1044b UIC - EAST POPLAR OIL FIELD
ENFORCEMENT CASE SDWA 1431
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Region 8
13654

EPU-8D
History
58p

HISTORY

MURPHY CORPORATION, ET AL.

EAST POPLAR UNIT WELL NO. 8

ROOSEVELT COUNTY, MONTANA

PRODUCTION DEPT.
FILE COPY

C. H. MURPHY, JR., ET AL

EAST POPLAR UNIT NO. 8

C NW SE SEC. 10, TWP 20N, RGE 51E
ROOSEVELT COUNTY, MONTANA

ELEVATION 2094' K.B.

HISTORY

ELECTRIC LOG DATA

CORE DESCRIPTIONS

COMPLETION DATA

SAMPLE DESCRIPTION

C. H. MURPHY, JR., ET AL

EAST POPLAR UNIT NO. 8

LOCATION: C NW SE Section 10, Township 28North, Range 51East, Roosevelt County, Montana

ELEVATION: 2094' K.B.

SPUDDED: August 1, 1952

COMPLETED: September 5, 1952

TOTAL DEPTH: 5788' Drlr., 5786' Schlumberger Microlog, 5783.5 Lane-Wells, 5783' Schlumberger ES.

HISTORY

August 1	Spudded, and drilled to 107' with a 12¼" bit.
August 2-4	Repairing rig.
August 5	Drilled 107' to 970'. 970=969 SLM
August 6	Set 947.69' of 9-5/8" casing at 960.47' with 390 sacks cement and 4 sacks calcium chloride. W. O. C.
August 7	W. O. C. Drilled out cement and plug, and drilled to 1086' with 8-3/4" rock bit.
August 8-25	Drilled 1086' to 5595'. 5595=98 SLM
August 26	Cut Core No. 1, 5598-5633, with 7-7/8" diamond bit. Drilled 5633-79' with 7-7/8" rock bit.
August 27	Drilled 5679-5750'.
August 28	Cut Core No. 2, 5750-88', with 7-7/8" diamond bit. Ran Schlumberger ES and Microlog.
August 29-September 5	Well completed as set forth under "completion data".

10-22-72 3794' PBTD Pressure testing Squeeze No. 3.

Pressure tested squeeze. Would not hold. Pumped in 1-1/2 bbls. at 400 PSI. Pulled out of hole with tubing and packer. Ran Baker drillable cement retainer on 2-7/8" tubing. Set at 3635'. Squeeze No. 4 Pumped 50 sacks 1-1 Pozmix with 2% ChCl. Cleared tool and pulled out of hole. Max. Injection Rate 2-1/2 BPM. Max. Injection Pressure 2000 PSI. Immediate S.I. 1500 PSI. 3 Min. S.I. 1100 PSI.

Ran 4 way block squeeze gun on Wireline and perforated at 3000'. Run in hole with Retrieve-O-Matic packer and set at 2713'. Pumped into formation at the rate of 4 BPM - 1800 PSI. Unable to circ. to surface. Pumped 310 sacks of 1-1 Pozmix (150 sacks 8% 160 sacks 2%) and 100 sacks regular cement with 2% ChCl. Cleared tool of cement and started to stage same. 1 bbl. at 20 min. intervals for a total of 5 bbls.. Max. Rate 2-1/2 BPM Max. Pressure 1900 PSI S.I. Tubing with 1400 PSI. 30 Min. S.I. 1350 PSI. Shut down for darkness and WOC.

10-23-72 3795' PBTD Prepairing to perforate and water frac the Dakota.

Hooked up portable pump and pressure tested squeeze # 4 down tubing with 1000 PSI. Pressure bled down 300 PSI in 26 mins.. Released packer and pulled out of hole. Ran 5-1/2" casing scraper and 4-3/4" bit to 2991'. Tagged cement. Drilled 10' of hard cement and 50' of cement stringers. Ran tubing to top of cement retainer at 3635'. Found 20' of fillup on retainer at 3615'. Pulled out of hole with bit and scraper. Ran Cement Bond Log. Ragged bond 2840' to 3060', excellent bond 3060' to 3080', and 3110' to 3155'. Ragged bond 3155' to 3500'. Run in hole with Retrieve-O-Matic packer to 3330'. Shut in for darkness.

10-24-72 3795' PBTD Waiting on equipment to complete pumping station. 20 PSI on tubing this A.M.

Perforated Dakota formation with 1-11/16" thru tubing gun, 4 holes per foot at three intervals, 3195-3255', 3335-3400', and 3430-3445' (3 runs). Pumped 200 BW into formation after each run. Set packer at 3114' and fraced entire Dakota formation with 200 Bbls. salt water. Dropped ball sealers and pumped 410 BW with no increase in pressure. Estimated rates and pressures are as follows with 390 BW.

Rate @ 6 BPM	=	1500 PSI	=	8,640 BPD
Rate @ 8 BPM	=	1950 PSI	=	11,520 BPD
Rate @ 10 BPM	=	2300 PSI	=	14,400 BPD
Rate @ 11½ BPM	=	2400 PSI	=	16,560 BPD

Well flowed 1/2" stream of salt water after perforation of first interval and increased to 3" flow at end of job. Pulled out of hole with tubing and packer. Installed well head. Shut in well and rigged down pulling unit. Total salt water used on frac job = 1400 bbls.
TO DROP FROM REPORT.

10-18-72 3794' PBTD Prepairing to break circulation and squeeze 5-1/2" casing.

Layed down bit and scrapper. Had to flare out top of 5-1/2" casing. Ran Gamma Ray - Neutron and Casing Collar Log from 3550' to 3100'. Set WASP bridge plug at 3800' with 1 sack of cement on top to 3794'. Tested casing and bridge plug to 1400 PSI. Held OK. Ran block squeeze gun and perforated at 3695'. Started hydrotesting tubing in hole. Unable to do so because of scale - Shut In due to darkness.

10-19-72 3794' PBTD Prepairing to break circ. and squeeze 5-1/2" casing to surface.

Unable to hydrotest tubing because of scale. Layed down tubing and picked up new string. Tested in hole to 3516'. Set packer and pumped into formation at 3695'. Would not circ. Pumped 50 sacks 1-1 Pozmix, 8% gel and overflushed 3-1/2 bbls. Shut In with 800 PSI on tubing.

Max. Pressure	=	1850 PSI
Max. Inj. Rate	=	3[illegible] BPM
Immed. S.I.	=	1200 PSI
15 Min. S.I.	=	800 PSI

Shut in overnight.

10-20-72 3794' PBTD Prepairing to perforate and squeeze cement to surface from 3000'.

Tried to break circ. from 3695'. Unable to do so. Squeezed 100 sacks 1-1 Pozmix, 8% gel in formation and left 45' in pipe. Shut In with 800 PSI on tubing.

Max. Pressure	=	1850 PSI
Max. Inj. Rate	=	3-3/4BPM
Immed. S.I.	=	1250 PSI
15 Min. S.I.	=	850 PSI

Shut in overnight.

10-21-72 3794' PBTD Pressure testing Squeeze No. 2.

Pressure tested Squeeze No. 2. Would Not Hold. Pumped 90 bbls. salt water and 10 bbls. fresh water into perforations at 3695'. Followed by 50 sacks regular cement with 2% chol. Left 50' of cement in pipe. Shut In under pressure to wait on cement.

Max. Pressure	=	1800 PSI
Max. Inj. Rate	=	4 BPM
Immed. S.I.	=	1200 PSI
15 Min. S.I.	=	1000 PSI

EAST POPLAR UNIT NO. 8-D

SUPPLEMENT TO WELL HISTORY

10-2-73 This well was acidized with 2000 gallons of 28% HCL, with inhibitor added, as follows:

Fifty bbls. of fresh water was injected ahead of the 2000 gallons of acid and tailed in with 10 bbls. of fresh water. Injection rate was 2 BPM at 300 PSI average with a 0 PSI at ISI. The injection pump went down 1 time more than usual in the past 24 hours.

Pressure Before Acid Job	=	400 PSI
Pressure After Acid Job	=	200 PSI

The salt water injection pump was used to displace the acid into the formation.

EAST POPLAR UNIT NO. 8-D

SUPPLEMENT TO WELL HISTORY

6-21-74 East Poplar Unit No. 8-D was acidized with 2,000 gallons of 28% regular acid with 4 gallons Pen 5, 20# of FE-2 and 10 gallons of HAI-50 inhibitor added.

Pumped 1,000 gallons of acid into tubing. 400# Pressure. Let soak 2 hrs.. Displaced with 400 barrels water at 6.2 barrels per min. Pressure 900#. Pumped in 1,000 gallons acid. Displaced with disposal pump.

Pressure Before Treatment 460#

Pressure After Treatment 320#

Treatment Successful

EAST POPLAR UNIT NO. 8-D

SUPPLEMENT TO WELL HISTORY

October 30, 1976

Injection pressure on this well is now 840# which exceeds the working pressure of the plungers in the pumps now being used.

The Dakota Sand perforations at 3195-3255', 3335-3400', and 3430-3445' were acidized with 3000gallons of hydrochloric acid, 9 gallons MAI-50 inhibitor, 30 gallons FEI-A, 75# FE-2, 200 gallons solvent and 35 RCN balls. Acid was flushed with 950 gallons of produced water.

ISIP 850# 5 Min. S.I. - 300# 10 Min. S.I. 250#

Maximum Injection Rate	7.5 BPM
Minimum Injection Rate	5.0 BPM
Average Injection Rate	5.5 BPM
Maximum PSI	1150#
Minimum PSI	750#
Average PSI	900#

EAST POPLAR UNIT NO. 8-D

SUPPLEMENT NO. 3

4-30-76 Acidized the Dakota Sand perforations at 3195-3255', 3335-3400', and 3430-3445' as follows:.

Pump PSI 1100#. Shut pump down and dumped 500 gallons of 28% HCL acid, 6 gallons inhibitor and 2 gallons F-40 surfactant down well. Started pump for 10 mins.. Shut pump down for 3 mins. to let acid soak on perforations. Started pump - Pump PSI 1000#.

Pressure Before Treatment	1100#
Pressure After Treatment	1000#

Treatment Unsuccessful

EAST POPLAR UNIT NO. 8-E

SUPPLEMENT TO WELL HISTORY

8-23-77 Move in and rig up pulling unit. Start to pull tubing, parted in body. Recovered 200' of fiberglass tubing. Shut down for darkness.

8-24-77 Start and service rig. Run in hole with overshot. Fish tubing, recovered 1700'. Run in hole with spear, recovered 800' of fiberglass. Shut down for night.

8-25-77 Start and service rig. Run in hole with 2-3/8" spear. Fish packer and 320' of fiberglass and run in hole with bit and 2-7/8" steel tubing, drill and circulate down to 3473.67' and lay down bit. Run in hole open ended. Run 2-7/8", J-55, 6.50#, 8rd., EUE, Cond. 2 tubing to 3442.67' (115 joints of tubing).

EAST POPLAR UNIT NO. 8-B

SUPPLEMENT TO WELL HISTORY

9-13-77

Preparing to acidize the Dakota Sand perforations with 500 gallons solvent, 500 gallons 15% HCL and 1000 gallons HF acid. The following additives were also used - 6 gallons HAI 50 and 12# FE 2.

Started pumping fresh water (10 barrels) at the rate of 1/2 BPM 400# pressure - increased rate to 1 BPM 500# pressure - increased rate to 3 BPM 800# pressure. Pressure increased to 950# at 3 BPM. Started pumping solvent at the rate of 3 BPM 900# pressure. Pressure increased to 1000#. Started pumping acid (500 gallons 15% HCL) at 2 BPM 900#. Dropped injection rate to 1/2 BPM at 800#. Started 1000 gallons HF acid. Pressure continued to drop slowly at this rate to 500#. Shut down for 15 minutes. Started pumping acid again. Started pumping water. Shut down for 30 minutes. Finished pumping water.

Shut In Pressure after 10 minutes	250#
Injection Pressure	950#

EAST POPLAR UNIT SWD NO. 8

SUPPLEMENT TO WELL HISTORY

11-12-92 Start rig and rig up Halliburton. Mix mud 18.6# Mud 19 bbls. total pump 5 bbls down tubing and pump 5 bbls down casing. Check still flowing. Pump 5 bbls still flowing pump 4 bbls and mix more mud 19 bbls. Pump 10 bbls down casing 19.7 mud. Pump 7 bbls down tubing. Tubing dead casing still flowing. Pull tubing anchor sheared. Pump 3 bbls down casing. Stop casing still flowing. Shut down.

A-0-1

pose to recomplete in Judith River formation as follows: Set cast iron bridge plug 1000' in 5-1/2" casing. Perforate 1' interval using 4 shots per foot at 990' in /2" casing. Pump cement to surface of 9-5/8". Close surface valve and squeeze area ow 9-5/8" shoe. Clean 5-1/2" to 940' and pressure test with 1000#.

n Gamma Ray Neutron and perforate for injection at approximately 825' to 875'.

:forate 1' interval at 700'. Set bridge plug(ret.) at 750' and block squeeze using roximately 50 sacks Class G cement. Drill out and pressure test with 1000# PSI.

ı 2-7/8", 6.40#, J-55, 8rd., thrd. tubing and Baker Model A-1 Tension Packer to 800'. ı treated fluid behind packer. Monitor injection pressures with surface gauges.

January, 1962 Murphy Oil Corporation was granted permission to dispose of water o the Judith River Sand. This was done on Order No. 10-62 Docket No. 7-62. This er states that the applicant also requested permission in the future to use other itional wells for the purpose of this program. These additional wells were subject the Commissions approval but another hearing was not necessary. Two other producers the area of the East Poplar Unit are currently using the Judith River Sand for disposal poses.

OCT 77
RECEIVED
OIL & GAS CONS. COMM.
STATE OF MONT.
BILLINGS

EAST POPLAR UNIT NO. 8-D

Lease and Well No.: East Poplar Unit No. 8-D

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C NW-SE Section 10, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Of Last Workover: December 10, 1965 - P.A.

T.D.: 5785' 3615' Perforations: 5630-36' and 5614-23' - A 50 sack cement plug set from 5650' to 5200' Cumulative Production: B-1 & 2 411,424 BO 1,340,205 BW C-3 196,324 BO 171,409 BW Last Test: September 9, 1965 - Pumping at the rate of 103 BFPD 95% W.C. 5 BOPD 98 BWPD. The C-Zone is shut in with B.R. Plug - Watered Out.

JUSTIFICATION FOR WORKOVER:

East Poplar Unit No. 8 was T & A as being uneconomical December 10, 1965. East Poplar Unit No. 8 is to be converted into a Dakota Sand disposal well to take care of water from EPU "D", "H", "X", and "R" batteries. Production from these 4 batteries could possibly be increased, by selective workovers, 80-100 BOPD if salt water disposal facilities were available. At the present time salt water facilities are working to capacity.

SUMMARY OF WORKOVER:

10-17-72 First Report- 3200' PBTD Present Status - Prepairing to pull tubing, set bridge plug on Wireline, log and perforate for squeeze.

M I P U Rigged up and picked up 2-7/8" tubing. Ran 4-3/4" bit and 5-1/2" casing scraper. Tagged cement at 3193'. Rigged up power swivel and pump. Drld. cmt. and B.P. (4 hrs. and 10 mins.). Ran bit and scraper to 3816'. Shut down due to darkness.

MURPHY
OIL CORPORATION

INTER-OFFICE CORRESPONDENCE

FROM: W. G. Brown — LOC.: Poplar-P&E — DATE: May 25, 1972

TO: A. W. Simpson — LOC.: El Dorado-P&E — CARBONS TO:

SUBJECT: East Poplar Unit South End Production

The accompanying A.F.E. is for making a disposal well in the South end of the East Poplar Unit as per our discussion while you were in Poplar. It is my belief that an increase of 80-100 BOPD could be realized by installing a salt water disposal station at East Poplar Unit No. 8 and by selected workovers at the four tank batteries in the South end of the field. The following will outline the prime suspects for workovers after the disposal plant installation. Tank batteries D, H, K, and R are the ones we would be concerned with.

Well numbers 20, 22, 32, 55, 101 and 104 are going to "H" battery at the present time. East Poplar Unit numbers 22 and 55 are flowed 1 day a week at the present time but would be able to be flowed on a 24 hour basis if the disposal system were installed. An increase of about 750 BWPD and 23 BOPD would be realized. East Poplar Unit No. 20 would have to be diverted to East Poplar Unit "K" battery to flow both 22 and 55 continously. Number 20 would then be a candidate for a high volume pumping system as the annulus is standing full with a 2-1/4" tubing pump in the hole at the present time. The water cut has gone down and oil production doubled on each of the last 3 pump-size changes. A larger pump should increase the production 50 BOPD.

East Poplar Unit No. 32 has no other zones to go to; or no possible increase in production. East Poplar Unit No. 101 is flowing 31 BOPD 598 BWPD and should be left alone as it is very sensitive to any change in choke size. Number 104 is flowing 242 BFPD and could possibly be increased by setting a pumping unit and running a pump.

The wells going into "K" battery are 24 and 100. East Poplar Unit No. 24 is flowing 529 BFPD 16 BOPD 513 BWPD and could possibly be increased by changing the choke size if more water could be handled at the salt water junction at "D" battery. This should be able to be done with a station at East Poplar Unit No. 8. East Poplar Unit No. 100 is pumping 62 BFPD 31 BOPD 31 BWPD and could possibly be increased by an acid job on the B-1 Zone. There would be the chance of acidizing into water and lose what we have. There is a casing patch in this well and should be depleated as soon as possible. The A-Zone also looks good in this well.

COPY

At East Poplar Unit "R" battery we have the Heath production from East Poplar Unit No. 7 and 15. Number 7 is producing about 40 BOPD and should be left alone. East Poplar Unit No. 15 is below the economic limit making 238 BFPD 5 BOPD 233 BWPD, May well test. The fluid level was shot and found to be 200' over the pump. In May, 1969 the B-1 & 2 Zones were blanked off with a bridge plug and 1 sack of cement, these two zones could be opened up and produced. The last test on the B-Zones was 319 BFPD 19 BOPD 300 BWPD 94% W.C.. In the event this well was converted back to a B-Zone well the flowline would have to be changed back to EPU "D" Battery.

"D" battery has well numbers 6, 9, 11 going to it and making 80 BOPD. East Poplar Unit No. 6 is flowing from the C-Zone at the rate of 460 BFPD 9 BOPD 451 BWPD 98% BS&W with the B-1 & 2 Zones as potential production. The C-Zone could be plugged off and the B-Zones opened up and a pumping unit set. The last B-Zone test available was December, 1963 which was 285 BFPD 23 BOPD 262 BWPD 92% W.C.. East Poplar Unit No. 9 is pumping from the B-1, B-2, and C-3 Zones and should be left alone until depleted. The A-Zone is still a potential pay after the present zones are depleted. Number 11 is in the B-1, B-2, and C Zone with no other zones to go to.

To accomplish all of the aforementioned work would cost approximately $65,250. The following is a breakdown on each job.

A.F.E. for S.W.D. Station No. 4	$ 46,000
Start EPU No. 22 and 55 Flowing	--------
Divert No. 20 and install 2-3/4" tubing pump	$ 7,000
East Poplar Unit No. 101	--------
East Poplar Unit No. 104	$ 3,500
East Poplar Unit No. 24	--------
East Poplar Unit No. 100 - Acid Job	$ 4,000
East Poplar Unit No. 15	$ 4,750
East Poplar Unit No. 6 - Left alone for now	--------
East Poplar Unit No. 7 - Left alone for now	--------
East Poplar Unit No. 9 - Left alone for now	--------
East Poplar Unit No. 32 - Left alone for now	--------
East Poplar Unit No. 11 - Left alone for now	--------
Est. Total For All Jobs	$ 65,250

Payout for the above work at an 80 BOPD increase at $3.32 per bbl, gross, would be approximately 250 days or 544 days net ($1.49). The above work would be like drilling a new 80 BOPD well for $65,250. This would allow us to deplete the existing wells more rapidly thereby not having to be as concerned with losing a well because of a casing leak. East Poplar Unit No. 100 already has patched casing which could go at any time. This program would also give us a higher fluid withdrawal rate which seems to be necessary for an efficient oil recovery in this field.

MURPHY
OIL CORPORATION

INTER-OFFICE CORRESPONDENCE

FROM: W. G. Brown LOC.: Poplar-P&E DATE: June 19, 1972

TO: A. W. Simpson LOC.: El Dorado-P&E CARBONS TO: File

SUBJECT: Wells Temporarily Abandoned

Enclosed you will find a list of wells in the East Poplar Unit that have been temporarily abandoned. Two, East Poplar Unit No. 8 and 89, of these wells should remain in the T.A. state in order to facilitate a salt water disposal system in the future if needed. The other wells will have to be plugged and cleaned up at some future date so this should be done while the company has an income in this area.

An A.F.E. is in to convert number 8 into a disposal well to take care of four South end batteries (D, R, K & H). East Poplar Unit No. 80-D would take care of the water from A, C, F, and G as it does now. In the event a high fluid withdrawal system is installed at East Poplar Unit No. 88 a disposal well may be needed at EPU "Q" battery, this would mean East Poplar Unit No. 89 would have to be made into a disposal well. Batteries B, E, I, J, L, M, N and P are being handled by East Poplar Unit No. 1-D. Number 2 salt water station could be reactivated if need be as the lines and wells are still intact.

From the above I don't believe any additional wells would be required for salt water disposal facilities other than the two mentioned. Unless your office or the engineering department has some use for these wells I believe they should be P&A'd and the locations cleaned up.

To the best of our knowledge the enclosed list is correct. Please advise as to your feelings on getting this work taken care of and I will proceed accordingly.

COPY

W. G. Brown

WGB/sb
enclosure

United States Department of the Interior

GEOLOGICAL SURVEY
Conservation Division
P.O. Box 2550
Billings, Montana 59103

March 29, 1977

Murphy Oil Corporation
P.O. Box 547
Poplar, Montana 59255

Re: NTL-2B Approval for Salt Water Disposal Wells in the Northeast Benrud Field, East Benrud Field, Volt Field and East Poplar Field, Roosevelt County, Montana

Gentlemen:

We have reviewed your applications concerning approval of the numerous disposal wells. Your applications meet the regulations required under NTL-2B, and approval is hereby given for the following disposal wells:

Mule Creek Allotted No.1-D, Fort Peck (Allotted) 35-009, SW SE, Sec. 20-31N-48E, 928' FSL and 2078' FEL, Northeast Benrud Field;

Wetsit No.1-D, Fort Peck (Allotted) 35-072, SW, Sec.36-31N-47E, 1740' FSL and 1740' FWL, East Benrud Field;

Courchene No.1-D, Fort Peck (Allotted) 35-035, SE SW, Sec.4-30N-46E, 801' FSL and 2034' FWL, Volt Field;

East Poplar Unit No.1-D, (Klies) #6104, SE SE SE, Sec.30-29N-51E, East Poplar Field;

East Poplar Unit No.80-D, I-37-IND-12914, SW NW, Sec.3-28N-51E, 1982' FNL and 761' FWL, East Poplar Field;

East Poplar Unit No.8-D, Fort Peck (Allotted) ---Patented, C NW SE, Sec.10-28N-51E, 1980' FSL and 1980' FEL, East Poplar Field;

East Poplar Unit No.5-D, I-37-IND-12856, SE SE, Sec.19-29N-51E, 1205' FSL and 660' FEL, East Poplar Field.

However, approval of the emergency pits that you are requesting cannot be given at this time. Each pit will be inspected individually by a staff member of this office. At the time of this inspection, each pit will be checked to see if it meets the criteria as stated under the section of NTL-2B that deals with emergency pits. We would like to remind you that all emergency pits are to be emptied of all fluids within 48 hours following their use. Each emergency use of the pits is to be reported to this office and approval is needed for the method of disposing of the fluid. Inspection of these pits will take place within 30 days. Also an emergency pit cannot be used as a trash pit.

Sincerely yours,

Virgil L. Pauli

Virgil L. Pauli
District Engineer

To: District Engineer, U.S. Geological Survey

From: District Superintendent, Murphy Oil Corporation, Poplar, Montana 59255

Subject: Pollution Report

Spill X Discharge ____ Blowout ____ Accident ____ Fire Or Explosion ____

1. Specific Nature or Cause of Incident

Salt Water Disposal emergency pit overflowed.

2. Location of Incident

NW SE Section 10, T28N, R51E, Roosevelt County, Montana

East Poplar Unit No. 8-D

3. Description of Resultant Damage and Volume of Pollutant Discharged

Approximately 9-1/2 barrels of salt water was discharged - crankshaft on disposal pump broke causing water to go to pit.

4. Date and Time of Occurrence

Tuesday November 23, 1976 3:30 P.M.

5. Length of Time Required to Control Incident or Contain Pollutants

Very Short Some wells were shut in and others were turned to the other disposal stations.

6. Action Taken to Prevent Recurrence

Installed new crankshaft on pump.

7. Measures Taken to Clean Up Pollutants

Water was pumped back into pit. Ground was froze and water had accumulated in low spot.

8. The make or manufacturer, size, working and test pressures, date of installation, type of use, physical damage, etc., of any equipment causing or directly involved with the incident.

Oilwell 346 P

9. Other Federal or State Agencies Notified of Incident

Montana Oil and Gas Commission by copy of this form.

Signature Billy D. Melcar Date November 24, 1976

Title District Superintendent

March 8, 1985

Address List Attached

Dear Owner or Tenant:

As required by 40 CFR Section 147.1355 you are hereby notified that Murphy Oil USA, Inc., 200 Peach Street, El Dorado, Arkansas 71730 has applied for an EPA Form 4 Permit and plans to inject produced formation water which is associated with oil producing operations. The following describes the zone and location for which a permit has been applied for.

Well Name:	East Poplar Unit 8-D
Well Location:	1980' FEL and 1980' FSL, Section 10, T28N-R51E
Injection Zone:	(a) Name: Judith River (b) Depth: 830' to 880'
Injection Pressure:	(Maximum) 700 psig
Injection Volume:	(Daily Rate) 7100 Barrels
Injection Fluid:	Mississippian (Madison & Heath) Water

Mr. William Engle of the EPA Montana Operations Office in Billings may be contacted if you have any questions concerning the submitted permit application. You will be given the opportunity to comment following an announcement by the EPA after they have prepared a draft permit.

Yours very truly,

Alvin W. Simpson
Manager of Operations

AWS/kw

Attachment

VIA: Certified Mail

SURFACE OWNERS AND/OR SURFACE LESSEES
ROOSEVELT COUNTY, MONTANA
March 7, 1985

#8-D

Township 28 North, Range 51 East

Owners and Lessees	Certified Mail Number
Audrey B. Kirn (Lessee) Box 884 Poplar, MT 59255	P 078 582 181
Birdie Sanchez 1000 South 130th Seattle, WA 98146	P 078 582 182
Zimmerman, Inc., A Montana Corp. Box 277 Poplar, MT 59255	P 078 582 183
Michael Kirn (Lessee) Box 884 Poplar, MT 59255	P 078 582 184
Earl W. Baker Box 56 Poplar, MT 59255	P 078 582 185
Audrey M. Buckles Box 252 Poplar, MT 59255	P 078 582 186
Fort Peck Tribes Assiniboine/Sioux Box 1027 Poplar, MT 59255	P 078 582 187

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
MILES CITY DISTRICT OFFICE
P.O. Box 940
Miles City, Montana 59301

IN REPLY REFER TO:

3160
NTL-2B

Murphy Oil USA, Inc.
P. O. Box 547
Poplar, Montana 59255

RE: NTL-2B Approval for the East Poplar Unit

Gentlemen:

We have received your NTL-2B application dated 12/2/85, for the federal wells within the East Poplar Unit boundaries. BLM regulation requires NTL-2B approval for all wells within a federal unit. We will not require additional NTL-2B application for nonfederal wells within the unit, rather this letter will serve as NTL-2B approval for all existing wells in the East Poplar Unit. Produced water from the unit is approved for disposal into the following wells:

EPU SWD No. 1 EPA ID No. MTS21PE-0022,
EPU SWD No. 80 EPA ID No. MTS21PE-0026,
EPU SWD No. 8 EPA ID No. MTS21PE-0023,
EPU SWD No. 5 EPA ID No. MTS21PE-0021, and
EPU SWD No. 29 EPA ID No. MTS21PE-0024.

The following conditions apply to this NTL-2B approval for the disposal of produced water from the referenced unit:

Receipt of this approval does not constitute EPA approval for subsurface injection.

Upon receipt of EPA approval, a copy of the EPA permit must be submitted to this office.

All unauthorized discharges or spills must be reported to this office in accordance with CFR Title 40, Parts 124, 144, 146, and 147.

For future wells, complete NTL-2B applications will not be required. Instead, a Well Completion Report (Form 3160-4) should be used with a statement referring to NTL-2B approval and an explanation of the water source and disposal facilities (see example attached).

Wells outside the unit boundaries will require separate NTL-2B approval.

Any changes to these approved procedures must be submitted via Sundry Notice (Form 3160-5) prior to the commencement of operations.

If you have any questions, please contact Jamie Connell at (406) 232-4331.

Sincerely yours,

Asst. District Manager
Division of Mineral Resources

MURPHY
EXPLORATION & PRODUCTION COMPANY

POST OFFICE BOX 547
POPLAR, MONTANA 59255

February 8, 1999

Steven Sasaki
Board Of Oil and Gas Conservation
2535 St. John's Avenue
Billings, MT 59102

Re: Renewal of Pit Permits

Dear Mr. Sasaki

As the pit permits have now expired or are going to expire shortly we would like to request an extension of these permits until the lease is plugged and restoration work takes place. The following is a list of the pits we would like to have the permits extended on.

EPU No. 1-D	SE SE Section 30, T29N, R51E	Federal
EPU No. 5-D	SE SE Section 19, T29N, R51E	Federal
EPU No. 8-D	NW SE Section 10, T29N, R51E	Federal
EPU No. 80-D	SW NW Section 3, T28N, R51E	Federal
War Club No. 1	NW SE Section 11, T 29N, R50E	Federal

If you have any questions concerning these pits, please contact the Poplar Office for any addition information you might require.

Yours truly,

Raymond Reede

Raymond Reede
District Manager

sb
cc: Sidney Campbell, New Orleans, LA.
file

SPUR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

JUN 22 1999

Ref: 8ENF-T

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Raymond Reede, District Manager
Murphy Exploration & Production Company
P.O. Box 547
Poplar, MT 59255

Re: UNDERGROUND INJECTION CONTROL (UIC)
Notice of Noncompliance
Annual Monitoring Reports
Roosevelt County, MT

Dear Mr. Reede:

Enclosed are Annual Disposal/Injection Well Monitoring Report forms (EPA Form 7520-11) for the wells listed below for the year 1998. These forms should have been submitted by February 15 of this year. Pursuant to permit condition Part II, Section D you are required to submit Annual Monitoring Report forms. Each well requires a separate form, whether the well is active or temporarily abandoned. Please submit the forms within thirty (30) days of receipt of this letter.

Well Name	Permit Number
Mule Creek Allotted #1	MT2791-04292
Well #5-D	MT2021-00021
Well #80-D	MT2026-00026
Well EPU #1-D	MT2022-00022
Well EPU #8-D	MT2023-00023
Well Huber #5	MT2779-04278

Any person who violates any requirement of the Underground Injection Control (UIC) program is subject to enforcement action under Section 1423 of the Safe drinking Water Act. [42 U.S.C. Section 300h-2], et seq.. Enforcement may include civil penalties of up to $27,500 for each day for each violation and require compliance with all provisions of the Safe Drinking Water Act. If the violation is willful, criminal penalties may be prosecuted in accordance with Title 18 of the United States Code.

If you have any questions concerning this letter, you may contact John Carson at (303) 312-6203. Also, please direct all correspondence to the attention of John Carson at Mail Code 8ENF-T.

Sincerely,

Connally E. Mears

Connally E. Mears, Director
Technical Enforcement Program

Enclosures: EPA Form 7520-11

cc: Deb Madison
Environmental Program Manager
Assiniboine & Sioux Tribes
P.O. Box 1027
Poplar, MT 59255

Spike Bighorn, Chairman
Fort Peck Tribal Executive Board
Assiniboine & Sioux Tribes
P.O. Box 1027
Poplar, MT 59255

Sandra Brooks, Field Manager
Billings Field Office
Bureau of Land Management
810 East Main Street
Billings, MT 59105-3395

MURPHY
EXPLORATION & PRODUCTION COMPANY

POST OFFICE BOX 547
POPLAR, MONTANA 59255

June 28, 1999

John Carson
United States Environmental Protection Agency
Region 8
999 18th Street – Suite 500
Denver, Co 80202-2466

Dear Mr. Carson

As per our phone conversation you will find copies of the Underground Injection Control Annual Monitoring Reports which we originally submitted sometime in late January of this year. The reports submitted cover the following wells:

EPU No. 5-D	MT2021-00021
EPU No. 80-D	MT2026-00026
EPU No. 1-D	MT2022-00022
EPU No. 8-D	MT2023-00023
Huber No. 5-D	MT2779-04278

No report was submitted on the Mule Creek Allotted No. 1 MT2791-04292 as the application for permit was cancelled in July of 1997.

Sincerely,

Sharon Bravard

Sharon Bravard

FP 11 E6

A.F.E. No. 53-9

AUTHORITY FOR EXPENDITURE

MURPHY CORPORATION - EAST POPLAR UNIT NO. 8

Center of NW of SE of Sec. 10, Twp. 28N., Range 51 E., Roosevelt Co., Montana

WELL DRILLING & CONSTRUCTION EXPENSE:	TO CSG.PT.	COMP. & EQUIP.	TOTAL COST
Drilling: Rig up & rig down	$ 3,000	$	$ 3,000
Day Work - 50 days @ $850/day (5900')	36,550	5,950	42,500
Loc. survey, permit & prep.	1,000		1,000
Roads, fences, cattleguards, etc.	500		500
Mud mat. & chem., incl. oil & gas	6,000		6,000
Fuel	6,000		6,000
Water	500		500
Drilling bits, baskets, etc.	3,500	200	3,700
Drill pipe rental	4,000		4,000
Move rig in & out	3,500		3,500
Cementing casing	1,100	800	1,900
Coring materials & services	3,500		3,500
Testing services, incl. swabbing	2,700	350	3,050
Other logs, surveys & analyses	1,100	555	1,655
Perf. & set packer		1,500	1,500
Float equip., centralizers, etc.	110	350	460
Tubular inspection, testing, etc.		1,200	1,200
Trucking, welding & other labor	500	800	1,300
Supervision & Miscellaneous	2,500	800	2,300
Total estimated well drilling & const. exp.	$ 76,060	$ 12,505	$ 88,565
WELL EQUIPMENT COSTS:			
1000' of 9-5/8" O.D. csg. @ $3.30/ft.	$ 3,300	$	$ 3,300
6000' of 5-1/2" O.D. csg. @ $1.75/ft.		10,500	10,500
6000' of 2-3/8" O.D. tbg. @ $.52/ft.		3,120	3,120
Packers, etc.		500	500
Casing head & connections	600	250	850
Xmas tree & connections		1,800	1,800
Total estimated well equip. costs	$ 3,900	$ 16,170	$ 20,070
TOTAL ESTIMATED COST OF WELL	$ 79,960	$ 28,675	$108,635

This A.F.E. does not include tanks and lease equipment

APPORTIONMENT OF TOTAL ESTIMATED COSTS

APPROVAL OF EXPENDITURE

Production Department

Requested by /s/ Paul C. McDonald (AWS)
Date 7-21-52

Approved by /s/ R. D. Custis V.P.
Date 7-21-52

Executive Department

Approved by /s/ R. D. Custis Vice Pres.
Date 7-21-52

Approved

_____

By _____

A.F.E. #57-4-7

AUTHORITY FOR EXPENDITURE
MURPHY CORPORATION - EAST POPLAR UNIT NO. 8
NW SE Section 10-T26N-R51E, Roosevelt County, Montana
(Installation of Pumping Unit)

Pumping unit complete with engine	$5,650
Labor and materials setting unit	750
Trucking, small fittings and incidentals	150
Rods, pump, and well head equipment	3,000
TOTAL ESTIMATED COST	$9,550

APPORTIONMENT OF TOTAL ESTIMATED COST

	%	
Murphy Corporation - Unit Operator	31.448470	$3,003
Munoco Company	2.098565	200
Placid Oil Company	33.545035	3,203
The Carter Oil Company	16.335860	1,560
Phillips Petroleum Company	16.335860	1,560
C. F. Lundgren	.238210	23

APPROVAL OF EXPENDITURE

Requested by:

Division Production Supt. JUN 8 1956 Date

Recommend Approval:

Staff Production Man Date

Recommend Approval:

Division Manager JUN 8 1956 Date

Recommend Approval:

Budget Supervisor Date

Approved:

By Date

Approved:

Vice President-Operations Date

HH:eg
6-8-56

EMERGENCY
A.F.E. #9-5060

AUTHORITY FOR EXPENDITURE
MURPHY CORPORATION - EAST POPLAR UNIT NO. 8
C NW SE Section 10, T28N, R51E, Roosevelt County, Montana
(Workover #1)

Pulling Unit 7 (12 hr.) days @ $300	$2,100
Pump truck and cement for four stage squeezed	2,000
Packers, bridge plug, power swivel and service	1,400
Miscellaneous labor and trucking	500
Total Estimated Cost	$6,000

Emergency A.F.E. No. 9-5060 is to cover the total estimated cost to repair 5-1/2" casing leak at approximately 3800'.

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Corporation	31.448470%	$1,887
Munoco Company	2.096565%	126
Placid Oil Company	33.545035%	2,013
Carter Oil Company	16.335860%	980
Phillips Petroleum Company	16.335860%	980
C. F. Lundgren	.238210%	14

APPROVAL OF EXPENDITURE

Requested by: [signature] 5-15-59 Date

Recommend Approval:

[signature] 5-21-59
Division Production Supt. Date

Staff Production Man Date

Recommend Approval:

[signature] 5/21/59
Division Manager Date

Recommend Approval:

Budget Supervisor Date

Approved:

Vice President-Operations Date

MTJ:mm
5-15-59

Received approval from El Dorado 6-3-59

File

A.F.E. #9-5060

AUTHORITY FOR EXPENDITURE
MURPHY CORPORATION - EAST POPLAR UNIT NO. 8
C NW SE Section 10, T38N, R51E, Roosevelt County, Montana
(Workover #1 - Supplement #1)

Pulling Unit 2 (12 hr.) days at $300	$600
Pump Truck and Cement	200
Total Estimated Cost	$800

Supplement No. 1 is to cover the additional cost of pulling unit time and cement squeezing on East Poplar Unit No. 8.

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Corporation	31.448470%	$ 251
Munoco Company	2.096565%	17
Placid Oil Company	33.545035%	268
Carter Oil Company	16.335860%	131
Phillips Petroleum Company	16.335860%	131
C. F. Lundgren	.238210%	2

APPROVAL OF EXPENDITURE

Requested by: [signature] 9-21-59 Recommend Approval:

Division Production Supt. Date Staff Production Man Date

Recommend Approval: Recommend Approval:

Division Manager Date Budget Supervisor Date

Approved:

Received approval from El Dorado 10-5-59

Vice President-Operations Date

MTJ:vw
9-17-59

A.F.E. No. 2-1553

AUTHORITY FOR EXPENDITURE
MURPHY CORPORATION - EAST POPLAR UNIT NO. 8
C NW SE Section 10, T28N, T51E, Roosevelt County, Montana

(WORKOVER #2)
(To D.O.C. Squeeze for Water Shut Off)

Pulling Unit 4 (12 hr) days @ $336 per day	$1,350
Pump Truck, Cement, diesel Oil and Emulsion Breaker	900
2500' of 2 7/8" Eve Class 2 Tbg @ $0.60 per ft	1,500
Less Credit for 2500' of 2 3/8" @ $0.35	(875)
Dia-Log Tbg	400
300' of 4 1/2" Csg Liner @ $2.00 per ft	600
Miscellaneous Trucking, Labor and Material	625
TOTAL ESTIMATED COST -	$4,500

PRESENT STATUS

Pumping 712 BFPD, 95% water (36 BO 676 BW) from B-1 zone perforations 5614-23' and B-2 5630-36'. The C zone is shut in with packer and DR plug at 5755'. Last test on the C zone November 1, 1956 flowing on 1/4" choke, TFP 375 lbs, 234 BFPD, 86% water cut (33 BO 201 BW).

JUSTIFICATION FOR EXPENDITURE

To lower water cut and increase production. (This Workover was recommended by Engineering Workover Committee.)

PROPOSED WORKOVER

Dia-Log 2 7/8" tubing, change out 2 3/8" tubing to full string of 2 7/8" tubing. Pressure test squeezed casing leak at 3852' and test casing and DR plug below B-2 perforations. Displace water with oil. D.O.C. squeeze the B-1 and 2 zone perforations through retrievable packer with 75 sacks regular cement. Swab test and run 4 1/2" casing liner.

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Corporation	31.448470%	$1,415
Munoco Company	2.096565%	$ 94
Placid Oil Company	33.545035%	$1,510
Humble Oil & Refining Company	16.335860%	$ 735
Phillips Petroleum Company	16.335860%	$ 735
C. F. Lundgren	.238210%	$ 11

APPROVAL OF EXPENDITURE

Requested by: [signature] 3-12-62
Field Production Superintendent — Date

RECOMMEND APPROVAL:
[signature] 3-15-62
Division Production Supt. — Date

RECOMMEND APPROVAL:
Staff Production Man — Date

[redacted] APPROVAL:
[signature] 3-16-62
Division Manager — Date

RECOMMEND APPROVAL:
Budget Supervisor — Date

APPROVED:
Vice President-Operations — Date

BUDGET STATUS:
FIELD OPERATING EXPENSE
This item was anticipated in the original budget planning. It was anticipated under unidentified DOC squeezes.

No partner approval required

MTJ:am
3-12-62

A.F.E. No. 2-1553-S1

25

AUTHORITY FOR EXPENDITURE

Oil MURPHY CORPORATION - EAST POPLAR UNIT NO. 8 27

C NW SE Section 10, T28N, R51E, Roosevelt County, Montana

28

59

(SUPPLEMENT NO. 1)

(WORKOVER NO. 2)

Pulling Unit - 5 (12 hr.) Days @ $336 per day	$3,025
Pump Truck, Cementing, Hot Oil Truck, Deisel, etc.	2,250
Baker Packer & Service	1,025
Miscellaneous Labor, Trucking & Material	700
TOTAL ADDITIONAL COST -	$7,000

JUSTIFICATION FOR SUPPLEMENT

To locate and squeeze casing leak at 4006' that was not anticipated on WO #2 to D.O.C. squeeze.

APPORTIONMENT OF TOTAL ADDITIONAL COST 38

Murphy Corporation	31.448470%	19	$2,201	267.31
Munoco Company	2.096565%		$ 147	17.82
Placid Oil Company	33.545035%		$2,348	285.13
Humble Oil & Refining Company	16.335860%		$1,144	138.85
Phillips Petroleum Company	16.335860%		$1,144	138.85
C. F. Lundgren	.238210%		$ 16	2.04

53 APPROVAL OF EXPENDITURE

Requested by: M. J. James 4-30-62

Field Production Superintendent Date

RECOMMEND APPROVAL:

Division Production Supt. Date

APPROVED:

Division Manager Date

MTJ:am
4-30-62

File

A.F.E. No. 5-1519

mail to M.T. James Approved Copy

AUTHORITY FOR EXPENDITURE

MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 8

C NW SE Section 10, T26N, R51E, Roosevelt County, Montana
(Pull Rods, Tubing, Plug and Abandon)

HISTORY: Completed September 5, 1952. Last test September 9, 1965 pumping at the rate of 103 BFPD 95% Water 5 BOPD 98 BWPD. The rods parted and well was temporarily abandoned October 15, 1965 (Uneconomical). Cumulative Production through October 15, 1965 B-1 & 2 Zone 411,424 BO 1,340,205 BW C-3 Zone 196,324 BO 171,409 BW. The C-Zone is shut in with D.R. Plug - Watered out.

Workover No. 1: May, 1950 Repaired Casing Leak at 3852'. (Note: Right place in casing at 3252'.)

Workover No. 2: April, 1962 To repair casing leak and D.O.C. Squeeze the B-1 & 2 Zones. Located and repaired casing leak at 4006'. The 3rd. or old casing leak started leaking while D.O.C. Squeezing and developed into a water flow estimated at 350 BWPD with 310 PSI shut in pressure. The casing is rough from 3850' to 4046' indicating the 5-1/2" casing is in bad shape and leaking.

PROPOSAL: To protect the B-Zone Formation. Pull rods and tubing, remove Model "R" Packer and set 50 sack cement plug 5650-5401' with lost circulation material added to cement. Let set overnight. Then tag top of cement. Set C.I. Bridge Plug on Wireline with 1 sack of cement on top at 3200'.

ESTIMATED COST

Pulling Unit 20 hrs. at $32.00 per hr.	$ 650.00
Cement and Pump Truck to set plug	$ 675.00
Bridge Plug set on Wireline	$ 600.00
Tuboscope Tubing and Rods	$ 800.00
Misc. Labor, Trucking and Material	$ 350.00
Total Estimated Cost	$3,075.00
Salvage Estimated 30% Class No. 2 Tubing, Rods, Pump and Packer	($2,225.00)
Net Estimated Cost to Abandon	$ 850.00

APPORTIONMENT OF TOTAL COST

Murphy Oil Corporation	31.448470%	$ 267.00
Sunoco Company	2.096565%	$ 18.00
Placid Oil Company	33.545035%	$ 285.00
Humble Oil and Refining Company	16.335860%	$ 139.00
Drilling Specialties Company	16.335860%	$ 139.00
C. F. Lundgren	.238210%	$ 2.00

APPROVAL OF EXPENDITURE

Requested by:

M. T. James — Date 11-5-65

APPROVED:

L. L. Duncan — Date 11/10/65

W. J. Thornton — Date 11-11-65

MTJ/sb
November 5, 1965

File

A.F.E. NO. 2-1511-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 8
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

Proposal and Justification: It is proposed to convert East Poplar Unit No. 8 into a Dakota Sand disposal well to take care of the water from EPU D, H, K and R Batteries.

Capacity of water disposal lines is the controlling factor for increasing the production. By making a disposal station at this point the line friction would be reduced and allow a higher total fluid production at the above named batteries. Selected workovers would give a higher total fluid production therefore more oil. Two more wells, namely 22 and 55, would be able to be flowed continuously instead of 1 day per week because of water problems. The increase in production should be between 80-100 BOPD from the 4 batteries. Payout at 80 BOPD for the disposal station would be 151 days at $3.32 per bbl. This payout would vary depending on workovers required to obtain an extra 80 BOPD.

ESTIMATED COST

Pulling Unit and Drilling Equipment	$ 3,700
Wireline Services (B.P. and Perforating)	5,400
Packer & Scrapper Rental	1,000
Cement, Pump Truck and Water Frac	5,000
Hydrotest	400
Pit and Rubber Liner	5,000
3300' Of Fiberglass Tubing	16,500
Lines and Fittings for tie in to existing system	3,500
210 Bbl. Accumulator Tank	2,500
Misc. Labor, Material and Trucking	3,000
Pump and Motor On Hand In EPU S.W. System	
TOTAL ESTIMATED COST	$ 46,000

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 14,466
Placid Oil Company	33.545035%	15,431
Humble Oil & Refining Company	16.335860%	7,514
Phillips Petroleum Company	16.335860%	7,514
Munoco Company	2.096565%	965
C. F. Lundgren	.238210%	110

APPROVAL OF EXPENDITURE

Requested by:

W. G. Brown — Date 5-26-72

Approved by:

A. W. Simpson — Date 6/28/72

W. J. Thornton — Date 6-29-72

6/30/72

Job went as anticipated, however we were unable to complete due to frost. Will complete the lines as soon as the frost leaves the ground.

Total Exp to date 46,504.—
lined pit 5000
46,504.—

1.25.73
46,504.00 — 41,504.00 Supl Inv.
5,000.00
46,504

Total Expense to date

A.F.E. No. 3-1524-10

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE
EAST POPLAR UNIT SALT WATER SYSTEM

RUBBER LINE PIT

PROPOSAL & JUSTIFICATION

It is proposed to dig an emergency overflow pit between "D" Battery and #8-D disposal station and rubber line the pit.

A large earthen pit now serves as the overflow pit for "D" Battery but the East Poplar Unit #8-D does not have a pit. An overflow pit was planned for the E.P.U. #8-D and $5,000 which was allotted for digging and lining a pit (A.F.E. No. 2-1511-10) was not used. In an effort to save land and money, E.P.U. "D" Battery and E.P.U. #8-D overflow pits could be combined and the existing earthen pit covered and the land returned to production. With this work done we would be in a better position to comply with the E.P.A. regulations.

ESTIMATED COST

Rubber Liner	$ 4,300
Dig New Pit and Cover Old Pit	750
Labor to Lay Liner and Pipe	1,000
Fiberglass Line Pipe and Fittings	2,500
Miscellaneous Labor, Material and Trucking	250
TOTAL ESTIMATED COST	$ 8,800

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 2,767
Placid Oil Company	33.545035%	2,952
Exxon Company, U.S.A.	16.335860%	1,438
Phillips Petroleum Company	16.335860%	1,438
Munoco Company	2.096565%	184
C. F. Lundgren	.238210%	21

APPROVAL OF EXPENDITURE

Requested: W. G. BROWN 7-3-73 Date

APPROVED: Albert W. Simpson 7/16/73 Date

WGB/sb/cm This job went as planned and is in operation. Winter weather prevented
7-10-73 us from covering the old pit but will be done before sping work begins. As can be seen $300 is included for the work WGB. 1-21-74

Date Job Completed 10-25-73
Approximate Cost $8,574 - Included $300 for cat work to be done in spring
By Gerald Hagadone.

A.F.E. No. 3-1524-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT SALT WATER SYSTEM

(Rubber Lined Pit)

Proposal and Justification: It is proposed to dig an emergincy overflow pit between "D" battery and # 8-D disposal station and rubber line the pit.

A large earthen pit now serves as the overflow pit for "D" battery but we do not have a pit for East Poplar Unit No. 8-D. An overflow pit was planned for East Poplar Unit No. 8-D and $5,000 saved from A.F.E. No. 3-1511-10 to dig and line a pit. In an effort to save land and money East Poplar Unit "D" battery and East Poplar Unit # 8-D overflow pits could be combined and the existing earthen pit covered up and the land returned to production. With the E.P.A. being as strong an agency as they are we would be in a better position to comply with their regulations.

ESTIMATED COST

Rubber Liner	$ 4,300
Dig New Pit and Cover Old Pit	$ 750
Labor To Lay Liner and Pipe	$ 1,000
Fiberglass Linepipe and Fittings	$ 2,500
Misc. Labor, Material and Trucking	$ 250
Less $5,000 appropriated on A.F.E. No. 3-1511-10	($ 5,000)
Total Estimated Cost	$ 3,800

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 1,195
Placid Oil Company	33.545035%	$ 1,275
Exxon Company, U.S.A.	16.335860%	$ 621
Phillips Petroleum Company	16.335860%	$ 621
Munoco Company	2.096565%	$ 79
C. F. Lundgren	.238210%	$ 9

APPROVAL OF EXPENDITURE

Requested by: Approved by:

W. G. Brown — Date 7-3-73 — A. W. Simpson — Date

WGB/sb
June 3, 1973

A.F.E. No. 3-1530-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

Proposal and Justification: It is proposed to acidize this well with 2,000 gallons of 28% HCL.

Injection pressure has increased from 290 PSI on completion in January, 1972 to 400 PSI in August of 1973. In an effort to lower the injection pressure and dispose of water with more efficiency this well should be acidized.

ESTIMATED COST

2,000 Gallons of Acid and Service	$ 2,250
Misc. Labor, Material and Equipment	$ 250
TOTAL ESTIMATED COST	$ 2,500

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 786
Placid Oil Company	33.545035%	$ 839
Exxon Company, U.S.A.	16.335860%	$ 408
Phillips Petroleum Company	16.335860%	$ 408
Munoco Company	2.096565%	$ 53
C. F. Lundgen	.238210%	$ 6

APPROVAL OF EXPENDITURE

Requested by: Approved by:

W. G. Brown — Date 9-14-73 — A. W. Simpson — Date

WGB/sb
September 14, 1973

A.F.E. No. 4-1519-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana
(Acidize Well)

Proposal and Justification: It is proposed to acidize the Dakota perforations with 2,000 gallons of 28% HCL to remove any scale build up.

Pressure has increased from 200 PSI to 400 PSI causing the disposal pumps to operate a full 24 hours rather than shutting off 3 to 5 hours per day. In an attempt to dispose of more water at a lower pressure this well should be acidized.

ESTIMATED COST

2,000 Gallons Of 28% HCL and Services	$ 2,000
Misc. Labor, Trucking and Supervision	$ 500
TOTAL ESTIMATED COST	$ 2,500

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 786
Placid Oil Company	33.545035%	$ 839
Exxon Company, U.S.A.	16.335860%	$ 408
Phillips Petroleum Company	16.335860%	$ 408
Munoco Company	2.096565%	$ 53
C. F. Lundgren	.238210%	$ 6

APPROVAL OF EXPENDITURE

Requested by: Approved by:

W. G. Brown — Date 6-5-74 — A. W. Simpson — Date 6/11/74

Pumped 1,000 gallons acid into tubing 400# Pressure Let soak 2 hours Displaced with 400 barrels water at 6.2 barrels per min. Pressure 900# Pump in 1,000 gallons acid. Displaced with disposal pump.

Pressure Before Treatment 460#
Pressure After Treatment 320#

WGB/sb
June 5, 1974

Date Job Completed 6-21-74
Approximate Cost $2,362
By Floyd O'Brien

REC. PROD. APR 6 1976

A.F.E. No. 6-1516-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana
(Acidize Well)

Proposal and Justification: It is proposed to acidize the Dakota perforations with 500 gallons of 28% HCL to remove any scale build up.

Pressure has increased from 500 PSI to 1000 PSI causing packing gland leaks and longer running time on pumps.

ESTIMATED COST

500 Gallons of 28% Acid	$ 600
Pump Truck	$ 250
Supervision	$ 50
TOTAL ESTIMATED COST	$ 900

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 283
Placid Oil Company	33.545035%	$ 302
Exxon Company, U.S.A.	16.335860%	$ 147
Phillips Petroleum Company	16.335860%	$ 147
Munoco Company	2.096565%	$ 19
C. F. Lundgren	.238210%	$ 2

APPROVAL OF EXPENDITURE

Requested by:

Billy G. Melear — Date 4-23-76

Approved by:

A. W. Simpson — Date 4/26/76

BGM/sb
April 23, 1976

A.F.E. No. 6-1549-10

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, RooseveltCounty, Montana
(Acidize Well)

It is proposed to acidize the Dakota Sand perforations, 3195-3255', 3335-3400', and 3430-3445', with 3000 gallons of 15% acid with 10% FE1A.

The injection pressure is now 840#, which exceeds the working pressure of our pumps with the size plungers being used. The above treatment should lower our injection pressure to approximately 350#.

ESTIMATED COST

3000 Gallons Acid and Services	$ 3,190
Supervision	$ 100
TOTAL ESTIMATED COST	$ 3,290

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 1,035
Placid Oil Company	33.545035%	$ 1,104
Exxon Company, U.S.A.	16.335860%	$ 537
Phillips Petroleum Company	16.335860%	$ 537
Munoco Company	2.096565%	$ 69
C. F. Lundgren	.238210%	$ 8

APPROVAL OF EXPENDITURE

Requested by:

Billy G. Melear — Date 10-29-76

Approved by:

A. W. Simpson — Date

BGM/sb
October, 1976

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - [illegible] UNIT NO. 8-D
NW SE Section 10, [illegible], R31E, [illegible] County, [illegible]

Due to crankshaft breaking, considerable damage was done to the Oilwell 366-[illegible] salt water pump at this station. It is proposed to replace the crankshaft and all damaged gears, etc..

Justification: Some of the wells are shut-in and others cut back on the South side of the Unit because we can not handle the water with this pump down.

ESTIMATED COST

Repair Parts	$ 6,[illegible]
Labor	$ 1,[illegible]
Supervision	$ [illegible]
Total Estimated Cost	$ 8,[illegible]

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 2,57[illegible]
Placid Oil Company	33.545035%	$ 2,7[illegible]
Exxon Company, U.S.A.	16.335860%	$ 1,3[illegible]
Phillips Petroleum Company	16.335860%	$ 1,337
Mimoco Company	2.096565%	$ 171
C. F. Lundgren	.238210%	$ 19

APPROVAL OF EXPENDITURE

Requested by:

Billy G. Melear — Date 11-24-76

Approved by:

A. W. Simpson — Date

BGM/sb
November 24, 1976

REC. FROM. JUL 22 1977

A.F.E. No. 7-1529-10

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Mont.

.s proposed to locate and cement squeeze casing leak in this well. Injection pres-
: has dropped from 760# to 125#.

ESTIMATED COST

.over Rig.	$ 3,200
O Services	$ 1,900
O Serviceman	$ 1,500
er	$ 700
king	$ 450
al Equipment (drill out)	$ 1,000
rvision and Misc.	$ 300
Total Estimated Cost	$ 9,050

APPORTIONMENT OF TOTAL ESTIMATED COST

ıy Oil Corporation	31.448470%	$ 2,846
ld Oil Company	33.545035%	$ 3,036
lips Petroleum Company	16.335860%	$ 1,478
ı Company, U.S.A.	16.335860%	$ 1,478
:o Company	2.096565%	$ 190
. Lundgren	.238210%	$ 22

APPROVAL OF EXPENDITURE

:sted by:

Q. Melear
Date 7-20-77

Approved by:

A. W. Simpson
Date 7/20/77

.8, 1977

REC. PROD. AUG 18 1977

A.F.E. NO. 7-1529-10-S1

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

This A.F.E. was overspent due to finding fiberglass tubing parted. Fishing tool equipment and operator plus extra rig time accounts for overage.

ESTIMATED COST

	Original A.F.E.	Actually Spent	Supplement No. 1
Workover Rig	$ 3,200	$ 6,014	$ 2,814
HOWCO Services	$ 1,900	-------	($ 1,900)
HOWCO Serviceman	$ 1,500	-------	($ 1,500)
Packer	$ 700	$ 1,765	$ 1,065
Trucking	$ 450	$ 156	($ 294)
Rental Equipment	$ 1,000	$ 1,096	$ 96
Supervision and Misc.	$ 300	$ 1,029	$ 729
1,045' of 2-7/8", Cond. 2 Fiberglass	-------	$ 1,766	$ 1,766
450' of Cond. 3 5-1/2" Casing	-------	$ 900	$ 900
Total Estimated Cost	$ 9,050	$12,726	$ 3,676

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 2,846	$ 4,002	$ 1,156
Placid Oil Company	33.545035%	$ 3,036	$ 4,269	$ 1,233
Phillips Petroleum Company	16.335860%	$ 1,478	$ 2,079	$ 601
Exxon Company, U.S.A.	16.335860%	$ 1,478	$ 2,079	$ 601
Munoco Company	2.096565%	$ 190	$ 267	$ 77
C. F. Lundgren	.238210%	$ 22	$ 30	$ 8

APPROVAL OF EXPENDITURE

Requested by:

Billy S. Melear — 8-15-77 Date

Approved by:

A. W. Simpson — 8/18/77 Date

RWC. PROD. SEP 28 1977

A.F.E. No. 7-1538-10

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

:-7/8" fiberglass tubing is parted in this well. It is proposed to fish all fiber-
; tubing and Baker Model A-1 Tension packer out of hole and run 3,443' of 2-7/8",
', J-55, 8rd., tubing.

.njection pressure has slowly increased from 760# at rate of 9200 BWD to 960# at rate
.00 BWD. Propose to acidize the Dakota perforations with 500 gallons solvent, 500
ns of HCL acid followed with 1000 gallons HF acid.

ESTIMATED COST

ver Rig	$ 1,239
' of 2-7/8", Cond. 2, 6.40#, J-55, 8rd. Tubing	$ 3,581
ing Services	$ 2,475
Truck	$ 300
and Supervision	$ 100
Total Estimated Cost	$ 7,695

APPORTIONMENT OF TOTAL ESTIMATED COST

' Oil Corporation	31.448470%	$ 2,420
! Oil Company	33.545035%	$ 2,581
.ps Petroleum Company	16.335860%	$ 1,257
Company, U.S.A.	16.335860%	$ 1,257
Company	2.096565%	$ 161
Lundgren	.238210%	$ 19

APPROVAL OF EXPENDITURE

ted by:

Approved by:

S. Melear — 9-21-77 Date

Al W. Simpson — 9/26/77 Date

9/26/77

approximate cost $ 14,276

REC. PROD. OCT 11 1977

A.F.E. No. 7-1538-10-S1

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

inal A.F.E. called for condition 2 tubing but condition 1 tubing was used to replace fiberglass pipe in this well. Also no cost for fishing tools and blow out preven- was included on original A.F.E..

ESTIMATED COST

	Estimated Cost	Actual Cost	Supplement No. 1
over Rig	$ 1,239	$ 1,312	$ 73
3' of 2-7/8", Cond. 1 Tubing	$ 3,581	$ 7,953	$ 4,372
ting Services	$ 2,475	$ 2,476	$ 1
r Truck	$ 300	$ 108	($ 192)
ing Tools and BOP	-------	$ 3,027	$ 3,027
. and Supervision	$ 100	-------	($ 100)
Total Cost	$ 7,695	$14,876	$ 7,181

APPORTIONMENT OF TOTAL ESTIMATED COST

ny Oil Corporation	31.448470%	$ 2,420	$ 4,678	$ 2,258
id Oil Company	33.545035%	$ 2,581	$ 4,990	$ 2,409
lips Petroleum Company	16.335860%	$ 1,257	$ 2,430	$ 1,173
n Company, U.S.A.	16.335860%	$ 1,257	$ 2,430	$ 1,173
co Company	2.096565%	$ 161	$ 312	$ 151
. Lundgren	.238210%	$ 19	$ 36	$ 17

APPROVAL OF EXPENDITURE

sted by:

G. Melear — Date

Approved by:

A. W. Simpson — Date 10/17/77

er 4, 1977

REC. PROD. OCT 24 1977

A.F.E. No. 7-1543-10

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

This well is currently being used as a Salt Water Disposal well with water being injected into the Dakota Formation. The injection pressure has slowly increased to 1100 PSI. Acidizing did not lower pressure. The excessive pressure is causing pump part failures and lower disposal rates.

It is proposed to run Gamma Ray Log thru the Judith River formation, to block squeeze and perforate best porosity. It is anticipated that injection pressure will be below 450 PSI.

ESTIMATED COST

Rig Cost, 33 hours	$ 2,700
HOWCO Cost	$ 4,200
Logging and perforate and bridge plug	$ 3,500
Supervision and Misc.	$ 400
Credit on 2600' of 2-7/8", No. 2 Tubing at .94¢ per ft.	($ 2,444)
Total Estimated Cost	$ 8,356

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 2,628
Placid Oil Company	33.545035%	$ 2,803
Phillips Petroleum Company	16.335860%	$ 1,365
Exxon Company, U.S.A.	16.335860%	$ 1,365
Munoco Company	2.096565%	$ 175
C. F. Lundgren	.238210%	$ 20

APPROVAL OF EXPENDITURE

Requested by:

Billy G. Melear — 10-21-77 Date

Approved by:

Al W. Simpson — 11/11/77 Date

PROD. FEB 6 1978

A.F.E. No. 7-1543-10-S1

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

A.F.E. overspent due in part to severe sub-zero weather during all of workover and underestimating service work cost. All service work equipment was snowed in on location part of job.

