





# WELL CHRONOLOGY REPORT

<b>WELL NAME : HALLWOOD 1 FED #01</b>		DISTRICT :	MIDLAND
FIELD :	PITCHFORK RANCH (MORROW)	LOCATION :	660' FNL & 1980' FWL, SEC 1-25S-33E
COUNTY & STATE :	LEA	CONTRACTOR :	
WI% : 75.33409	AFE# : 101655	API# :	PLAN DEPTH : 13,660
DHC : \$96,000	CWC :	AFE TOTAL : \$96,000	SPUD DATE : 08/10/1992
		FORMATION :	WOLFCAMP

REPORT DATE : 03/20/1999 MD : 0 TVD : 0 DAYS : 0 MW : VISC :  
 DAILY : DC : \$0 CC : \$2,200 TC : \$2,200 CUM : DC : \$0 CC : \$2,200 TC : \$2,200  
 ACTIVITY AT REPORT TIME : RD FLOWLINES

DAILY DETAILS : 3 hrs RD flowline connections. RU flanges for injection of treated methanol. Pumped 1000 gal of methanol treated with Lo-surf 300 and Cla-Sta XP, flushed methanol with treated 2% KCl. Initial pressure 1400 psig decreasing to vacuum while pumping. Found thread in 4-1/2" lift flange. No 8rd ordered proper flange from Weatherford Odessa. Will run gauge ring, set CIBP. Test plug and dump cement this a.m. (3/20/99).

REPORT DATE : 03/21/1999 MD : 0 TVD : 0 DAYS : 0 MW : VISC :  
 DAILY : DC : \$0 CC : \$700 TC : \$700 CUM : DC : \$0 CC : \$2,900 TC : \$2,900  
 ACTIVITY AT REPORT TIME : SHUT IN

DAILY DETAILS : 8-3/4 hrs SITP 1750 psig. RU Grease wireline unit. PU 2.59" gauge ring and sinker bars. TIH with gauge ring. Stopped on obstruction @ 4625'. Slowly work gauge ring from 4624' to 7200'. TP on in hole to 14,600', without encountering additional obstructions (indications that tbg connection may have been over torqued). TOH with sinker bars and gauge ring. PU baker, 2.562" CIBP and TIH to 14,512' and set plug (10' below tbg collar) TOH with sinker bars and setting tool blew well down, plug holding. SI.

REPORT DATE : 03/22/1999 MD : 0 TVD : 0 DAYS : 0 MW : VISC :  
 DAILY : DC : \$0 CC : \$5,200 TC : \$5,200 CUM : DC : \$0 CC : \$8,100 TC : \$8,100  
 ACTIVITY AT REPORT TIME : RU EQUIPMENT

DAILY DETAILS : RU N2 pump equipment. Pressured plug with N2 with 5000 psig. Held with no communication with annulus (7-5/8" x 3-1/2"). RU wireline and dumped 20' of cement on top of CIBP @ 14,512' TOH and RD wireline equipment. SI.

REPORT DATE : 03/23/1999 MD : 0 TVD : 0 DAYS : 0 MW : VISC :  
 DAILY : DC : \$0 CC : \$2,760 TC : \$2,760 CUM : DC : \$0 CC : \$10,860 TC : \$10,860  
 ACTIVITY AT REPORT TIME :

DAILY DETAILS : 5 hr road service unit to location and RU same. Loaded tbg with 106 bbls of 10#/gals brine. RU lift flange on top of well head. Borek out double stud (7-1/2, 10000# x 9", 10,000#) on base of 3-1/2 x 4-1/8", 10,000 lbs tree. PU tree (pulling over 200,000 lbs to obtain space to set tbg slips). Worked out wrap around by partially disassembling and installing balls as pull stands. Installed 5,000 lb x 7-1/16" hydraulic BOP's. Set and connected tank for displacement mud from 7-5/8" x 3-1/2" annulus. To run free point and back off tbg this a.m.

REPORT DATE : 03/24/1999 MD : 0 TVD : 0 DAYS : 0 MW : VISC :  
 DAILY : DC : \$0 CC : \$13,225 TC : \$13,225 CUM : DC : \$0 CC : \$24,085 TC : \$24,085  
 ACTIVITY AT REPORT TIME :

DAILY DETAILS : 11 hrs rigged up Baker Atlas electric WL. PU string shot, free-point tools and sinker balls. TIH and obtained free point reading of 80 point (out of 100 max). From 13,330 to 14,000'. Work right hand torque, with max tops of 18 rounds, down hole. Worked 8 round of left hand torque into tbg. Fired string shot @ 13,996'. Pulled tbg string to max pull of 210,000 lbs unable to move tbg. RU pump truck and pressure tbg to 4500 psig, tbg wt declined to 160,000 lbs (pumping tbg up hole). Repeated pumping, tbg up hole 40', pulling in 5' intervals, due to steel pipe available for pressuring tbg. To rig up steel flex pipe to allow for pumping out full jts at one time.



