Rec'd 11/06/2020 - NMOCD

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM032636

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.: MOSAIC FED 2419 WA 1H

2. Name of Operator: KAISER FRANCIS OIL COMPANY

9. API Well No.: 30 015 47646

3a. Address: PO BOX 21468 TULSA OK 74121-1468

3b. Phone No. *(include area code)*:

10. Field and Pool, or Exploratory: Purple Sage;Wolfcamp
~~BOBCAT DRAW /~~ WOLFCAMP, (GAS)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: NWNW / 1045 FNL / 156 FWL / LAT 32.295397 / LONG -104.049151

At proposed prod. zone: NENE / 660 FNL / 330 FEL / LAT 32.296047 / LONG -104.0166009

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 24 / T23S / R28E / NMP

14. Distance in miles and direction from nearest town or post office*: 3 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 0 feet

16. No of acres in lease: 1040.32

17. Spacing Unit dedicated to this well: 640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 30 feet

19. Proposed Depth: 9716 feet / 19653 feet

20. BLM/BIA Bond No. in file: FED: WYB000055

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 2987 feet

22. Approximate date work will start*: 06/01/2019

23. Estimated duration: 40 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)		02/08/2019

Title:

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	11/06/2020

Title	Office
Assistant Field Manager Lands & Minerals	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.

Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

- Will require a directional survey with the C-104
- Surface casing must be set 25' below top of Rustler Anhydrite
- in order to seal off protectable water

Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

SL

KP 11/9/2020 GEO Review

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 11/06/2020

Entered - KMS NMOCD

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, 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	[2] Pool Code	[3] Pool Name
30-015- 47646	98220	Purple Sage; Wolfcamp (Gas)

[4] Property Code	[5] Property Name	[6] Well Number
329792	MOSAIC FED 2419 WA	1H

[7] OGRID No.	[8] Operator Name	[9] Elevation
12361	KAISER-FRANCIS OIL CO.	2986.9

[10] Surface Location

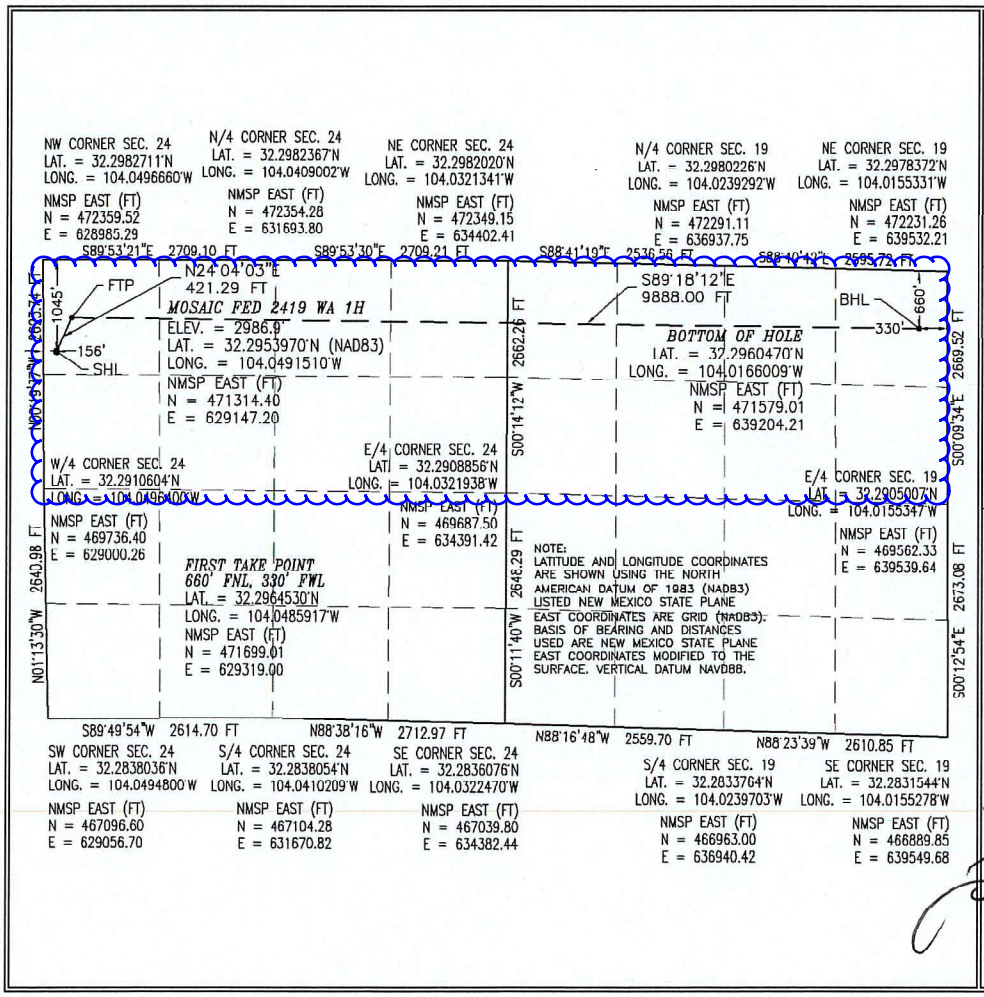
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	24	23 S	28 E		1045	NORTH	156	WEST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	19	23 S	29 E		660	NORTH	330	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640			

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.



[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.

Melanie J. Wilson 02/04/2019
Signature Date

Melanie Wilson
Printed Name

mjp1692@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.

JANUARY 17, 2019
Date of Survey

FILIMON F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor:

Certificate Number: FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 6830

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: **01/26/2018**

☒ Original
☐ Amended - Reason for Amendment:

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

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Mosaic Fed 2419 WC 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 WC 2H		24-23S-28E		2000	0	
Mosaic Fed 2419 WA 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 WA 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 WAM 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 BS 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 BS 1H		24-23S-28E		2000	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Sendero and will be connected to Sendero low/high pressure gathering system located in Eddy County, New Mexico. It will require 11,000' of pipeline to connect the facility to low/high pressure gathering system. Kaiser-Francis Oil Company provides (periodically) to Sendero a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Kaiser-Francis Oil Company and Sendero have periodic conference calls to discuss changes to drilling and completion schedules.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

APD ID: 10400038797 **Submission Date:** 02/08/2019

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: MOSAIC FED 2419 WA **Well Number:** 1H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
390088	---	2987	0	0		NONE	N
390093	DELAWARE	336	2651	2651		NATURAL GAS, OIL	N
390095	CHERRY CANYON	-394	3381	3381		NATURAL GAS, OIL	N
390096	BRUSHY CANYON	-1779	4766	4766		NATURAL GAS, OIL	N
390097	BONE SPRING	-3279	6266	6266		NATURAL GAS, OIL	N
390098	FIRST BONE SPRING SAND	-4329	7316	7316		NATURAL GAS, OIL	N
390099	BONE SPRING 2ND	-5099	8086	8086		NATURAL GAS, OIL	N
390102	BONE SPRING 3RD	-6354	9341	9341		NATURAL GAS, OIL	N
390103	WOLFCAMP	-6604	9591	9658		NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

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

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

Variance request: Flex Hose Variance

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional and tested.