ESTIMATED COST

	Original A.F.E.	Actual Cost	Supplement No. 1
Workover Rig	$ 2,700	$ 5,425	$ 2,725
HOWCO Services	$ 4,200	$ 9,272	$ 5,072
Logging, Perforate, Etc.	$ 3,500	$ 6,175	$ 2,675
Supervision and Misc.	$ 400	$ 1,072	$ 672
Credit On Tubing	($ 2,444)	($ 2,444)	-------
TOTAL ESTIMATED COST	$ 8,356	$19,500	$11,144

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470	$ 2,628	$ 6,133	$ 3,505
Placid Oil Company	33.545035%	$ 2,803	$ 6,541	$ 3,738
Phillips Petroleum Co.	16.335860%	$ 1,365	$ 3,185	$ 1,820
Exxon Company, U.S.A.	16.335860%	$ 1,365	$ 3,185	$ 1,820
Munoco Company	2.096565%	$ 175	$ 409	$ 234
C. F. Lundgren	.238210%	$ 20	$ 47	$ 27

APPROVAL OF EXPENDITURE

Requested by:

Billy D. Melear — 2-2-78 Date

Approved by:

A. W. Simpson — 2/6/78 Date

0-1515-10

A.F.E. No. ~~XXXXXXXXX~~

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

It is proposed to install cathodic protection on this salt water installation.

ESTIMATED COST

Materials	$ 1,428
Labor to install equipment	1,470
Technician to check & put equipment into operation	93
Supervision and miscellaneous	100
Total Estimated Cost	$ 3,091

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 972
Placid Oil Company	33.545035%	1,037
Exxon Company, U.S.A.	16.335860%	505
Phillips Petroleum Company	16.335860%	505
Munoco Company	2.096565%	65
C. F. Lundgren	.238210%	7

APPROVAL OF EXPENDITURE

Requested by:

Billy G. Melear 11/8/79

Approved by:

Alvin W. Simpson 4/23/80
Alvin W. Simpson Date

BGM:CDF:ch
March 13, 1980
(OFD)

Closed out
at $ 1074

REC. PROD. OCT 24 1980

A.F.E. No. 0-1515-10-S1

MURPHY OIL CORPORATION
AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 8-D
NW SE Section 10, T28N, R51E, Roosevelt County, Montana

Labor to install cathodic protection was considerably less than originally estimated.

ESTIMATED COST

	Original A.F.E.	Actual Cost	Over (Under)
Materials	$ 1,428	$ 1,346	($ 82)
Labor To Install Equipment	$ 1,470	$ 459	($1,011)
Technician To Check & Put Equipment Into Operation	$ 93	$ 93	-------
Supervision and Miscellaneous	$ 100	$ 176	$ 76
Total Estimated Cost	$ 3,091	$ 2,074	($1,017)

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 972	$ 652	($320)
Placid Oil Company	33.545035%	$ 1,037	$ 696	($341)
Exxon Company, U.S.A.	16.335860%	$ 505	$ 339	($166)
Phillips Petroleum Company	16.335860%	$ 505	$ 339	($166)
Munoco Company	2.096565%	$ 65	$ 43	($ 22)
C. F. Lundgren	.238210%	$ 7	$ 5	($ 2)

APPROVAL OF EXPENDITURE

Requested by:

Billy G. Melear — Date 10-21-80

Approved by:

A. W. Simpson — Date 10/28/80

REC. PROD. APR 13 1984

A.F.E. No. 4-1505-10

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE - SALT WATER STATION 4-D
NW SE SECTION 10, T28N, R51E, ROOSEVELT COUNTY, MONTANA
EAST POPLAR FIELD

PROPOSAL & JUSTIFICATION:

The crank shaft broke on one of the oil well 346 P pumps at 8-D SWD. It is proposed to buy a new crank shaft and bearings and install in this pump and put it back in service.

ESTIMATED COST

Crank shaft	$ 4,400
Bearings	600
Mechanic	1,500
Supervision & Miscellaneous	500
Total Estimated Costs	$ 7,000

APPORTIONMENT OF TOTAL ESTIMATED COSTS

Murphy Oil USA, Inc.	31.448470%	$ 2,200
Petro-Lewis Corporation	33.544035%	2,348
Exxon Company, U.S.A.	16.335860%	1,144
Phillips Petroleum Company	16.335860%	1,144
Munoco Company	2.096565%	147
C.F. Lundgren	.238210%	17

APPROVAL OF EXPENDITURE

Requested by:

Raymond Reede 4-9-84
Raymond Reede Date

Approved by:

A. W. Simpson 4/16/84
A. W. Simpson Date

RR/jh
April 6, 1984

(SOC)

DATE JOB COMPLETED 5-4-84
APPROXIMATE COST 6119.00

REC. PROD. JAN 23 1985

A.F.E. NO. 5-1502-10

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE - SALT WATER STATION NO. 4
NW SE SECTION 10, T28N, R51E, ROOSEVELT COUNTY, MONTANA
EAST POPLAR FIELD

PROPOSAL & JUSTIFICATION:

The building around the free water knock out and salt water disposal pump at 8-D SWD caught on fire and burned. The total fluid line from the wells to the free water knock out developed a leak and gas migrated to the motor starter on the SWD pump and caused an explosion. It is proposed to rebuild the building, motor starter, rewind the motor and replace a section of the total fluid line.

ESTIMATED COST

Rewind 125 H. P. Motor	$ 2,600
Electrician	2,500
Building Material	2,000
Flow Line	600
Connections	1,000
Roustabout	3,000
Miscellaneous & Supervision	1,300
Total Estimated Costs	$ 13,000

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil USA, Inc.	31.448470%	$ 4,088
Petro-Lewis Corporation	33.545035%	4,361
Exxon Company USA	16.335860%	2,124
Phillips Petroleum	16.335860%	2,124
Munoco Company	2.096565%	272
C. F. Lundgren	.238210%	31

APPROVAL OF EXPENDITURE

Requested by: Approved by:

1-15-85 1/25/85

Log 3/25/85

A.F.E. No. 5-1502-010
Supplement No. 1

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE
SALT WATER STATION NO. 4
NW SE SECTION 10-T28N-R51E, ROOSEVELT COUNTY, MONTANA
EAST POPLAR FIELD

This A.F.E. was overspent because the extreme cold weather caused the roustabout bill to be more than originally estimated. There were more connections and electrical equipment that had been damaged by fire than originally figured.

ESTIMATED SUPPLEMENTAL COSTS

Rewind Motor	$ (640)
Electrician	763
Building Material	(807)
Flow Line	263
Connections	812
Roustabout	4,820
Supervision and Miscellaneous	1,149
Total Estimated Supplemental Costs	$ 6,360
Original AFE Approved Costs	$ 13,000
Total Estimated Costs	$ 19,360

APPORTIONMENT OF ESTIMATED SUPPLEMENTAL COSTS

Murphy Oil USA, Inc.	31.448470%	$ 2,000
Fairway Resources, Inc.	29.351906%	1,867
Phillips Petroleum Co.	16.335860%	1,039
Exxon Company USA	16.335860%	1,039
TPEX Exploration, Inc.	4.193129%	266
Munoco Company	2.096565%	134
C. F. Lundgren	.238210%	15

APPROVAL OF EXPENDITURE

Requested by:

Approved by:

REC. PROD. OCT 7 1985

A.F.E. NO. 5-1519-10

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE
EPU SALT WATER DISPOSAL NO. 8-D
NW SE SECTION 10, T28N, R51E, ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION:

This SWD Well has developed a tubing leak. It is proposed to mix mud, kill the well and change out the tubing and packer.

ESTIMATED COST

Rig	$ 4,200
Pump truck - Mix mud	3,200
Mud	6,000
Packer	2,200
700' - 2 7/8" Tubing	2,000
Supervision & Miscellaneous	400
Total Estimated Cost	$ 18,000

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil USA, Inc.	47.784330%	$ 8,601
Fairway Resources	29.351906%	5,283
Exxon company, USA	16.335860%	2,941
TPEX Exploration, Inc.	4.193129%	755
Munoco Company	2.096565%	377
C.F. Lundgren	.238210%	43

APPROVAL OF EXPENDITURE

Requested by: Raymond Reede 10-3-85
Raymond Reede DAte

Approved by: A. W. Simpson 10/7/85
A. W. Simpson Date

RR/jh
October 3, 1985

DATE JOB COMPLETED 9-28-85

209
12/2/85

A.F.E. NO. 5-1519-10S1

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE
EPU SALT WATER DISPOSAL NO. 8-D
NW SE SECTION 10, T28N, R51E, ROOSEVELT COUNTY, MONTANA

This A.F.E. was overspent due to the fact that the water trucks and the roustabouts were more than originally anticipated.

SUPPLEMENTAL COSTS

	Original	Actual	Supplement#1
Rig	$ 4,200	$ 4,073	$ (127)
Pump Truck	3,200	4,112	912
Mud	6,000	5,230	(770)
Packer	2,200	2,745	545
700' - 2 7/8" Tbg.	2,000	2,057	57
Supervision & Misc.	400	2,944	2,544
	$18,000	$21,161	$ 3,161

APPORTIONMENT OF SUPPLEMENTAL COSTS

Murphy Oil USA, Inc.	47.784330%	$ 8,601	$10,112	$ 1,511
Fairway Resources	29.351906%	5,283	6,211	928
Exxon Company USA	16.335860%	2,941	3,457	516
TPEX Exploration, Inc.	4.193129%	755	887	133
Munoco Company	2.096565%	377	444	66
C. F. Lundgren	.238210%	43	50	7

APPROVAL OF EXPENDITURE

Requested by:

Raymond Reede 11-27-85
Raymond Reede Date

Approved by:

A. W. Simpson 12/3/85
A. W. Simpson Date

Logged 8/26/87

Rec., Prod. AUG 1 7 1987

A.F.E. NO. 7-0509-010

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE
EPU SWD #8
NW SE SECTION 10, T28N, R51E
ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION:

The tubing on this well developed a hole in it. It is proposed to mix mud to kill well and change out the tubing and packer.

ESTIMATED COST

Rig	$ 2,500
HOWCO	1,500
Packer	1,600
Mud	3,000
Tubing	1,800
Water Truck	500
Supervision & miscellaneous	600
Total Estimated Cost	$11,500

APPORTIONMENT OF TOTAL ESTIMATED COSTS

Murphy Oil USA, Inc.	81.329365%	$ 9,353
Exxon Company U.S.A.	16.335860%	1,879
Munoco Company	2.096565%	241
C. F. Lundgren	.238210%	27

APPROVAL OF EXPENDITURE

Requested by: Approved by:

Raymond Reede 8-12-87 A. W. Simpson 8/20/87

Raymond Reede Date A. W. Simpson Date

RR/jh
August 12, 1987

A.F.E. No. 2-0404-010

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE
EAST POPLAR UNIT SWD NO. 8
NW SE SECTION 10, T28N, R51E
ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION:

This pump at the 8-D salt water station had a crack in the crank shaft. The crankshaft and all the bearings were replaced.

ESTIMATED COST

Crankshaft & Bearings	$ 6,800
Labor & Mileage	1,200
TOTAL ESTIMATED COST	$ 8,000

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil USA, Inc.	60.363718%	$ 4,829
Doil Oil & Gas	20.965647%	1,677
Exxon Company U.S.A.	16.335860%	1,307
Munoco Company	2.096565%	168
C.F. Lundgren	.238210%	19

APPROVAL OF EXPENDITURE

Requested by:

Raymond Reede 2-5-92
Raymond Reede Date

Approved by:

Sidney W. Campbell 2-10-92
Sidney Campbell Date

Paul E. Ramsey 2-11-92
Paul Ramsey Date

RR/jh
February 5, 1992

DATE JOB COMPLETED_____
APPROXIMATE COST_____
BY_____

D-12/12/9

A.F.E. No. 70702
OBJECT CODE: 232910

MURPHY EXPLORATION AND PRODUCTION COMPANY
AUTHORITY FOR EXPENDITURE
EAST POPLAR UNIT SALT WATER STATION 8-D
NW SE Section 10, T28N, R51E
ROOSEVELT COUNTY, MONTANA

PLUG & ABANDON

PROPOSAL AND JUSTIFICATION:

We have recently converted the Huber #5 to a salt water disposal well for injection into the Mission Canyon and Nisku Formations. The Huber #5 has an EPA approved permit to dispose of all waters previously handled by EPU #8-D SWD. We have no further use for EPU #8-D and it therefore requires abandonment.

It is proposed to P&A the EPU #8-D SWD well as follows: (Note that the 5 1/2" casing has been cemented to the surface with 350 sacks of cement and good cement returns were observed.) The well will be killed with 18 ppg mud and the retrievable packer will be pulled out of the hole. A cement retainer will be set at 631'. The Judith River perforated interval (830'- 840') will be squeezed with 100 sacks of cement. The plans are to then pull out of the retainer and leave a 60 sack cement plug on top. The tubing will be partially laid down (500'), a 20 sack surface plug will be pumped and the remainder of the tubing will be laid down.

ESTIMATED COSTS

Workover Rig	$ 3,000
HOWCO Cement	4,500
Retainer	1,500
Roustabout Services	500
Supervision and Miscellaneous	1,500
Total Estimated Cost	$11,000

APPORTIONMENT OF TOTAL ESTIMATED COST

MURPHY EXPRO	76.937788%	$ 8,463
DOIL OIL AND GAS	20.965647%	2,306
MUNOCO COMPANY	2.096565%	231

APPROVAL OF EXPENDITURE

PERMIT APPLICATIONS

Permit.
57 P
1965 - 1985

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)

TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment Temp.	XXX
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

October 19, 19 65

Following is a {report of work done} on land {leased} described as follows:

LEASE East Poplar Unit No. 8

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 8 C NW SE Sec. 10 (m. sec.) 28N (Township) 51E (Range) MPM (Meridian)

The well is located 1980 ft. from {S} line and 1980 ft. from {E} line of Sec. 8

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is .....

READ CAREFULLY — DETAILS OF PLAN OF WORK — READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

RECEIVED
OCT 21 1965
OIL AND GAS CONSERVATION COMMISSION
STATE OF MONTANA - BILLINGS

East Poplar Unit No. 8 was shut down October 15, 1965.

September 9, 1965 well test 5 BOPD 98 BWPD 95% Water

Temporarily Abandoned - Uneconomical

Approved subject to conditions on reverse of form

Date OCT 26 1965

By ORIGINAL SIGNED BY J. R. Hug, Supervisor
Title
District Office Agent

Company MURPHY OIL CORPORATION

By ORIGINAL SIGNED BY M. T. JAMES

Title Field Production Superintendent

Address P.O. Box 547 Poplar, Montana

NOTE:—Reports on this Form to be submitted to the District Agent for Approval in Quadruplicate.

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL

OVER

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)
TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well	XX	Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

November 16, 19 65

Following is a {notice of intention to do work} on land {leased} described as follows:

LEASE East Poplar Unit

MONTANA (State) Roosevelt (County) East Poplar (Field)

Well No. 8 C NW SE Sec. 10 (m. sec.) 28N (Township) 51E (Range) MPM (Meridian)

The well is located 1980' ft. from {N/S} line and 1980 ft. from {E/W} line of Sec. 10

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is 2094' RKB

RECEIVED NOV 18 1965 OIL AND GAS CONSERVATION COMMISSION OF THE STATE OF MONTANA - BILLINGS

READ CAREFULLY — DETAILS OF PLAN OF WORK — READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

This well was Temporarily Abandoned as uneconomical on October 15, 1965. Plan to pull rods, tubing, and packer, leave casing in place, set 50 sack cement plug at 5450' to 5401' with lost circulation material added to cement, set cast-iron Bridge Plug on wireline at 3200' with 1 sack cement on top. Top of casing will be closed with a valve.

September 9, 1965 well test 5 BOPD 98 BWPD 95% water

Approved subject to conditions on reverse of form

Date NOV 18 1965

By ORIGINAL SIGNED BY: J. R. Hug, Supervisor
Title District Office Agent

Company MURPHY OIL CORPORATION

By ORIGINAL SIGNED BY M. T. JAMES

Title Field Production Supt.

Address P.O. Box 547 Poplar, Montana

NOTE:—Reports on this Form to be submitted to the District Agent for Approval in Quadruplicate.

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL

OVER

EPU #8

Form No. 2
GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)
TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	XXX
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

December 10, 1965

Following is a {XXXXXXXXXXXXXXXXXXXX report of work done} on land {XXXXX leased} described as follows:

LEASE East Poplar Unit

MONTANA (State) Roosevelt (County) East Poplar (Field)

Well No. 8 C NW SE Section 10 (m. sec.) 28N (Township) 51E (Range) MPM (Meridian)

The well is located 1980 ft. from {XXXX S} line and 1980 ft. from {E XXXX} line of Sec. 10

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is 2094' XXX

RECEIVED
DEC 13 1965
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA - BILLINGS

READ CAREFULLY DETAILS OF PLAN OF WORK READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

East Poplar Unit No. 8: 5786' PBTD Plugged and Abandoned

Pulled rods and tubing. Removed packer, ran tubing in hole open ended. Set 30 sack cement plug from 5650' to 5200'. Set C.I. Bridge Plug on Schlumberger W.L. at 3200' with 1 sack of cement on top of plug. Put on casing head with master valve. Closed well in at surface. 5-1/2" O.D. Production String of Casing left in place.

LOCATION INSPECTED & APPROVED

Approved subject to conditions on reverse of form

Date DEC 14 1965

By ORIGINAL SIGNED BY: J. R. Hug, Supervisor
Title
District Office Agent

Company Murphy Oil Corporation

By ORIGINAL SIGNED BY M. T. JAMES

Title Field Production Superintendent

Address P.O. Box 347 Poplar, Montana 59255

NOTE:—Reports on this Form to be submitted to the District Agent for Approval in Quadruplicate.

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL

OVER

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)
TO
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

RECEIVED OCT 1972 GAS CONS. COMM. STATE OF MONT. BILLINGS

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
Complete as Salt Water Dis. Well	XX		

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

September 29, 19 72

Following is a {notice of intention to do work} on land {XXXXX leased} described as follows:

LEASE East Poplar Unit

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 8 NW SE Section 10 (m. sec.) T28N (Township) R51E (Range) MPM (Meridian)

The well is located 1980 ft. from {XXX S} line and 1980 ft. from {E XXX} line of Sec. 10

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is 2094' RKB

READ CAREFULLY — DETAILS OF PLAN OF WORK — READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

9-5/8" surface casing was set at 960.47' with 390 sacks of cement and 4 sacks of Calcium Chloride. 181 Joints (5765.65') of 5-1/2", 15.5#, J-55 casing was cemented with 250 sacks of common Dakota bulk cement and 5 sacks of gel. A 50 sack cement plug was set at 5650' to 5200' when the well was T.A.. A C.I. bridge plug with 1 sack of cement on top was also set at 3200'.

The cement plug and bridge plug are to be drilled out and hole cleaned out to 3900'. A bridge plug will be set at 3800' and cement circulated to surface from block squeeze perforations at 1550'. The Dakota formation will then be perforated, 4 holes per foot, and water fraced at highest possible rate from 3200-3260', 3340-3405' and 3435-3450'. Plugging balls will be used if necessary on the final injection test with all perforations open. Fiberglass tubing will be ran in the well and left swinging free with an inhibited oil in the annulus.

Approved subject to conditions on reverse of form

Date OCT 3 - 1972

ORIGINAL SIGNED BY
By Judson D. Sweet, Petroleum Engineer
District Office Agent Title

Company MURPHY OIL CORPORATION

By

Title District Superintendent

Address P.O. Box 547, Poplar, Montana 59255

COMMISSION USE ONLY
API WELL NUMBER
2 | 5
STATE COUNTY WELL

NOTE:—Reports on this form to be submitted to the District Agent for Approval in Quadruplicate

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL.

OVER

2

Propose to recomplete in Judith River formation as follows: Set cast iron bridge plug at 1000' in 5-1/2" casing. Perforate 1' interval using 4 shots per foot at 990' in 5-1/2" casing. Pump cement to surface of 9-5/8". Close surface valve and squeeze area below 9-5/8" shoe. Clean 5-1/2" to 940' and pressure test with 1000#.

Run Gamma Ray Neutron and perforate for injection at approximately 825' to 875'.

Perforate 1' interval at 700'. Set bridge plug(ret.) at 750' and block squeeze using approximately 50 sacks Class G cement. Drill out and pressure test with 1000# PSI.

Run 2-7/8", 6.40#, J-55, 8rd., thrd. tubing and Baker Model A-1 Tension Packer to 800'. Use treated fluid behind packer. Monitor injection pressures with surface gauges.

In January, 1962 Murphy Oil Corporation was granted permission to dispose of water into the Judith River Sand. This was done on Order No. 10-62 Docket No. 7-62. This order states that the applicant also requested permission in the future to use other additional wells for the purpose of this program. These additional wells were subject to the Commissions approval but another hearing was not necessary. Two other producers in the area of the East Poplar Unit are currently using the Judith River Sand for disposal purposes.

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
Helena, Montana 59601

N° 9567

$ 75.00

RECEIVED OF Murphy Oil Corporation, P.O. Box 547, Poplar, Montana 59255

THE SUM OF Seventy-five and no/100 DOLLARS

IN PAYMENT FOR DRILLING PERMIT NO. S6193, Southern DISTRICT

FOR WELL NO. 8, LEASE East Poplar Unit

LOCATION 1980' fr S li & 1980' fr E li (Footage) SEC. 10 TWP. 28N RGE. 51E

PROJECTED DRILLING DEPTH 3900 FEET

Date Oct. 17 19 72

Check No. 1644

Executive Secretary

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)
TO
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	XX
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	XX

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

January 30, 19 73

Following is a report of work done on land leased described as follows:

LEASE East Poplar Unit No. 8-D

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 8-D C NW SE Section 10 (m. sec.) T28N (Township) R51E (Range) MPM (Meridian)

The well is located 2080 ft. from S line and 1980 ft. from E line of Sec. 10

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is 2094' RKB

READ CAREFULLY DETAILS OF PLAN OF WORK READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

See Attached Sheet

Approved subject to conditions on reverse of form

Date FEB 1 - 1973

ORIGINAL SIGNED BY

By Judson D. Sweet, Petroleum Engineer
District Office Agent Title

Company MURPHY OIL CORPORATION

By ORIGINAL SIGNED BY W. G. BROWN

Title District Superintendent

Address P.O. Box 547, Poplar, Montana 59255

COMMISSION USE ONLY
API WELL NUMBER
25
STATE COUNTY WELL

NOTE:—Reports on this form to be submitted to the District Agent for Approval in Quadruplicate

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL.

OVER

2

Set WASP bridge plug at 3800' with 1 sack of cement on top. Tested casing and bridge plug to 1400 PSI, held OK. PBTD 3794'. Ran block squeeze gun and perforated at 3695'. Attempted squeeze # 1 with 50 sacks 1-1 Pozmix, 8% gel. Attempted squeeze # 2 with 100 sacks 1-1 Pozmix, 8% gel. Attempted squeeze # 3. Pumped 90 bbls. salt water and 10 bbls. fresh water into perforations. Followed with 50 sacks regular cement with 2% ChCl. Attempted squeeze # 4 with 50 sacks 1-1 Pozmix (8%) and 50 sacks regular with 2% ChCl. Max. injection rate 2-1/2 BPM. Maximum injection pressure 2000 PSI. Immediate S.I. 1500 PSI. 3 Min. shut in 1100 PSI. Ran 4 -way block squeeze gun on wireline and perforated at 3000'. Set packer at 2713'. Pumped 310 sacks of 1-1 Pozmix (150 sacks of 8% and 160 sacks of 2%). Maximum rate of 2-1/2 BPM. Maximum pressure 1900 PSI. Pressure tested squeeze with 1000 PSI. Perforated the Dakota formation with 1-11/16" thru tubing gun, 4 holes per foot at three intervals, 3195' to 3255', 3335' to 3400', and 3430' to 3445'. Pumped 200 bbls. of water into formation after each run. Set packer at 3114' and fraced entire Dakota formation with 200 barrels of salt water. Dropped ball sealers and pumped 410 barrels of water with no increase in pressure. Started injecting water 1-26-73 at 500 PSI.

'o. 2
RAL RULES
2, 213,
9, 230,
2

(SUBMIT IN QUADRUPLICATE)
TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE BOARD.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans	X	Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

September 28, 19 77

ing is a {notice of intention to do work / report of work done} on land {~~owned~~ / leased} described as follows:

LEASE East Poplar Unit No. 8-D

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

lo. 8-D C NW SE Section 10 (m. sec.) T28N (Township) R51E (Range) MPM (Meridian)

ell is located 1980 ft. from {~~N~~ / S} line and 1980 ft. from {E / ~~W~~} line of Sec. 10

TE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

evation of the ground or K.B. above the sea level is 2094' RKB

CAREFULLY DETAILS OF PLAN OF WORK READ CAREFULLY

ate names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points and other nt proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

RECEIVED
OCT 77
OIL & GAS CONS. COMM.
STATE OF MONTANA
BILLINGS

DETAILS OF WORK
RESULT

is proposed to change the formation that salt water is now being disposed of into m the Dakota Sand to the Judith River Sand.

ginally 947.69' of 9-5/8" casing was run and cemented with 390 sacks of cement and acks calcuim chloride. 5-1/2", 15.50# casing was run and set at 5,779.30'. The ing was cemented with 250 sacks common dakota bulk cement and 5 sacks of gel. When well was converted into a disposal well a WASP bridge plug with one sack of cement set at 3800'. A Baker drillable cement retainer was also set at 3635'. The 5-1/2" ing was block squeezed with 310 sacks 1-1 Pozmix and 100 sacks regular cement with CaCl.

ved subject to conditions on reverse of form

OCT 17 1977
ORIGINAL SIGNED BY
CHARLES G. MAIO, Petroleum Geologist
District Office Agent Title

Company Murphy Oil Corporation
By
Title District Superintendent
Address P.O. Box 547, Poplar, Montana 59255

BOARD USE ONLY
PI WELL NUMBER
COUNTY WELL

NOTE:—Reports on this form to be submitted to the appropriate District for approval

WHEN USED AS PERMIT TO DRILL, PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL IF WELL NOT SPUDDED OR EXTENSION REQUESTED.

OVER

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 230,
231, 232

(SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE BOARD.

SUNDRY NOTICES AND REPORT OF WELLS

RECEIVED JUL 1978 OIL & GAS CONS. COM. STATE OF MONT. BILLINGS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
		Change Disposal Zone	X

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

July 21, 19 78

Following is a {notice of intention to do work} on land {~~XXXXX~~ leased} described as follows:

LEASE East Poplar Unit No. 8-D

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 8-D C NW SE (m. sec.) Section 10 (Township) T28N (Range) R51E (Meridian) MPM

The well is located 1980 ft. from {~~XXX~~ S} line and 1980 ft. from {E ~~XXX~~} line of Sec. 10

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is 2094' RKB

READ CAREFULLY — DETAILS OF PLAN OF WORK — READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

Set cast iron bridge plug at 1000'. Perforate the Judith River Sand at 990-991'. Set cement retainer at 960'. Squeezed up around surface casing with 350 sacks regular cement. Went in hole with bit and hit cement at 490'. Drilled down to 852'. Perforated 700' to 701'. Squeeze thru perforation with 100 sacks regular cement with 2% calcuix chloride. Clean hole out to 954'. Run Gamma Ray Neutron Log. Perforate from 830' to 880', 4 holes per foot, 200 holes total.

Injection Pressure 630 PSI.

Approved subject to conditions on reverse of form

Date JUL 26 1978

ORIGINAL SIGNED BY

By Judson D. Sweet, Petroleum Engineer
District Office Agent Title

Company Murphy Oil Corporation

By ORIGINAL SIGNED BY BILLY C. MELEAR

Title District Superintendent

Address P.O. Box 547, Poplar, Montana 59255

BOARD USE ONLY
API WELL NUMBER

25 — STATE COUNTY WELL

NOTE:—Reports on this form to be submitted to the appropriate District for approval

WHEN USED AS PERMIT TO DRILL, PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL IF WELL NOT SPUDDED OR EXTENSION REQUESTED.

OVER

Form 23
Rev. 2/92

Submit in triplicate to:

MONTANA BOARD OF OIL AND GAS CONSERVATION
Billings or Shelby Office

MAR 1993
RECEIVED
BOARD OF OIL & GAS CONS.
STATE OF MONT.
BILLINGS

Application For Permit To Construct Or Operate An Earthen Pit Or Pond
(Production Facility Only)

New pit ☐ Existing pit ☒

Lease Name: East Poplar Unit 8-D

Operator Murphy Exploration & Production Company

Lease Type (Private/State/Federal): Federal

Address P.O. Box 547

Unit Name: East Poplar Unit 8-D

Field or Area: East Poplar

City Poplar State MT Zip Code 59255

County: Roosevelt

Telephone Number (406) 768-3612 Telefax Number (406) 768-5497

Location of pit - ¼ ¼ Section, Township, and Range: NW SE Sec.10,T29N,R51E

Describe the purpose of the earthen pit or pond (if temporary, indicate anticipated time pit will be in use):

Emergency salt water storage. The only time this pit is used is when there is a problem with the SWD system.

Number and type of wells using this pit: _____ Oil _____ Gas 1 Injection _____ Other (specify)

Average water inflow: 0 bbls./day Maximum pit volume: 4950 bbls.

Describe type and origin of fluids, name and location of source wells, producing formations, and approximate fluid volume contributed by each well:

Salt water from the Madison Formation from wells in the east Poplar Unit approximately 4950 BWPD.

Provide a copy of full water analysis with application for new pits only. Board may require a water analysis for existing pits.

The water analysis must include the date and source of sample (treater, wellhead, pit, etc.), and the name, address, and telephone numbers of laboratories. Standard methods must be used for all collection and testing of samples.

BOARD USE ONLY

Approved (date) MAR 3 1 1993 Permit Expires _____

By Accepted for record purposes only

Title _____

CONDITIONS OF APPROVAL ON REVERSE.

Signed (Agent) Sidney W. Campbell

Typed name and Title Sidney W. Campbell
Staff Operations Coordinator

Date March 30, 1993

SUPPLEMENTAL INFORMATION

MAR 1993
RECEIVED
BOARD OF OIL & GAS CONS.

Attach the following information to this permit application:

FOR NEW PITS: Attach diagrams of a top view and two side views of the pit or pond. The diagrams must show the length, width, depth, cut and fill, maximum fluid level, area of topsoil stockpile, and the height and width of berms. Identify the location of additional items such as fences, liners, monitoring wells, tanks, lines, siphons, or other equipment if used. Diagrams need not be prepared by an engineer or surveyor.

FOR EXISTING PITS: Attach color 3" x 5" (or larger) photographs of existing pit or pond. Indicate the date photographs were taken and name and address of the photographer. All photographs must accurately portray the size and condition of the earthen pit or pond at the time this application is submitted.

Describe the type and amount of material or liner used, if any, to seal the pit or pond. If a synthetic liner is used, indicate the liner thickness (mils), bursting strength, tensile strength, tear strength, puncture resistance, hydrostatic resistance, or attach the manufacturer's specification sheet to this application.

20 mill nylon reinforced oil resistant pit liner - manufacturer specifications enclosed
This pit is covered with 1" square netting

Describe the proposed method of treatment and/or disposal of the liquid and solid contents upon abandonment of the pit or pond:

Liquids will be pumped down the SWD well.

Solids will be mixed and diluted with available soil to meet state and federal regulations.

NOTE: The Operator must comply with all applicable federal, state, county, and local laws and regulations concerning the handling, treatment, and disposal of wastes.

This pit or pond was previously permitted by Bureau of Land Management (operator(s)) on the 13 day of September, 1988. Attach a copy(ies) of the previous permit(s).

BOARD USE ONLY	CONDITIONS OF APPROVAL

The operator must comply with the following condition(s):

Failure to comply with conditions of approval may void this permit.

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form Approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck (Allotted)

7. UNIT AGREEMENT NAME: East Poplar Unit

8. FARM OR LEASE NAME: East Poplar Unit

9. WELL NO.: 8-B

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW SE Section 10, T28N, R51E

12. COUNTY OR PARISH: Roosevelt

13. STATE: MT

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.)

MAR 1993 RECEIVED BOARD OF OIL & GAS CONS. STATE OF MONT. BILLINGS

OIL WELL ☐ GAS WELL ☐ OTHER Disposal

2. NAME OF OPERATOR: Murphy Oil USA, Inc.

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, MT 59255

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface: 1980' from the South line and 1980' from the East line

14. PERMIT NO.: EPA # MTS21RE-0023

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2094' RKB

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF		PULL OR ALTER CASING		WATER SHUT-OFF		REPAIRING WELL	
FRACTURE TREAT		MULTIPLE COMPLETE		FRACTURE TREATMENT		ALTERING CASING	
SHOOT OR ACIDIZE		ABANDON*		SHOOTING OR ACIDIZING		ABANDONMENT*	
REPAIR WELL		CHANGE PLANS		(Other) Emergency pit approval	X		
(Other)				(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.)*

1. Type of pit: Emergency salt water pit
2. Size of pit: 94' x 94' x 5'
3. Location of pit: NW SE Section 10, T28N, R51E
4. Plumbing to pit: Schematic attached
5. In cut or fill material: Cut Material
6. Fencing: 4' mesh
7. Pit lined: Yes
8. Any problems, potential problems or corrective action required? No

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

SIGNED [signature] TITLE District Manager DATE 9-8-88

(This space for Federal or State office use)

APPROVED BY [signature] TITLE ADM-MINERALS DATE SEP 13 1988

CONDITIONS OF APPROVAL, IF ANY:

See Conditions of Approval

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

U. S. GEOLOGICAL SURVEY RECEIVED NOV 18 1965 BILLINGS, MONTANA

1. OIL WELL [XX] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: MURPHY OIL CORPORATION

3. ADDRESS OF OPERATOR: P.O. Box 547 Poplar, Montana 59255

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface: 1980' from South line and 1980' from East line of Section 10

5. LEASE DESIGNATION AND SERIAL NO.:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ft. Peck (Allotted)

7. UNIT AGREEMENT NAME: East Poplar Unit

8. FARM OR LEASE NAME: EPU

9. WELL NO.: 8

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: C NW SE Section 10 T28N R51E

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.):

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*, Temp.	[X]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)							

(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.)*

This well was Temporarily Abandoned as uneconomical on October 15, 1965. Plan to pull rods, tubing, and packer, leave casing in place, set 50 sack cement plug at 5650' to 5401' with lost circulation material added to cement, set cast-iron Bridge Plug on wireline at 3200' with 1 sack cement on top. Top of casing will be closed with a valve.

September 9, 1965 well test 5 BOPD 98 BWPD 95% water

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

SIGNED ORIGINAL SIGNED BY M. T. JAMES TITLE Field Production Supt. DATE Nov. 16, 1965

(This space for Federal or State office use)

APPROVED BY (ORIG. SGD.) HILLARY A. ODEN TITLE DISTRICT ENGINEER DATE NOV 19 1965

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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 [XX] GAS WELL [ ] OTHER

2. NAME OF OPERATOR
Murphy Oil Corporation

3. ADDRESS OF OPERATOR
P.O. Box 547 Poplar, Montana 59255

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' from South line and 1980' from East line

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Ft. Peck (Allotted)

7. UNIT AGREEMENT NAME
East Poplar Unit

8. FARM OR LEASE NAME
EPU

9. WELL NO.
No. 8

10. FIELD AND POOL, OR WILDCAT
East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
C NW SE Section 10, T28N, R51E

12. COUNTY OR PARISH: Roosevelt
13. STATE: Montana

OCT 25 1965

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	Temp. ABANDONMENT*	[XX]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)				(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.)*

East Poplar Unit No. 8 was shut down October 15, 1965.

September 9, 1965 Well Test: 5 BOPD 98 BWPD 95% Water

Temporarily Abandoned - Uneconomical

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

SIGNED ORIGINAL SIGNED BY [illegible] TITLE Field Production Superintendent DATE October 18, 1965

(This space for Federal or State office use)

APPROVED BY (ORIG. SGD.) HILARY A. [illegible] TITLE DATE OCT 25 1965

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

STATE
MURPHY

ENTERED: TWR
GM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

5. LEASE DESIGNATION AND SERIAL NO.: Fee

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck (Allotted)

7. UNIT AGREEMENT NAME: East Poplar Unit

8. FARM OR LEASE NAME: EPU

9. WELL NO.: 8

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: C-NW-SE Section 10, T28N, R51E

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

1. OIL WELL [ ] GAS WELL [X] OTHER

2. NAME OF OPERATOR: Murphy Oil Corporation

3. ADDRESS OF OPERATOR: P.O. Box 547 Poplar, Montana 59255

DEC 13 1965
BILLINGS, MONTANA

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' from South line and 1980' from East line of section 10

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	Temp. ABANDONMENT*	[X]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)				(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.)*

East Poplar Unit No. 8: 5786' PBTD Plugged and Abandoned

Pulled rods and tubing. Removed packer, ran tubing in hole open ended. Set 50 sack cement plug from 5650' to 5200'. Set C.I. Bridge Plug on Schlumberger W.L. at 3200' with 1 sack of cement on top of plug. Put on casing head with master valve. Closed well in at surface. 5-1/2" O.D. Production String of Casing left in place.

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

SIGNED ORIGINAL SIGNED BY M. T. JAMES TITLE Field Production Superintendent Dec. 10., 1965

(This space for Federal or State office use)

APPROVED BY (ORIG. SGD.) HILLARY A. ODEN TITLE DISTRICT ENGINEER DATE DEC 13 1965

CONDITIONS OF APPROVAL, IF ANY:

ORIGINAL FORWARDED TO CASPER

*See Instructions on Reverse Side

STATE, B
MURPHY

SS

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck

1. OIL WELL ☐ GAS WELL ☐ OTHER: Salt Water Disposal Well

7. UNIT AGREEMENT NAME: East Poplar Unit

2. NAME OF OPERATOR: Murphy Oil Corporation

8. FARM OR LEASE NAME: East Poplar Unit

3. ADDRESS OF OPERATOR: P.O. box 547, Poplar, Montana 59255

9. WELL NO.: No. 8

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

1980' from the South line and 1980' from the East line

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW SE Section 10 T28N, R51E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2094' RKB

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other) Complete as S. Wtr. Dis. Well XX				(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.)*

9-5/8" surface casing was set at 960.47' with 390 sacks of cement and 4 sacks of Calcium Chloride. 181 Joints (5765.65') of 5-1/2", 15.5#, J-55 casing was cement with 250 sacks of common Dakota Bulk cement and 5 sacks of gel. A 50 sack cement plug was set at 5650' to 5200' when the well was T.A.. A C.I. bridge plug with 1 sack of cement on top was also set at 3200'.

The cement plug and bridge plug are to be drilled out and hole cleaned out to 3900'. A bridge plug will be set at 3800' and cement circulated to surface from block squeeze perforations at 3550'. The Dakota formation will then be perforated, 4 holes per foot, and water fraced at highest possible rate from 3200-3260', 3340-3405', and 3435-3450'. Plugging balls will be used if necessary on the final injection test with all perforations open. Fiberglass tubing will be run in the well and left swinging free with an inhibited oil in the annulus.

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

SIGNED _____ TITLE District Superintendent DATE Sept. 29, 1972

(This space for Federal or State office use)

APPROVED BY (ORIG. SGD.) VIRGIL L. PAULI TITLE DISTRICT ENGINEER DATE 10-16-72

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

ORIGINAL RETURNED TO CASPER

MURPHY OIL CORP.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

5. LEASE DESIGNATION AND SERIAL NO.: Allotted

6. IF INDIAN, ALLOTTEE OR TIBE NAME: Fort Peck (Allotted)

1. OIL WELL ☐ GAS WELL ☐ OTHER Salt Water Disposal Well

7. UNIT AGREEMENT NAME: East Poplar Unit

2. NAME OF OPERATOR: Murphy Oil Corporation

8. FARM OR LEASE NAME: East Poplar Unit

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, Montana

9. WELL NO.: No. 8-D

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' from the South line and 1980' from the East line of Section 10

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: C NW SE Section 10, T28N, R51E

RECEIVED FEB 1 1973 Billings, Montana

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2094' RKB

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Squeeze and water frac			XX
(Other)				(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.)*

Set WASP bridge plug at 3800' with 1 sack of cement on top. Tested casing and bridge plug to 1400 PSI, held OK. PBTD 3794'. Ran block squeeze gun and perforated at 3695'. Attempted squeeze # 1 with 50 sacks 1-1 Pozmix, 8% gel. Attempted squeeze # 2 with 100 sacks 1-1 Pozmix, 8% gel. Attempted squeeze # 3. Pumped 90 bbls. of salt water and 10 bbls. of fresh water into perforations. Followed with 50 sacks regular cement with 2% ChCl. Attempted squeeze # 4 with 50 sacks 1-1 Pozmix (8%) and 50 sacks regular with 2% ChCl. Max. injection rate 2-1/2 BPM. Maximum injection pressure 2000 PSI. Immediate S.I. 1500 PSI. 3 Min. shut in 1100 PSI. Ran 4-way block squeeze on wireline and perforated at 3000'. Set packer at 2713'. Pumped 310 sacks of 1-1 Pozmix (150 sacks of 8% and 160 sacks of 2%). Maximum rate of 2-1/2 BPM. Maximum pressure 1900 PSI. Pressure tested squeeze with 1000 PSI. Perforated the Dakota formation with 1-11/16" gun (thru tubing), 4 holes per foot at three intervals, 3195' to 3255', 3335' to 3400', and 3430' to 3445'. Pumped 200 bbls. of water into formation after each run. Set packer at 3114' and fraced entire Dakota formation with 200 barrels of salt water. Dropped ball sealers and pumped 410 barrels of water with no increase in pressure. Started injecting water 1-26-73 at 500 PSI.

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

SIGNED [illegible] TITLE District Superintendent DATE January 30, 1973

(This space for Federal or State office use)

APPROVED BY [illegible] TITLE DATE 2-2-73

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side ORIGINAL [illegible] TO CASPER

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved. Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Salt Wtr. Dis.

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other Salt Wtr. Dis

2. NAME OF OPERATOR: Murphy Oil Corporation

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, Montana 59255

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1980' from the South line and 1980' from the East line
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.: Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck (Allotted)

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: East Poplar Unit

9. WELL NO.: No. 8-D

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: C NW SE Section 10, T28N, R51E

14. PERMIT NO.: | DATE ISSUED:

12. COUNTY OR PARISH: Roosevelt | 13. STATE: Montana

15. DATE SPUDDED: August 1, 1952 | 16. DATE T.D. REACHED: | 17. DATE COMPL. (Ready to prod.): January 26, 1973 September 5, 1952 | 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: 2094' RKB | 19. ELEV. CASINGHEAD:

20. TOTAL DEPTH, MD & TVD: 5783' | 21. PLUG, BACK T.D., MD & TVD: 3635' | 22. IF MULTIPLE COMPL., HOW MANY*: | 23. INTERVALS DRILLED BY: → | ROTARY TOOLS: | CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
Injection Interval - Dakota Sand
3195-3255', 3335-3400', and 3430'-3445'

25. WAS DIRECTIONAL SURVEY MADE:

26. TYPE ELECTRIC AND OTHER LOGS RUN
Cement Bond Log

27. WAS WELL CORED:

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	36#	960.47	12-1/4"	390 sks. cmt. w/4 sks. CaCl	
5-1/2"	15.5#	5779.29	7-7/8"	250 sks. common Dakota bulk cmt. w/5 sks. gel	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	3186.50'	

31. PERFORATION RECORD (Interval, size and number)
3195-3255'
3335-3400'
3430-3445', 4 holes per foot w/1-11/16" thru tubing gun
50 sks. cmt. plug set at 5650' to 5200'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
3195-3255'	200 bbls. after each run
3335-3400'	200 bbls. on entire interval
3430-3445'	dropped ball sealers and 410 bbls. of water

33.* PRODUCTION

DATE FIRST PRODUCTION: | PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump): | WELL STATUS (Producing or shut-in):

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): | TEST WITNESSED BY:

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED _____ TITLE District Superintendent DATE February 19, 197

*(See Instructions and Spaces for Additional Data on Reverse Side)

ORIGINAL FORWARDED TO CASPER

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

U.S. Geological Survey
RECEIVED
OCT 19 1977
Billings, Montana

1. OIL WELL ☐ GAS WELL ☐ OTHER Disposal Well

2. NAME OF OPERATOR
Murphy Oil Corporation

3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, Montana 59255

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' from the South line and 1980' from the East line

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
2094' RKB

5. LEASE DESIGNATION AND SERIAL NO.
Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Fort Peck (Allotted)

7. UNIT AGREEMENT NAME
East Poplar Unit

8. FARM OR LEASE NAME
East Poplar Unit

9. WELL NO.
No. 8-D

10. FIELD AND POOL, OR WILDCAT
East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
NW SE Section 10
T28N, R51E

12. COUNTY OR PARISH
Roosevelt

13. STATE
Montana

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	X	(Other)			
(Other)							

(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.)*

It is proposed to change the formation that salt water is now being disposed of into from the Dakota Sand to the Judith River Sand.

Originally 947.69' of 9-5/8" casing was run and cemented with 390 sacks of cement and 4 sacks calcuim chloride. 5-1/2", 15.50# casing was run and set at 5,779.30'. The casing was cemented with 250 sacks common dakota bulk cement and 5 sacks of gel. When the well was converted into a disposal well a WASP bridge plug with one sack of cement was set at 3800'. A Baker drillable cement retainer was also set at 3635'. The 5-1/2" casing was block squeezed with 310 sacks 1-1 pozmix and 100 sacks regular cement with 2% CaCl.

Propose to recomplete in Judith River formation as follows: Set cast iron bridge plug at 1000' in 5-1/2" casing. Perforate 1' interval using 4 shots per foot at 990' in 5-1/2" casing. Pump cement to surface of 9-5/8". Close surface valve and squeeze area below 9-5/8" shoe. Clean 5-1/2" to 940' and pressure test with 1000#.

Run Gamma Ray Neutron and perforate for injection at approximately 825' to 875'.

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

SIGNED ORIGINAL SIGNED BY BILLY G. MELGAR TITLE District Superintendent DATE September 28, 1977

(This space for Federal or State office use)

APPROVED BY [signature] TITLE DISTRICT ENGINEER DATE 10-28-77
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

U. S. Geological Survey
RECEIVED
OCT 19 1977
Billings, Montana

Perforate 1' interval at 700'. Set ret. bridge plug at 750' and block squeeze using approximately 50 sacks Class G cement. Drill out and pressure test with 1000# PSI.

Run 2-7/8", 6.40#, J-55, 8rd. thrd., tubing and Baker Model A-1 Tension packer to 800'. Use treated fluid behind packer. Monitor injection pressures with surface gauges.

In January, 1962 Murphy Oil Corporation was granted permission to dispose of water into the Judith River Sand. This was done on Order No. 10-62 Docket No. 7-62. This order states that the applicant also requested permission in the future to use other additional wells for the purpose of this program. These additional wells were subject to the Commissions approval but another hearing was not necessary. Two other producers in the area of the East Poplar Unit are currently using the Judith River Sand for disposal purposes.

OPERATOR
STATE B

(Rev. 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

U.S. Geological Survey
RECEIVED
JUL 25 1978
Billings, Montana

5. LEASE DESIGNATION AND SERIAL NO.: Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck (Allotted)

1. OIL WELL ☐ GAS WELL ☐ OTHER: Disposal Well

7. UNIT AGREEMENT NAME: East Poplar Unit

2. NAME OF OPERATOR: Murphy Oil Corporation

8. FARM OR LEASE NAME: East Poplar Unit

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, Montana

9. WELL NO.: No. 8-D

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' from the South line and 1980' from the East line

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW SE Section 10, T28N, R51E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2094' RKB

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Change Disposal Zones			X
(Other)				(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.)*

Set cast iron bridge plug at 1000'. Perforate the Judith River Sand at 990-991'. Set cement retainer at 960'. Squeezed up around surface casing with 350 sacks regular cement. Went in hole with bit and hit cement at 490'. Drilled down to 852'. Perforated 700' to 701'. Squeeze thru perforation with 100 sacks regular cement with 2% calcuim chloride. Clean hole out to 954'. Run Gamma Ray Neutron Log. Perforate from 830' to 880', 4 holes per foot, 200 holes total.

Injection Pressure 630 PSI.

U.S. GEOLOGICAL SURVEY
RECEIVED
JUL 24 1978
CASPER, WYOMING

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

SIGNED Gary D. McCall TITLE District Superintendent DATE July 21, 1978

(This space for Federal or State office use)

APPROVED BY Thomas P. Butler TITLE ACTING DISTRICT ENGINEER DATE AUG 2 1978

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

U.S. Geological Survey
RECEIVED
OCT 19 1977
Billings, Montana

1. OIL WELL ☐ GAS WELL ☐ OTHER Disposal Well

2. NAME OF OPERATOR
Murphy Oil Corporation

3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, Montana 59255

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' from the South line and 1980' from the East line

5. LEASE DESIGNATION AND SERIAL NO.
Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Fort Peck (Allotted)

7. UNIT AGREEMENT NAME
East Poplar Unit

8. FARM OR LEASE NAME
East Poplar Unit

9. WELL NO.
No. 8-D

10. FIELD AND POOL, OR WILDCAT
East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
NW SE Section 10
T28N, R51E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
2094' RKB

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☒	(Other)			
(Other)				(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.)*

It is proposed to change the formation that salt water is now being disposed of into from the Dakota Sand to the Judith River Sand.

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Run Gamma Ray Neutron and perforate for injection at approximately 825' to 875'.

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

SIGNED ORIGINAL SIGNED BILLY O. MELLAR TITLE District Superintendent DATE September 28, 1977

(This space for Federal or State office use)

APPROVED BY [signature] TITLE DISTRICT ENGINEER DATE 10-28-77

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

U. S. Geological Survey
RECEIVED
OCT 19 1977
Billings, Montana

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Run 2-7/8", 6.40#, J-55, 8rd. thrd., tubing and Baker Model A-1 Tension packer to 800'. Use treated fluid behind packer. Monitor injection pressures with surface gauges.

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Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Fort Peck (Allotted)

7. UNIT AGREEMENT NAME
East Poplar Unit

8. FARM OR LEASE NAME
East Poplar Unit

9. WELL NO.
No. 8-D

10. FIELD AND POOL, OR WILDCAT
East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
NW SE Section 10, T28N, R51E

12. COUNTY OR PARISH: Roosevelt
13. STATE: Montana

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.)

U.S. Geological Survey
RECEIVED
JUL 25 1978
Billings, Montana

1. OIL WELL ☐ GAS WELL ☐ OTHER Disposal Well

2. NAME OF OPERATOR
Murphy Oil Corporation

3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, Montana

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' from the South line and 1980' from the East line

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
2094' RKB

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) ~~Change Disposal Zones~~			X
(Other)				(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.)*

Set cast iron bridge plug at 1000'. Perforate the Judith River Sand at 990-991'. Set cement retainer at 960'. Squeezed up around surface casing with 350 sacks regular cement. Went in hole with bit and hit cement at 490'. Drilled down to 852'. Perforated 700' to 701'. Squeeze thru perforation with 100 sacks regular cement with 2% calcuim chloride. Clean hole out to 954'. Run Gamma Ray Neutron Log. Perforate from 830' to 880', 4 holes per foot, 200 holes total.

Injection Pressure 630 PSI.

U.S. GEOLOGICAL SURVEY
RECEIVED
JUL 24 1978
CASPER, WYO.

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

SIGNED _____ TITLE ~~District Superintendent~~ DATE ~~July 21, 1978~~

(This space for Federal or State office use)

APPROVED BY Thomas P. Rulison TITLE ACTING DISTRICT ENGINEER DATE AUG 2 1978
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

BUREAU of LAND MANAGEMENT
RECEIVED
MAY 27 1983
BILLINGS, MONTANA

1. oil well ☐ gas well ☐ other Salt Water Disposal

2. NAME OF OPERATOR
Murphy Oil Corporation

3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, Montana 59255

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1980' from the South line and 1980'
AT TOP PROD. INTERVAL: from the East Line
AT TOTAL DEPTH:

5. LEASE
Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Fort Peck (Allotted)

7. UNIT AGREEMENT NAME
East Poplar Unit

8. FARM OR LEASE NAME
East Poplar Unit

9. WELL NO.
No. 8-D

10. FIELD OR WILDCAT NAME
East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA NW SE Section 10, T28N, R51E,

12. COUNTY OR PARISH
Roosevelt

13. STATE
Montana

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
2094' RKB

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

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	☐	☐
FRACTURE TREAT	☐	☐
SHOOT OR ACIDIZE	☐	☐
REPAIR WELL	☐	☐
PULL OR ALTER CASING	☐	☐
MULTIPLE COMPLETE	☐	☐
CHANGE ZONES	☐	☐
ABANDON*	☐	☐
(other) Salt Water Disposal		

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

RECEIVED
MAR 15 1983
DICKINSON, N. D.

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.)*

Packer set at 814.34, and the perforations are 830-880, 4 shots per foot.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED Raymond Reed TITLE Dist. Superintendent DATE March 11, 1983

(This space for Federal or State office use)

Accepted ~~APPROVED~~ BY [signature] TITLE Supervisor DATE June 1, 1983

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

*See Instructions on Reverse Side

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
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.)

5. LEASE DESIGNATION AND SERIAL NO.: Patented

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck (Allotted)

1. OIL WELL ☐ GAS WELL ☒ OTHER: Disposal Well

7. UNIT AGREEMENT NAME: East Poplar Unit

2. NAME OF OPERATOR: Murphy Oil USA, Inc.

8. FARM OR LEASE NAME: East Poplar Unit

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, MT 59255

9. WELL NO.: No. 8-D

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' from the South line and 1980' from the East line.

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW SE Section 10, T28N, R51E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2094' RKB

12. COUNTY OR PARISH: Roosevelt

13. STATE: MT

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☒
(Other)				(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.)*

For your information the produced water from the following wells: East Poplar Unit No.'s 12, 55, 14, 24, 100, 32, and 9 goes to SWD #8.

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

SIGNED Raymond Reede TITLE District Superintendent DATE 12-2-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

MURPHY
OIL USA, INC.

200 PEACH STREET
EL DORADO, ARKANSAS 71730

March 8, 1985

Address List Attached

Dear Owner or Tenant:

As required by 40 CFR Section 147.1355 you are hereby notified that Murphy Oil USA, Inc., 200 Peach Street, El Dorado, Arkansas 71730 has applied for an EPA Form 4 Permit and plans to inject produced formation water which is associated with oil producing operations. The following describes the zone and location for which a permit has been applied for.

Well Name:	East Poplar Unit 8-D
Well Location:	1980' FEL and 1980' FSL, Section 10, T28N-R51E
Injection Zone:	(a) Name: Judith River (b) Depth: 830' to 880'
Injection Pressure:	(Maximum) 700 psig
Injection Volume:	(Daily Rate) 7100 Barrels
Injection Fluid:	Mississippian (Madison & Heath) Water

Mr. William Engle of the EPA Montana Operations Office in Billings may be contacted if you have any questions concerning the submitted permit application. You will be given the opportunity to comment following an announcement by the EPA after they have prepared a draft permit.

Yours very truly,

Alvin W. Simpson
Manager of Operations

AWS/kw

Attachment

VIA: Certified Mail

SPUR

Pete 3809
M 2829

MURPHY
OIL USA, INC.

200 PEACH STREET
EL DORADO, ARKANSAS 71730

March 14, 1985

Mr. Max H. Dodson, Director
Water Management Division
United States Environmental
Protection Agency, Region VIII
1860 Lincoln Street
Denver, Colorado 80295-0699

Re: Underground Injection Control
(UIC) Permit Application for:
East Poplar Field Well Nos. 1-D,
5-D, 8-D, 29-D, & 80-D.
Ref: 8WM-DW

Dear Mr. Dodson:

This is in response to your certified letter dated with Attachments I, II, and III, all pertaining to the referenced applications, which we received on March 5, 1985. We believe the attached adequately answer questions or make corrections as such were listed on your attachments.

Murphy Oil USA, Inc. is very much aware of the seriousness of the permit applications and have worked diligently to make the applications complete. We have operated in the East Poplar Field for more than 30 years and hopefully will be operating there for many years to come. We plan to do whatever is required to comply with the regulations of the Environmental Potection Agency, as we have with all of the Federal and State Agency, as we have with all of the Federal agencies which we have worked with over the years.

The help and cooperation of your staff is very much appreciated in this permitting process. Please contact the undersigned or Mr. Sidney W. Campbell at 501-862-6411 if you have any further questions.

Yours very truly,

Alvin W. Simpson
Manager of Operations

AWS/cs
Attachments
cc: Ray Reede
Poplar, MT

SPUR

Form Approved. OMB No. 2000-0042
Approval expires 9-30-86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

EPA

COMPLETION FORM FOR INJECTION WELLS

ADMINISTRATIVE INFORMATION

1. Permittee

Murphy Oil USA, Inc.

Address *(Permanent Mailing Address) (Street, City, State, and ZIP Code)*
P. O. Box 547, Poplar, Montana 59255 (District Office)
200 Peach Street, El Dorado, Arkansas 71730 (Home Office)

2. Operator

Murphy Oil USA, Inc.

Address *(Street, City, State, and ZIP Code)*

same as above

3. Facility Name

East Poplar Unit 8-D

Telephone Number
District Office 406-768-3611
Home Office 501-862-6411

Address *(Street, City, State, and ZIP Code)*

Murphy Oil USA, Inc. (District Office)
P. O. Box 547
Poplar, Montana 59255

4. Surface Location Description of Injection Well(s)

State	County
Montana	Roosevelt

¼ of	¼ of	¼ section
	NW	SE 10

Township	Range
28N	51E

Feet from (N/S)	Line of quarter section and
1980'	S

Feet from (E/W)	Line of quarter section
1980'	E

Submit with this Completion Form the attachments listed in *Attachments for Completion Form.*

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
GLENN M. FEDDERSON Vice President		12/4/84

EPA Form 7520-9 (2-84)

CONTINUED ON REVERSE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

EPA

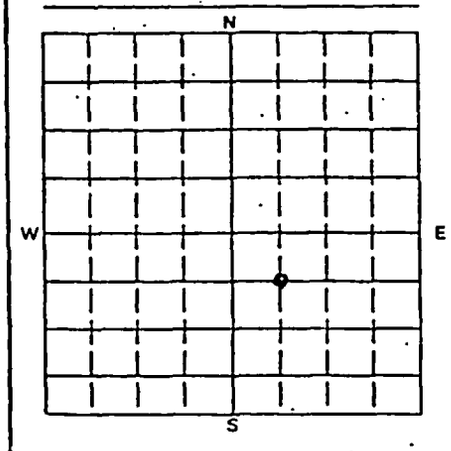
COMPLETION REPORT FOR BRINE DISPOSAL, HYDROCARBON STORAGE, OR ENHANCED RECOVERY WELL

Form Approved
OMB No. 2040-0042
Approval expires 9-30-86

NAME AND ADDRESS OF EXISTING PERMITTEE
Murphy Oil USA, Inc.
200 Peach Street
El Dorado, AR 71730
EPU 8-D

NAME AND ADDRESS OF SURFACE OWNER
Zimmerman Inc.
Box 277
Poplar, MT

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

SURFACE LOCATION DESCRIPTION
NW ¼ OF SE ¼ OF ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

WELL ACTIVITY
- [X] Brine Disposal
- [ ] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [ ] Area
- Number of Wells ____

Estimated Fracture Pressure of Injection Zone: 1 psi/foot

Anticipated Daily Injection Volume (Bbls)		Injection Interval	
Average	Maximum	Feet	to Feet
7100	8400	830	880

Anticipated Daily Injection Pressure (PSI)		Depth to Bottom of Lowermost Freshwater Formation (Feet)
Average	Maximum	
650	700	89'

Type of Injection Fluid *(Check the appropriate block(s))*
- [X] Salt Water
- [ ] Brackish Water
- [ ] Fresh Water
- [ ] Liquid Hydrocarbon
- [ ] Other

Lease Name: East Poplar Unit
Well Number: 8-D
Name of Injection Zone: Judith River

Date Drilling Began: 8/1/52
Date Well Completed: 9/5/52
Permeability of Injection Zone: 21 MD

Date Drilling Completed: 8/29/52 — Recompleted 1/28/78 to Judith River
Porosity of Injection Zone: 31%

CASING AND TUBING			CEMENT		HOLE	
OD Size	Wt/Ft — Grade — New or Used	Depth	Sacks	Class	Depth	Bit Diameter
13 3/8	48# H-40 New	100' approx.				
9 5/8	36# H-40 New	960.47'	390	G	970'	12¼
5 1/2	15.5# J-55 New	5765.65'	250	G	5783'	8 3/4
	Block Squeeze		350	G	960'	
2 7/8	6.50# J-55 New	737.74'	100	G	960'	

INJECTION ZONE STIMULATION		WIRE LINE LOGS, LIST EACH TYPE	
Interval Treated	Materials and Amount Used	Log Types	Logged Intervals
None		Electric Survey	966-5783
		Micro Log	5400-5783
		Gamma Ray-Neutron	6950-5783.5
		Gamma Ray-Neutron	500-952

Complete Attachments A — E listed on the reverse.

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE *(Please type or print)*
GLENN M. FEDDERSON
Vice President

Dual Form

DATE SIGNED: 12/4/84

EPA Form 7520-10 (2-84)

Form Approved. OMB No. 2040-0042. Expires 9-30-86

Form 4 UIC

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT APPLICATION
(Collected under the authority of the Safe Drinking Water Act, Sections 1421, 1422, 40 CFR 144)

I. EPA ID NUMBER: U well file

T/A | C

READ ATTACHED INSTRUCTIONS BEFORE STARTING
FOR OFFICIAL USE ONLY

Application approved mo day year	Date Received mo day year	Permit/Well Number	Comments
		East Poplar Unit 8-D SWD	

II. FACILITY NAME AND ADDRESS

Facility Name: East Poplar Unit
Street Address: P. O. Box 547
City: Poplar | State: MT | ZIP Code: 59255

III. OWNER/OPERATOR AND ADDRESS

Owner/Operator Name: Murphy Oil USA, Inc.
Street Address: 200 Peach Street
City: El Dorado | State: AR | ZIP Code: 71730

IV. OWNERSHIP STATUS *(Mark 'x')*

☐ A. Federal ☐ B. State ☒ C. Private
☐ D. Public ☐ E. Other *(Explain)*

V. SIC CODES

1311

VI. WELL STATUS *(Mark 'x')*

☒ A. Operating — Date Started: mo 1, day 26, year 73
☒ B. Modification/Conversion ☐ C. Proposed
Permitting Existing Well Approved by Rule

VII. TYPE OF PERMIT REQUESTED *(Mark 'x' and specify if required)*

☒ A. Individual ☐ B. Area

Number of Existing wells	Number of Proposed wells	Name(s) of field(s) or project(s)
		East Poplar Unit

VIII. CLASS AND TYPE OF WELL *(see reverse)*

A. Class(es) *(enter code(s))*	B. Type(s) *(enter code(s))*	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
II D			

IX. LOCATION OF WELL(S) OR APPROXIMATE CENTER OF FIELD OR PROJECT

C	A. Latitude Deg	Min	Sec	B. Longitude Deg	Min	Sec	Township and Range Twsp	Range	Sec	¼ Sec	Feet from	Line	Feet from	Line
I							28N	51E	10	SE	1980'	E	1980'	S

X. INDIAN LANDS *(Mark 'x')*

☒ Yes ☐ No

XI. ATTACHMENTS

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)
FOR CLASSES I, II, III (and other classes) complete and submit on separate sheet(s) Attachments A — U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application:

XII. CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref: 40 CFR 144.32)

A. Name and Title *(Type or Print)*: GLENN M. FEDDERSON, Vice President

Deal Form

B. Phone No. *(Area Code and No.)*: 501/862-6411

C. Signature:

D. Date Signed: 12/4/84

EPU 8-D

A. Area of Review
Fixed Radius of ½ mile - Field Plat attached.
No wells within the area of review

E. Name and Depth of USDWs (Class II)

Depth	Name	Local Name
100±	Tertiary	Unknown

G. Geological Data

ZONE	NAME	DESCRIPTION	DEPTH	THICKNESS	FRAC PRESSURE
Upper Confining	Bear Paw	Gray Shale	250'±	500'±	Unknown
Injection	Judith River	V. Lt. Gray, fine to medium grained, Calcareous, glauconitic sandstone	750'±	200'±	1 psi/foot
Lower Confining	Clagget & Eagle Shale	Gray Shale	950'±	1150'±	Unknown

H. Operating Data

(1) Average Injection Volume - 7100 Bbls/Day 202 Bbls/Hour/Pump
Maximum Injection Volume - 8400 Bbls/Day
(2) Average Injection Pressure - 650 psi
Maximum Injection Pressure - 700 psi
(3) Annulus Fluid - Corrosion Inhibited Fluid
(5) Source of Injection Fluid - Mississippian Formation Fluid Produced from the East Poplar Field. (See Attached Analysis
(6) SWD Station No. 4 operates with 2 pumps. One pump operates approximately 24 hrs/Day and the other pump operates approximately 10 hrs/Day.

