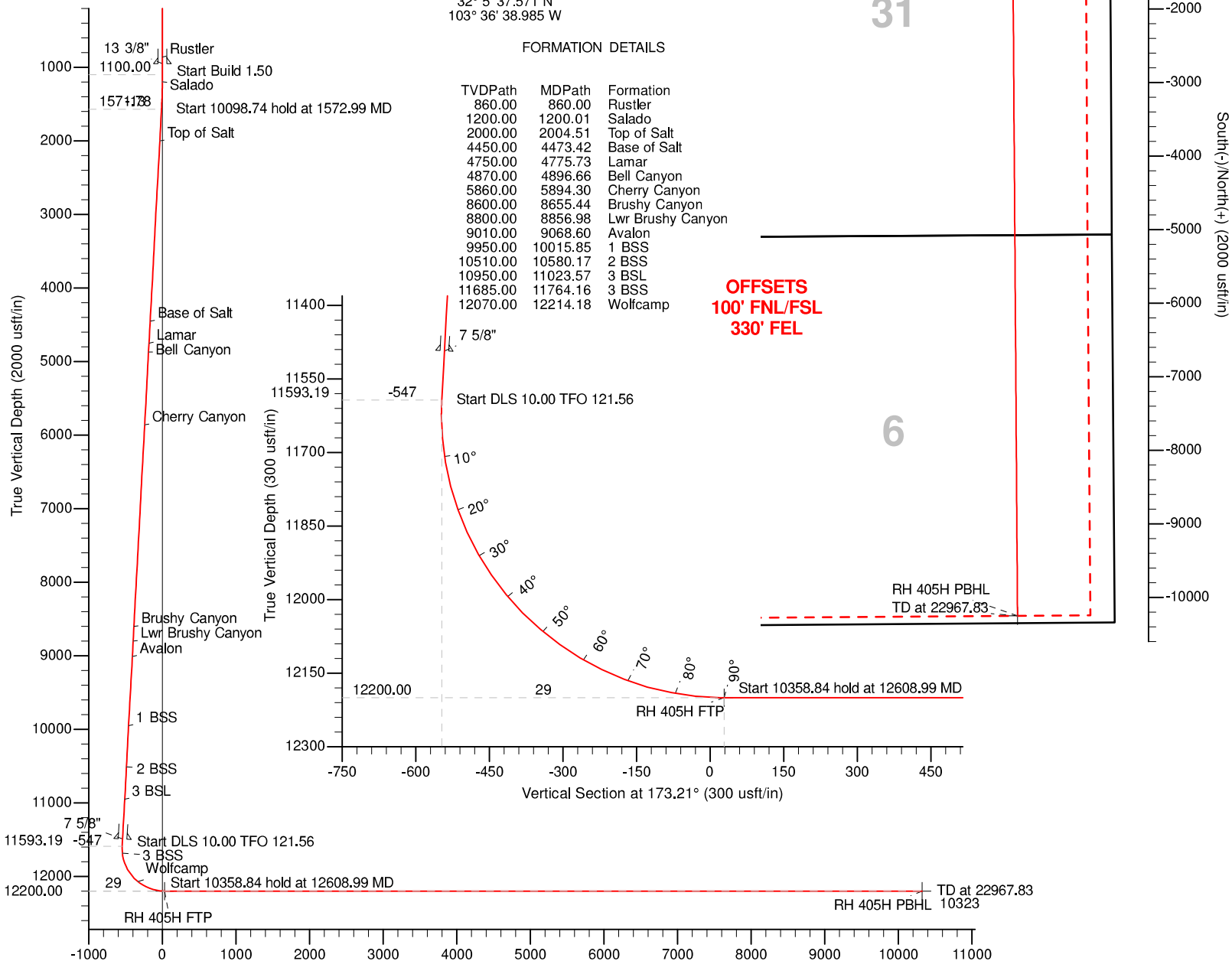
Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.30°

Magnetic Field
Strength: 47597.5snT
Dip Angle: 59.90°
Date: 12/26/2019
Model: IGRF2015

US State Plane 1983
New Mexico Eastern Zone
32° 5' 37.571 N
103° 36' 38.985 W

FORMATION DETAILS

TVDP	MD	Formation
860.00	860.00	Rustler
1200.00	1200.01	Salado
2000.00	2004.51	Top of Salt
4450.00	4473.42	Base of Salt
4750.00	4775.73	Lamar
4870.00	4896.66	Bell Canyon
5860.00	5894.30	Cherry Canyon
8600.00	8655.44	Brushy Canyon
8800.00	8856.98	Lwr Brushy Canyon
9010.00	9068.60	Avalon
9950.00	10015.85	1 BSS
10510.00	10580.17	2 BSS
10950.00	11023.57	3 BSL
11685.00	11764.16	3 BSS
12070.00	12214.18	Wolfcamp



Vertical Section at 173.21° (2000 usft/in)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RH 405H SL	0.00	0.00	0.00	398599.80	765079.55	32° 5' 37.571 N	103° 36' 38.985 W
RH 405H FTP	12200.00	108.00	1149.00	398707.80	766228.52	32° 5' 38.564 N	103° 36' 25.620 W
RH 405H PBHL	12200.00	-10250.58	1220.83	388349.56	766300.34	32° 3' 56.059 N	103° 36' 25.596 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1572.99	7.09	57.85	1571.78	15.56	24.76	1.50	57.85	-12.53	
4	11671.72	7.09	57.85	11593.19	679.29	1080.82	0.00	0.00	-546.70	
5	12608.99	90.00	179.60	12200.00	108.00	1149.00	10.00	121.56	28.64	RH 405H FTP
6	22967.83	90.00	179.60	12200.00	-10250.58	1220.83	0.00	0.00	10323.03	RH 405H PBHL