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: MOSAIC FED 2419 WA **Well Number:** 1H

Choke Diagram Attachment:

Mosaic_Fed_2419_WA_1H_Choke_Manifold_20190205111616.pdf

BOP Diagram Attachment:

Mosaic_Fed_2419_WA_1H_BOP_10M_5M_20190205111631.pdf

Mosaic_Fed_2419_WA_1H_Flex_Hose_Data_20190205111917.pdf

Mosaic_Fed_2419_WA_1H_Wellhead_Diagram_20191025090535.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	500	0	500			500	H-40	48	ST&C	3.3	7.4	DRY	13.4	DRY	22.5
2	INTERMEDIATE	12.25	10.75	NEW	API	N	0	2850	0	2850			2850	J-55	40.5	BUTT	1.1	2.1	DRY	3.6	DRY	5.4
3	INTERMEDIATE	9.875	7.625	NEW	API	N	0	9200	0	9200			9200	P-110	29.7	BUTT	1.4	2	DRY	2.6	DRY	3.2
4	PRODUCTION	6.75	5.5	NEW	API	N	0	19653	0	9716			19653	P-110	20	OTHER - USS Eagle	2	2.2	DRY	2.9	DRY	3.4

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mosaic_Fed_2419_WA_1H_Csg_Assumptions_20190205113005.pdf

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: MOSAIC FED 2419 WA **Well Number:** 1H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mosaic_Fed_2419_WA_1H_Csg_Assumptions_20190205113017.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mosaic_Fed_2419_WA_1H_Csg_Assumptions_20190205113038.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mosaic_Fed_2419_WA_1H_PROD_CSG_SPECS_20190205113050.pdf

Section 4 - Cement

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: MOSAIC FED 2419 WA **Well Number:** 1H

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	396	1.75	13.5	693	100	ExtendaCem	KOL-Seal
INTERMEDIATE	Lead		0	2850	340	2.46	11.9	836.4	75	EconoCem C	None
INTERMEDIATE	Tail		0	2850	212	1.33	14.8	282	50	Halcem	none
INTERMEDIATE	Lead		2500	9200	430	2.77	11	1192	50	NeoCem	LCM
INTERMEDIATE	Tail		2500	9200	807	1.2	15.6	966	50	Halcem	Halad
PRODUCTION	Lead		8200	19653	381	1.44	13	548.64	15	NeoCem	None
PRODUCTION	Tail		8200	19653	447	1.22	14.5	547	15	Versacem	Halad

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all 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
9200	19653	OIL-BASED MUD	12.5	13							

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: MOSAIC FED 2419 WA **Well Number:** 1H

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	2850	OTHER : Brine	10	10							
0	500	OTHER : Fresh Water	8.4	9							
2850	9200	OTHER : Diesel Brine Emulsion	9	9.3							

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: 6568 **Anticipated Surface Pressure:** 4430.47

Anticipated Bottom Hole Temperature(F): 195

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:

Mosaic_Fed_2419_Pad_1_H2S_Plan_20190205114237.pdf

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: MOSAIC FED 2419 WA **Well Number:** 1H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Mosaic_Fed_2419_WA_1H_Directional_Plan_20190208125832.pdf

Other proposed operations facets description:

Gas Capture Plan attached

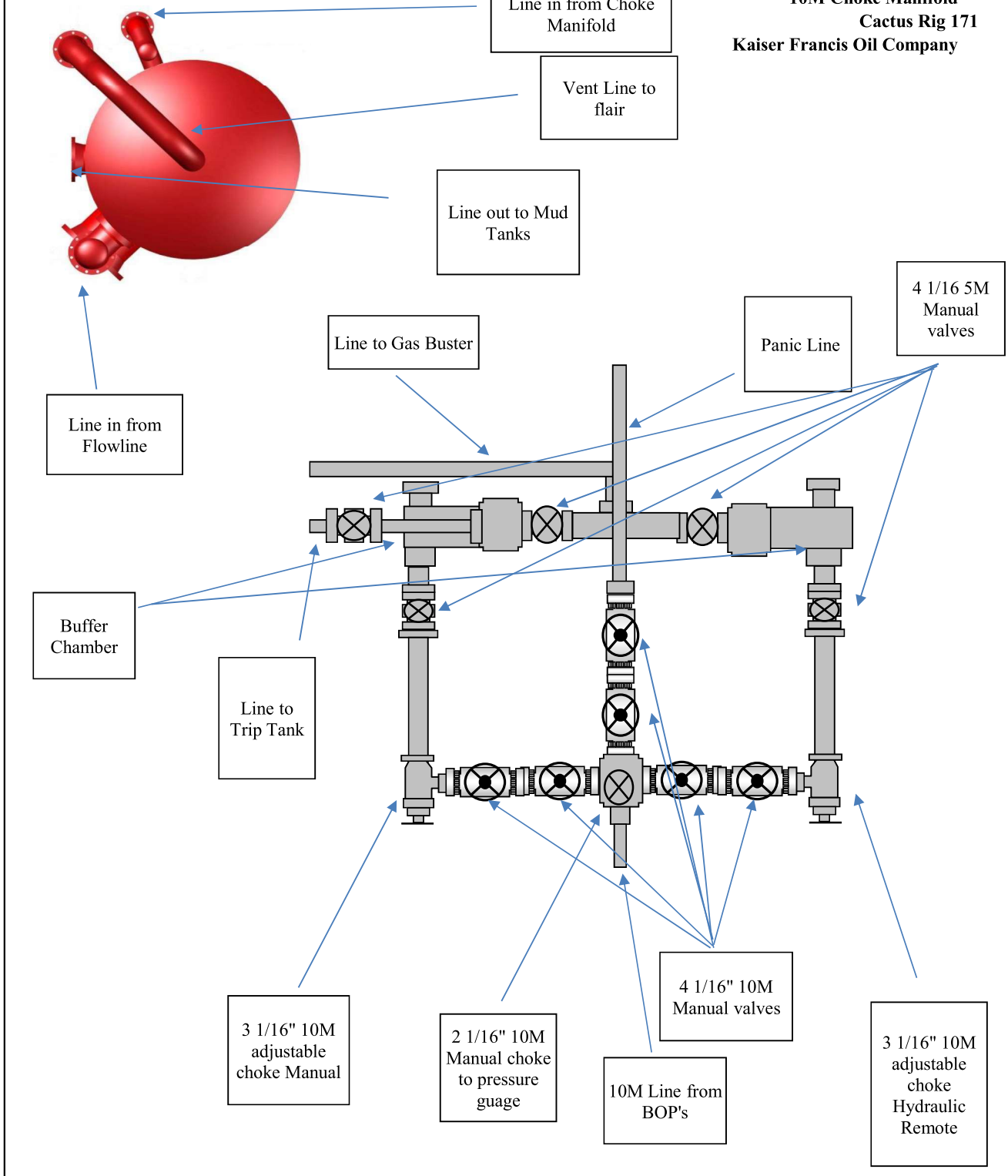
Other proposed operations facets attachment:

Mosaic_Fed_2419_Pad_1_GCP_20190205114357.pdf

Other Variance attachment:

Mosaic_Fed_2419_WA_1H_Flex_Hose_Data_20190205114409.pdf

10M Choke Manifold
Cactus Rig 171
Kaiser Francis Oil Company



Kaiser-Francis Oil Company
Mosaic Fed 2419 WA 1H
Casing Assumptions

Formation Name	Formation Top TVD
Delaware	2651
Cherry Canyon	3381
Brushy Canyon	4766
Bone Spring	6266
1 BSS	7316
2 BSS	8086
3 BSS	9341
Wolfcamp	9591

