

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

RECEIVED
BLM MAIL ROOM

Sundry Notices and Reports on Wells

55 FEB 15 PM 2:50

1. Type of Well
GAS

5. Lease Number
SF-079266
6. If Indian, All. or
Tribe Name

2. Name of Operator
MERIDIAN OIL

7. Unit Agreement Name

3. Address & Phone No. of Operator
PO Box 4289, Farmington, NM 87499 (505) 326-9700

8. Well Name & Number
Vaughn #14

9. API Well No.
30-039-20382

4. Location of Well, Footage, Sec., T, R, M
1500' FSL, 1460' FWL, Sec.27, T-26-N, R-6-W, NMPM

10. Field and Pool
Blanco MV/Basin DK/
Ensenada Gallup

11. County and State
Rio Arriba Co, NM

12. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA

Type of Submission

Type of Action

<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Other -	

13. Describe Proposed or Completed Operations

It is intended to add the Mesaverde and Gallup formations to the subject well according to the attached procedure and wellbore diagram. The well will then be commingled. A down-hole commingle order will be applied for.

RECEIVED
MAR 2 6 1996
OIL CON. DIV.
DIST. 3

14. I hereby certify that the foregoing is true and correct.

Signed *Reggie Steadwell* (JE3) Title Regulatory Administrator Date 3/7/96

(This space for Federal or State Office use)

APPROVED BY _____ Title _____ Date _____

CONDITION OF APPROVAL, if any:

APPROVED

MAR 1 8 1996

DISTRICT MANAGER

NMOCD

District I
PO Box 1988, Hobbs, NM 88241-1988
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Need NHC

Form C-1
Revised February 21, 1988

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-039-20382		Pool Code 71599 72319/96321/	Pool Name Blanco MV/Ensenada Gallup/Basin DK
Property Code 7623	Property Name Vaughn		Well Number 14
OGRID No. 14538	Operator Name MERIDIAN OIL INC.		Elevation 6314'

10 Surface Location

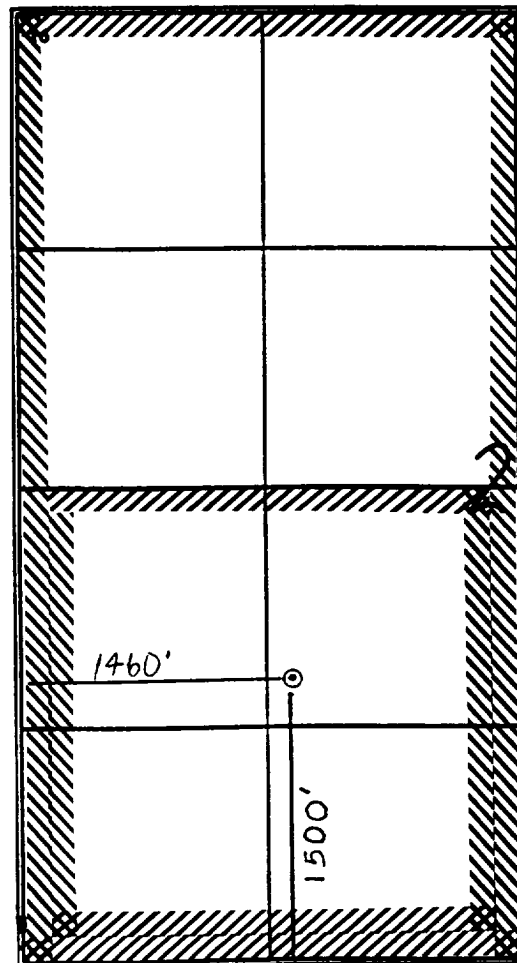
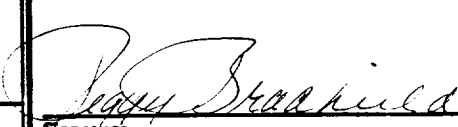
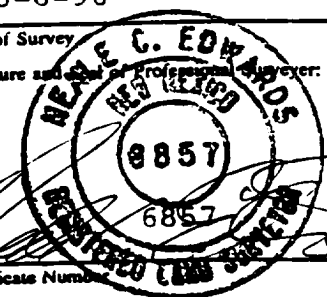
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	27	26 N	6 W		1500	South	1460	West	R.A.

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

12 Dedicated Acres W/320 W/320-160	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

	Not resurveyed, prepared from a plat dated 4-6-70 by David O. Vilven.	RECEIVED MAR 26 1996 OIL CON. DIV. DIST. 3	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature Peggy Bradfield Printed Name Regulatory Administrator Title 3-14-96 Date
			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. 3-8-96 Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number

VAUGHN #14

Dakota/Gallup/Mesaverde

800' FNL, 800' FWL

Unit K, Section 27, T26N, R6W

Rio Arriba County, NM

Elevation: 6314' GL

LAT: 36° 27' 15"

LONG: 107° 27' 15"

date spud: 07-07-71

Current

8-5/8" 32.3#, H-40
casing set @
207' w/190sx cmt

TOC @ 2095' (T.S.)