## WELL CHRONOLOGY REPORT

REPORT DATE : 03/25/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$5,630 TC : \$5,630 CUM : DC : \$0 CC : \$29,715 TC : \$29,715

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 10 hrs RU flexible steel connections. Pumped out 10 additional jts of tbg (3-1/2" - 324.71') This produced a total of 399.65' of 3-1/2 tbg pumped out following backoff, pump pressure varying between 4200-4500 psig and pull wts between 160,000 lbs and 195,000 lbs. Gained circ after pulling 12 jts of 3-1/2" tbg. Circ out heavy mud utilizing 360 bbls of water. Note: To RU reverse circulating well head equipment and will wash down. Removing heavy mud left across Wolfcamp formations.

REPORT DATE : 03/26/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$3,730 TC : \$3,730 CUM : DC : \$0 CC : \$33,445 TC : \$33,445

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 11 hrs RU reverse circulating equipment. Washed down, removing heavy mis, from 13,628 to 14,000'. circulated out mud. RD reverse equipment. RU and TOH with 280 jts of 3-1/2" 12.95#/ft, P105, PH6 tbg, stand back tbg in derrick. Rotated all connections in low gear and installed thread protectors close in well for night.

REPORT DATE : 03/27/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$3,140 TC : \$3,140 CUM : DC : \$0 CC : \$36,585 TC : \$36,585

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 6 hrs finished TOH with backed off 3-1/2" tbg. Pulled tbg as follows:  
 69 JTS OF 3-1/2", 12.95#/FT, P105 PH6 2189.66  
 23 JTS OF 3-1/2", 12.95#/FT, P105, PH6, CB 716.71  
 239 JTS OF 3-1/2", 12.95#/FT, L80, PH6, CB7451.36  
 1 DOUBLE PIN .45  
 112 JTS OF 3-1/2', 12.95#/FT, N80, PH6 3636.76  
 KB TOP TBG 23.74  
 TBG BACKOFF 14018.68  
 Layed down 34 jt of 3-1/2" 12.95, N80, PH6 of tbg in preparation of picking up 2-7/8" tbg for run in 5-1/2" liner. To PU 2-7/8" and bit scraper (2-7/8", 79#/ft, L80, PH6 tbg).

REPORT DATE : 03/28/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$3,520 TC : \$3,520 CUM : DC : \$0 CC : \$40,105 TC : \$40,105

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 10 hrs PU 4-1/2" bit, bit sub, 5-1/2, 23# casing scraper. PU 18 jts of 2-7/8", 7.9#/ft, N80, PH6 tbg. TIH with bit and scraper. Running 3-1/2", 12.95#/ft, N+L80, P105, PH6 tbg. TI to top of liner to circ down in liner this a.m. (3/28/99).

REPORT DATE : 03/29/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$5,050 TC : \$5,050 CUM : DC : \$0 CC : \$45,155 TC : \$45,155

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 2-1/2 hrs washed down bit and scraper, while circulating from 13,038' (top of 5-1/2" liner) to 13,728' KB. 3-1/2 hrs displaced hole with 560 bbls of treated 2% KCL (lo surf 300). 5-1/2 hrs TOH with 3-1/2" tbg standing in derrick. Pulled 280 jts of tbg. SIFN.

REPORT DATE : 03/30/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$3,950 TC : \$3,950 CUM : DC : \$0 CC : \$49,105 TC : \$49,105

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 11-1/2 hrs finished TOH with tbg, scraper and bit pick up. 1 jt of 2-7/8" 6.5#/ft, N80, 8rd tbg with entry guide on btm, PLS pkr (10,000 psig) on-off tool, 18 jts of 2-7/8", 7.9#/ft, N80, PG6, 84 jts of 3-1/2", 12.95#/ft, N80, PH6, 239 jts of 3-1/2", 12.95#/ft, L80, PH6CB 23 jts of 3-1/2", 12.95#/ft, P-105, PHGCB, and 65 jts of 3-1/2", 12.95#/ft, P105, PH6 tbg. Landed pkr @ 13,556' KB. Set pkr @ 25,000 lbs of set down wt, installed wraparound hanger and tree (10,000 lb x 7-1/16 x 3-1/2"). SIFN. To test pkr acid dump sand this a.m. 3/30/99.