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120	20"				New		120
Surface	500	13-3/8	48	H-40	STC	New	17-1/2"	500
Intermediate	2850	10-3/4"	40.5	J55	BTC API Special Clearance	New	12-1/4"	2850
Intermediate	9200	7-5/8"	29.7	P110	BTC	New	9-7/8"	9200
Production	19653	5-1/2"	20	P110 HC	USS Eagle SFH	New	6-3/4"	9716

Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss
FW	8.4 - 9.0	500.0	32 - 34	NC
Brine	10.0	2850.0	28-32	LCM
DBE	9-9.3	9300.0	28-29	NC
OBM	12.5-13	9716.0	55-70	LCM

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	234	770	1730	541000	322000
10.0	1482	1580	3130	629000	420000
8.9	4258	6700	9460	940000	769000
12	6063	13150	14360	729000	629000

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)
3.3	7.4	22.5	13.4
1.1	2.1	5.4	3.6
1.6	2.2	3.4	2.8
2.2	2.4	3.8	3.2

Kaiser-Francis Oil Company
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Kaiser-Francis Oil Company
Mosaic Fed 2419 WA 1H
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Conductor	120	20"				New		120
Surface	500	13-3/8	48	H-40	STC	New	17-1/2"	500
Intermediate	2850	10-3/4"	40.5	J55	BTC API Special Clearance	New	12-1/4"	2850
Intermediate	9200	7-5/8"	29.7	P110	BTC	New	9-7/8"	9200
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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)
3.3	7.4	22.5	13.4
1.1	2.1	5.4	3.6
1.6	2.2	3.4	2.8
2.2	2.4	3.8	3.2

U. S. Steel Tubular Products

5 1/2 20.00 lb (0.361) P110 HP

USS-EAGLE SFH™

	PIPE	CONNECTION	
MECHANICAL PROPERTIES			
Minimum Yield Strength	**125,000**		*psi*
Maximum Yield Strength	**140,000**		*psi*
Minimum Tensile Strength	**130,000**		*psi*
DIMENSIONS			
Outside Diameter	**5.500**	**5.830**	*in.*
Wall Thickness	0.361		*in.*
Inside Diameter	4.778	4.693	*in.*
Drift - API	4.653	4.653	*in.*
Nominal Linear Weight, T&C	**20.00**		*lbs/ft*
Plain End Weight	19.83		*lbs/ft*
SECTION AREA			
Cross Sectional Area | Critical Area	5.828	5.027	*sq. in.*
Joint Efficiency		86.25	%
PERFORMANCE			
Minimum Collapse Pressure	13,150	13,150	*psi*
External Pressure Leak Resistance		10,000	*psi*
Minimum Internal Yield Pressure	14,360	14,360	*psi*
Minimum Pipe Body Yield Strength	729,000		*lbs*
Joint Strength		629,000	*lbs*
Compression Rating		629,000	*lbs*
Reference Length		21,146	*ft*
Maximum Uniaxial Bend Rating		89.9	*deg/100 ft*
MAKE-UP DATA			
Minimum Make-Up Torque		14,200	*ft-lbs*
Maximum Make-Up Torque		16,800	*ft-lbs*
Maximum Operating Torque		25,700	*ft-lbs*
Make-Up Loss		5.92	*in.*

Notes:

1) Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
2) Compressive & Tensile Connection Efficiencies are calculated by dividing the connection critical area by the pipe body area.
3) Uniaxial bending rating shown is structural only, and equal to compression efficiency.
4) Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
5) Reference length is calculated by joint strength divided by plain end weight with 1.5 safety factor.
6) Connection external pressure resistance has been verified to 10,000 psi (Fit-For-Service testing protocol).

U. S. Steel Tubular Products
10343 Sam Houston Park Dr., #120
Houston, TX 77064
1-877-893-9461
connections@uss.com
www.usstubular.com

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

Mosaic Fed 2419 WC 1H
Mosaic Fed 2419 WC 2H
Mosaic Fed 2419 WA 1H
Mosaic Fed 2419 WA 2H
Mosaic Fed 2419 WAM 1H
Mosaic Fed 2419 BS 1H
Mosaic Fed 2419 BS 2H
SECTION 24 -T23S-R28E
Eddy County, NM

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

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Training	8
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Maps	

EMERGENCY RESPONSE ACTIVATION AND GENERAL RESPONSIBILITIES

Activation of the Emergency Action Plan

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

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

General Responsibilities

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

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

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

3) Always use the "buddy system".

4) Isolate the well/problem if possible.

5) Account for all personnel

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

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

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

INDIVIDUAL RESPONSIBILITIES DURING AN H_2S RELEASE

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

All Personnel:

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

Rig Manager/Tool Pusher:

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

Two People Responsible for Shut-in and Rescue:

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

All Other Personnel:

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

Kaiser-Francis Oil Company Representative:

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

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

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

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

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

INSTRUCTIONS FOR IGNITION:

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

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

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

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

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

CONTACTING AUTHORITIES

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

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

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

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

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

PROTECTION OF THE GENERAL PUBLIC/ROE:

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

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

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

Calculation for the 100 ppm ROE:

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

Calculation for the 500 ppm ROE:

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

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

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

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

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

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

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

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

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

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

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

CHARACTERISTICS OF H_2S AND SO_2

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

TRAINING:

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

PUBLIC RELATIONS

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

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

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

Kaiser-Francis Oil Company

Company: Kaiser-Francis
Well: Mosaic Fed 2419 WA 1H
County: Eddy County, New Mexico (NAD 27)
Rig: Cactus 171
Wellbore: Wellbore #1
Design: Design #1
Created By: BSW
Date: 11:33, February 01 2019

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

To convert a Magnetic Direction to a Grid Direction, Add 6.919°
To convert a Magnetic Direction to a True Direction, Add 7.071° East
To convert a True Direction to a Grid Direction, Subtract 0.152°

Azimuths to Grid North
True North: -0.15°
Magnetic North: 6.92°

Magnetic Field
Strength: 47815.2nT
Dip Angle: 59.97°
Date: 2/7/2019
Model: BGGM2018

WELL DETAILS: Mosaic Fed 2419 WA 1H

GL @ 2986.90 WELL @ 3009.90usft (Cactus 171)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	471255.07	587964.28	32° 17' 42.993 N	104° 2' 55.166 W