Stage tool set
@ 2733' w/130 sx

Stage tool set
@ 5078' w/150 sx

Dakota Perfs:
6812-20', 6902-18', 6942-48',
6976-92', 7013-21', 7046-52',
7062-70', 7080-96', 7112-20',
w/16 SPZ, 80,000# sand &
80,000 gal water

4-1/2" 11.6" & 10.5#
K-55 csg set @
7199' w/230 sx

casing failure from 1780-1810'
squeezed w/89 ft3. Pressure
tested to 800 psi, ok.

Annulus loaded w/
corrosion inhibitor

Halliburton cement
retainer @ 6768'

2-3/8" 4.7#, J-55
tubing landed
@ 6775'

TD = 7199'
PBD = 7183'

Ojo Alamo	@ 2000'
Kirtland	@ 2146'
Fruitland	@ 2345'
Pictured Cliffs	@ 2535'
Chacra	@ 2636'
Mesaverde	@ 4207'
Point Lookout	@ 4779'
Gallup	@ 5841'
Greenhorn	@ 6699'
Graneros	@ 6753'
Dakota	@ 6902'

Final

Mesaverde Perfs:
4784', 4788', 4792',
4815', 4825', 4826',
4845', 4852', 4858',
4867', 4878', 4888',
4897', 4908', 4915',
4923', 4933', 4946',
4953', 4968', 4980',
4993', 5003', w/1 SPF
(23 holes) 80,000#
16/30 sand & 10,000#
resin-coated sand in
20# linear gel w/30Q
N2 foam

Gallup Perfs
5947', 5954', 5964',
5986', 5999', 6013',
6019', 6031', 6041',
6054', 6065', 6074',
6096', 6108', 6128',
6143', 6158', 6167',
6209', w/1 SPF
(19 holes) 50,000#
tempered DC sand
& 20# linear gel
w/30Q N2 foam

Dakota Perfs:
6812-20', 6902-18',
6942-48', 6976-92',
7013-21', 7046-52',
7062-70', 7080-96',
7112-20', w/16 SPZ,
80,000# sand &
80,000 gal water

2-3/8" 4.7#, J-55
tubing landed
@ 7120'

TD = 7199'
PBD = 7183'

This well will be commingled in the Mesaverde, Gallup, & Dakota. Prior to commingle, the Gallup & Dakota will be T&A'd under a CIBP while the Mesaverde will be produced separately to help determine commingled production. An Allocation Formula will be finalized after a 3 month online sales testing period.

PERTINENT DATA SHEET
VAUGHN #14

Location: 1500' FSL, 1460' FWL
Unit K, Section 27, T26N, R06W
Rio Arriba County, NM

Field: Basin Dakota

Spud Date: 07-07-71
Completion Date: 08-06-71

Elevation: 6314' GL
LAT: 36° 27' 15"
LONG: 107° 27' 15"
DP#: 45041A
GW: 100%
NRI: 68.25%
ID: 7199'
PBTD: 7183'

Casing Record:

<u>Hole Size</u>	<u>Casing Size</u>	<u>Weight & Grade</u>	<u>Depth Set</u>	<u>Sxs Cement</u>	<u>Cement Top</u>
13-3/4"	9-5/8"	32.3#, H-40	207'	190	surface
8-3/4 - 7-7/8"	4-1/2"	11.6#, K-55	7199'	230	2095' (T.S.)
	4-1/2"	10.5#, K-55	6431'		
Float valve @ 7184'			stage tool @ 5078'	150	
No Marker Jt.			stage tool @ 2733'	130	

Tubing Record:

<u>Tubing Size</u>	<u>Weight & Grade</u>	<u>Depth Set</u>	<u>BHA</u>
2-3/8"	4.7#, J-55	6775'	SN one jt off btm @ 6742'
			217 jts

Tubing set in cement retainer @ 6768'

Formation Tops:

Ojo Alamo	2000'	Point Lookout	4779'
Kirtland	2146'	Mancos	
Fruitland	2345'	Gallup	5841'
Pictured Cliffs	2535'	Greenhorn	6699'
Chacra	2636'	Graneros	6753'
Mesaverde	4207'	Dakota	6902'

Logging Record:

IES, FDC-GR, Temperature Survey

Stimulation:

6812-20', 6902-18', 6942-48', 6976-92', 7013-21', 7046-52', 7062-70', 7080-96', 7112-20', w/16 SPZ
80,000# sand & 80,000 gal water

Workover History:

07-09-84 Moved on location & rigged up. Pulled tubing. Isolated csg failure from 1780-1810'. TOH w/pckr to Squeezed leak w/59 cu. ft. cement. WOC. Drilled out squeeze cement. Press. tested csg to 800 psi
07-12-84: okay. Ran 217 jts 2-3/8", 4.7# tubing set in Halliburton cmt retainer @ 6775'. SN @ 6742'.
Loaded annulus w/corrosion inhibitor.