S31-T25S-R33E SL
200'FNL 2470'FEL
S31-T25S-R33E FTP
100'FNL 1320'FEL
S6-T26S-R33E PBHL
100'FSL 1320'FEL

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

Project	Permian NM E'83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	Red Hills Pad 7, Centered on 405H		
Site Position:		Northing:	398,599.80 usft
From:	Map	Easting:	765,079.55 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 37.571 N
		Longitude:	103° 36' 38.985 W
		Grid Convergence:	0.38 °

Well	Red Hills 405H - Slot C		
Well Position	+N/-S	0.00 usft	Northing: 398,599.80 usft
	+E/-W	0.00 usft	Easting: 765,079.55 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 5' 37.571 N
		Longitude:	103° 36' 38.985 W
		Ground Level:	3,411.00 usft

Wellbore	#405H OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/26/19	6.69	59.90	47,597.50339283

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	173.21	

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
860.00	0.00	0.00	860.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	1.50	57.85	1,199.99	0.70	1.11	-0.56	1.50	1.50	0.00
1,200.01	1.50	57.85	1,200.00	0.70	1.11	-0.56	0.00	0.00	0.00
Salado									
1,300.00	3.00	57.85	1,299.91	2.79	4.43	-2.24	1.50	1.50	0.00
1,400.00	4.50	57.85	1,399.69	6.27	9.97	-5.04	1.50	1.50	0.00
1,500.00	6.00	57.85	1,499.27	11.13	17.72	-8.96	1.50	1.50	0.00
1,572.99	7.09	57.85	1,571.78	15.56	24.76	-12.53	1.50	1.50	0.00
1,600.00	7.09	57.85	1,598.59	17.34	27.59	-13.95	0.00	0.00	0.00
1,700.00	7.09	57.85	1,697.82	23.91	38.04	-19.24	0.00	0.00	0.00
1,800.00	7.09	57.85	1,797.05	30.48	48.50	-24.53	0.00	0.00	0.00

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

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)
1,900.00	7.09	57.85	1,896.29	37.06	58.96	-29.82	0.00	0.00	0.00
2,000.00	7.09	57.85	1,995.52	43.63	69.42	-35.11	0.00	0.00	0.00
2,004.51	7.09	57.85	2,000.00	43.92	69.89	-35.35	0.00	0.00	0.00
Top of Salt									
2,100.00	7.09	57.85	2,094.76	50.20	79.87	-40.40	0.00	0.00	0.00
2,200.00	7.09	57.85	2,193.99	56.77	90.33	-45.69	0.00	0.00	0.00
2,300.00	7.09	57.85	2,293.23	63.35	100.79	-50.98	0.00	0.00	0.00
2,400.00	7.09	57.85	2,392.46	69.92	111.25	-56.27	0.00	0.00	0.00
2,500.00	7.09	57.85	2,491.69	76.49	121.70	-61.56	0.00	0.00	0.00
2,600.00	7.09	57.85	2,590.93	83.06	132.16	-66.85	0.00	0.00	0.00
2,700.00	7.09	57.85	2,690.16	89.63	142.62	-72.14	0.00	0.00	0.00
2,800.00	7.09	57.85	2,789.40	96.21	153.08	-77.43	0.00	0.00	0.00
2,900.00	7.09	57.85	2,888.63	102.78	163.53	-82.72	0.00	0.00	0.00
3,000.00	7.09	57.85	2,987.87	109.35	173.99	-88.01	0.00	0.00	0.00
3,100.00	7.09	57.85	3,087.10	115.92	184.45	-93.30	0.00	0.00	0.00
3,200.00	7.09	57.85	3,186.33	122.50	194.90	-98.59	0.00	0.00	0.00
3,300.00	7.09	57.85	3,285.57	129.07	205.36	-103.88	0.00	0.00	0.00
3,400.00	7.09	57.85	3,384.80	135.64	215.82	-109.17	0.00	0.00	0.00
3,500.00	7.09	57.85	3,484.04	142.21	226.28	-114.46	0.00	0.00	0.00
3,600.00	7.09	57.85	3,583.27	148.79	236.73	-119.75	0.00	0.00	0.00
3,700.00	7.09	57.85	3,682.51	155.36	247.19	-125.04	0.00	0.00	0.00
3,800.00	7.09	57.85	3,781.74	161.93	257.65	-130.32	0.00	0.00	0.00
3,900.00	7.09	57.85	3,880.97	168.50	268.11	-135.61	0.00	0.00	0.00
4,000.00	7.09	57.85	3,980.21	175.08	278.56	-140.90	0.00	0.00	0.00
4,100.00	7.09	57.85	4,079.44	181.65	289.02	-146.19	0.00	0.00	0.00
4,200.00	7.09	57.85	4,178.68	188.22	299.48	-151.48	0.00	0.00	0.00
4,300.00	7.09	57.85	4,277.91	194.79	309.93	-156.77	0.00	0.00	0.00
4,400.00	7.09	57.85	4,377.15	201.37	320.39	-162.06	0.00	0.00	0.00
4,473.42	7.09	57.85	4,450.00	206.19	328.07	-165.95	0.00	0.00	0.00
Base of Salt									
4,500.00	7.09	57.85	4,476.38	207.94	330.85	-167.35	0.00	0.00	0.00
4,600.00	7.09	57.85	4,575.61	214.51	341.31	-172.64	0.00	0.00	0.00
4,700.00	7.09	57.85	4,674.85	221.08	351.76	-177.93	0.00	0.00	0.00
4,775.73	7.09	57.85	4,750.00	226.06	359.68	-181.94	0.00	0.00	0.00
Lamar									
4,800.00	7.09	57.85	4,774.08	227.66	362.22	-183.22	0.00	0.00	0.00
4,896.66	7.09	57.85	4,870.00	234.01	372.33	-188.33	0.00	0.00	0.00
Bell Canyon									
4,900.00	7.09	57.85	4,873.32	234.23	372.68	-188.51	0.00	0.00	0.00
5,000.00	7.09	57.85	4,972.55	240.80	383.14	-193.80	0.00	0.00	0.00
5,100.00	7.09	57.85	5,071.79	247.37	393.59	-199.09	0.00	0.00	0.00
5,200.00	7.09	57.85	5,171.02	253.94	404.05	-204.38	0.00	0.00	0.00
5,300.00	7.09	57.85	5,270.25	260.52	414.51	-209.67	0.00	0.00	0.00
5,400.00	7.09	57.85	5,369.49	267.09	424.97	-214.96	0.00	0.00	0.00

