

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Budget Bureau No. 1004-0100
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	5. LEASE DESIGNATION AND SERIAL NO. NM 04077
2. NAME OF OPERATOR Mallon Oil Company	6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR 1099 18th St., Suite 2750, Denver, CO 80202	7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 795' FSL & 2145' FEL	8. FARM OR LEASE NAME Davis Federal Com 3
	9. WELL NO. 15
	10. FIELD AND POOL, OR WILDCAT Gavilan Mancos/Gavilan Greenhorn Graneros-Dakota
	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Section 3, T25N, R2W
14. PERMIT NO.	12. COUNTY OR PARISH 13. STATE Rio Arriba NM
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 7458' GL	

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) Perforate and log <input checked="" type="checkbox"/>	
(Other) <input type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

SEE ATTACHED DAILY REPORTS (10/28/88 thru 12/7/88).

RECEIVED
BUREAU OF LAND MANAGEMENT
88 DEC 13 AM 10:34
FARMINGTON RESOURCE AREA
FARMINGTON, NEW MEXICO

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

SIGNED Kevin H. McCord

TITLE Petroleum Engineer
Agent for Mallon Oil Co.

DATE 12/9/88

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

ACCEPTED FOR RECON

DEC 16 1988

FARMINGTON RESOURCE AREA

BY KK

NSMOCC

*See Instructions on Reverse Side

MALLON OIL COMPANY

DAVIS FEDERAL COM 3 #15
795' FSL & 2145' FEL
Section 3, T25N, R2W
Rio Arriba County, NM

RECOMPLETION

- 10/28/88 Move in and rig up Bayless Rig 6. Tried to unseat pump-- could not. Begin stripping rods out of hole. Shut down for night.
- 10/29/88 Nipple down wellhead. Nipple up BOP. Strip rods and tubing out of hole. Rod count: 198 - 3/4" plain rods, 123 - 7/8" scraped rods, 2 - 6' - 7/8" pony rods. Tubing count: 256 jts. of 2 7/8" EUE tubing. Shut down for night.
- 10/30/88 Shut down--Sunday.
- 10/31/88 Rigged up Blue Jet wireline services. Set CIBP at 7900' RKB. Tripped in hole with tubing. Spotted 10 sx (12 ft³) Class B cement. Plug on top of bridge plug. Trip tubing out of hole. Set CIBP at 6750' RKB. Trip in hole with tubing. Spotted 10 sx (12 ft³) Class B cement. Plug on top of bridge plug. Pressure tested casing to 2000 psi--held OK. Trip tubing out of hole. Perforated block squeeze holes as follows:
- 4 holes @ 5860' RKB (.43" diameter)
4 holes @ 5000' RKB (.43" diameter)
- Shut down for night.
- 11/01/88 Trip in hole with 5 1/2" Baker retrievematic packer on tubing. Tagged bridge plug at 6750'. (NOTE: tubing depth was => 6763.21', therefore, tubing depth - 13.21' = open hole depth). Circulated hole with fresh water. Recovered oil in pit. Moved packer to 5110' and set packer. Broke down perforations at 5000' down the annulus and established a rate of 2 BPM @ 1500 psi. Did not get communication with perforations at 5860'. Tried pumping down tubing. Tubing pressured to 3500 psi. Did not break down perforations at 5860'. Trip tubing and packer out of hole. Rigged up Blue Jet. Perforated squeeze holes as follows:
- 2 holes @ 5826' RKB (.43" diameter)

11/01/88 (Continued)

Trip in hole with packer on 2 7/8" tubing. Set packer at 5236' RKB. Tried to pump down tubing. Pressure tested to 3500 psi. Bled back 200 psi in 10 minutes, then remained steady. Squeeze holes at 5826' not broken down. Pumped down annulus at 2 1/2 BPM @ 1300 psi. Squeeze holes at 5000' are open. Trip tubing and packer out of hole. Rigged up Blue Jet. Perforated squeeze holes as follows:

4 holes @ 5695' RKB (.43" diameter)