Production History:

	ISICP: 2591	ISITP: 2103
Initial Deliverability	5168 MCFD - AOF	
Latest Deliverability	196 MCFD	0.5 BOPD

Transporter: Oil/Condensate: Giant Transporation Gas: El Paso Natural Gas

Vaughn #14
Blanco Mesaverde/Undesignated Gallup/Basin Dakota Workover
UnitK-Sec27-T26N-R06W
Lat: 36° 27' 15"
Long: 107° 27' 15"

-
- Comply with all BLM, NMOCD, & MOI rules & regulations.
 - **Always Hold Safety Meetings.** Place fire and safety equipment in strategic locations.
 - 2-7/8" N-80 Buttress Frac String (6300' +/- required).
 - Fifty (50) joints 2-3/8" 4.7# EUE J-55 tubing and six (6) 3-1/8" drill collars on location
 - 6 frac tanks to be spotted and filled with 2% KCl water.
 - Acetic acid will be used for Gallup stimulation.
 - **Immediate flowback will be implemented on the fracs. Note special frac rig-up for this: flow tee, swab valve, etc.**
 - Use drill gas or Nitrogen **ONLY** for all operations - **NO AIR**.
 - Ensure CIBPs used are T-Lok for easier drilling of stacked plugs.
-

This well is part of the 1996 Klein/Vaughn Mesaverde/Gallup/Dakota commingle program. The well is currently completed in the Dakota with a production rate of 319 MCFD/ 1 BOPD. Cumulative Dakota production is 5333 MMCF/ 23 MBO. The Dakota will be temporarily abandoned so that the Gallup (Niobrara) and Mesaverde (Point Lookout) intervals can be added. All three zones will be commingled after production has been established in the upper two zones.

1. MIRU. Record and report SI pressures on tubing, casing, & bradenhead. Lay blowdown line. Blow down casing & tubing. Kill well w/ 2% KCl down tubing. ND WH, NU BOP.
2. **Sting tubing out of Halliburton cement retainer @ 6768'.** TOOH, rabbit, & strap 217 jts of 2-3/8" tubing (from 6775', SN @ 6742'). Visually inspect tubing, note any scale in tubing. Lay down bottom 500' of this pipe (scale problems anticipated - this tubing may be used if there is no scale or other problems).
3. PU 3-7/8" bit, float, six (6) 3-1/8" drill collars & 2-3/8" 4.7# J-55 EUE workstring. Clean out w/ gas to cement retainer @ 6768'. Note drilling mud in returns if any. Load hole from bottom with 2% KCl water. TOOH with bit & collars.
4. PU 4-1/2" FB packer on 2-3/8". TIH & set above cement retainer @ 6768'. Test to 3800 psi for 10 minutes. If holds, release PKR to pressure test casing. If not, TOOH, PU 4-1/2" CIBP and 4-1/2" PKR in combination, TIH and set @ 6300'.
5. Set PKR above CIBP (if used) & test to 3800 psi. Hold for 10 minutes. **NOTE: Prior squeeze work done, see pertinent data sheet and wellbore diagram.** Release PKR & pressure test entire casing string to 1000 psi for 10 minutes. If PT does not hold, pull above DV tools @ 5078' and 2733' & test below each to 1000 psi. Locate hole(s). TOOH. Engineering will provide a squeeze procedure if required.
6. RU wireline. Run GR-CCL-CBL from 6768' (or 6300') to surface under 1000 psi w/ no gaps. Note and report all cement tops and quality of bond over both Gallup & Mesaverde intervals. If cement is not covering the Gallup interval, a block squeeze may be performed across the Gallup. Engineering will provide a squeeze procedure if required.

7. Complete all squeeze cementing operations which will be determined based upon pressure test information and bond quality. WOC recommended time. Drill out cement. Pressure test to 1000 psi. If casing integrity is not sound, identify leaks, & engineering will recommend squeeze procedure & modify stimulation work.

Niobrara Completion:

8. Spot 250 gallons **10% acetic acid** (w/ 2 gal/1000 corrosion inhibitor) across Gallup @ 6210'. TOO, standing 2-3/8" back. Change rams to 2-7/8".

9. RU wireline under packoff. Perforate Gallup top-down in acid @ the following depths with 3-1/8" HSC gun w/ Owen 306 12 g charges (0.31" hole, 11" penetration), 1 SPF @ 180 degree phasing. Engineering may modify perforations based upon bond character.