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

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)
5,500.00	7.09	57.85	5,468.72	273.66	435.42	-220.25	0.00	0.00	0.00
5,600.00	7.09	57.85	5,567.96	280.23	445.88	-225.54	0.00	0.00	0.00
5,700.00	7.09	57.85	5,667.19	286.81	456.34	-230.83	0.00	0.00	0.00
5,800.00	7.09	57.85	5,766.43	293.38	466.79	-236.12	0.00	0.00	0.00
5,894.30	7.09	57.85	5,860.00	299.58	476.66	-241.10	0.00	0.00	0.00
Cherry Canyon									
5,900.00	7.09	57.85	5,865.66	299.95	477.25	-241.41	0.00	0.00	0.00
6,000.00	7.09	57.85	5,964.90	306.52	487.71	-246.69	0.00	0.00	0.00
6,100.00	7.09	57.85	6,064.13	313.10	498.17	-251.98	0.00	0.00	0.00
6,200.00	7.09	57.85	6,163.36	319.67	508.62	-257.27	0.00	0.00	0.00
6,300.00	7.09	57.85	6,262.60	326.24	519.08	-262.56	0.00	0.00	0.00
6,400.00	7.09	57.85	6,361.83	332.81	529.54	-267.85	0.00	0.00	0.00
6,500.00	7.09	57.85	6,461.07	339.39	540.00	-273.14	0.00	0.00	0.00
6,600.00	7.09	57.85	6,560.30	345.96	550.45	-278.43	0.00	0.00	0.00
6,700.00	7.09	57.85	6,659.54	352.53	560.91	-283.72	0.00	0.00	0.00
6,800.00	7.09	57.85	6,758.77	359.10	571.37	-289.01	0.00	0.00	0.00
6,900.00	7.09	57.85	6,858.00	365.68	581.83	-294.30	0.00	0.00	0.00
7,000.00	7.09	57.85	6,957.24	372.25	592.28	-299.59	0.00	0.00	0.00
7,100.00	7.09	57.85	7,056.47	378.82	602.74	-304.88	0.00	0.00	0.00
7,200.00	7.09	57.85	7,155.71	385.39	613.20	-310.17	0.00	0.00	0.00
7,300.00	7.09	57.85	7,254.94	391.96	623.65	-315.46	0.00	0.00	0.00
7,400.00	7.09	57.85	7,354.18	398.54	634.11	-320.75	0.00	0.00	0.00
7,500.00	7.09	57.85	7,453.41	405.11	644.57	-326.04	0.00	0.00	0.00
7,600.00	7.09	57.85	7,552.64	411.68	655.03	-331.33	0.00	0.00	0.00
7,700.00	7.09	57.85	7,651.88	418.25	665.48	-336.62	0.00	0.00	0.00
7,800.00	7.09	57.85	7,751.11	424.83	675.94	-341.91	0.00	0.00	0.00
7,900.00	7.09	57.85	7,850.35	431.40	686.40	-347.20	0.00	0.00	0.00
8,000.00	7.09	57.85	7,949.58	437.97	696.86	-352.49	0.00	0.00	0.00
8,100.00	7.09	57.85	8,048.82	444.54	707.31	-357.78	0.00	0.00	0.00
8,200.00	7.09	57.85	8,148.05	451.12	717.77	-363.07	0.00	0.00	0.00
8,300.00	7.09	57.85	8,247.28	457.69	728.23	-368.35	0.00	0.00	0.00
8,400.00	7.09	57.85	8,346.52	464.26	738.68	-373.64	0.00	0.00	0.00
8,500.00	7.09	57.85	8,445.75	470.83	749.14	-378.93	0.00	0.00	0.00
8,600.00	7.09	57.85	8,544.99	477.41	759.60	-384.22	0.00	0.00	0.00
8,655.44	7.09	57.85	8,600.00	481.05	765.40	-387.16	0.00	0.00	0.00
Brushy Canyon									
8,700.00	7.09	57.85	8,644.22	483.98	770.06	-389.51	0.00	0.00	0.00
8,800.00	7.09	57.85	8,743.46	490.55	780.51	-394.80	0.00	0.00	0.00
8,856.98	7.09	57.85	8,800.00	494.30	786.47	-397.82	0.00	0.00	0.00
Lwr Brushy Canyon									
8,900.00	7.09	57.85	8,842.69	497.12	790.97	-400.09	0.00	0.00	0.00
9,000.00	7.09	57.85	8,941.92	503.70	801.43	-405.38	0.00	0.00	0.00
9,068.60	7.09	57.85	9,010.00	508.20	808.60	-409.01	0.00	0.00	0.00
Avalon									