M. Schematic Attached

Q. Plugging and Abandonment Plan
See Attached Financial Statement

U. Description of Business - EPU Well No. 8-D is used to dispose of part of the produced salt water from the East Poplar Unit wells. The salt water is separated from the produced fluid and comes to the disposal facility at SWD Station No. 1 through closed flowlines. The salt water is held in the salt water storage tanks until the salt water disposal pumps are engaged through automatic level switches. The salt water disposal pumps dispose of the salt water into the tubing of the wellbore and then into the formation.

The produced fluids are mixed in the flowlines and the resulting final TDS is approximately 130,000 TDS.

The SWD Station No. 4 operates an average of 24 hours per day.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

UIC PROGRAM COMPLIANCE FIELD INSPECTION REPORT

COMPANY: [illegible] REPRESENTATIVE: [illegible]
ADDRESS: [illegible] PHONE: [illegible]
FIELD/WELL NAME: [illegible]
LOCATION: ____/4; SEC. [illegible]; T[illegible]; R[illegible]; COUNTY: [illegible] STATE [illegible]

RECORDS INSPECTION

Injection Rate: Max. _____ B/D; Ave. _____ B/D; Pmt.Max. [illegible] B/D
Injection Pressure: Ave. _____ psig; Max. _____ psig; Pmt.Max. [illegible] psig
Cummulative Inj. Vol: [illegible] Bbl. Pmt. #: [illegible]
Comments: _____

WELLHEAD INSPECTION

General Surface Condition: [illegible]
[photos,(Y)(N)]
[illegible]

Injection Rate: [illegible] B/D; 2) Meter Type: [illegible]
Location: (~~at well~~) (at pump)
Injection Press: (at wellhead) [illegible] psig; (at pump): _____ psig
Gauge Range: [illegible] psig; Gauge Range: _____ psig
Annulus Press: [illegible] psig Other: _____
Injection Water Source: [illegible]
Water Sample Location/Techniques/Analyses _____

General/Comments [illegible]

INSPECTOR(S): [illegible]
DATE: [illegible] TIME: [illegible]

EPA R8 3560-18 (8-89)

Original - Regional Office Copy
Yellow Copy - File Copy
Pink Copy - Operator Copy

MURPHY
OIL USA, INC.

POST OFFICE BOX 547
POPLAR, MONTANA 59255

December 15, 1989

Mr. Max H. Dodson
Director, Water Management Division
United States Environmental Protection Agency
Region VIII
999 18th Street - Suite 500
Denver, Colorado 80202-2405

RE: UIC Permit #MTS21PE-0023
East Poplar Unit 8-D

Dear Mr. Dodson:

Enclosed are four (4) consecutive quarterly water analyses for the East Poplar Unit 8-D, NW SE Section 10, T28N, R51E, Roosevelt County, Montana.

At this time we request a minor permit modification to reduce the frequency of water analysis to once per year to be submitted in the fourth quarter.

Sincerely,

Raymond Reede

Raymond Reede
District Manager

RR/jh

cc: A. W. Simpson
C.J. Boyter, Montana Operations
well file

SPUR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

JAN 25 1990

Ref: 8WM-DW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Raymond Reede
District Manager
Murphy Oil USA, Inc.
Post Office Box 547
Poplar, Montana 59255

RE: UNDERGROUND INJECTION CONTROL (UIC)
Monitoring of Injection Fluids
Salt Water Disposal Wells
Roosevelt County, Montana

Dear Mr. Reede:

In response to your recent requests to reduce the frequency of injection fluid analyses for the wells listed below, approval is hereby granted to submit fluid analyses annually, instead of on a quarterly basis. The only exception to this requirement is when there is a change in the source of injection fluids, in which case a water analysis is to be submitted to the Director within thirty (30) days.

WELL	EPA PERMIT NO.
Goings Government 1-D	MTS2008-0008
East Poplar Unit 80-D	MTS2026-0026
East Poplar Unit 8-D	MTS2023-0023
East Poplar Unit 1-D	MTS2022-0022
East Poplar Unit 5-D	MTS2021-0021
Lillian 1-D	MTS2035-0046

If you have any questions concerning this letter, you may contact John Carson at (303) 293-1435. Also, please direct all correspondence to the attention of John Carson at Mail Code 8WM-DW.

Sincerely,

Max H. Dodson
Director
Water Management Division

cc: Jim Boyter
Montana Office

MURPHY
OIL USA, INC.

POST OFFICE BOX 547
POPLAR, MONTANA 59255

March 15, 1991

Emmett Schmitz
United States Environmental Protection Agency
Region VIII
999 18th Street - Suite 500
Denver, CO 80202-2405

RE: EPU SWD No. 8
EPA Permit No. MTS2023-0023

Dear Mr. Schmitz:

Enclosed is the downhole schematic for the East Poplar Unit SWD No. 8. I hope this is what you wanted.

Sincerely,

Raymond Reede
District Manager

Enclosure

cc: Jim Boyter
Paul Ramsey
Debi Madison
well file

SPUR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

JUL 18 1995

JUL 21

SWC
Copy to Ray Reed

Ref: 8WM-DW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

To Injection Well Operators

RE: UNDERGROUND INJECTION CONTROL (UIC)
Notice of Noncompliance
Excess Injection Pressure

Dear Operator:

The Annual Disposal/Injection Well Monitoring Report (EPA Form 7520-11) submitted by your office for the year 1994, indicates that the well shown on the enclosed list was injecting at a pressure in excess of its allowable maximum surface injection pressure. The list also indicates the highest reported pressure during the year and the allowable pressure. Operation of an injection well at pressures greater than authorized is a violation of the Safe Drinking Water Act and may result in enforcement action. Therefore, you are directed to maintain the injection pressure of this well at or below its maximum allowable limit.

Within thirty (30) days of receipt of this letter, please respond in writing describing: 1) what action has been taken to correct this situation; 2) how you intend to prevent any recurrence in the future; or 3) why the pressure information is in error. If you believe a higher injection pressure is needed for continued operation of the well, you may conduct a step-rate injectivity test of the injection zone and request an increase based on the test results. However, this test may, or may not, indicate that a higher injection pressure can be approved for the well.

If you have any questions concerning this letter, you may contact John Carson at (303) 293-1435. Also, please direct all correspondence to the attention of John Carson at Mail Code 8WM-DW.

Sincerely,

Thomas J. Pike
Chief
UIC Implementation Section

Enclosure: List of Wells and Pressures

Printed on Recycled Paper

File 8-D

MURPHY
EXPLORATION & PRODUCTION COMPANY

131 SOUTH ROBERTSON STREET
P.O. BOX 61780
NEW ORLEANS, LA 70161-1780
(504) 561-2811

September 6, 1995

OVERNIGHT MAIL

United States E.P.A.
Region VIII
999 18th Street - Suite 500
Denver, Colorado 80202-2466

Attn: Mr. John Carson
Mail Code 8WM-DW

RE: Murphy EXPRO
East Poplar Unit #8-D (SWDW)
Underground Injection Control (UIC)
East Poplar Field
Roosevelt County, Montana

Dear Mr. Carson:

This is written in response to your letter of July 18, signed by Mr. Thomas J. Pike, indicating we had exceeded the maximum allowed injection pressure on our E.P.U. #8-D SWDW during 1994.

Murphy EXPRO, on August 8, conducted a step-rate injectivity test on the well using Halliburton Energy Services pumping equipment. The test revealed that the surface injection pressure required to fracture the Judith River Formation is 600 psig. The step-rate test data was analyzed by plotting the pressure at each step versus the corresponding rate. As ATTACHMENT 1 indicates, the two lines intersect at the formation "breakdown" pressure of 600 psig (surface). The slope of the subsequent straight line, as expected, is less than that of the before fracture straight line. Also attached is Halliburton's PLAYBACK STRIP CHART indicating the tubing pressures and rates recorded during the job.

Murphy EXPRO, on August 24th, filed a UIC Permit Application (Attn: Mr. Gus Stolz) to convert East Poplar Field's Huber #5 to a SWDW. Once we receive an approved permit and convert the Huber #5 to a Mission Canyon/Nisku SWDW, we plan to transfer the water currently being disposed by EPU #8-D to the Huber #5.

EPU #8-D's surface injection pressure is below the fracture pressure. Murphy EXPRO therefore requests a maximum injection pressure of 600 psig for the EPU #8-D SWDW until such time as we are able to transfer the water to our Huber #5 SWDW.

If there are any questions concerning any of the above, please give me a call in New Orleans at 504 561-2829.

Yours truly,

Bruce D. MacArthur
Sr. Operations Coordinator

BDM/ebh

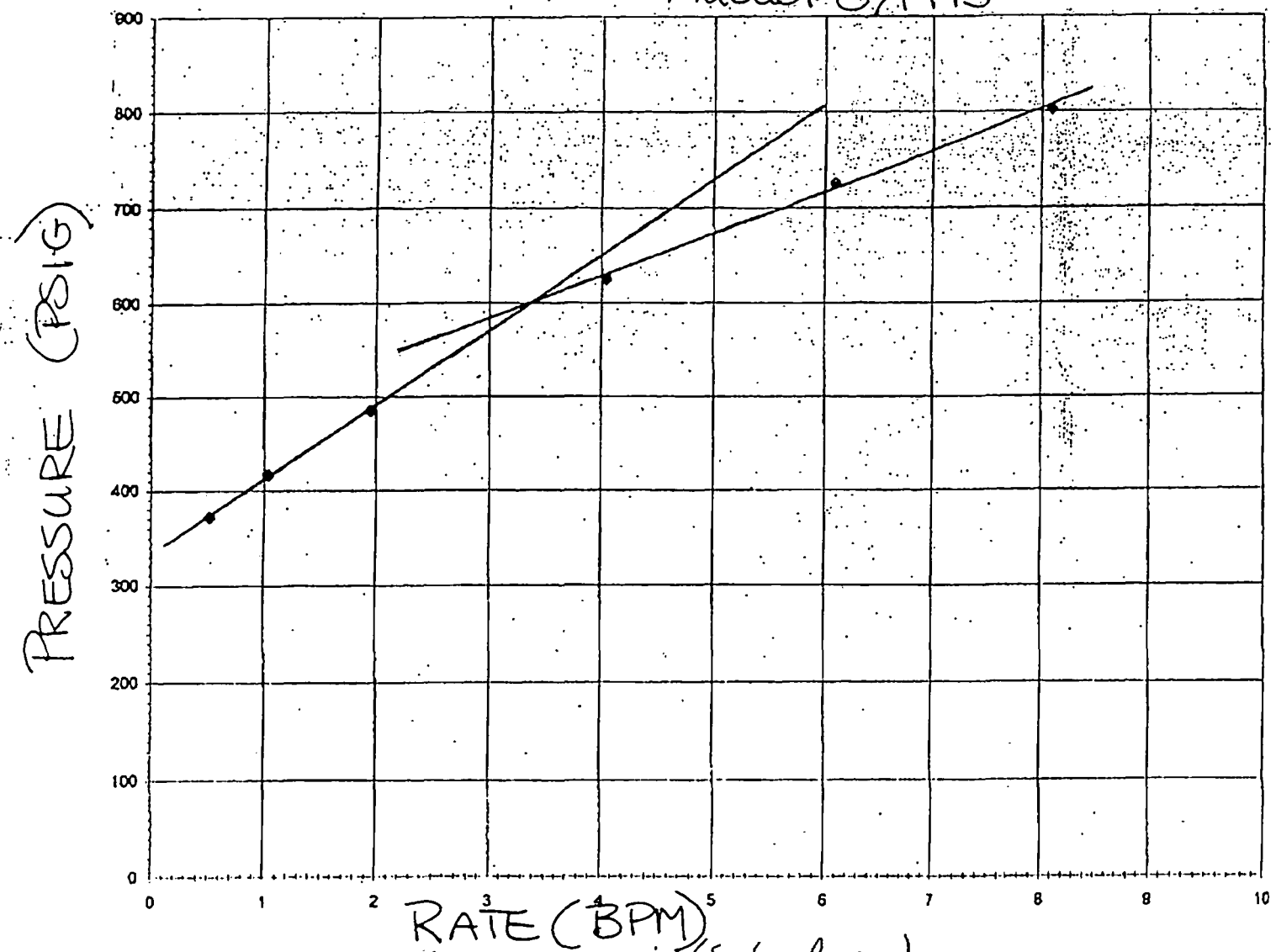
Attachments

cc: Ray Reede
Poplar District Manager

(EPAUIC)

ATTACHMENT 1

Murphy Oil Co.
EPU 8-D
Step Rate Test
AUGUST 8, 1995



Intersection @ 600 psi (Surface Pressure)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

MINOR PERMIT MODIFICATION

EPU #8D SWD
EPA Permit #MT2023-00023

Pursuant to Part III, Section B. 1. of the above-referenced Underground Injection Control (UIC) permit, a modification to said permit is to be made. Changes to the original version of Part II, Section C. 4. (a) are as follows:

Original version:

4. Injection Pressure Limitation.

(a) Injection pressure, measured at the surface, shall not exceed 340 psig.

Is Modified to read:

4. Injection Pressure Limitation.

(a) Injection pressure, measured at the surface, shall not exceed 573 psig.

All other provisions and conditions of the final permit for the EPU #8D SWD remain as originally issued.

SEP 25 1995
Date

Max H. Dodson
Director
Water Management Division

Printed on Recycled Pape

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

File

SEP 29 1995

OCT 2 1995

ONSHORE PRODUCTION DEPT.

SWC ____
BDM ____
FAX & REGULAR COPY TO RAY REEDE ✓
WELL FILE ____

Ref: 8WM-DW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Bruce D. MacArthur
Sr. Operations Coordinator
Murphy Exploration & Production Company
131 South Robertson Street
P.O. Box 61780
New Orleans, Louisiana 70161-1780

RE: UNDERGROUND INJECTION CONTROL (UIC)
Minor Permit Modification for the
East Poplar Unit #8D SWD Well
EPA Permit #MT2023-00023
Roosevelt County, Montana

Dear Mr. MacArthur:

Enclosed is a minor modification to the above-referenced permit. Your request to increase the maximum surface injection pressure for the EPU #8D SWD well was received in our office on September 8, 1995. The results of a step-rate test performed in the well support your request for an adjustment in injection pressure; therefore, your request has been approved.

The enclosed "Addendum to Statement of Basis" discusses the reasons for the permit modification and the upward adjustment of injection pressure from 340 pounds per square inch gauge (psig) to a maximum of 573 psig.

If you have any questions on this action, you may contact John Carson at (303) 293-1435. Also, please direct all correspondence to the attention of John Carson at Mail Code 8WM-DW.

Sincerely,

Max H. Dodson

Max H. Dodson
Director
Water Management Division

Enclosures: Addendum to Statement of Basis
Minor Permit Modification

Printed on Recycled Paper

cc: Debi Madison w/enclosures
Fort Peck Reservation

Jim Boyter w/enclosures
Montana Office

Addendum to Statement of Basis
for
EPA Permit #MT2023-00023
East Poplar Unit #8D SWD
Date prepared 9/18/95

Murphy Exploration & Production Company submitted a request for a minor permit modification on September 6, 1995. The request was to increase the maximum permitted surface injection pressure from 340 pounds per square inch gauge (psig) to 600 psig, based on the results of a step-rate test of the Judith River Formation (perforations 830-880 feet) injection zone in the EPU #8D SWD well. An increase in injection pressure is required in order to continue using the well for the disposal of produced water, until such time that a final UIC permit is issued for the Huber #5 SWD well in the East Poplar Unit. The injection zone in the Huber #5 SWD is to be the Mission Canyon/Nisku.

Injection Pressure:

A review of data from a step-rate test performed of the Judith River in the EPU #8D on August 8, 1995, indicates that a formation breakdown occurred at a surface injection pressure of 600 psig and an injection rate of approximately 3.3 BPM (4,752 BPD). The instantaneous shut-in pressure (ISIP) at the conclusion of the test was 523 psig. A tubing friction pressure of 50 psi may be added to the ISIP in order to arrive at an allowable injection pressure. Therefore, a maximum allowable surface injection pressure of **573 psig** (523 + 50 psi) shall be approved for the EPU #8D SWD well.

4 UIC

EPA

UNDERGROUND INJECTION CONTROL PERMIT APPLICATION

(Collec. under the authority of the Safe Drinking Water Act, Sections 1421, 1422, 40 CFR 144)

EPA ID NUMBER	T/A	C

READ ATTACHED INSTRUCTIONS BEFORE STARTING

FOR OFFICIAL USE ONLY

Application approved mo	day	year	Date Received mo	day	year	Permit/Well Number	Comments
						East Poplar Unit 8-D SWD	

I. FACILITY NAME AND ADDRESS

Facility Name: East Poplar Unit

Street Address: P. O. Box 547

City: Poplar | State: MT | ZIP Code: 59255

III. OWNER/OPERATOR AND ADDRESS

Owner/Operator Name: Murphy Oil USA, Inc.

Street Address: 200 Peach Street

City: El Dorado | State: AR | ZIP Code: 71730

IV. OWNERSHIP STATUS *(Mark 'x')*

☐ A. Federal ☐ B. State ☒ C. Private

☐ D. Public ☐ E. Other *(Explain)*

V. SIC CODES

VI. WELL STATUS *(Mark 'x')*

☐ A. Operating — Date Started: mo 1, day 26, year 73

☒ B. Modification/Conversion ☐ C. Proposed

Permitting Existing Well Approved by Rule

VII. TYPE OF PERMIT REQUESTED *(Mark 'x' and specify if required)*

☐ A. Individual ☐ B. Area

Number of Existing wells:

Number of Proposed wells:

Name(s) of field(s) or project(s): East Poplar Unit

VIII. CLASS AND TYPE OF WELL *(see reverse)*

A. Class(es) (enter code(s))	B. Type(s) (enter code(s))	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
I D			

LOCATION OF WELL(S) OR APPROXIMATE CENTER OF FIELD OR PROJECT

A. Latitude Deg	Min	Sec	B. Longitude Deg	Min	Sec	Township and Range Twsp	Range	Sec	¼ Sec	Feet from	Line	Feet from	Line
						28N	51E	10	SE	1980'	E	1980'	S

X. INDIAN LANDS *(Mark 'x')*

☒ Yes ☐ No

ATTACHMENTS

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

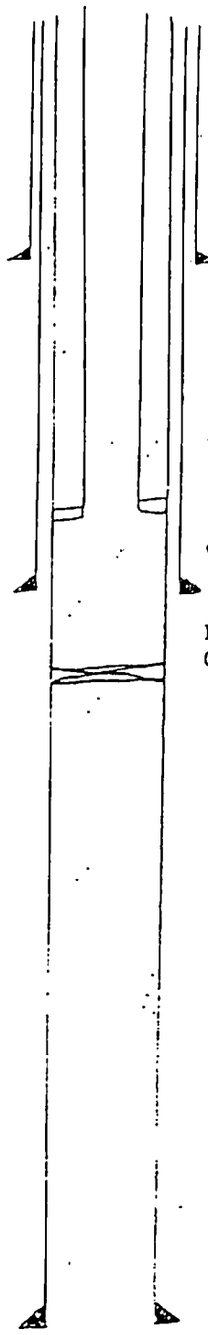
FOR CLASSES I, II, III (and other classes) complete and submit on separate sheet(s) Attachments A — U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application:

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref: 40 CFR 144.32)

Name and Title *(Type or Print)*	B. Phone No. *(Area Code and No.)*
Kevin W. Simpson, Manager of Operations	501/862-6411
Signature	**D. Date Signed**

EPU 8-D



Approximately 100' of 13 3/8", 48#, H-40, 8rd cemented to surface

737.74' of 2 7/8", 6.5#, J-55 tubing with packer landed at 752.54
perforations 825'-875'

960.47' of 9 5/8", 36#, H-40, 8 rd cemented to surface

Block squeezed at 700' and 990' cemented to surface
Cast iron bridge plug set at 1000'

5765.65' of 5½", 15.5#, J-55 cemented with 250 sacks cement

Form Approved. OMB No. 2060-0042. Approval expires 3-31-86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

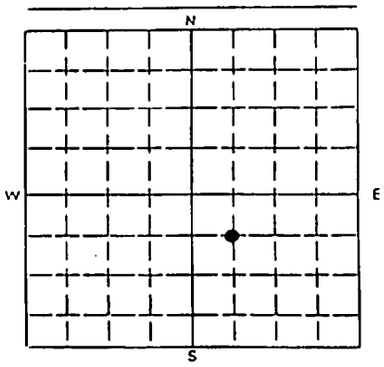
EPA

APPLICATION TO TRANSFER PERMIT

NAME AND ADDRESS OF EXISTING PERMITTEE
Murphy Exploration & Production Co.
P.O. Box 547
Poplar, Mt 59255-0547

NAME AND ADDRESS OF SURFACE OWNER
Zimmerman, Inc.
P.O. Box 277
Poplar, Mt 59255-0277

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	MTS2023-0023

SURFACE LOCATION DESCRIPTION
¼ OF NW ¼ OF SE ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

WELL ACTIVITY
- ☐ Class I
- ☒ Class II
  - ☒ Brine Disposal
  - ☐ Enhanced Recovery
  - ☐ Hydrocarbon Storage
- ☐ Class III
- ☐ Other

WELL STATUS
- ☒ Operating
- ☐ Modification/Conversion
- ☐ Proposed

TYPE OF PERMIT
- ☒ Individual
- ☐ Area

Number of Wells 1

Lease Name East Poplar Unit Well Number 8-D

NAME(S) AND ADDRESS(ES) OF NEW OWNER(S)

NAME AND ADDRESS OF NEW OPERATOR

Attach to this application a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The new permittee must show evidence of financial responsibility by the submission of surety bond, or other adequate assurance, such as financial statements or other materials acceptable to the director.

Effective change of owner/operator from Murphy Exploration and Production Company to

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Sidney W. Campbell Manager Onshore Operations		

EPA Form 7520-7 (2-84)

Form Approved. OMB No. 2000-0042. Approval expires 9-30-86

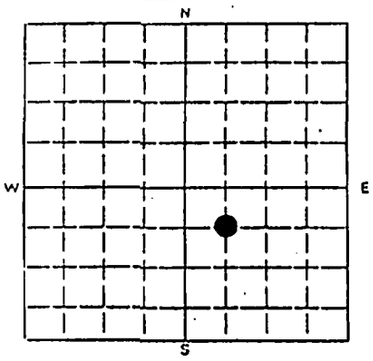
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

EPA

WELL REWORK RECORD

NAME AND ADDRESS OF PERMITTEE	NAME AND ADDRESS OF CONTRACTOR
Murphy Oil USA, Inc. P.O. Box 547 Poplar, Mt. 59255	H & H Well Service P.O. Box 1244 Poplar, Mt. 59255

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	MTS2022-0022

SURFACE LOCATION DESCRIPTION
¼ OF NW ¼ OF SE ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

WELL ACTIVITY	Total Depth Before Rework	TYPE OF PERMIT
☒ Brine Disposal ☐ Enhanced Recovery ☐ Hydrocarbon Storage	960'	☐ Individual ☐ Area Number of Wells 1
Lease Name	Date Rework Commenced 11-12-92	Well Number
EPU SWD	Date Rework Completed 11-13-92	8-D

WELL CASING RECORD — BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture
Size	Depth	Sacks	Type	From	To	Treatment Record
13-3/8	94	100	G			
9-5/8	960.47	390	G			
5-1/2	5765.65	250				
5-1/2	B.S.	350	G	830	880	
5-1/2	B.S.	100	G			

WELL CASING RECORD — AFTER REWORK *(Indicate Additions and Changes Only)*

Casing		Cement		Perforations		Acid or Fracture
Size	Depth	Sacks	Type	From	To	Treatment Record
13-3/8	94	100	G			
9-5/8	960.47	390	G			
5-1/2	5765.65	250	G			
5-1/2	B.S.	350	G	830	880	
5-1/2	B.S.	100	G			

DESCRIBE REWORK OPERATIONS IN DETAIL USE ADDITIONAL SHEETS IF NECESSARY	WIRE LINE LOGS, LIST EACH TYPE	
	Log Types	Logged Intervals
There was a tubing leak at 630'	Gamma Ray-Neutron	452-953
Replaced all the tubing and ran	Differential Temp.	
M.I.T. Test	& Radioactive Tracer	
	Log	700-940

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Raymond Reede District Manager	Raymond Reede	11-20-92

EPA Form 7520-12 (2-84)

3160
Patented

RE: Patented
Murphy Oil USA, Inc.
East Poplar Unit No. 8-D
NW SE Section 10 - T28N - R51E
Roosevelt County, Montana

CONDITIONS OF APPROVAL/ACCEPTANCE

- The pit is approved for emergency use only.
- Any use of this pit for containment of fluids must be reported to this office within 24 hours of each occurence.
- Any oil placed in this pit must be removed within 48 hours.
- The pit must be maintained and operated to prevent any discharges. Any discharges of fluids must be reported to this office in accordance with NTL-3A.
- The fence around the pit or location must be maintained to keep out livestock and wildlife.

U. S ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PROGRAM

DRAFT PERMIT

CLASS II SALT WATER DISPOSAL WELL

PERMIT # MTS21PE-0023

WELL NAME: EAST POPLAR FIELD WELL No. 8-D

FIELD NAME: EAST POPLAR UNIT

COUNTY AND STATE: VALLEY COUNTY, MONTANA

ISSUED TO

MURPHY OIL USA, INC.

200 Peach Street

El DORADO, ARKANSAS 71730

DATE PREPARED: August 13, 1986

PART II. SPECIFIC PERMIT CONDITIONS

A. WELL CONSTRUCTION

1. Casing and Cementing. The as-built construction details submitted with the application are hereby incorporated into this permit as Appendix A, and shall be binding on the permittee. The casing and cementing consists of the following:

(a) Surface casing: 13 3/8", 48 lb./ft, H-40 to the depth of 100' below ground surface (BGS),

Cement: Cemented to surface.

Casing: 9 5/8", 36 lb/ft, J-55 to the depth of 960' BGS,

Cement: Cemented to surface.

(b) Production Casing: 5 1/2", 15.5 lb/ft., J-55 to the depth of 5759' BGS,

Cement: Cemented to surface.

(c) The operator set a cast iron bridge plug at 1000 feet BGS. The casing was perforated at 990-991 feet BGS, a cement retainer was set at 960 and cement squeezed in the annulus between the 9 5/8" and the 5 1/2" casings to surface.

2. Tubing and Packer Specifications. A tubing of two and seven-eighths (2 & 7/8) inches diameter shall be utilized with a Model A-1 packer placed at not less than 732 feet BGS. Injection between the outermost casing protecting underground sources of drinking water and the wellbore is prohibited. Injection directly through the casing, without approved tubing and packer to isolate the injection zone, is also prohibited.

3. Monitoring Devices. The operator shall provide and maintain in good operating condition:

(a) a tap on the suction intake line upstream of the injection pump for the purposes of obtaining representative samples of the injection fluids, and

(b) two one-half (1/2) inch FIP fittings, isolated by plug or globe valves, and located: 1) at the wellhead on the tubing and, 2) on the tubing/casing annulus, and positioned to allow attachment of one-half (1/2) inch MIP gauges;

(c) a flow meter with cumulative volume recorder that is certified for 5 percent accuracy throughout the range of injection rates allowed by the permit.

EPA

PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY

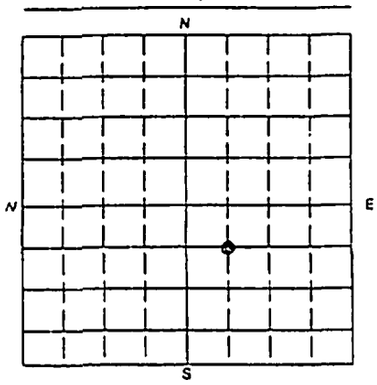
EAST POPLAR UNIT 8-D

NAME AND ADDRESS O. .NER/OPERATOR

Murphy Oil USA, Inc.
200 Peach Street
El Dorado, AR 71730

STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



SURFACE LOCATION DESCRIPTION

¼ OF NW ¼ OF SE ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 1980 ft. from (N/S) S Line of quarter section

and 1980 ft. from (E/W) E Line of quarter section

TYPE OF AUTHORIZATION

- ☐ Individual Permit
- ☐ Area Permit
- ☐ Rule

Number of Wells ____

Lease Name

WELL ACTIVITY

- ☐ CLASS I
- ☐ CLASS II
  - ☒ Brine Disposal
  - ☐ Enhanced Recovery
  - ☐ Hydrocarbon Storage
- ☐ CLASS III

Well Number

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT(LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
3/8"	48#	1	94' approx	17 1/4
5/8	36#		941.69	12 1/4
1/2	15.5		5759.65	8 3/4

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☐ The Balance Method
- ☒ The Dump Bailer Method
- ☐ The Two-Plug Method
- ☐ Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
ize of Hole or Pipe in which Plug Will Be Placed (inches)	5½	5½	9 5/8				
epth to Bottom of Tubing or Drill Pipe (ft.)	780'						
acks of Cement To Be Used (each plug)	2	10	10				
urry Volume To Be Pumped (cu. ft.)	2	10	10				
alculated Top of Plug (ft.)	~~761~~ 765	10'	10'				
easured Top of Plug (if tagged ft.)							
urry Wt. (Lb./Gal.)							
pe Cement or Other Material (Class III)							

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED *(If any)*

From	To	From	To
880 - 830	880		

timated Cost to Plug Wells

'Cast iron BP will be set at 780'

'10 Sks. Cement will be pumped down 5½" casing annulus

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Alvin W. Simpson, Manager of Operations		

Form 7520-14 (3-84)

Approval expires 9-30-86

U' ED STATES ENVIRONMENTAL PROTECTION AGEN'
WASHINGTON, DC 20460

EPA

COMPLETION FORM FOR INJECTION WELLS

ADMINISTRATIVE INFORMATION

1. Permittee

Murphy Oil USA, Inc.

Address *(Permanent Mailing Address) (Street, City, State, and ZIP Code)*

P. O. Box 547, Poplar, Montana 59255 (District Office)
200 Peach Street, El Dorado, Arkansas 71730 (Home Office)

2. Operator

Murphy Oil USA, Inc.

Address *(Street, City, State, and ZIP Code)*

same as above

3. Facility Name

East Poplar Unit 8-D

Telephone Number
District Office 406-768-3611
Home Office 501-862-6411

Address *(Street, City, State, and ZIP Code)*

Murphy Oil USA, Inc. (District Office)
P. O. Box 547
Poplar, Montana 59255

4. Surface Location Description of Injection Well(s)

State	County
Montana	Roosevelt

¼ of	¼ of	¼ section
	NW	SE 10

Township	Range
28N	51E

Feet from (N/S)	Line of quarter section and
1980'	S

Feet from (E/W)	Line of quarter section
1980'	E

Submit with this Completion Form the attachments listed in *Attachments for Completion Form.*

CERTIFICATION

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NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Alvin W. Simpson, Manager of Operations		

CONTINUED ON REVERSE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

EPA

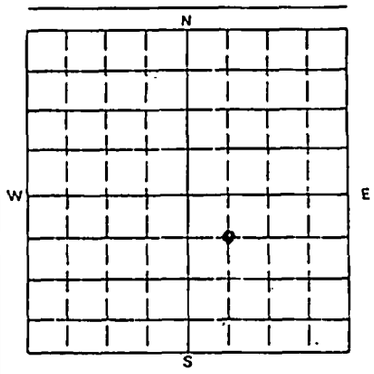
COMPL ION REPORT FOR BRINE DISPOS L, HYDROCARBON STORAGE, OR ENHANCED RECOVERY WELL

Form Approved
OMB No. 2040-0042
Approval expires 9-30-86

NAME AND ADDRESS OF EXISTING PERMITTEE
Murphy Oil USA, Inc.
200 Peach Street
El Dorado, AR 71730
EPU 8-D

NAME AND ADDRESS OF SURFACE OWNER
Zimmerman Inc.
Box 277
Poplar, MT

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

SURFACE LOCATION DESCRIPTION
NW ¼ OF SE ¼ OF ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

WELL ACTIVITY
- [X] Brine Disposal
- [ ] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [ ] Area
- Number of Wells ____

Estimated Fracture Pressure of Injection Zone Unknown

Anticipated Daily Injection Volume (Bbls)		Injection Interval	
Average	Maximum	Feet	to Feet
7100	8400	830	880

Anticipated Daily Injection Pressure (PSI)		Depth to Bottom of Lowermost Freshwater Formation (Feet)
Average	Maximum	
650	700	89'

Type of Injection Fluid *(Check the appropriate block(s))*
- [X] Salt Water
- [ ] Brackish Water
- [ ] Fresh Water
- [ ] Liquid Hydrocarbon
- [ ] Other

Lease Name	Well Number
East Poplar Unit	8-D

Name of Injection Zone: Judith River

Date Drilling Began	Date Well Completed	Permeability of Injection Zone
8/1/52	9/5/52	21 MD

Date Drilling Completed		Porosity of Injection Zone
8/29/52	Recompleted 1/28/78 to Judith River	31%

CASING AND TUBING			CEMENT		HOLE	
OD Size	Wt/Ft — Grade — New or Used	Depth	Sacks	Class	Depth	Bit Diameter
13 3/8	48# H-40 New	100 approx.				
9 5/8	36# H-40 New	960.47	390	G	970'	12¼
5 1/2	15.5# J-55 New	5765.65	250	G	5783'	8 3/4
	Block Squeeze		350	G	960'	
2 7/8	6.50# J-55 New	737.74	100	G	960'	

INJECTION ZONE STIMULATION		WIRE LINE LOGS. LIST EACH TYPE	
Interval Treated	Materials and Amount Used	Log Types	Logged Intervals
None		Electric Survey	966-5783
		Micro Log	5400-5783
		Gamma Ray-Neutron	4950-5783.5
		Gamma Ray-Neutron	500-952

Complete Attachments A — E listed on the reverse.

CERTIFICATION

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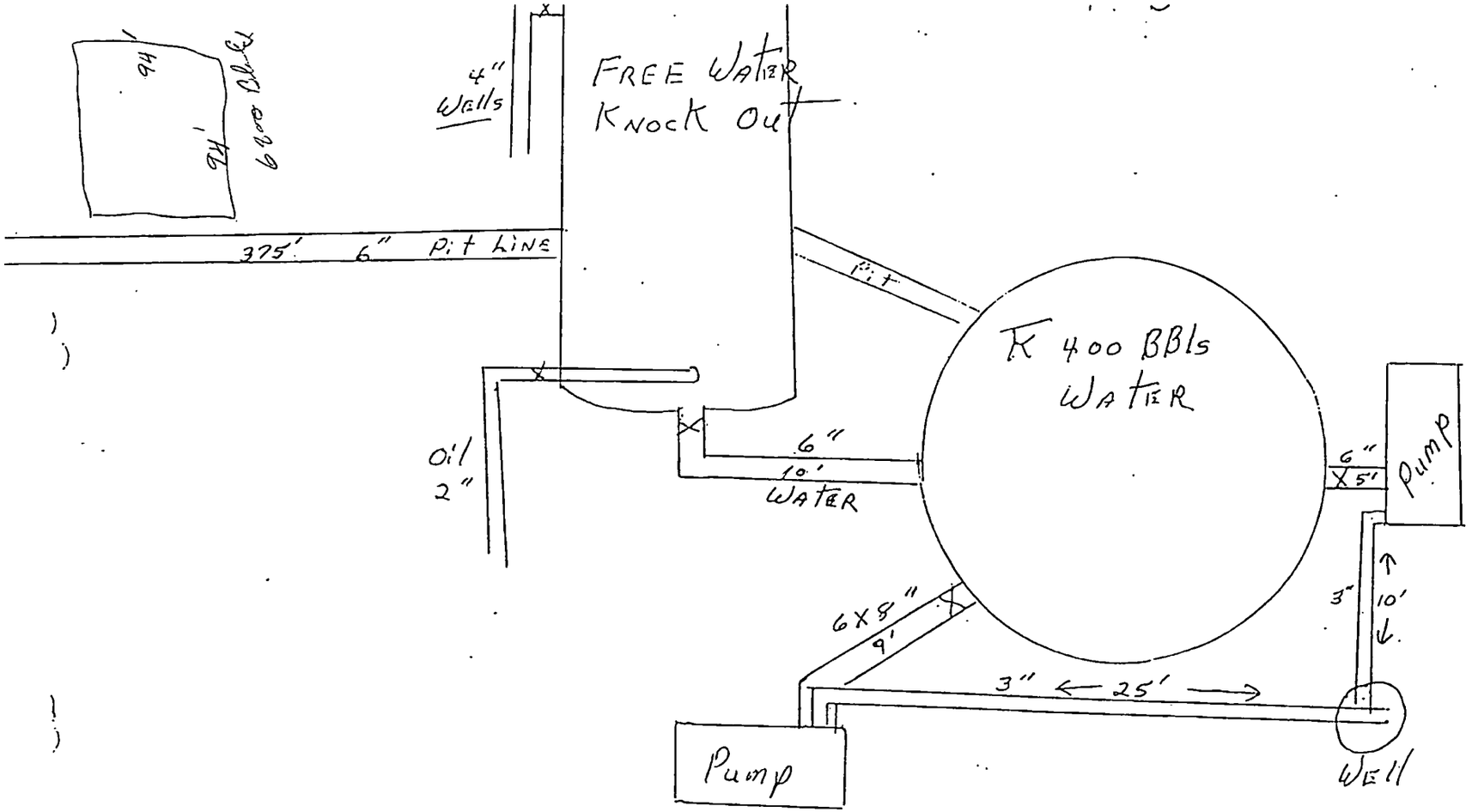
NAME AND OFFICIAL TITLE *(Please type or print)*		DATE SIGNED
Alvin W. Simpson Manager of Operations		


24'
24'
6400 Bbls
4"
Wells
FREE WATER
KNOCK OUT
375'
6"
Pit LINE
Pit
400 BBls
WATER
Oil
2"
6"
10'
WATER
6"
5'
Pump
3"
10'
6X8"
9'
3"
25'
Pump
WELL

EPU 8-D

A. Area of Review
Fixed Radius of ¼ mile
No wells within the area of review

E. Name and Depth of USDWs (Class II)

Depth	Name	Local Name
100±	Tertiary	Unknown

G. Geological Data

ZONE	NAME	DESCRIPTION	DEPTH	THICKNESS	FRAC PRESSURE
Upper Confining	Bear Paw	Gray Shale	250'±	500'±	Unknown
Injection	Judith River	V. Lt. Gray, fine to medium grained, Calcareous, glauconitic sandstone	750'±	200'±	Unknown
Lower Confining	Clagget & Eagle Shale	Gray Shale	950'±	1150'±	Unknown

H. Operating Data

(1) Average Injection Rate - 7100 Bbls/Day
Maximum Injection Rate - 8400 Bbls/Day
(2) Average Injection Pressure - 650 psi
Maximum Injection Pressure - 700 psi
(3) Annulus Fluid - Corrosion Inhibited Fluid
(5) Source of Injection Fluid - Mississippian Formation Fluid Produced from the East Poplar Field. (See Attached Analysis

M. Schematics Attached

Q. Plugging and Abandonment Plan
See Attached Financial Statement

U. Description of Business
(Same as 1-D)

EPA

PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY

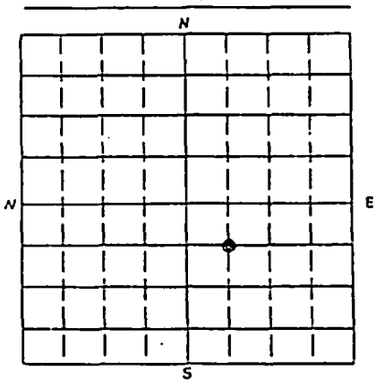
EAST POPLAR UNIT 8-D

NAME AND ADDRESS O. .NER/OPERATOR

Murphy Oil USA, Inc.
200 Peach Street
El Dorado, AR 71730

STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT. — 640 ACRES



SURFACE LOCATION DESCRIPTION

¼ OF NW ¼ OF SE ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 1980 ft. from (N/S) S Line of quarter section

and 1980 ft. from (E/W) E Line of quarter section

TYPE OF AUTHORIZATION

- ☐ Individual Permit
- ☐ Area Permit
- ☐ Rule

Number of Wells ____

Lease Name

WELL ACTIVITY

- ☐ CLASS I
- ☐ CLASS II
  - ☒ Brine Disposal
  - ☐ Enhanced Recovery
  - ☐ Hydrocarbon Storage
- ☐ CLASS III

Well Number

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT(LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
3/8"	480	1	94' approx	17 1/4
5/8	360		941.69	12 1/4
1/2	15.5		5759.65	8 3/4

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☐ The Balance Method
- ☒ The Dump Bailer Method
- ☐ The Two-Plug Method
- ☐ Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
ize of Hole or Pipe in which Plug Will Be Placed (inches)	5½	5½	9 5/8				
epth to Bottom of Tubing or Drill Pipe (ft.)	780'						
icks of Cement To Be Used (each plug)	2	10	10				
urry Volume To Be Pumped (cu. ft.)	2	10	10				
lculated Top of Plug (ft.)	~~761~~ 765	10'	10'				
easured Top of Plug (if tagged ft.)							
urry Wt. (Lb./Gal.)							
pe Cement or Other Material (Class III)							

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED *(If any)*

From	To	From	To
880 - 830	880		

timated Cost to Plug Wells

'Cast iron BP will be set at 780'
'10 Sks. Cement will be pumped down 5½" casing annulus

CERTIFICATION

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AME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Alvin W. Simpson, Manager of Operations		

Form 7520-14 (3-84)

Approval expires 9-30-86

U' ED STATES ENVIRONMENTAL PROTECTION AGEN
WASHINGTON, DC 20460

EPA

COMPLETION FORM FOR INJECTION WELLS

ADMINISTRATIVE INFORMATION

1. Permittee

Murphy Oil USA, Inc.

Address *(Permanent Mailing Address) (Street, City, State, and ZIP Code)*

P. O. Box 547, Poplar, Montana 59255 (District Office)
200 Peach Street, El Dorado, Arkansas 71730 (Home Office)

2. Operator

Murphy Oil USA, Inc.

Address *(Street, City, State, and ZIP Code)*

same as above

3. Facility Name

East Poplar Unit 8-D

Telephone Number
District Office 406-768-3611
Home Office 501-862-6411

Address *(Street, City, State, and ZIP Code)*

Murphy Oil USA, Inc. (District Office)
P. O. Box 547
Poplar, Montana 59255

4. Surface Location Description of Injection Well(s)

State Montana	County Roosevelt

¼ of	¼ of NW	¼ section SE 10

Township 28N	Range 51E
Feet from (N/S) 1980'	Line of quarter section and S
Feet from (E/W) 1980'	Line of quarter section E

Submit with this Completion Form the attachments listed in *Attachments for Completion Form.*

CERTIFICATION

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NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Alvin W. Simpson, Manager of Operations		

CONTINUED ON REVERSE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

EPA

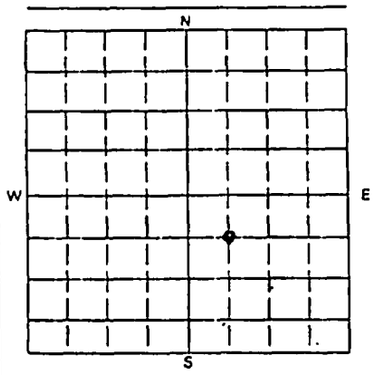
COMPL .ION REPORT FOR BRINE DISPOS.-L, HYDROCARBON STORAGE, OR ENHANCED RECOVERY WELL

Form Approved
OMB No. 2040-0042
Approval expires 9-30-86

NAME AND ADDRESS OF EXISTING PERMITTEE
Murphy Oil USA, Inc.
200 Peach Street
El Dorado, AR 71730
EPU 8-D

NAME AND ADDRESS OF SURFACE OWNER
Zimmerman Inc.
Box 277
Poplar, MT

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

SURFACE LOCATION DESCRIPTION
NW ¼ OF SE ¼ OF ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

WELL ACTIVITY
- [X] Brine Disposal
- [ ] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [ ] Area
- Number of Wells ____

Estimated Fracture Pressure of Injection Zone Unknown

Anticipated Daily Injection Volume (Bbls)		Injection Interval	
Average	Maximum	Feet	to Feet
7100	8400	830	880

Anticipated Daily Injection Pressure (PSI)		Depth to Bottom of Lowermost Freshwater Formation (Feet)
Average	Maximum	
650	700	89'

Type of Injection Fluid *(Check the appropriate block(s))*
- [X] Salt Water
- [ ] Brackish Water
- [ ] Fresh Water
- [ ] Liquid Hydrocarbon
- [ ] Other

Lease Name: East Poplar Unit
Well Number: 8-D
Name of Injection Zone: Judith River

Date Drilling Began: 8/1/52
Date Well Completed: 9/5/52
Permeability of Injection Zone: 21 MD

Date Drilling Completed: 8/29/52 Recompleted 1/28/78 to Judith River
Porosity of Injection Zone: 31%

CASING AND TUBING			CEMENT		HOLE	
OD Size	Wt/Ft — Grade — New or Used	Depth	Sacks	Class	Depth	Bit Diameter
13 3/8	48# H-40 New	100 approx.				
9 5/8	36# H-40 New	960.47	390	G	970'	12¼
5 1/2	15.50 J-55 New	5765.65	250	G	5783'	8 3/4
	Block Squeeze		350	G	960'	
2 7/8	6.50# J-55 New	737.74	100	G	960'	

INJECTION ZONE STIMULATION		WIRE LINE LOGS. LIST EACH TYPE	
Interval Treated	Materials and Amount Used	Log Types	Logged Intervals
None		Electric Survey	966-5783
		Micro Log	5400-5783
		Gamma Ray-Neutron	4950-5783.5
		Gamma Ray-Neutron	500-952

Complete Attachments A — E listed on the reverse.

CERTIFICATION

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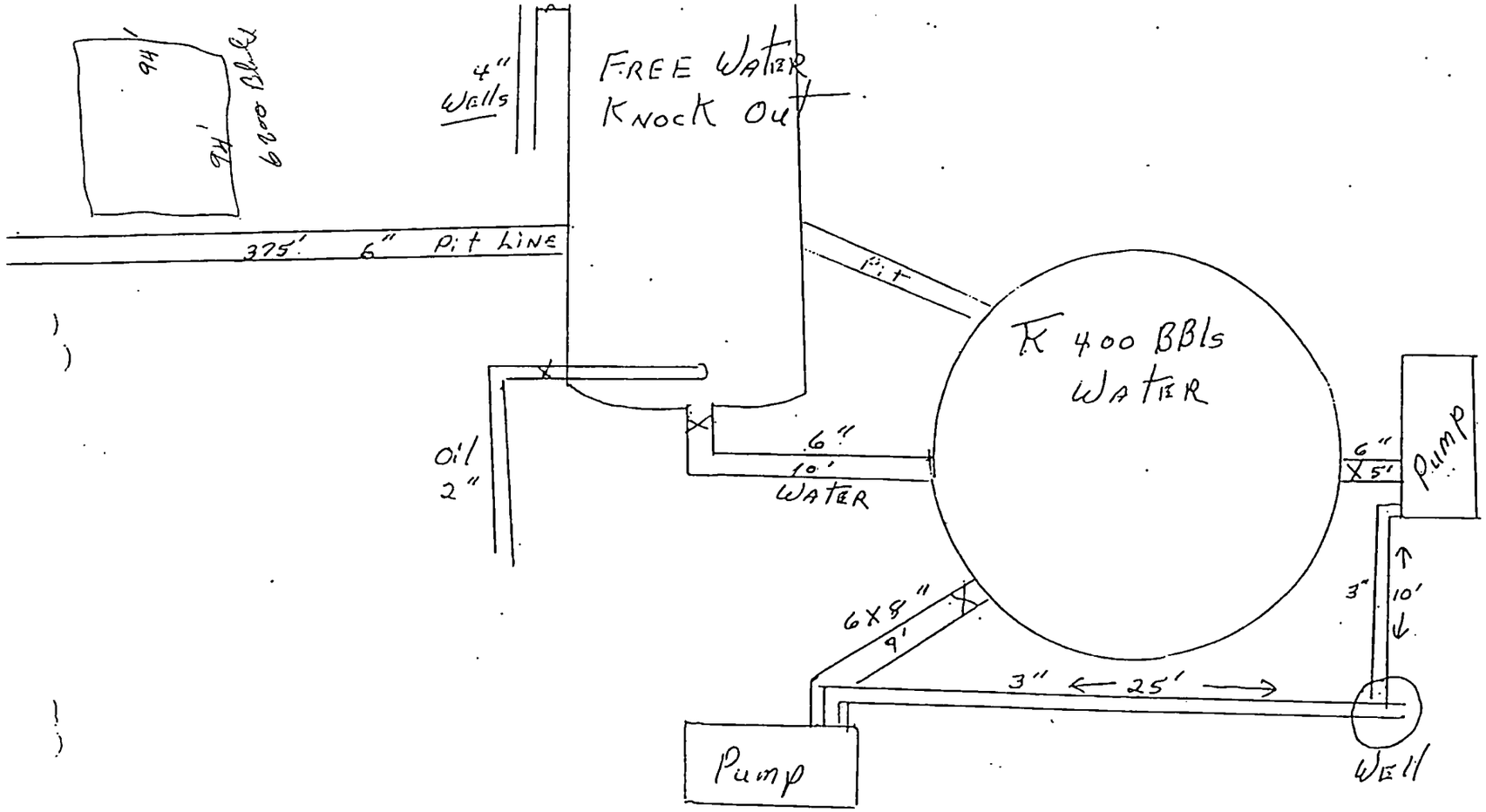
NAME AND OFFICIAL TITLE *(Please type or print)*		DATE SIGNED
Alvin W. Simpson Manager of Operations		

EPA Form 7520-10 (2-84)


94'
94'
6000 Bbls
4" Wells
FREE WATER KNOCK OUT
375' 6" Pit LINE
Pit
400 BBls WATER
Oil 2"
6"
10'
WATER
6" X 5'
Pump
3"
10'
6X8"
9'
3" 25'
Pump
WELL

EPU 8-D

A. Area of Review
Fixed Radius of ½ mile
No wells within the area of review

E. Name and Depth of USDWs (Class II)

Depth	Name	Local Name
100±	Tertiary	Unknown

G. Geological Data

ZONE	NAME	DESCRIPTION	DEPTH	THICKNESS	FRAC PRESSURE
Upper Confining	Bear Paw	Gray Shale	250'±	500'±	Unknown
Injection	Judith River	V. Lt. Gray, fine to medium grained, Calcareous, glauconitic sandstone	750'±	200'±	Unknown
Lower Confining	Clagget & Eagle Shale	Gray Shale	950'±	1150'±	Unknown

H. Operating Data

(1) Average Injection Rate - 7100 Bbls/Day
Maximum Injection Rate - 8400 Bbls/Day
(2) Average Injection Pressure - 650 psi
Maximum Injection Pressure - 700 psi
(3) Annulus Fluid - Corrosion Inhibited Fluid
(5) Source of Injection Fluid - Mississippian Formation Fluid Produced from the East Poplar Field. (See Attached Analysis

M. Schematics Attached

Q. Plugging and Abandonment Plan
See Attached Financial Statement

U. Description of Business
(Same as 1-D)

Judith River 680'

Claggett 790'

Eagle 1,000'

Niobrara 2,005'

Carlisle 2,155'

Greenhorn 2,350'

Graneros 2,542'

Muddy Sandstone 2,900'
Skull Creek 2,946'

~~Judith River~~ Siltstone 3,112'

Figure 1. Downhole Schematic and Geology for EPU 8-D.

Table 1. Well Construction and P&A Plan for EPU 8-D.

	Hole (inch)	Casing Size (inch)	Set at (feet)	Perforated Zone (feet)	Sacks of Cemer
Well Construction					
Conductor Pipe	17 1/4	13 3/8	100		200
Surface Casing	12 1/4	9 5/8	960		390 ~~400~~
Production Casing	8 3/4	5 1/2	5,765	830 - 880	250
		CIBP	1,000	block 990 ~~991~~	350
				squeeze 700	
Tubing		2 7/8	737	Packer at 732	100
P&A Plan					
Plug 1		7	3,583		Surfa
Plug 2		7, 9 5/8	700		
Plug 3		7, 9 5/8	90		

780 10sx
694

100 10sx
14

5650
5200

no date on this SOB

GEOLOGICAL DATA

Geo DATA
EPU 8-D

41P

Form 9-880

Bude. Bureau No. 42-R355.2.
Approval expires 12-31-52.

U. S. LAND OFFICE Billings
SERIAL NUMBER Fee Land (Reynolds)
LEASE OR PERMIT TO PROSPECT

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company Murphy Corporation Address P. O. Box 76, Poplar, Montana

Lessor or Tract Reynolds Field East Poplar State Montana

Well No. 8 Sec. 10 T. 28N R. 51E Meridian Principal County Roosevelt

Location 1980 ft. {N/S} of So. Line and 1980 ft. {E/W} of E. Line of Sec. 10 Elevation 2094'
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed [illegible]

Date September 17, 1952 Title District Production Supt.

The summary on this page is for the condition of the well at above date.

Commenced drilling Aug. 1, 1952 Finished drilling Aug. 28, 1952

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 5614 to 5626 B-1 No. 4, from to

No. 2, from 5630 to 5646 B-2 No. 5, from to

No. 3, from 5778 to 5788 C No. 6, from to

IMPORTANT WATER SANDS

No. 1, from to No. 3, from to

No. 2, from to No. 4, from to

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From	Perforated To	Purpose
9 5/8	36	8 rd.	Nat'l	917.69	Baker		5614	5626	Surface
5 1/2	15.50	8 rd.	Ger.	5765.65	Baker		5630	5636	Oil Strg.
							5778	5788	Open Hole

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
9 5/8	960.69	390 reg. 4 cal. chlo.	Pump & plug		
5 1/2	5778.35	250 Dak. bulk 5 gel.	" "		

PLUGS AND ADAPTERS

Heaving plug—Material Length Depth set

Adapters—Material Size

SHOOTING RECORD

FOLD | MARK

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
1/2"	Jet	Jet	48	9-3	5614-5626	
1/2"	Jet	Jet	24	9-3	5630-5636	
1/2"	Jet	Jet	8	9-3	5782-5786	

TOOLS USED

Rotary tools were used from 0 feet to 5788 feet, and from ..... feet to ..... feet

Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

DATES

Sept. 6, 19 52 Put to producing 8:45 PM Sept. 5, 19 52

The production for the first 24 hours was 555.84 barrels of fluid of which 100 % was oil; ..... % emulsion; ..... % water; and ..... % sediment. Gravity, °Bé. 42.4

If gas well, cu. ft. per 24 hours Negligible Gallons gasoline per 1,000 cu. ft. of gas .....

Rock pressure, lbs. per sq. in. .....

EMPLOYEES

H. L. Irwin, Driller C. A. Thurman, Driller

J. W. Storar, Driller ....., Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
1152			Eagle
2007			Niobrara
2147			Carlisle
2348			Greenhorn
2550			Graneros
2703			U. Muddy
2927			Muddy Sd.
2970			Skull Crk.
3135			Dakota Silt
3528			Morrison
3922			Ellis
4097			Rierdon
4273			Piper Shale
4351			Piper Ls.
4405			Gyp. Sprgs.
4592			Spearfish
4711			Amsden
4845			Heath
5003			Otter
5120			Kibbey
5280			Kibbey Ls.
5373			Madison Charles
5492			"A" Zone
5615			"B"-1 Zone
5632			"B"-2 Zone
5778			"C" Zone
FROM—	TO—	TOTAL FEET	FORMATION

(OVER) 16—43094-2

Released rig at 7:00 AM 9-6-52. Initial prod. for 24 hrs. 555.84 BO.

C. H. MURPHY, JR., ET AL

EAST POPLAR UNIT #8

C NW SE SEC. 10, TWP 28N, RGE 51E
ROOSEVELT COUNTY, MONTANA

ELEVATION 2094 K. B.

HISTORY

ELECTRO LOG DATA

CORE DESCRIPTIONS

CORE ANALYSIS

DRILL STEM TESTS

COMPLETION DATA

PRODUCTION TEST DATA

SAMPLE DESCRIPTION

C. H. MURPHY, JR., ET AL

EAST POPLAR UNIT #8

LOCATION: C NW SE Section 10, Township 28North, Rage 51 East, Roosevelt County, Montana.

ELEVATION: 2094' K. B.

SPUDDED: August 1, 1952

COMPLETED: September 5, 1952

TOTAL DEPTH: 5788 Drlr., 5786 Schlumberger Microlog, 5783.5 Lane-Wells, 5783 Schlumberger ES.

HISTORY

August 1	Spudded, and drilled to 107' with a 12¼" bit.
August 2-4	Repairing rig.
August 5	Drilled 107' to 970'. 970=969 SLM
August 6	Set 947.69' of 9 5/8" casing at 960.47' with 390 sacks cement and 4 sacks calcium chloride. W. O. C.
August 7	W. O. C. Drilled out cement and plug, and drilled to 1086' with 8 3/4" rock bit.
August 8-25	Drilled 1086' to 5595. 5595=98 SLM
August 26	Cut Core #1, 5598-5633, with 7 7/8" diamond bit. Drilled 5633-79 with 7 7/8" rock bit.
August 27	Drilled 5679-5750.
August 28	Cut Core #2, 5750-88, with 7 7/8" diamond bit. Ran Schlumberger ES and Microlog.
August 29-September 5	Well completed as set forth under "Completion Data".

CORE DESCRIPTIONS

East Poplar Unit #8

Core #1

5598-33 Rec. 35':100%

C. T. 20, 15, 15, 17, 18/ 20, 15, 18, 16, 19/ 17, 15, 10, 15, 11/ 16, 12, 9, 7, 10/ 15, 17, 18, 15, 15/ 15, 15, 14, 15, 21/ 14, 16, 14, 15, 14/

3' Anhydrite, light gray, fine crystalline, medium soft, numerous fairly large vugs caused by solution of salt inclusions.

8' Anhydrite, medium gray to light gray, fine crystalline, medium hard, dense, except for 2"? streak clear salt at 5602 3/4'.

2' Limestone, light brownish-gray, amorphous to micro-crystalline, medium hard, numerous small dark crystals calcite, secondary crystals clear calcite in vuggy areas, fair porosity, good oil odor, even stain, fairly even dull yellow fluorescence with fairly well-developed vertical fractures filled with calcite, good permeability along fracture planes.

3' Limestone, brownish-gray, micro-crystalline, numerous fairly large crystals clear calcite, fairly hard, good inter-crystalline porosity in top 1', becoming streaked porosity in bottom 2', good oil odor & stain in porous zones, fair dull yellow fluorescence in porous zones.

4'6" Limestone, dark brownish-gray, fine crystalline, medium hard, fairly good inter-crystalline porosity, good oil odor and stain, good golden yellow fluorescence in top 1', free oil bleeding from top 1', faint dull even yellow fluorescence in bottom 3'6".

8' Anhydrite, light gray, amorphous to microcrystalline, medium hard, numerous thin black shale streaks throughout, No Show.

6'6" Limestone, dark brownish-gray, medium crystalline, medium hard, good inter-crystalline porosity, few small vugs lined with calcite crystals, fairly fossiliferous, with few fairly well-developed canals at 5629', good oil odor and stain throughout, weak dull yellow fluorescence, few thin streaks bleeding free oil.

Core #2

5750-88 Rec. 37'

C. T. 46, 38, 14, 16, 18/ 24, 19, 22, 21, 15/ 24, 20, 25, 15, 18/ 12, 20, 17, 17, 17/ 11, 25, 22, 17, 24,/ 20, 24, 26, 25, 28/ 25, 19, 15, 13, 12/ 12, 12, 11.

2' Limestone, dark brownish-gray-black, fine to medium crystalline, medium hard, numerous thin streaks white anhydrite. No Show.

2½' Limestone, black, very dolomitic, slightly pyritic, amorphous to micro-crystalline, hard, and dense. No Show.

5' Limestone, dark brownish-gray, fine to coarsely crystalline, medium hard, dense, No Show.

1½' Limestone, light brownish-gray, very fine crystalline, single tight vertical fracture covered with calcite crystals, otherwise very hard and dense. No Show.

8' Limestone, dark brownish-gray, amorphous to microcrystalline, numerous thin streaks medium brownish-gray, amorphous to microcrystalline dolomite, very hard and dense. No Show.

1' Dolomite, medium brownish-gray, amorphous to microcrystalline, fairly hard and dense. No Show.

2' Limestone, dark brownish-gray, fine crystalline, fairly hard and dense, with fair oil odor and stain in bottom 6" of unit. Bottom 6" very slightly porous and questionably permeable.

1' Dolomite, light brownish gray, fine to medium crystalline, very hard, dense. No Show.

5' Limestone, dark brownish gray, micro to very fine crystalline, very hard, dense, few black stylolite partings. No Show.

5' Limestone, dark brownish gray, fine to medium crystalline, fairly hard, with few fairly tight vertical fractures running length of unit. All fractures cemented with clear calcite. No Show along fracture planes or in mass of unit.

4' Limestone, dark brownish gray, fine to medium crystalline, medium hard, fair inter-crystalline porosity, very highly fractured with well-developed open vertical fractures. Good oil odor and stain along fracture planes and in mass of core. Fair weak golden yellow fluorescence in mass of core.

CORE ANALYSIS

Company MURPHY CORPORATION Date Report August 30, 1952 Page ___ of ___

Well East Poplar Unit No. 8 Cores Diamond File ___

Field East Poplar Formation Charles-Madison Analysts RWH, WBM

County Roosevelt State Montana Elevation 2094'KB Coregraph Yes

Location Sec. 10-28N-51E Remarks Service No. 9

CORE ANALYSIS RESULTS

Sample Number	Depth Feet	Permeability Millidarcys Kmax	Permeability Millidarcys K90	Porosity Per Cent	Residual Saturation Oil %Volume	Residual Saturation Oil % Pore	Residual Saturation Total Water %Pore
1	5609.0-10.4	*	*	13.8		19.6	39.1
2	11.8	*	*	12.5		12.8	48.0
3	13.4	0.2	0.1	7.1		12.7	50.6
4	14.8	0.1	<0.1	5.8		20.7	43.2
5	16.2	1.2	0.7	13.1		16.1	32.1
6	17.8	1.0	0.3	14.6		17.1	42.8
7	18.4	1.0	0.8	10.6		23.6	44.4
8	5626.2-27.3	0.2	0.1	4.7		17.0	34.0
9	28.9	0.5	<0.1	17.2		9.3	50.5
10	30.7	0.5	0.2	15.4		14.3	37.6
11	31.9	*	*	18.3		11.5	45.3
12	33.5	*	*	12.5		8.0	52.8
13	5777.8-79.3	<0.1	<0.1	3.1		9.7	74.1
14	80.6	<0.1	<0.1	2.8		10.7	67.8
15	82.3	*	*	1.8		16.7	61.1
16	84.0	<0.1	<0.1	3.6		19.4	41.7
17	85.4	*	*	8.6		10.5	45.3
18	87.0	<0.1	<0.1	9.3		10.7	66.6

Permeability:
(*) Sample unsuitable for analysis.