5947'	5954'	5964'	5986'	5999'	6013'
6019'	6031'	6041'	6054'	6065'	6074'
6096'	6108'	6128'	6143'	6158'	6167'
6209'					

(19 total holes, 262' of interval)

10. PU 4-1/2" FB PKR, 1.81" profile nipple, 4 joints 2-3/8" 4.7# N-80 tubing, 2-3/8" x 2-7/8" buttress changeover, 2.25" profile nipple, and 2-7/8" 8.7# N-80 Buttress frac string. Set PKR 100' above top Gallup perforation. Hold 500 psi on annulus during acid job.

11. RU stimulation company. Pressure test surface lines to 7500 psi. **Max pressure = 6500 psi.** Prepare to break down Niobrara w/ 250 gallons **10% acetic acid** (w/ 2 gal/1000 corrosion inhibitor) and 38 7/8" 1.3 s.g ball sealers. Attempt to achieve 20 BPM on breakdown, go higher if possible. Release pressure, RD stimulation company. Release PKR & TIH knocking balls below bottom perforation. Pull up and reset PKR.

12. RU immediate flowback equipment (frac nipple, valve, tee, etc.). See attached diagram.

13. RU stimulation company. Pressure test surface lines to 7500 psi. **Maximum STP = 6500 psi.** Hold 500 psi on annulus. Fracture stimulate the Niobrara w/ 50,000# Tempered DC sand and 20# linear gel w/30Q N2 foam. See attached frac schedule for details. *(2 frac tanks needed)*

14. Flow back well immediately after shutdown -- **NOTE: Time from frac shut-down until flow tee is opened for flow back should be around 30 seconds. Time is critical to achieve reverse gravel packing. Flowback rate not to exceed 4 BPM - choke flowback line as necessary.** Frac company is to monitor flowback pressures for 30 minutes after shutdown. Flowback should continue for as long as possible while still allowing for completion of both stages within 24 hours. Blow down to release pressure when necessary.

15. Release PKR, TOO w/ 2-7/8" tubing and PKR. RU wireline under packoff. Make 4-1/2" gauge ring run to 5100'. Set 4-1/2" RBP @ 5075'. Dump 1 sack sand (approx. 8') on RBP w/ dump bailer. RD wireline.

Point Lookout Completion:

Vaughn #14
Meridian Oil Inc.
3/15/96

16. TIH w/ PKR on 2-7/8" and test RBP to 3800 psi. Spot 250 gallons 15% HCl acid (w/ 2 gal/1000 corrosion inhibitor) at 5005' across Mesaverde. TOOH.

17. Perforate Mesaverde top-down in acid @ the following depths with 3-1/8" HSC gun w/ Owen 306 12 g charges (0.31" hole, 11" penetration), 1 SPF @ 180 degree phasing. Engineering may modify perforations based upon bond character.

4784'	4788'	4792'	4815'	4825'	4826'
4845'	4852'	4858'	4867'	4878'	4888'
4897'	4908'	4915'	4923'	4933'	4946'
4953'	4968'	4980'	4993'	5003'	

(23 total holes, 219' of interval)

18. PU 4-1/2" FB PKR, 1.81" profile nipple, 4 joints 2-3/8" 4.7# N-80 tubing, 2-3/8" x 2-7/8" buttress changeover, 2.25" profile nipple, and 2-7/8" 8.7# N-80 Buttress frac string. Set PKR 100' above top Mesaverde perforation. Hold 500 psi on annulus during acid job

19. RU stimulation company. Pressure test surface lines to 7500 psi. **Max pressure = 6500 psi.** Prepare to break down Mesaverde w/ 250 gallons 15% HCl acid (w/ 2 gal/1000 corrosion inhibitor) and 46 7/8" 1.3 s.g ball sealers. Attempt to achieve 20 BPM on breakdown, go higher if possible. Release pressure, RD stimulation company. Release PKR & TIH knocking balls below bottom perforation. Pull up and reset PKR.

20. RU immediate flowback equipment (frac nipple, valve, tee, etc.). See attached diagram

21. RU stimulation company. Pressure test surface lines to 7500 psi. **Maximum STP = 6500 psi.** Hold 500 psi on annulus. Fracture stimulate the Mesaverde w/ 80,000# 16/30 sand and 10,000# curable resin-coated sand in a 20# linear gel w/ 30Q N2 foam. See attached frac schedule for details. *(4 frac tanks needed)*

22. Flow back well immediately after shutdown -- **NOTE: Time from frac shut-down until flow tee is opened for flow back should be around 30 seconds. Time is critical to achieve reverse gravel packing. Flowback rate not to exceed 4 BPM - choke flowback line as necessary.** Frac company is to monitor flowback pressures for 30 minutes after shutdown. Flowback should continue for as long as necessary to release PKR.

23. Release PKR & TOOH laying down 2-7/8" N-80 tubing. Change out rams to 2-3/8".

24. TIH w/ retrieving head on 2-3/8" tubing and clean out to RBP @ 5075'. Obtain MV pitot gauge. Latch onto RBP, release and TOOH. LD RBP and retrieving head. PU notched collar, TIH and CO to cement retainer @ 6768' (or CIBP @ 6300'). Clean up to +/- 5 BPH and trace to no sand. Obtain MV/GP pitot gauge. TOOH.