11/02/88 Trip in hole with packer on tubing. Set packer at 5110' RKB. Rigged up Dowell. Pumped into annulus as follows:

2 BPM @ 1000 psi
3 BPM @ 850 psi (perfs at 5000' open)
4 BPM @ 1000 psi
5 BPM @ 1100 psi
ISIP = 600 psi

Tried to pump into tubing. Tubing pressure tested to 3000 psi--2800 psi after 5 minutes. Perforations at 5860, 5826, and 5695 are not open. Move end of packer to 5701' RKB. Spotted 200 gallons of 7 1/2% HCL acid across perforations at 5695 ft. Moved packer and set at 5383' RKB. Tubing pressured up to 3500 psi. Could not break down perforations at 5695' RKB. Moved packer and set at 5842' RKB. Tubing pressured up to 3500 psi. Could not break down perforations at 5860' RKB. Moved packer and set at 5765' RKB. Tubing pressured up to 3500 psi. Could not break down perforations at 5826' or 5860' RKB. Moved packer and set at 5842' RKB. Tubing pressured up to 4500 psi. Could not break down perforations at 5860' RKB. Moved packer and set at 5669' RKB. Tubing pressured up to 4500 psi. Could not break down perforations at 5860, 5826, or 5695 ft. Moved tubing and packer to bridge plug at 6750'. Circulated hole clean with fresh water. Trip tubing and packer out of hole. Shut down for night.

11/03/88 to 11/06/88 Shut down. Wait on orders.

11/07/88 Trip in hole with 5 1/2" packer on 2 7/8" tubing. Set packer at 5233' RKB. Pumped into tubing (perfs at 5695, 5826, and 5860 ft.). Established injection rate as follows:

3 BPM @ 600 psi
4 BPM @ 800 psi
5 BPM @ 1100 psi
6 BPM @ 1550 psi
ISIP = 600 psi

11/07/88 (Continued)

Did not communicate with perforations at 5000 ft. Established injection down the annulus (perfs at 5000 ft.) as follows:

4 BPM @ 700 psi
5 BPM @ 850 psi
6 BPM @ 1050 psi
ISIP = 600 psi

It appears that circulating hole clean on 11/3/88 washed perfs clean of debris. Pumped 50 bbls. down the annulus and into the formation at 7 BPM @ 1300 psi, ISIP = 700 psi. Did not circulate with lower perforations. Pumped 30 bbls. of water into lower perforations at 5 BPM @ 1200 psi, ISIP = 800 psi. Did not circulate with perforations at 5000'. Moved packer and set at 4973'. Annulus pressure tested to 2000 psi. Pumped into tubing (all perforations) at 5 BPM @ 1000 psi, ISIP = 600 psi. Moved packer and set at 5800'. Pumped down tubing at 2 BPM @ 350 psi and circulated with the annulus. Perfs at 5695 are open. Moved packer and set at 5840'. Pumped down tubing at 2 BPM @ 350 psi and circulated with annulus. Perforations at 5860' are open and perforations at 5826' may be open. Pumped 125 bbls. of water down the annulus and circulated through the tubing to the surface. Saw fluid discoloration and some watered down mud with lost circulation material. Moved packer and set at 5877'. Tubing pressure tested to 2000 psi (packer OK). Moved packer and set at 5351'. Pumped on both tubing and annulus attempting to establish circulation between perforations at 5000' and perforations at 5695, 5826, and 5860 ft. Could not establish circulation. Rigged to swab. Swabbed well as follows, making 6 swab runs in 1 1/4 hours (see Swab Report). Recovered 20 bbls. of fluid (watered mud). Initial fluid level was at surface. Final fluid level was at 1500 feet. Fluid entry into wellbore at end of swabbing was 8 bbls per hour. Shut well in. Shut down for night.