SECTION DETAILS

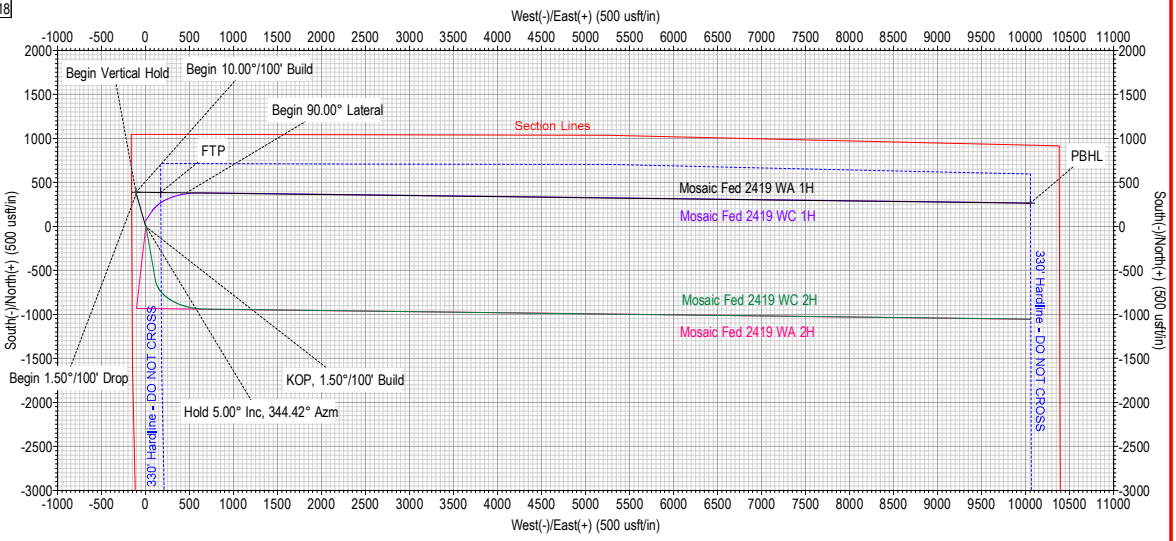
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.000	0.00	KOP, 1.50°/100' Build
2333.28	5.00	344.42	2332.86	14.00	-3.90	1.50	344.425	-4.07	Hold 5.00° Inc, 344.42° Azm
6621.92	5.00	344.42	6605.18	373.99	-104.25	0.00	0.000	-108.81	Begin 1.50°/100' Drop
6955.20	0.00	0.00	6938.04	387.99	-108.15	1.50	180.000	-112.88	Begin Vertical Hold
9160.20	0.00	0.00	9143.04	387.99	-108.15	0.00	0.000	-112.88	Begin 10.00°/100' Build
10060.20	90.00	90.70	9716.00	381.03	464.77	10.00	90.696	460.08	Begin 90.00° Lateral
19653.00	90.00	90.70	9716.00	264.48	10056.86	0.00	0.000	10052.88	PBHL

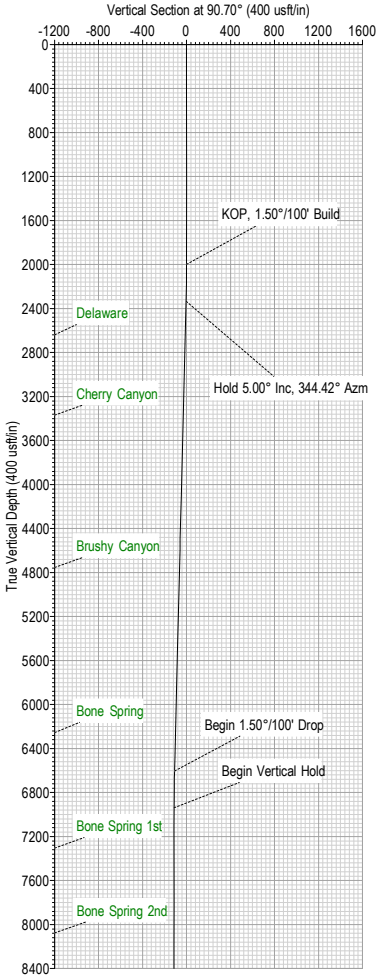
DESIGN TARGET DETAILS

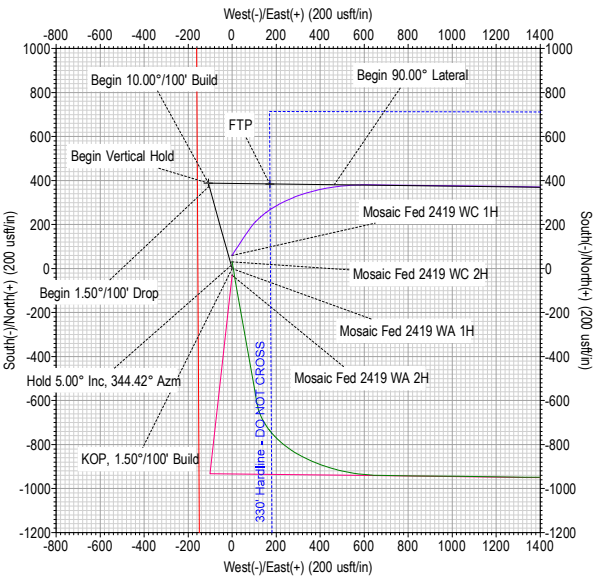
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
VP - Mosaic Fed 2419 WA 1H	9143.04	387.99	-108.15	471643.06	587856.13	32° 17' 46.835 N	104° 2' 56.414 W
PBHL - Mosaic Fed 2419 WA 1H	9716.00	264.48	10056.86	471519.55	598021.14	32° 17' 45.331 N	104° 0' 57.990 W
FTP - Mosaic Fed 2419 WA 1H	9716.00	384.59	171.79	471639.66	588136.07	32° 17' 46.794 N	104° 2' 53.152 W

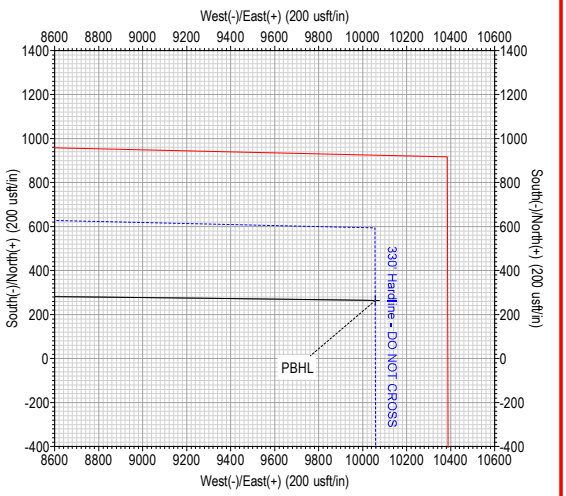
SURVEY PROGRAM

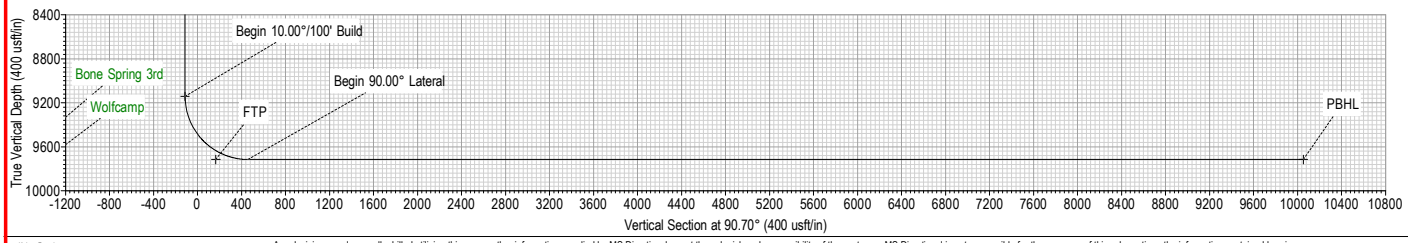
Depth From	Depth To	Survey/Plan	Tool
0.00	19653.00	Design #1 (Wellbore #1)	MWD











MS Directional

Kaiser-Francis Oil Company

Kaiser-Francis

Eddy County, New Mexico (NAD 27)
Mosaic Fed 2419
Mosaic Fed 2419 WA 1H

Wellbore #1

Plan: Design #1

Standard Planning Report

01 February, 2019

MS Directional

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Eddy County, New Mexico (NAD 27)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Mosaic Fed 2419