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

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)
9,100.00	7.09	57.85	9,041.16	510.27	811.89	-410.67	0.00	0.00	0.00
9,200.00	7.09	57.85	9,140.39	516.84	822.34	-415.96	0.00	0.00	0.00
9,300.00	7.09	57.85	9,239.63	523.41	832.80	-421.25	0.00	0.00	0.00
9,400.00	7.09	57.85	9,338.86	529.99	843.26	-426.54	0.00	0.00	0.00
9,500.00	7.09	57.85	9,438.10	536.56	853.72	-431.83	0.00	0.00	0.00
9,600.00	7.09	57.85	9,537.33	543.13	864.17	-437.12	0.00	0.00	0.00
9,700.00	7.09	57.85	9,636.56	549.70	874.63	-442.41	0.00	0.00	0.00
9,800.00	7.09	57.85	9,735.80	556.27	885.09	-447.70	0.00	0.00	0.00
9,900.00	7.09	57.85	9,835.03	562.85	895.54	-452.99	0.00	0.00	0.00
10,000.00	7.09	57.85	9,934.27	569.42	906.00	-458.28	0.00	0.00	0.00
10,015.85	7.09	57.85	9,950.00	570.46	907.66	-459.12	0.00	0.00	0.00
1 BSS									
10,100.00	7.09	57.85	10,033.50	575.99	916.46	-463.57	0.00	0.00	0.00
10,200.00	7.09	57.85	10,132.74	582.56	926.92	-468.86	0.00	0.00	0.00
10,300.00	7.09	57.85	10,231.97	589.14	937.37	-474.15	0.00	0.00	0.00
10,400.00	7.09	57.85	10,331.20	595.71	947.83	-479.44	0.00	0.00	0.00
10,500.00	7.09	57.85	10,430.44	602.28	958.29	-484.73	0.00	0.00	0.00
10,580.18	7.09	57.85	10,510.00	607.55	966.67	-488.97	0.00	0.00	0.00
2 BSS									
10,600.00	7.09	57.85	10,529.67	608.85	968.75	-490.01	0.00	0.00	0.00
10,700.00	7.09	57.85	10,628.91	615.43	979.20	-495.30	0.00	0.00	0.00
10,800.00	7.09	57.85	10,728.14	622.00	989.66	-500.59	0.00	0.00	0.00
10,900.00	7.09	57.85	10,827.38	628.57	1,000.12	-505.88	0.00	0.00	0.00
11,000.00	7.09	57.85	10,926.61	635.14	1,010.57	-511.17	0.00	0.00	0.00
11,023.57	7.09	57.85	10,950.00	636.69	1,013.04	-512.42	0.00	0.00	0.00
3 BSL									
11,100.00	7.09	57.85	11,025.84	641.72	1,021.03	-516.46	0.00	0.00	0.00
11,200.00	7.09	57.85	11,125.08	648.29	1,031.49	-521.75	0.00	0.00	0.00
11,300.00	7.09	57.85	11,224.31	654.86	1,041.95	-527.04	0.00	0.00	0.00
11,400.00	7.09	57.85	11,323.55	661.43	1,052.40	-532.33	0.00	0.00	0.00
11,500.00	7.09	57.85	11,422.78	668.01	1,062.86	-537.62	0.00	0.00	0.00
11,570.76	7.09	57.85	11,493.00	672.66	1,070.26	-541.36	0.00	0.00	0.00
7 5/8"									
11,600.00	7.09	57.85	11,522.02	674.58	1,073.32	-542.91	0.00	0.00	0.00
11,671.72	7.09	57.85	11,593.19	679.29	1,080.82	-546.70	0.00	0.00	0.00
11,700.00	6.11	81.12	11,621.28	680.45	1,083.78	-547.51	10.00	-3.49	82.30
11,750.00	7.30	123.87	11,670.97	679.09	1,089.05	-545.53	10.00	2.38	85.49
11,764.16	8.17	132.14	11,685.00	677.92	1,090.55	-544.19	10.00	6.19	58.47
3 BSS									
11,800.00	10.91	146.30	11,720.35	673.38	1,094.32	-539.24	10.00	7.63	39.49
11,850.00	15.32	156.87	11,769.04	663.37	1,099.54	-528.68	10.00	8.81	21.15
11,900.00	20.00	162.70	11,816.67	649.12	1,104.68	-513.92	10.00	9.37	11.66
11,950.00	24.80	166.36	11,862.89	630.76	1,109.70	-495.09	10.00	9.61	7.33
12,000.00	29.67	168.90	11,907.33	608.41	1,114.56	-472.33	10.00	9.73	5.06