25. PU 4-1/2" CIBP on 2-3/8" tubing, TIH. Set CIBP @ 5075' +/- to T&A Gallup zone. TOOH.

26. Prepare to run production tubing string as follows for Mesaverde: expendable check, one joint 2-3/8" tubing, 1.81" 'F' nipple, and remaining tubing. Land tubing @ 5003'.

27. ND BOP, NU WH. Pump off expendable check and flow well up tubing obtain Mesaverde production gauge. RD & release rig to next location.

Vaughn #14
Meridian Oil Inc.
3/14/96

28. Operations will remanifold wellhead, and produce well for 180 days into EPNG pipeline. Notify governmental agencies that Mesaverde ONLY production will occur until further notice, GP & DK T&A'd.

Commingle Operations (6 months after MV 1st delivery)

29. At end of 6 month production test, run pressure bomb well. Leave well SI 7 days. Pull bomb. Return Mesaverde to production until workover rig returns.

30. MIRU workover rig. Record flowing casing & tubing pressures. Blow casing and tubing down. Kill tubing with 2% KCl water. ND WH, NU BOP.

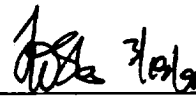
31. TOOH with 2-3/8" tubing. PU 3-7/8" bit, 4-3-1/8" drill collars & TIH on 2-3/8". Drill CIBP @ 5075' +/- TIH & drill cement retainer @ 6768' (or CIBP @ 6300'). Clean out to PBTD @ 7183'. TOOH & LD bit & collars.

32. TIH with final production tubing string for commingled production as follows: expendable check, one joint 2-3/8", 1.81" F nipple, and remaining 2-3/8" tubing. Land tubing @ 7120'.

33. ND BOP, NU WH. Pump off check. Flow well up tubing verifying check pumped. RD & release rig to next location.

34. Notify Marketing & government agencies that commingled production from all horizons MV, GP, & DK will occur in order to finalize allocation formula. At end of 90 days, the allocation formula will be submitted to NMOCD for approval, **production will commence prior to actual allocation approval.**

Concur:


Northeast Basin Team Leader

Approved:


Drilling Superintendent

JME 

Recommended Vendors:

Immediate Flowback WH Equipment
Stimulation
Cased Hole Services
Engineering

WSI	327-3402
BJ Services	327-6222
Basin Perforating	327-5244
Joan Easley	599-4026-work
	324-2717-pager

**Stimulation Procedure
Meridian Oil, Inc.**

General Information		Well Configuration		Formation and Stimulation Data	
Well Name:	Vaughn #14	Casing:	4-1/2" 10.5# J-55 453 FT	Max Treating Pressure	6500 psi
Location:	Sec. 27, T26N, R06W		0 FT	Frac Gradient:	0.6 psi/ft
Formation:	Niobrara	Tubing:	2-7/8" 6.5# N-80 5847 FT	BH Temp:	160 deg. F
Vendors		Capacity:	0.0159 0 0.00579	Antic. Treating Rate:	25 BPM
Stimulation:		PBTD	6300 ft	Antic. BH Treating Pres:	3,647 psi
Tagging:	None	Top Perf:	5947 ft	Antic. Surf Treating Pres:	5,221 psi
		Bot Perf:	6209 ft	Percent Pad:	15%
		Midpoint:	6078 ft	Net Interval:	262 ft
Fluid:	20# Linear gel w/30Q N2 foam	Perforations		lb prop/net ft pay:	lb/ft
Note:	N2 to aid in flowback	1 spf	0.31 " holes	Job Duration:	29.1 min
		19 holes	11 " penetration	Perf friction	549 psi
				Total friction	4,206 psi

Stimulation Schedule

Sand Data						Fluid Data				Rate and Time Data			Comments
Tag	Stage	Mesh	ppg	lbs	Cum	Stage	Cum	Stage	Cum	Slurry	Stage	Cum	
	Pad	N/A	0.0	0	0	Fluid	Fluid	Slurry	Slurry	Rate	Time	Time	
No	1	20/40	1.0	10,000	10,000	gals	gals	gals	gals	bpm	min	min	w/30Q N2 foam
No	2	20/40	2.0	10,000	20,000	3,500	3,500	3,500	3,500	25.0	3.3	3.3	w/30Q N2 foam
No	3	20/40	3.0	10,000	30,000	10,000	13,500	10,456	13,956	25.0	10.0	13.3	w/30Q N2 foam
No	4	20/40	4.0	10,000	40,000	5,000	18,500	5,456	19,412	25.0	5.2	18.5	w/30Q N2 foam
Flush	N/A	0.0	0	50,000	50,000	3,334	21,834	3,790	23,202	25.0	3.6	22.1	w/30Q N2 foam
						5,000	26,834	5,912	29,114	25.0	5.6	27.7	w/30Q N2 foam
						1,422	28,256	1,422	30,536	25.0	1.4	29.1	reduce N2 to 10Q
Total						Total				Ave.	Total		
50,002						28,256				25.0	29.1		