Site Position:		**Northing:**	471,255.07 usft	**Latitude:**	32° 17' 42.993 N
From:	Map	**Easting:**	587,964.28 usft	**Longitude:**	104° 2' 55.166 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well Mosaic Fed 2419 WA 1H

Well Position	**+N/-S**	0.00 usft	**Northing:**	471,255.07 usft	**Latitude:**	32° 17' 42.993 N
	+E/-W	0.00 usft	**Easting:**	587,964.28 usft	**Longitude:**	104° 2' 55.166 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,986.90 usft
Grid Convergence:		0.152 °				

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2018	2/7/2019	7.071	59.972	47,815.22

Design Design #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	90.70

Plan Survey Tool Program **Date** 1/30/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,653.00	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,333.28	5.00	344.42	2,332.86	14.00	-3.90	1.50	1.50	0.00	344.425	
6,621.92	5.00	344.42	6,605.18	373.99	-104.25	0.00	0.00	0.00	0.000	
6,955.20	0.00	0.00	6,938.04	387.99	-108.15	1.50	-1.50	0.00	180.000	
9,160.20	0.00	0.00	9,143.04	387.99	-108.15	0.00	0.00	0.00	0.000	VP - Mosaic Fed 24
10,060.20	90.00	90.70	9,716.00	381.03	464.77	10.00	10.00	10.08	90.696	
19,653.00	90.00	90.70	9,716.00	264.48	10,056.86	0.00	0.00	0.00	0.000	PBHL - Mosaic Fed