EAST POPLAR UNIT NO. 8

ELECTRO LOG DATA

Type Log	Interval Logged
ES	966'-5783'
Microlog	5400'-5783'
Gamma Ray-Neutron	4950-5783.5'

LOG TOPS

	Depth	Datum	Thickness
Eagle	1152	+ 942	
Niobrara	2007	+ 87	
Carlisle	2147	- 53	
Greenhorn	2348	- 254	
Graneros	2550	- 456	
U. Muddy	2703	- 609	
Muddy Sd.	2927	- 833	
Skull Crk.	2970	- 876	
Dakota Silt	3135	- 1041	
Morrison	3528	- 1434	
Ellis	3922	- 1828	
Rierdon	4097	- 2003	
Piper Sh.	4273	- 2179	
Piper Ls.	4351	- 2257	
Gyp Sprgs.	4405	- 2311	
Spearfish	4592	- 2498	
Amsden	4711	- 2617	
Heath	4845	- 2751	
Otter	5003	- 2909	
Kibbey	5120	- 3026	
Kibbey Ls.	5280	- 3279	
Madison	5373	- 3279	
A-1	5467	- 3373	3'
A-2	5480	- 3386	6'
A-3	5492	- 3398	10'
A-4	5514	- 3420	24'
B-1	5615	- 3521	8'
B-2	5632	- 3538	15'
B-3	5653	- 3559	6'
B-4	5686	- 3592	5'
B-5	5724	- 3630	?
C-1	5764	- 3670	?
C-2	-----	------	

C. H. MURPHY JR., ET AL

East Poplar Unit No. 8
N.W.¼, S.E.¼, Section 10, Twp. 28N, Rge. 51E
Elevation 2094 R.K.B.
Roosevelt County, Montana

SAMPLE DESCRIPTION

0-1500	No Samples
1500-1530	Shale; light gray, soft, silty, with some light gray, very fine-grained glauconitic sandstone.
1530-1580	Siltstone; light gray, calcareous, soft, with some light gray, sand shale.
1580-1710	Shale; light gray, slightly silty, soft.
1710-1850	Shales; light and dark gray, medium soft, slightly micaceous.
1850-1950	Shales; medium gray, medium soft, fine, micaceous; with some silty medium gray, unconsolidated to semi-consolidated, slightly bentonitic, sandy and glauconitic in places.
1950	Sample Top Niobrara (+ 151)
1950-2020	Shales; medium-dark brown, medium soft, numerous buff colored inclusions, few white chalky inclusion, slightly bentonitic near top.
2020-2100	Shales; medium gray, soft, slightly sandy, slightly calcareous, bentonitic in streaks.
2100-2200	Shales; medium gray, medium soft, silty, bentonitic and pyritic in streaks.
2200-2330	Shales; medium gray to dark brownish gray, medium soft, very calcareous.
2330	Sample Top Greenhorn. (- 254)
2330-2390	Shale; dark brownish-gray to brown, medium soft, numerous small tan to buff calcareous inclusions.
2390-2500	Shale; dark gray, medium soft; firm, slightly micaceous, slightly calcareous.
2500-2590	Shale, dark gray to black, medium soft, firm micaceous, some pyrite and white bentonite.

S.P.U. No. 8

2590-2720	Shale, dark gray to black, medium hard, slightly chunky, finely micaceous.
[illegible]	Sample Top Upper Muddy (-626)
2720-2840	Shale; dark gray, medium soft, firm, slightly micaceous with some fine grained light gray soft salt and pepper sandstone and silt.
2840-2900	Shale; dark gray, medium hard, firm, micaceous, some light gray siltstone.
2900	Sample Top Muddy (-799)
2900-2970	Sandstone, medium to light gray, medium soft, very fine-grained, glauconitic, slightly micaceous.
2970-3050	Shale; dark gray, medium hard, firm slightly micaceous with some light gray, very fine-grained, soft sandstone.
3050-3200	Shale; dark gray, medium hard, firm, micaceous, with some medium brown, soft siltstone.
3200-3270	Sandstone, light gray, very fine-grained, soft, very porous, fairly well consolidated.
3270-3300	Shale; dark gray to black, medium hard, firm, splintery, with some light gray porous sandstone.
3300-3400	Sandstone; medium gray, fine-medium grained, fair porosity, poorly cemented with some coarse grained white sandstone.
3400-3420	Shale; dark gray, medium hard, firm, splintery.
3420-3460	Sandstone; light gray, fine to medium grained, poorly cemented with some dark gray splintery shale.
3460-3520	Shale, dark gray, medium hard, slightly carbonaceous, splintery.
3520	Sample Top Jurassic-Morrison (-1426)
3520-3610	Sandstone; light gray, medium soft, fine-medium grained, glauconitic, with some medium gray soft, silty shale.
3610-3650	Shale, dark gray to black, firm, medium soft, slightly silty.
3650-3700	Sandstone; light gray, fine grained, porous, poorly cemented; few stringers dark gray, firm splintery carbonaceous shale.
3700-3740	Sandstone; light gray, medium grained, very porous, fairly well cemented with calcareous material, slightly glauconitic.
3740-3800	Shale; dark gray to black, carbonaceous, firm, splintery.

E.P.U. No. 8

3800-3905	Shale; dark gray, medium soft, fissile, finely micaceous, with some light greenish-gray, splintery shale toward base.
3905	Sample Top Ellis. (-1811)
3905-3960	Sandstone; light gray, medium soft, very fine grained, very calcareous, with some light greenish-gray firm shale.
3960-4050	Shale; gray-green, medium hard, firm, splintery, pyritic.
4050-4090	Shale; gray-green, as above with some light gray, very fine-grained, calcareous Sandstone.
4090-4150	Shales, as above, with some light brown calcareous shale.
4150-4260	Shales, gray-green, medium hard, firm, slightly pyritic, with few stringers light gray, very fine-grained calcareous sandstone.
4260	Sample Top Piper Shale. (-2166)
4260-4300	Shale; reddish-brown, soft, slightly fissile, slightly anhydritic.
4300-4320	Shale, reddish-brown, as above with some light gray, medium soft, microcrystalline Limestone.
4320-4340	Shale, as above.
4340	Sample Top Piper Limestone. (-2246)
4340-4380	Limestone, dark brown, medium hard, amorphous to microcrystalline, few tight fractures, very fossiliferous, with some red anhydritic Shales.
4380-4400	Sandstone; light gray, medium grained, very calcareous; with some red and greenish-gray shales.
4400-4440	Shales; gray-green, firm, splintery, with some soft red shale and some dense brown, fossiliferous limestone.
4440-4450	Sandstone; light gray, medium grained, very calcareous, with some brown, dense Limestone and red and green Shales.
4450-4500	Limestone; brown, amorphous-microcrystalline, dense, fossiliferous; with some red and green shales and few thin stringers soft white anhydrite.
4500-4510	Anhydrite, light gray to white, very soft; with some gray-green splintery shale and dense, brown limestone.
4510-4520	Limestone, light gray-brownish-gray, medium hard, dense; with some red and green shales.

E.P.U. No. 8

4520-4535	Limestone; as above, with some light gray, very fine-grained calcareous sandstone and red and green shales.
4535-4600	Limestone; light brown to light gray, microcrystalline, dense, with some white anhydrite and green and red shale.
4600-4705	Sandstone; brick red, very fine-grained, very calcareous with some red and green shale, trace gray, dense limestone.
4705	Sample Top Amsden, (-2611)
4705-4720	Dolomite; pink, microcrystalline, medium hard, with some light gray microcrystalline, dense, limestone.
4720-4740	Limestone, light gray, microcrystalline, slightly dolomitic, with some pink dolomite, and gray calcareous shale, trace white anhydrite.
4740-4760	Limestone; gray-brown, medium hard, micro-fine crystalline, with some very fine-grained red sandstone.
4760-4800	Limestone, as above, with red, gray, green, purple shales.
4800-4850	Shales; red, green, gray, purple, medium hard, firm, slightly calcareous, with some dense gray-brown limestone.
4850	Sample Top Heath (-2756)
4850-4880	Shales, red, gray, green, medium hard, numerous small ankerite inclusions.
4880-4920	Sandstone, dark red and gray, fine-medium grained, angular, slightly calcareous, with some vari-colored shales.
4920-4970	Shale, red, purple, green, gray, medium hard, firm, chunky, slightly calcareous.
4970-5000	Sandstone, dark red and gray, medium-coarse grained, porous, angular, with some red, purple, gray, green shales.
5000	Sample Top Otter (-2906)
5000-5025	Shale, red, green, gray, medium hard, firm, with traces of light gray, fine-grained calcareous sandstone.
5025-5075	Shales; as above, with some light gray, medium soft limestone.
5075-5120	Limestone; light gray, fine crystalline, dense, with some red shale and soft white anhydrite.
5120	Sample Top Kibby Sandstone (-3026)
5120-5150	Sandstone; brick red, very fine-grained, fairly well cemented, slightly silty in top, with some red shale.

E.P.U. No. 8

5150-5190	Sandstone; light gray, fine grained, sand grains well rounded, good porosity, with some red sandstone and vari-colored shales.
5190-5280	Sandstone, brick red, very fine grained to medium grained, fairly porous, grains rounded to sub-rounded, with some red and green shale.
5280	Sample Top Kibby Limestone. (-3186)
5280-5295	Limestone; light gray-white, very had, dense, amorphous to microcrystalline, with some soft white anhydrite.
5295-5370	Shale, dark gray to black, medium hard, firm, with some red fine grained sandstone, and traces of white anhydrite.
5370	Sample Top Charles. (-3276)
5370-5390	Anhydrite, light gray-white, amorphous to microcrystalline, medium hard, with some dark gray shale and red fine grained sandstone.
5390-5470	Limestones and Dolomites: medium gray-dark gray; limestone very argillaceous with numerous streaks dark gray-black carbonaceous shale, trace light gray to white anhydrite.
5470-5490	Limestone, brownish-gray, microcrystalline, fairly hard, dense with some light gray, dense dolomite.
5490-5510	Limestone, brownish-gray, amorphous-microcrystalline, very highly fractured with some dolomite.
5510-5520	Limestone, brownish-gray, oolitic, fairly soft, well developed oolites, good porosity, with some dense gray limestone.
5520-5550	Anhydrite; light gray, medium hard, amorphous with some hard, dense, brownish-gray limestone.
5550-5570	Limestone, brownish-gray, amorphous-microcrystalline, dense with some hard, dense, light gray dolomite.
5570-5595	Anhydrite, light gray, soft, with some dense brownish-gray limestone.
5595	Depth Correction 5595=5598 S.L.M.
5598-5633	Core No. 1 Rec. 35'
5633-5650	Limestone; brownish-gray, fine-medium crystalline, dense, with some light gray dense dolomite.
5650-5660	Anhydrite, light gray, soft, with some dense brown limestone.

E.P.U. No. 8

5660-5670	Limestone, brownish-gray, fine crystalline, medium hard, dense, with some medium gray dense dolomite.
5670-5685	Anhydrite, light gray, fairly soft, with some brown crystalline limestone.
5685-5750	Limestone, dark brownish-gray, amorphous-fine crystalline, medium hard, with numerous streaks of white anhydrite and few stringers light gray, very hard, dense dolomite.
5750-5788	Core No. 2 Rec. 37'

COMPLETION DATA

Ran 181 (5765.65') joints of 5½" 15.5# J-55 casing which was landed 12.70' below R.K.B.; scratchers at 5597 to 5602, 5607-12, 5624-29, 5642-52, 5752-62, 5768-73; centralizers at 5605, 5656, 5765; float collar at 5743.96; shoe at 5778.35 drlr. Cemented with 250 sacks common Dakota bulk cement and 5 sacks gel. Pumped plug with 1200#; released pressure, held O.K. Plug down 6:00 P.M., 8-29-52. W.O.C. for 48 hours.

Ran Lane-Wells Gamma Ray-Neutron log to check measurements and shoot from. Perforated 5614-23 (B-1), and 5630-36 (B-2) with 4 jet shots per foot. Went in hole with open hole jet gun to perforate bottom 10' of open hole. The gun failed to fire and was lost at 4000' while coming out of hole. Pushed gun to bottom with bit and casing scraper on tubing; drilled and cleaned out to TD. Re-ran open hole gun and perforated 5782-86 (driller). Ran Baker wire line junk basket, then started in hole with Baker Model "D" Packer which set prematurely at 685'. Drilled out packer and cleaned out to bottom.

Set Baker Model "D" Packer with wire line at 5755'. Ran 187 joints 2 3/8" O.D. 4.70# J-55 8 Rd. Thd. Japanese tubing and subs (5767.99). Landed 11.30' below R.B.

1 jt. tbg.	31.21
1 sub	4.03
1 sub	6.11
1 sub	10.10
186 jts. tbg.	5,689.13
1 Otis Model "W" ck.	1.34
1 Baker feeler sub	.58
2 Baker seal nip.	2.00
2 Pc. blank flush jt.	12.42
1 Perf. nip.	5.00
1 Baker seal nip.	.83
1 Blank flush jt.	5.24
	5,767.99
Below R.B.	11.30
	5,779.29

Acidized "B" zone with 1000 gal. Formation broke down with 1800# pressure. Pressure dropped to 1400#. Injected acid into formation with 1400# at rate of 2¼ bbls. per minute.

Acidized "C" zone with 500 gal. Formation broke down with 800# pressure. Pressure dropped to 700# while injecting acid. Injected acid at rate of 2¼ bbls. per minute.

Both zones flowing through one flow line; turned into tanks at 8:45 P.M. 8-5-52. Well produced 254.72 B.O. in 11 hours.

"C" Zone - 8/64" choke TFP 550#
"B" Zone - 9/64" choke CFP 650#

Released rig at 7:00 A.M. 8-5-52.

10-18-72 3794' PBTD Prepairing to break circulation and squeeze 5-1/2" casing.

Layed down bit and scrapper. Had to flare out top of 5-1/2" casing. Ran Gamma Ray - Neutron and Casing Collar Log from 3550' to 3100'. Set WASP bridge plug at 3800' with 1 sack of cement on top to 3794'. Tested casing and bridge plug to 1400 PSI. Held OK. Ran block squeeze gun and perforated at 3695'. Started hydrotesting tubing in hole. Unable to do so because of scale - Shut In due to darkness.

10-19-72 3794' PBTD Prepairing to break circ. and squeeze 5-1/2" casing to surface.

Unable to hydrotest tubing because of scale. Layed down tubing and picked up new string. Tested in hole to 3516'. Set packer and pumped into formation at 3695'. Would not circ. Pumped 50 sacks 1-1 Pozmix, 8% gel and overflushed 3-1/2 bbls. Shut In with 800 PSI on tubing.

Max. Pressure	=	1850 PSI
Max. Inj. Rate	=	3 BPM
Immed. S.I.	=	1200 PSI
15 Min. S.I.	=	800 PSI

Shut in overnight.

10-20-72 3794' PBTD Prepairing to perforate and squeeze cement to surface from 3000'.

Tried to break circ. from 3695'. Unable to do so. Squeezed 100 sacks 1-1 Pozmix, 8% gel in formation and left 45' in pipe. Shut In with 800 PSI on tubing.

Max. Pressure	=	1850 PSI
Max. Inj. Rate	=	3-3/4BPM
Immed. S.I.	=	1250 PSI
15 Min. S.I.	=	850 PSI

Shut in overnight.

10-21-72 3794' PBTD Pressure testing Squeeze No. 2.

Pressure tested Squeeze No. 2. Would Not Hold. Pumped 90 bbls. salt water and 10 bbls. fresh water into perforations at 3695'. Followed by 50 sacks regular cement with 2% chcl. Left 50' of cement in pipe. Shut In under pressure to wait on cement.

Max. Pressure	=	1800 PSI
Max. Inj. Rate	=	4 BPM
Immed. S.I.	=	1200 PSI
15 Min. S.I.	=	1000 PSI

10-22-72 3794' PBTD Pressure testing Squeeze No. 3.

Pressure tested squeeze. Would not hold. Pumped in 1-1/2 bbls. at 400 PSI. Pulled out of hole with tubing and packer. Ran Baker drillable cement retainer on 2-7/8" tubing. Set at 3635'. Squeeze No. 4 Pumped 50 sacks 1-1 Pozmix with 2% ChCl. Cleared tool and pulled out of hole. Max. Injection Rate 2-1/2 BPM. Max. Injection Pressure 2000 PSI. Immediate S.I. 1500 PSI. 3 Min. S.I. 1100 PSI.

Ran 4 way block squeeze gun on Wireline and perforated at 3000'. Run in hole with Retrieve-O-Matic packer and set at 2713'. Pumped into formation at the rate of 4 BPM - 1800 PSI. Unable to circ. to surface. Pumped 310 sacks of 1-1 Pozmix (150 sacks 8% 160 sacks 2%) and 100 sacks regular cement with 2% ChCl. Cleared tool of cement and started to stage same. 1 bbl. at 20 min. intervals for a total of 5 bbls. Max. Rate 2-1/2 BPM Max. Pressure 1900 PSI S.I. Tubing with 1400 PSI. 30 Min. S.I. 1350 PSI. Shut down for darkness and WOC.

10-23-72 3795' PBTD Prepairing to perforate and water frac the Dakota.

Hooked up portable pump and pressure tested squeeze # 4 down tubing with 1000 PSI. Pressure bled down 300 PSI in 26 mins. Released packer and pulled out of hole. Ran 5-1/2" casing scraper and 4-3/4" bit to 2991'. Tagged cement. Drilled 10' of hard cement and 50' of cement stringers. Ran tubing to top of cement retainer at 3635'. Found 20' of fillup on retainer at 3615'. Pulled out of hole with bit and scraper. Ran Cement Bond Log. Ragged bond 2840' to 3060', excellent bond 3060' to 3080', and 3110' to 3155'. Ragged bond 3155' to 3500'. Run in hole with Retrieve-O-Matic packer to 3330'. Shut in for darkness.

10-24-72 3795' PBTD Waiting on equipment to complete pumping station. 20 PSI on tubing this A.M.

Perforated Dakota formation with 1-11/16" thru tubing gun, 4 holes per foot at three intervals, 3195-3255', 3335-3400', and 3430-3445' (3 runs). Pumped 200 BW into formation after each run. Set packer at 3114' and fraced entire Dakota formation with 200 Bbls. salt water. Dropped ball sealers and pumped 410 BW with no increase in pressure. Estimated rates and pressures are as follows with 390 BW.

Rate @	6	BPM	= 1500 PSI	=	8,640 BPD
Rate @	8	BPM	= 1950 PSI	=	11,520 BPD
Rate @	10	BPM	= 2300 PSI	=	14,400 BPD
Rate @	11½	BPM	= 2400 PSI	=	16,560 BPD

Well flowed 1/2" stream of salt water after perforation of first interval and increased to 3" flow at end of job. Pulled out of hole with tubing and packer. Installed well head. Shut in well and rigged down pulling unit. Total salt water used on frac job = 1400 bbls.
TO DROP FROM REPORT.

PRODUCTION TEST DATA

E. P. U. WELL #8

September 7, 1952

Length of Test: 12 hours. (Tubing)

Time of Test: 7:05 A. M. to 8:40 P. M.

CSIP beginning of Test 650#
CSIP end of Test 850#

Hour	Prod'n.	TP	Choke	BS & W
7:05 to 8:05 A. M.	23.02	175#	¼"	6%
8:05 to 9:05 A. M.	18.95	125#	¼"	6%
9:05 to 10:05 A. M.	21.66	125#	¼"	3.8%
10:05 to 11:05 A. M.	20.31	125#	¼"	3.8%
Total 4 hours.	83.94			
11:25 to 12:25 P. M.	18.95	300#	12/64"	.2%
12:25 to 1:25 P. M.	16.24	300#	12/64"	.2%
1:25 to 2:25 P. M.	18.95	300#	12/64"	2%
2:25 to 3:25 P. M.	17.59	300#	12/64"	2%
Total 4 hours.	71.73			
4:40 to 5:40 P. M.	10.83	600#	1/8"	1.8%
5:40 to 6:40 P. M.	10.83	600#	1/8"	1.8%
6:40 to 7:40 P. M.	10.82	600#	1/8"	.4%
7:40 to 8:40 P. M.	10.83	600#	1/8"	.4%
Total 4 hours.	43.31			

Total produced during entire Test: 198.98 bbls.

PRODUCTION TEST DATA

E. P. U. WELL #8

September 7, 1952

Length of Test: 12 hours. (Casing)

Time of Test: 7:00 A. M. to 7:45 P. M.

TSIP beginning of test 700#
TSIP end of test 925#

Hour	Prod'n	CP	Choke	BS & W
7:00 to 8:00 A. M.	43.40	450#	1/4"	1.2%
8:00 to 9:00 A. M.	40.69	400#	1/4"	1.2%
9:00 to 10:00 A. M.	39.33	400#	1/4"	1.2%
10:00 to 11:00 A. M.	39.33	400#	1/4"	1.2%
Total 4 hours.	162.75			
11:30 to 12:30 P. M.	25.73	525#	12/64"	.6%
12:30 to 1:30 P. M.	24.37	525#	12/64"	.6%
1:30 to 2:30 P. M.	24.37	550#	12/64"	.6%
2:30 to 3:30 P. M.	25.00	550#	12/64"	.6%
Total 4 hours.	99.47			
3:45 to 4:45 P. M.	9.48	700#	1/8"	.2%
4:45 to 5:45 P. M.	12.18	700#	1/8"	.2%
5:45 to 6:45 P. M.	10.83	700#	1/8"	.2%
6:45 to 7:45 P. M.	9.93	675#	1/8"	.2%
Total 4 hours.	42.42			

Total produced during entire Test: 304.64 bbls.

2590-2720	Shale, dark gray to black, medium hard, slightly chunky, finely micaceous.
2720	Sample Top Upper Muddy (-626)
2720-2840	Shale; dark gray, medium soft, firm, slightly micaceous with some fine-grained light gray soft salt and pepper sandstone and silt.
2840-2900	Shale; dark gray, medium hard, firm, micaceous, some light gray siltstone.
2900	Sample top Muddy (-799)
2900-2970	Sandstone, medium to light gray, medium soft, very fine-grained, glauconitic, slightly micaceous.
2970-3050	Shale; dark gray, medium hard, firm, slightly micaceous with some light gray, very fine-grained, soft sandstone.
3050-3200	Shale; dark gray, medium hard, firm, micaceous, with some medium brown, soft siltstone.
3200-3270	Sandstone, light gray, very fine-grained, soft, very porous, fairly well consolidated.
3270-3300	Shale; dark gray to black, medium hard, firm, splintery, with some light gray porous sandstone.
3300-3400	Sandstone; medium gray, fine-medium grained, fair porosity, poorly cemented with some coarse grained white sandstone.
3400-3430	Shale; dark gray, medium hard, firm, splintery.
3430-3460	Sandstone; light gray, fine to medium grained, poorly cemented with some dark gray splintery shale.
3460-3520	Shale, dark gray, medium hard, slightly carbonaceous, splintery.
3520	Sample Top Jurassic-Morrison (-1426)
3520-3610	Sandstone; light gray, medium soft, fine-medium grained, glauconitic, with some medium gray soft, silty shale.
3610-3650	Shale, dark gray to black, firm, medium soft, slightly silty,
3650-3700	Sandstone; light gray, fine grained, porous, poorly cemented; few stringers dark gray, firm, splintery carbonaceous shale.
3700-3740	Sandstone; light gray, medium grained, very porous, fairly well cemented with calcareous material, slightly glauconitic.
3740-3800	Shale; dark gray to black, carbonaceous, firm, splintery.

3800-3905	Shale; dark gray, medium soft, fissile, finely micaceous, with some light greenish-gray, splintery shale toward base.
3905	Sample Top Ellis. (-1811)
3905-3960	Sandstone; light gray, medium soft, very fine grained, very calcareous, with some light greenish-gray firm shale.
3960-4050	Shale; gray-green, medium hard, firm, splintery, pyritic.
4050-4090	Shale; gray-green, as above with some light gray, very fine-grained, calcareous Sandstone.
4090-4150	Shales, as above, with some light brown calcareous shale.
4150-4260	Shales, gray-green, medium hard, firm, slightly pyritic, with few stringers light gray, very fine-grained calcareous sandstone.
4260	Sample Top Piper Shale. (-2166)
4260-4300	Shale; reddish-brown, soft, slightly fissile, slightly anhydritic.
4300-4320	Shale, reddish-brown, as above with some light gray, medium soft, microcrystalline Limestone.
4320-4340	Shale, as above.
4340	Sample Top Piper Limestone. (-2246)
4340-4380	Limestone, dark brown, medium hard, amorphous to microcrystalline, few tight fractures, very fossiliferous, with some red anhydritic Shales.
4380-4400	Sandstone; light gray, medium grained, very calcareous; with some red and greenish-gray shales.
4400-4440	Shales; gray-green, firm, splintery, with some soft red shale and some dense brown, fossiliferous limestone.
4440-4450	Sandstone; light gray, medium grained, very calcareous, with some brown, dense Limestone and red and green Shales.
4450-4500	Limestone; brown, amorphous-microcrystalline, dense, fossiliferous; with some red and green shales and few thin stringers soft white anhydrite.
4500-4510	Anhydrite, light gray to white, very soft; with some gray-green splintery shale and dense, brown limestone.
4510-4520	Limestone, light gray-brownish-gray, medium hard, dense; with some red and green shales.

4520-4535	Limestone; as above, with some light gray, very fine-grained calcareous sandstone and red and green shales.
4535-4600	Limestone; light brown to light gray, microcrystalline, dense, with some white anhydrite and green and red shale.
4600-4705	Sandstone; brick red, very fine-grained, very calcareous with some red and green shale, trace gray, dense Limestone.
4705	Sample Top Amsden, (-2611)
4705-4720	Dolomite; pink, microcrystalline, medium hard, with some light gray microcrystalline, dense, limestone.
4720-4740	Limestone, light gray, microcrystalline, slightly dolomitic, with some pink dolomite, and gray calcareous shale, trace white anhydrite.
4740-4760	Limestone; gray-brown, medium hard, micro-fine crystalline, with some very fine-grained red sandstone.
4760-4800	Limestone, as above, with red, gray, green, purple shales.
4800-4850	Shales; red, green, gray, purple, medium hard, firm, slightly calcareous, with some dense gray-brown limestone.
4850	Sample Top Heath. (-2756)
4850-4880	Shales, red, gray, green, medium hard, numerous small ankerite inclusions.
4880-4920	Sandstone, dark red and gray, fine-medium grained, angular, slightly calcareous, with some vari-colored shales.
4920-4970	Shale, red, purple, green, gray, medium hard, firm, chunky, slightly calcareous.
4970-5000	Sandstone, dark red and gray, medium-coarse grained, porous, angular, with some red, purple, gray, green shales.
5000	Sample Top Otter. (-2906)
5000-5025	Shale, red, green, gray, medium hard, firm, with traces of light gray, fine-grained calcareous sandstone.
5025-5075	Shales; as above, with some light gray, medium soft limestone.
5075-5120	Limestone; light gray, fine crystalline, dense, with some red shale and soft white anhydrite.
5120	Sample Top Kibby Sandstone. (-3026)
5120-5150	Sandstone; brick red, very fine-grained, fairly well cemented, slightly silty in top, with some red shale.

5150-5190	Sandstone; light gray, fine grained, sand grains well rounded, good porosity, with some red sandstone and vari-colored shales.
5190-5280	Sandstone, brick red, very fine grained to medium grained, fairly porous, grains rounded to sub-rounded, with some red and green shale.
5280	Sample Top Kibby Limestone. (-3186)
5280-5295	Limestone; light gray-white, very hard, dense, amorphous to microcrystalline, with some soft white anhydrite.
5295-5370	Shale, dark gray to black, medium hard, firm, with some red fine grained sandstone, and traces of white anhydrite.
5370	Sample Top Charles. (-3276)
5370-5390	Anhydrite, light gray-white, amorphous to microcrystalline, medium hard, with some dark gray shale and red fine grained sandstone.
5390-5470	Limestones and Dolomites; medium gray-dark gray; Limestone very argillaceous with numerous streaks dark gray-black carbonaceous shale, trace light gray to white anhydrite.
5470-5490	Limestone, brownish-gray, microcrystalline, fairly hard, dense, with some light gray, dense dolomite.
5490-5510	Limestone, brownish-gray, amorphous-microcrystalline, very highly fractured with some dolomite.
5510-5520	Limestone, brownish-gray, oolitic, fairly soft, well developed oolites, good porosity, with some dense gray limestone.
5520-5550	Anhydrite; light gray, medium hard, amorphous with some hard, dense, brownish-gray limestone.
5550-5570	Limestone, brownish-gray, amorphous-microcrystalline, dense, with some hard, dense, light gray dolomite.
5570-5595	Anhydrite, light gray, soft, with some dense brownish-gray limestone.
5595	Depth Correction 5595=5598 S.L.M.
5598-5633	Core #1 Rec. 35'
5633-5650	Limestone; brownish-gray, fine-medium crystalline, dense, with some light gray dense dolomite.
5650-5660	Anhydrite, light gray, soft, with some dense brown limestone.

5660-5670 Limestone, brownish-gray, fine crystalline, medium hard, dense, with some medium gray dense dolomite.

5670-5685 Anhydrite, light gray, fairly soft, with some brown crystalline limestone.

5685-5750 Limestone, dark brownish-gray, amorphous-fine crystalline, medium hard, with numerous streaks of white anhydrite and few stringers light gray, very hard, dense dolomite.

5750-5788 Core #2. Rec. 37'

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

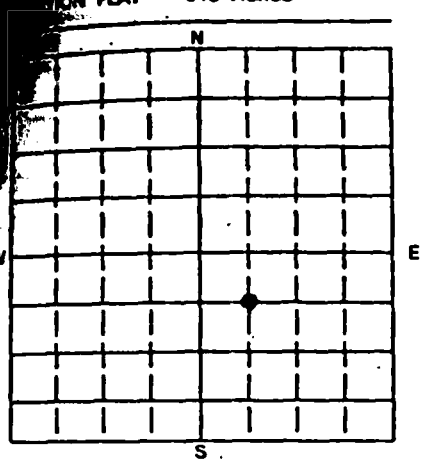
COMPLETION REPORT FOR BRINE DISPOSAL, HYDROCARBON STORAGE, OR ENHANCED RECOVERY WELL

Form Approved
OMB No. 2040-0042
Approval expires 9-30-88

NAME AND ADDRESS OF EXISTING PERMITTEE
USA, Inc.
Street
, AR 71730
EPU 8-D

NAME AND ADDRESS OF SURFACE OWNER
Zimmerman Inc.
Box 277
Poplar, MT

WELL AND OUTLINE UNIT ON PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

SURFACE LOCATION DESCRIPTION
NW ¼ OF SE ¼ OF ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

WELL ACTIVITY
- [X] Brine Disposal
- [ ] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [ ] Area
- Number of Wells ____

Estimated Fracture Pressure of Injection Zone: 1 psi/foot

Anticipated Daily Injection Volume (Bbls)		Injection Interval	
Average	Maximum	Feet	to Feet
7100	8400	830	880

Anticipated Daily Injection Pressure (PSI)		Depth to Bottom of Lowermost Freshwater Formation (Feet)
Average	Maximum	
650	700	89'

Type of Injection Fluid *(Check the appropriate block(s))*
- [X] Salt Water
- [ ] Brackish Water
- [ ] Fresh Water
- [ ] Liquid Hydrocarbon
- [ ] Other

Lease Name: East Poplar Unit
Well Number: 8-D
Name of Injection Zone: Judith River

Date Drilling Began: 8/1/52
Date Well Completed: 9/5/52
Permeability of Injection Zone: 21 MD

Date Drilling Completed: 8/29/52 Recompleted 1/28/78 to Judith River
Porosity of Injection Zone: 31%

CASING AND TUBING			CEMENT		HOLE	
OD Size	Wt/Ft — Grade — New or Used	Depth	Sacks	Class	Depth	Bit Diameter
13 3/8	48# H-40 New	100' approx.			—	
9 5/8	36# H-40 New	960.47'	390	G	970'	12¼
5 1/2	15.5# J-55 New	5765.65'	250	G	5783'	8 3/4
	Block Squeeze		350	G	960'	
2 7/8	6.50# J-55 New	737.74'	100	G	960'	

INJECTION ZONE STIMULATION		WIRE LINE LOGS, LIST EACH TYPE	
Interval Treated	Materials and Amount Used	Log Types	Logged Intervals
None		Electric Survey	966-5783
		Micro Log	5400-5783
		Gamma Ray-Neutron	4950-5783.5
		Gamma Ray-Neutron	500-952

Complete Attachments A — E listed on the reverse.

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE *(Please type or print)*
GLENN M. FEDDERSON
Vice President

Dual Form	

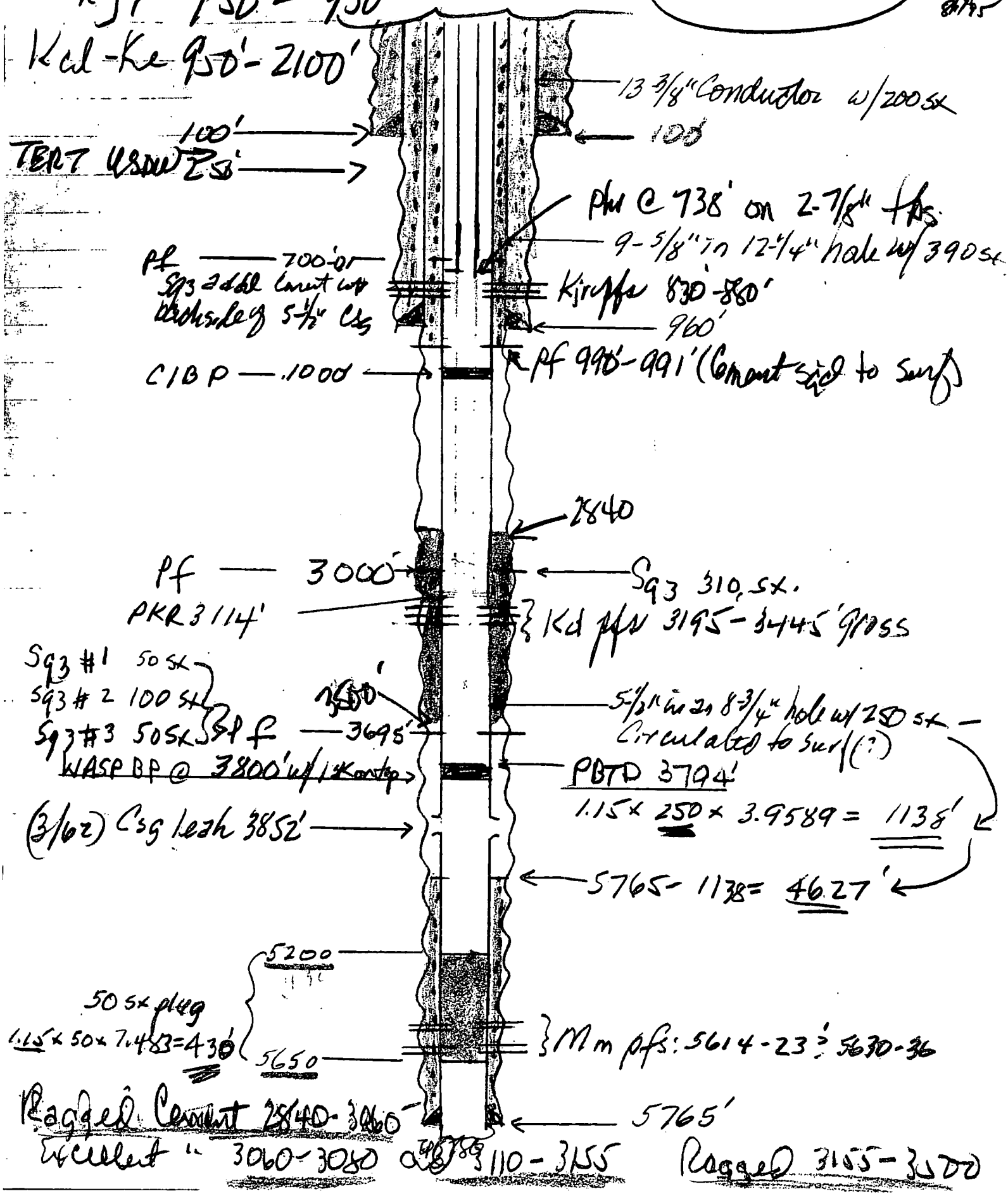
DATE SIGNED: 12/4/84

EPA Form 7620-10 (2-84)

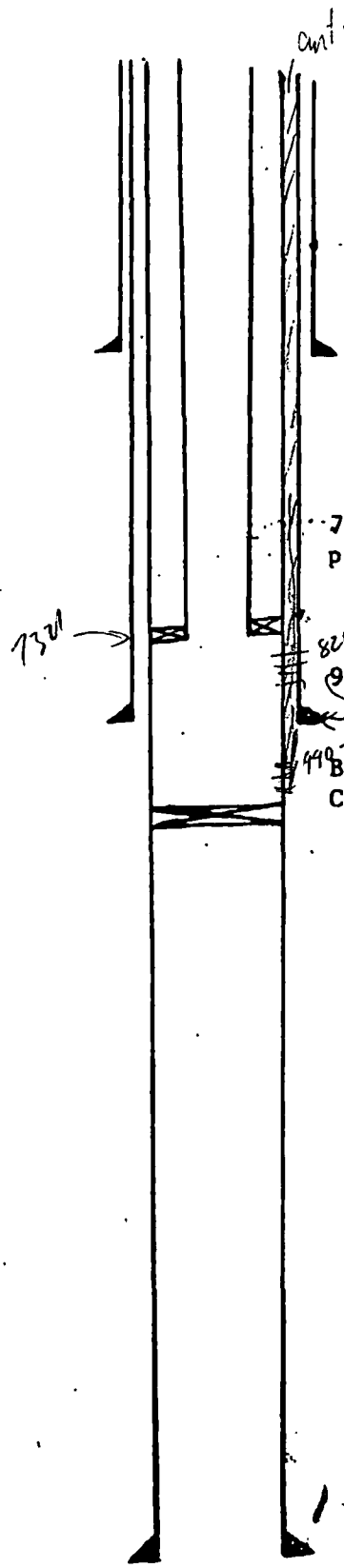
Bear Paw Sh. 250'-750'
Kjr 750'-950'
Kcl-Ke 950'-2100'

EPU 8-D

from Emmett Schmitz 8/1/95

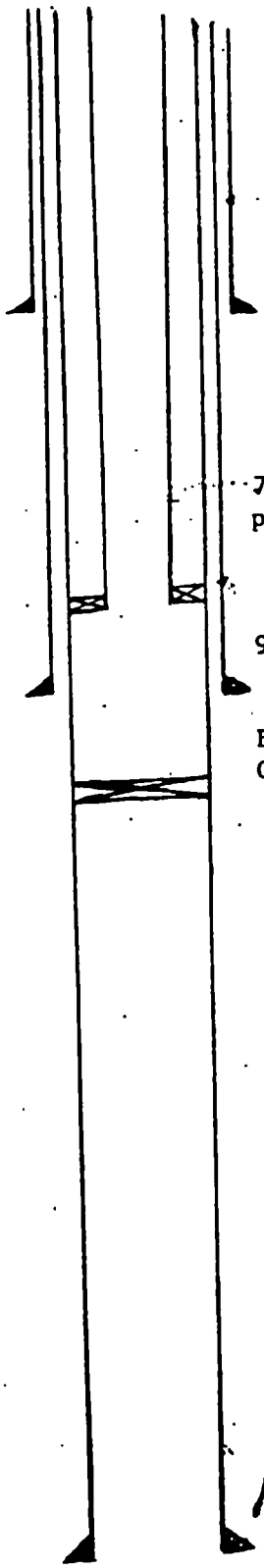


EPU 8-D Subsurface Well Design



Note: Design is not to scale

EPU 8-D Subsurface Well Design



Approximately 100' of 13 3/8", 48#, H-40, 8rd cemented to surface

737.74' of 2 7/8", 6.5#, J-55 tubing with packer landed at 732.54
perforations 825'-875'

960.47' of 9 5/8", 36#, H-40, 8 rd cemented to surface

Block squeezed at 700' and 990' cemented to surface
Cast iron bridge plug set at 1000'

5765.65' of 5½", 15.5#, J-55 cemented with 250 sacks cement

Note: Design is not to scale

TUBING RECORD

WELL NAME & NO.	FIELD	DISTRICT
East Poplar Unit 8-D	East Poplar Unit	Poplar

K. B. ELEVATION	SETTING DATE	DISTANCE K. B. TO CASING HEAD FLANGE	AFE NO.
2094'	1-23-73	11.30	2-1511-10

TUBING STRING DESIGN

JOINTS	COND.	SIZE	DESCRIPTION	FEET
1	1	2 7/8" x 2'	Steel Pup Joint	2.00
102	1	2 7/8"	E.U.E 8rd 1500# TFP Fiberglass Tubing External Upset	3186.5
			TOTAL	
LANDED BELOW R. K. B.				3188.5
LANDED AT				8.50
PERFORATIONS AT				3197.00

3195 - 3255 and 3335 - 3400 and 3430 - 3445

TAIL PIPE DESCRIPTION

PACKER	MANUFACTURER	SIZE	WEIGHT	TYPE	MODEL
	I.D.	LENGTH	TOP SET #	BOTTOM SET #	TYPE "J" ASSEMBLY

CHOKES/SEATING NIPPLES:

SPECIAL EQUIPMENT DESCRIPTION:

REMARKS:

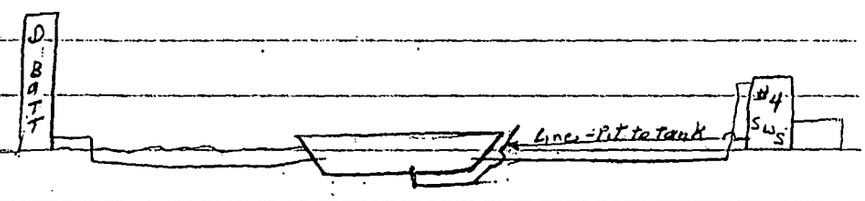
FORM 297

1200 OV2400

file
#4 SW5.

Liner for EPU #8-D

sheet = 100' x 100' = 4300
btm = 70' x 70' } 182,520 gallons w/ 2' freeboard.
top = 94' x 94' }
depth = 6' including 2' to 3' bank above ground.
material = 20 mil nylon reinforced CPE
slope = 2 to 1



TUBING RECORD

WELL NAME & NO.	FIELD	DISTRICT
East Poplar Unit 8-D	East Poplar Unit	R.M.

K. B. ELEVATION	SETTING DATE	DISTANCE K. B. TO CASING HEAD FLANGE	AFE NO.
	November 1, 1988	11.00	

TUBING STRING DESIGN

JOINTS	COND.	SIZE	DESCRIPTION	FEET
12	1		2-7/8", 6.50#, J-55, 8rd., E.U.E. tubing	368.28
8	1		2-7/8", 6.50#, J-55, 8rd., E.U.E. tubing coated pipe	248.00
1	1		Baker J-Slot Model AD-1	2.85
2	2		2-7/8", 6.50#, J-55, 8rd., E.U.E. tubing	64.72
			TOTAL	683.85

LANDED BELOW R. K. B.	11.00
LANDED AT	694.85

PERFORATIONS AT
825' to 875'

TAIL PIPE DESCRIPTION
2 jts 2-7/8", 6.50#, J-55, 8rd., E.U.E. tubing

PACKER	MANUFACTURER	SIZE	WEIGHT	TYPE	MODEL

I.D.	LENGTH	TOP SET #	BOTTOM SET #	TYPE "J" ASSEMBLY

CHOKES/SEATING NIPPLES:

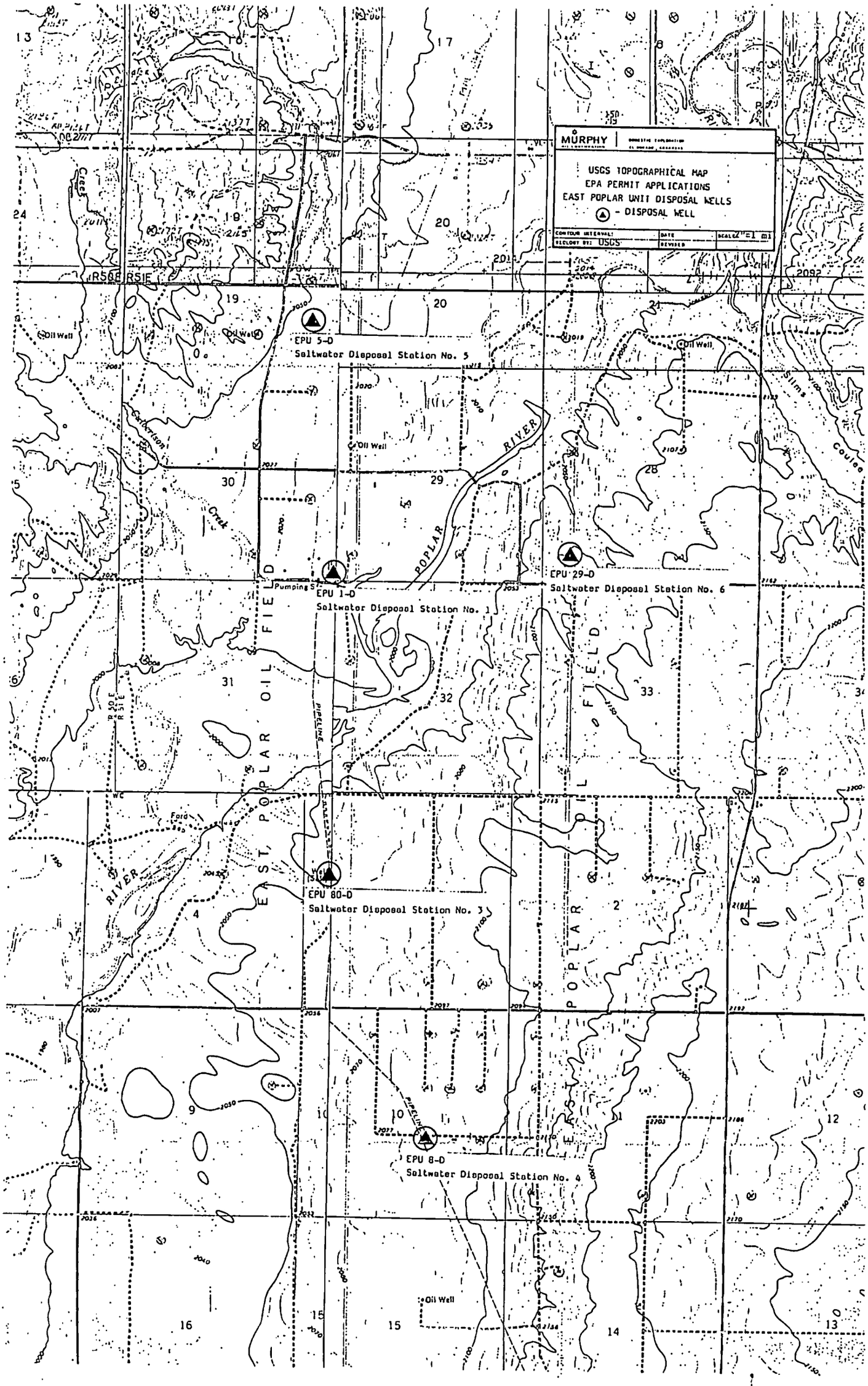
SPECIAL EQUIPMENT DESCRIPTION:

REMARKS:
PBTD 932.41'

Baker J-Slot Model AD-1 ¼" left to set ¼" right to free.

FORM 297

SIGNED: Gerald Hagadone/jh 11/8-88



5782-4 5765-5786

ANSWERS TO ATTACHMENT II
DEFICIENCIES FOR EPU WELLS 1-D, 5-D, and 8-D

(Continued)

E) A new Form 7520-14 is attached. Also, a completion and workover history is attached.

3) EPU 8-D

A) Correction to Form 4, Item XI has been noted on our form. The letters should be "A, E, G, H, M, Q, R, and U" and not "..R to U". Please note the correction on your form.

B) The discrepancy between the Sundry Notices and Attachment G is noted. However, the Sundry Notice to which you refer was for squeeze cementing when the No. 8-D Well was completed into the Judith River Sand. The perforations from 990'-991' were below the Judith River in order to get cement coverage across the zone to be perforated for injection. A completion and workover history is attached.

C) Well No. 19 (760' FSL and 1980' FEL of Sec. 19, T29N, R51E) and Well No. 4-G (same location description) are not the same well. No. 19 is a Madison producer and No. 4-G was originally a Judith River gas well. The 4-G was drilled at the same time as the No. 19 well by moving the Rotary Table approximately 5' away from the No. 19 wellbore. The 4-G was a Judith River gas well. No. 4-G was converted to and is currently used as a water source well for production operations. Saltwater Disposal Station No. 1 is at EPU 1-D, Saltwater Disposal Station No. 3 is at EPU 80-D and Saltwater Disposal Station No. 4 is at EPU 8-D. Saltwater Disposal Stations are shown on the topographical map attached to the common deficiencies submittal. Also attached are additional water samples from the Judith River.

D) The cement used will be Class G or equivalent quality cement. A new Form 7520-14 is attached.

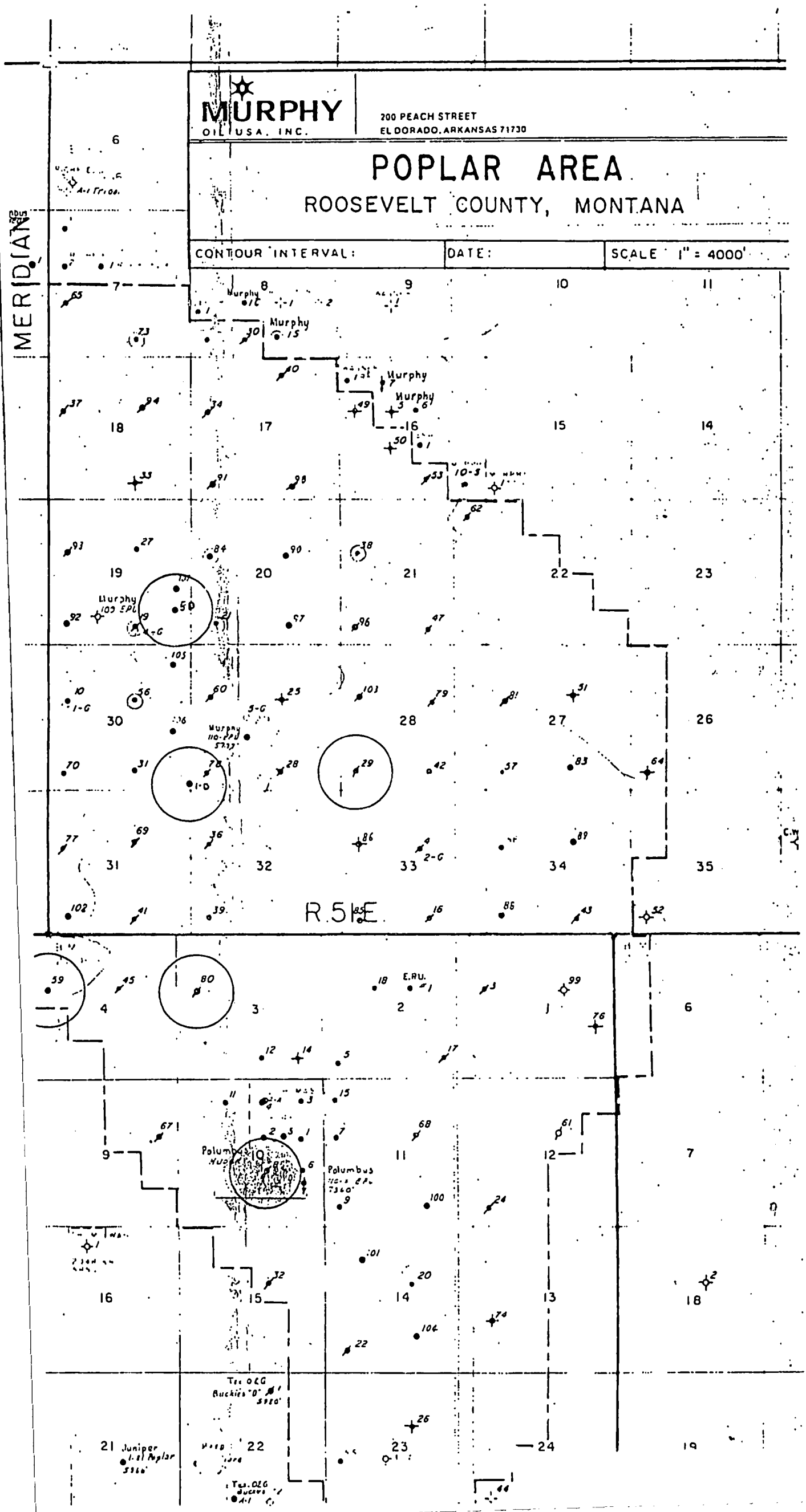
MURPHY OIL USA, INC.

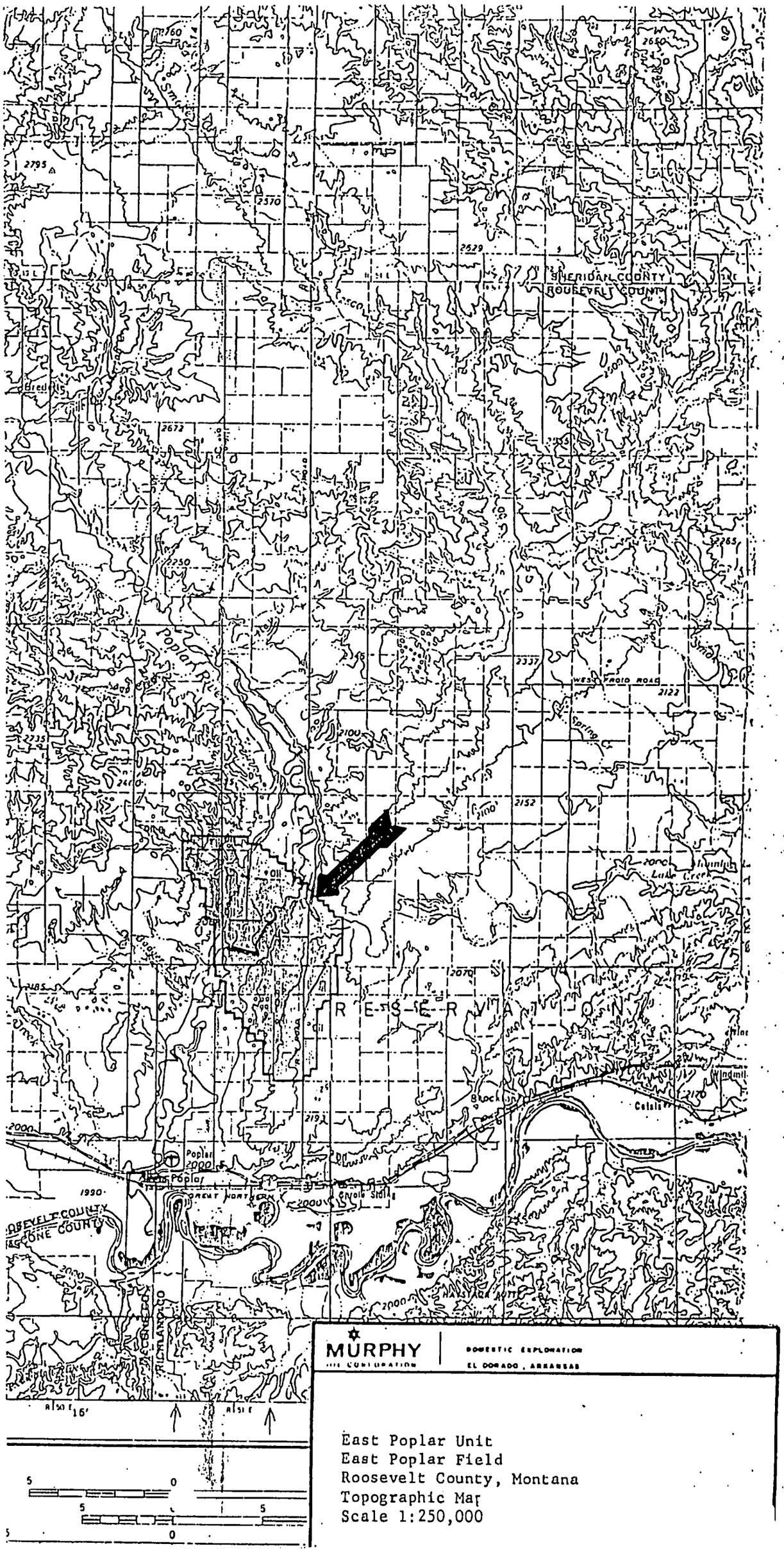
200 PEACH STREET
EL DORADO, ARKANSAS 71730

POPLAR AREA

ROOSEVELT COUNTY, MONTANA

CONTOUR INTERVAL:	DATE:	SCALE 1" = 4000'





East Poplar Unit
East Poplar Field
Roosevelt County, Montana
Topographic Map
Scale 1:250,000

BOTTOM HOLE TEMPERATURE SURVEY
(Static)

Date March 27, 1953

Company Murphy Corporation Lease East Poplar Unit Well No. 8

Location C NW SE 10-28N-51E County Roosevelt State Montana

WELL DATA:

Elevation: 2094 KB Datum Point: 5778

Formation: Mississipplan Perforation: open hole

T.D.: 5788 Tubing Press:

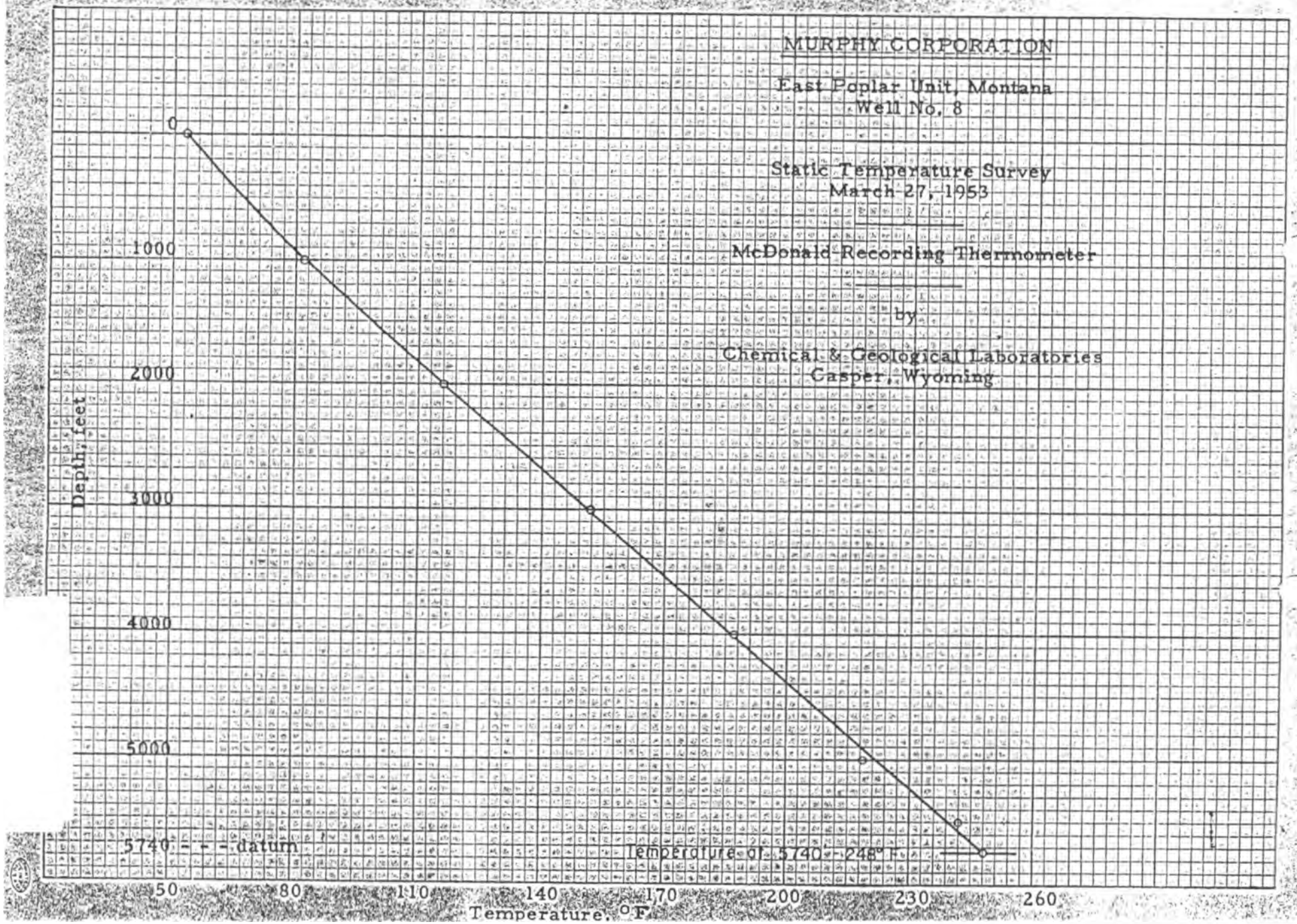
Casing: 5½" OD @ 5778 Casing Press:

Tubing: 2" EUE @ 5755

Depths	Extension Inches	Temperature	Additional Information
Top Hole	4.820	53	
1000	4.290	82	
2000	3.671	116	
3000	3.010	151½	
4000	2.372	187	
5000	1.760	219	
5500	1.320	242	
5740	1.210	248	

Remarks: All measurements from K.B.
Well shut in 48 hours.

CHARLES BRUNING COMPANY, INC. NO. 700-10 DATA SHEETS
10 x 10 to the inch.



Location: C AW SE Sec. 10-T28N-R51E
Spacing - 40 acres
Elevation: 2094' K.B.
Spudded: 8-1-52
Completed: 9-5-52
T.D.: 5786' Schl
Prod. Zones: B-1 5614-23 B-2 5630-46'
C-2 Open hole 5782-86'

Schlumberger Tops

	Depth	Datum	Thickness
Judith River	----	----	
Greenhorn	2348	- 254	
Muddy Sd	2927	- 833	
Dakota Silt	3135	-1041	
Piper Ls	4351	-2257	
Amsden	4711	-2617	
Heath	4845	-2751	
Otter	5003	-2909	
Kibbey Sd	5120	-3026	
Kibbey Ls	5280	-3186	
Madison	5373	-3279	
A-1	**5467	-3373	3'
A-2	**5480	-3386	6'
A-3	**5492	-3398	10'
A-4	*5514	-3420	24'
B-1	*5615	-3521	8'
B-2	5632	-3538	15'
B-3	**5653	-3559	6'
B-4	**5686	-3592	5'
B-5	5724	-3630	?
C-1	*5764	-3670	?
C-2	----	----	----

**Probable prod. Zones (From DST structural position, etc.
*Shows.

Drill Pipe Corrections (Made)
5595 Driller = 5599 SLM (+4')

Casing Intervals:
#1 5604-5639 Rec. 35' B-1 & B-2
#2 5748-5786 Rec. 37' C-1

Drill Stem Tests:

There were no drill stem tests.