Volumes and Additives

Water Volume=	28,256	treat +	1,413	excess =	29,669	gallons (MOI)
Water Volume=	673	treat +	34	excess =	706	bbls (MOI)
Fluid Volume:	706 bbl designed treating volume					
Sand Type:	20/40 Tempered DC					
	<u>Total Sand:</u>		<u>50,002 lbs</u>			
Fluid:	20# Linear gel					
	Bacteriacide (added to tanks before filling with water).					

Equipment

Tanks:	2.0	x 400 bbl frac tanks(supplied by MOI).
Filled w/	706	bbls 2% KCl water (supplied by MOI).
Acid Requirements:		
500 gallons (250 spot, 250 pump)		
10% acetic acid w/		
2 gal/1000 corrosion inhibitor		

Radioactive Tagging

none

Comments and Special Instructions

MAXIMUM ALLOWABLE TREATING PRESSURE IS 6500 PSI.

Frac down 2-7/8" N-80 frac string and a packer.
Hold safety meeting with everyone on location before pressure testing surface lines.
Pressure test surface lines to 7500 psi (1000 over max allowable but less than working pressure).
Call flush when sand concentration drops 1/2 ppg (@ 3.5 ppg).
Perform immediate flowback through 1/8" positive chokes. Downtime between pump shut-down and opening of flowback valve must be LESS THAN 30 SECONDS.

Production Engineer: Joan Easley

ADJ 3/15/06

**Stimulation Procedure
Meridian Oil, Inc.**

General Information		Well Configuration		Formation and Stimulation Data	
Well Name:	Vaughn #14	Casing:	4-1/2" 10.5# J-55 391 FT	Max Treating Pressure	6500 psi
Location:	Sec. 27, T26N, R06W		0 FT	Frac Gradient:	0.67 psi/ft
Formation:	Point Lookout	Tubing:	2-7/8" 6.5# N-80 4684 FT	BH Temp:	140 deg. F
Vendors		Capacity:	0.0159 0 0.00579	Antic. Treating Rate:	30 BPM
Stimulation:		PBTD	5075 ft	Antic. BH Treating Pres:	3,279 psi
Tagging:	None	Top Perf:	4784 ft	Antic. Surf Treating Pres:	5,388 psi
		Bot Perf:	5003 ft	Percent Pad:	10%
		Midpoint:	4894 ft	Net Interval:	219 ft
Fluid:	20# Linear gel w/30Q N2 foam	Perforations		lb prop/net ft pay:	lb/ft
Note:	N2 to aid in flowback	1 spf	0.31 " holes	Job Duration:	44.8 min
		23 holes	11 " penetration	Perf friction	540 psi
				Total friction	4,228 psi

Stimulation Schedule

Sand Data						Fluid Data				Rate and Time Data			Comments
Tag	Stage	Mesh	Sand Conc ppg	Stage Sand lbs	Cum Sand lbs	Stage Fluid gals	Cum Fluid gals	Stage Slurry gals	Cum Slurry gals	Slurry Rate bpm	Stage Time min	Cum Time min	
No	1	16/30	1.0	20,000	20,000	4,500	20,000	4,500	20,912	30.0	3.6	3.6	w/ 30Q N2 foam
No	2	16/30	2.0	20,000	40,000	10,000	34,500	10,912	36,324	30.0	8.7	20.2	w/ 30Q N2 foam
No	3	16/30	3.0	39,999	79,999	13,333	47,833	15,157	51,481	30.0	12.0	40.9	w/ 30Q N2 foam
No	3	20/40 res	3.0	10,002	90,001	3,334	51,167	3,790	55,271	30.0	3.0	43.9	No N2 , resin coated
	Flush	N/A	0.0	0	90,001	1,139	52,306	1,139	56,410	30.0	0.9	44.8	reduce N2 to 10Q
Total						reduce rate & flush to end of tubing				Ave.	Total		
90,001						Total				30.0	44.8		

Volumes and Additives

Water Volume=	52,306	treat +	2,615	excess =	54,921	gallons (MOI)
Water Volume=	1,245	treat +	62	excess =	1,308	bbls (MOI)
Fluid Volume:	1,308 bbl designed treating volume					
Sand Type:	16/30 Arizona					
20/40 Resin:	10,002 lbs	Total Sand:	90,001 lbs			
Fluid:	20# Linear gel					
Bactericide (added to tanks before filling with water).						