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 1.50°/100' Build									
2,100.00	1.50	344.42	2,099.99	1.26	-0.35	-0.37	1.50	1.50	0.00
2,200.00	3.00	344.42	2,199.91	5.04	-1.41	-1.47	1.50	1.50	0.00
2,300.00	4.50	344.42	2,299.69	11.34	-3.16	-3.30	1.50	1.50	0.00
2,333.28	5.00	344.42	2,332.86	14.00	-3.90	-4.07	1.50	1.50	0.00
Hold 5.00° Inc, 344.42° Azm									
2,400.00	5.00	344.42	2,399.32	19.60	-5.46	-5.70	0.00	0.00	0.00
2,500.00	5.00	344.42	2,498.94	27.99	-7.80	-8.14	0.00	0.00	0.00
2,600.00	5.00	344.42	2,598.56	36.39	-10.14	-10.59	0.00	0.00	0.00
2,641.50	5.00	344.42	2,639.90	39.87	-11.11	-11.60	0.00	0.00	0.00
Delaware									
2,700.00	5.00	344.42	2,698.18	44.78	-12.48	-13.03	0.00	0.00	0.00
2,800.00	5.00	344.42	2,797.80	53.17	-14.82	-15.47	0.00	0.00	0.00
2,900.00	5.00	344.42	2,897.42	61.57	-17.16	-17.91	0.00	0.00	0.00
3,000.00	5.00	344.42	2,997.04	69.96	-19.50	-20.35	0.00	0.00	0.00
3,100.00	5.00	344.42	3,096.66	78.36	-21.84	-22.80	0.00	0.00	0.00
3,200.00	5.00	344.42	3,196.28	86.75	-24.18	-25.24	0.00	0.00	0.00
3,300.00	5.00	344.42	3,295.90	95.15	-26.52	-27.68	0.00	0.00	0.00
3,374.28	5.00	344.42	3,369.90	101.38	-28.26	-29.50	0.00	0.00	0.00
Cherry Canyon									
3,400.00	5.00	344.42	3,395.52	103.54	-28.86	-30.12	0.00	0.00	0.00
3,500.00	5.00	344.42	3,495.14	111.93	-31.20	-32.57	0.00	0.00	0.00
3,600.00	5.00	344.42	3,594.76	120.33	-33.54	-35.01	0.00	0.00	0.00
3,700.00	5.00	344.42	3,694.38	128.72	-35.88	-37.45	0.00	0.00	0.00
3,800.00	5.00	344.42	3,794.00	137.12	-38.22	-39.89	0.00	0.00	0.00
3,900.00	5.00	344.42	3,893.62	145.51	-40.56	-42.33	0.00	0.00	0.00
4,000.00	5.00	344.42	3,993.24	153.90	-42.90	-44.78	0.00	0.00	0.00
4,100.00	5.00	344.42	4,092.86	162.30	-45.24	-47.22	0.00	0.00	0.00
4,200.00	5.00	344.42	4,192.48	170.69	-47.58	-49.66	0.00	0.00	0.00
4,300.00	5.00	344.42	4,292.10	179.09	-49.92	-52.10	0.00	0.00	0.00
4,400.00	5.00	344.42	4,391.72	187.48	-52.26	-54.55	0.00	0.00	0.00
4,500.00	5.00	344.42	4,491.33	195.88	-54.60	-56.99	0.00	0.00	0.00
4,600.00	5.00	344.42	4,590.95	204.27	-56.94	-59.43	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	5.00	344.42	4,690.57	212.66	-59.28	-61.87	0.00	0.00	0.00
4,764.57	5.00	344.42	4,754.90	218.08	-60.79	-63.45	0.00	0.00	0.00
Brushy Canyon									
4,800.00	5.00	344.42	4,790.19	221.06	-61.62	-64.31	0.00	0.00	0.00
4,900.00	5.00	344.42	4,889.81	229.45	-63.96	-66.76	0.00	0.00	0.00
5,000.00	5.00	344.42	4,989.43	237.85	-66.30	-69.20	0.00	0.00	0.00
5,100.00	5.00	344.42	5,089.05	246.24	-68.64	-71.64	0.00	0.00	0.00
5,200.00	5.00	344.42	5,188.67	254.64	-70.98	-74.08	0.00	0.00	0.00
5,300.00	5.00	344.42	5,288.29	263.03	-73.32	-76.53	0.00	0.00	0.00
5,400.00	5.00	344.42	5,387.91	271.42	-75.66	-78.97	0.00	0.00	0.00
5,500.00	5.00	344.42	5,487.53	279.82	-78.00	-81.41	0.00	0.00	0.00
5,600.00	5.00	344.42	5,587.15	288.21	-80.34	-83.85	0.00	0.00	0.00
5,700.00	5.00	344.42	5,686.77	296.61	-82.68	-86.29	0.00	0.00	0.00
5,800.00	5.00	344.42	5,786.39	305.00	-85.02	-88.74	0.00	0.00	0.00
5,900.00	5.00	344.42	5,886.01	313.39	-87.36	-91.18	0.00	0.00	0.00
6,000.00	5.00	344.42	5,985.63	321.79	-89.70	-93.62	0.00	0.00	0.00
6,100.00	5.00	344.42	6,085.25	330.18	-92.04	-96.06	0.00	0.00	0.00
6,200.00	5.00	344.42	6,184.87	338.58	-94.38	-98.50	0.00	0.00	0.00
6,270.30	5.00	344.42	6,254.90	344.48	-96.02	-100.22	0.00	0.00	0.00
Bone Spring									
6,300.00	5.00	344.42	6,284.49	346.97	-96.72	-100.95	0.00	0.00	0.00
6,400.00	5.00	344.42	6,384.11	355.37	-99.06	-103.39	0.00	0.00	0.00
6,500.00	5.00	344.42	6,483.73	363.76	-101.39	-105.83	0.00	0.00	0.00
6,600.00	5.00	344.42	6,583.35	372.15	-103.73	-108.27	0.00	0.00	0.00
6,621.92	5.00	344.42	6,605.18	373.99	-104.25	-108.81	0.00	0.00	0.00
Begin 1.50°/100' Drop									
6,700.00	3.83	344.42	6,683.03	379.78	-105.86	-110.49	1.50	-1.50	0.00
6,800.00	2.33	344.42	6,782.88	384.95	-107.30	-112.00	1.50	-1.50	0.00
6,900.00	0.83	344.42	6,882.84	387.61	-108.04	-112.77	1.50	-1.50	0.00
6,955.20	0.00	0.00	6,938.04	387.99	-108.15	-112.88	1.50	-1.50	0.00
Begin Vertical Hold									
7,000.00	0.00	0.00	6,982.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,100.00	0.00	0.00	7,082.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,200.00	0.00	0.00	7,182.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,300.00	0.00	0.00	7,282.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,322.06	0.00	0.00	7,304.90	387.99	-108.15	-112.88	0.00	0.00	0.00
Bone Spring 1st									
7,400.00	0.00	0.00	7,382.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,500.00	0.00	0.00	7,482.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,600.00	0.00	0.00	7,582.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,700.00	0.00	0.00	7,682.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,800.00	0.00	0.00	7,782.84	387.99	-108.15	-112.88	0.00	0.00	0.00
7,900.00	0.00	0.00	7,882.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,000.00	0.00	0.00	7,982.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,092.06	0.00	0.00	8,074.90	387.99	-108.15	-112.88	0.00	0.00	0.00
Bone Spring 2nd									
8,100.00	0.00	0.00	8,082.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,200.00	0.00	0.00	8,182.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,300.00	0.00	0.00	8,282.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,400.00	0.00	0.00	8,382.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,500.00	0.00	0.00	8,482.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,600.00	0.00	0.00	8,582.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,700.00	0.00	0.00	8,682.84	387.99	-108.15	-112.88	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,800.00	0.00	0.00	8,782.84	387.99	-108.15	-112.88	0.00	0.00	0.00
8,900.00	0.00	0.00	8,882.84	387.99	-108.15	-112.88	0.00	0.00	0.00
9,000.00	0.00	0.00	8,982.84	387.99	-108.15	-112.88	0.00	0.00	0.00
9,100.00	0.00	0.00	9,082.84	387.99	-108.15	-112.88	0.00	0.00	0.00
9,160.20	0.00	0.00	9,143.04	387.99	-108.15	-112.88	0.00	0.00	0.00
Begin 10.00°/100' Build									
9,200.00	3.98	90.70	9,182.81	387.97	-106.77	-111.50	10.00	10.00	0.00
9,300.00	13.98	90.70	9,281.46	387.79	-91.18	-95.91	10.00	10.00	0.00
9,350.54	19.03	90.70	9,329.90	387.61	-76.82	-81.55	10.00	10.00	0.00
Bone Spring 3rd									
9,400.00	23.98	90.70	9,375.90	387.39	-58.70	-63.43	10.00	10.00	0.00
9,500.00	33.98	90.70	9,463.27	386.80	-10.31	-15.04	10.00	10.00	0.00
9,600.00	43.98	90.70	9,540.91	386.04	52.51	47.79	10.00	10.00	0.00
9,657.02	49.68	90.70	9,579.90	385.53	94.07	89.36	10.00	10.00	0.00
Wolfcamp									
9,700.00	53.98	90.70	9,606.46	385.12	127.85	123.14	10.00	10.00	0.00
9,800.00	63.98	90.70	9,657.92	384.08	213.44	208.73	10.00	10.00	0.00
9,900.00	73.98	90.70	9,693.75	382.95	306.66	301.96	10.00	10.00	0.00
10,000.00	83.98	90.70	9,712.84	381.76	404.68	399.99	10.00	10.00	0.00
10,060.20	90.00	90.70	9,716.00	381.03	464.77	460.08	10.00	10.00	0.00
Begin 90.00° Lateral									
10,100.00	90.00	90.70	9,716.00	380.55	504.56	499.88	0.00	0.00	0.00
10,200.00	90.00	90.70	9,716.00	379.33	604.56	599.88	0.00	0.00	0.00
10,300.00	90.00	90.70	9,716.00	378.12	704.55	699.88	0.00	0.00	0.00
10,400.00	90.00	90.70	9,716.00	376.90	804.54	799.88	0.00	0.00	0.00
10,500.00	90.00	90.70	9,716.00	375.69	904.53	899.88	0.00	0.00	0.00
10,600.00	90.00	90.70	9,716.00	374.47	1,004.53	999.88	0.00	0.00	0.00
10,700.00	90.00	90.70	9,716.00	373.26	1,104.52	1,099.88	0.00	0.00	0.00
10,800.00	90.00	90.70	9,716.00	372.04	1,204.51	1,199.88	0.00	0.00	0.00
10,900.00	90.00	90.70	9,716.00	370.83	1,304.50	1,299.88	0.00	0.00	0.00
11,000.00	90.00	90.70	9,716.00	369.61	1,404.50	1,399.88	0.00	0.00	0.00
11,100.00	90.00	90.70	9,716.00	368.40	1,504.49	1,499.88	0.00	0.00	0.00
11,200.00	90.00	90.70	9,716.00	367.18	1,604.48	1,599.88	0.00	0.00	0.00
11,300.00	90.00	90.70	9,716.00	365.97	1,704.48	1,699.88	0.00	0.00	0.00
11,400.00	90.00	90.70	9,716.00	364.75	1,804.47	1,799.88	0.00	0.00	0.00
11,500.00	90.00	90.70	9,716.00	363.54	1,904.46	1,899.88	0.00	0.00	0.00
11,600.00	90.00	90.70	9,716.00	362.32	2,004.45	1,999.88	0.00	0.00	0.00
11,700.00	90.00	90.70	9,716.00	361.11	2,104.45	2,099.88	0.00	0.00	0.00
11,800.00	90.00	90.70	9,716.00	359.89	2,204.44	2,199.88	0.00	0.00	0.00
11,900.00	90.00	90.70	9,716.00	358.68	2,304.43	2,299.88	0.00	0.00	0.00
12,000.00	90.00	90.70	9,716.00	357.46	2,404.42	2,399.88	0.00	0.00	0.00
12,100.00	90.00	90.70	9,716.00	356.25	2,504.42	2,499.88	0.00	0.00	0.00
12,200.00	90.00	90.70	9,716.00	355.03	2,604.41	2,599.88	0.00	0.00	0.00
12,300.00	90.00	90.70	9,716.00	353.82	2,704.40	2,699.88	0.00	0.00	0.00
12,400.00	90.00	90.70	9,716.00	352.60	2,804.39	2,799.88	0.00	0.00	0.00
12,500.00	90.00	90.70	9,716.00	351.39	2,904.39	2,899.88	0.00	0.00	0.00
12,600.00	90.00	90.70	9,716.00	350.17	3,004.38	2,999.88	0.00	0.00	0.00
12,700.00	90.00	90.70	9,716.00	348.96	3,104.37	3,099.88	0.00	0.00	0.00
12,800.00	90.00	90.70	9,716.00	347.74	3,204.36	3,199.88	0.00	0.00	0.00
12,900.00	90.00	90.70	9,716.00	346.53	3,304.36	3,299.88	0.00	0.00	0.00
13,000.00	90.00	90.70	9,716.00	345.31	3,404.35	3,399.88	0.00	0.00	0.00
13,100.00	90.00	90.70	9,716.00	344.10	3,504.34	3,499.88	0.00	0.00	0.00
13,200.00	90.00	90.70	9,716.00	342.88	3,604.33	3,599.88	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,300.00	90.00	90.70	9,716.00	341.67	3,704.33	3,699.88	0.00	0.00	0.00
13,400.00	90.00	90.70	9,716.00	340.45	3,804.32	3,799.88	0.00	0.00	0.00
13,500.00	90.00	90.70	9,716.00	339.24	3,904.31	3,899.88	0.00	0.00	0.00
13,600.00	90.00	90.70	9,716.00	338.02	4,004.31	3,999.88	0.00	0.00	0.00
13,700.00	90.00	90.70	9,716.00	336.81	4,104.30	4,099.88	0.00	0.00	0.00
13,800.00	90.00	90.70	9,716.00	335.59	4,204.29	4,199.88	0.00	0.00	0.00
13,900.00	90.00	90.70	9,716.00	334.38	4,304.28	4,299.88	0.00	0.00	0.00
14,000.00	90.00	90.70	9,716.00	333.16	4,404.28	4,399.88	0.00	0.00	0.00
14,100.00	90.00	90.70	9,716.00	331.95	4,504.27	4,499.88	0.00	0.00	0.00
14,200.00	90.00	90.70	9,716.00	330.73	4,604.26	4,599.88	0.00	0.00	0.00
14,300.00	90.00	90.70	9,716.00	329.52	4,704.25	4,699.88	0.00	0.00	0.00
14,400.00	90.00	90.70	9,716.00	328.30	4,804.25	4,799.88	0.00	0.00	0.00
14,500.00	90.00	90.70	9,716.00	327.09	4,904.24	4,899.88	0.00	0.00	0.00
14,600.00	90.00	90.70	9,716.00	325.87	5,004.23	4,999.88	0.00	0.00	0.00
14,700.00	90.00	90.70	9,716.00	324.66	5,104.22	5,099.88	0.00	0.00	0.00
14,800.00	90.00	90.70	9,716.00	323.44	5,204.22	5,199.88	0.00	0.00	0.00
14,900.00	90.00	90.70	9,716.00	322.23	5,304.21	5,299.88	0.00	0.00	0.00
15,000.00	90.00	90.70	9,716.00	321.01	5,404.20	5,399.88	0.00	0.00	0.00
15,100.00	90.00	90.70	9,716.00	319.80	5,504.19	5,499.88	0.00	0.00	0.00
15,200.00	90.00	90.70	9,716.00	318.58	5,604.19	5,599.88	0.00	0.00	0.00
15,300.00	90.00	90.70	9,716.00	317.37	5,704.18	5,699.88	0.00	0.00	0.00
15,400.00	90.00	90.70	9,716.00	316.15	5,804.17	5,799.88	0.00	0.00	0.00
15,500.00	90.00	90.70	9,716.00	314.94	5,904.17	5,899.88	0.00	0.00	0.00
15,600.00	90.00	90.70	9,716.00	313.72	6,004.16	5,999.88	0.00	0.00	0.00
15,700.00	90.00	90.70	9,716.00	312.51	6,104.15	6,099.88	0.00	0.00	0.00
15,800.00	90.00	90.70	9,716.00	311.29	6,204.14	6,199.88	0.00	0.00	0.00
15,900.00	90.00	90.70	9,716.00	310.08	6,304.14	6,299.88	0.00	0.00	0.00
16,000.00	90.00	90.70	9,716.00	308.86	6,404.13	6,399.88	0.00	0.00	0.00
16,100.00	90.00	90.70	9,716.00	307.65	6,504.12	6,499.88	0.00	0.00	0.00
16,200.00	90.00	90.70	9,716.00	306.43	6,604.11	6,599.88	0.00	0.00	0.00
16,300.00	90.00	90.70	9,716.00	305.22	6,704.11	6,699.88	0.00	0.00	0.00
16,400.00	90.00	90.70	9,716.00	304.00	6,804.10	6,799.88	0.00	0.00	0.00
16,500.00	90.00	90.70	9,716.00	302.79	6,904.09	6,899.88	0.00	0.00	0.00
16,600.00	90.00	90.70	9,716.00	301.57	7,004.08	6,999.88	0.00	0.00	0.00
16,700.00	90.00	90.70	9,716.00	300.36	7,104.08	7,099.88	0.00	0.00	0.00
16,800.00	90.00	90.70	9,716.00	299.14	7,204.07	7,199.88	0.00	0.00	0.00
16,900.00	90.00	90.70	9,716.00	297.93	7,304.06	7,299.88	0.00	0.00	0.00
17,000.00	90.00	90.70	9,716.00	296.71	7,404.05	7,399.88	0.00	0.00	0.00
17,100.00	90.00	90.70	9,716.00	295.50	7,504.05	7,499.88	0.00	0.00	0.00
17,200.00	90.00	90.70	9,716.00	294.28	7,604.04	7,599.88	0.00	0.00	0.00
17,300.00	90.00	90.70	9,716.00	293.07	7,704.03	7,699.88	0.00	0.00	0.00
17,400.00	90.00	90.70	9,716.00	291.85	7,804.02	7,799.88	0.00	0.00	0.00
17,500.00	90.00	90.70	9,716.00	290.64	7,904.02	7,899.88	0.00	0.00	0.00
17,600.00	90.00	90.70	9,716.00	289.42	8,004.01	7,999.88	0.00	0.00	0.00
17,700.00	90.00	90.70	9,716.00	288.21	8,104.00	8,099.88	0.00	0.00	0.00
17,800.00	90.00	90.70	9,716.00	286.99	8,204.00	8,199.88	0.00	0.00	0.00
17,900.00	90.00	90.70	9,716.00	285.78	8,303.99	8,299.88	0.00	0.00	0.00
18,000.00	90.00	90.70	9,716.00	284.56	8,403.98	8,399.88	0.00	0.00	0.00
18,100.00	90.00	90.70	9,716.00	283.35	8,503.97	8,499.88	0.00	0.00	0.00
18,200.00	90.00	90.70	9,716.00	282.13	8,603.97	8,599.88	0.00	0.00	0.00
18,300.00	90.00	90.70	9,716.00	280.92	8,703.96	8,699.88	0.00	0.00	0.00
18,400.00	90.00	90.70	9,716.00	279.70	8,803.95	8,799.88	0.00	0.00	0.00
18,500.00	90.00	90.70	9,716.00	278.49	8,903.94	8,899.88	0.00	0.00	0.00
18,600.00	90.00	90.70	9,716.00	277.27	9,003.94	8,999.88	0.00	0.00	0.00