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

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)
12,050.00	34.57	170.77	11,949.67	582.25	1,119.22	-445.80	10.00	9.80	3.74
12,100.00	39.49	172.22	11,989.58	552.48	1,123.65	-415.71	10.00	9.85	2.91
12,150.00	44.43	173.40	12,026.75	519.32	1,127.82	-382.29	10.00	9.87	2.36
12,200.00	49.38	174.39	12,060.90	483.03	1,131.68	-345.80	10.00	9.90	1.98
12,214.18	50.78	174.65	12,070.00	472.20	1,132.72	-334.92	10.00	9.91	1.79
Wolfcamp									
12,250.00	54.33	175.25	12,091.77	443.88	1,135.22	-306.51	10.00	9.91	1.67
12,300.00	59.29	176.00	12,119.13	402.17	1,138.41	-264.71	10.00	9.92	1.50
12,350.00	64.26	176.68	12,142.77	358.22	1,141.21	-220.74	10.00	9.93	1.36
12,400.00	69.22	177.30	12,162.51	312.36	1,143.62	-174.92	10.00	9.93	1.25
12,450.00	74.19	177.89	12,178.20	264.94	1,145.61	-127.60	10.00	9.94	1.17
12,500.00	79.16	178.44	12,189.72	216.33	1,147.17	-79.14	10.00	9.94	1.11
12,550.00	84.13	178.98	12,196.98	166.89	1,148.28	-29.92	10.00	9.94	1.08
12,600.00	89.11	179.51	12,199.93	116.99	1,148.94	19.70	10.00	9.94	1.06
12,608.99	90.00	179.60	12,200.00	108.00	1,149.00	28.64	10.00	9.94	1.05
12,700.00	90.00	179.60	12,200.00	17.00	1,149.64	119.08	0.00	0.00	0.00
12,800.00	90.00	179.60	12,200.00	-83.00	1,150.33	218.46	0.00	0.00	0.00
12,900.00	90.00	179.60	12,200.00	-183.00	1,151.02	317.84	0.00	0.00	0.00
13,000.00	90.00	179.60	12,200.00	-283.00	1,151.72	417.21	0.00	0.00	0.00
13,100.00	90.00	179.60	12,200.00	-382.99	1,152.41	516.59	0.00	0.00	0.00
13,200.00	90.00	179.60	12,200.00	-482.99	1,153.10	615.97	0.00	0.00	0.00
13,300.00	90.00	179.60	12,200.00	-582.99	1,153.80	715.35	0.00	0.00	0.00
13,400.00	90.00	179.60	12,200.00	-682.99	1,154.49	814.73	0.00	0.00	0.00
13,500.00	90.00	179.60	12,200.00	-782.98	1,155.18	914.10	0.00	0.00	0.00
13,600.00	90.00	179.60	12,200.00	-882.98	1,155.88	1,013.48	0.00	0.00	0.00
13,700.00	90.00	179.60	12,200.00	-982.98	1,156.57	1,112.86	0.00	0.00	0.00
13,800.00	90.00	179.60	12,200.00	-1,082.98	1,157.26	1,212.24	0.00	0.00	0.00
13,900.00	90.00	179.60	12,200.00	-1,182.97	1,157.96	1,311.62	0.00	0.00	0.00
14,000.00	90.00	179.60	12,200.00	-1,282.97	1,158.65	1,410.99	0.00	0.00	0.00
14,100.00	90.00	179.60	12,200.00	-1,382.97	1,159.34	1,510.37	0.00	0.00	0.00
14,200.00	90.00	179.60	12,200.00	-1,482.97	1,160.04	1,609.75	0.00	0.00	0.00
14,300.00	90.00	179.60	12,200.00	-1,582.96	1,160.73	1,709.13	0.00	0.00	0.00
14,400.00	90.00	179.60	12,200.00	-1,682.96	1,161.42	1,808.50	0.00	0.00	0.00
14,500.00	90.00	179.60	12,200.00	-1,782.96	1,162.12	1,907.88	0.00	0.00	0.00
14,600.00	90.00	179.60	12,200.00	-1,882.96	1,162.81	2,007.26	0.00	0.00	0.00
14,700.00	90.00	179.60	12,200.00	-1,982.95	1,163.50	2,106.64	0.00	0.00	0.00
14,800.00	90.00	179.60	12,200.00	-2,082.95	1,164.20	2,206.02	0.00	0.00	0.00
14,900.00	90.00	179.60	12,200.00	-2,182.95	1,164.89	2,305.39	0.00	0.00	0.00
15,000.00	90.00	179.60	12,200.00	-2,282.95	1,165.58	2,404.77	0.00	0.00	0.00
15,100.00	90.00	179.60	12,200.00	-2,382.94	1,166.28	2,504.15	0.00	0.00	0.00
15,200.00	90.00	179.60	12,200.00	-2,482.94	1,166.97	2,603.53	0.00	0.00	0.00
15,300.00	90.00	179.60	12,200.00	-2,582.94	1,167.66	2,702.91	0.00	0.00	0.00
15,400.00	90.00	179.60	12,200.00	-2,682.94	1,168.36	2,802.28	0.00	0.00	0.00
15,500.00	90.00	179.60	12,200.00	-2,782.94	1,169.05	2,901.66	0.00	0.00	0.00