Equipment

Tanks:	4.0	x 400 bbl frac tanks(supplied by MOI).
Filled w/	1,308	bbls 2% KCl water (supplied by MOI).
Acid Requirements:		
500 gallons (250 spot, 250 pump)		
15% HCl acid w/		
2 gal/1000 corrosion inhibitor		

Radioactive Tagging

none

Comments and Special Instructions

MAXIMUM ALLOWABLE TREATING PRESSURE IS 6500 PSI.

Frac down 2-7/8" N-80 frac string and a packer.

Hold safety meeting with everyone on location before pressure testing surface lines.

Pressure test surface lines to 7500 psi (1000 over max allowable but less than working pressure).

Call flush when sand concentration drops 1/2 ppg.

Perform immediate flowback through 1/8" positive choke. Downtime between pump shut-down and opening of flowback valve must be LESS THAN 30 SECONDS.

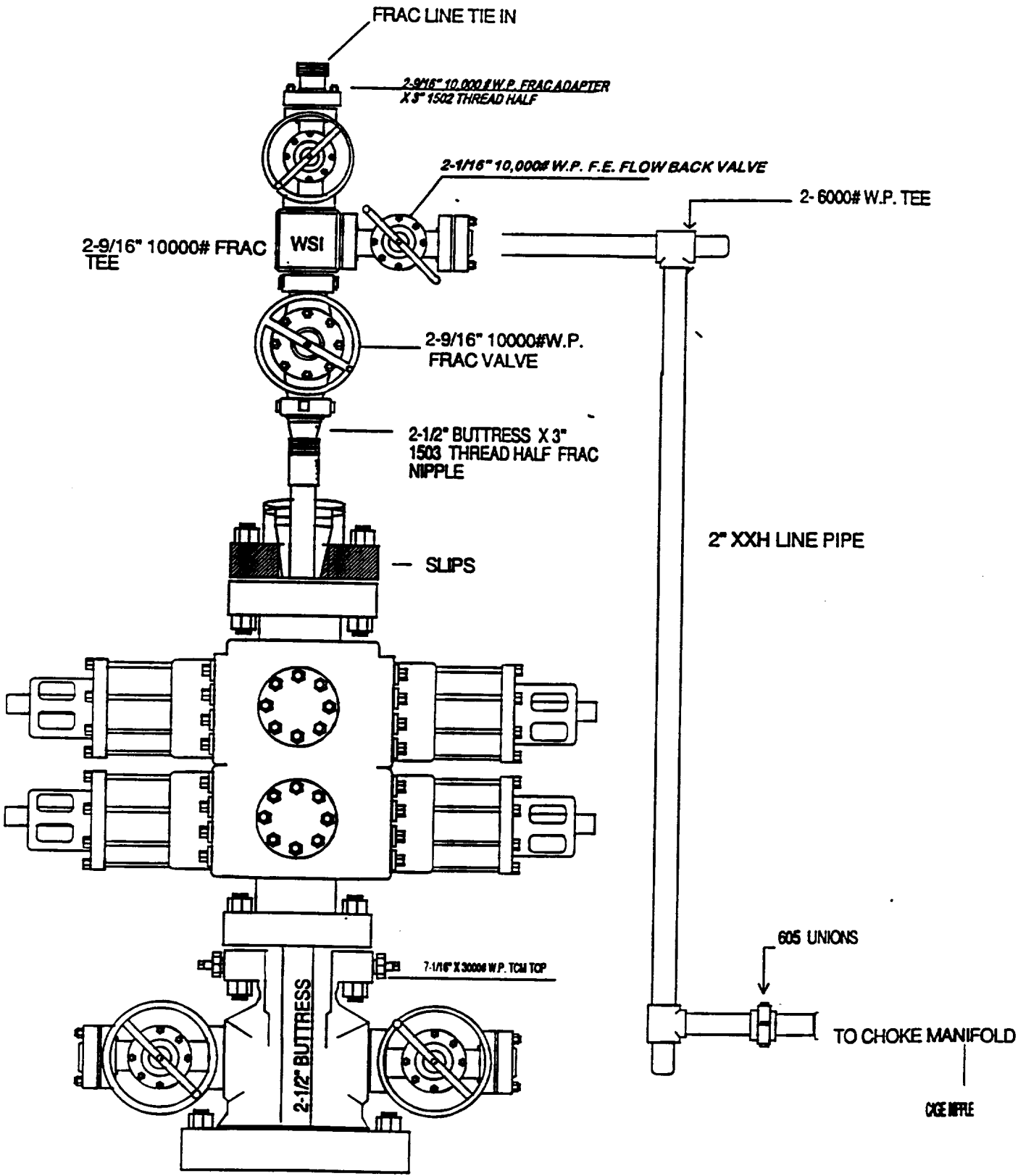
Production Engineer: Joan Easley

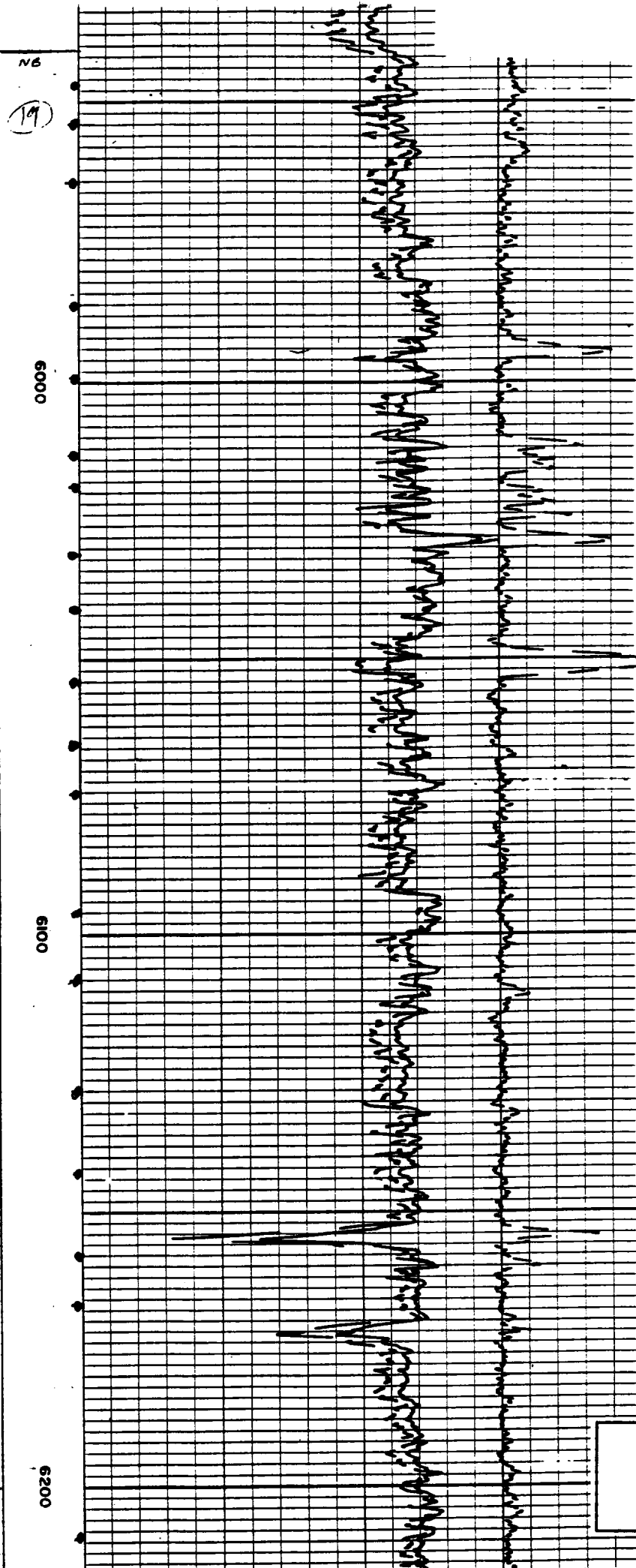
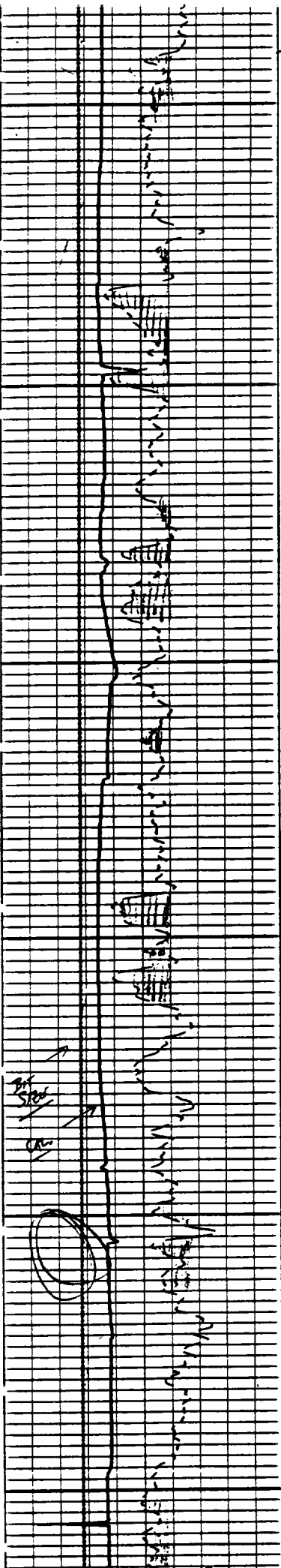
JME

PJB 3/15/16

WSI FRAC & FLOW BACK ASSEMBLY - for tubing

MERIDIAN OIL





Vaughn #14
Niobrara

PL
(22)

4800

11

3

4900

3

2

5

24

5000

DS
Fatherson
1.2 x 152

Vaughn #14
Point Lookout