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,700.00	90.00	90.70	9,716.00	276.06	9,103.93	9,099.88	0.00	0.00	0.00
18,800.00	90.00	90.70	9,716.00	274.84	9,203.92	9,199.88	0.00	0.00	0.00
18,900.00	90.00	90.70	9,716.00	273.63	9,303.91	9,299.88	0.00	0.00	0.00
19,000.00	90.00	90.70	9,716.00	272.41	9,403.91	9,399.88	0.00	0.00	0.00
19,100.00	90.00	90.70	9,716.00	271.20	9,503.90	9,499.88	0.00	0.00	0.00
19,200.00	90.00	90.70	9,716.00	269.98	9,603.89	9,599.88	0.00	0.00	0.00
19,300.00	90.00	90.70	9,716.00	268.77	9,703.88	9,699.88	0.00	0.00	0.00
19,400.00	90.00	90.70	9,716.00	267.55	9,803.88	9,799.88	0.00	0.00	0.00
19,500.00	90.00	90.70	9,716.00	266.34	9,903.87	9,899.88	0.00	0.00	0.00
19,600.00	90.00	90.70	9,716.00	265.12	10,003.86	9,999.88	0.00	0.00	0.00
19,653.00	90.00	90.70	9,716.00	264.48	10,056.86	10,052.88	0.00	0.00	0.00
PBHL									