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,600.00	90.00	179.60	12,200.00	-2,882.93	1,169.74	3,001.04	0.00	0.00	0.00
15,700.00	90.00	179.60	12,200.00	-2,982.93	1,170.44	3,100.42	0.00	0.00	0.00
15,800.00	90.00	179.60	12,200.00	-3,082.93	1,171.13	3,199.79	0.00	0.00	0.00
15,900.00	90.00	179.60	12,200.00	-3,182.93	1,171.82	3,299.17	0.00	0.00	0.00
16,000.00	90.00	179.60	12,200.00	-3,282.92	1,172.52	3,398.55	0.00	0.00	0.00
16,100.00	90.00	179.60	12,200.00	-3,382.92	1,173.21	3,497.93	0.00	0.00	0.00
16,200.00	90.00	179.60	12,200.00	-3,482.92	1,173.90	3,597.31	0.00	0.00	0.00
16,300.00	90.00	179.60	12,200.00	-3,582.92	1,174.60	3,696.68	0.00	0.00	0.00
16,400.00	90.00	179.60	12,200.00	-3,682.91	1,175.29	3,796.06	0.00	0.00	0.00
16,500.00	90.00	179.60	12,200.00	-3,782.91	1,175.98	3,895.44	0.00	0.00	0.00
16,600.00	90.00	179.60	12,200.00	-3,882.91	1,176.68	3,994.82	0.00	0.00	0.00
16,700.00	90.00	179.60	12,200.00	-3,982.91	1,177.37	4,094.20	0.00	0.00	0.00
16,800.00	90.00	179.60	12,200.00	-4,082.90	1,178.06	4,193.57	0.00	0.00	0.00
16,900.00	90.00	179.60	12,200.00	-4,182.90	1,178.76	4,292.95	0.00	0.00	0.00
17,000.00	90.00	179.60	12,200.00	-4,282.90	1,179.45	4,392.33	0.00	0.00	0.00
17,100.00	90.00	179.60	12,200.00	-4,382.90	1,180.14	4,491.71	0.00	0.00	0.00
17,200.00	90.00	179.60	12,200.00	-4,482.89	1,180.84	4,591.08	0.00	0.00	0.00
17,300.00	90.00	179.60	12,200.00	-4,582.89	1,181.53	4,690.46	0.00	0.00	0.00
17,400.00	90.00	179.60	12,200.00	-4,682.89	1,182.22	4,789.84	0.00	0.00	0.00
17,500.00	90.00	179.60	12,200.00	-4,782.89	1,182.92	4,889.22	0.00	0.00	0.00
17,600.00	90.00	179.60	12,200.00	-4,882.88	1,183.61	4,988.60	0.00	0.00	0.00
17,700.00	90.00	179.60	12,200.00	-4,982.88	1,184.30	5,087.97	0.00	0.00	0.00
17,800.00	90.00	179.60	12,200.00	-5,082.88	1,185.00	5,187.35	0.00	0.00	0.00
17,900.00	90.00	179.60	12,200.00	-5,182.88	1,185.69	5,286.73	0.00	0.00	0.00
18,000.00	90.00	179.60	12,200.00	-5,282.88	1,186.39	5,386.11	0.00	0.00	0.00
18,100.00	90.00	179.60	12,200.00	-5,382.87	1,187.08	5,485.48	0.00	0.00	0.00
18,200.00	90.00	179.60	12,200.00	-5,482.87	1,187.77	5,584.86	0.00	0.00	0.00
18,300.00	90.00	179.60	12,200.00	-5,582.87	1,188.47	5,684.24	0.00	0.00	0.00
18,400.00	90.00	179.60	12,200.00	-5,682.87	1,189.16	5,783.62	0.00	0.00	0.00
18,500.00	90.00	179.60	12,200.00	-5,782.86	1,189.85	5,883.00	0.00	0.00	0.00
18,600.00	90.00	179.60	12,200.00	-5,882.86	1,190.55	5,982.37	0.00	0.00	0.00
18,700.00	90.00	179.60	12,200.00	-5,982.86	1,191.24	6,081.75	0.00	0.00	0.00
18,800.00	90.00	179.60	12,200.00	-6,082.86	1,191.93	6,181.13	0.00	0.00	0.00
18,900.00	90.00	179.60	12,200.00	-6,182.85	1,192.63	6,280.51	0.00	0.00	0.00
19,000.00	90.00	179.60	12,200.00	-6,282.85	1,193.32	6,379.89	0.00	0.00	0.00
19,100.00	90.00	179.60	12,200.00	-6,382.85	1,194.01	6,479.26	0.00	0.00	0.00
19,200.00	90.00	179.60	12,200.00	-6,482.85	1,194.71	6,578.64	0.00	0.00	0.00
19,300.00	90.00	179.60	12,200.00	-6,582.84	1,195.40	6,678.02	0.00	0.00	0.00
19,400.00	90.00	179.60	12,200.00	-6,682.84	1,196.09	6,777.40	0.00	0.00	0.00
19,500.00	90.00	179.60	12,200.00	-6,782.84	1,196.79	6,876.77	0.00	0.00	0.00
19,600.00	90.00	179.60	12,200.00	-6,882.84	1,197.48	6,976.15	0.00	0.00	0.00
19,700.00	90.00	179.60	12,200.00	-6,982.83	1,198.17	7,075.53	0.00	0.00	0.00
19,800.00	90.00	179.60	12,200.00	-7,082.83	1,198.87	7,174.91	0.00	0.00	0.00