11/08/88 Overnight shut-in pressures: annulus 0 psi, tubing 20 psi. Blew tubing down immediately. Rigged to swab. Swabbed well as follows, making 25 swab runs on the day (see Swab Report). Recovered 122 bbls. (total 142 bbls.) of water cut drilling mud. Had gas shows throughout the day. Initial fluid level at 700 ft. Final fluid level at 4800 ft. Fluid entry into wellbore at end of day was 7-10 bbls. per hour. At three different intervals throughout the day fresh water was pumped down the annulus in an attempt to establish circulation through lower squeeze perforations and squeeze perforations at 5000 ft. Did not circulate fluid. Pumped into annulus (perfs at 5000 ft.) at 3 BPM @ 400 psi, ISIP = 300 psi. Shut well in. Shut down for night.

- 11/09/88 Overnight shut-in pressures: annulus 0 psi, tubing 950 psi. Blew well down in 15 minutes. Well was trying to unload mud to pit. Rigged to swab. Swabbed well as follows, making 20 swab runs on the day (see Swab Report). Recovered 64 bbls. (total 206 bbls.) of water cut drilling mud. Had gas shows after each run throughout the day. Gas tapered off in the afternoon. Initial fluid level at 2500 ft. (gas cut), final fluid level at 4800 ft. Fluid entry into wellbore at end of day was 4-6 bbls. per hour. A total of 200 bbls. of water was pumped down the annulus in an attempt to establish circulation through lower squeeze perforations and squeeze perforations at 5000 ft. Did not circulate fluid. Pumped into annulus (perfs at 5000 ft.) at 3 BPM @ 500 psi, ISIP = 300 psi. Shut well in. Shut down for night.
- 11/10/88 to 11/15/88 Waiting on orders.
- 11/16/88 Shut-in pressures: tubing 1750 psi, annulus 0 psi. Bled off tubing pressure. Well blew down in 15 minutes. Unseated packer. Moved and set packer at 5732' RKB. Rigged up Dowell. Established circulation between perforations at 5826' and 5694'. Released packer and tripped tubing and packer out of hole. Rigged up Blue Jet. Set cement retainer on wireline at 5820' RKB. Trip in hole with retainer stinger on tubing. Sting into retainer at 5820'. Established circulation. Pumped 500 gallons of mud flush. Cemented with 100 sacks (135 ft³) of Class B cement containing 2% gel and 0.5% dispersant-friction reducer (weight = 14.8#/gal, yield = 1.35 ft³/sx, water = 6.4 gal/sx). Partial circulation throughout job. Pressure increased from 300 psi to 1300 psi during displacement. Pulled out of retainer, pulled 4 stands of tubing. Reversed excess cement to surface. Tripped tubing out of hole. Shut down for night.
- 11/17/88 Shut down. Cement curing.
- 11/18/88 Pick up bit, casing scraper and 2 7/8" tubing. Tag cement tap at 5589' RKB. Drilled 231 ft. of cement stingers to cement retainer at 5820' RKB. Trip tubing, scraper, and bit out of hole. Shut down for night.
- 11/19/88 Trip in hole with large bore packer on 2 7/8" tubing. Set packer at 5540' RKB (between perforations @ 5000' and 5695'). Tried to pressure test down tubing (squeeze holes at 5695'). Perforations broke down at 350 psi. Pumped 75 bbls. into perforations down tubing at 3 BPM @ 1000 psi. ISIP = 650 psi, decreasing to 500 psi after 10 minutes. No circulation seen through perforations at 5000'. Pumped 75 bbls. into perforations at 5000' down the annulus at 3 BPM @ 400 psi. ISIP = 200 psi decreasing to 0 psi after 1 minute. No circulation seen through perforation at 5695'. Rigged to

11/19/88 (Continued)

swab. Made 7 swab runs and swabbed tubing dry. Recovered 48 bbls. of water and mud with gas shows. Samples getting thicker mud on later swab runs. Pumped 30 barrels of water down the annulus into perforations at 5000'. No circulation seen. Made 1 swab run. Fluid level at 4500'. Recovered 2 bbls. of heavy mud and gas cut fluid. Released packer. Pulled 10 stands. Shut down for night.

11/20/88 Shut down--Sunday.