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 - Mosaic Fed 241 - plan hits target center - Point	0.00	0.00	9,143.04	387.99	-108.15	471,643.06	587,856.13	32° 17' 46.835 N	104° 2' 56.414 W
PBHL - Mosaic Fed 2 - plan hits target center - Point	0.00	0.00	9,716.00	264.48	10,056.86	471,519.55	598,021.14	32° 17' 45.331 N	104° 0' 57.990 W
FTP - Mosaic Fed 241 - plan misses target center by 70.76usft at 9794.23usft MD (9655.37 TVD, 384.15 N, 208.26 E) - Point	0.00	0.00	9,716.00	384.59	171.79	471,639.66	588,136.07	32° 17' 46.794 N	104° 2' 53.152 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,641.50	2,639.90	Delaware		0.000	
3,374.28	3,369.90	Cherry Canyon		0.000	
4,764.57	4,754.90	Brushy Canyon		0.000	
6,270.30	6,254.90	Bone Spring		0.000	
7,322.06	7,304.90	Bone Spring 1st		0.000	
8,092.06	8,074.90	Bone Spring 2nd		0.000	
9,350.54	9,329.90	Bone Spring 3rd		0.000	
9,657.02	9,579.90	Wolfcamp		0.000	

Database:	EDM 5000.14 Conroe Db	**Local Co-ordinate Reference:**	Well Mosaic Fed 2419 WA 1H
Company:	Kaiser-Francis	**TVD Reference:**	WELL @ 3009.90usft (Cactus 171)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3009.90usft (Cactus 171)
Site:	Mosaic Fed 2419	**North Reference:**	Grid
Well:	Mosaic Fed 2419 WA 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000.00	2,000.00	0.00	0.00	KOP, 1.50°/100' Build
2,333.28	2,332.86	14.00	-3.90	Hold 5.00° Inc, 344.42° Azm
6,621.92	6,605.18	373.99	-104.25	Begin 1.50°/100' Drop
6,955.20	6,938.04	387.99	-108.15	Begin Vertical Hold
9,160.20	9,143.04	387.99	-108.15	Begin 10.00°/100' Build
10,060.20	9,716.00	381.03	464.77	Begin 90.00° Lateral
19,653.00	9,716.00	264.48	10,056.86	PBHL

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, 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	[2] Pool Code	[3] Pool Name
	98220	Purple Sage Wolfcamp Gas

[4] Property Code	[5] Property Name	[6] Well Number
	MOSAIC FED 2419 WA	1H

[7] OGRID No.	[8] Operator Name	[9] Elevation
12361	KAISER-FRANCIS OIL CO.	2986.9

[10] Surface Location

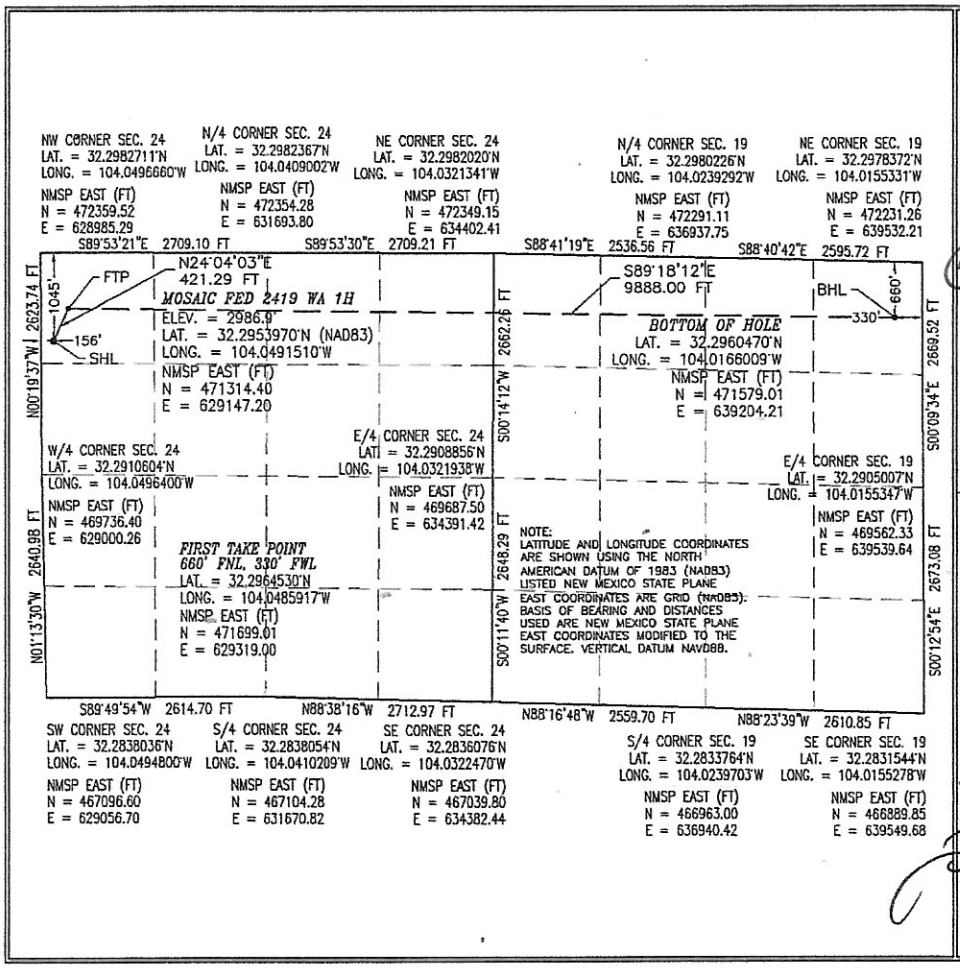
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	24	23 S	28 E	D	1045	NORTH	156	WEST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	19	23 S	29 E	A	660	NORTH	330	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640		–	–

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.



[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.

11/6/2020
Signature Date

Charlotte Van Valkenburg
Printed Name

Charlotv@kfoc.net
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.

JANUARY 17, 2019
Date of Survey

FILIMON F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor:
Certificate Number: FILIMON F. JARAMILLO, PLS 12797
SURVEY NO. 6830

District I
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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: **01/26/2018**

☒ Original
☐ Amended - Reason for Amendment:

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

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Mosaic Fed 2419 WC 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 WC 2H		24-23S-28E		2000	0	
Mosaic Fed 2419 WA 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 WA 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 WAM 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 BS 1H		24-23S-28E		2000	0	
Mosaic Fed 2419 BS 1H		24-23S-28E		2000	0	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Sendero and will be connected to Sendero low/high pressure gathering system located in _Eddy_ County, New Mexico. It will require _11,000' of pipeline to connect the facility to low/high pressure gathering system. Kaiser-Francis Oil Company provides (periodically) to Sendero a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Kaiser-Francis Oil Company and Sendero have periodic conference calls to discuss changes to drilling and completion schedules.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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