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

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)
19,900.00	90.00	179.60	12,200.00	-7,182.83	1,199.56	7,274.29	0.00	0.00	0.00
20,000.00	90.00	179.60	12,200.00	-7,282.83	1,200.25	7,373.66	0.00	0.00	0.00
20,100.00	90.00	179.60	12,200.00	-7,382.82	1,200.95	7,473.04	0.00	0.00	0.00
20,200.00	90.00	179.60	12,200.00	-7,482.82	1,201.64	7,572.42	0.00	0.00	0.00
20,300.00	90.00	179.60	12,200.00	-7,582.82	1,202.33	7,671.80	0.00	0.00	0.00
20,400.00	90.00	179.60	12,200.00	-7,682.82	1,203.03	7,771.18	0.00	0.00	0.00
20,500.00	90.00	179.60	12,200.00	-7,782.82	1,203.72	7,870.55	0.00	0.00	0.00
20,600.00	90.00	179.60	12,200.00	-7,882.81	1,204.41	7,969.93	0.00	0.00	0.00
20,700.00	90.00	179.60	12,200.00	-7,982.81	1,205.11	8,069.31	0.00	0.00	0.00
20,800.00	90.00	179.60	12,200.00	-8,082.81	1,205.80	8,168.69	0.00	0.00	0.00
20,900.00	90.00	179.60	12,200.00	-8,182.81	1,206.49	8,268.06	0.00	0.00	0.00
21,000.00	90.00	179.60	12,200.00	-8,282.80	1,207.19	8,367.44	0.00	0.00	0.00
21,100.00	90.00	179.60	12,200.00	-8,382.80	1,207.88	8,466.82	0.00	0.00	0.00
21,200.00	90.00	179.60	12,200.00	-8,482.80	1,208.57	8,566.20	0.00	0.00	0.00
21,300.00	90.00	179.60	12,200.00	-8,582.80	1,209.27	8,665.58	0.00	0.00	0.00
21,400.00	90.00	179.60	12,200.00	-8,682.79	1,209.96	8,764.95	0.00	0.00	0.00
21,500.00	90.00	179.60	12,200.00	-8,782.79	1,210.65	8,864.33	0.00	0.00	0.00
21,600.00	90.00	179.60	12,200.00	-8,882.79	1,211.35	8,963.71	0.00	0.00	0.00
21,700.00	90.00	179.60	12,200.00	-8,982.79	1,212.04	9,063.09	0.00	0.00	0.00
21,800.00	90.00	179.60	12,200.00	-9,082.78	1,212.73	9,162.47	0.00	0.00	0.00
21,900.00	90.00	179.60	12,200.00	-9,182.78	1,213.43	9,261.84	0.00	0.00	0.00
22,000.00	90.00	179.60	12,200.00	-9,282.78	1,214.12	9,361.22	0.00	0.00	0.00
22,100.00	90.00	179.60	12,200.00	-9,382.78	1,214.81	9,460.60	0.00	0.00	0.00
22,200.00	90.00	179.60	12,200.00	-9,482.77	1,215.51	9,559.98	0.00	0.00	0.00
22,300.00	90.00	179.60	12,200.00	-9,582.77	1,216.20	9,659.35	0.00	0.00	0.00
22,400.00	90.00	179.60	12,200.00	-9,682.77	1,216.89	9,758.73	0.00	0.00	0.00
22,500.00	90.00	179.60	12,200.00	-9,782.77	1,217.59	9,858.11	0.00	0.00	0.00
22,600.00	90.00	179.60	12,200.00	-9,882.76	1,218.28	9,957.49	0.00	0.00	0.00
22,700.00	90.00	179.60	12,200.00	-9,982.76	1,218.97	10,056.87	0.00	0.00	0.00
22,800.00	90.00	179.60	12,200.00	-10,082.76	1,219.67	10,156.24	0.00	0.00	0.00
22,900.00	90.00	179.60	12,200.00	-10,182.76	1,220.36	10,255.62	0.00	0.00	0.00
22,967.83	90.00	179.60	12,200.00	-10,250.58	1,220.83	10,323.03	0.00	0.00	0.00

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
950.00	950.00	13 3/8"	13-3/8	17-1/2
11,570.76	11,493.00	7 5/8"	7-5/8	9-7/8

Titan Directional Drilling

Survey Report

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Red Hills 405H - Slot C
Project:	Permian NM E'83	TVD Reference:	est.GL+KB @ 3436.00usft (planning)
Site:	Red Hills Pad 7	MD Reference:	est.GL+KB @ 3436.00usft (planning)
Well:	Red Hills 405H	North Reference:	Grid
Wellbore:	#405H OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5k-14

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
860.00	860.00	Rustler				
1,200.01	1,200.00	Salado				
2,004.51	2,000.00	Top of Salt				
4,473.42	4,450.00	Base of Salt				
4,775.73	4,750.00	Lamar				
4,896.66	4,870.00	Bell Canyon				
5,894.30	5,860.00	Cherry Canyon				
8,655.44	8,600.00	Brushy Canyon				
8,856.98	8,800.00	Lwr Brushy Canyon				
9,068.60	9,010.00	Avalon				
10,015.85	9,950.00	1 BSS				
10,580.18	10,510.00	2 BSS				
11,023.57	10,950.00	3 BSL				
11,764.16	11,685.00	3 BSS				
12,214.18	12,070.00	Wolfcamp				