11/21/88 Shut-in pressures: tubing 300 psi. Rigged up Blue Jet. Perforated 2 jet shots @ 5350' with 2 1/8" biwire glass charges (through tubing perforating gun). Moved tubing and packer to 5165' and set packer. Pumped 30 bbls. of water down tubing. Did not communicate with perforations at 5350'. Pumped down annulus. Communicated perforations at 5000' and 5350'. Pumped 20 bbls. of fluid down annulus up through tubing. Lost circulation. Pumped 40 bbls. down tubing. Had circulation initially, then lost circulation. Move tubing and packer to 5546'. Set packer. Pumped 30 bbls. down tubing (into perfs at 5695') at 3 BPM @ 1000 psi, ISIP = 600 psi--no circulation. Pumped 20 bbls. down annulus at 3 BPM @ 500 psi, ISIP = 300 psi--no circulation. Moved tubing and packer back to 5165'. Pumped 20 bbls. down the annulus at 3 BPM @ 500 psi, ISIP = 300 psi--no circulation. Pumped 20 bbls. down the tubing at 3 BPM @ 1100 psi, ISIP = 600 psi. Trip tubing and packer out of hole. Shut down for night.

11/22/88 Trip in hole with packer and bridge plug on tubing. Set bridge plug at 5552' RKB. Set packer at 5484'. Pressure tested packer and plug to 1500 psi--held OK. Moved packer and set at 5164'. Pumped 15 bbls. of water into tubing (perforations at 5350 ft.) at 3 BPM @ 700 psi, ISIP = 300 psi. No circulation with perforations at 5000'. Pumped 15 bbls. of water into annulus (perforations at 5000 ft.) at 3 BPM @ 500 psi, ISIP = 300 psi. No circulation with perforations at 5350'. Rigged to swab. Swabbed well as follows: (see Swab Report). Swabbed well down in 3 runs. Recovered 32 bbls. of fluid, mostly fresh water. Last run was mud with a show of gas. Swab line hung up in lubricator late in day. Shut down for night.

11/23/88 Repair swab line. Rigged to swab. Swab well as follows: initial fluid level at 3500'. Made 5 swab runs and swabbed tubing down. Recovered 10 bbls. of thick mud, LCM, and cuttings. Had good gas show. Pumped 20 bbls. of water into formation down tubing (perfs at 5350 ft.) at 3 BPM @ 700 psi, ISIP = 300 psi. No pressure increase noticed, pumped in easily (perfs probably were not plugged). No circulation with perfs at 5000'. Pumped 20 bbls. of fluid into formation down annulus (perfs at 5000 ft.) at 3 BPM @ 500 psi, ISIP = 300 psi. No circulation seen with perforations at 5350'. Made 4 swab runs and swabbed tubing dry. Recovered small amount of thick mud and LCM from formation on final run. Pumped 20 bbls. of water into formation down the tubing with no circulation. Pumped easily into perforations (they probably weren't plugged). Pumped 20 bbls. of water into formation down the annulus. No circulation seen at surface. Made 5 swab runs and swabbed tubing dry. Recovered small amount of thick mud and LCM from formation on last run. Pumped 20 bbls. of fluid into formation down the tubing but no circulation was seen at the surface. Pumped easily into perforations (they probably weren't plugged). Shut well in. Shut down for night.

11/24/88 to 11/28/88 Shut in--Thanksgiving holidays.

11/29/88 Shut-in pressure in tubing was a slight blow. Initial fluid level at 200'. Made 6 swab runs and swabbed well down (see Swab Report). Rigged up Dowell. Pumped 20 bbls. of water into the perforations at 5350' down tubing at 3.0 BPM @ 500 psi, then 5 BPM @ 1550 psi, ISIP = 350 psi. Circulation seen initially, then no circulation with perforations at 5000'. Pumped 20 bbls. down annulus (perfs at 5000 ft.) at 3.5 BPM @ 500 psi, then 5 BPM @ 800 psi, ISIP = 400 psi. Pumped 15 gallons (15 ft. fillup) of sand on top of bridge plug at 5552', 3.7 BPM @ 1100 psi, ISIP = 400 psi. Let sand fall. Moved and reset packer at 5037' RKB. Pumped 150 sx (203 ft³) of Class G cement with 2% gel and 0.5% dispersant-friction reducer into perforations at 5350'. Could not get perfs to squeeze. Pumped 100 sx (135 ft³) of Class G cement with 2% gel and 0.5% dispersant-friction reducer into perforations at 5350'. Pressure increased while squeezing but did not completely squeeze off perfs (700 psi). Left 1 bbl. of cement (43 ft.) in casing. Expected cement top is 5307' RKB. Left 700 psi pressure on well. Shut down for night.