History Subsequent to Completion:

None

EAST POPLAR UNIT NO. 8-D

Lease and Well No.: East Poplar Unit No. 8-D

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C NW-SE Section 10, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Of Last Workover: December 10, 1965 - P.A.

T.D.: 5785' 3615' Perforations: 5630-36' and 5614-23' - A 50 sack cement plug set from 5650' to 5200' Cumulative Production: B-1 & 2 411,424 BO 1,340,205 BW C-3 196,324 BO 171,409 BW Last Test: September 9, 1965 - Pumping at the rate of 103 BWPD 95% W.C. 5 BOPD 98 BWPD. The C-Zone is shut in with D.R. Plug - Watered Out.

JUSTYFICATION FOR WORKOVER:

East Poplar Unit No. 8 was P & A as being uneconomical December 10, 1965. East Poplar Unit No. 8 is to be converted into a Dakota Sand disposal well to take care of water from EPU "D", "H", "K", and "R" batteries. Production from these 4 batterie could possibly be increased, by selective workovers, 80-100 BOPD if salt water disposal facilities were available. At the present time salt water facilities are working to capacity.

SUMMARY OF WORKOVER:

10-17-72 First Report- 3200' PBTD Present Status - Prepairing to pull tubing, set bridge plug on Wireline, log and perforate for squeeze.

M I P U Rigged up and picked up 2-7/8" tubing. Ran 4-3/4" bit and 5-1/2" casing scraper. Tagged cement at 3193'. Rigged up power swivel and pump. Drld. cmt. and B.P. (4 hrs. and 10 mins.). Ran bit and scraper to 3818'. Shut down due to darkness.

EAST POPLAR UNIT NO. 3-D

SUB-SURFACE EQUIPMENT RECORD

Casing:

947.69' of 9-5/8" Casing set at 960.47'. 36#, 8rd., thrd., National, H-40

5765.65' of 5-1/2" Casing (181 joints) 15.5#, J-55, Rg. 2, 8rd. thrd..

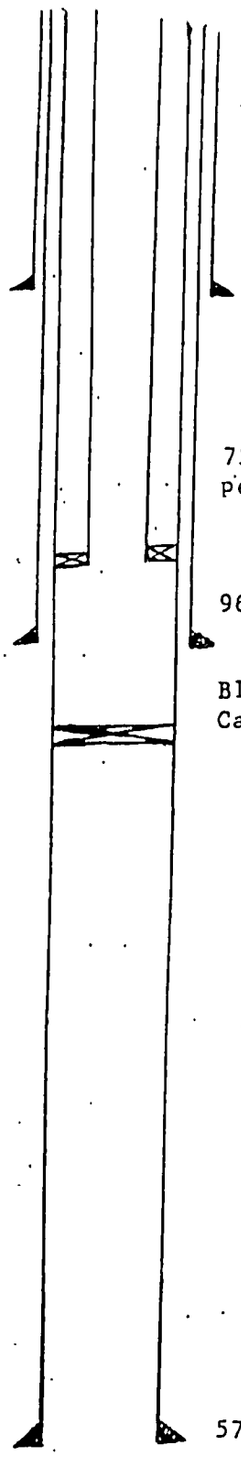
5-1/2" Casing plugged back to 3635' with Baker drillable Cement Retainer.

Tubing:

3186.50' (107 joints) of 2-7/8", EUE, 8rd., 1500#, TFP, Fiberglass Tubing, External Upset.

1 - 2-7/8" X 2' Steel Pup Joint made up in bottom of Cameron Valve

EPU 8-D Subsurface Well Design



Approximately 100' of 13 3/8", 48#, H-40, 8rd cemented to surface

737.74' of 2 7/8", 6.5#, J-55 tubing with packer landed at 752.54
perforations 825'-875'

960.47' of 9 5/8", 36#, H-40, 8 rd cemented to surface

Block squeezed at 700' and 990' cemented to surface
Cast iron bridge plug set at 1000'

5765.65' of 5½", 15.5#, J-55 cemented with 250 sacks cement

Note: Design is not to scale

BAKER PACKERS
A DIVISION OF BAKER OIL TOOLS, INC.
P.O. BOX 3048 • HOUSTON, TEXAS 77253

REMIT TO: BAKER PACKERS P.O. BOX 200301 HOUSTON, TEXAS 77216

TERMS: NET 30 DAYS FROM DATE OF INVOICE
(INTEREST CHARGEABLE AFTER END OF MONTH FOLLOWING DATE OF INVOICE.)

GA — PROJECT CODE

INVOICE NUMBER & DATE

PLEASE REFER TO THIS INVOICE NO. WHEN REMITTING

DATE ISSUED: 08-07-87
SHIPPED FROM: (DISTRICT) Williston, North Dakota

SOLD TO (PRINT ONLY):
MURPHY OIL USA, INC.
P. O. BOX 547
POPLAR, MONTANA 59255

SHIP TO:
COUNTY: Roosevelt
STATE: Montana
WELL NO.: S-D
FIELD: EPU
LEASE:

well file

PURCHASE ORDER NUMBER	REQUISITION NUMBER	LOCATION	STATE TO	COUNTY TO	TERRITORY	CUSTOMER CODE	CODE RJ	CODE ID	PRICE CODE	SHIP VIA	DATE SHIPPED
			35		B 6625	MUY				Our Delivery	08 07 87

ITEM	QUANTITY	COMMODITY NO.	DESCRIPTION	PRODUCT NO. F/PARTS	TAX CODE	REV CODE	UNIT CONTROL CODE	DISC.	NET AMOUNT
01	1	457-30-6671	Size 2-7/8" EU 8rd Box X 2-3/8" EU 8rd Pin, Crossover Sub - TK-69 Int. & Ext.			00	253 25		253 25
02	9	00-00000-W1	Technical Specialist's Time and Expenses to pull and run and set your Lok-Set Packer. (08-07-87)			W1	33 00		297 00
03	150	00-00000WF	Truck Milage To and From Your Location. (08-07-87)			WF	95		142 50
04	1	01-70652-00	45 Bearing	646-12		00	18 90		18 90
05	2	01-70393-00	45 Seal Ring	646-12		00	79 00		158 00
06	1	01-77071-00	45 A Upper Packing Element	646-12		00	96 00		96 00
07m	1	01-77071-01	45 A Lower Packing Element	646-12		00	67 50		67 50
08	2	01-71269-00	45 Lok Segment	646-12		00	113 00		226 00
09	2	01-71270-00	45 Control Segment	646-12		00	70 75		141 50
10	2	01-70484-00	45 Garter Springs	646-12		00	4 85		9 70
11	1	00-00000-Z1	Labor Charge To Repair Your Size 45A4 Lok-Set Packer	646-12		Z1	195 00		195 00
			Field Estimate: $1605.35						
			TAX						

THANK YOU

DO NOT PAY FROM THIS COPY
YOU WILL BE INVOICED

SIGNED FOR BAKER PACKERS
Barry Windsor
REPRESENTATIVE

CUSTOMER'S COPY

I certify that the above materials or services have been received on the terms and conditions set forth on the reverse side hereof, which the undersigned has read and understood, that the basis for charges is correctly stated and that I am authorized to sign this memorandum as agent of owner or contractor.

AGENT OF OWNER OR CONTRACTOR: Gerald Hagerbone
(NAME IN FULL)

THE MACHINING OF THREADS ON PRODUCTS IS PERFORMED BY OR FOR BAKER. ANY TRADE OR TRADEMARK DESIGNATION ONLY INDICATES THREAD COMPATIBILITY.

CHECKED BY | CODED BY

TOTAL

CHARGES ARE SUBJECT TO CORRECTION BY OUR INVOICING DEPARTMENT IN ACCORDANCE WITH LATEST PRICE SCHEDULES AND THE ADDITION OF APPLICABLE STATE AND LOCAL SALES/USE TAX IF NOT LISTED ABOVE.

nhole Water Analysis 12/29/1994
yright 1991,1993, Nalco Chemical Company DON S. WHISONANT

ENT NAME : MURPHY EXPL. & PROD. CO.
ENT LOCATION: POPLAR MT

l Number : EPU 8D
er Source : 12-13-94

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	43442.8	1888.8	as NaCL	0.0
Calcium	Ca++	3003.4	149.9	as CaCO3	7500.0
Magnesium	Mg++	801.4	65.9	as CaCO3	3300.0
Barium	Ba++	0.0	0.0	as CaCO3	0.0
Strontium	Sr++	0.0	0.0	as CaCO3	0.0
Total Cations		47247.5	2104.6		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	74008.3	2087.5	as NaCL	122000.0
Sulfate	SO4=	534.2	11.1	as Na2SO4	790.0
Carbonate	CO3=	0.0	0.0	as CaCO3	0.0
Bicarb.	HCO3-	365.7	6.0	as CaCO3	300.0
Total Anions		74908.2	2104.6		

Total Solids 122155.7

METALS

Total Iron,Fe	2.5	as Fe	2.5
Acid to Phen,CO2	77.0	as CaCO3	175.0

OTHER PROPERTIES

pH	5.9
Specific Gravity	1.1
Turbidity jtu	0.0
Oxygen, as O2 ppm	0.0
Sulfide as H2S ppm	0.0
Temperature F	100.0

>>> Scaling Indices <<<

Downhole Water Analysis 12/29/1994

Copyright 1991,1993, Nalco Chemical Company DON S. WILSONANT

CLIENT NAME : MURPHY EXPL. & PROD. CO.
CLIENT LOCATION: POPLAR MT

Well Number : EPU 8D
Water Source : 12-13-94

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60.0	-1.02	-38.11	NA	NA
80.0	-0.82	-38.39	NA	NA
100.0	-0.58	-38.48	NA	NA
120.0	-0.30	-37.98	NA	NA
140.0	0.02	-37.33	NA	NA
160.0	0.39	-36.24	NA	NA
180.0	0.80	-35.34	NA	NA
200.0	1.25	NA	NA	NA
220.0	NA	NA	NA	NA
240.0	NA	NA	NA	NA
260.0	NA	NA	NA	NA
280.0	NA	NA	NA	NA
300.0	NA	NA	NA	NA
320.0	NA	NA	NA	NA

Positive values indicate scaling tendencies

MURPHY OIL CORP.
POPLAR, MONTANA

29-NOV-88

EPU #8-D
PRODUCED

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-1.41	-59.06	NA	NA
80	-1.21	-59.37	NA	NA
100	-0.97	-59.50	NA	NA
120	-0.69	-59.11	NA	NA
140	-0.36	-58.04	NA	NA
160	NA	-56.89	NA	NA
180	+0.40	-55.72	NA	NA
200	+0.86	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

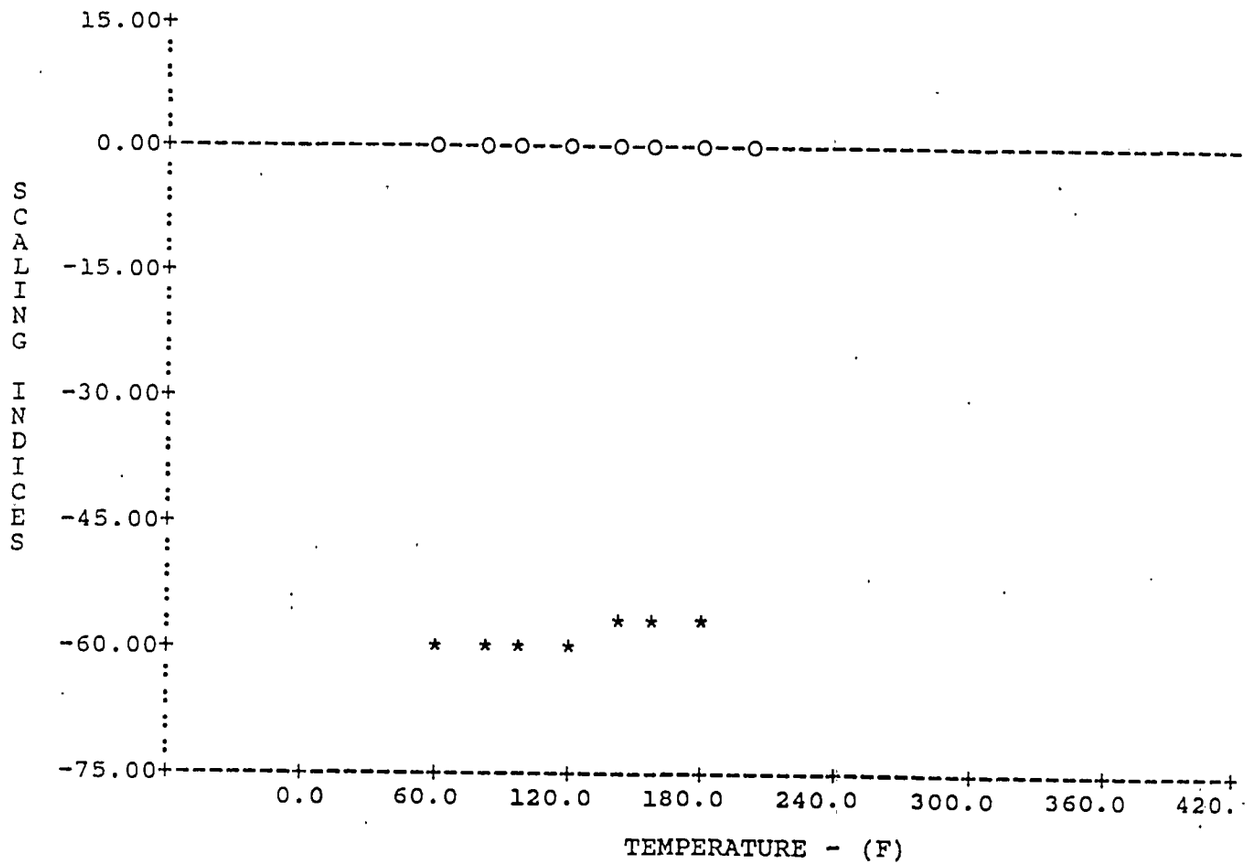
REMARKS: Sample marked 8-D 7:30 a.m. (MST)
Taken from Disposal Tank
Sample Container 6 oz. Bottle

MURPHY OIL CORP.
POPLAR, MONTANA

29-NOV-88

EPU #8-D
PRODUCED

>>> Scaling Indices <<<



O = CaCO3
* = CaSO4
# = BaSO4
X = SrSO4

Downhole Water Analysis 12/27/1993
Copyright 1991,1993, Nalco Chemical Company Max A. Jensen

CLIENT NAME : Murphy Exploration & Production
CLIENT LOCATION: Poplar, Montana

Well Number : EPU 8D SWD Water Analysis

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	37940.9	1649.6	as NaCL	0.0
Calcium	Ca++	1401.6	69.9	as CaCO3	3500.0
Magnesium	Mg++	121.4	10.0	as CaCO3	500.0
Barium	Ba++	0.0	0.0	as CaCO3	0.0
Strontium	Sr++	0.0	0.0	as CaCO3	0.0
Total Cations		39463.8	1729.5		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	60662.5	1711.1	as NaCL	100000.0
Sulfate	SO4=	541.0	11.3	as Na2SO4	800.0
Carbonate	CO3=	0.0	0.0	as CaCO3	0.0
Bicarb.	HCO3-	438.9	7.2	as CaCO3	360.0
Total Anions		61642.3	1729.5		
Total Solids		101106.2			

METALS

Total Iron,Fe	5.0	as Fe	5.0
Acid to Phen,CO2	114.4	as CaCO3	260.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity jtu	0.0
Oxygen, as O2 ppm	0.0
Sulfide as H2S ppm	0.0
Temperature F	60.0

Max A. J
12/27/93

CLIENT NAME : Murphy Exploration & Production
CLIENT LOCATION: Poplar, Montana

Well Number : EPU 8D SWD Water Analysis

>>> Scaling Indices <<<

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60.0	-1.31	-50.17	NA	NA
80.0	-1.11	-50.45	NA	NA
100.0	-0.87	-50.58	NA	NA
120.0	-0.59	-50.27	NA	NA
140.0	-0.26	-49.53	NA	NA
160.0	0.11	-48.21	NA	NA
180.0	0.52	-47.12	NA	NA
200.0	0.98	NA	NA	NA
220.0	NA	NA	NA	NA
240.0	NA	NA	NA	NA
260.0	NA	NA	NA	NA
280.0	NA	NA	NA	NA
300.0	NA	NA	NA	NA
320.0	NA	NA	NA	NA

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60.0	-1.04	-37.97	NA	NA
80.0	-0.84	-38.26	NA	NA
100.0	-0.60	-38.31	NA	NA
120.0	-0.31	-37.63	NA	NA
140.0	0.01	-37.08	NA	NA
160.0	0.39	-36.19	NA	NA
180.0	0.80	-35.46	NA	NA
200.0	1.26	NA	NA	NA
220.0	NA	NA	NA	NA
240.0	NA	NA	NA	NA
260.0	NA	NA	NA	NA
280.0	NA	NA	NA	NA
300.0	NA	NA	NA	NA
320.0	NA	NA	NA	NA

Positive values indicate scaling tendencies

---

hole Water Analysis 12/13/96

right 1991-1995, Nalco Chemical Company Don Whisonant

NT NAME : Murphy Exploration and Production
NT LOCATION: Poplar, MT

Number : EPU 8D produced water
r Source : 12-13-96

Submitted Metolite Analysis

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	53114.6	2309.3	as NaCL	0.0
Calcium	Ca++	3071.4	153.3	as CaCO3	7670.0
Magnesium	Mg++	849.9	69.9	as CaCO3	3500.0
Barium	Ba++	0.0	0.0	as CaCO3	0.0
Strontium	Sr++	0.0	0.0	as CaCO3	0.0
Total Cations		57036.0	2532.5		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	89173.9	2515.3	as NaCL	147000.0
Sulfate	SO4=	541.0	11.3	as Na2SO4	800.0
Carbonate	CO3=	0.0	0.0	as CaCO3	0.0
Bicarb.	HCO3-	365.7	6.0	as CaCO3	300.0
Total Anions		90080.6	2532.5		

Total Solids 147116.6

METALS

Total Iron,Fe	2.5	as Fe	2.5
Acid to Phen,CO2	35.2	as CaCO3	80.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.0
Turbidity jtu	0.0
Oxygen, as O2 ppm	0.0
Sulfide as H2S ppm	35.0
Temperature F	70.0

>>> Scaling Indices <<<

SCALE TENDENCY REPORT

Company	: Muphy Oil Corp,	Date	: 12-7-95
Address	: Poplar, Mt.	Date Sampled	: 12-4-95
Lease	: 8-D S.W.D.	Analysis No.	: 1
Well	: 8-D S.W.D.	Analyst	: Ron Neubauer
Sample Pt.	: Well Head		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
$CaCO_3$ Scaling Tendency

S.I. =	1.6	at 100 deg. F	or	38 deg. C
S.I. =	1.7	at 120 deg. F	or	49 deg. C
S.I. =	1.8	at 140 deg. F	or	60 deg. C
S.I. =	1.9	at 160 deg. F	or	71 deg. C
S.I. =	1.9	at 180 deg. F	or	82 deg. C

****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	4071	at 100 deg. F	or	38 deg C
S =	4164	at 120 deg. F	or	49 deg C
S =	4232	at 140 deg. F	or	60 deg C
S =	4192	at 160 deg. F	or	71 deg C
S =	4139	at 180 deg. F	or	82 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Ron Neubauer

PETROLITE

SCALE TENDENCY REPORT

ompany	: Murphy Oil Corp.	Date	: 12-3-96
ddress	: Poplar, Mt.	Date Sampled	: 11-25-96
ease	: 8-D S.W.D.	Analysis No.	: 1
ell	: 8-D S.W.D.	Analyst	: Ron Neubauer
ample Pt.	: Well Head		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.5	at 100 deg. F or	38 deg. C
S.I. =	0.5	at 120 deg. F or	49 deg. C
S.I. =	0.6	at 140 deg. F or	60 deg. C
S.I. =	0.7	at 160 deg. F or	71 deg. C
S.I. =	0.8	at 180 deg. F or	82 deg. C

****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	5154	at 100 deg. F or	38 deg C
S =	5250	at 120 deg. F or	49 deg C
S =	5319	at 140 deg. F or	60 deg C
S =	5272	at 160 deg. F or	71 deg C
S =	5210	at 180 deg. F or	82 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Ron Neubauer

PETROLITE

SCALE TENDENCY REPORT

Company	: Murphy Oil Co.	Date	: 12-19-97
Address	: Poplar, Mt.	Date Sampled	: 12-18-97
Lease	: 8-D	Analysis No.	: 2
Well	: 8-D S.W.D.	Analyst	: Ken Kolstad
Sample Pt.	: Pump		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.9	at 120 deg. F or	49 deg. C
S.I. =	0.9	at 140 deg. F or	60 deg. C
S.I. =	1.0	at 160 deg. F or	71 deg. C
S.I. =	1.1	at 180 deg. F or	82 deg. C
S.I. =	1.2	at 200 deg. F or	93 deg. C

****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	3990	at 120 deg. F or	49 deg C
S =	4057	at 140 deg. F or	60 deg C
S =	4018	at 160 deg. F or	71 deg C
S =	3967	at 180 deg. F or	82 deg C
S =	3865	at 200 deg. F or	93 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Ken Kolstad

BAKER PETROLITE
A Baker Hughes company

CEMENTING SERVICE REPORT

DOWELL

DWL-406-E PRINTED IN U.S.A.

TREATMENT NUMBER	STAGE NUMBER	DOWELL STATION	DATE
15-05-	1	Williston	10-18-7

WELL NAME AND NUMBER: EPU- #8-0

POOL:

COUNTY: Roosevelt

TYPE JOB: Squeeze

LOCATION:

FORMATION: Dakota

STATE: Montana

DOWELL ENGINEER: Curt White

NAME: Murphy Oil Co

ADDRESS:

CITY & STATE: Poplar Montana

JOB INSTRUCTIONS: Squeeze Perfs at 3500' with 50 sx 50/50 poz. 8% gel.

JOB SCHEDULED FOR 1430 ARRIVED LOCATION 1400

WELL DATA

HOLE AND MUD		CASING A	CASING B	
HOLE SIZE	SIZE			STAGE TOOL
DEPTH	WEIGHT			TYPE
ROT.	GRADE			DEPTH
CABLE	THREAD			TYPE
BHT	FLOAT TYPE			DEPTH
MUD TYPE	FLOAT DEPTH			ROT.
	SHOE TYPE			RECIP.
MUD WT.	SHOE DEPTH			CENTRALIZER
MUD VISC.	CAPACITY			

TUBING-D. P.	HEADS & PLUGS	SQUEEZE	
SIZE 2 7/8	DOUBLE	PERFORATION	TYPE PACKER
WEIGHT	SINGLE	3500 TO	Baker
GRADE	SWEDGE	TO	DEPTH
THREAD 8 RD	KNOCKOFF	TO	3500
NEW USED	TOP	TO	TAIL PIPE
DEPTH	BOTTOM	TO	SIZE
CAPACITY 20.3	OTHER		LENGTH

TIME	PRESSURE TBG. OR D.P.	PRESSURE CASING	BARRELS PUMPED	DETAIL
1430				Rig uptruck - Safety meeting.
1500				Start Pump to Pressure Csg.
1507		1000	2	Pressure on Csg.
1510				Start Pump to Break circulation 3 BPM.
1520		1300	30	Not able to get Circulation - Shut Down.
1535				Start fresh water ahead of Cement to Squeeze
1540		1400	10	Start mixing Cement
1544		1200	23	Done mixing Cement (50 sx 50/50 poz.) Start Flush
1548		1600	30	Cement on Perfs.
1552		1800	53	Tbg flushed clear - Shut Down.
				Job Complete

REMARKS:

CEMENT DATA

CUBIC FEET	BRAND	TYPE	% GEL.	OTHER ADMIXES	%	SLURRY WT.
50	Poz.	50/50	8			13#

CUBIC FEET: MIXED _____ DISPLACED _____

PRESSURE: BREAKDOWN _____ AVERAGE _____ FINAL _____

WASHED THRU: ☐ YES ☐ NO TO _____

PUMPED BY ☒ DOWELL ☐ RIG

MEASURED BY ☒ DISPLACEMENT ☐ WIRE LINE

PRESSURE MAXIMUM 1800 MINIMUM _____

WAS CIRCULATION LOST ☒ YES ☐ NO

WAS CEMENT CIRCULATED TO SURFACE ☐ YES ☒ NO

CEMENT LEFT IN PIPE FT. ☐ NECESSITY ☐ REQ'D

MODIFIED CEMENT LICENSE APPLIED ON SACKS

GULF HIGH GEL LICENSE APPLIES ON SACKS

MATERIAL FURNISHED BY CUSTOMER

TYPE OF WELL: OIL OR GAS PROD. A ☐ STORAGE B ☐ BRINE C ☐ INJECTION D ☐

CALL BACK | DATE | CUSTOMER REPR. CONTRACTED

CUSTOMER CONSIDERED SERVICE: ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN

CEMENTING SERVICE REPORT

DWL-496-E PRINTED IN U.S.A.

TREATMENT NUMBER	STAGE NUMBER	DOWELL STATION	DATE
15-05-	2	Williston	10-19-7

WELL NAME AND NUMBER	LOCATION
POOL	FORMATION: Dakota
COUNTY: Roosevelt	STATE: Montana
TYPE JOB: Squeeze	DOWELL ENGINEER: Curt White

NAME: Murphy Oil Co.

ADDRESS:

Poplar

CITY & STATE: Montana

JOB INSTRUCTIONS: Squeeze Perfs at 3500 with 100 sx 50/50 poz.

JOB SCHEDULED FOR 0700 ARRIVED LOCATION 0700

WELL DATA

HOLE AND MUD		CASING A	CASING B	
HOLE SIZE	SIZE	5 1/2		STAGE TOOL
DEPTH	WEIGHT	15.50		TYPE
ROT.	GRADE			DEPTH
CABLE	THREAD	8 RD		TYPE
BHT	FLOAT TYPE			DEPTH
MUD TYPE	FLOAT DEPTH			ROT.
	SHOE TYPE			RECIP.
MUD WT.	SHOE DEPTH			CENTRALIZER
MUD VISC.	CAPACITY			

TUBING-D. P.	HEADS & PLUGS	SQUEEZE	
SIZE 2 7/8	DOUBLE	PERFORATION	TYPE PACKE
WEIGHT	SINGLE	3695	Baker
GRADE	SWEDGE	TO	DEPTH
THREAD	KNOCKOFF	TO	3500
NEW USED	TOP	TO	TAIL PIPE
DEPTH	BOTTOM	TO	SIZE
CAPACITY 20.3	OTHER		LENGTH

TIME	PRESSURE TBG. OR D.P.	PRESSURE CASING	BARRELS PUMPED	DETAIL
0710				Rig up truck - Safety Meeting.
0750		700	2	Start Pump to pressure Csg.
0752				Start Pump to Break Circulation
0801			30	Not able to get circulation - Shut Down
0830		1400		Start fresh water ahead of Cement.
0835		1000	10	Start Mixing cement
0842		1400	35	Done mixing cement (100 sx 50/50 poz.) Start flush
0844		1600	36	Cement on Perfs. - Pressure Increasing.
0847		1900	60	Tbg. flushed Clear - Shut Down
				Job complete

REMARKS:

CEMENT DATA

CUBIC FEET	BRAND	TYPE	% GEL.	OTHER ADMIXES	%	SLURRY WT.
100	Poz	50/50	8			13#

CUBIC FEET: MIXED _____ DISPLACED _____

PRESSURE: BREAKDOWN _____ AVERAGE _____ FINAL _____

WASHED THRU: ☐ YES ☐ NO TO _____

PUMPED BY ☒ DOWELL ☐ RIG

MEASURED BY ☒ DISPLACEMENT ☐ WIRE LINE

PRESSURE MAXIMUM 1900 MINIMUM _____

WAS CIRCULATION LOST ☒ YES ☐ NO

WAS CEMENT CIRCULATED TO SURFACE ☐ YES ☒ NO

CEMENT LEFT IN PIPE FT. ☐ NECESSITY ☐ REQ'D

MODIFIED CEMENT LICENSE APPLIED ON _____ SACKS GULF HIGH GEL LICENSE APPLIES ON _____ SACKS

MATERIAL FURNISHED BY CUSTOMER

TYPE OF WELL: OIL OR GAS PROD. A ☐ STORAGE B ☐ BRINE C ☐ INJECTION D ☐

CALL BACK | DATE | CUSTOMER REPR. CONTRACTED

CUSTOMER CONSIDERED SERVICE: ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN

CEMENTING SERVICE REPORT

DWL-490-E PRINTED IN U.S.A.

TREATMENT NUMBER	STAGE NUMBER	DOWELL STATION	DATE
15-05-		Williston	10-20-72

WELL NAME AND NUMBER: EPU #8-A

LOCATION:

POOL: East Poplar

FORMATION: Dakota

COUNTY: Roosevelt

STATE: Montana

TYPE JOB: Squeeze

DOWELL ENGINEER: Curt White

NAME: Murphy Oil Co

ADDRESS:

CITY & STATE: Poplar, Montana

JOB INSTRUCTIONS:

JOB SCHEDULED FOR 0800 ARRIVED LOCATION 0800

WELL DATA

HOLE AND MUD		CASING A	CASING B	
HOLE SIZE	SIZE	5 1/2		STAGE TOOL
DEPTH	WEIGHT	15.50		TYPE
ROT.	GRADE			DEPTH
CABLE	THREAD	8RD		TYPE
BHT	FLOAT TYPE			DEPTH
MUD TYPE	FLOAT DEPTH			ROT.
	SHOE TYPE			RECIP.
MUD WT.	SHOE DEPTH			CENTRALIZER
MUD VISC.	CAPACITY			

TUBING-D. P.	HEADS & PLUGS	SQUEEZE	
SIZE 2 7/8	DOUBLE	PERFORATION	TYPE PACKER
WEIGHT 9.6	SINGLE	3695-0	Baker
GRADE	SWEDGE	TO	DEPTH
THREAD	KNOCKOFF	TO	3516
NEW USED	TOP	TO	TAIL PIPE
DEPTH	BOTTOM	TO	SIZE
CAPACITY	OTHER		LENGTH

TIME	PRESSURE TBG. OR D.P.	PRESSURE CASING	BARRELS PUMPED	DETAIL
0800				Rig up truck - Safety Meeting.
0815	1400		1/2	Test Squeeze - Not Holding.
1045		1000	1/2	Pressure Csg.
1046	1400	1000		Start Pump Salt Water Up Tbg.
1050	1400	1000		Repressure Csg.
1054	1400	1000		" "
1058	1400	1000		" "
1104	1400	1000		" "
1107	1200	1000	90	Start Fresh Water
1116	1400	1000	100	Mix Cement
1119	1000	1000	110	Done Mixing Cement - Start Flush
1130	1800	800	135	Tbg Cleared of Cement - Shut Down

REMARKS: left 50 ft. of Cement in 5 1/2 Csg.

CEMENT DATA

CUBIC FEET	BRAND	TYPE	% GEL.	OTHER ADMIXES	%	SLURRY WT.
50		G		Calcium Chloride	2	16#

CUBIC FEET: MIXED ____ DISPLACED ____

PRESSURE: BREAKDOWN ____ AVERAGE ____ FINAL ____

WASHED THRU: ☐ YES ☐ NO TO ____

PUMPED BY ☒ DOWELL ☐ RIG

MEASURED BY ☒ DISPLACEMENT ☐ WIRE LINE

PRESSURE MAXIMUM 1800 MINIMUM ____

WAS CIRCULATION LOST ☐ YES ☐ NO

WAS CEMENT CIRCULATED TO SURFACE ☐ YES ☐ NO

CEMENT LEFT IN PIPE FT. ☐ NECESSITY ☐ REQ'D

MODIFIED CEMENT LICENSE APPLIED ON ____ SACKS

GULF HIGH GEL LICENSE APPLIES ON ____ SACKS

MATERIAL FURNISHED BY CUSTOMER

TYPE OF WELL: OIL OR GAS PROD. A ☐ STORAGE B ☐ BRINE C ☐ INJECTION D ☐

CALL BACK | DATE | CUSTOMER REPR. CONTRACTED

CUSTOMER CONSIDERED SERVICE: ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN

CEMENTING SERVICE REPORT

DOWELL

DWL-496-E PRINTED IN U.S.A.

TREATMENT NUMBER	STAGE NUMBER	DOWELL STATION	DATE
15-05-	2	Williston	10-21-72

WELL NAME AND NUMBER: EPU #86	LOCATION:
POOL: East Poplar	FORMATION: Dakota
COUNTY: Roosevelt	STATE: Mont.
TYPE JOB: Squeeze	DOWELL ENGINEER: Curt White

NAME: Murphy Oil Co.

ADDRESS:

Poplar

CITY & STATE: Mont.

JOB INSTRUCTIONS: Squeeze Perfs at 3000'
With 200 sx 50/50 Poz. 8% gel.
160 sx 50/50 Poz. 2% gel.
100 sx. Peg 2% C.C.

JOB SCHEDULED FOR | ARRIVED LOCATION

WELL DATA

HOLE AND MUD		CASING A	CASING B	
HOLE SIZE	SIZE	5 1/2		STAGE TOOL
DEPTH	WEIGHT	15.50		TYPE
ROT.	GRADE			DEPTH
CABLE	THREAD			TYPE
BHT	FLOAT TYPE			DEPTH
MUD TYPE	FLOAT DEPTH			ROT.
	SHOE TYPE			RECIP.
MUD WT.	SHOE DEPTH			CENTRALIZER
MUD VISC.	CAPACITY			

TUBING-D. P.	HEADS & PLUGS	SQUEEZE	
SIZE 2 7/8	DOUBLE	PERFORATION	TYPE PACKER
WEIGHT 9.6	SINGLE	3000 TO	Baker
GRADE	SWEDGE	TO	DEPTH
THREAD	KNOCKOFF	TO	2713
NEW USED	TOP	TO	TAIL PIPE
DEPTH	BOTTOM	TO	SIZE
CAPACITY	OTHER		LENGTH

TIME	PRESSURE TBG. OR D.P.	PRESSURE CASING	BARRELS PUMPED	DETAIL
~~1605~~	1000	1000		Pump Salt Water
~~1620~~	1600	1000		Pump Fresh Water
~~1623~~	1700	1000	10	Mix Cement
1630	1500	800	34	Cement on Perfs - Slight Pressure Increase
1658	1100	600	154	Start Flush
1704	1900	600	178	Cement Cleared tbg. - ~~Start~~ Staging Shut Down
1707	1100	600	180	Start Staging Cement
1720	1100	800	181	Pressure test Squeeze - Not Holding.
1737	1050	800	182	" " " - Not Holding.
1756	1300	1000	183	" " " - Not Holding.
1818	1700	—	184	" " " - " "
1834	1800	—	184 1/2	" " " - formation Squeezing.
1858	1800	—	185	" " " Squeezing Breaking Back - Shut Down

REMARKS:

CEMENT DATA

CUBIC FEET	BRAND	TYPE	% GEL.	OTHER ADMIXES.	%	SLURRY WT.
200	Poz	50/50	8			13
160	Poz.	50/50	2			13.5
100	Class	G		Calcium Chloride	2	16.

CUBIC FEET: MIXED _____ DISPLACED _____

PRESSURE: BREAKDOWN _____ AVERAGE _____ FINAL _____

WASHED THRU: ☐ YES ☐ NO. TO _____

PUMPED BY ☒ DOWELL ☐ RIG

MEASURED BY ☒ DISPLACEMENT ☐ WIRE LINE

PRESSURE MAXIMUM 1900 MINIMUM 1000

WAS CIRCULATION LOST ☒ YES ☐ NO

WAS CEMENT CIRCULATED TO SURFACE ☐ YES ☒ NO

CEMENT LEFT IN PIPE _____ FT. ☐ NECESSITY ☐ REQ'D

MODIFIED CEMENT LICENSE APPLIED ON _____ SACKS | GULF HIGH GEL LICENSE APPLIES ON _____ SACKS

MATERIAL FURNISHED BY CUSTOMER

TYPE OF WELL: OIL OR GAS PROD. A ☐ STORAGE B ☐ BRINE C ☐ INJECTION D ☐

CALL BACK | DATE | CUSTOMER REPR. CONTRACTED

CUSTOMER CONSIDERED SERVICE: ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN

TREATMENT REPORT

DOWELL

PRINTED IN U.S.A.

DOWELL DIVISION OF THE DOW CHEMICAL COMP.

DATE: 10-23-72

WELL NAME AND NUMBER: E.P.U. #8	LOCATION: East Poplar	CUSTOMER REPRESENTATIVE: MR. Logering	TREATMENT NUMBER: 15-05-6879
POOL: East Poplar	FORMATION:	JOB DONE DOWN: TUBING A ☒ CASING B ☐ ANNULUS C ☐	ALLOWABLE PRESSURE: TBG. 3500 CSG.
COUNTY: Roosevelt	STATE: Montana	TYPE OF WELL: OIL A ☐ GAS B ☐ WATER C ☐ INJ. D ☒	
TYPE OF SERVICE: Pump Rental		AGE OF WELL: NEW WELL A ☐ REWORK B ☒	TOTAL DEPTH: CIRC. BHT.:
CUST. NAME: Murphy Oil Corp.		CASING SIZE: CASING DEPTH:	TUBING SIZE: 2⅞ TUBING DEPTH:
ADDRESS: Murphy Bldg.		LINER SIZE: LINER DEPTH:	PACKER TYPE: Baker PACKER DEPTH: 3390
CITY, STATE & ZIP CODE: El Dorado Arkansas 71730		OPEN HOLE: CSG. OR ANNL. VOL.:	TBG VOLUME: 23 STATIC BHT.:
REMARKS:		PERFORATED INTERVALS: DEPTH / NO. OF HOLES / DEPTH / NO. OF HOLES / DEPTH / NO. OF HOLES	

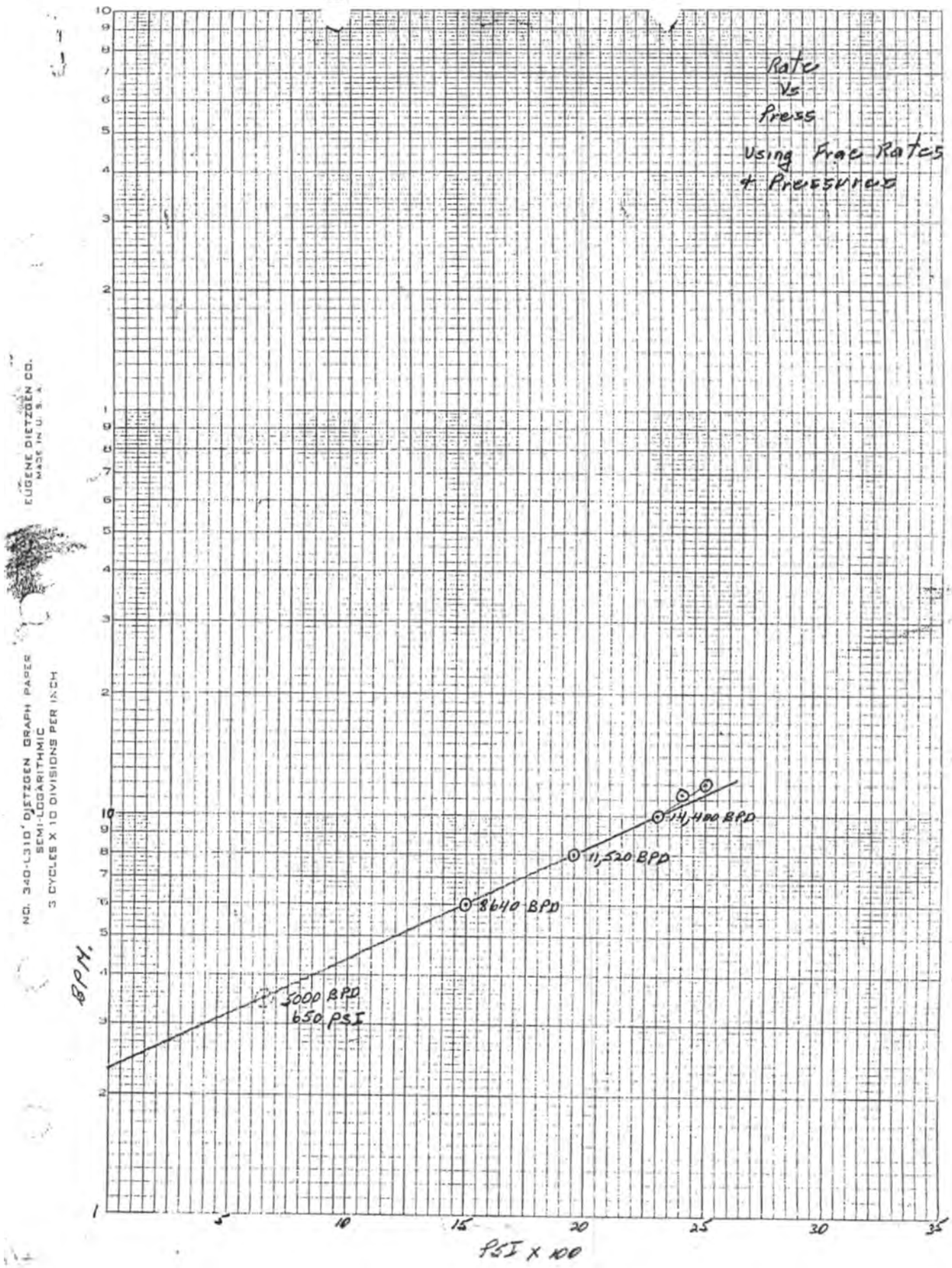
FOR CONVERSION PURPOSES 24 BBLS EQUALS 1000 GALLONS

ARRIVED ON LOCATION:

TIME	INJECTION RATE	INJECTION BBLS IN	PRESSURE CSG.	PRESSURE TBG.	SERVICE LOG
					Saftey meeting Hook up
9:28					Start 200 BBl Saltwater via tubing
					Est. Rate & Pressure
9:40	10.5	200	-	3200	200 BBl Pumped stop Pump
					AVG Rate 10.5 AVG psi 3200
11:05					Rig Pump to tubing Pump 200 BBl Salt
11:25	11.5	200	-	2600	water Est. Rate & Pressure
					AVG. Rate 11.5 AVG PSi 2600
12:45					Rig Pump to tubing Pump 200 BBl Salt water
					Est. Rate & Pressure
					AVG Rate 12 AVG psi 2500
1:04	12	200	.	2500	200 BBl Pump Start 1st of 300 1.3 sp.gr Balls
1:23	12	410	-	2500	410 BBl Pumped Rate @ 12 psi @ 2500
					Rig Pump to tubing Pump 390 BBls to
					Est Rate & psi
					Rate @ 6 BPM psi @ 6 BPM 1500
					Rate @ 8 BPM psi @ 8 BPM 1950
					Rate @ 10 BPM psi @ 10 BPM 2300
					Rate @ 11.5 BPM psi @ 11.5 BPM 2400

TIME LEFT LOCATION: 4:00	AVG. LIQUID INJ. RATE: 11 Bpm	ADDITIONAL RATE (SOLIDS INC.)	TOTAL FLUID PUMPED: OIL / WATER 1200	PROPS AND LIQUIDS INJECTED: TYPE / SIZE OR PURPOSE / AMOUNT
MAX. PRESSURE: 3200	AVG. PRESSURE: 2500	FINAL PUMP IN PRESSURE: 2400	SHUT IN PRESSURE: IMMEDIATE / 15 MINUTES	Ball Sealers / 7/8" 1.3 sp.gr / 300
DOWELL LOCATION: Glendive, Montana	DOWELL ENGINEER: DARRYl Dobie			

CALL BACK: DATE - | CUSTOMER REP. CONTACTED. | CUSTOMER CONSIDERED SERVICE ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN | PROD. BEFORE TREATMENT TEST ☐ ALLOWABLE ☐ | PROD. AFTER TREATMENT DAYS TEST ☐ ALLOWABLE ☐


Rate
Vs
Press
Using Frac Rates
& Pressures
BPM.
PSI X 100
3000 BPD
650 PSI
8640 BPD
11,520 BPD
14,400 BPD
NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH
EUGENE DIETZGEN CO.
MADE IN U. S. A.

CEMENTING SERVICE REPORT

DWL-400-E PRINTED IN U.S.A.

TREATMENT NUMBER	STAGE NUMBER	DOWELL STATION	DATE
5-05-		Williston	10-21-72

WELL NAME AND NUMBER: EPU #8S	LOCATION:
POOL: East Poplar	FORMATION: Dakota
COUNTY: Roosevelt	STATE: Mont.
TYPE JOB: Squeeze	DOWELL ENGINEER: Curt White

NAME: Murphy Oil Co.

ADDRESS:

Poplar

CITY & STATE: Montana

JOB INSTRUCTIONS: Set Plug at 3635' with 50sx 50/50 Poz. 8% gel. - 50sx Reg. 2% c.c.

JOB SCHEDULED FOR: 0700 ARRIVED LOCATION: 0700

WELL DATA

HOLE AND MUD		CASING A	CASING B	
HOLE SIZE	SIZE	5½		STAGE TOOL
DEPTH	WEIGHT	15.50		TYPE
ROT.	GRADE			DEPTH
CABLE	THREAD	8 RD		TYPE
BHT	FLOAT TYPE			DEPTH
MUD TYPE	FLOAT DEPTH			ROT.
	SHOE TYPE			RECIP.
MUD WT.	SHOE DEPTH			CENTRALIZER
MUD VISC.	CAPACITY			

TUBING-D.P.	HEADS & PLUGS	SQUEEZE	
SIZE	DOUBLE	PERFORATION	TYPE PACKER
WEIGHT	SINGLE	3 TO	Baker
GRADE	SWEDGE	TO	DEPTH
THREAD	KNOCKOFF	TO	3635
NEW USED	TOP	TO	TAIL PIPE
DEPTH	BOTTOM	TO	SIZE
CAPACITY	OTHER		LENGTH

TIME	PRESSURE TBG. OR D.P.	PRESSURE CASING	BARRELS PUMPED	DETAIL
0715				Rig up truck - Safety Meeting.
0715	500		1/2	Test Squeeze - Not Holding.
0745		1000	1/2	Pressure Csg.
1347	1700	600	10	Pump fresh Water
1352	1000	200		Mix Cement
1357	500	100	22	Tear down Mixer to mix sack cement.
1359	1500	100	52	Mix sack cement
1408	1800	1000	32	Start flush
1413	2100	800		Shut Down - Tbg Cleared

REMARKS:

CEMENT DATA

CUBIC FEET	BRAND	TYPE	% GEL	OTHER ADMIXES	%	SLURRY WT.
1050	Poz	50/50	8			13
50	Class G			Calcium Chloride	2	16

CUBIC FEET: MIXED _____ DISPLACED _____

PRESSURE: BREAKDOWN _____ AVERAGE _____ FINAL _____

WASHED THRU: ☐ YES ☐ NO TO _____

PUMPED BY: ☒ DOWELL ☐ RIG

MEASURED BY: ☒ DISPLACEMENT ☐ WIRE LINE

PRESSURE: MAXIMUM 2100 MINIMUM _____

WAS CIRCULATION LOST ☐ YES ☐ NO

WAS CEMENT CIRCULATED TO SURFACE ☐ YES ☐ NO

CEMENT LEFT IN PIPE _____ FT. ☐ NECESSITY ☐ REQ'D

MODIFIED CEMENT LICENSE APPLIED ON _____ SACKS

GULF HIGH GEL LICENSE APPLIES ON _____ SACKS

MATERIAL FURNISHED BY CUSTOMER

TYPE OF WELL: OIL OR GAS PROD. A ☐ STORAGE B ☐ BRINE C ☐ INJECTION D ☐

CALL BACK | DATE | CUSTOMER REPR. CONTRACTED

CUSTOMER CONSIDERED SERVICE: ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN

STIMULATION TREATMENT REPORT

DOWELL

DWL-494-J PRINTED IN U.S.A. DOWELL DIVISION OF THE DOW CHEMICAL COMPANY

DATE 10-2-73

WELL NAME AND NUMBER: 8-D	LOCATION:	CUSTOMER REPRESENTATIVE: MR O'Brian	TREATMENT NUMBER: 15-05-7615
POOL: FPU	FORMATION:	JOB DONE DOWN: TUBING A☑ CASING B☐ ANNULUS C☐	ALLOWABLE PRESSURE: TBG: CSG:
COUNTY: Roosevelt	STATE: Mont	TYPE OF WELL: OIL A☐ GAS B☐ WATER C☐ INJ. D☐	
TYPE OF SERVICE:		AGE OF WELL: NEW WELL A☐ REWORK B☐	TOTAL DEPTH / CIRC. BHT.

CUST. NAME: Murphy Corp

ADDRESS:

CITY, STATE & ZIP CODE:

REMARKS:

CASING SIZE	CASING DEPTH	TUBING SIZE	TUBING DEPTH
LINER SIZE	LINER DEPTH	PACKER TYPE	PACKER DEPTH
OPEN HOLE	CSG.OR ANRL.VOL.	TBG VOLUME	STATIC BHT.

PERFORATED INTERVALS

DEPTH	NO. OF HOLES	DEPTH	NO. OF HOLES	DEPTH	NO. OF HOLES

FOR CONVERSION PURPOSES 24 BBLS EQUALS 1000 GALLONS

ARRIVED ON LOCATION:

TIME	INJECTION RATE	BBLS IN	PRESSURE CSG.	PRESSURE TBG.	SERVICE LOG
					Rig Pump to tubing Safty Meeting
1:30	2			200	Start 40BBl Fresh water
1:50	2			400	40 BBl Pumped Start 40 BBl acid
2:10	2			400	80 BBl Pumped Start 15 Bbl Fresh water
2:18	2			400	95 BBl pumped Shutdown Tie inj Pump to well
					MAX RATE 2 MAX PSI 400
					Min " 2 Min " 200
					AVG " 2 AVG " 300
					Total load 95 Bbl

TIME LEFT LOCATION	AVG. LIQUID INJ. RATE	ADJ. INJ. RATE (SOLIDS INCL)	TOTAL FLUID PUMPED: OIL / WATER
MAX. PRESSURE	AVG. PRESSURE	FINAL PUMP IN PRESSURE	SHUT IN PRESSURE: IMMEDIATE / 15-MINUTES
DOWELL LOCATION		DOWELL ENGINEER	

PROPS AND LIQUIDS INJECTED

TYPE	SIZE OR PURPOSE	AMOUNT

CALL BACK	DATE	CUSTOMER REP. CONTACTED	CUSTOMER CONSIDERED SERVICE ☐ SATISFACTORY ☐ UNSATISFACTORY ☐ UNKNOWN	PROD. BEFORE TREATMENT ☐ TEST ☐ ALLOWABLE	PROD. AFTER TREATMENT ☐ DAYS ☐ TEST ☐ ALLOWABLE

Legal Description
SEC 10
Twp 28-S
Rge 41E

GEARHART INDUSTRIES, INC.
WIRELINE SERVICES
P.O. Box 1258 / Fort Worth, Texas 76101

ID #
Job Ticket **306442**
Invoice #
Cust. Order #
Date of service 3-8-85
Schedule zone
District
R&S Code

Bill to: Murphy Oil Corp
Address:
City State Zip
Lease and Well No. Eddy Unit 8-D
Field East Poplar Unit County Sucrtoan
Job No. 6016 State Texas

TO GEARHART INDUSTRIES, INC.
You are hereby requested to furnish the service and materials and equipment herein set forth. Unless there is presently in effect a master or other specific or general contract intended to extend and apply to such service, materials and equipment (in which case such master, specific or general contract shall apply in accordance with its terms), these will be supplied in accordance with your General Terms and Conditions as set out on the back of this form. It is understood that certain of these, including (but not limited to) Chemical Cutters and Radioactive Materials, are potentially dangerous to persons, animals and property and accordingly the said General Terms and Conditions contain certain DISCLAIMERS OF LIABILITY and INDEMNITIES. It is expressly accepted and agreed that (unless there is in effect a master or other specific or general contract as aforesaid) the said General Terms and Conditions shall supersede and replace any and all terms of any other contract or arrangement which may otherwise apply or be deemed to apply to the furnishing of the service, materials and equipment to the extent that any such term modifies, conflicts with, contradicts or is added to any term of this form or the said General Terms and Conditions.

Name of Customer X Signature of Customer or Authorized Agent (also required on reverse)

INSTRUMENT PROTECTION: ☐ NOT OFFERED ☐ Accepted ☐ Not Accepted Signature of Customer/Agent: X

Service Code	Description	S/N	Depth or Quantity	Rate	Amount
1000-001	Service Charge				400.00
1200-003					~~300.00~~
1600-144	Mast Truck				300.00
1430-010	Run RA TRACER				
	Depth 940		min		520.00
	Operations		min		360.00
	Instrument Protection:				
	List Third Party/Other Charges Below				
					1580.00
					~~1880.00~~

Well Data
Perm. Datum Elev.
Log from: to:
Depth: Driller Logger
Size: Casing @ Bit
Borehole fluid: Type pH
Density Viscosity
Fluid loss Sample source
BHT Rm @ temp
RMF @ temp Rmc @ temp
Other:

	Date	Time	ET
Report/rel.	3-8-85	5:00	
Arrive Loc.		8:00	3
Rig up		10:00	2
Oper: DTL - TRACER		Begin: 10:00	
Run #: 1		End: 12:00	3
Oper: MOVE TO OTHER		Begin: 12:00	
Run #: WE		End: 12:30	1.5
Oper: DTL - TRACER		Begin: 14:30	
Run #: INC	3-8-85	End: 18:30	4
Oper: DTL - TRACER		Begin: 8:00	
Run #: 2	3-9-85	End: 12:00	4
Oper: DTL - TRACER		Begin: 12:00	
Run #: 3	3-9-85	End: 16:00	4
Oper: DTL - TRACER		Begin: 16:00	
Run #: 4		End: 19:00	3
Oper:		Begin:	
Run #:		End:	
Oper:		Begin:	
Run #:		End:	
Oper:		Begin:	
Run #:		End:	
Rig down:		Time:	
Depart:		Time:	
Shop/Loc:		Time:	
Oper:		Begin:	
Run #:		End:	

Received by customer: Field prints (+) Film (+) Tape ( ) Other ( )
Signature of Customer/Agent: X
Third Party Charges:
Invoice #'s
Remarks: Logged Temp TRACER on Wells
① 4-D
② D-5
③ 1-D
④ 6-D
⑤ 2-D Tie-in

Review
Cr
Pr
Dt

Gearhart Engineer: Gary Chancellor
I Acknowledge Completion of the Foregoing Job
X Signature of Customer/Agent

CUSTOMERS COPY

WS-592 8-82 R6-84

HALLIBURTON SERVICES
A DIVISION OF HALLIBURTON COMPANY

REMIT TO
P.O. BOX 84737
DALLAS, TEXAS 75284
DIRECT ANY CORRESPONDENCE TO
P.O. DRAWER 1431
DUNCAN, OKLAHOMA 73536

TICKET NO. 249403-0

FORM 1906 R9

PAGE 1 OF 1 PAGES

WELL NO. – FARM OR LEASE NAME	COUNTY	STATE	CITY/OFFSHORE LOCATION	DATE
8-D East Poplar Unit	Roosevelt	MT		1-25-85

CHARGE TO	OWNER	TICKET TYPE (CHECK ONE)	NITROGEN JOB
Murphy Oil USA	SAME	SERVICE ☒ SALES ☐	YES ☐ NO ☒

ADDRESS	CONTRACTOR	LOCATION	CODE
Box 547	Allen well serv.	1 Glendive	55530

CITY, STATE, ZIP	SHIPPED VIA	FREIGHT CHARGES	LOCATION	CODE
Poplar MT 59255		☐ PPD ☐ COLLECT	2	

DELIVERED TO	LOCATION	CODE
	3	

ORDER NO.	REFERRAL LOCATION

WELL TYPE	WELL CATEGORY	WELL PERMIT NO.
03 Disposal	workover	

TYPE AND PURPOSE OF JOB	
435 kill well	B–

DUNCAN USE ONLY

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATE PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC.	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT
Rum-115				MILEAGE	123	mi			.90	110 70
Rum-205				pump chg	0/1000	165	4	hr		715 00
Rum-213				additional hours	2	ea	0/1000	hr	120.00	240 00

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B–

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

X Gerald Unruhe
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X [signature]
CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

Thank you

TAX REFERENCES

SUB TOTAL	
TAX	
TAX	
TAX	
TOTAL	

Donald Simpkins
HALLIBURTON OPERATOR

EXTRA COPY

received invoice
sent in! JH

HALLIBURTON ENERGY SERVICES

FORM 1906 R-12

CHARGE TO: Murphy Oil CO

ADDRESS

CITY, STATE, ZIP CODE

COPY

TICKET No. 472948 - 3

PAGE 1 OF

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY/OFFSHORE LOCATION	DATE	OWNER
1. Williston	8-D	EPU	Roosevelt	MT		8-8-95	same

2.	TICKET TYPE ☒ SERVICE ☐ SALES	NITROGEN JOB? ☐ YES ☒ NO	CONTRACTOR None	RIG NAME/NO.	SHIPPED VIA Truck	DELIVERED TO LOC	ORDER NO.
3.	WELL TYPE 11	WELL CATEGORY 2	JOB PURPOSE 460 Injection Test			WELL PERMIT NO.	WELL LOCATION
4.							

REFERRAL LOCATION | INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	TIME	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
500-111						MILEAGE	180	mi	1	eq	2.75	495.00
011-205						Pumping chg						1125.00
307-772						computer system	1 Job					660.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY,** and **LIMITED WARRANTY** provisions.

CUSTOMER OR CUSTOMER'S AGENT SIGNATURE: X Ray Reede

DATE SIGNED | TIME SIGNED ☐ A.M. ☐ P.M.

I ☐ do ☐ do not require IPC (Instrument Protection). ☐ Not offered

SUB SURFACE SAFETY VALVE WAS: ☐ PULLED & RETURN ☐ PULLED ☐ RUN

TYPE LOCK	DEPTH
BEAN SIZE	SPACERS
TYPE OF EQUALIZING SUB.	CASING PRESSURE
TUBING SIZE	TUBING PRESSURE / WELL DEPTH
TREE CONNECTION	TYPE VALVE

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			

ARE YOU SATISFIED WITH OUR SERVICE? ☐ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL	2280.00
FROM CONTINUATION PAGE(S)	
SUB-TOTAL APPLICABLE TAXES WILL BE ADDED ON INVOICE	

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowleges receipt of the materials and services listed on this ticket.

CUSTOMER OR CUSTOMER'S AGENT (PLEASE PRINT): Ray Reede

CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE): X Ray Reede

HALLIBURTON OPERATOR/ENGINEER: MARK Buehm EMP # D-8017

HALLIBURTON APPROVAL

HALLIBURTON ENERGY SERVICES

JOB SUMMARY

HALLIBURTON DIVISION: Western

HALLIBURTON LOCATION: Williston

BILLED ON TICKET NO. 472948

WELL DATA

FIELD: EPU SEC. 10 TWP. 28N RNG. 51E COUNTY: Roosevelt STATE: MT

FORMATION NAME: Judith River TYPE: Disposal

FORMATION THICKNESS: ____ FROM: ____ TO: ____

INITIAL PROD: OIL ____ BPD. WATER ____ BPD. GAS ____ MCFD

PRESENT PROD: OIL ____ BPD. WATER ____ BPD. GAS ____ MCFD

COMPLETION DATE ____ MUD TYPE ____ MUD WT. ____

PACKER TYPE ____ SET AT ____

BOTTOM HOLE TEMP. ____ PRESSURE ____

MISC. DATA ____ TOTAL DEPTH ____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	U	15.5	5.5	KB	TD	
LINER						
TUBING	U	6.5	2 7/8	KB	719	
OPEN HOLE						SHOTS/FT.
PERFORATIONS				830	880	
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 8-8-95	DATE 8-8-95	DATE 8-8-95	DATE 8-8-95
TIME 500	TIME 830	TIME 940	TIME 1300

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
Ph. Boehm	93130	55860
F. Kjorstad	52809 7540	"

MATERIALS

TREAT. FLUID ____ DENSITY ____ LB/GAL.-°API

DISPL. FLUID ____ DENSITY ____ LB/GAL.-°API

PROP. TYPE ____ SIZE ____ LB. ____

PROP. TYPE ____ SIZE ____ LB. ____

ACID TYPE ____ GAL ____ % ____

ACID TYPE ____ GAL. ____ % ____

ACID TYPE ____ GAL. ____ % ____

SURFACTANT TYPE ____ GAL. ____ IN ____

NE AGENT TYPE ____ GAL. ____ IN ____

FLUID LOSS ADD. TYPE ____ GAL.-LB. ____ IN ____

GELLING AGENT TYPE ____ GAL.-LB. ____ IN ____

FRIC. RED. AGENT TYPE ____ GAL.-LB ____ IN ____

BREAKER TYPE ____ GAL.-LB ____ IN ____

BLOCKING AGENT TYPE ____ GAL.-LB. ____

PERFPAC BALLS TYPE ____ QTY. ____

OTHER ____

OTHER ____

DEPARTMENT: 5005

DESCRIPTION OF JOB: STEP RATE TEST

JOB DONE THRU: TUBING ☒ CASING ☐ ANNULUS ☐ TBG./ANN. ☐

CUSTOMER REPRESENTATIVE X [signature]

HALLIBURTON OPERATOR: MARK Boehm COPIES REQUESTED ____

CEMENT DATA

STAGE	NUMBER OF SACKS	CEMENT	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

SUMMARY

PRESSURES IN PSI

CIRCULATING ____ DISPLACEMENT ____

BREAKDOWN ____ MAXIMUM ____

AVERAGE ____ FRACTURE GRADIENT ____

SHUT-IN, INSTANT ____ 5-MIN ____ 15-MIN ____

HYDRAULIC HORSEPOWER

ORDERED ____ AVAILABLE ____ USED ____

AVERAGE RATES IN BPM

TREATING ____ DISPL. ____ OVERALL ____

CEMENT LEFT IN PIPE

FEET ____ REASON ____

VOLUMES

PRESLUSH: BBL.-GAL. ____ TYPE ____

LOAD & BKDN: BBL.-GAL. ____ PAD: BBL.-GAL. ____

TREATMENT: BBL.-GAL. ____ DISPL: BBL.-GAL. ____

CEMENT SLURRY: BBL.-GAL. ____

TOTAL VOLUME: BBL.-GAL. 27498

RAMARKS

see Job Log

CUSTOMER: Murphy Oil Co

LEASE: EPU

WELL NO.: 8-D

JOB TYPE: STEP RATE TEST

DATE: 8-8-95

FORM 2025-R3

CUSTOMER

HALLIBURTON

JOB LOG FORM 2013 R-4

DATE 8-8-95 PAGE NO.