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, 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-	² Pool Code 97994	³ Pool Name WC-025 G-06 S253329D; Upper Bone Spring
⁴ Property Code 5467	⁵ Property Name RED HILLS FEDERAL	⁶ Well Number 205H
⁷ OGRID No. 12361	⁸ Operator Name KAISER-FRANCIS OIL CO.	⁹ Elevation 3410.4

¹⁰ Surface Location

UL or lot no. B	Section 31	Township 25 S	Range 33 E	Lot Idn	Feet from the 200	North/South line NORTH	Feet from the 2390	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. O	Section 6	Township 26 S	Range 33 E	Lot Idn	Feet from the 100	North/South line SOUTH	Feet from the 1700	East/West line EAST	County LEA
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¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NW CORNER SEC. 31 LAT. = 32.0943129°N LONG. = 103.6199197°W NMSP EAST (FT) N = 398778.60 E = 762263.04 W/4 CORNER SEC. 31 LAT. = 32.0870551°N LONG. = 103.6199216°W NMSP EAST (FT) N = 396138.31 E = 762279.92 SECTION CORNER LAT. = 32.0797982°N LONG. = 103.6198947°W NMSP EAST (FT) N = 393498.44 E = 762305.72 W/4 CORNER SEC. 6 LAT. = 32.0724791°N LONG. = 103.6198675°W NMSP EAST (FT) N = 390835.89 E = 762331.74 SW CORNER SEC. 6 LAT. = 32.0652928°N LONG. = 103.6198397°W NMSP EAST (FT) N = 388221.69 E = 762357.64 NE CORNER SEC. 31 LAT. = 32.0943209°N LONG. = 103.6028553°W NMSP EAST (FT) N = 398816.91 E = 767547.55 E/4 CORNER SEC. 31 LAT. = 32.0870695°N LONG. = 103.6028547°W NMSP EAST (FT) N = 396178.96 E = 767565.60 SECTION CORNER LAT. = 32.0797953°N LONG. = 103.6028596°W NMSP EAST (FT) N = 393532.70 E = 767582.02 E/4 CORNER SEC. 6 LAT. = 32.0725247°N LONG. = 103.6028542°W NMSP EAST (FT) N = 390887.75 E = 767601.57 SE CORNER SEC. 6 LAT. = 32.0652983°N LONG. = 103.6028496°W NMSP EAST (FT) N = 388258.92 E = 767620.79	S89°33'55"W 2650.63 FT S89°36'15"W 2635.02 FT FTP 2390' 200' SURFACE LOCATION N/4 CORNER SEC. 31 LAT. = 32.0943196°N LONG. = 103.6113623°W NMSP EAST (FT) N = 398798.70 E = 764913.09 FIRST TAKE POINT 100' FNL, 1700' FEL LAT. = 32.064677°N LONG. = 109.072803°W SEC. 31 RED HILLS' 205H ELEV. = 3410.4' LAT. = 32.064340°N (NAD83) LONG. = 109.075017°W NMSP EAST (FT) N = 398601.63 E = 765159.14 QUARTER CORNER LAT. = 32.0797943°N LONG. = 103.6113923°W NMSP EAST (FT) N = 393514.54 E = 764939.16 LATITUDE AND LONGITUDE VALUES ARE NAD 83 STATE PLANE VALUES ARE NMSP EAST GRID SEC. 6 BOTTOM OF HOLE & LAST TAKE POINT LAT. = 32.036237°N LONG. = 109.071698°W NMSP EAST (FT) N = 388346.31 E = 765920.34 BOTTOM OF HOLE & LTP 1700' N89°35'41"E 2632.14 FT N89°35'41"E 2632.14 FT	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Stormi Davis</i> 1/7/20 Signature Date Stormi Davis Printed Name ssdavis104@gmail.com E-mail Address ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. NOVEMBER 11, 2019 Date of Survey <i>FILIMON F. JARAMILLO</i> Signature and Seal of Professional Surveyor: Certificate Number: FILIMON F. JARAMILLO, P.S. 12797 SURVEY NO. 7586B
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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: **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 (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Red Hills 205H		31-25S-33E	200 FNL 2390 FEL	1500	0	
Red Hills 705H		31-25S-33E	200 FNL 2370 FEL	2500	0	
Red Hills 005H		31-25S-33E	200 FNL 2410 FEL	1500	0	
Red Hills 505H		31-25S-33E	200 FNL 2430 FEL	2500	0	
Red Hills 404H		31-25S-33E	200 FNL 2450 FEL	2500	0	
Red Hills 405H		31-25S-33E	200 FNL 2470 FEL	2500	0	
Red Hills 604H		31-25S-33E	200 FNL 2490 FEL	2500	0	
Red Hills 605H		31-25S-33E	200 FNL 2510 FEL	2500	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Mark West and will be connected to Mark West low/high pressure gathering system located in Lea County, New Mexico. Kaiser-Francis Oil Company provides (periodically) to Mark West an 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 Mark West have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Mark West Processing Plant. 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 Mark West 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