11/30/88 Pressure tested squeeze on perfs at 5350' to 2000 psi--held OK. Released packer and reset at 4406' RKB. NOTE: Packer pulled tight when pulled past perfs at 5000 ft. Perfs at 5000' took water very slowly. 1/4 BPM @ 3300 psi. It appears cement circulated from 5350 to 5000 ft. Moved packer to

11/30/88 (Continued)

4914'. Circulated cement to packer. Set packer. Squeezed perfs at 5000' with 25 sx (29 ft³) of Class B cement. Left 2 bbls. of cement in casing when perfs squeeze to 3800 psi. Approximate top of cement at 4914' (86 ft. of cement to drill. Released packer and pulled 5 stands of tubing. Pressured tubing to 2000 psi. Shut down for night.

12/01/88 Released packer. Trip tubing and packer out of hole. Trip in hole with bit and scraper on tubing. Tag cement at 4848' RKB. Drill 152' of cement. Fall through cement at 5000'. Pressure tested squeeze holes at 5000' to 3000 psi--held OK. Trip in hole. Tag cement at 5225'. Drill 70' of cement stringers and solid cement. Shut down for night.

12/02/88 Drill remaining 55' of cement and fall through cement at 5350'. Pressure tested squeeze holes at 5350' RKB to 3000 psi--held OK. Trip tubing, scraper and bit out of hole. Trip in hole with retrieving head on tubing. Tag fill on top of bridge plug at 5523' RKB. Circulate fill off of plug. Recover bridge plug at 5552' RKB. Trip tubing and bridge plug out of hole. Shut down for night.

12/03/88 to 12/04/88 Shut down for weekend.

12/05/88 Rigged up Blue Jet. Ran GR-CLL-CBL-UDL from 5399' RKB to 4450'. Couldn't get log to retainer at 5830' RKB (10 ft. correction to depths reported earlier). Cement top at 4602' RKB. Tripped in hole with bit and casing. Scraper on tubing. Circulated heavy mud, LCM material, and cuttings off of retainer at 5830' RKB. (NOTE: New tubing - open hole correction is 9.18' => tubing depth - 9.18' = open hole log depth). Tripped tubing, scraper, and bit out of hole. Perforated squeeze holes with 4" casing gun as follows:

2 holes @ 5385' RKB (.43" diameter)

Shut in well. Shut down for night.

12/06/88 Trip in hole with Baker retrievematic packer. Set packer at 5680' RKB. Rigged up Halliburton. Pumped 30 bbls. of water down annulus (perfs at 5385' RKB) as follows:

3 BPM @ 2200 psi
4 BPM @ 1750 psi
5 BPM @ 2000 psi

12/06/88 (Continued)

ISIP = 800 psi. No circulation seen with tubing (perfs at 5705' RKB). Pumped 30 bbls. of water down tubing (perfs at 5705' RKB) as follows:

3 BPM @ 1400 psi
4 BPM @ 1600 psi
5 BPM @ 1850 psi

ISIP = 800 psi. No circulation seen with annulus (perfs at 5385' RKB). Rigged to swab. Swabbed well dry in 6 runs. Pumped 80 bbls. of water down annulus (perfs at 5385 ft.) at 5 BPM @ 1900 - 1750 psi, ISIP = 800 psi. No circulation seen to the surface. Release packer. Trip tubing and packer out of hole. Trip in hole with cement retainer on tubing. Set retainer at 5649' RKB. Squeeze cemented with 175 sx (236 ft³) of Class B cement with 2% gel and 0.5% dispersant-friction reducer. May have had a small amount of circulation, but questionable. Unstring from retainer. Pulled 6 stands. Reversed out excess cement. Trip out of hole. Shut down for night.