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
Murphy Oil	8-D	EPU	Step Rate Test	472948

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								on loc Rig up & have
								safety meeting
								Step Rate Test
	0940	.5				348		.5 Bpm Test
	0955	.5				366		15 min Rate PSI
						371		30 min Rate PSI
	1011	1	655			390		1 Bpm Test
						417		15 min
						417		30 min
	1042	2	1920			448		2 Bpm Test
						481		15 min
								30 min
	1113	4	[illegible]			642		4 Bpm Test
						615		15 min
						610		30 min
	1143	6	9735			700		6 Bpm Test
						706		15 min
						703		30 min
	1213	8	17375			820		8 Bpm Test
						818		15 min
						855		30 min
	1241		27498			523		ISIP
	1249					482		5 min
						470		10 min
						464		15 min
	1350							Rig Down Job complete
								thank you work crew

CUSTOMER

HALLIBURTON SERVICES
A Division of Halliburton Company
DUNCAN, OKLAHOMA 73536

FORM 1908 R-4

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 249324

DISTRICT Williston DATE 9-24-85

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murphy Oil Co. (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 8-D LEASE BM SEC. 10 TWP. 28N RANGE 51E

FIELD East Poplar COUNTY Roosevelt STATE Mont OWNED BY Same

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT _____

TOTAL DEPTH _____ MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING	U	15.5#	5½	Surface	TD	
LINER						
TUBING	U	6.5#	2⅞	Surface	318'	
OPEN HOLE						SHOTS/FT.
PERFORATIONS				725		
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☐ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☒ HYDRAULIC HORSEPOWER ORDERED

Kill Well

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

As consideration, the above-named Customer agrees:

(a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists.

(b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.

(c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton.

(d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.

(e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

(f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.

(g) Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

(h) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it.

(i) Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTIABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequental damages.

(j) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

(k) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished.

(l) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED Ray Reeds CUSTOMER

DATE 9-24-85

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

TIME 0900 A.M. P.M.

CUSTOMER

HALLIBURTON SERVICES
A Division of Halliburton Company
DUNCAN, OKLAHOMA 73536

FORM 1908 R-4

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 249403

DISTRICT Williston DATE 9-25-85

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murphy Oil USA (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 8-D LEASE East Poplar Unit SEC. 10 TWP. 25N RANGE 51E

FIELD _____ COUNTY Roosevelt STATE MT OWNED BY SAME

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT _____

TOTAL DEPTH _____ MUD WEIGHT 18.5

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING	U	15.5	5½	KB	826T	
LINER						
TUBING	U	6.5	2⅞	KB	814	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS					825	
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☐ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☒ HYDRAULIC HORSEPOWER ORDERED

Mix mud + Kill well

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

As consideration, the above-named Customer agrees:

(a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists.

(b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.

(c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton.

(d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.

(e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

(f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.

(g) Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

(h) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it.

(i) Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTIABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequental damages.

(j) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

(k) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished.

(l) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED [signature] CUSTOMER

DATE 9-25-85

TIME 715 (A.M.) P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

CUSTOMER

HALLIBURTON SERVICES

JOB LOG

FORM 2013 R-2

WELL NO. 6-D LEASE BAI TICKET NO. 249324

CUSTOMER Murphy Oil Co PAGE NO. 1

JOB TYPE Kill Well DATE 9-26-95

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	0600							Oil Loc Rig up
	0845	6	20			500		Mix mud
	0920	1	1			2000		Press Test Lines
	0921	1	5½			300		Pump down Tub (dead) Pull Tu
	0930	1	10½				500	Pump down csg (dead) Pull Tub
	1020	6	20			500		Mix up mud
	1054	½	7				250	Pump down Ann (dead)
	1127	1	6			250		Pump down Tub (dead)
	1201	6	14			500		Mix up mud
	1215	1	3				300	Pump down Ann (dead)
	1237	1	3			100		Pump down Tub (dead)
	1249	—	—			—		Pull Tub
	1431	1	3				500	Set Packer & Test Ann (not holding)
	1450	—	—			—	—	Pull one Joint
	1452	1	½				300	Set Packer & Test Ann (not holding)
	1503	1½	14				300	Release Packer & circ mud out
	1516	½	—				700	Test Packer (holding 500 PSI)
	1519	½	—				700	Tighten Packer & Test Packer (holding 500)
	1530	—	—				—	Released for today Packer sheared off

Thanks Jay

CUSTOMER

HALLIBURTON SERVICES
A DIVISION OF HALLIBURTON COMPANY

REMIT TO
P.C X 84737
DALLAS, TEXAS 75284
DIRECT ANY CORRESPONDENCE TO
P.O. DRAWER 1431
DUNCAN, OKLAHOMA 73536

TICKET NO. 249324-9

FORM 1906 R9

PAGE 1 OF 1 PAGES

WELL NO. – FARM OR LEASE NAME	COUNTY	STATE	CITY/OFFSHORE LOCATION	DATE
2-D	Roosevelt	Mont		9-24-85

CHARGE TO	OWNER	TICKET TYPE (CHECK ONE)	NITROGEN JOB
Murphy Oil USA	Same	SERVICE [X] SALES [ ]	YES [ ] NO [X]

ADDRESS	CONTRACTOR	LOCATION	CODE
Box 547	Allison	1 Glendive	55-30

CITY, STATE, ZIP	SHIPPED VIA	FREIGHT CHARGES	LOCATION	CODE
Poplar Mont 59255	Co Uni	[ ] PPD [ ] COLLECT	2	

DELIVERED TO	LOCATION	CODE
Loc	3	

ORDER NO.	REFERRAL LOCATION

WELL TYPE	WELL CATEGORY	WELL PERMIT NO.
07 Injection	02 Workover	

TYPE AND PURPOSE OF JOB	
425 Kill Well	B–

DUNCAN USE ONLY

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 16% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATE PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC.	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT	
R000-117				MILEAGE	123	mi	1	ea	2.15	264	45
R011-205				Pump Charge	[illegible]	[illegible]	4	hr		715	00
R011-234				Add hours	1	hr	6	ea	100	600	00

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B–

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

X Ray Reede
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X _____
CUSTOMER OR HIS AGENT (SIGNATURE)

TAX REFERENCES

SUB TOTAL	
TAX	
TAX	
TAX	
TOTAL	

[signature]
HALLIBURTON OPERATOR

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

[signature]
EXTRA COPY

received invoice sent in! JH

HALLIBURTON SERVICES

JOB SUMMARY

FORM 2028

HALLIBURTON DIVISION: Denver

HALLIBURTON LOCATION: Glendive

BILLED ON TICKET NO. 249324

WELL DATA

FIELD: East Poplar SEC. 10 TWP. 28N RNG. 51E COUNTY: Roosevelt STATE: Mont

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD

PRESENT PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT _____

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH _____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	4	15.5	5½	Surface	TD	
LINER						
TUBING	4	6.5#	2⅞	Surface	214	
OPEN HOLE						SHOTS/FT.
PERFORATIONS				225		
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 9-24-85	DATE 9-24-85	DATE 9-24-85	DATE 9-24-85
TIME 0200	TIME 0600	TIME 0745	TIME 1530

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
Merv D Johnson	P.U. 35705	Glendive
L Harbor	T.C.-S 2331-5374	"

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL. °API

DISPL. FLUID _____ DENSITY _____ LB/GAL. °API

PROP. TYPE _____ SIZE _____ LB. _____

PROP. TYPE _____ SIZE _____ LB. _____

ACID TYPE _____ GAL. _____ %

ACID TYPE _____ GAL. _____ %

ACID TYPE _____ GAL. _____ %

SURFACTANT TYPE _____ GAL. _____ IN _____

NE AGENT TYPE _____ GAL. _____ IN _____

FLUID LOSS ADD. TYPE _____ GAL.-LB. _____ IN _____

GELLING AGENT TYPE _____ GAL.-LB. _____ IN _____

FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN _____

BREAKER TYPE _____ GAL.-LB. _____ IN _____

BLOCKING AGENT TYPE _____ GAL.-LB. _____

PERFPAC BALLS TYPE _____ QTY. _____

OTHER _____

OTHER _____

DEPARTMENT: Cement

DESCRIPTION OF JOB: Kill Well

JOB DONE THRU: TUBING ☐ CASING ☐ ANNULUS ☐ TBG./ANN. ☒

CUSTOMER REPRESENTATIVE: X Ray Reede

HALLIBURTON OPERATOR: Merv D Johnson

COPIES REQUESTED _____

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____

BREAKDOWN _____ MAXIMUM _____

AVERAGE _____ FRACTURE GRADIENT _____

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM

TREATING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE

FEET _____ REASON _____

SUMMARY

VOLUMES

PRESLUSH: BBL.-GAL. _____ TYPE _____

LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

TREATMENT: BBL.-GAL. 56 DISPL: BBL.-GAL. 16

CEMENT SLURRY: BBL.-GAL. _____

TOTAL VOLUME: BBL.-GAL. 72

REMARKS

See Job Log

CUSTOMER

CUSTOMER: Murphy Oil Co

LEASE

WELL NO. 2-D

JOB TYPE: Kill Well

DATE: 9-24-85

HALLIBURTON SERVICES
JOB SUMMARY
FORM 2029

HALLIBURTON DIVISION: Denver
HALLIBURTON LOCATION: Glendive
BILLED ON TICKET NO. 249403

WELL DATA

FIELD _____ SEC. 10 TWP. 28N RNG. 51E COUNTY Roosevelt STATE MT

FORMATION NAME _____ TYPE _____
FORMATION THICKNESS _____ FROM _____ TO _____
INITIAL PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD
PRESENT PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD
COMPLETION DATE _____ MUD TYPE _____ MUD WT. 18.5
PACKER TYPE _____ SET AT _____
BOTTOM HOLE TEMP. _____ PRESSURE _____
MISC. DATA _____ TOTAL DEPTH _____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	U	15.5	5 1/2	KB	826 ft	
LINER						
TUBING	U	6.5	2 7/8	KB	814	
OPEN HOLE						SHOTS/FT.
PERFORATIONS					825	
PERFORATIONS						
PERFORATIONS						

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 9-25	DATE 9-25	DATE 9-25	DATE 9-25
TIME 0300	TIME 0700	TIME 0715	TIME 1230

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
G. Scarpholt	35703	Glendive
D. Turner	2331-5374	"

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL. °API
DISPL. FLUID _____ DENSITY _____ LB/GAL. °API
PROP. TYPE _____ SIZE _____ LB. _____
PROP. TYPE _____ SIZE _____ LB. _____
ACID TYPE _____ GAL. _____
ACID TYPE _____ GAL. _____
ACID TYPE _____ GAL. _____
SURFACTANT TYPE _____ GAL. _____ IN _____
NE AGENT TYPE _____ GAL. _____ IN _____
FLUID LOSS ADD. TYPE _____ GAL.-LB. _____ IN _____
GELLING AGENT TYPE _____ GAL.-LB. _____ IN _____
FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN _____
BREAKER TYPE _____ GAL.-LB. _____ IN _____
BLOCKING AGENT TYPE _____ GAL.-LB. _____
PERFPAC BALLS TYPE _____ QTY. _____
OTHER _____
OTHER _____

DEPARTMENT CMT
DESCRIPTION OF JOB Kill well

JOB DONE THRU: TUBING ☐ CASING ☐ ANNULUS ☐ TBG./ANN. ☒
CUSTOMER REPRESENTATIVE X Gerald Hagadone
HALLIBURTON OPERATOR G.W. Scarpholt COPIES REQUESTED

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____
BREAKDOWN _____ MAXIMUM _____
AVERAGE _____ FRACTURE GRADIENT _____
SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM

TREATING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE

FEET _____ REASON _____

SUMMARY

PRESLUSH: BBL.-GAL. _____ TYPE _____
LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____
TREATMENT: BBL.-GAL. _____ DISPL.: BBL.-GAL. _____
CEMENT SLURRY: BBL.-GAL. _____
TOTAL VOLUME: BBL.-GAL. _____

REMARKS

See Job Log!!

CUSTOMER

CUSTOMER: Murphy O.C.
LEASE: East Poplar Unit
WELL NO.: 8-D
JOB TYPE: Kill well
DATE: 9-25-85

HALLIBURTON SERVICES

JOB LOG

FORM 2013 R-2

WELL NO. 8-D LEASE E.R.U. TICKET NO. 251-412

CUSTOMER Murphy PAGE NO.

JOB TYPE Misc DATE 8-7-87

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	0730							on loc Rig up
	0800		20					Mix mud, used 10 sx Bentonite
								105 sx Barite
	0918	1.0	4.5			200		pump [illegible] lbs
	0924	1	11			150		pump [illegible] Ann
	0945							[illegible] Relief
	1135		15.5					well flowing, [illegible] mud
	1235	1.5	10			100		pump Ann
	1245	1	3			50		pump [illegible]
	1300	.25	1.5					Fill Hole w/ TOH
								TIH w/ [illegible] Pkr + [illegible]
	1432		15			~~300~~	300	test pkr
	1440		13				250	Circ pkr Fluid
	1500							test pkr Again, Rig up [illegible]
	1530							Job Complete

Thank You

Corm

Ed.

CUSTOMER

HALLIBURTON SERVICES
A DIVISION OF HALLIBURTON COMPANY

TICKET NO. 250412-8

FORM 1906 R9

PAGE 1 OF ____ PAGES

WELL NO. – FARM OR LEASE NAME	COUNTY	STATE	CITY/OFFSHORE LOCATION	DATE
Lost Ridge Unit 8-D	Roosevelt	MT		8-7-87

CHARGE TO: Murphy Oil	OWNER: Same	TICKET TYPE (CHECK ONE): SERVICE [X] SALES [ ]	NITROGEN JOB: YES [ ] NO [X]
ADDRESS	CONTRACTOR: Hot Hull Service	LOCATION 1: Glendive	CODE: 55530
CITY, STATE, ZIP	SHIPPED VIA: Haken; FREIGHT CHARGES: [ ] PPD [ ] COLLECT	LOCATION 2	CODE
DUNCAN USE ONLY	DELIVERED TO: Location	LOCATION 3	CODE
	ORDER NO.	REFERRAL LOCATION	
	WELL TYPE: 03 Disposal	WELL CATEGORY: Workover	WELL PERMIT NO.
	TYPE AND PURPOSE OF JOB: 125 Killwell, 435 mix mud		B–

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATE PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC.	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT
Rem-117				MILEAGE	140	mi	1	mil	2.15	301.00
Rem-205				Misc pump chg	250	psi	4	hrs		415.00
Rem-213				Additional taxes	4	EA	0	psi	120.00	480.00

THIS IS NOT AN INVOICE

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B–

WAS JOB SATISFACTORILY COMPLETED? ____

WAS OPERATION OF EQUIPMENT SATISFACTORY? ____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? ____

X [signature]
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X [signature]
CUSTOMER OR HIS AGENT (SIGNATURE)

TAX REFERENCES

SUB TOTAL ____
TAX ____
TAX ____
TAX ____
TOTAL ____

[signature]
HALLIBURTON OPERATOR

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

CUSTOMER

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Halliburton Company

FORM 1908 R-5

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 256 412

DISTRICT [illegible]

DATE 8-7-87

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: [illegible] (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 8-D LEASE East Roberts Unit SEC. 10 TWP. 28N RANGE 9E

FIELD East Roberts COUNTY Roosevelt STATE Utah OWNED BY State

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT _____

TOTAL DEPTH _____ MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING	U		5 1/2	KB	700'	
LINER						
TUBING	U		2 7/8	KB	700'	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☐ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☒ HYDRAULIC HORSEPOWER ORDERED _____

mix mud kill well

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

As consideration, the above-named Customer agrees:

(a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists

(b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.

(c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconcuct or gross negligence of Halliburton

(d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.

(e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

(f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service

(g) Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

(h) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it

(i) Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTIABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages

(j) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

(k) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished

(l) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT

SIGNED [illegible] CUSTOMER

DATE 8-7-87

TIME 7:00 A.M./P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

CUSTOMER

HALLIBURTON SERVICES

JOB SUMMARY

HALLIBURTON DIVISION Denver

HALLIBURTON LOCATION Cleveline

BILLED ON TICKET NO. 25412

WELL DATA

FIELD East Poplar SEC. 10 TWP. 25N RNG. 51E COUNTY Roosevelt STATE MT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD

PRESENT PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT _____

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH _____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	U		5 1/2	KB	7002	
LINER						
TUBING	U		2 7/8	KB	7002	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 8-7	DATE 8-7	DATE 8-7	DATE 8-7
TIME 1330	TIME 1330	TIME 1800	TIME 1530

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
G. Scarpitti	35703	Cleveline
E. Bryan	3740	"

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL.°API

DISPL. FLUID _____ DENSITY _____ LB/GAL.°API

PROP. TYPE _____ SIZE _____ LB. _____

PROP. TYPE _____ SIZE _____ LB. _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

SURFACTANT TYPE _____ GAL. _____ IN _____

NE AGENT TYPE _____ GAL. _____ IN _____

FLUID LOSS ADD. TYPE _____ GAL.-LB. _____ IN _____

GELLING AGENT TYPE _____ GAL.-LB. _____ IN _____

FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN _____

BREAKER TYPE _____ GAL.-LB. _____ IN _____

BLOCKING AGENT TYPE _____ GAL.-LB. _____

PERFPAC BALLS TYPE _____ QTY. _____

OTHER _____

OTHER _____

DEPARTMENT Cmt

DESCRIPTION OF JOB Mix and Kill well

JOB DONE THRU: TUBING ☐ CASING ☐ ANNULUS ☐ TBG./ANN. ☒

CUSTOMER REPRESENTATIVE X _____

HALLIBURTON OPERATOR Gary Scarpitti COPIES REQUESTED _____

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

SUMMARY

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____

BREAKDOWN _____ MAXIMUM _____

AVERAGE _____ FRACTURE GRADIENT _____

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM

TREATING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE

FEET _____ REASON _____

VOLUMES

PRESLUSH: BBL.-GAL. _____ TYPE _____

LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

TREATMENT: BBL.-GAL. _____ DISPL: BBL.-GAL. _____

CEMENT SLURRY: BBL.-GAL. _____

TOTAL VOLUME: BBL.-GAL. _____

REMARKS

See wb Rig.

CUSTOMER Hillcorp

LEASE EPU

WELL NO. 8-D

JOB TYPE Misc

DATE 8-7-87

FORM 2025-R1

CUSTOMER

PAGE 1 OF _____ PAGES

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Division of Halliburton Company

TICKET NO. 648660

FORM 1906 R-11

WELL NO. — FARM OR LEASE NAME	COUNTY	STATE	CITY / OFFSHORE LOCATION	DATE
EAST PEAR 8-D	ROOSEVELT	MT		8-17-88

CHARGE TO	OWNER	TICKET TYPE (CHECK ONE)	NITROGEN JOB
Murphy Oil	SAME	SERVICE [X] SALES [ ]	YES [ ] NO [X]

ADDRESS	CONTRACTOR	LOCATION 1	CODE
	H & H Well Serv	GLENDIVE	5553

CITY, STATE, ZIP	SHIPPED VIA	FREIGHT CHARGES	LOCATION 2	CODE
	OUTER	[ ] PPD [ ] COLLECT		

WELL TYPE	WELL CATEGORY	WELL PERMIT NO.	DELIVERED TO	LOCATION 3	CODE
OIL	LA WORKOVER		WELLSITE		

TYPE AND PURPOSE OF JOB		ORDER NO.	REFERRAL LOCATION
425 Kill Well	B-		

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT
R000-117				MILEAGE	122	Jm.			2.20	268 40
R011-205				Pump Charge	0-1000	#				785 00
R011-213				ADDITIONAL HOURS	2	ea			120	240 00

THIS IS NOT AN INVOICE

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B-

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

X [signature]
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X [signature]
CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

[signature]
HALLIBURTON OPERATOR

HALLIBURTON APPROVAL _____

CUSTOMER

SUB TOTAL

APPLICABLE TAXES WILL BE ADDED ON INVOICE.

PAGE 1 OF _____ PAGES

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Division of Halliburton Company

TICKET NO. 648660-1

FORM 1906 R-11

WELL NO. – FARM OR LEASE NAME	COUNTY	STATE	CITY / OFFSHORE LOCATION	DATE

CHARGE TO	OWNER	TICKET TYPE (CHECK ONE)	NITROGEN JOB
		SERVICE ☐ SALES ☐	YES ☐ NO ☐
ADDRESS	CONTRACTOR	1 LOCATION	CODE
CITY, STATE, ZIP	SHIPPED VIA / FREIGHT CHARGES ☐ PPD ☐ COLLECT	2 LOCATION	CODE
WELL TYPE / WELL CATEGORY / WELL PERMIT NO.	DELIVERED TO	3 LOCATION	CODE
TYPE AND PURPOSE OF JOB / B-	ORDER NO.	REFERRAL LOCATION	

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT
				MILEAGE						

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B-

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

X _____
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X _____
CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

_____
HALLIBURTON OPERATOR

HALLIBURTON APPROVAL _____

SUB TOTAL

APPLICABLE TAXES WILL BE ADDED ON INVOICE

EXTRA COPY

HALLIBURTON SERVICES

JOB LOG

WELL NO. 8-D LEASE East Poplar TICKET NO. 648260

CUSTOMER Murphy Oil PAGE NO. 1

JOB TYPE Mix Mud-Kill Well DATE 8-17-88

FORM 2013 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL/GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								On location 8-17-88
								Mix 20 bbl of mud to 19 #/g
						310		Pump 12 bbl mud down Ann
						310		Pump 4 bbl mud down Tub
								Rolling Packer - lay down 1
						VAC		Pump 4 bbl mud down Ann
								Mix 10 bbl mud to 17#
								STAND by to pump mud down
								ANNULUS AS Rig TRIPS out of
								Hole - Lay down 5 jts w/ HOLES
								Run in hole w/ New Tubing
								Circulate out mud w/ Packer
								Fluid - SET PACKER
								PRESSURE TEST ANNULUS TO
								500# FOR 30 minutes
								Job Complete
								Thank You

CUSTOMER

HALLIBURTON SERVICES

JOB LOG

FORM 2013 R-2

WELL NO. 8-0 LEASE EPU TICKET NO. 531661-9

CUSTOMER Murphy Oil PAGE NO.

JOB TYPE Mud Mixing Job DATE 11-1-88

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL/GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	5:00							Called out
	0820							on loc
	0830							Setup on loc
	0835							Prime & test
	0840							Safety meeting
1.	0848					?		Start mixing Mud 10.4#/gal to 18.5#/gal
2.	1200							Mud mixed to 18.6#/gal
3.	12:03		0			100	-	Pump 5 Bbl down Tubing 12 Bbl down Ann.
4.	12:33		17			100	-	Shut down - workover to pull tbg.
5.	12:45							Well flowing back can't pull tbg
								Mix 10 Bbl more mud
6.	12:53							Start mixing Mud
7.	13:10							Stop mixing Mud
8	13:20	.5	17					Pump 5 Bbl mud down tubing
9.	14:30	.25	23			-		hook up to Annulus and pump while
								Pulling tubing Also going back in hole
10.	15:30	.15	30			-		Shut down hook up IRON to Roll
								Hole w/salt H2O
11.	15:35	1.5	30					Start Rolling hole
12.	15:45	1.5	[illegible]					shut down
13	15:45		53			[illegible]	700	Test Packer 15 min
14	16:00					[illegible]	700	test complete

CUSTOMER

HALLIBURTON SERVICES

JOB SUMMARY

HALLIBURTON DIVISION: DENVER

HALLIBURTON LOCATION: GLENDIVE

BILLED ON TICKET NO.: 648660

WELL DATA

FIELD: EAST POPLAR UNIT SEC. 10 TWP. 28N RNG. 51E COUNTY: ROOSEVELT STATE: MT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD. WATER _____ BPD.GAS _____ MCFD

PRESENT PROD: OIL _____ BPD. WATER _____ BPD.GAS _____ MCFD

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT _____

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH _____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING						
LINER						
TUBING						
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 8-17-88	DATE 8-17-88	DATE 8-17-88	DATE 8-17-88
TIME 0400	TIME 0740	TIME 0810	TIME

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
NEWTON	3570 X	GLENDIVE
SCARPHOLT	3740	GLENDIVE

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL.°API

DISPL. FLUID _____ DENSITY _____ LB/GAL.°API

PROP. TYPE _____ SIZE _____ LB. _____

PROP. TYPE _____ SIZE _____ LB. _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

SURFACTANT TYPE _____ GAL. _____ IN _____

NE AGENT TYPE _____ GAL. _____ IN _____

FLUID LOSS ADD.TYPE _____ GAL.-LB. _____ IN _____

GELLING AGENT TYPE _____ GAL.-LB. _____ IN _____

FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN _____

BREAKER TYPE _____ GAL.-LB. _____ IN _____

BLOCKING AGENT TYPE _____ GAL.-LB. _____

PERFPAC BALLS TYPE _____ QTY. _____

OTHER _____

OTHER _____

DEPARTMENT: CEMENT

DESCRIPTION OF JOB: Misc. Pump Mix Mud Kill Well

JOB DONE THRU: TUBING ☐ CASING ☐ ANNULUS ☐ TBG./ANN. ☒

CUSTOMER REPRESENTATIVE X Gerald Hopkins

HALLIBURTON OPERATOR John R Newton

COPIES REQUESTED _____

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

SUMMARY

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____

BREAKDOWN _____ MAXIMUM _____

AVERAGE _____ FRACTURE GRADIENT _____

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM

TREATING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE

FEET _____ REASON _____

VOLUMES

PRESLUSH: BBL.-GAL. _____ TYPE _____

LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

TREATMENT: BBL.-GAL. _____ DISPL: BBL.-GAL. _____

CEMENT SLURRY: BBL.-GAL. _____

TOTAL VOLUME: BBL.-GAL. 40

REMARKS

See Job Log

CUSTOMER: Montana Cal

LEASE: E. Poplar

WELL NO.: 8-D

JOB TYPE: Misc Pump

DATE: 8-17-88

FORM 2025-R1

CUSTOMER

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Halliburton Company

FORM 1908 R-6

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 648660

DISTRICT Williston

DATE 8-17-88

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murphy Oil (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 8-D LEASE East Poplar SEC. 20 TWP. 28N RANGE 59E

FIELD East Poplar COUNTY Roosevelt STATE MT OWNED BY Same

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT _____

TOTAL DEPTH _____ MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING		15.5	5½	KB	800	
LINER						
TUBING		6.5	2⅞	KB	600	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☐ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☒ HYDRAULIC HORSEPOWER ORDERED _____

Mix Mud - Killed

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees: THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

(a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists.

(b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.

(c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton

(d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.

(e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

(f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.

(g) To the extent permitted by law, waives the provisions of the Deceptive Trade Practices - Consumer Protection Act.

(h) Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

(i) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it.

(j) Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

(k) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

(l) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished.

(m) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED [signature] CUSTOMER

DATE 8-17-88

TIME 6:00 A.M. P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

CUSTOMER

HALLIBURTON SERVICES

Duncan, Oklahoma 73536

A Halliburton Company

FORM 1008 R-6

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. [illegible]

DISTRICT [illegible] DATE [illegible]

TO: HALLIBURTON SERVICES . YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: [illegible] (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. [illegible] LEASE [illegible] SEC. [illegible] TWP. [illegible] RANGE [illegible]

FIELD [illegible] COUNTY [illegible] STATE [illegible] OWNED BY [illegible]

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE _____ SET AT _____

TOTAL DEPTH _____ MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING		[illegible]	[illegible]	[illegible]	[illegible]	
LINER						
TUBING		[illegible]	[illegible]	[illegible]	[illegible]	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☐ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☒ HYDRAULIC HORSEPOWER ORDERED _____

[illegible]

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

(a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists

(b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.

(c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a wild blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton

(d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder

(e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

(f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.

(g) To the extent permitted by law, waives the provisions of the Deceptive Trade Practices - Consumer Protection Act.

(h) Customer shall at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton

(i) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it

(j) Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES EXPRESS OR IMPLIED OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty, or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials or their return to Halliburton or at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages

(k) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary, to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

(l) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished

(m) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT

SIGNED [illegible] CUSTOMER

DATE [illegible]

TIME [illegible] A.M. P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

RETAIN

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Halliburton Company

FORM 1908 R-6

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 531661-9

DISTRICT Williston ND DATE 11-1-88

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murphy Oil (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 8-D LEASE E.P.U. SEC. 10 TWP. 28N RANGE 51

FIELD _____ COUNTY Roosevelt STATE MT. OWNED BY _____

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PACKER: TYPE RTS SET AT 700'

TOTAL DEPTH _____ MUD WEIGHT _____

BORE HOLE _____

INITIAL PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

PRESENT PROD: OIL _____ BPD, H_2O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING		15.5	5.5	PBTD		
LINER						
TUBING		6.5	2 7/8			
OPEN HOLE						SHOTS/FT.
PERFORATIONS				850'		
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☒ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☐ HYDRAULIC HORSEPOWER ORDERED _____

Mix Mud Start 10.4# to 18.5#/gal Pump down Tubing And Annulus to kill well.

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees: THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

(a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists.

(b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer, and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.

(c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton.

(d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.

(e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

(f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.

(g) To the extent permitted by law, waives the provisions of the Deceptive Trade Practices - Consumer Protection Act.

(h) Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

(i) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any damages arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it.

(j) Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTIABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

(k) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

(l) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished.

(m) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED Gerald Fogelson CUSTOMER

DATE 11-1-88

air Labor Standards Act of 1938, as amended, has been complied with in the and/or with respect to services furnished under this contract.

TIME _____ A.M. P.M.

CUSTOMER

HALLIBURTON SERVICES
A DIVISION OF HALLIBURTON COMPANY

TICKET NO. 531661-9

FORM 1906 R-10

PAGE 1 OF 1 PAGES

WELL NO. – FARM OR LEASE NAME	COUNTY	STATE	CITY/OFFSHORE LOCATION	DATE
8-D E.P.U.	Roosevelt	MT	Williston ND	11-1-88

CHARGE TO	OWNER	TICKET TYPE (CHECK ONE)	NITROGEN JOB
Murphy Oil		SERVICE [X] SALES [ ]	YES [ ] NO [X]

ADDRESS	CONTRACTOR	LOCATION	CODE
	H & H	1 Williston	53860

CITY, STATE, ZIP	SHIPPED VIA	FREIGHT CHARGES	LOCATION	CODE
	Halco	[ ] PPD [ ] COLLECT	2	

DELIVERED TO	LOCATION	CODE
Location	3	

ORDER NO.	REFERRAL LOCATION

WELL TYPE	WELL CATEGORY	WELL PERMIT NO.
01 Oil	02 Workover	

TYPE AND PURPOSE OF JOB	
Mix Mud 435	B-

DUNCAN USE ONLY

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC.	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT
R000-117				MILEAGE Pump Trk	1	EA	85	mi	2.20	187.–
R011-205				Miscellaneous Pump Chg						715.–
R011-213				Additional hours Pump Chg	4	hr			120.00	480.–

THIS IS NOT AN INVOICE

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B-

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

Gerald Hungerford
CUSTOMER OR HIS AGENT (PLEASE PRINT)

Gerald Hungerford
CUSTOMER OR HIS AGENT (SIGNATURE)

THE FAIR LABOR STANDARDS ... AMENDED HAS BEEN COMPLIED ... PRODUCTION OF GOODS AND OR ... NO SERVICES FURNISHED UNDER

TAX REFERENCES

	SUB TOTAL	
	TAX	
	TAX	
	TAX	
	TOTAL	

Thank you!
HALLIBURTON OPERATOR

HALLIBURTON APPROVAL

CUSTOMER

HALLIBURTON SERVICES

JOB SUMMARY

HALLIBURTON DIVISION: Denver Co.

HALLIBURTON LOCATION: Williston ND

BILLED ON TICKET NO. 5316619

WELL DATA

FIELD _____ SEC. 10 TWP. 26N RNG. 57 COUNTY Roosevelt STATE Mt.

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD

PRESENT PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT 700'

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH _____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING		15.5	5.5	GND		
LINER						
TUBING						
OPEN HOLE						SHOTS/FT.
PERFORATIONS				950'		
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 11-1-88	DATE 11-1-88	DATE 11-1-88	DATE 11-1-88
TIME 5:00AM	TIME 6:00AM	TIME 08:45	TIME 1600

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
Keel	OPR.	Williston ND
Anderson	Extra	"
Jennick	4884-7539 Cat Pumper	"

MATERIALS

TREAT. FLUID Mud DENSITY 10.4-10.6 LB/GAL. °API

DISPL. FLUID _____ DENSITY _____ LB/GAL. °API

PROP. TYPE _____ SIZE _____ LB. _____

PROP. TYPE _____ SIZE _____ LB. _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

SURFACTANT TYPE _____ GAL. _____ IN _____

NE AGENT TYPE _____ GAL. _____ IN _____

FLUID LOSS ADD. TYPE _____ GAL.-LB. _____ IN _____

GELLING AGENT TYPE _____ GAL.-LB. _____ IN _____

FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN _____

BREAKER TYPE _____ GAL.-LB. _____ IN _____

BLOCKING AGENT TYPE _____ GAL.-LB. _____

PERFPAC BALLS TYPE _____ QTY. _____

OTHER _____

OTHER _____

DEPARTMENT Chemical

DESCRIPTION OF JOB Mud Mix Job

JOB DONE THRU: TUBING ☒ CASING ☐ ANNULUS ☐ TBG./ANN. ☐

CUSTOMER REPRESENTATIVE X [signature]

HALLIBURTON OPERATOR [signature] COPIES REQUESTED _____

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

SUMMARY

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____

BREAKDOWN _____ MAXIMUM _____

AVERAGE _____ FRACTURE GRADIENT _____

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM

ING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE

_____ REASON _____

VOLUMES

PREFLUSH: BBL.-GAL. _____ TYPE _____

LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

TREATMENT: BBL.-GAL. _____ DISPL: BBL.-GAL. _____

CEMENT SLURRY: BBL.-GAL. _____

TOTAL VOLUME: BBL.-GAL. _____

REMARKS

See Job Log

CUSTOMER: Nelkirkey Oil

LEASE: EFU.

WELL NO.: 8-D

JOB TYPE: Mud Mixing Job

DATE: 11-1-88

25-R1

CUSTOMER

-80831

MT

MATERIAL TRANSFER TICKET

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Halliburton Company

SOLD TO [redacted]

SHIP TO
Page 2 of 2
MURPHY OIL
Attn: Ray Reiding
Hwy 2 East
Poplar, Montana 58255

CUSTOMER'S ORDER NO.

CUSTOMER'S REF. Ray Reiding

DATE OF REQUISITION	DATE REQUIRED AT DESTINATION	INVOICE DATE	SHIP VIA
1-5-89			UPS

CHARGE TO		CREDIT
67742-67230		NIS 8-D 2" 785.00 ea

ITEM NO.	ORDERED QTY.	SHIPPED QTY.	HALLIBURTON NUMBER	ARTICLES AND DESCRIPTION	ZARB
				ESTIMATED SHIP DATE: 1-10-89	
2.	2		991.44150	Halliburton Flow Measurement System consisting of: 1-2" Turbine Flow Meter, stainless steel, with 2" Female NPT ends, 1" conduit pickup connection and quick change receptacle. Serial #2ST-14927 C.E. 54.45 14928 53.99 1-Model 3030AN Electro Magnetic Pickup 1-Model MC-II Flow Analyzer, weatherproof housing, with pipe mounting bracket, complete with one lithium battery, continuous display with totalizer registering barrels and rate meter indicating SPD. Serial # 129645 129646 J @ 27 lbs 034-575-636 [illegible] 1-12-89	

FILLED BY	RECEIVED BY	DATE RECEIVED	DATE SHIPPED	ENTERED STORES LEDGER

cc: Moon

Steve Neal:bh

BOXES _____ BAGS _____ CRATES _____ CARTONS _____

SIGNATURE

MT

HALLIBURTON SERVICES

JOB LOG

FORM 2013 R-2

WELL NO. [illegible] LEASE EPU TICKET NO. 280611

CUSTOMER Murphy PAGE NO. 1

JOB TYPE Mix Mud DATE 11-12-92

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	0500							called out
	0755							on Location
								set up
								Saftey meeting
	0915							mix mud 20 bbls 18#
			20					pump mud down Tbg + backside
								mix mud 20 bbls 18#
			20					pump mud down Tbg + backside
								mix mud 10 bbls 20#
			10					pump mud down Tbg + backside
	1400							killed well
	1445							Released from Location

Thank you

CUSTOMER

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Division of Halliburton Company

ORM 1908 R-7

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 280611

DISTRICT Williston DATE 11-12-92

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murphy Corp (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 8-D LEASE FPU SEC. TWP. RANGE

FIELD Poplar COUNTY Roosevelt STATE MT OWNED BY Same

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME TYPE

FORMATION THICKNESS FROM TO

PACKER: TYPE SET AT

TOTAL DEPTH MUD WEIGHT

BORE HOLE

INITIAL PROD: OIL BPD, H_2O BPD, GAS MCF

PRESENT PROD: OIL BPD, H_2O BPD, GAS MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING		15#	5½	KB		
LINER						
TUBING			2⅞	KB	678	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE TYPE MATERIALS

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ☐ ANNULUS ☐ CASING ☐ TUBING/ANNULUS ☒ HYDRAULIC HORSEPOWER ORDERED

Mix mud

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees: THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price list. Invoices are payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ attorneys to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.

b) To defend, indemnify, release and hold harmless Halliburton, its divisions, subsidiaries, parent and affiliated companies and the officers, directors, employees, agents and servants of all of them from and against any claims, liability, expenses, attorneys fees, and costs of defense to the extent permitted by law for:

1. Damage to property owned by, in the possession of, or leased by Customer, and/or the well owner (if different from Customer), including, but not limited to, surface and subsurface damage. The term "well owner" shall include working and royalty interest owners.
2. Reservoir, formation, or well loss or damage, subsurface trespass or any action in the nature thereof.
3. Personal injury or death or property damage (including, but not limited to, damage to the reservoir, formation or well), or any damages whatsoever, growing out of or in any way connected with or resulting from pollution, subsurface pressure, losing control of the well and/or a well blowout or the use of radioactive material.

The defense, indemnity, release and hold harmless obligations of Customer provided for in this Section b) and Section c) below shall apply to claims or liability even if caused or contributed to by Halliburton's negligence, strict liability, or the unseaworthiness of any vessel owned, operated, or furnished by Halliburton or any defect in the data, products, supplies, materials, or equipment of Halliburton whether in the preparation, design, manufacture, distribution, or marketing thereof, or from a failure to warn any person of such defect. Such defense, indemnity, release and hold harmless obligations of Customer shall not apply where the claims or liability are caused by the gross negligence or willful misconduct of Halliburton. The term "Halliburton" as used in said Sections b) and c) shall mean Halliburton, its divisions, subsidiaries, parent and affiliated companies, and the officers, directors, employees, agents and servants of all of them.

c) That because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the effectiveness of the products, supplies or materials, nor the results of any treatment or service, nor the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be liable for and Customer shall indemnify Halliburton against any damages arising from the use of such information.

d) That Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

e) That Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

f) To waive the provisions of the Deceptive Trade Practices - Consumer Protection Act, to the extent permitted by law.

g) That this contract shall be governed by the law of the state where services are performed or materials are furnished.

h) That Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED [illegible] CUSTOMER

DATE 11-12-92

TIME 0900 A.M. P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

CUSTOMER

HALLIBURTON SERVICES
Duncan, Oklahoma 73536
A Division of Halliburton Company

TICKET NO. 280611-1

LEASE NAME	COUNTY	STATE	CITY / OFFSHORE LOCATION	DATE
8-D EPU	Roosevelt	MT		11-12-92

Murphy Corp.	OWNER: Same	TICKET TYPE (CHECK ONE): SERVICE [X] SALES [ ]	NITROGEN JOB: YES [ ] NO [X]
	CONTRACTOR: H&H	1 LOCATION: Williston	CODE: 55860
STATE, ZIP	SHIPPED VIA: Truck; FREIGHT CHARGES: [ ] PPD [ ] COLLECT	2 LOCATION	CODE
WELL TYPE: 01; WELL CATEGORY: 02; WELL PERMIT NO.	DELIVERED TO: Location	3 LOCATION	CODE
TYPE AND PURPOSE OF JOB: 435 min mud; B-	ORDER NO.	REFERRAL LOCATION	

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	LOC	ACCOUNT	DESCRIPTION	UNITS 1 QTY	UNITS 1 MEAS	UNITS 2 QTY	UNITS 2 MEAS	UNIT PRICE	AMOUNT
000-117				MILEAGE	80	mi	1	ea	2.60	208.00
301-085				Pump Charge	4	hrs.				1680.00
011-213				Additional hours	3	hrs	500	psi	155.00	465.00

THIS IS NOT AN INVOICE

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B-

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

X Gerald Hanschke
CUSTOMER OR HIS AGENT (PLEASE PRINT)

X [signature]
CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

Jeff LeDosquet
HALLIBURTON OPERATOR

HALLIBURTON APPROVAL _____

CUSTOMER

SUB TOTAL 2353.00

APPLICABLE TAXES WILL BE ADDED ON INVOICE.

FORM 524 (8/75)

MORNING REPORT

DATE	FIELD OR AREA	LEASE OR WELL NAME & NO.
11/12/92	E.P.U.	# 8-D

REPORT NO.	DAYS SINCE SPUD	PROPOSED TD	AFE—TO CSG. PT. (100%)	
2				

DEPTH	FORMATION	HOLE MADE	DRLG. TIME

BIT NO.	SIZE	TYPE	MFG.	NOZ.	OUT HOLE	HRS	FT.	T	B	GUAGE
								REMARKS:		
BIT NO.	SIZE	TYPE	MFG.	NOZ.	OUT HOLE	HRS	FT.	T	B	GUAGE
								REMARKS:		

ROT SPEED	BIT WEIGHT	NO. OF LINES STRUNG	CSG. SET @	FUEL ON HAND

PUMP #1 LIN SIZE	STR	PRESS	PUMP #2 LIN SIZ	STR	PRESS

MUD WT., #/GAL.	VISC.	WL	PH	FC	CL	YP	OIL CONT., %	SD, %	SOL. %

DRILL PIPE From DC's Upward

NOMINAL SIZE & GRADE	TYPE JTS. & SIZE	JT. OD	NO. JTS. IN HOLE
1			
2			
3			
4			

DRILL COLLARS & OTHER (From Bit Upward)

OD	ID	TYPE JTS	NO. COL. IN HOLE

DEVIATION SURVEY @

DETAILS

11/12/92

Start Rig and Rig up
Halliburton Mix Mud 18.6
Mud 19 BBls. total Pump 5 BBls.
Down tubing and Pump 5 BBls.
Down Casing Check Still
Flowing Pump 5 BBls. still
Flowing Pump 4 BBls. and
Mix More Mud 19 BBls. Pump
10 BBls Down Casing 19.7 Mud.
Pump 7 BBls. Down tubing
Dead Casing still Flowing
Pull tubing Anchor Sheared
Pump 3 BBls Down Casing Stop
Casing still Flowing Shut Down

DAILY & CUMULATIVE ESTIMATED COSTS

DAILY ROAD & LOC. COSTS (CUM.-$ Rig	$
Halliburton	2353
RIG-FOOTAGE OR DAY WORK COSTS	
Water Trucks	532
DAILY MUD (CUM.-$)	
MONITORING UNIT OR MUD LOGGER	
Mud	3092
BITS	
RENTAL EQUIPMENT	
SUPERVISION & MISC.	
DAILY TOTAL	$
PREVIOUS CUMULATIVE TOTAL	
CUMULATIVE TO DATE	$

PERSONNEL ON RIG J.H.

PRESENT OPERATIONS

HALLIBURTON SERVICES

JOB SUMMARY

HALLIBURTON DIVISION: [illegible]

HALLIBURTON LOCATION: Williston

BILLED ON TICKET NO.: 250611

WELL DATA

FIELD: Poplar SEC. ____ TWP. ____ RNG. ____ COUNTY: Roosevelt STATE: MT

FORMATION NAME ____ TYPE ____

FORMATION THICKNESS ____ FROM ____ TO ____

INITIAL PROD: OIL ____ BPD, WATER ____ BPD, GAS ____ MCFD

PRESENT PROD: OIL ____ BPD, WATER ____ BPD, GAS ____ MCFD

COMPLETION DATE ____ MUD TYPE ____ MUD WT. ____

PACKER TYPE ____ SET AT ____

BOTTOM HOLE TEMP. ____ PRESSURE ____

MISC. DATA ____ TOTAL DEPTH ____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING		15.5	5½	KB		
LINER						
TUBING			2⅜	KB	17'	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 11-12-94	DATE 11-12-94	DATE 11-12-94	DATE 11-12-94
TIME 0800	TIME 0755	TIME 0915	TIME [illegible]

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
J. LeDoux	4000	Williston
D. Ward	PU	
L. Dancer	5000	
10057	PCM	

MATERIALS

HEAT. FLUID ____ DENSITY ____ LB/GAL-°API

SPL. FLUID ____ DENISTY ____ LB/GAL-°API

TOP. TYPE ____ SIZE ____ LB. ____

TOP. TYPE ____ SIZE ____ LB. ____

ACID TYPE ____ GAL. ____ %

ACID TYPE ____ GAL. ____ %

ACID TYPE ____ GAL. ____ %

SURFACTANT TYPE ____ GAL. ____ IN

NE AGENT TYPE ____ GAL. ____ IN

FLUID LOSS ADD. TYPE ____ GAL.-LB. ____ IN

GELLING AGENT TYPE ____ GAL.-LB ____ IN

FRIC. RED. AGENT TYPE ____ GAL.-LB ____ IN

BREAKER TYPE ____ GAL.-LB. ____ IN

BLOCKING AGENT TYPE ____ GAL.-LB. ____

PERFPAC BALLS TYPE ____ QTY. ____

OTHER ____

OTHER ____

DEPARTMENT: Cement

DESCRIPTION OF JOB: Mix mud

JOB DONE THRU: TUBING ☐ CASING ☐ ANNULUS ☐ TBG./ANN. ☒

CUSTOMER REPRESENTATIVE: X [signature]

HALLIBURTON OPERATOR: Jeff LeDoux

COPIES REQUESTED ____

CEMENT DATA

STAGE	NUMBER OF SACKS	CEMENT	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.

PRESSURES IN PSI

CIRCULATING ____ DISPLACEMENT ____

BREAKDOWN ____ MAXIMUM ____

AVERAGE ____ FRACTURE GRADIENT ____

SHUT-IN: INSTANT ____ 5-MIN. ____ 15-MIN. ____

HYDRAULIC HORSEPOWER

ORDERED ____ AVAILABLE ____ USED ____

AVERAGE RATES IN BPM

TREATING ____ DISPL. ____ OVERALL ____

CEMENT LEFT IN PIPE

FEET ____ REASON ____

SUMMARY

PRESLUSH: BBL.-GAL. ____ TYPE ____

LOAD & BKDN: BBL.-GAL. ____ PAD: BBL.-GAL. ____

TREATMENT: BBL.-GAL. ____ DISPL: BBL.-GAL. ____

CEMENT SLURRY: BBL.-GAL. ____

TOTAL VOLUME: BBL.-GAL. ____

REMARKS

See Job Log

CUSTOMER: Murphy

LEASE: Fed

WELL NO.: 8-10

JOB TYPE: Mix mud

DATE: 11-12-94

FORM 2025-R2

HALLIBURTON ENERGY SERVICES

ACQUIRE Version 2.1102

8-D

CUSTOMER AND JOB INFORMATION

8-8-95

Customer	MURPHY OIL CO	Date	08-Aug-1995
Contractor	NONE	County	ROOSEVELT
Lease	EPU	Town	28N
Location		Section	10
Formation	JUDITH RIVER	Range	51E
Job Type	STEP RATE TEST	Permit No	
Country	USA	Well No	8-D
State	MT	Field Name	EPU

Customer Representative RAY REEDE Halliburton Operator MARK BOEHM Ticket No. 472948

STAGE DESCRIPTIONS

STEP RATE TEST .5 BPM
1 BPM
2 BPM
4 BPM
6 BPM
8 BPM
STOP PUMPING

WELL CONFIGURATION INFORMATION

Packer Type N/A Depth 719 ft
Bottom Hole Temp. 125.0 Deg F

PIPE CONFIGURATION

Wellbore Segment Number	Measured Depth (ft)	TVD (ft)	Casing ID (inch)	Casing OD (inch)	Tubing ID (inch)	Tubing OD (inch)
1	719	719	4.950	5.500	2.441	2.875
2	880	880	4.950	5.500	0.000	0.000

PERFORATIONS

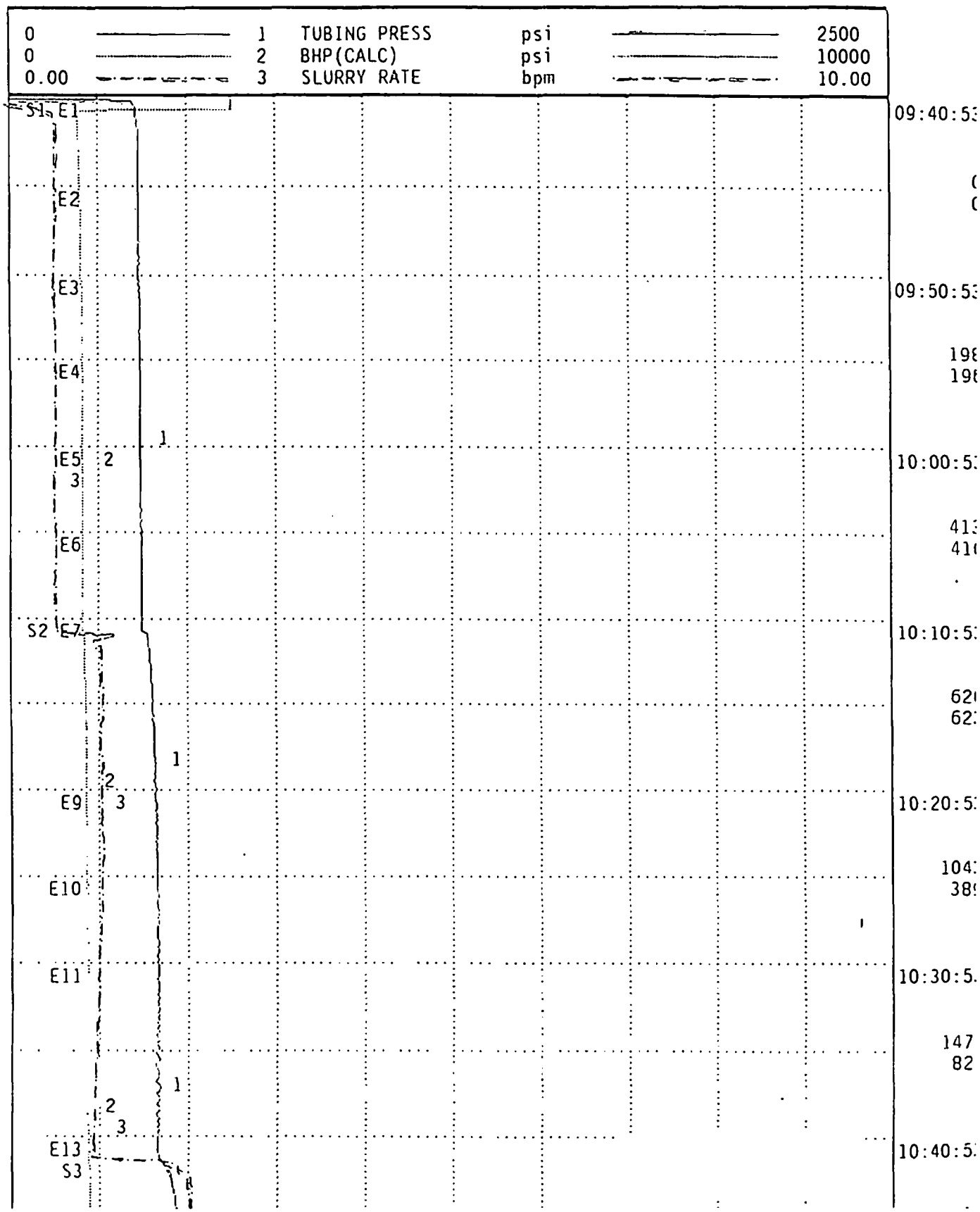
Perforation Interval	Top (ft)	Bottom (ft)	Shots per (ft)
1	830	880	2

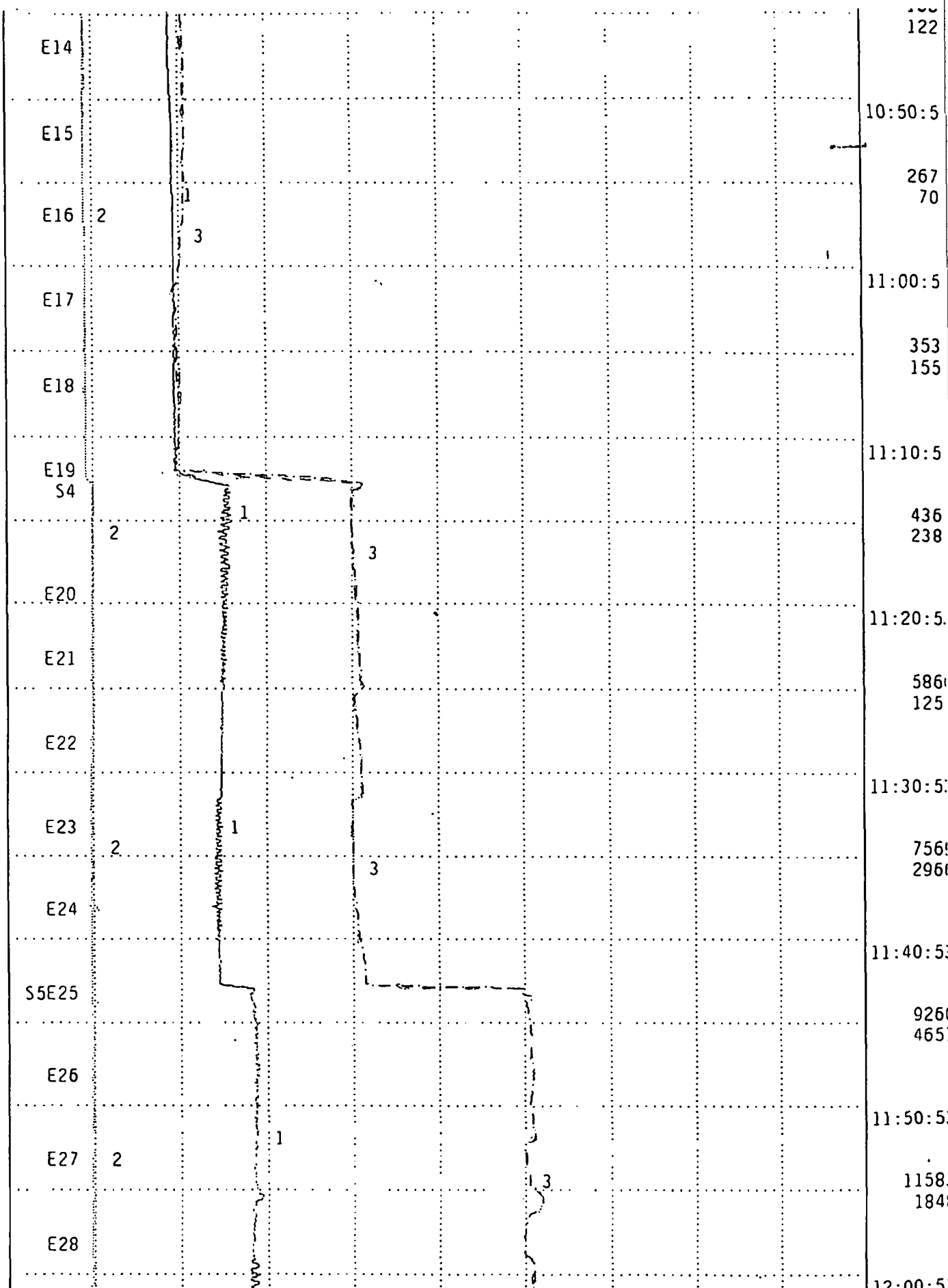
REMARKS ABOUT JOB

NOTICE: THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES, BUT BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION WHICH MUST BE RELIED UPON, HALLIBURTON MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ACCURACY OF THE DATA OR OF ANY CALCULATIONS OR OPINIONS EXPRESSED HEREIN. YOU AGREE THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH SUCH DATA, CALCULATIONS OR OPINIONS.

```
#####################
PLAYBACK STRIP CHART
#####################
```

3. Slurry Volume (gal)
4. Stage Volume (gal)




E14
E15
E16
E17
E18
E19
S4
E20
E21
E22
E23
E24
S5E25
E26
E27
E28
E29
1
2
3
122
10:50:5
267
70
11:00:5
353
155
11:10:5
436
238
11:20:5
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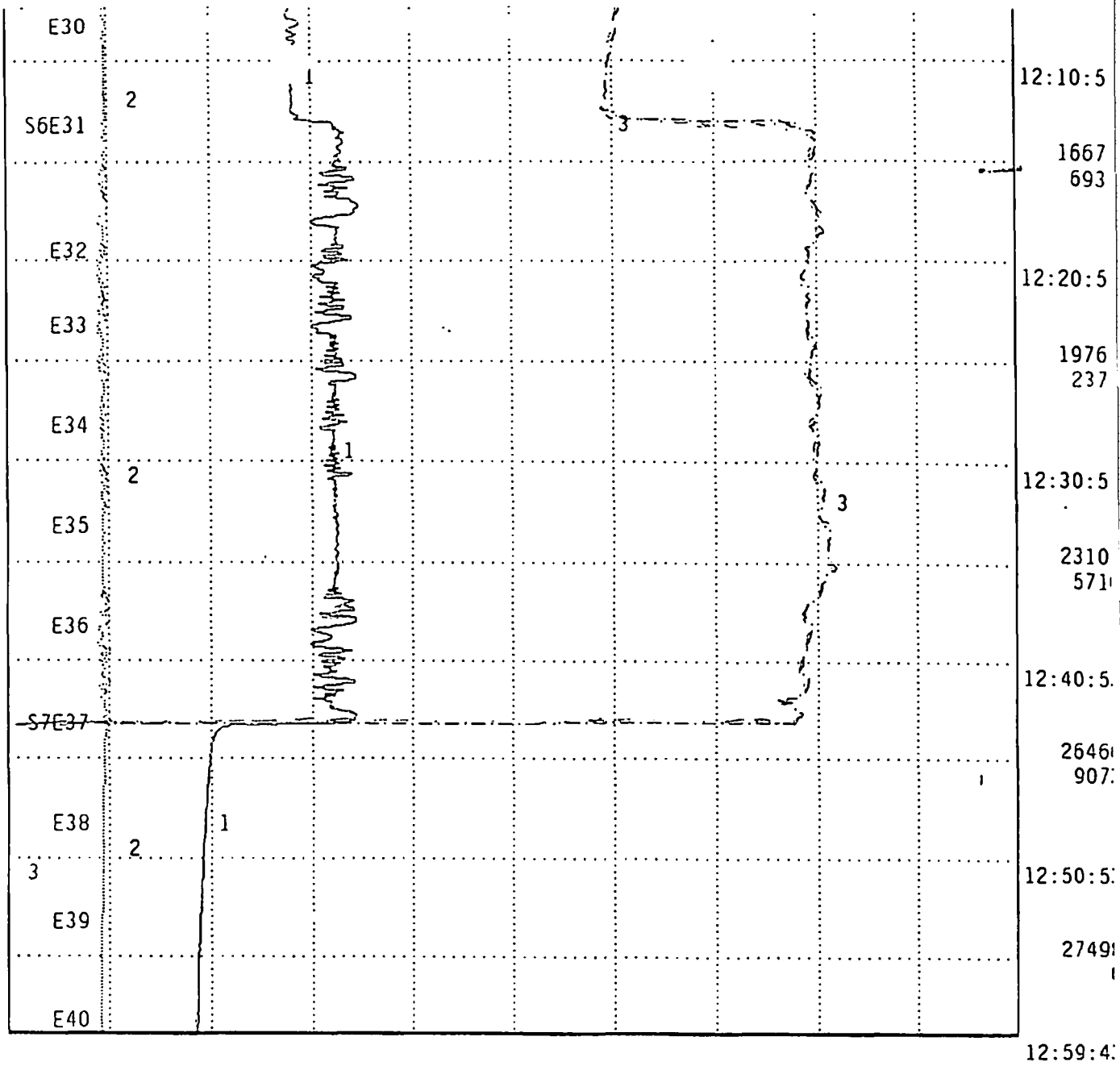
1848
12:00:5
14130
4395


E30
S6E31
E32
E33
E34
E35
E36
S7E37
E38
E39
E40
12:10:5
1667
693
12:20:5
1976
237
12:30:5
2310
571
12:40:5
2646
907
12:50:5
2749
12:59:4

HALLIBURTON ENERGY SERVICES

ACQUIRE Version 2.11b2

CUSTOMER AND JOB INFORMATION

Customer	MURPHY OIL CO	Date	08-Aug-1995
Contractor	NONE	County	ROOSEVELT
Lease	EPU	Town	28N
Location		Section	10
Formation	JUDITH RIVER	Range	51E
Job Type	STEP RATE TEST	Permit No	
Country	USA	Well No	8-D
State	MT	Field Name	EPU

Customer Representative RAY REEDE Halliburton Operator MARK BOEHM Ticket No. 472948

STAGE DESCRIPTIONS

STEP RATE TEST .5 BPM
1 BPM
2 BPM
4 BPM
6 BPM
8 BPM
STOP PUMPING

WELL CONFIGURATION INFORMATION

Packer Type N/A Depth 719 ft
Bottom Hole Temp. 125.0 Deg F

PIPE CONFIGURATION

Wellbore Segment Number	Measured Depth (ft)	TVD (ft)	Casing ID (inch)	Casing OD (inch)	Tubing ID (inch)	Tubing OD (inch)
1	719	719	4.950	5.500	2.441	2.875
2	880	880	4.950	5.500	0.000	0.000

PERFORATIONS

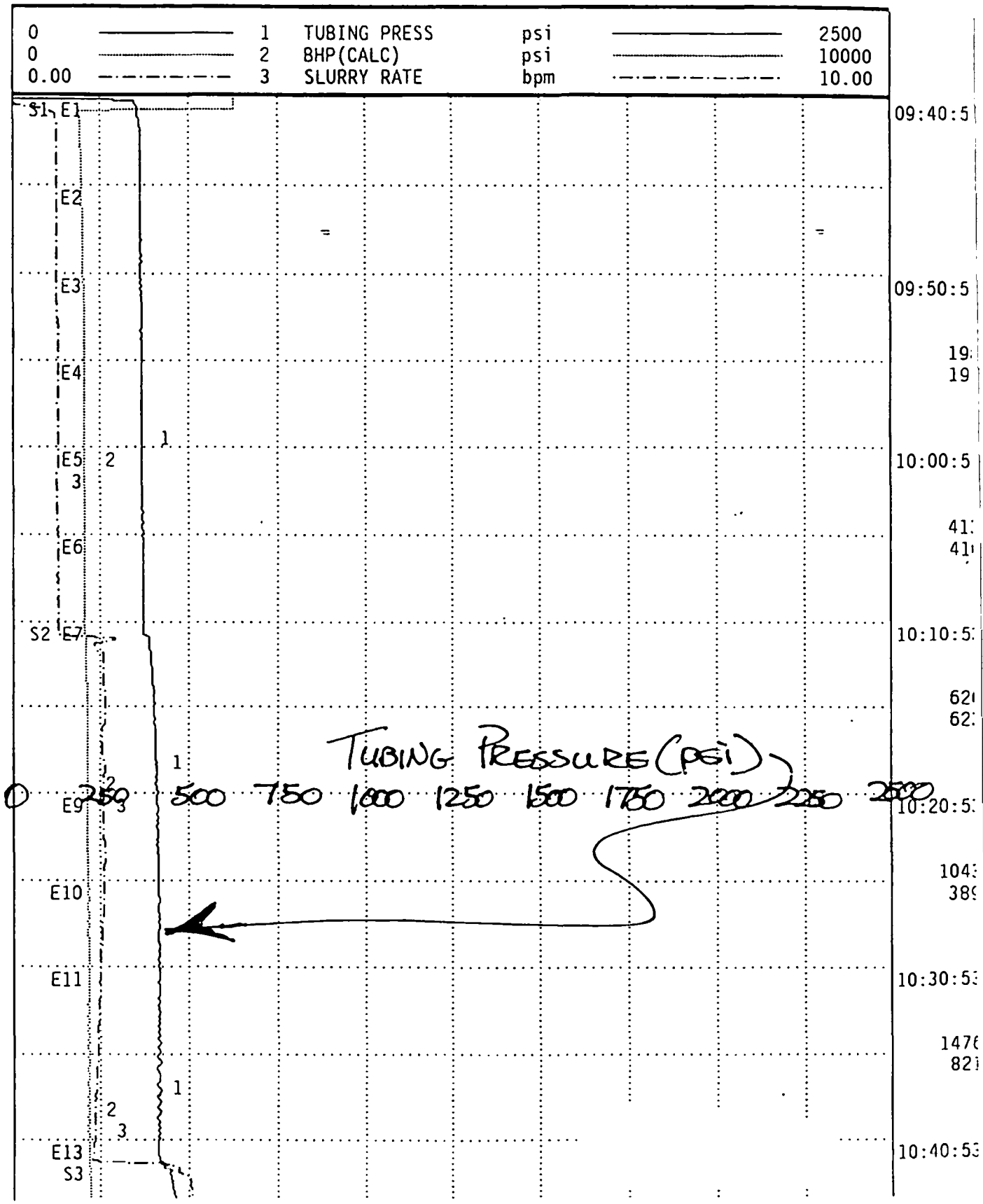
Perforation Interval	Top (ft)	Bottom (ft)	Shots per (ft)
1	830	880	2

