

Well Name: BELL LAKE UNIT NORTH	Well Location: T23S / R34E / SEC 6 / SWNE / 32.3353924 / -103.5071362	County or Parish/State: LEA / NM
Well Number: 409H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0000587	Unit or CA Name: BELL LAKE	Unit or CA Number: NMNM068292X, NMNM68292X
US Well Number: 3002548478	Well Status: Approved Application for Permit to Drill	Operator: KAISER FRANCIS OIL COMPANY

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 03/25/2021	Time Sundry Submitted: 03:02
Date proposed operation will begin: 03/31/2021	

Procedure Description: Kaiser Francis Oil Co. request to change the approved wellbore three casing string design to a four casing string design. Due to drilling concerns Kaiser Francis Oil Co. believes adding an additional string of pipe will help mitigate hole problems, help increase the safety of all personnel on location, and increase the ability handle well control concerns. Please see the attached procedure. Multiple wells in the North Bell Lake Unit have been drilled successfully with the four string casing design.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

4_String_Casing_Sundry_With_Cont_Cement_20210325150139.pdf

Received by OCD: 7/9/2021 7:07:32 AM

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Conditions of Approval

Additional Reviews

BLUN_409H_SUNDRY_APD_Drilling_Calculations_20210601073140.pdf
BLUN_409H_SUNDRY_Drilling_COAs_20210601073139.pdf

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: ERIC HANSEN	Signed on: MAR 25, 2021 03:01 PM
Name: KAISER FRANCIS OIL COMPANY	
Title: Drilling Engineer	
Street Address: 6733 S. Yale Ave.	
City: Tulsa	State: OK
Phone: (918) 491-4339	
Email address: EricH@kfoc.net	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 06/11/2021
Signature: Chris Walls	

Kaiser Francis Oil Co. 4 String Design Sundry

Kaiser Francis Oil Co. request to change the purposed wellbore three casing string design to a four casing string design. Due to drilling concerns Kaiser Francis Oil Co. believes adding an additional string of pipe will help mitigate hole problems, help increase the safety of all personnel on location, and increase the ability handle well control trepidations. The casing program will be the following.

Surface casing:

Surface will be drilled with 17-1/2" bit to the same depths as the Approved APD. Casing will be 13-3/8" J-55 54.5# with standard BTC connections. This will be set a minimum of 25' into the Rustler Anhydrite and set above the salt section. ~1500' TVD. Cement will be lifted to surface. In the event cement does not circulate to surface the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of 6 hours after pumping cement, ideally between 8-10 hours after. WOC time for the primary cement job will be 8 hours or 500 psi compressive strength, whichever is greater. This will include the lead cement. In the event cement falls back, a remedial cementing job will be conducted prior to drilling out the surface string. WOC time for the remedial job will be a minimum of 4 hours subsequently bringing cement to surface or 500 psi compressive strength, whichever is greater.

Intermediate casing I:

The first intermediate casing will be drilled with 12-1/4" bit to the top of the Delaware sequence. This is at approximately 5,000' TVD. Casing will be 10-3/4" 45.50# L-80 with BTC connections. A special clearance variance is requested for the minimum space between the 10-3/4" casing coupling and the 12-1/4" hole size. Because Kaiser Francis Oil Co. is adding an additional intermediate string of casing to the planned well. The second intermediate string will isolate this zone and will meet or exceed all BLM minimum requirements. Cement for the Intermediate I casing is planned to be brought up to surface. **Currently a DV tool is not planned.** If a DV tool is later planned the appropriate BLM office will be notified before proceeding. The depth of the DV tool may be adjusted as long as the cement is changed proportionally. The DV tool will be cancelled if cement circulates to surface on the first stage.

- First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool. The appropriate BLM office will be contacted before proceeding with the secondary job.
- Second stage via DV tool: Cement to surface. If cement does not circulate the appropriate BLM office will be contacted.

Contingency Cement Plan Intermediate Casing I:

If cement is not brought to surface on the primary job Kaiser Francis Oil Co. plans a contingency bradenhead cement job down the annulus of the 10-3/4" casing. If cement does not reach surface, Kaiser Francis Oil Co. will immediately notify the appropriate BLM office, and start pumping the bradenhead cement job down the 10-3/4" annulus in order to prevent cement from setting in the annulus. Cement will consist of a Haliburton Class C equivalent blend at 14.8lbm/gal. Cement volume will be calculated using the annular volume of the 10-3/4" casing from surface to 1,000' below the previous casing shoe. A 50% excess will be calculated in for the open hole portion to the

Kaiser Francis Oil Co. 4 String Design Sundry

10-3/4" casing. The contingency cement will be on location prior to pumping the primary cement job, to avoid any downtime and reduce the risk of the primary cement setting up.

- Kaiser Francis Oil Co. will verify top of cement using an Echo-meter, and will submit the final fluid top to the BLM. Kaiser Francis Oil Co. will also report to the BLM the volume of fluids used to flush the intermediate casing valves taking place after the bradenhead cement job.
- If cement does not pump down the annulus, the appropriate BLM office will be notified and further remediation will be discussed.