## WELL CHRONOLOGY REPORT

REPORT DATE : 03/31/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$12,061 TC : \$12,061 CUM : DC : \$0 CC : \$61,166 TC : \$61,166

## ACTIVITY AT REPORT TIME :

DAILY DETAILS : 2-1/2 hrs finished NU tree (7-1/16 x 10,000 psig). Tested pkr to 5000 psig, installed csg relief valve and set @ 4000 psig. Pressure annulus (7-5/8" x 3-1/2") to 3500 psig. Tested tbg to 9300 psig. OK. Released pressure. 2-1/2 hrs waiting on wireline equipment to perf. 8 hrs RU Baker WL. PU 10,000 psig lubricator and tested to 7000 psig. Ran spent perforating gun and Gamma Ray CCL to 13,900'. Ran correlation log from 13,900 to 13,300' (Correlating with Density -Neutron log 10/21/92). TOH and PU 2-1/8" HSC perforating gun with predator charges. TIH and tie in with Gamma Ray perforated Wolfcamp interval as follows:

13,660' -13,674' - 14' - 28 HOLES 0 DEG PHASING  
 13,678' - 13,680' -2' - 4 HOLES 0 DEG PHASING  
 LEFT GUN ON BTM WITH RECORDING PRESSURES

1 MIN 540 PSIG	8 MIN 3000 PSIG	19 MIN 4800 PSIG
2 MIN 1350 PSIG	10 MIN 4000 PSIG	21 MIN 4850 PSIG
3 MIN 1700 PSIG	11 MIN 4200 PSIG	23 MIN 4900 PSIG
4 MIN 1920 PSIG	13 MIN 4500 PSIG	28 MIN 4900 PSIG
5 MIN 2000 PSIG	15 MIN 4600 PSIG	33 MIN 4900 PSIG
7 MIN 2500 PSIG	17 MIN 4700 PSIG	

TOH, problems hanging up in grease tube from 680' to surface. Worked tool out of hole. Indication of asphalt type residue in grease tube. Tubing pressure 4900 psig 3 hrs open to tank, initial pressure of 4900 psig. Pressure dropped from 4900 psig to 40 psig and built back to 540 psig with recovery of 19 bbls of water 1st hr. Pressure build to 920 psig. 7 hrs turned to sales on 40/64" chk. Current rate of 3.1 MMCFD of gas, 15 BO hr, no water, LP 822 psig. Total sales @ 07:00 666 MCF. Total water rec 99 bbls. Total oil rec 75 bbls. LWRTR 2 bbls. Note: Shut in for line problems for 25 min and TP built to 5400 psig.

REPORT DATE : 04/01/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$2,360 TC : \$2,360 CUM : DC : \$0 CC : \$63,526 TC : \$63,526

ACTIVITY AT REPORT TIME : FLOWING TO SALES

DAILY DETAILS : Flowing to sales for 23-1/4 hrs. Produced 2704 MCF. 350 bbls condensate, 0 BW, controls on production sep froze off (Big Joe) @ 03:15 returned to sales @ 04:30. Pressure (TP) increased from 805 psig to 7200 psig during the 1-1/4 hrs well was shut in (froze off). Current flow conditions @ 0700. Chk 16/64, FTP 2200 psig, LP 843 psig, gas rate 4,200 MCF, oil rate 16 bbls/hr, H2O 0/hr. Total oil rec to date 425 bbls, Total H2O 99 bbls. Note: RD service unit, released all rental equipment except tanks.

REPORT DATE : 04/02/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$2,500 TC : \$2,500 CUM : DC : \$0 CC : \$66,026 TC : \$66,026

ACTIVITY AT REPORT TIME : FLOWING

DAILY DETAILS : 13 hrs flowing to sales on 48/64" chk, FTP 804 psig, LP 710 psig, spot rate 3,116 MCFD, oil rate 16 bbls/hr, 0 BW, sold 2717 MCF. RU Arc pressure BHP guages, PU conventional and electronic gauges. TIH making gradient stop @ 2500'-5000', 7500', 9500', 11,500', 13,447' and 13,647' (mid perms). Zeroed @ surface. Wolfcamp perforations 13,660-13,674', 13,678-13,680'. Flowed well for 1 hr. 11 hr SI for pressure buildup. SITP @ 0700, 7220 psig in 11 hrs. Set acid, KCL and CO2 tanks

REPORT DATE : 04/03/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$0 TC : \$0 CUM : DC : \$0 CC : \$66,026 TC : \$66,026

ACTIVITY AT REPORT TIME : SHUT IN

DAILY DETAILS : SITP 7450 psig, 36 hrs.