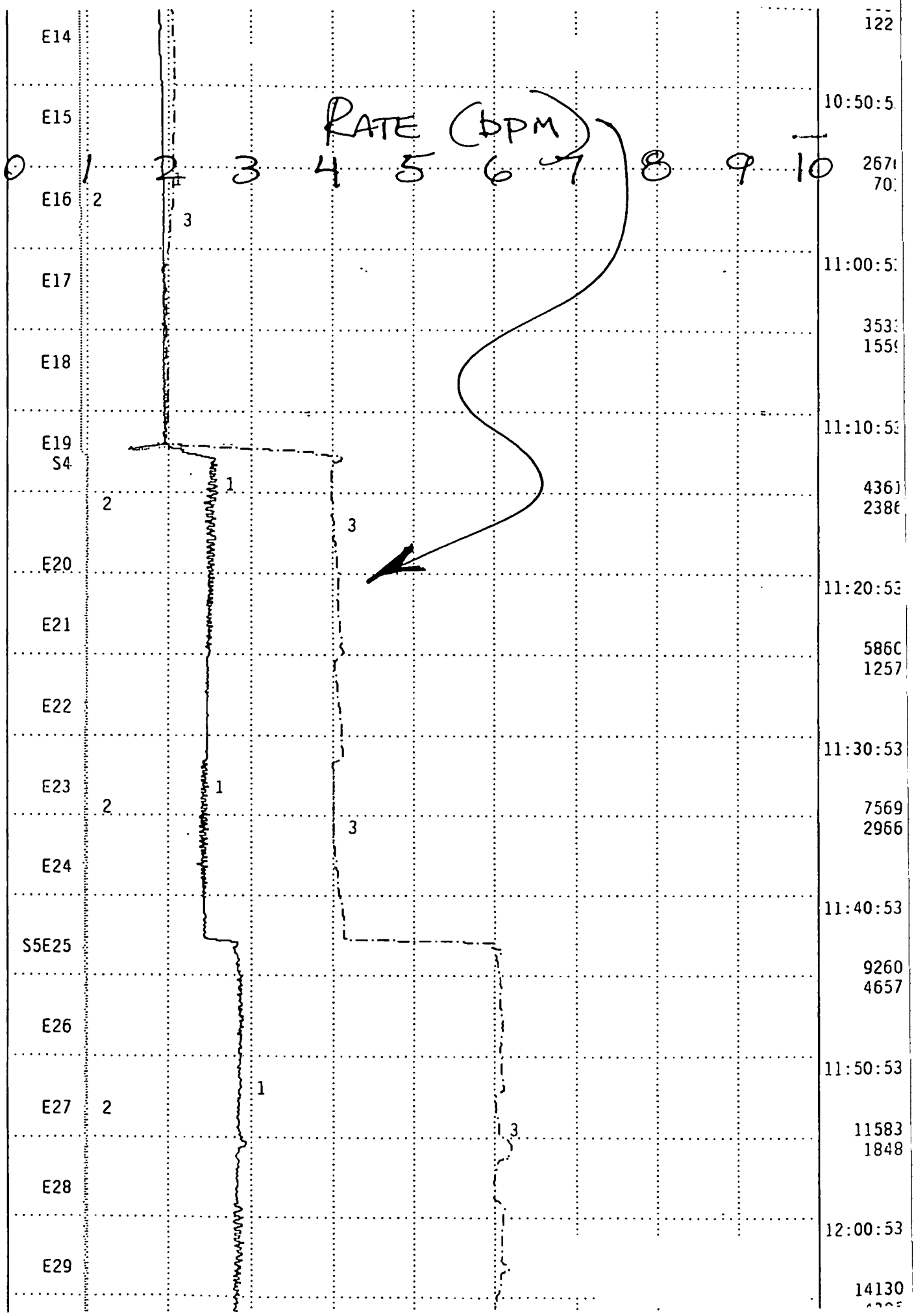
REMARKS ABOUT JOB

NOTICE: THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES, BUT BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION WHICH MUST BE RELIED UPON, HALLIBURTON MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ACCURACY OF THE DATA OR OF ANY CALCULATIONS OR OPINIONS EXPRESSED HEREIN. YOU AGREE THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH SUCH DATA, CALCULATIONS OR OPINIONS.

```
####################
PLAYBACK STRIP CHART
####################
```

3. Slurry Volume (gal)
4. Stage Volume (gal)




RATE (DPM)
0
1
2
3
4
5
6
7
8
9
10
E14
E15
E16
E17
E18
E19
S4
E20
E21
E22
E23
E24
S5E25
E26
E27
E28
E29
122
10:50:5
267
70
11:00:5
353
155
11:10:5
436
238
11:20:5
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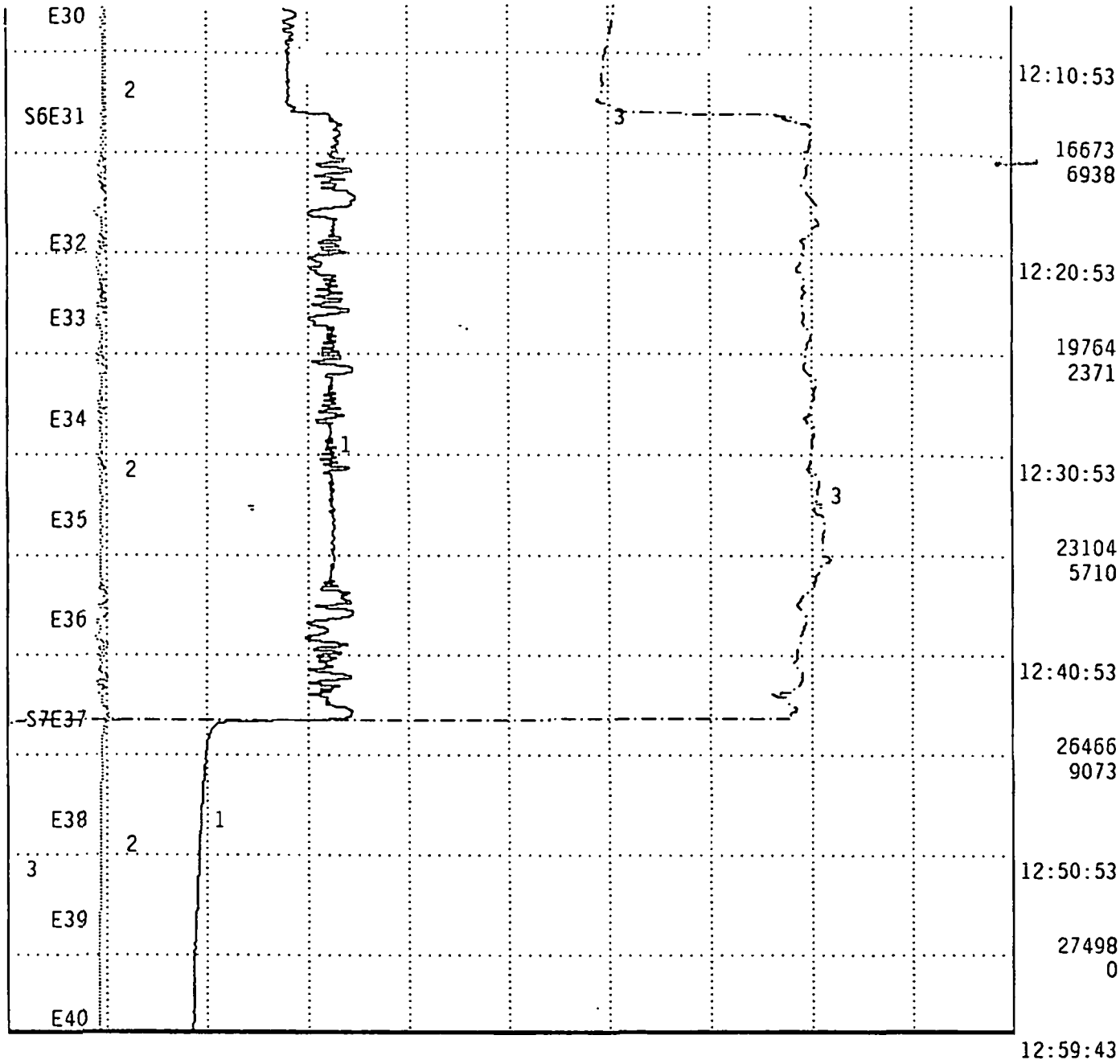
11:50:53
11583
1848
12:00:53
14130


E30
S6E31
E32
E33
E34
E35
E36
S7E37
E38
E39
E40
2
2
3
1
1
2
3
3
12:10:53
16673
6938
12:20:53
19764
2371
12:30:53
23104
5710
12:40:53
26466
9073
12:50:53
27498
0
12:59:43

Well Desc: EPU 8-U
Formation: JUDITH RIVER

Ticket #: 472948
Job Type: STEP RATE TEST

JOB SUMMARY

JOB START TIME: 09:40:53
JOB END TIME: 12:59:43
JOB DURATION: 03:18:50

STAGES AND EVENTS:

Chart	Time	Slurry Rate (bpm)	Slurry Stage Volume (gal)	Tubing Press. (psi)	Remark
Event #1	09:40:53	0.00	0	0	Start Job
Stage #1	09:41:29	0.37	652	355	.5 BPM
Event #2	09:46:30	0.50	0	364	RECORD RATE & PSI
Event #3	09:51:29	0.51	0	366	RECORD RATE & PSI
Event #4	09:56:29	0.51	0	367	RECORD RATE & PSI
Event #5	10:01:29	0.51	0	368	RECORD RATE & PSI
Event #6	10:06:29	0.51	0	371	RECORD RATE & PSI
Event #7	10:11:29	0.51	0	372	RECORD RATE & PSI
Stage #2	10:11:55	1.12	1320	387	1 BPM TEST
Event #8	10:17:01	1.02	0	403	RECORD RATE & PSI
Event #9	10:21:54	1.03	0	409	RECORD RATE & PSI
Event #10	10:26:54	1.03	0	417	RECORD RATE & PSI
Event #11	10:31:54	0.99	0	415	RECORD RATE & PSI
Event #12	10:36:58	0.95	0	413	RECORD RATE & PSI
Event #13	10:41:54	0.90	0	412	RECORD RATE & PSI
Stage #3	10:42:43	1.90	2629	445	2 BPM TEST
Event #14	10:47:43	2.06	0	469	RECORD RATE & PSI
Event #15	10:52:47	2.06	0	482	RECORD RATE & PSI
Event #16	10:57:44	2.05	0	481	RECORD RATE & PSI
Event #17	11:02:43	1.96	0	482	RECORD RATE & PSI
Event #18	11:07:43	1.98	0	483	RECORD RATE & PSI
Event #19	11:12:43	1.95	0	485	RECORD RATE & PSI
Stage #4	11:13:26	3.96	5131	588	4 BPM TEST
Event #20	11:20:04	4.04	0	625	RECORD RATE & PSI
Event #21	11:23:26	4.07	0	620	RECORD RATE & PSI
Event #22	11:28:33	4.06	0	622	RECORD RATE & PSI
Event #23	11:33:29	4.00	0	623	RECORD RATE & PSI
Event #24	11:38:26	4.03	0	622	RECORD RATE & PSI
Event #25	11:43:26	4.14	0	611	RECORD RATE & PSI
Stage #5	11:43:38	5.34	7658	672	6 BPM TEST
Event #26	11:48:37	6.09	0	725	RECORD RATE & PSI
Event #27	11:53:37	6.01	0	706	RECORD RATE & PSI
Event #28	11:58:37	5.99	0	707	RECORD RATE & PSI
Event #29	12:03:37	6.08	0	705	RECORD RATE & PSI
Event #30	12:08:37	6.05	0	695	RECORD RATE & PSI
Event #31	12:13:38	6.05	0	717	RECORD RATE & PSI
Stage #6	12:13:46	6.08	10105	707	8 BPM TEST
Event #32	12:20:20	7.92	0	812	Prime Pumps
Event #33	12:23:51	7.91	0	795	RECORD RATE & PSI
Event #34	12:28:46	7.97	0	818	RECORD RATE & PSI
Event #35	12:33:47	8.09	0	802	RECORD RATE & PSI
Event #36	12:38:46	7.92	0	856	RECORD RATE & PSI
Event #37	12:43:46	7.78	0	855	RECORD RATE & PSI
Stage #7	12:44:19	0.00	0	523	ISIP Tubing Press 523 (psi)
Event #38	12:49:27	0.00	0	482	5 Min Shutin Pres. Tubing Pr ess 482 (psi)

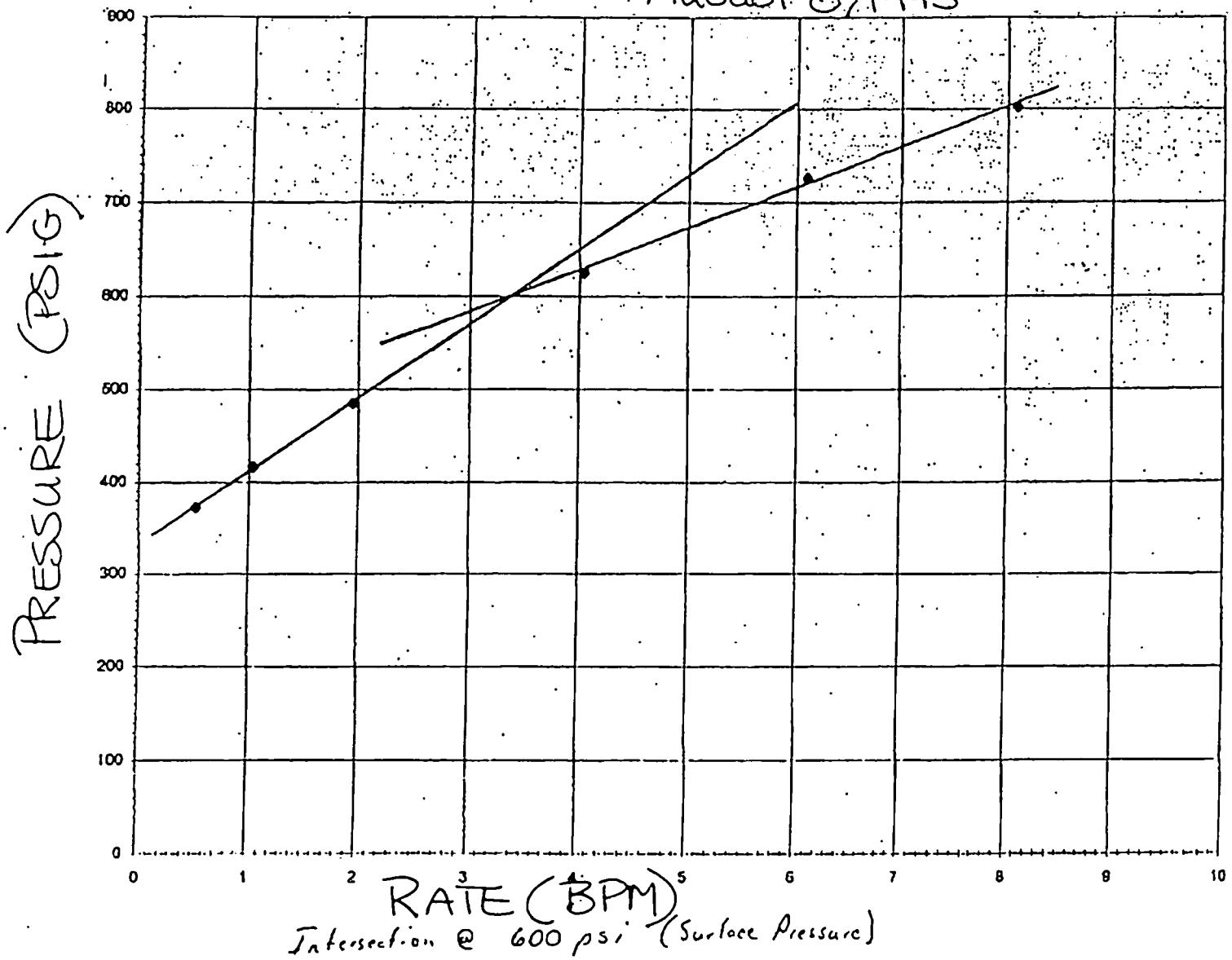
				ess 482 (psi)
Event #39 12:54:18	0.00	0	470	10 Min Shutin Pres. Tubing P ress 470 (psi)
Event #40 12:59:22	0.00	0	464	15 Min Shutin Pres. Tubing P ress 464 (psi)
Event #41 12:59:43	0.00	0	464	End Job

JOB START TIME: 09:40:53
JOB END TIME: 12:59:4[illegible]
JOB DURATION: 03:18:50

STAGES AND EVENTS:

Chart	Time	Slurry Rate (bpm)	Slurry Stage Volume (gal)	Tubing Press. (psi)	Remark
Event #1	09:40:53	0.00	0	0	Start Job
Stage #1	09:41:29	0.37	652	355	.5 BPM
Event #2	09:46:30	0.50	0	364	RECORD RATE & PSI
Event #3	09:51:29	0.51	0	366	RECORD RATE & PSI
Event #4	09:56:29	0.51	0	367	RECORD RATE & PSI
Event #5	10:01:29	0.51	0	368	RECORD RATE & PSI
Event #6	10:06:29	0.51	0	371	RECORD RATE & PSI
Event #7	10:11:29	0.51	0	372	RECORD RATE & PSI
Stage #2	10:11:55	1.12	1320	387	1 BPM TEST
Event #8	10:17:01	1.02	0	403	RECORD RATE & PSI
Event #9	10:21:54	1.03	0	409	RECORD RATE & PSI
Event #10	10:26:54	1.03	0	417	RECORD RATE & PSI
Event #11	10:31:54	0.99	0	415	RECORD RATE & PSI
Event #12	10:36:58	0.95	0	413	RECORD RATE & PSI
Event #13	10:41:54	0.90	0	412	RECORD RATE & PSI
Stage #3	10:42:43	1.90	2629	445	2 BPM TEST
Event #14	10:47:43	2.06	0	469	RECORD RATE & PSI
Event #15	10:52:47	2.06	0	482	RECORD RATE & PSI
Event #16	10:57:44	2.05	0	481	RECORD RATE & PSI
Event #17	11:02:43	1.96	0	482	RECORD RATE & PSI
Event #18	11:07:43	1.98	0	483	RECORD RATE & PSI
Event #19	11:12:43	1.95	0	485	RECORD RATE & PSI
Stage #4	11:13:26	3.96	5131	588	4 BPM TEST
Event #20	11:20:04	4.04	0	625	RECORD RATE & PSI
Event #21	11:23:26	4.07	0	620	RECORD RATE & PSI
Event #22	11:28:33	4.06	0	622	RECORD RATE & PSI
Event #23	11:33:29	4.00	0	623	RECORD RATE & PSI
Event #24	11:38:26	4.03	0	622	RECORD RATE & PSI
Event #25	11:43:26	4.14	0	611	RECORD RATE & PSI
Stage #5	11:43:38	5.34	7658	672	6 BPM TEST
Event #26	11:48:37	6.09	0	725	RECORD RATE & PSI
Event #27	11:53:37	6.01	0	706	RECORD RATE & PSI
Event #28	11:58:37	5.99	0	707	RECORD RATE & PSI
Event #29	12:03:37	6.08	0	705	RECORD RATE & PSI
Event #30	12:08:37	6.05	0	695	RECORD RATE & PSI
Event #31	12:13:38	6.05	0	717	RECORD RATE & PSI
Stage #6	12:13:46	6.08	10105	707	8 BPM TEST
Event #32	12:20:20	7.92	0	812	Prime Pumps
Event #33	12:23:51	7.91	0	795	RECORD RATE & PSI
Event #34	12:28:46	7.97	0	818	RECORD RATE & PSI
Event #35	12:33:47	8.09	0	802	RECORD RATE & PSI
Event #36	12:38:46	7.92	0	856	RECORD RATE & PSI
Event #37	12:43:46	7.78	0	855	RECORD RATE & PSI
Stage #7	12:44:19	0.00	0	523	ISIP Tubing Press 523 (psi)
Event #38	12:49:27	0.00	0	482	5 Min Shutin Pres. Tubing Pr ess 482 (psi)
Event #39	12:54:18	0.00	0	470	10 Min Shutin Pres. Tubing P ress 470 (psi)
Event #40	12:59:22	0.00	0	464	15 Min Shutin Pres. Tubing P ress 464 (psi)
Event #41	12:59:43	0.00	0	464	End Job

Murphy Oil Co.
EPU 8-D
Step Rate Test
AUGUST 8, 1995



Intersection @ 600 psi (Surface Pressure)

EPA Permit #MT2023-00023

3

DELIVERY TICKET

No. 395775

IMCO Services
A Division of HALLIBURTON Company
2400 West Loop South, P.O. Box 22605
Houston, Texas 77027 A/C 713 671-4800

DATE SHIPPED: 9-24-85

FOR TRANSFERS ONLY — DELIVERING LOCATION / RECEIVING LOCATION

CUSTOMER NUMBER / WELL / TYPE / LOCATION

PRICING POINT: Wolf Point Mont — ZONE

F.O.B. — PR. CODE

1. ☐ WAREHOUSE 3. ☐ INLAND WATER
2. ☐ LAND WELL SITE

SOLD TO: Murphy Corp

ADDRESS

CITY — ZIP CODE

STATE AND COUNTY: Mont Roosevelt

WELL NAME AND NUMBER: East Poplar unit #80

STATE CODE — COUNTY CODE

DELIVERING WAREHOUSE: Wolf Point Mont

CUSTOMER ORDER NO.

SHIPPED VIA:
1. ☐ IMCO OR DEALER A. ☐ TRUCK D. ☐
2. ☐ CUSTOMER B. ☐ BOAT E. ☐
3. ☐ CONTRACTOR C. ☐ BARGE

TRUCK OR BOAT NAME: 203

	QUANTITY	PRODUCT	SIZE	WEIGHT	PRODUCT CODE	TAX	PER *	UNIT PRICE	AMOUNT
1	324	IMCO BAR ☐ DOM ☐ BULK ☐ M.B. ☐ BULKANS	100	32400				635	2057 40
2	50	IMCO BRINEGEL	~~100~~ 50 LB.	2500	10030-000		3	635	317 50
3		IMCO GEL	100 LB.		10035-600		3		
4		IMCO CMC ☐ REG.	50 LB.		15104-002				
5		IMCO CMC ☐ HI VIS.	50 LB.		15103-001				
6		IMCO POLY RX	50 LB.		15568-000				
7		IMCO LIG	50 LB.		15111-000		3		
8		IMCO LOID	50 LB.		15112-000		3		
9		IMCO R.D. 111	50 LB.		15120-000		3		
10		IMCO VC-10	50 LB.		15134-000		3		
11		CAUSTIC SODA	50 LB.		15308-000		3		
12		IMCO MYCA ☐ FINE	50 LB.		15404-001		3		
13		IMCO MYCA ☐ CR.	50 LB.		15405-002		3		
14		IMCO PLUG ☐ FINE	50 LB.		15406-001		3		
15		IMCO PLUG ☐ MED.	50 LB.		15407-002		3		
16		IMCO PLUG ☐ CR.	50 LB.		15408-003		3		
17		IMCO KEN X							
18	5	Desco	25	125				4620	231 00
19	3	5 gal Defoam	50	150				3740	112 20
20									
21									
22									
23									

MATERIAL RECEIVED: Gerald Hagadone

MATERIAL DELIVERED BY: Auto

DISTANCE TO LOCATION

TOTAL WEIGHT: 35175

MILEAGE FOR DRAYAGE CHARGE: 35175 LBS. @ 122 CWT. 429 14

HRS. @ HR.

SWAMPER HRS. HR.

TOTAL DELIVERY CHARGE $ 429 14

TOTAL AMOUNT 2718 10

1. STATE % SALES TAX
2. COUNTY % SALES TAX
3. CITY % SALES TAX

TAX EXEMPT NO.

DELIVERY CHARGE 429 14

TOTAL 3147 24

DISTRIBUTION:
ORIGINAL & DUPLICATE TO HOUSTON ON SIGNATURE OF CUSTOMER. TRIPLICATE TO HOUSTON ON DATE OF DELIVERY. 4TH, 5TH & 6TH COPIES TO CUSTOMER FIELD. 7TH COPY TO DIST. OFFICE. 8TH COPY IS BOOK COPY.

* 1. TON 2. CWT. 3. BAG 4. GAL. 5. LB. 6. EA. 7. DRM. 8. BBL.

505 REV. 6/81-10-83-40M

DELIVERY TICKET NO. 395775

CUSTOMER — FIELD

DELIVERY TICKET

No. 373364

IMCO Services
A Division of HALLIBURTON Company
2400 West Loop South, P.O. Box 22605
Houston, Texas 77027 A/C.713 671-4800

CUSTOMER NUMBER	WELL	TYPE	LOCATION

DATE SHIPPED: 8-5-87

FOR TRANSFERS ONLY

DELIVERING LOCATION	RECEIVING LOCATION

PRICING POINT: Wolf Point Mont — ZONE

F.O.B. — PR CODE

1. ☐ WAREHOUSE 3. ☐ INLAND WATER
2. ☐ LAND WELL SITE

SHIPPED VIA:
1. ☐ IMCO OR DEALER A. ☐ TRUCK D. ☐
2. ☐ CUSTOMER B. ☐ BOAT E. ☐
3. ☒ CONTRACTOR C. ☐ BARGE

TRUCK OR BOAT NAME: HW trucking

SOLD TO: Murphy Oil
ADDRESS: Box 541 59255
CITY: Poplar Mont — ZIP CODE
STATE AND COUNTY: Mont Roosevelt
WELL NAME AND NUMBER: EPU 8D — STATE CODE — COUNTY CODE
DELIVERING WAREHOUSE: Wolf Point Mont — CUSTOMER ORDER NO

QUANTITY	PRODUCT	SIZE	WEIGHT	PRODUCT CODE	TAX	PER *	UNIT PRICE	AMOUNT
1 360	IMCO BAR ☐ DOM ☐ BULK ☐ M.B. ☐ BULKANS	100	36,000	0001			670	2412 00
2 50	IMCO BRINEGEL	~~100~~ 50 LB.	2500	~~10030-000~~ 0314		3	635	317 50
3	IMCO GEL	100 LB.		10035-600		3		
4	IMCO CMC ☐ REG.	50 LB.		15104-002				
5	IMCO CMC ☐ HI VIS.	50 LB.		15103-001				
6	IMCO POLY RX	50 LB.		15568-000				
7	IMCO LIG	50 LB.		15111-000		3		
8	IMCO LOID	50 LB.		15112-000		3		
9	IMCO R.D. 111	50 LB.		15120-000		3		
10	IMCO VC-10	50 LB.		15134-000		3		
11	CAUSTIC SODA	50 LB.		15308-000		3		
12	IMCO MYCA ☐ FINE	50 LB.		15404-001		3		
13	IMCO MYCA ☐ CR.	50 LB.		15405-002		3		
14	IMCO PLUG ☐ FINE	50 LB.		15406-001		3		
15	IMCO PLUG ☐ MED.	50 LB.		15407-002		3		
16	IMCO PLUG ☐ CR.	50 LB.		15408-003		3		
17	IMCO KEN X							
18 2	Deco	25	50	1021			4600	92 00
19 2	Defoamer	50	100	5078			3740	74 80
20								
21	Engineer Service chg						150 day	150 00
22								
23								

MATERIAL RECEIVED

MATERIAL DELIVERED BY: Hayden Auto

DISTANCE TO LOCATION — TOTAL WEIGHT

MILEAGE FOR DRAYAGE CHARGE

LBS. @ CWT.
5 HRS. @ 45.00 HR. 225 00
SWAMPER 5 HRS. 11 HR 55 00

TOTAL DELIVERY CHARGE $ 280 00

TOTAL AMOUNT 3046 30

1 STATE % SALES TAX
2 COUNTY % SALES TAX
3 CITY % SALES TAX
TAX EXEMPT NO.

DELIVERY CHARGE 280 00

TOTAL 3326.3

DISTRIBUTION:
ORIGINAL & DUPLICATE TO HOUSTON ON SIGNATURE OF CUSTOMER. TRIPLICATE TO HOUSTON ON DATE OF DELIVERY. 4TH, 5TH & 6TH COPIES TO CUSTOMER FIELD. 7TH COPY TO DIST. OFFICE. 8TH COPY IS BOOK COPY.

* 1. TON 2. CWT. 3. BAG 4. GAL. 5. LB. 6. EA. 7. DRM. 8. BBL.

505 REV. 6/81-10-83-40M

DELIVERY TICKET NO. 373364

CUSTOMER — FIELD

IMCO Services
A Halliburton Company
5950 N. Course Dr., P.O. Box 22605
Houston, TX 77227 A/C 713 561-1300
24-Hour Emergency: A/C 713 561-1600

DRILLING MUD REPORT NO.

DATE 9-24 19 85 | DEPTH

SPUD DATE | PRESENT ACTIVITY

OPERATOR Murphy Oil	CONTRACTOR	RIG NO.
REPORT FOR Mr. Ray Reede	REPORT FOR	SECTION, TOWNSHIP, RANGE
WELL NAME AND NO. East Poplar 44.80	FIELD OR BLOCK NO.	COUNTY PARISH OR OFFSHORE AREA Roosevelt / STATE/PROVINCE Mt

DRILLING ASSEMBLY			CASING	MUD VOLUME (BBL)		CIRCULATION DATA		
BIT SIZE	TYPE	JET SIZE	SURFACE in. @ ft.	HOLE	PITS	PUMP SIZE × IN.		ANNULAR VEL (ft/min) DP DC
DRILL PIPE SIZE	TYPE	LENGTH	INTERMEDIATE in. @ ft.	TOTAL CIRCULATING VOLUME		PUMP MAKE, MODEL	ASSUMED EFF %	CIRCULATION PRESSURE (psi)
DRILL PIPE SIZE	TYPE	LENGTH	INTERMEDIATE in. @ ft.	IN STORAGE	WEIGHT	bbl/stk	stk/min	BOTTOMS UP (min)
DRILL COLLAR SIZE		LENGTH	PRODUCTION OR LINER in. @ ft.	MUD TYPE		bbl/min	gal/min	TOTAL CIRC TIME (min)

MUD PROPERTIES		
Sample From	☐ F.L. ☐ PIT	☐ F.L. ☐ PIT
Time Sample Taken		
Flowline Temperature (°F)		
Depth (ft)		
Weight ☐ (ppg) ☐ (lb/cu ft) ☐ sp gr		
Funnel Viscosity (sec/qt) API @ °F		
Plastic Viscosity cp @ °F		
Yield Point (lb/100 ft²)		
Gel Strength (lb/100 ft²) 10 sec/10 min	/	/
Filtrate API (cm³/30 min)		
API HTHP Filtrate (cm³/30 min) @ °F		
Cake Thickness (32nd in. API/HTHP)	/	/
Solids Content (% by Vol) ☐ calculated ☐ retort		
Liquid Content (% by Vol) Oil/Water	/	/
Sand Content (% by Vol)		
Methylene Blue Capacity ☐ lb/bbl equiv ☐ cm³/cm³ mud		
pH ☐ Strip ☐ Meter @ °F		
Alkalinity Mud (P_m)		
Alkalinity Filtrate (P_f/M_f)	/	/
Chloride (mg/L)		
Total Hardness as Calcium (mg/L)		

MUD PROPERTY SPECIFICATIONS

WEIGHT	VISCOSITY	FILTRATE

RECOMMENDED TOUR TREATMENT

IMCO mixed 20 bbls. 18.5 lb./gal salt mud to kill disposal well at 814 ft. with tubing pressure 350 psi.
pumped 47 bbls down tubing (2 7/8")
15 bbls down backside.
well flowed on 9th jt. mixed 20 more bbls. and pumped 7 bbls down backside and 7 down tubing

REMARKS

well flowed. Made up 20 bbls. 19 lb. mud. pumped 8 bbls down backside and 12 down tubing. well quiet. Round Tripped csg.

SOLIDS EQUIPMENT RUN LAST 24 HOURS (Please Fill In)

SHAKER #1 / mesh | CENTRIFUGE hou
SHAKER #2 / mesh | DESANDER yes
MUD CLEANER mesh | DESILTER yes

PRODUCT INVENTORY	Barite	Bentonite	Desco			Trucking									
STARTING INVENTORY															
RECEIVED															
USED LAST 24 hr	258	5	1												
CLOSING INVENTORY	6.35	6.35	46			430									
COST LAST 24 hr															

BIT HYDRAULI
Δ P_b JV
HHP$_b$ IF$_b$
CRITICAL VELOCIT
DP DC
EQUIVALENT CIRC DENSITY
Csg. Shoe TD

IMCO REPRESENTATIVE	PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Doug Taylor	7748286	653 1437	2146	

OPERATOR

NOTICE: ANY OPINION AND/OR RECOMMENDATION, EXPRESSED ORALLY OR WRITTEN HEREIN, HAS BEEN PREPARED CAREFULLY AND MAY BE USED IF THE USER SO ELECTS. HOWEVER, NO REPRESENTATION OR WARRANTY IS MADE BY OURSELVES OR OUR AGENTS AS TO ITS CORRECTNESS OR COMPLETENESS, AND NO LIABILITY IS ASSUMED FOR ANY DAMAGES RESULTING FROM THE USE OF SAME.

FORM 515 REV. 4-84
PRINTED IN U.S.A. 1-85 80M

51

NALCO CHEMICAL COMPANY

P.O. BOX 87 SUGAR LAND, TEXAS 77487-0087
AREA 713—491-4500

ORIGINAL INVOICE

INVOICE			
DATE			NUMBER
9	20	88	09V016

PLEASE SHOW INVOICE NUMBER AND REMIT TO

NALCO CHEMICAL COMPA
P. O. box 87
Sugar Land, Tx. 77
Attn: Cathy Starr

SOLD TO

Murphy Oil USA, Inc.
P. O. Box 547
Poplar, Montana 59255

SHIPPED TO

CUSTOMER ORDER NO	CUSTOMER REG'N. OR CONTR. NO.	DATE SHIPPED

OR COLL	F.O.B. POINT	SHIPPED FROM	CAR INITIAL AND NUMBER

SHIPPED

NALCO ORDER NO.

TERMS: NET 30 DAYS

QUANTITY	SIZE	DEN.	TYPE	PRODUCT DESCRIPTION	TAX EXEMPT	WEIGHT, GALLONAGE, CU. FT. OR SQ. FT.	PR. CL.	UNIT PRICE	AMOUNT
10				150 gallon steel bulk tanks @37.00 each to the following leases:					$370.00
				Yola Tribal A-1					
				Tribal SWD-Watsit 1-D					
				Bridges #1					
				Courchene #1					
				Courchene SWD 2-D					
				EPU #9					
				EPU #20					
				EPU #39					
				EPU #66					
				EPU 8-D					

☒ INVOICE ☐ DELIVERY TICKET
CHG. TO as shown
USED FOR Chemical Treating
AFE # maint
APPROVAL BR

PURCHASING ONLY

DEPT.	TYPE	ORDER REF.

PRICE CLASS 1 - PER POUND 2 - PER GALLON 3 - PER CASE 4. - PER STICK 5. - PER EACH 6. - PER FOOT 7. - PER CWT. 8. - PER CU. FT. 9. - PER SQ. FT.

** TYPE ABBREVIATIONS BGS. - BAGS F.D. - FIBER DRUMS S.D. - STEEL DRUMS CSS. - CASES T.C. - TANK CARS BOT. - BOTTLES

ALL WORK DONE BY THIS COMPANY IN PRODUCING THE MERCHANDISE LISTED IN THIS INVOICE, AND THE PRICES CHARGED, ARE IN ACCORDANCE WITH GOVERNMENT REGULATIONS. SELLER ALSO REPRESENTS THAT THE GOODS OR SERVICES COVERED BY THIS INVOICE HAVE BEEN PRODUCED OR RENDERED IN ACCORDANCE WITH THE PROVISIONS OF THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED.

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORP.
POPLAR, MONTANA

29-NOV-88

EPU #8-D
PRODUCED

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	43,295.8	1,882.4	as NaCl	
Calcium	Ca++	1,000.0	50.0	as CaCO3	2,500.0
Magnesium	Mg++	121.5	10.0	as CaCO3	500.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		44,417.3	1,942.4		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	67,984.0	1,917.1	as NaCl	112,000.0
Sulfate	SO4=	811.2	16.9	as Na2SO4	1,200.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	512.4	8.4	as CaCO3	420.0
Total Anions		69,307.6	1,942.4		
Total Solids		113,724.9			

METALS

Total Iron,Fe	2.0	as Fe	2.0
Acid to Phen,CO2	158.4	as CaCO3	360.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

D. Kasrush
Service Technician

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

27-FEB-89

EPU 8-D
PRODUCED

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	44,752.0	1,945.7	as NaCl	
Calcium	Ca++	1,200.0	60.0	as CaCO3	3,000.0
Magnesium	Mg++	486.0	40.0	as CaCO3	2,000.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		46,438.0	2,045.7		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	71,626.0	2,019.9	as NaCl	118,000.0
Sulfate	SO4=	878.8	18.3	as Na2SO4	1,300.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	463.6	7.6	as CaCO3	380.0
Total Anions		72,968.4	2,045.7		
Total Solids		119,406.4			

METALS

Total Iron,Fe	2.3	as Fe	2.3
Acid to Phen,CO2	154.0	as CaCO3	350.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Max A. [illegible] 2/21/89

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ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

27-FEB-89

EPU 8-D
PRODUCED

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-1.39	-56.77	NA	NA
80	-1.19	-57.10	NA	NA
100	-0.95	-57.22	NA	NA
120	-0.67	-56.74	NA	NA
140	-0.34	-55.68	NA	NA
160	+0.01	-54.55	NA	NA
180	+0.42	-53.41	NA	NA
200	+0.87	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

NALCO

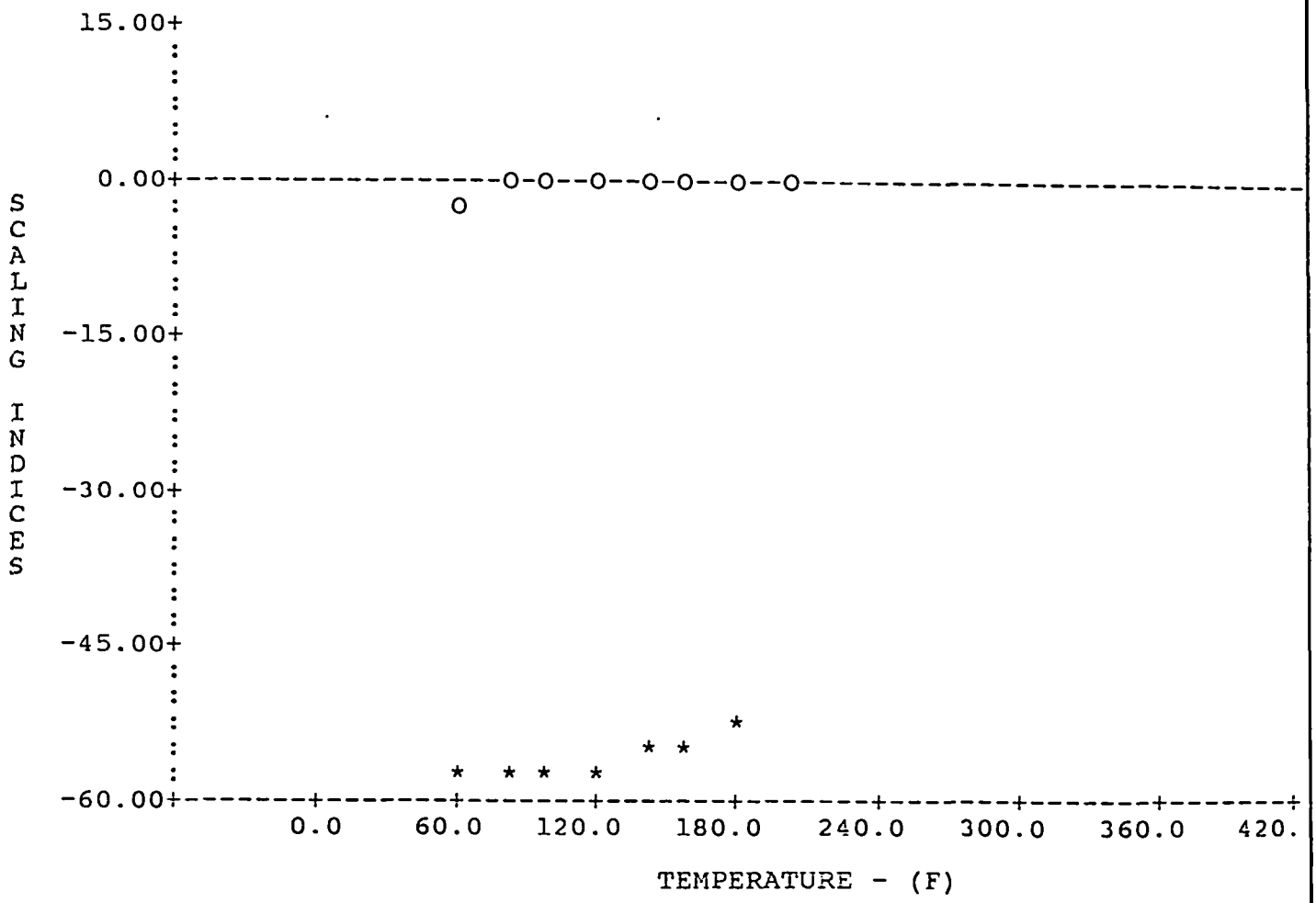
ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

27-FEB-89

EPU 8-D
PRODUCED

>>> Scaling Indices <<<



O = $CaCO_3$
* = $CaSO_4$
# = $BaSO_4$
X = $SrSO_4$

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ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

21-JUN-89

EPU #8-D
PRODUCED

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	45,105.7	1,961.1	as NaCl	
Calcium	Ca++	1,040.0	52.0	as CaCO3	2,600.0
Magnesium	Mg++	170.1	14.0	as CaCO3	700.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		46,315.8	2,027.1		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	71,019.0	2,002.7	as NaCl	117,000.0
Sulfate	SO4=	845.0	17.6	as Na2SO4	1,250.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	414.8	6.8	as CaCO3	340.0
Total Anions		72,278.8	2,027.1		
Total Solids		118,594.6			

METALS

Total Iron,Fe	2.0	as Fe	2.0
Acid to Phen,CO2	114.4	as CaCO3	260.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Mary Q. [illegible]
6/21/89

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

21-JUN-89

EPU #8-D
PRODUCED

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-1.49	-59.44	NA	NA
80	-1.29	-59.76	NA	NA
100	-1.05	-59.88	NA	NA
120	-0.77	-59.44	NA	NA
140	-0.45	-58.37	NA	NA
160	-0.08	-57.22	NA	NA
180	+0.32	-56.06	NA	NA
200	+0.77	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

NALCO

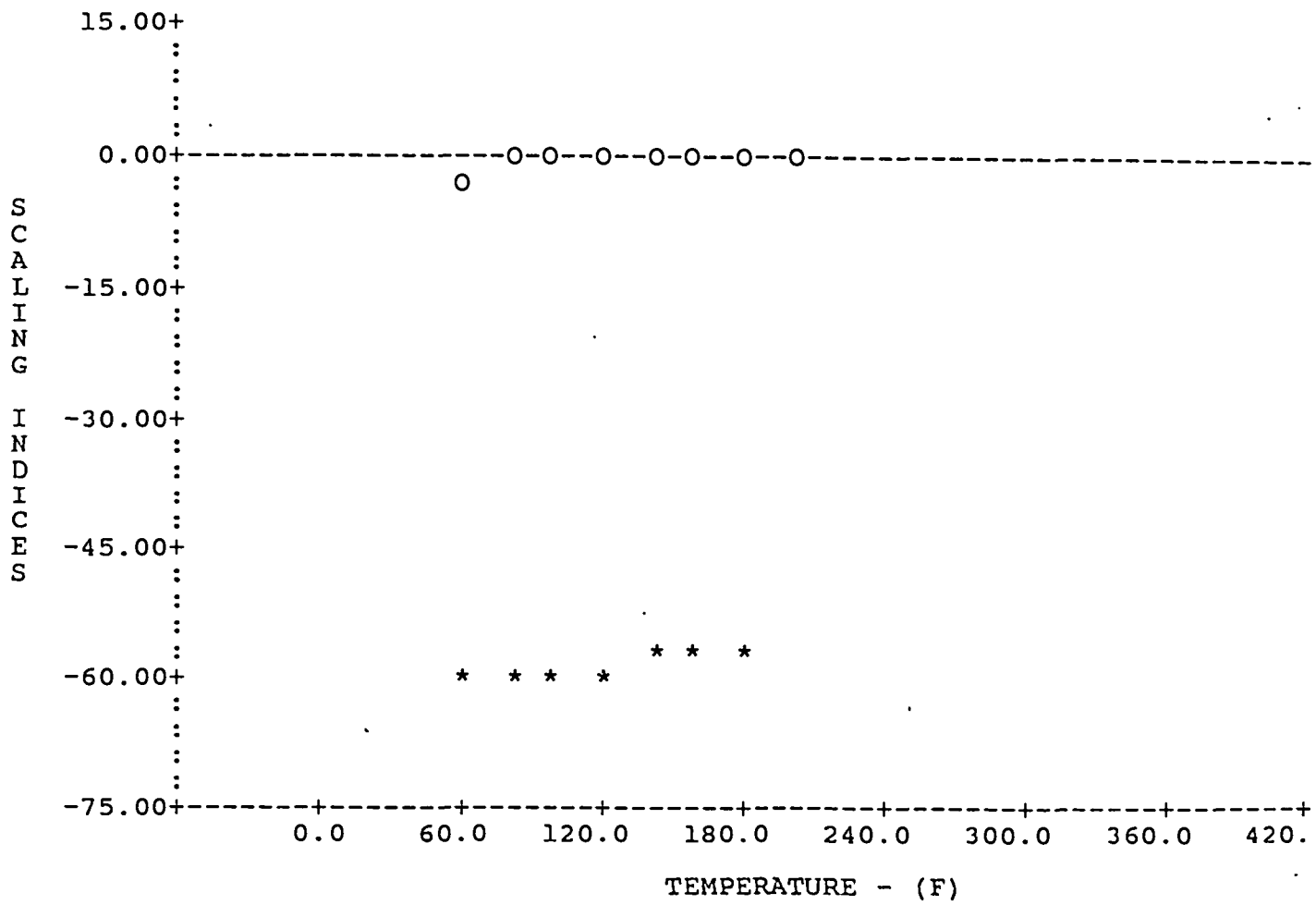
ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

21-JUN-89

EPU #8-D
PRODUCED

>>> Scaling Indices <<<



O = CaCO3
* = CaSO4
# = BaSO4
X = SrSO4

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

22-SEP-89

EPU 8-D
PRODUCED

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	42,292.0	1,838.8	as NaCl	
Calcium	Ca++	920.0	46.0	as CaCO3	2,300.0
Magnesium	Mg++	243.0	20.0	as CaCO3	1,000.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		43,455.0	1,904.8		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	66,770.0	1,882.9	as NaCl	110,000.0
Sulfate	SO4=	743.6	15.5	as Na2SO4	1,100.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	390.4	6.4	as CaCO3	320.0
Total Anions		67,904.0	1,904.8		
Total Solids		111,359.1			

METALS

Total Iron,Fe	2.5	as Fe	2.5
Acid to Phen,CO2	105.6	as CaCO3	240.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Mark A. [illegible]
9-22-89

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

22-SEP-89

EPU 8-D
PRODUCED

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-1.56	-61.25	NA	NA
80	-1.36	-61.56	NA	NA
100	-1.12	-61.70	NA	NA
120	-0.84	-61.32	NA	NA
140	-0.52	-60.25	NA	NA
160	-0.15	-59.09	NA	NA
180	+0.25	-57.92	NA	NA
200	+0.71	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

NALCO

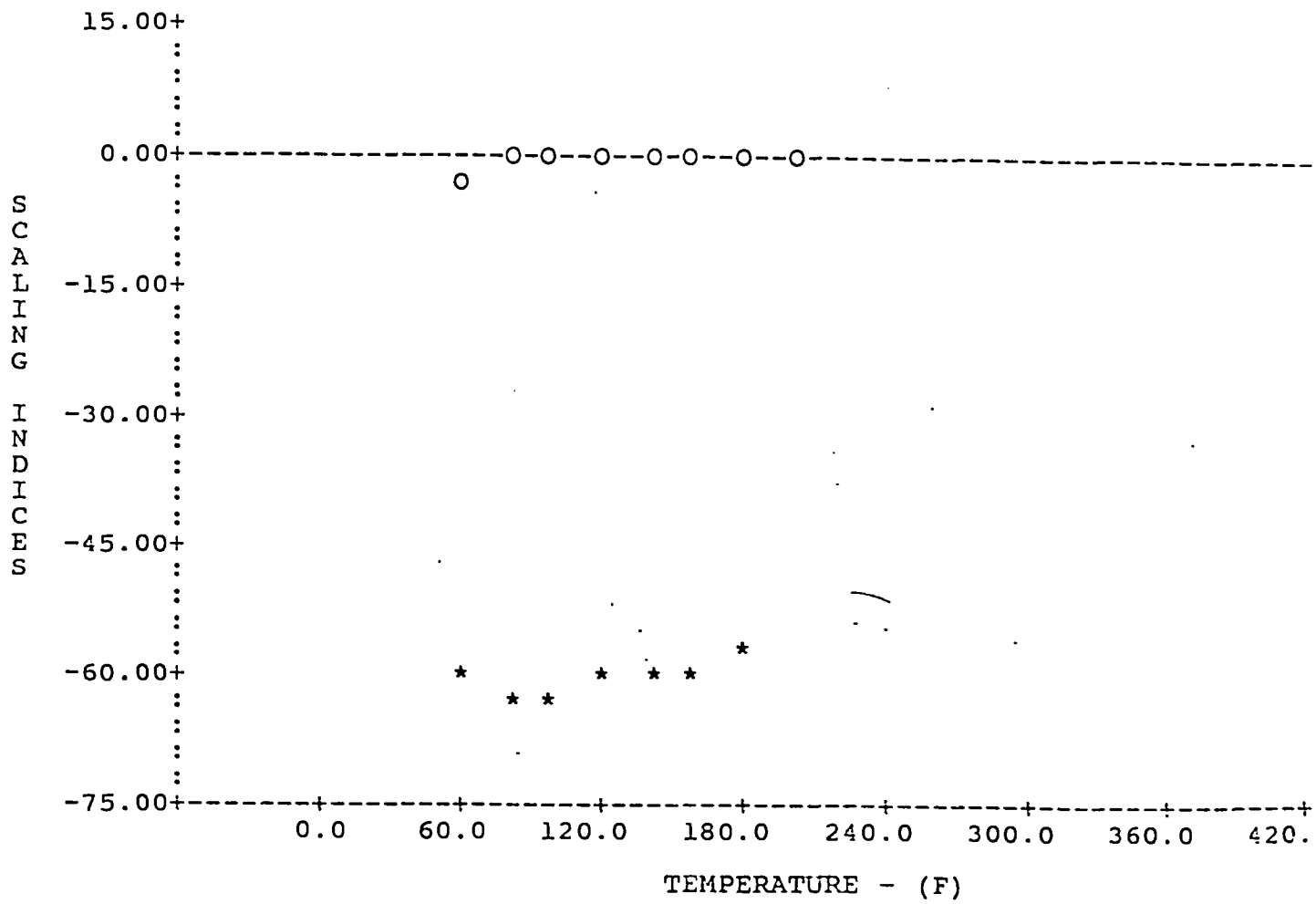
ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

22-SEP-89

EPU 8-D
PRODUCED

>>> Scaling Indices <<<



O = $CaCO_3$
* = $CaSO_4$
# = $BaSO_4$
X = $SrSO_4$

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

11-DEC-89

EPU 8-D
PRODUCED

Page 1

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	43,218.1	1,879.0	as NaCl	
Calcium	Ca++	1,000.0	50.0	as CaCO3	2,500.0
Magnesium	Mg++	364.5	30.0	as CaCO3	1,500.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		44,582.6	1,959.0		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	68,591.0	1,934.3	as NaCl	113,000.0
Sulfate	SO4=	845.0	17.6	as Na2SO4	1,250.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	439.2	7.2	as CaCO3	360.0
Total Anions		69,875.2	1,959.0		
Total Solids		114,457.8			

METALS

Total Iron,Fe	2.1	as Fe	2.1
Acid to Phen,CO2	149.6	as CaCO3	340.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Max A.
12-11-89

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY CORPORATION
POPLAR, MONTANA

14-DEC-90

EPU 8-D
PRODUCED

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	32,491.8	1,412.7	as NaCl	
Calcium	Ca++	9,200.0	460.0	as CaCO3	23,000.0
Magnesium	Mg++	218.7	18.0	as CaCO3	900.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		41,910.5	1,890.7		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	66,163.0	1,865.8	as NaCl	109,000.0
Sulfate	SO4=	946.4	19.7	as Na2SO4	1,400.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	317.2	5.2	as CaCO3	260.0
Total Anions		67,426.6	1,890.7		
Total Solids		109,337.1			

METALS

Total Iron,Fe	1.0	as Fe	1.0
Acid to Phen,CO2	88.0	as CaCO3	200.0

OTHER PROPERTIES

pH	5.9
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Murphy Nalco Chemical 12-21-90

Form 738 (8-89)

Analytical Laboratory Locations:
NALCO CHEMICAL COMPANY
ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198
POST OFFICE BOX 87 • SUGAR LAND, TEXAS 77487-0087

Quali-Trak™

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY CORPORATION
POPLAR, MONTANA

14-DEC-90

EPU 8-D
PRODUCED

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-0.59	+0.35	NA	NA
80	-0.39	+0.20	NA	NA
100	-0.15	+0.17	NA	NA
120	+0.12	+0.47	NA	NA
140	+0.45	+0.86	NA	NA
160	+0.81	+1.27	NA	NA
180	+1.22	+1.68	NA	NA
200	+1.67	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

Form 738 (8-89)

Analytical Laboratory Locations:
NALCO CHEMICAL COMPANY
ONE NALCO CENTER ◦ NAPERVILLE, ILLINOIS 60563-1198
POST OFFICE BOX 87 ◦ SUGAR LAND, TEXAS 77487-0087

Quall-Trak™

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORP.
POPLAR, MONTANA

17-DEC-91

EPU 8-D
PRODUCED

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	41,932.4	1,823.1	as NaCl	
Calcium	Ca++	940.0	47.0	as CaCO3	2,350.0
Magnesium	Mg++	158.0	13.0	as CaCO3	650.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		43,030.3	1,883.1		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	66,163.0	1,865.8	as NaCl	109,000.0
Sulfate	SO4=	507.0	10.5	as Na2SO4	750.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	414.8	6.8	as CaCO3	340.0
Total Anions		67,084.8	1,883.1		
Total Solids		110,115.1			

METALS

Total Iron,Fe	10.0	as Fe	10.0
Acid to Phen,CO2	110.0	as CaCO3	250.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Mark A. 2-14-92

Form 738 (8-89)

Analytical Laboratory Locations:
NALCO CHEMICAL COMPANY
ONE NALCO CENTER ▫ NAPERVILLE, ILLINOIS 60563-1198
POST OFFICE BOX 87 ▫ SUGAR LAND, TEXAS 77487-0087

Quali-Trak™

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORP.
POPLAR, MONTANA

17-DEC-91

EPU 8-D
PRODUCED

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-1.52	-63.40	NA	NA
80	-1.32	-63.70	NA	NA
100	-1.08	-63.84	NA	NA
120	-0.80	-63.48	NA	NA
140	-0.48	-62.42	NA	NA
160	-0.11	-61.27	NA	NA
180	+0.29	-60.10	NA	NA
200	+0.75	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

Form 738 (8-89)

Analytical Laboratory Locations:
NALCO CHEMICAL COMPANY
ONE NALCO CENTER □ NAPERVILLE, ILLINOIS 60563-1198
POST OFFICE BOX 87 □ SUGAR LAND, TEXAS 77487-0087

Quali-Trak™

NALCO

ANALYTICAL LABORATORY REPORT

EPA # MTS2023-0023

MURPHY OIL CORPORATION
POPLAR, MONTANA

17-DEC-92

EPU 8D
PRODUCED

MAR 1993
RECEIVED
BOARD OF OIL & GAS CONS.
STATE OF MONT.
BILLINGS

Page 1

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	39,232.5	1,705.8	as NCCl	
Calcium	Ca++	3,000.0	150.0	as CaCO3	7,500.0
Magnesium	Mg++	729.0	60.0	as CaCO3	3,000.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		42,961.5	1,915.8		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	67,377.0	1,900.0	as NaCl	111,000.0
Sulfate	SO4=	486.7	10.1	as Na2SO4	720.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	341.6	5.6	as CaCO3	280.0
Total Anions		68,205.3	1,915.8		
Total Solids		111,166.8			

METALS

Total Iron, Fe	2.5	as Fe	2.5
Acid to Phen, CO2	66.0	as CaCO3	150.0

OTHER PROPERTIES

pH	5.8
Specific Gravity	1.1
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	

Mary A. [illegible] 1-7-93

Form 738 (8-89)

Analytical Laboratory Locations:
NALCO CHEMICAL COMPANY
ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198
POST OFFICE BOX 87 • SUGAR LAND, TEXAS 77487-0087

Quali-Trak™

NALCO

ANALYTICAL LABORATORY REPORT

MURPHY OIL CORPORATION
POPLAR, MONTANA

17-DEC-92

EPU 8D
PRODUCED

>>> Scaling Indices <<<

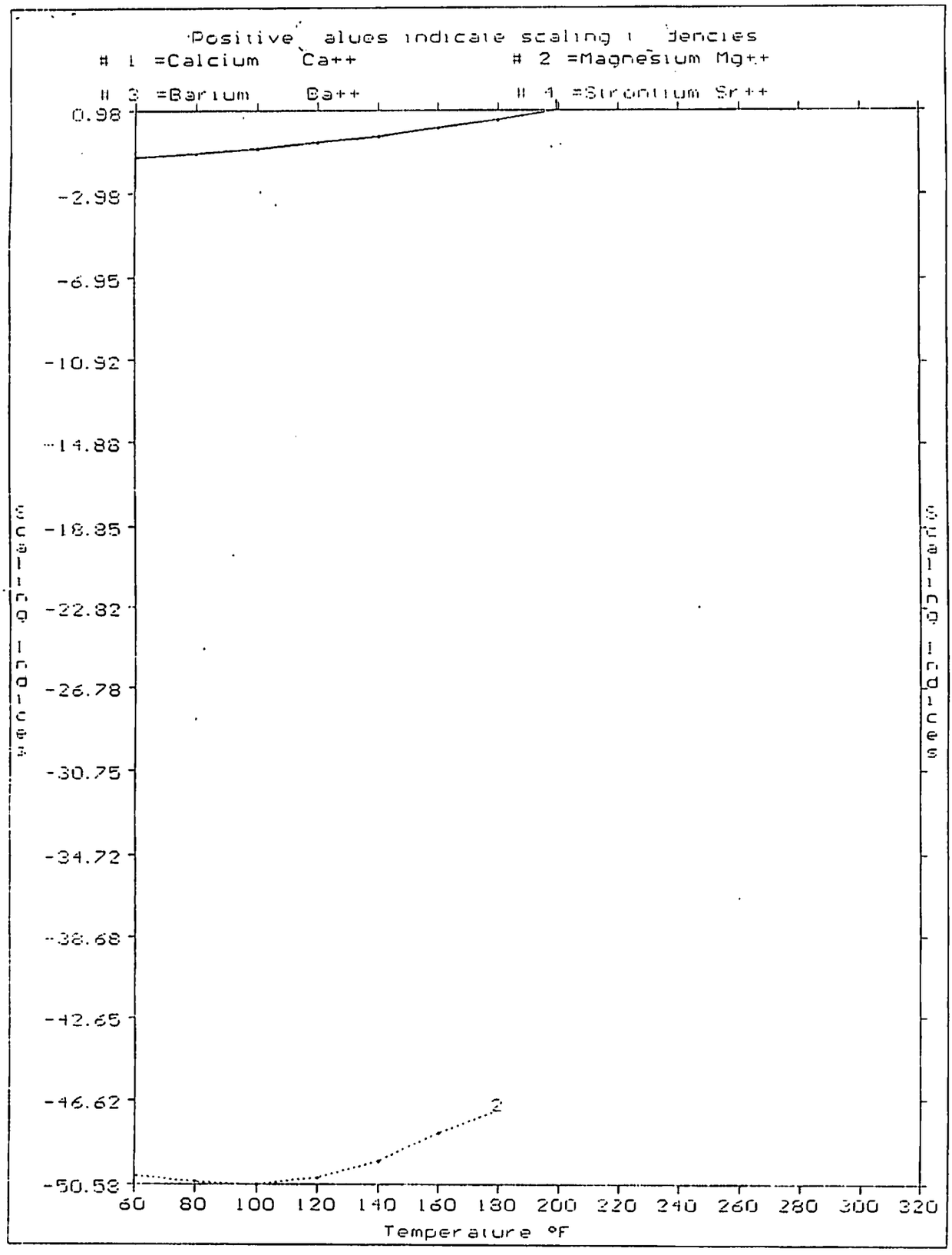
Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-1.13	-36.39	NA	NA
80	-0.93	-36.66	NA	NA
100	-0.69	-36.75	NA	NA
120	-0.41	-36.34	NA	NA
140	-0.08	-35.50	NA	NA
160	+0.27	-34.60	NA	NA
180	+0.68	-33.71	NA	NA
200	+1.13	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

Form 738 (8-89)

Analytical Laboratory Locations:
NALCO CHEMICAL COMPANY
ONE NALCO CENTER ◻ NAPERVILLE, ILLINOIS 60563-1198
POST OFFICE BOX 87 ◻ SUGAR LAND, TEXAS 77487-0087

Quali-Trak™


Positive values indicate scaling tendencies
1 =Calcium Ca++
2 =Magnesium Mg++
3 =Barium Ba++
4 =Strontium Sr++
0.98
-2.98
-6.95
-10.92
-14.88
-18.85
-22.82
-26.78
-30.75
-34.72
-38.68
-42.65
-46.62
-50.58
Scaling Indices
60 80 100 120 140 160 180 200 220 240 260 280 300 320
Temperature °F
2

(9)

NATIONAL-OILWELL
Production Systems

#51772

FIELD SERVICE REPORT

REPORT № 21567
STORE: 2484
REPRESENTATIVE: T.M.C.
DATE: 12-16-91

CUSTOMER Murphy Oil

LEASE East Poplar Unit

LOCATION

WELL NO. #8D-

TROUBLE AS REPORTED: Inspect pump for possible crack in crankshaft

TROUBLE AS FOUND:

SERVICE PERFORMED OR REMARKS: Removed back cover of triplex - Pulled #1 rod cap to inspect crankshaft - Used emory cloth & sanded over crack - determined crank was not cracked - Journal worn slight but cleaned up nice - Also pulled #2 cap - Journal fair - Checked for end play & could not get any - checked crosshead pins & bushings - Noticed wear between pin & bushing - could not determine wear between pin & cross head - Also found excessive metal in cradle below Jackshaft & also sludge - Reason for low oil pressure could be worn oil ring - Did not start unit with cover off - Recommend to repair triplex due mostly to excess metal found in oil - Travel back to EPU 80 loc to start up pump

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL

TIME: FROM 3:00 CDT O'CLOCK TO 5:00 CDT O'CLOCK = 2 HOURS @ 31.00 PER HOUR 62.00

MILEAGE: FROM _____ TO _____ = _____ MILES @ _____ PER MILE _____

Total Charge _____

CUSTOMER Murphy Oil BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: National Oilwell
Watford City, N.D.