Intermediate casing II:

The Second intermediate casing will be drilled with a 9-7/8" bit into the 3rd Bone Lime ~10600'. The casing will consist of 7-5/8" 29.7# HCP-110 casing with BTC connections. This second intermediate casing string will be attempted to be cemented to surface. Cement will be brought a minimum of 200' into the previous casing string. Cement volumes pumped will be ample enough for cement to be brought to surface in an ideal wellbore situation. **Currently a DV tool is not planned.** If a DV tool is later planned the appropriate BLM office will be notified before proceeding. The depth of the DV tool may be adjusted as long as the cement is changed proportionally. The DV tool will be cancelled if cement circulates to surface on the first stage.

- First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool. The appropriate BLM office will be contacted before proceeding with the secondary job.
- Second stage via DV tool: Cement to surface. If cement does not circulate the appropriate BLM office will be contacted.

Contingency Cement Plan:

If cement is not brought to surface on the primary job Kaiser Francis Oil Co. plans a contingency bradenhead cement job down the annulus of the 7-5/8" casing. If cement does not reach surface, Kaiser Francis Oil Co. will immediately notify the appropriate BLM office, and start pumping the bradenhead cement job down the 7-5/8" annulus in order to prevent cement from setting in the annulus. Cement will consist of a Haliburton Class C equivalent blend at 14.8lbm/gal. Cement volume will be calculated using the annular volume of the 7-5/8" casing from surface to the top of the Delaware sequence. A 50% excess will be calculated in for the open hole portion to the 7-5/8" casing. The contingency cement will be on location prior to pumping the primary cement job, to avoid any downtime and reduce the risk of the primary cement setting up.

Kaiser Francis Oil Co. will verify top of cement using an Echo-meter, and will submit the final fluid top to the BLM. Kaiser Francis Oil Co. will also report to the BLM the volume of fluids used to flush the intermediate casing valves taking place after the bradenhead cement job.

If cement does not pump down the annulus, the appropriate BLM office will be notified and further remediation will be discussed.

Kaiser Francis Oil Co. 4 String Design Sundry

Production casing:

The production casing will be drilled with a 6-3/4" bit. 5-1/2" 20# HP-110 with Eagle SF connections will be used for production casing. Production casing shall be cemented with at least 200' tie-back into the previous casing. In medium cave/karst areas, if cement does not circulate to surface on two of the first three casing strings, the cement on the 4th casing string will be brought to surface.

Below is a table of the maximum TVD depths the four casing strings are capable of going while still meeting minimum BLM requirements. Actual setting depths will be shallower. Surface casing will be set a minimum of 25' into the Rustler formation and before the salt section. The first Intermediate string will be set into the top of Delaware. The second Intermediate string will be set into the 3rd Bone Lime. The Production string will be set into the targeted interval in the original approved APD.

*Maximum TVD allowed using expected mud program. Actual TVD will be shallower.

Interval	Maximum TVD:	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Surface	3,000	13-3/8"	54.5	J-55	BTC	New	17.5	3,000
Intermediate	5,140	10-3/4"	45.5	L-80 HC	BTC	New	12.25	5,140
Intermediate	12,732	7-5/8"	29.7	HCP-110	BTC	New	9.875	12,732
Production	17,684	5-1/2"	20	P110 HP	Eagle SF	New	6.75	17,684

Interval	Mud Type	Mud Weight Hole Control	Depth TVD	Viscosity	Fluid Loss
Surface	FW	8.4 - 9.0	1272	32 - 34	NC
Intermediate	Cut Brine	8.8-10	5170	34	NC
Intermediate	Cut Brine	8.8-9.2	10,600	34	NC
Production	OBM	10-13.0	11,487	48-52	<10

Interval	Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
Surface	9	1404	1580	3130	629000	420000
Intermediate	10	2673	2940	5210	1040000	1063000
Intermediate	9.2	6091	6700	9460	940000	769000
Production	13	11955	13150	14360	729000	629000