REPORT DATE : 04/04/1999 MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$0 TC : \$0 CUM : DC : \$0 CC : \$66,026 TC : \$66,026

ACTIVITY AT REPORT TIME : SHUT IN

DAILY DETAILS : SITP 7460 psig, 41 hrs SI gauge reading.



# WELL CHRONOLOGY REPORT

**REPORT DATE : 04/05/1999** MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$0 TC : \$0 CUM : DC : \$0 CC : \$66,026 TC : \$66,026  
 ACTIVITY AT REPORT TIME : SHUT IN  
 DAILY DETAILS : SITP 7600 psig, 60 hrs SI gauge reading.

**REPORT DATE : 04/06/1999** MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$0 TC : \$0 CUM : DC : \$0 CC : \$66,026 TC : \$66,026  
 ACTIVITY AT REPORT TIME : SHUT IN  
 DAILY DETAILS : BHP 10,213.40 psig pressure gauge (BHP)

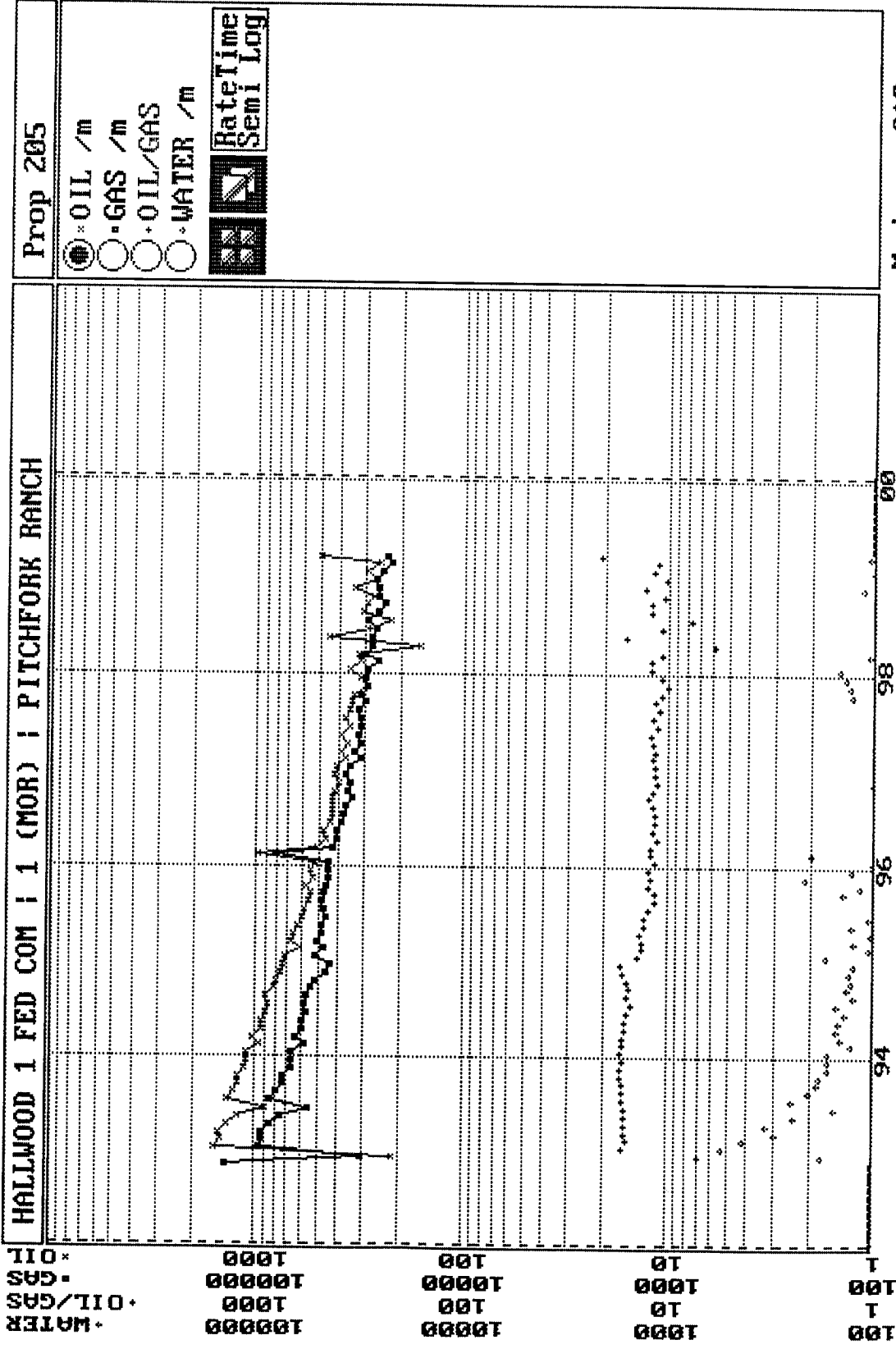
**REPORT DATE : 04/07/1999** MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$5,750 TC : \$5,750 CUM : DC : \$0 CC : \$71,776 TC : \$71,776  
 ACTIVITY AT REPORT TIME : SHUT IN  
 DAILY DETAILS : SITP 7620 psig, 63.47 hrs, dead wt. TOH with BHP guages, making gradient stops @ 13,447', 11,500', 9,500', 7,500', 5,000', and 2,500'.