12/07/88 Well shut in to allow cement to set up.

12/08/88 Trip in hole with bit and scraper on 2 7/8" tubing. Tag cement top at 5576' RKB. Tried to pressure test perfs at 5835'. Pumped in down tubing at 3 BPM @ 1300 psi, ISIP = 800 psi. Drill 73 ft. of cement and retainer at 5649'. Drilled 56 ft. of cement and dropped through cement at 5705'. Squeeze hole. Trip tubing, scraper, and bit out of hole. Rigged up Blue Jet. Ran GR-CLL-CBL from 5825' RKB to 5200' RKB. Perforated Mesa Verde interval with 4" select fire casing guns as follows: (Open hole Gamma Ray log depths)

5431	5545	5567
5433	5547	5569
5442	5549	5645
5454	5551	5647
5459	5553	5649
5461	5555	5651
5463	5557	5653
5468	5559	5798
5506	5561	5800
5509	5563	

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Total: 29 perforations (0.43" diameter)

12/09/88 Trip in hole with Baker SAP tool (straddle packer) on tubing. Rigged up the Western Company. Used 500 gallons of 7 1/2% DI HCL acid to individually break down perforations with SAP tool. Perfs broke down as follows:

RECOMPLETION

12/09/88 (Continued)

Bottom Packer Depth	Top Packer Depth	Perfs Strattled	Breakdown Pressure (psi)	Rate (BPM)	Pressure (psi)	ISIP (psi)	Communi- cation
5434	5430	5431, 5433	Broken Down	1.6	1200	700	No
5444	5440	5442	Broken Down	1.6	1300	700	No
5456	5452	5454	Broken Down	1.6	1000	500	No
5461	5457	5459	Broken Down	1.6	600	200	Yes
5464	5460	5461, 5463	Broken Down	1.6	700	100	Yes
5470	5466	5468	Broken Down	1.6	700	100	Yes
5509 1/2	5505 1/2	5506, 5509	1800	1.6	1500	800	No
5548	5544	5545, 5547	Broken Down	1.6	1100	400	No
5552	5548	5549, 5551	Broken Down	1.6	800	500	Yes
5556	5554	5553, 5555	Broken Down	1.6	500	400	Yes
5560	5556	5557, 5559	Broken Down	1.6	600	400	Yes
5564	5560	5561, 5563	Broken Down	1.6	900	400	Yes
5570	5566	5567, 5569	Broken Down	1.6	800	100	Yes
5646	5644	5645	Broken Down	1.6	1000	500	No
5650	5646	5647, 5649	Broken Down	1.6	1000	500	No
5654	5650	5651, 5653	1800	1.8	1200	700	No
5801	5797	5798, 5800	1400	1.5	1000	800	No

Move tubing to 5817' RKB. Circulated hole clean with 3% KCL water. Trip tubing and SAP tool out of hole. Fracture stimulated Mesa Verde interval with 100,000 gallons of slick water containing 80,000# of 20-40 sand and 40 MC of RA sand as follows:

20,000 gallons pad	61 BPM @ 2250 psi
80,000 gallons of 1 ppg 20-40 sand	*61 BPM @ 1900-2100 psi
5,292 gallons flush	45 BPM @ 1800 psi

* Had to decrease rate to 45 BPM for last 150 bbls. of frac to keep sand concentration up. Running out of sand.

ISIP = 950 psi	10 min. = 775 psi
5 min. = 800 psi	15 min. = 775 psi

Average rate - 61 BPM. Average pressure - 1900 psi. Maximum pressure - 2300 psi. Minimum pressure - 1800 psi. Load fluid to recover - 2407 bbls. All water contained 1/2 gal/1000 FR28 friction reducer, 3% KCL, 1/2 gal/1000 clay stabilization agent, 1/2 gal/1000 surfactant. Shut well in overnight to allow fracture to heal. Shut down for night.

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