**Kaiser Francis Oil Co.
4 String Design Sundry**

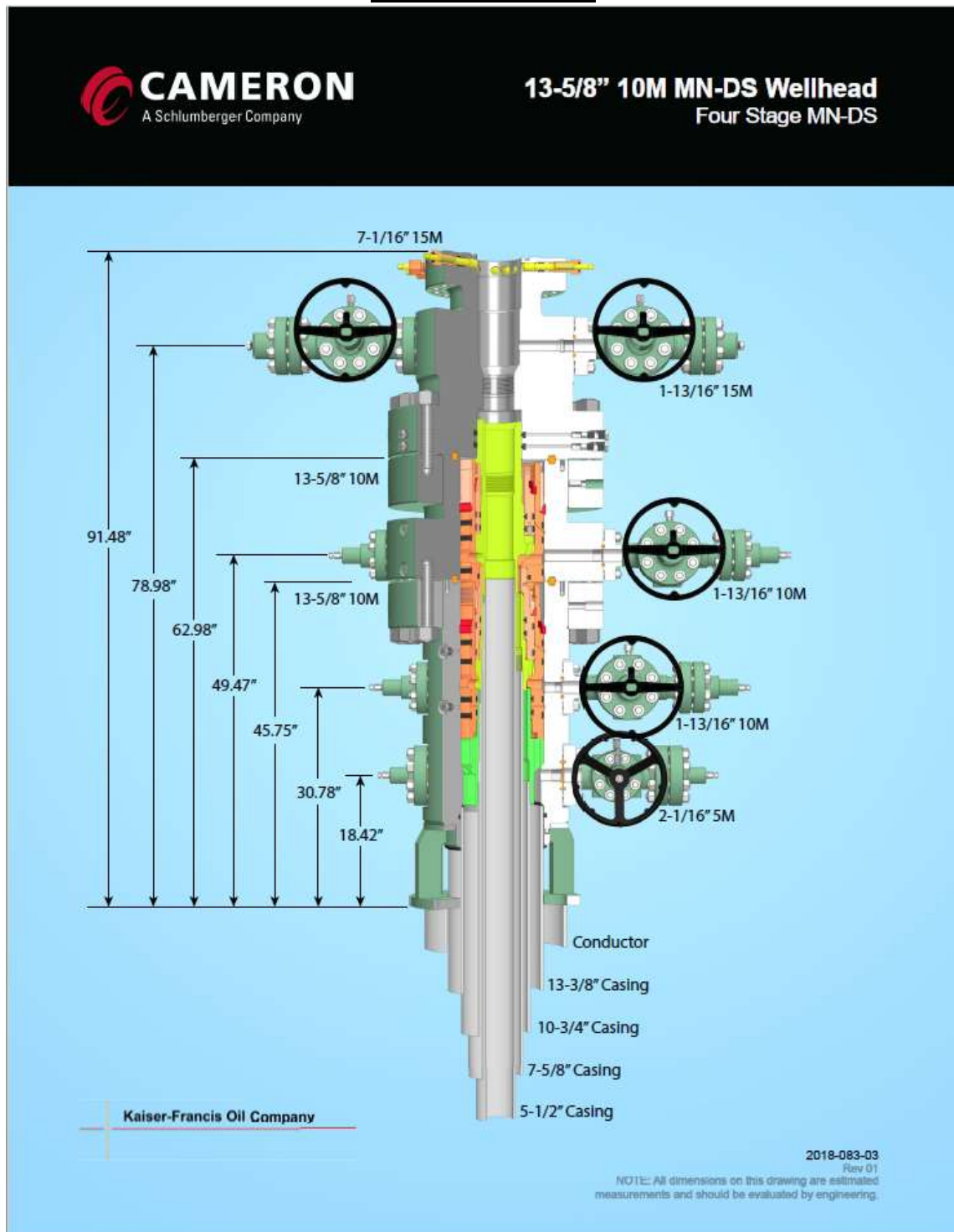
Interval	Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
Surface	1.1	2.2	3.8	2.6
Intermediate	1.1	1.9	4.4	4.5
Intermediate	1.1	1.6	2.5	2.0
Production	1.1	1.2	2.1	1.8

Mud Program:

Interval	Mud Type	MW
Surface	FW	8.4 - 9
Intermediate 1	Brine	8.7-10
Intermediate 2	FW	8.7-9.2
Lateral	OBM	10-13

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Four String Wellhead



Wellhead shall be installed by Cameron representative. Cameron rep shall install the test plug for the initial BOP test.

**Kaiser Francis Oil Co.
4 String Design Sundry**

Cement Program:

- **Surface**
 - Cement will be ExtendaCem with KOL-Seal as an additive. Yield will be 1.75 FT³/Sack. Density 13.5 and calculated using 100% excess
- **Intermediate I**
 - Cement will be EconoCem, Yield for lead will be 2.46 FT³/Sack with a density of 11.9. Yield for tail will be 1.33 FT³/Sack with a density of 14.8. Percent excess will be 50% in the calculation for cement volume.
- **Intermediate II**
 - Cement will be Neocem with LCM as an additive. Yield for lead will be 2.77 FT³/Sack with a density of 11. Yield for tail will be 1.197 FT³/Sack and a density of 15.6. Percent excess will be 50% in the calculation for cement volume.
- **Production**
 - Production string will be pumped same as the submitted APD.

District I

1625 N. French Dr., Hobbs, NM 88240
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District II

811 S. First St., Artesia, NM 88210
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 35714

COMMENTS

Operator: KAISER-FRANCIS OIL CO P.O. Box 21468 Tulsa, OK 74121	OGRID: 12361
	Action Number: 35714
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
jagarcia	Accepted for record	7/28/2021

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	Action Number: 35714
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CONDITIONS

Created By	Condition	Condition Date
jagarcia	None	7/28/2021