**REPORT DATE : 04/08/1999** MD : 0 TVD : 0 DAYS : MW : VISC :  
 DAILY : DC : \$0 CC : \$42,602 TC : \$42,602 CUM : DC : \$0 CC : \$114,378 TC : \$114,378  
 ACTIVITY AT REPORT TIME : ACIDIZE WOLFCAMP  
 DAILY DETAILS : 6-1/2 hrs RU HES acidization equipment. Acidized Wolfcamp perforations (13,660-13,674' and 13,678-13,680') using 2,000 gals of 15% MCA acid. Followed with 10,000 gals of 20% VCA acid containing 25% CO2 using 25, 1.1 SG B10 - balls for diversion. Avg inj rate 14.8 BPM, Avg pressure 8260 psig, max pressure 9386 psig. Total fluid used 593 bbls and 35 tons of CO2. Approx 200-300 lbs of action due to balls with minimal prop in pressure following ball seating. ISIP 5720 psig, 5 min 5566 psig, 10 min 5501 psig, 15 min 5479 psig. Details as follows:

VOL	RATE	TP	CSGP	CO2%	REMARKS
BBLs	B/M	PSIG	PSIG		
0	0	7652	3500		INITIAL PRESSURE
250	2.9	9345	3438	0	15% MCA ACID
1000	4.8	8852	3488	0	" "
2000	7.6	8725	3433	25%	START TREATED H2O & CO2
700	7.6	7933	3468	25%	" "
2250	13.2	8075	3410	"	" "
4000	15.6	8457	3417	"	START 20% VCA AND CO2
1700	15.6	8951	3364	"	" "
3750	14.3	8963	3983	"	DROPPED 20 BALLS
7800	14.5	7794	3449	"	DROPPED 5 BALLS
9000	14.5	8100	3437	"	BALL ACTION
9000	14.5	8000	3416	"	20% VCA AND CO2
10000	14.8	8010	3416	"	START FLUSH W/CO2
1000	14.8	7960	3437	"	" "
5000	15.4	7859	3367	"	" "
6500	15.3	8305	3410	"	FLUSHED

2-1/2 hrs RD Howco. Opened to flowback tank IFTP 6300 psi on 6/64" chk. Increased chk size to 12/64" with pressure decreasing to 4600 psig while recovering 105 bbls load fluid total fluid to recover 593 bbls LWTR 488 bbls. 6 hrs flowing to sales. Rate varying from 5,000 MCF to 9,000 MCF with FTP varying from 7200 psig to 5600 psig due to freezing problem with pressure regulators last hr. Stabilized @ 6200 MCF with FTP of 5750 psig. Recovered 116 BO, 35 BW last hr 30 bbls and 0 bbls. 10 hrs flowing to sales on 11/64" chk flowing tbg pressure 5410 psig. Line pressure 787 psig, avg gas rate 5,448 MCFD (flow restricted due to heating problems - regulators freezing recovered 273 BO, 3 BW. Last hr showed 28 BO, 0 BW. Flash gas 384 MCFD. Flash gas 384 MCFD. Total gas 506 since putting on line 3520 MCF and 260 MCF of flash gas. Total oil rec 389 bbls. Total H2O 143 bbls. LWTR 593-143 = 450 bbls.

PRODUCTION BEFORE WORKOVER



# PRODUCTION AFTER WORKOVER