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

NATIONAL-OILWELL
Production Systems

51959

FIELD SERVICE REPORT

REPORT No. 31961
STORE: 2484
REPRESENTATIVE: Tim
DATE: 1-16-12-20

CUSTOMER Murphy Oil

LEASE EPU 8D

LOCATION

WELL NO. SWD

TROUBLE AS REPORTED Pump over haul

TROUBLE AS FOUND

SERVICE PERFORMED OR REMARKS Labor to tear down triplex - clean up parts. Install new bearings & races - new crankshaft & set end play on Jackshaft & crankshaft - Install new Insert bearings & also new pins in crossheads - new bushings in connecting rods - ~~Ins~~ Replaced rod wiper seals & assembled.

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL
		Mud #3		

TIME: FROM _____ O'CLOCK TO _____ O'CLOCK = 8 HOURS @ 31.00 PER HOUR _____

MILEAGE: FROM _____ TO _____ = _____ MILES @ _____ PER MILE _____

Total Charge _____

CUSTOMER Murphy BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: National Oilwell Watford City

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/07/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: CEZ

CUSTOMER CODE: 6675700

DELIVERY TICKET: 7484-051959
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY REEDE
ORDER NO:
LEASE: EPU 80
WELL/RIG:
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

file copy

QUANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
1.000	EA	6686	LUBRIPLATE	3.37	$3.37
1.000	EA	6686	LOT OF BOLTS	7.14	$7.14
1.000	EA	9310	INBOUND UPS BLUE ON BEARING CUP FROM ROOSEVELT, UTAH	21.50	$21.50
1.000	EA	6686	CHARGE TO BORE AND SLEEVE BEARING RETAINER, PRESS GEAR FROM SHAFT AND FIT THREE CROSSHEAD PINS AND BUSHINGS	432.86	$432.86
8.000	EA	9160	HRS. LABOR PER FSR #31789 TO OVERHAUL 346P FOR MAN #1	31.00	$248.00
8.000	EA	9160	HRS. LABOR PER FSR #31928 TO OVERHAUL 346P MAN #2	31.00	$248.00
8.000	EA	9160	HRS. LABOR PER FSR #31961 TO OVERHAUL 346P MAN #3	31.00	$248.00

SUBTOTAL	$7,338.67
TAX	$0.00
TOTAL	$7,338.67

** D O N O T P A Y **

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reede

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

END QUESTIONS TO:
ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

DELIVERY TICKET PAGE 1
****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/07/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: CEZ

DELIVERY TICKET: 7484-051959
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

CUSTOMER CODE: 6675700

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY REEDE
ORDER NO:
LEASE: EPU 80
WELL/RIG:
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

file copy

QUANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
1.000	EA	64229100	BREATHER- AIR MAZE	34.00	$34.00
3.000	EA	08444002	BEARING CRANKPIN 2 GKOHS -HALVES-	50.85	$152.55
6.000	EA	75102005	COTTER STEEL, 1/8X11/2	0.04	$0.24
1.000	EA	08017024	P17-26 GASKET	11.00	$11.00
1.000	EA	08427003	X4 3/8X26 1/2X1/16 GASKET	11.00	$11.00
3.000	EA	08466001	GASKET	3.23	$9.69
1.000	EA	08018266	P17-346 CRANK SHAFT	4,196.45	$4,196.45
2.000	EA	65010966	X6461 TIMKEN CONE	58.07	$116.14
2.000	EA	65013405	X6420 TIMKEN CUP	26.38	$52.76
1.000	EA	68630375	SEAL, OIL	12.70	$12.70
2.000	EA	65010542	X938 TIMKEN CONE	247.00	$494.00
2.000	EA	65013235	X932 TIMKEN CUP	82.84	$165.68

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reede

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/07/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: CEZ

CUSTOMER CODE: 6675700

DELIVERY TICKET: 7484-051959
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY REEDE
ORDER NO:
LEASE: EPU 8D
WELL/RIG:
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

QUANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
3.000	EA	08017706	PIN- CROSS HEAD P17-209	92.10	$276.30
1.000	EA	08017393	GASKET- P17-103	7.50	$7.50
2.000	EA	08017105	SHIMS- SET P17-51	43.93	$87.86
1.000	EA	08017966	RING-OIL PRESS	38.33	$38.33
1.000	EA	08017961	GASKET- P17-281	48.10	$48.10
2.000	EA	08275003	P17-308-GASKET	55.20	$110.40
3.000	EA	08017130	BUSHING- CROSSHEAD PIN P17-58	57.78	$173.34
12.000	EA	08256000	P17-42-1 .005 SHIM	2.19	$26.28
10.000	EA	08256001	P17-42-2 .007 SHIM	2.82	$28.20
2.000	EA	08256002	P17-42-3 SHIM .030	5.51	$11.02
1.000	EA	4447405	CONNECTION- BRASS,5/16 X 1/4 IN, IMPERIAL 68-F	1.82	$1.82
9.000	EA	08466012	WIPER-ROD	7.16	$64.44

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reede

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

NATIONAL-OILWELL
Production Systems

51959
FIELD SERVICE REPORT

REPORT **No. 31789**
STORE: Watford City
REPRESENTATIVE: Tom Kalberer
DATE: 1-20-92

CUSTOMER Murphy

LEASE

LOCATION

WELL NO.

TROUBLE AS REPORTED

TROUBLE AS FOUND

SERVICE PERFORMED OR REMARKS Dissassemble oilwell pump, cleaned pump & parts put bearings on shaft, installed connecting rods & crankshaft, shimed up crank to 0 end play with no preload, installed Jackshaft & shimed to .003 end play, put Gears on shafts, put Reducer cover on, torked connecting rods, hooked up oil pump, put sheave on Jackshaft put covers on pump.

(rebuit in shop)

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL
		MWN #1		

TIME: FROM 8:00 O'CLOCK TO 4:00 O'CLOCK = 8 HOURS @ 31.00 PER HOUR

MILEAGE: FROM _____ TO _____ = _____ MILES @ _____ PER MILE

Total Charge _____

CUSTOMER _____ BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: National Oilwell Production
Watford City ND

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

NATIONAL-OILWELL
Production Systems

51959

FIELD SERVICE REPORT

REPORT No. 31928
STORE: 7484
REPRESENTATIVE: Monty Mulder
DATE: 1/20/92

CUSTOMER MURPHY OIL

LEASE EPU 80

LOCATION

WELL NO. SWD

TROUBLE AS REPORTED
PUMP OVER HAUL

TROUBLE AS FOUND
SAME

SERVICE PERFORMED OR REMARKS

DISASSEMBLED PUMP, CLEANED UP ALL PARTS & GOT READY FOR RE-ASSEMBLY. INSTALLED NEW BEARINGS ON CRANKSHAF & JACKSHAFT. INSTALLED IN POWER END & SET END PLAY. REASSEMBLED REST OF PUMP & SET OIL PUMP AT 25 PSI.

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL
		Mun #2		

TIME: FROM 8:00 O'CLOCK TO 4:00 O'CLOCK = 8 HOURS @ 31.00 PER HOUR

MILEAGE: FROM _____ TO _____ = _____ MILES @ _____ PER MILE

Total Charge _____

CUSTOMER _____ BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: NATIONAL OIL WELL
WATFORD CITY, ND

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

END QUESTIONS TO:
ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

DELIVERY TICKET PAGE 1
****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/22/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: MLM

CUSTOMER CODE: 6675700

DELIVERY TICKET: 7484-052212
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY R.
ORDER NO:
LEASE: EPU 8D
WELL/RIG: SWD
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

UANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
4.500	EA	9160	S/C TO INSTALL INTERMEDIATE RODS AND START UNIT PER FSR #31927	31.00	$139.50
135.000	EA	9160	MILEAGE PER FSR #31927	0.55	$74.25

SUBTOTAL	$213.75
TAX	$0.00
TOTAL	$213.75
** D O N O T P A Y **	

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reed

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

NATIONAL-OILWELL
Production Systems

#52212

FIELD SERVICE REPORT

REPORT No. 31927
STORE: 7484
REPRESENTATIVE: Marty Mulder
DATE: 1/22/92

CUSTOMER MURPHY OIL
LEASE EPU 80
LOCATION
WELL NO. SWD

TROUBLE AS REPORTED	TROUBLE AS FOUND
START UP UNIT	SAME

SERVICE PERFORMED OR REMARKS
DEPARTED EPU 1-D SWD & ARRIVED ON LOCATION. INSTALLED INTERMEDIATE RODS & WIPERS. FILLED UNIT W/CENEX 80-90 GEAR OIL. STARTED UNIT & MONITERED CLOSELY. OIL PRESSURE WAS AT 32 PSI. CHECKED BEARINGS & THEY LOOKED OK. LET UNIT RUN FOR 40 MINUTES AT 500 PSI. EVERYTHING LOOKED GOOD. LEFT LOCATION, WENT BACK & CHECKED EPU 1-D SWD - IT WAS OK. ARRIVED WATFORD CITY.

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL

TIME: FROM 12:30 O'CLOCK TO 5:00 O'CLOCK = 4.5 HOURS @ 31.00 PER HOUR

MILEAGE: FROM ~~12:30~~ 76767 TO ~~5:00~~ 76902 = ~~4.5~~ 135 MILES @ ~~[illegible]~~ .55 PER MILE

Total Charge

CUSTOMER _____ BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: NATIONAL OIL WELL
WATFORD CITY ND

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

9

NATIONAL-OILWELL
Production Systems

#51772

FIELD SERVICE REPORT

REPORT № 21567
STORE: 2484
REPRESENTATIVE: T.M.C.
DATE: 12-16-91

CUSTOMER Murphy Oil

LOCATION

LEASE East Poplar Unit

WELL NO. #8D-

TROUBLE AS REPORTED Inspect pump for possible crack in crankshaft

TROUBLE AS FOUND

SERVICE PERFORMED OR REMARKS Removed back cover of triplex - Pulled #1 rod cap to inspect crankshaft - Used emory cloth & sanded over crack - determined crank was not cracked - Journal worn slight but cleaned up nice - Also pulled #2 cap - Journal fair - Checked for end play & could not get any - Checked crosshead pins & bushings - Noticed wear between pin & bushing - could not determine wear between pin & cross head - Also found excessive metal in cradle below Jackshaft & also sludge - Reason for low oil pressure could be worn oil ring - Did not start unit with cover off - Recommend to repair triplex due mostly to excess metal found in oil - Travel back to EPU 80 loc to start up pump

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL

TIME: FROM 3:00 CDT O'CLOCK TO 5:00 CDT O'CLOCK = 2 HOURS @ 31.00 PER HOUR 62.00

MILEAGE: FROM _____ TO _____ = _____ MILES @ _____ PER MILE _____

Total Charge _____

CUSTOMER Murphy Oil BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: National Oilwell
Watford City, N.D.

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

NATIONAL-OILWELL
Production Systems

51959

FIELD SERVICE REPORT

REPORT No. 31961
STORE: 2484
REPRESENTATIVE: Tim
DATE: 1-16-12-20

CUSTOMER Murphy Oil

LEASE EPU 8D

LOCATION

WELL NO. SWD

TROUBLE AS REPORTED Pump over haul

TROUBLE AS FOUND

SERVICE PERFORMED OR REMARKS Labor to tear down triplex - clean up parts. Install new bearings & races - new crankshaft & set end play on Jackshaft & crankshaft - Install new Insert bearings & also new pins in crossheads - new bushings in connecting rods - ~~Re~~ Replaced rod wiper seals & assembled.

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL
		Mud #3		

TIME: FROM _____ O'CLOCK TO _____ O'CLOCK = 8 HOURS @ 31.00 PER HOUR _____

MILEAGE: FROM _____ TO _____ = _____ MILES @ _____ PER MILE _____

Total Charge _____

CUSTOMER Murphy BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: National Oilwell Watford City

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

NATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/07/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: CEZ

CUSTOMER CODE: 6675700

DELIVERY TICKET: 7484-051959
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY REEDE
ORDER NO:
LEASE: EPU 80
WELL/RIG:
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

file copy

QUANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
1.000	EA	6686	LUBRIPLATE	3.37	$3.37
1.000	EA	6686	LOT OF BOLTS	7.14	$7.14
1.000	EA	9310	INBOUND UPS BLUE ON BEARING CUP FROM ROOSEVELT, UTAH	21.50	$21.50
1.000	EA	6686	CHARGE TO BORE AND SLEEVE BEARING RETAINER, PRESS GEAR FROM SHAFT AND FIT THREE CROSSHEAD PINS AND BUSHINGS	432.86	$432.86
8.000	EA	9160	HRS. LABOR PER FSR #31789 TO OVERHAUL 346P FOR MAN #1	31.00	$248.00
8.000	EA	9160	HRS. LABOR PER FSR #31928 TO OVERHAUL 346P MAN #2	31.00	$248.00
8.000	EA	9160	HRS. LABOR PER FSR #31961 TO OVERHAUL 346P MAN #3	31.00	$248.00

SUBTOTAL	$7,338.67
TAX	$0.00
TOTAL	$7,338.67

** D O N O T P A Y **

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reede

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

END QUESTIONS TO:
ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

DELIVERY TICKET PAGE 1
****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/07/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: CEZ

CUSTOMER CODE: 6675700

DELIVERY TICKET: 7484-051959
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY REEDE
ORDER NO:
LEASE: EPU 8D
WELL/RIG:
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

file copy

QUANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
1.000	EA	64229100	BREATHER- AIR MAZE	34.00	$34.00
3.000	EA	08444002	BEARING CRANKPIN 2 GKOHS -HALVES-	50.85	$152.55
6.000	EA	75102005	COTTER STEEL, 1/8X11/2	0.04	$0.24
1.000	EA	08017024	P17-26 GASKET	11.00	$11.00
1.000	EA	08427003	X4 3/8X26 1/2X1/16 GASKET	11.00	$11.00
3.000	EA	08466001	GASKET	3.23	$9.69
1.000	EA	08018266	P17-346 CRANK SHAFT	4,196.45	$4,196.45
2.000	EA	65010966	X6461 TIMKEN CONE	58.07	$116.14
2.000	EA	65013405	X6420 TIMKEN CUP	26.38	$52.76
1.000	EA	68630375	SEAL, OIL	12.70	$12.70
2.000	EA	65010542	X938 TIMKEN CONE	247.00	$494.00
2.000	EA	65013235	X932 TIMKEN CUP	82.84	$165.68

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reede

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY : ND 58854

NATIONAL-OILWELL

****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/07/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: CEZ

CUSTOMER CODE: 6675700

DELIVERY TICKET: 7484-051959
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY REEDE
ORDER NO:
LEASE: EPU 8D
WELL/RIG:
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

QUANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
3.000	EA	08017706	PIN- CROSS HEAD P17-209	92.10	$276.30
1.000	EA	08017393	GASKET- P17-103	7.50	$7.50
2.000	EA	08017105	SHIMS- SET P17-51	43.93	$87.86
1.000	EA	08017966	RING-OIL PRESS	38.33	$38.33
1.000	EA	08017961	GASKET- P17-281	48.10	$48.10
2.000	EA	08275003	P17-308-GASKET	55.20	$110.40
3.000	EA	08017130	BUSHING- CROSSHEAD PIN P17-58	57.78	$173.34
12.000	EA	08256000	P17-42-1 .005 SHIM	2.19	$26.28
10.000	EA	08256001	P17-42-2 .007 SHIM	2.82	$28.20
2.000	EA	08256002	P17-42-3 SHIM .030	5.51	$11.02
1.000	EA	4447405	CONNECTION- BRASS,5/16 X 1/ 4 IN, IMPERIAL 68-F	1.82	$1.82
9.000	EA	08466012	WIPER-ROD	7.16	$64.44

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reede

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

NATIONAL-OILWELL
Production Systems

51959
FIELD SERVICE REPORT

REPORT No. 31789
STORE: Watford City
REPRESENTATIVE: Tom Kalbrecht
DATE: 1-20-92

CUSTOMER Murphy
LOCATION

LEASE
WELL NO.

TROUBLE AS REPORTED

TROUBLE AS FOUND

SERVICE PERFORMED OR REMARKS Dissassemble oilwell pump, cleaned pump & parts put bearings on shaft, installed connecting rods & crankshaft, shimed up crank to 0 end play with no preload, installed jackshaft & shimed to .003 end play, put gears on shafts, put reducer cover on, torked connecting rods, hooked up oil pump, put sheave on jackshaft put covers on pump.

(rebuit in shop)

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL
		Mud #1		

TIME: FROM 8:00 O'CLOCK TO 4:00 O'CLOCK = 8 HOURS @ 31.00 PER HOUR

MILEAGE: FROM ____ TO ____ = ____ MILES @ ____ PER MILE

Total Charge ____

CUSTOMER ____ BY ____ DATE ____

ABOVE CHARGES WILL BE BILLED BY: National Oilwell Production
Watford City ND

CHARGED:
S.O. NO. ____
D.M. NO. ____

Form No. 1053

CUSTOMER COPY

NATIONAL-OILWELL
Production Systems

51959

FIELD SERVICE REPORT

REPORT **No. 31928**
STORE: 7484
REPRESENTATIVE: Marty Mikel
DATE: 1/20/92

CUSTOMER MURPHY OIL

LEASE EPU 80

LOCATION

WELL NO. SWD

TROUBLE AS REPORTED: PUMP OVER HAUL

TROUBLE AS FOUND: SAME

SERVICE PERFORMED OR REMARKS

DISASSEMBLED PUMP, CLEANED UP ALL PARTS & GOT READY FOR RE-ASSEMBLY. INSTALLED NEW BEARINGS ON CRANKSHAF & JACKSHAFT. INSTALLED IN POWER END & SET END PLAY. REASSEMBLED REST OF PUMP & SET OIL PUMP AT 25 PSI.

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL
		MUN #2		

TIME: FROM 8:00 O'CLOCK TO 4:00 O'CLOCK = 8 HOURS @ 31.00 PER HOUR

MILEAGE: FROM ____ TO ____ = ____ MILES @ ____ PER MILE

Total Charge ____

CUSTOMER ____ BY ____ DATE ____

ABOVE CHARGES WILL BE BILLED BY: NATIONAL OIL WELL
WATFORD CITY, ND

CHARGED:
S.O. NO. ____
D.M. NO. ____

Form No. 1053

CUSTOMER COPY

END QUESTIONS TO:
ATIONAL-OILWELL
IGHWAY 23 EAST
OX 1286 (701)-842-2902
ATFORD CITY ND 58854

NATIONAL-OILWELL

DELIVERY TICKET PAGE 1
****
PLEASE MAIL CHECKS TO:
P. O. BOX 845984
DALLAS, TX 75284-5984

DATE DELD/SHPD: 01/22/92 SHIP VIA: DELV PREPAID
AD: Y
INITIALS: MLM

DELIVERY TICKET: 7484-052212
****
* DELIVERY TICKET ONLY *
* D O N O T P A Y *
* INVOICE WILL BE MAILED *
****

CUSTOMER CODE: 6675700

SOLD TO
MURPHY OIL U.S.A. INC.

200 PEACH STREET
EL DORADO AR
71730

SHIP TO
MURPHY OIL U.S.A. INC.

POPLAR, MT

ORDERED BY: RAY R.
ORDER NO:
LEASE: EPU 8D
WELL/RIG: SWD
BLANKET PO:
TAX LOC: 2700 TAX CODE: 0

UANTITY SOLD	UM	ITEM CODE	PART DESCRIPTION	NET RESALE	NET AMOUNT
4.500	EA	9160	S/C TO INSTALL INTERMEDIATE RODS AND START UNIT PER FSR #31927	31.00	$139.50
135.000	EA	9160	MILEAGE PER FSR #31927.	0.55	$74.25

SUBTOTAL $213.75
TAX $0.00
TOTAL $213.75
** D O N O T P A Y **

MATERIAL LISTED ABOVE RECEIVED BY DATE
X Ray Reed

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLER'S PUBLISHED TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS. UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM INVOICE DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

NATIONAL-OILWELL
Production Systems

#52212

FIELD SERVICE REPORT

REPORT No. 31927
STORE: 7484
REPRESENTATIVE: Marty Mulder
DATE: 1/22 P92

CUSTOMER MURPHY OIL
LEASE EPU 80
LOCATION
WELL NO. SWD

TROUBLE AS REPORTED	TROUBLE AS FOUND
START UP UNIT	SAME

SERVICE PERFORMED OR REMARKS
DEPARTED EPU 1-D SWD & ARRIVED ON LOCATION. INSTALLED INTERMEDIATE RODS & WIPERS. FILLED UNIT W/CENEX 80-90 GEAR OIL. STARTED UNIT & MONITERED CLOSELY. OIL PRESSURED WAS AT 32 PSI. CHECKED BEARINGS & THEY LOOKED OK. LET UNIT RUN FOR 40 MINUTES AT 500 PSI. EVERYTHING LOOKED GOOD. LEFT LOCATION, WENT BACK & CHECKED EPU 1-D SWD - IT WAS OK. ARRIVED WATFORD CITY.

PARTS USED

QUAN.	PART NO.	DESCRIPTION	UNIT	TOTAL

TIME: FROM 12:30 O'CLOCK TO 5:00 O'CLOCK = 4.5 HOURS @ 31.00 PER HOUR

MILEAGE: FROM ~~12:30~~ 76767 TO ~~5:00~~ 76902 = ~~4.5~~ 135 MILES @ ~~5~~ .55 PER MILE

Total Charge

CUSTOMER _____ BY _____ DATE _____

ABOVE CHARGES WILL BE BILLED BY: NATIONAL OIL WELL
WATFORD CITY ND

CHARGED:
S.O. NO. _____
D.M. NO. _____

Form No. 1053

CUSTOMER COPY

Magcobar

MAGCOBAR GROUP
Dresser Industries, Inc.
P.O. BOX 6504, HOUSTON, TEXAS 77265

MAG-45-N

DELIVERY TICKET

SUBJECT TO THE TERMS AND CONDITIONS AS SET FORTH ON REVERSE SIDE

No. DT 52337 -A

FOR TRANSFER ONLY		TO BE USED FOR SALES ONLY						COMPLETED WELL NOTIFICATION	
TRANS DLR WHSE NO	REC DLR WHSE NO	CUSTOMER NUMBER	SUFX	DEALER WHSE NO	STATE	BILL CODE	TAX DISC	DATE SPUDDED	COMP DATE
				DBRT	25	1		☐ DRY HOLE ☐ SHUT IN ☐ PRODUCING	

SOLD OR TRANSFERRED TO: Murphy Oil Co

DATE SHIPPED: 8-16-88

NO. OF TICKETS ISSUED THIS WELL TO DATE: 1

P.O. BOX OR STREET:

CUSTOMER ORDER NO:

CITY AND STATE: Poplar Montana

TYPE OF SALE

BASE PRICE: 1 ☒ WAREHOUSE 2 ☐ LAND WELLSITE 3 ☐ INLAND WATER 4 ☐ OFFSHORE ZONE NO ☐

DELIVERING DEALER NAME OR REGION: Easton Rockies

DELIVERING WAREHOUSE: Wolf Point Mont

WELL NO.:

WELL NAME:

COUNTY OR PARISH (IF OFFSHORE, TRACT OR BLOCK): Roosevelt Mont

CONTRACTOR:

CASING INFORMATION:

RIG OR PLATFORM NO.:

SHIPPED VIA: NWT

	PRODUCT	LBS. PER BAG OR GAL PER CAN	QUANTITY (NO. BAGS OR CANS)	NUMBER OF PRICING UNITS	PER	PRODUCT CODE	UNIT PRICE	AMOUNT
	MAGCOBAR-BAGGED	100	175	175 00	3		6 70	1172 50
	MAGCOBAR ☐ BULK	"LBS"			1			
	MAGCOGEL	100			3			
	SPERSENE	50			3	1105		
	TANNATHIN	50			3	1111		
	XP-20	50			3	1140		
	East Poplar Mont 8D							
	CAUSTIC SODA-DRY CORROSIVE MATERIAL - UN1823				3			

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature

This confirms receipt of Material Safety Data Sheets on products shipped with this order. NOTE TO CUSTOMERS: MSDS sheets will accompany the initial shipment of each product. Additional copies may be obtained from your MAGCOBAR REPRESENTATIVE.

MATERIAL & MSDS SHEETS REC'D. BY: DATE 8-16-88

AUTHORIZED REPRESENTATIVE OF CUSTOMER

PURCHASE AUTHORIZED BY: Gerald Hogadone DATE

AUTHORIZED REPRESENTATIVE OF CUSTOMER

MATERIAL DELIVERED BY: DATE

DELIVERY CHARGE

BARGE OR TRUCK NUMBER

MILEAGE FOR DRAYAGE CHGS

LBS RATE ___ CWT

HRS RATE ___ HR

SWAMPER ___ HRS RATE ___ HR

TAX

TOTAL DELIVERY CHARGES

	TOTAL	1172 50
8900	STATE SALES TAX	
	89 ___ OTHER TAX	
8908	DELIVERY CHARGES (SEE DETAIL AT LEFT)	
	TOTAL	

ORIGINAL, TRIPLICATE, AND 4TH COPIES TO H[illegible]STON BILLING ON DATE OF DELIVERY, DUPLICATE COPY TO CUSTOMER'S FIELD OFFICE, 5TH COPY - RETAINED BY WAREHOUSE, 6TH COPY - EXTRA COPY, 7TH COPY - BOOK COPY

CUSTOMER

2 CWT 3 BAG 4 BBL OR GAL 5 LB 6 EA

No. DT 52337-A

Magcobar

MAGCOBAR GROUP
Dresser Industries, Inc.
P. O. BOX 6504, HOUSTON, TEXAS 77265

MAG-45-N

DELIVERY TICKET

SUBJECT TO THE TERMS AND CONDITIONS AS SET FORTH ON REVERSE SIDE

No. DT 52338 -A

FOR TRANSFER ONLY		TO BE USED FOR SALES ONLY						COMPLETED WELL NOTIFICATION	
TRANS DLR	REC DLR	CUSTOMER		DEALER	STATE	BILL CODE	TAX DISC	DATE SPUDDED	COMP DATE
WHSE NO	WHSE NO	NUMBER	SUFX	WHSE NO					
				DBR +	25	1	1	☐ DRY HOLE ☐ SHUT IN ☐ PRODUCING	

SOLD OR TRANSFERRED TO: Murphy Oil Co.

DATE SHIPPED: 8-17-88

NO. OF TICKETS ISSUED THIS WELL TO DATE: 2

P.O. BOX OR STREET:

CUSTOMER ORDER NO:

CITY AND STATE: Poplar Mont

TYPE OF SALE

BASE PRICE: 1 ☑ WAREHOUSE 2 ☐ LAND WELLSITE 3 ☐ INLAND WATER 4 ☐ OFFSHORE

ZONE NO

DELIVERING DEALER NAME OR REGION: Eastern Rockies

DELIVERING WAREHOUSE: Wolf Point Mont

WELL NO. | WELL NAME | COUNTY OR PARISH (IF OFFSHORE, TRACT OR BLOCK): Roosevelt Mont

CONTRACTOR | CASING INFORMATION | RIG OR PLATFORM NO | SHIPPED VIA: NWT

PRODUCT	LBS PER BAG OR GAL PER CAN	QUANTITY (NO. BAGS OR CANS)	NUMBER OF PRICING UNITS	PER	PRODUCT CODE	UNIT PRICE	AMOUNT
MAGCOBAR-BAGGED	100	175	175 00	3	00001	6 70	1172 50
MAGCOBAR ☐ BULK	"LBS"			1			
MAGCOGEL	100			3			
SPERSENE	50			3	1105		
TANNATHIN	50			3	1111		
XP-20	50			3	1140		
Salt Gel	50	30	6 35	3	0314	6 35	190 50
Drisco	25	3	46 00	3	1021	46 00	138 00
Defoam	2	2	37 40		05078	37 40	74 80
CAUSTIC SODA-DRY CORROSIVE MATERIAL - UN1823				3			

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature

This confirms receipt of Material Safety Data Sheets on products shipped with this order. NOTE TO CUSTOMERS: MSDS sheets will accompany the initial shipment of each product. Additional copies may be obtained from your MAGCOBAR REPRESENTATIVE.

MATERIAL & MSDS SHEETS REC'D. BY: DATE 8-17-88

AUTHORIZED REPRESENTATIVE OF CUSTOMER

PURCHASE AUTHORIZED BY: Gerald Hopkins DATE

AUTHORIZED REPRESENTATIVE OF CUSTOMER

MATERIAL DELIVERED BY DATE

DELIVERY CHARGE

BARGE OR TRUCK NUMBER

MILEAGE FOR DRAYAGE CHGS

LBS RATE CWT

HRS RATE HR

SWAMPER HRS RATE HR

TAX

TOTAL DELIVERY CHARGES

TOTAL 1575 80

8900 STATE SALES TAX Mont

89 OTHER TAX

59.00 DELIVERY CHARGES (SEE DETAIL AT LEFT)

TOTAL

ORIGINAL, TRIPLICATE, AND 4TH COPIES TO HOUSTON BILLING ON DATE OF DELIVERY, DUPLICATE COPY TO CUSTOMER'S FIELD OFFICE, 5TH COPY - RETAINED BY WAREHOUSE, 6TH COPY - EXTRA COPY, 7TH COPY - BOOK COPY

CUSTOMER

2 CWT 3 BAG 4 BBL OR GAL 5 LB 6 EA

No. DT 52338-A

MAG-45-N

DELIVERY TICKET

SUBJECT TO THE TERMS AND CONDITIONS AS SET FORTH ON REVERSE SIDE

No. DT 25360-A

Magcobar

MAGCOBAR GROUP
Dresser Industries, Inc.
P. O. BOX 6504, HOUSTON, TEXAS 77265

FOR TRANSFER ONLY		TO BE USED FOR SALES ONLY						COMPLETED WELL NOTIFICATION	
TRANS DLR WHSE NO	REC DLR WHSE NO	CUSTOMER NUMBER	SUFX	DEALER WHSE NO	STATE	BILL CODE	TAX DISC	DATE SPUDDED	COMP. DATE
						1		DRY HOLE / SHUT IN / PRODUCING	

SOLD OR TRANSFERRED TO: Murphy Oil USA INC

DATE SHIPPED: 11-7-88

NO. OF TICKETS ISSUED THIS WELL TO DATE:

P.O. BOX OR STREET: P.O. Box 547

CUSTOMER ORDER NO.:

CITY AND STATE: Poplar MT 59255

TYPE OF SALE

BASE PRICE: 1 ☐ WAREHOUSE 2 ☐ LAND WELLSITE 3 ☐ INLAND WATER 4 ☐ OFFSHORE ZONE NO ☐

DELIVERING DEALER NAME OR REGION:

DELIVERING WAREHOUSE:

WELL NO.:

WELL NAME: E.P.U. 8-D

COUNTY OR PARISH (IF OFFSHORE, TRACT OR BLOCK): 40

CONTRACTOR:

CASING INFORMATION:

RIG OR PLATFORM NO.:

SHIPPED VIA:

PRODUCT	LBS PER BAG OR GAL PER CAN	QUANTITY (NO BAGS OR CANS)	NUMBER OF PRICING UNITS	PER	PRODUCT CODE	UNIT PRICE	AMOUNT
MAGCOBAR-BAGGED	100	418	418	3		6 70	2800 60
MAGCOBAR ☐ BULK	"LBS"			1			
MAGCOGEL	100			3			
SPERSENE	50			3	1105		
TANNATHIN	50			3	1111		
XP-20	50			3	1140		
S.A.P.P.	100	1	1			117 50	117 58
Delaumer	50	3	3			37 40	112 20
*CAUSTIC SODA DRY CORROSIVE MATERIAL - UN1823				3			

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature

This confirms receipt of Material Safety Data Sheets on products shipped with this order. NOTE TO CUSTOMERS: MSDS sheets will accompany the initial shipment of each product. Additional copies may be obtained from your MAGCOBAR REPRESENTATIVE.

MATERIAL & MSDS SHEETS REC'D. BY: [signature] DATE: 11-7-88

AUTHORIZED REPRESENTATIVE OF CUSTOMER

PURCHASE AUTHORIZED BY: DATE:

AUTHORIZED REPRESENTATIVE OF CUSTOMER

DELIVERED BY: [signature] DATE: 11-1-88

DELIVERY CHARGE

BARGE OR TRUCK NUMBER:

MILEAGE FOR DRAYAGE CHGS:

LBS RATE ___ CWT

HRS RATE ___ HR

SWAMPER ___ HRS RATE ___ HR

TAX

TOTAL DELIVERY CHARGES: 910 00

	TOTAL	3030 38
8900	STATE SALES TAX %	—
	89 OTHER TAX %	—
	DELIVERY CHARGES (SEE DETAIL AT LEFT)	910 00
	TOTAL	3940 38

TRIPLICATE, AND 4TH COPIES TO HOUSTON BILLING ON DATE OF DELIVERY, 2 COPY TO CUSTOMER'S FIELD OFFICE, 5TH COPY - RETAINED BY WAREHOUSE, EXTRA COPY, 7TH COPY - BOOK COPY

2 CWT 3 BAG 4 BBL OR G

No. DT 25360-A

DRILLING MUD REPORT

OPERATOR

M-I Drilling Fluids Co.
Magcobar/IMCO A Dresser/Halliburton Company
P.O. BOX 42842 ■ HOUSTON, TEXAS 77242 USA

DRILLING MUD REPORT NO. 1

DATE 8-17 19 88 | DEPTH

SPUD DATE | PRESENT ACTIVITY

OPERATOR Murphy Oil	CONTRACTOR H & H Well Service	RIG NO.
REPORT FOR Ray Reedy	REPORT FOR	SECTION, TOWNSHIP, RANGE 28-10N-51E
WELL NAME AND NO. 8-D	FIELD OR BLOCK NO. East Poplar	COUNTY, PARISH OR OFFSHORE AREA Roosevelt	STATE/PROVINCE Montana

DRILLING ASSEMBLY			CASING	MUD VOLUME (BBL)		CIRCULATION DATA		
BIT SIZE	TYPE	JET SIZE	SURFACE in. @ ft.	HOLE	PITS	PUMP SIZE X IN.		ANNULAR VEL (ft/min) DP DC
DRILL PIPE SIZE	TYPE	LENGTH	INTERMEDIATE in. @ ft.	TOTAL CIRCULATING VOLUME		PUMP MAKE, MODEL	ASSUMED EFF %	CIRCULATION PRESSURE (psi)
DRILL PIPE SIZE	TYPE	LENGTH	INTERMEDIATE in. @ ft.	IN STORAGE	WEIGHT	bbl/stk	stk/min	BOTTOMS UP (min) (strk)
DRILL COLLAR SIZE		LENGTH	PRODUCTION OR LINER in. @ ft.	MUD TYPE		bbl/min	gal/min	TOTAL CIRC TIME (min) (strk)

	MUD PROPERTIES	
Sample From	☐ F.L. ☐ PIT	☐ F.L. ☐ PIT
Time Sample Taken		
Flowline Temperature (°F)		
Depth (ft) (TVD / ft)		
Weight ☐ (ppg) ☐ (lb/cu ft) ☐ (sp gr)		
Funnel Viscosity (sec/qt) API @ °F		
Plastic Viscosity cp @ °F		
Yield Point (lb/100 ft²)		
Gel Strength (lb/100 ft²) 10 sec/10 min	/	/
Filtrate API (cm³/30 min)		
API HTHP Filtrate (cm³/30 min) @ °F		
Cake Thickness (32nd in. API/HTHP)	/	/
Solids Content (% by Vol) ☐ calculated ☐ retort		
Liquid Content (% by Vol) Oil/Water	/	/
Sand Content (% by Vol)		
Methylene Blue Capacity ☐ lb/bbl equiv ☐ cm³/cm³ mud		
pH ☐ Strip ☐ Meter @ °F		
Alkalinity Mud (P_m)		
Alkalinity Filtrate (P_f/M_f)	/	/
Chloride (mg/L)		
Total Hardness as Calcium (mg/L)		

Sd 0 %

MUD PROPERTY SPECIFICATIONS		
WEIGHT	VISCOSITY	FILTRATE

RECOMMENDED TOUR TREATMENT

REMARKS

Mix 20 bbl 19.0 ppg mud
Pump 12 bbl down annulus
4 bbl down tubing
Release packer, Pump 4 bbl mud down annulus.
Mix 10 bbl 17 ppg mud for standby on trip.

DT# 52337
52338

EMERGENCY PHONE NUMBER
(713) 561-1600

M-I Drilling Fluids Co.
Magcobar NCO A Dresser Halliburton Company
PO BOX 42842, HOUSTON, TEXAS 77242
713/972-1310 TELEX 166743

DELIVERY TICKET

SUBJECT TO THE TERMS ON THE REVERSE SIDE

Page ___ of ___

No. D24609

DATE SHIPPED	CUSTOMER NUMBER	SUFFIX	STATE	CNTY.	WELL NO.	WAREHOUSE	TYPE	PR CODE
11/12/92	PXHZ	39	25	085	- - - -	DBRT		

CUSTOMER: Murphy Oil USA Inc.

PO BOX OR STREET: P.O. Box 547

CITY AND STATE: Poplar, Mt. 59255

WELL NAME: Salt Water Disposal EPU 80

DELIVERING WAREHOUSE: Williston ND | STATE: MT | COUNTY (BLOCK OR TRACK): Roosevelt, Mt

(FOR TRANSFER ONLY) DELY. LOC. | REC. LOC.

BASE PRICE AREA

TAX EXEMPT NO.

CITY (IF APPLICABLE)

TRANSFER: 1 ☑ WAREHOUSE 3 ☐ INLAND WATER 2 ☐ LAND WELLSITE 4 ☐ OFFSHORE

SHIPPED VIA: 1 ☐ COMPANY/DEALER 4 ☑ TRUCK 2 ☐ CUSTOMER 5 ☐ BOAT/BARGE 3 ☑ CONTRACTOR 6 ☐ RAIL

CUSTOMER P.O. NO.

RIG OR PLATFORM NO: Workover Rig

NO. OF TICKETS ISSUED THIS WELL TO DATE: 1 only

PRODUCT	PRODUCT CODE	QUANTITY	UNIT SIZE	PER	TOTAL WEIGHT LBS/GAL	UNIT PRICE	AMOUNT
MI-Bar	0001	215	100lb	3	21,500	11.00	2365.00
Salt Gel	034	30	50lb	3	1500	10.50	315.00
Defoam A	3417	~~5~~ 2	5gal	6	220	62.50	~~312.50~~
HEC Liquid	5939	~~5~~ 2	5gal	6	220	143.75	~~718.75~~
CAUSTIC SODA - DRY CORROSIVE MATERIAL - UN 1823							

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature: _____ M-I REPRESENTATIVE

MATERIAL DELIVERY BY: A&R Rental

PURCHASE of the above products in accordance with the terms set forth above and on the reverse side is hereby authorized.

RECEIPT of the above products in good order and condition, together with Material Safety Data Sheets for each, is hereby acknowledged.

NOTE TO CUSTOMERS: MSD Sheets will accompany the initial shipment of each product. Additional copies may be obtained from your M-I REPRESENTATIVE.

Signature: _____ AUTHORIZED REPRESENTATIVE OF CUSTOMER

MATERIAL RECEIVED BY: _____ DATE

23,440 LBS/RATE 1.29 CWT 302.36

HRS RATE ___ HR

SWAMPER 8 HRS. RATE 11.00 HR 88.00

TOTAL DELIVERY CHARGES 390.36

INTER-CO TRUCK CAPACITY CHARGE CREDIT 412.36

CARRIER NAME: A&R | UNIT NUMBER: Tandem | INTER-CO TRUCK RATE

MILAGE FOR DRAYAGE CHGS OR INTER-CO TRUCK: 81-90

SUB-TOTAL MATERIAL & SERVICES	3411.25
8834 TOTAL DELIVERY CHARGE	390.36
SUB-TOTAL BEFORE TAXES	4112
25 STATE SALES TAX — %	—
085 COUNTY SALES TAX — %	—
— CITY SALES TAX — %	—
TOTAL	4101.63

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M-45-2

DISTRICT COPY

No. D 24609

EMERGENCY PHONE NUMBER
(713) 561-1600

M-I Drilling Fluids Co.
Magcobar MCD A Dresser Halliburton Company

PO. BOX 42842, HOUSTON, TEXAS 77242
713/972-1310 TELEX 166743

Page ___ of ___

No. D24609

DELIVERY TICKET

SUBJECT TO THE TERMS ON THE REVERSE SIDE

DATE SHIPPED	CUSTOMER NUMBER	SUFFIX	WELL NUMBER STATE	CNTY	WELL NO.	WAREHOUSE	TYPE	PR CODE
11/12/92	PXHZ	39	25	085	- - - -	DBRT		

CUSTOMER: Murphy Oil USA Inc.

P.O. BOX OR STREET: P.O. Box 547

CITY AND STATE: Poplar, Mt. 59255

WELL NAME: Salt Water Disposal EPU 80

FOR TRANSFER ONLY — DELY. LOC. / REC. LOC.

BASE PRICE AREA

TAX EXEMPT NO

TAX REF: 1 ☑ WAREHOUSE 2 ☐ LAND WELLSITE 3 ☐ INLAND WATER 4 ☐ OFFSHORE

SHIPPED VIA: 1 ☐ COMPANY/DEALER 2 ☐ CUSTOMER 3 ☑ CONTRACTOR 4 ☑ TRUCK 5 ☐ BOAT/BARGE 6 ☐ RAIL

CUSTOMER P.O. NO

DELIVERING WAREHOUSE: Williston, ND — STATE: ND — COUNTY (BLOCK OR TRACK): Roosevelt, Mt — CITY (IF APPLICABLE)

RIG OR PLATFORM NO: Workover Rig — NO. OF TICKETS ISSUED THIS WELL TO DATE: 1 only

PRODUCT	PRODUCT CODE	QUANTITY	UNIT SIZE	PER	TOTAL WEIGHT LBS/GAL	UNIT PRICE	AMOUNT
MI-Bar	0001	215	100lb	3	21,500	11.00	2365.00
Salt Gel	0334	30	50lb	3	1500	10.50	315.00
Defoam A	3417	~~5~~ 2	5gal	6	220	62.50	~~312.50~~ 125.00
HEC Liquid	5939	~~5~~ 2	5gal	6	220	143.75	~~718.75~~ 287.50
CAUSTIC SODA - DRY CORROSIVE MATERIAL - UN 1823							

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature _____ M-I REPRESENTATIVE

MATERIAL DELIVERY BY: A&R Rental

PURCHASE of the above products in accordance with the terms set forth above and on the reverse side is hereby authorized.

RECEIPT of the above products in good order and condition, together with Material Safety Data Sheets for each, is hereby acknowledged.

NOTE TO CUSTOMERS: MSD Sheets will accompany the initial shipment of each product. Additional copies may be obtained from your M-I REPRESENTATIVE.

Signature _____ AUTHORIZED REPRESENTATIVE OF CUSTOMER

MATERIAL RECEIVED BY _____ DATE _____

23,440 LBS/RATE 1.29 CWT — 302.38

HRS RATE ___ HR

SWAMPER 8 HRS RATE 11.00 HR — ~~88.00~~

TOTAL DELIVERY CHARGES — ~~390.38~~

INTER CO TRUCK CAPACITY CHARGE CREDIT 112.32

CARRIER NAME: A&R — UNIT NUMBER: Worden — INTER CO TRUCK RATE

MILAGE FOR DRAYAGE CHGS OR INTER-CO TRUCK: 81-90

SUB-TOTAL MATERIAL & SERVICES		~~3711~~ 2365.25
8834	TOTAL DELIVERY CHARGE	~~390~~ 302.38
	SUB-TOTAL BEFORE TAXES	412
25	STATE SALES TAX — %	—
085	COUNTY SALES TAX — %	—
—	CITY SALES TAX — %	
	TOTAL	4

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CUSTOMER COPY

No. D

EMERGENCY PHONE NUMBER
(713) 561-1600

Page ___ of ___

No. D24611

M-I Drilling Fluids Co.
Magcobar IMCO — Dresser Haliburton Company
PO. BOX 42842, HOUSTON, TEXAS 77242
713/972-1310 TELEX 166743

DELIVERY TICKET

SUBJECT TO THE TERMS ON THE REVERSE SIDE

DATE SHIPPED	CUSTOMER NUMBER	CUSTOMER SUFFIX	WELL NUMBER STATE	WELL NUMBER CNTY	WELL NUMBER WELL NO	WAREHOUSE	TYPE	PR CODE
11-13-92	PXHZ	39	25	085	----	DBRT		

CUSTOMER: Murphy Oil USA Inc.

P.O. BOX OR STREET: P.O. Box 547

CITY AND STATE: Poplar, Mt 59255

WELL NAME: Salt Water Disposal EPU 50

FOR TRANSFER ONLY: DELY. LOC. / REC. LOC.

BASE PRICE AREA

TAX EXEMPT NO.

TAX REF: 1 [x] WAREHOUSE 2 [ ] LAND WELLSITE 3 [ ] INLAND WATER 4 [ ] OFFSHORE

SHIPPED VIA: 1 [ ] COMPANY/DEALER 2 [ ] CUSTOMER 3 [x] CONTRACTOR 4 [x] TRUCK 5 [ ] BOAT/BARGE 6 [ ] RAIL

CUSTOMER P.O. NO.

DELIVERING WAREHOUSE: Williston ND | STATE: Mt | COUNTY (BLOCK OR TRACK): Roosevelt, Mt | CITY (IF APPLICABLE) | RIG OR PLATFORM NO.: Workover Rig | NO. OF TICKETS ISSUED THIS WELL TO DATE: Yerly

HM	PRODUCT	PRODUCT CODE	QUANTITY	UNIT SIZE	PER	TOTAL WEIGHT LBS/GAL	UNIT PRICE	AMOUNT
	MI-Bar	0001	245	100lb	3	21000	11.00	2695.00
	Salt Gel	0314	30	50lb	3	1500	10.50	315.00
	Defcam A	3617	2	5gal	6	88	62.50	125.00
	HFC Liquid	5939		5gal	6	44	143.75	287.50
	CAUSTIC SODA - DRY CORROSIVE MATERIAL - UN 1823							34[illegible]

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature _____ M-I REPRESENTATIVE

MATERIAL DELIVERY BY: A & K Rental 11/13/92

PURCHASE of the above products in accordance with the terms set forth above and on the reverse side is hereby authorized.

RECEIPT of the above products in good order and condition, together with Material Safety Data Sheets for each, is hereby acknowledged.

NOTE TO CUSTOMERS: MSD Sheets will accompany the initial shipment of each product. Additional copies may be obtained from your M-I REPRESENTATIVE.

Signature _____ AUTHORIZED REPRESENTATIVE OF CUSTOMER

MATERIAL RECEIVED BY: [signature] DATE 11/13/92

22,132 LBS/RATE 1.29 CWT	291	95
___ HRS RATE ___ HR		
SWAMPER 9 HRS. RATE 11.00 HR	99	00
TOTAL DELIVERY CHARGES	390	95

INTER-CO TRUCK CAPACITY CHARGE CREDIT

CARRIER NAME	UNIT NUMBER	INTER-CO TRUCK RATE
A & K	14	

MILAGE FOR DRAYAGE CHGS. OR INTER-CO TRUCK: 81-90

SUB-TOTAL MATERIAL & SERVICES		3092.50
8834	TOTAL DELIVERY CHARGE	390.95
SUB-TOTAL BEFORE TAXES		
25	STATE SALES TAX — %	—
085	COUNTY SALES TAX — %	—
—	CITY SALES TAX — %	—
	TOTAL	3483.45

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MI-45-2

DISTRICT COPY

No. D 24611

M-I Drilling Fluids Co.
Magcobar MCO & Dresser Halliburton Company
P.O. BOX 42842, HOUSTON, TEXAS 77242
713/972-1310 TELEX 166743

DELIVERY TICKET

SUBJECT TO THE TERMS ON THE REVERSE SIDE

No. D24611

Page ___ of ___

DATE SHIPPED	CUSTOMER NUMBER	SUFFIX	WELL NUMBER STATE	CNTY	WELL NO.	WAREHOUSE	TYPE	PR CODE
11-13-92	PXHZ	39	25	085	----	DBRT		

CUSTOMER: Murphy Oil USA Inc.

P.O. BOX OR STREET: P.O. Box 547

CITY AND STATE: Poplar, Mt 59255

WELL NAME: Salt Water Disposal EPU 80

DELIVERING WAREHOUSE: Williston, ND — STATE: Mt — COUNTY (BLOCK OR TRACK): Roosevelt, Mt

FOR TRANSFER ONLY — DELY. LOC. — REC. LOC.

BASE PRICE AREA

TAX EXEMPT NO.

CITY (IF APPLICABLE)

TAX REF: 1 [x] WAREHOUSE 2 [ ] LAND WELLSITE 3 [ ] INLAND WATER 4 [ ] OFFSHORE

SHIPPED VIA: 1 [ ] COMPANY/DEALER 2 [ ] CUSTOMER 3 [x] CONTRACTOR 4 [x] TRUCK 5 [ ] BOAT/BARGE 6 [ ] RAIL

CUSTOMER P.O. NO.

RIG OR PLATFORM NO.: Workover Rig

NO. OF TICKETS ISSUED THIS WELL TO DATE: Early

PRODUCT	PRODUCT CODE	QUANTITY	UNIT SIZE	PER	TOTAL WEIGHT LBS/GAL	UNIT PRICE	AMOUNT
MI-Bar	0001	215 ~~245~~	100lb	3	21000	11.00	2365.00 ~~2695.00~~
Salt Gel	0314	30	50lb	3	1500	10.50	315.00
Defoam A	3607	2	5gal	6	88	62.50	125.00
HEC Liquid	5939		5gal	6	44	143.75	287.50

CAUSTIC SODA - DRY CORROSIVE MATERIAL - UN 1823

~~3422.45~~

I certify that the above named materials are properly classified, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

M-I REPRESENTATIVE

BY: A&K Rental 11/13/92

USE of the above products in accordance with the terms set forth on the reverse side is hereby authorized.
of the above products in good order and condition, together with Material Safety Data Sheets for each, is hereby acknowledged.
CUSTOMERS: MSD Sheets will accompany the initial shipment of product. Additional copies may be obtained from your M-I REPRESENTATIVE.

AUTHORIZED REPRESENTATIVE OF CUSTOMER

BY: [signature] DATE: 11/13/92

22,132 LBS/RATE 1.29 CWT	291	95
___ HRS RATE ___ HR		
SWAMPER 9 HRS RATE 11.00 HR	99	00
TOTAL DELIVERY CHARGES	390	95

INTER-CO TRUCK CAPACITY CHARGE CREDIT

CARRIER NAME	UNIT NUMBER	INTER-CO TRUCK RATE
A&K	14	

MILAGE FOR DRAYAGE CHGS. OR INTER-CO TRUCK: 81-90

SUB-TOTAL MATERIAL & SERVICES		3092.50
8834	TOTAL DELIVERY CHARGE	390.95
SUB-TOTAL BEFORE TAXES		
25	STATE SALES TAX — %	—
085	COUNTY SALES TAX — %	—
—	CITY SALES TAX — %	—
	TOTAL	3483.45

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CUSTOMER COPY

No. D 24611

NOWSCO

2200 BENDEN DR.
WOOSTER, OHIO 44691
216-264-2120

ACIDIZING/FRACTURING UNIT WORK INVOICE NO.

CUSTOMER: MURPHY OIL USA
ADDRESS: BOX 217
POPLAR MONT

DATE: 9/2/85
ASSOC. NOWSCO REF. NO.
P.O. NUMBER
QUOTE NO.
SERVICE ENG: Jody Mohrs
STATION MGR. APP.

SERVICE ORDER NO. A 3916

I HAVE READ, UNDERSTOOD AND AGREED TO THE TERMS AND CONDITIONS OF THE REVERSE SIDE HEREOF AND REPRESENT THAT I HAVE FULL AUTHORITY TO ACCEPT SAME AND SIGN THIS ORDER.

RECEIPT OF MATERIALS & SERVICES ON THIS ORDER ARE HEREBY ACKNOWLEDGED.

CUSTOMER BY: Ray Reede
AUTHORIZED AGENT

NAME OF WELL: EPU 8-D
PERMIT NO.
TWP.: 510-728-051
COUNTY: ROOSEVELT
STATE: MONTANA
TYPE OF TREATMENT: PUMP RENTAL SUPPLY ACID FOR MULE CREEK LILLIAN

PRICE LIST REFERENCE	MATERIAL & EQUIPMENT	QUANTITY	UOM	UNIT PRICE	AMOUNT	PRICE LIST REFERENCE	MATERIAL & EQUIPMENT	QUANTITY	UOM	UNIT PRICE	AMOUNT
	BLENDER					201-103	28 % HCL ACID	600	GAL	1.58	948.00
	COMBINATION UNIT		EA			205-122	AI 250 INHIBITOR	2	GAL	27.00	54.00
	VT-1200 PUMPERS					209-134	IS-300 IRON SEQ		GAL		
101-001	T.P. PUMPER	1	EA		550.00	206-125	WS-BONE SURFACTANT		GAL		
501-401	L.V. N2 PUMPERS		EA			230-162	CSA-3 CLAY STAB		GAL		
501-450	H.V. N2 PUMPERS					230-164	CSA-5 CLAY STAB		GAL		
501-451	EACH ADDITIONAL 1000 SCF/MIN						IRON STAB				
	CO2 TRANSPORTS		EA			239-100	CHEMICAL & ACID HAULING		HRS		
508-414	N2 TRANS					239-200	ACID TRANSPORT		HRS		
	MILEAGE ON UNITS		M				GELLANT		LBS		
307-217	80/100 MESH SAND		SK				GEL BREAKER				
307-219	20/40 MESH SAND		SK				GEL BUFFER				
307-220	10/20 MESH SAND		SK				FRICTION REDUCER				
301-210	PROPPANT PUMPING CHG 100 MESH 20/40		SK				FOAMER		GALS		
301-211	PROPPANT PUMPING CHG 10/20		SK			321-273	KCL SALT		LBS		
	SAND CONC CHG - FOAM FRAC LB/gal		GALS			330-010	CO2 PRODUCT		SCF		
310-231	SAND CARTAGE TO LOC		T/M			501-405	N2 PRODUCT FIRST 50,000 SCF		SCF		
310-231	RETURN SAND CARTAGE		T/M			501-407	N2 PRODUCT ADDITIONAL SCF		SCF		
	BALL INJECTOR - REMOTE/MANUAL		EA			501-409	N2 PRODUCT IN EXCESS OF 1,000,000 SCF		SCF		
	BALL SEALERS		EA								
717-786	3¼ FRAC BALL		EA								15[illegible]
717-787	3½ FRAC BALL		EA					15%			[illegible]
717-788	3¾ FRAC BALL		EA					TOTAL			13191.20
717-789	3 FRAC BALL		EA			UNIT NO.	EMPLOYEE	UNIT NO.	EMPLOYEE		
719-790	2¾ FRAC BALL		EA			4311	R BRAND				
							D MAHAR				
							received invoice				

• WHITE-ORIGINAL • WHITE-HEAD OFFICE • GREEN-CUSTOMER COPY • YELLOW-STATION COPY • GOLDEN ROD-BOOK COPY

N 515 C-F15

3

PENKOTA WIRELINE SERVICES

P.O. BOX 1952
WILLISTON, ND 58801
PHONE: (701) 572-1087

JOB TICKET

2980

Trk. Operator: Boeckel

Riggers: 6 Jovig

Legal Description:

Charge to Invoice Address: Murphy O,I

City:

Lease and Well no.: EPU 8D

Field: EPU County: Roosevelt

Job No.: #35 State: Montana

Invoice No.: 1988

Invoice Date:

Customer's Order No.: 44070

Date Job Performed: 1-13-95

Operating Base: Williston

CONDITIONS OF THIS CONTRACT

TO PENKOTA WIRELINE SERVICES

You are hereby requested to furnish the service and materials and equipment herein set forth upon the following terms and conditions to wit:

The undersigned, as customer, agrees to pay you for the services and/or materials ordered hereunder at the office of Penkota Wireline Services, Williston, N.D. Should any account not be paid within the term fixed by the invoice, interest will be charged at the rate of ten per cent (10%) per annum from date of such invoice.

In the event you employ an attorney to enforce any claims of indebtedness against the undersigned customer, said customer agrees to pay all costs of collection and reasonable attorney's fees which, in no event, shall be less than the sum of $75.00.

The above described work shall be performed by you as an independent contractor However, it is understood and agreed that you do not guarantee the results of your service and shall not be liable for injury to persons or to property of well owners and/or customers unless caused by your willful negligence, this provision applying, but not limited to, subsurface damage and surface damage arising from subsurface damage Well owner and/or customers shall be responsible for and secure you against any liability for reservoir loss or damage or personal property damage arising from a well blowout, unless such loss or damage is caused by your willful negligence. The well owner or drilling company will pay for the actual cost of replacing or repairing the well service equipment, or any part thereof, if same should be lost or damaged while being used in performing the work on the above described well.

Should any of your instruments, tools, or equipment be lost or destroyed in the rendition of your service, customer agrees to use all reasonable diligence and facilities available to recover the same, and customer agrees to reimburse you for the reasonable value of any instrument, tools, or other personal property that cannot be recovered within (60) days, or for the cost of repairing any damage to items recovered.

Customer agrees that all depth measurements shall be made by it or its employees, and shall be supervised by customer or its employees.

Customer certifies that it is the owner of the well on which the work herein ordered is to be done or that it has the full right and authority to order such work done on such wells; and that the well in which the work is to be done by you is in proper and suitable condition for the performance of said work

Customer further agrees that the terms and conditions herein set forth constitute the entire agreement and that no employee of your company is authorized to alter the terms hereof. I have read and understand the terms of this agreement and represent that I am authorized to sign the same as agent of customer

Gerald Higgins — Customer

Agent

PRODUCT CODE	DESCRIPTION	PRICE	AMOUNT
1000 110	Service Charge		
1500 010	Jet cut 2 7/8" Tubing @ 6720' with 2 7/8" Jet cutter		
		$1500.00	
	TOTAL		

MERCHANDISE AND SERVICE ORDER

OEC-1.10-N

OTIS Otis Engineering Corporation
A HALLIBURTON Company
P.O. BOX 819052, DALLAS, TEXAS 75381-9052
AREA CODE 214-323-3000

INVOICE TO: MURPHY OIL USA INC.
P.O. BOX 547
POLEAR, MT.

ORDER NO. 792559
SEE ORDER NO. (ACCT. ONLY)

We hereby request OTIS ENGINEERING CORPORATION to come to the well location of

OWNER NAME: MURPHY

WORK ORDER BY (SIGNATURE): Gerald Hagadone

LEASE: EPU | API WELL NO.:

FIELD OR AREA: EAST POPLAR

OWNER WELL NO.: 8-D | STATE: MT.

FEDERAL WATERS: ☐ YES ☒ NO | COUNTY PARISH: ROOSEVELT

and hereby agree that its work shall be performed under the terms & conditions on reverse side hereof. D.F.

(ACCOUNT ONLY) | DATE: 6-18-87

SALES CREDIT: 457 | ST. | INV. CR.: 457 | TAX

CUSTOMER ORDER NO.

EST. COST $1529.08

SUB SURFACE SAFETY VALVE WAS:

☐ PULLED & RERUN ☐ PULLED ☐ RUN

TYPE LOCK | DEPTH | TYPE VALVE

BEAN SIZE | SPACERS

TUBING PRESSURE: 360 | CASING PRESSURE

TUBING SIZE: 2 7/8" | WELL DEPTH

TREE CONNECTION: 3" R-G

TYPE OF EQUALIZING SUB.

UNIT OR VIA: 7971-4435

ITEM	SERVICE CODE	SERVICE, RENTAL AND THIRD PARTY CHARGES	D.F.	XL UNITS	UNIT PRICE	AMOUNT
1	100000	W/L TRUCK W/CREW MIN CHG		6	65.00	390.00
2	110818	MAST TRAILER		1	188.00	188.00
3	135420	2½" PLUG USE		1	124.00	124.00
4	134818	PULLING TOOL USE		1	105.00	105.00
5	135818	RUNNING TOOL USE		1	105.00	105.00
6	138220	2½" TUBING STOP		1	124.00	124.00
7	108424	CREW TRAVEL		2	36.00	72.00
8	108099	FROM: WILLISTON TO LOCATION OR DOCK 76 MILES; TO: WILLISTON FROM LOCATION OR DOCK 76 MILES		152	1.75	266.00

MATERIAL FURNISHED AND/OR DESCRIPTION OF OPERATION

ITEM	CODE	ITEM NUMBER OR DATE	SIZE, TYPE AND DESCRIPTION	D.F.	QTY.	UNIT PRICE	AMOUNT
9		JUNE 18, 1987	R/U W/L RAN 2.34" GAUGE SET				
10			DOWN AT 674'. RAN + SET 2½"				
11			F SLIP STOP AT 598'. RAN + SET 2½"				
12			PACK-OFF PLUG AT 598'. BLED TUBING				
13			FROM 360 PSI TO 0 PSI, WATCH FOR 10 MIN,				
14			CHANGE OUT MASTER VALVE, RAN EQUALIZING				
15			PRONG + EQUALIZE PLUG TO 360 PSI. PULLED 2½"				
16			PACKOFF PLUG FROM 598'. PULLED STOP FROM				
17			598'. R/D.				
18							
19		91M2014	ELEMENT		1	81.40	81.40
20		91QV1223-H	O-RING		1	4.84	4.84
21		91QV1224-H	O-RING		2	7.42	14.84
22		93K15	KOBE KNOCK-OUT		1	44.00	44.00

CUSTOMER'S FIELD COPY

SERVICE PERFORMED AND/OR MERCHANDISE DELIVERED BY:

EMPLOYEE	HRS.	EMPLOYEE	HRS.
M. Bullock			
B. T. Horlaksen			

CUSTOMER NAME: MURPHY

APPROVED BY: Gerald Hagadone

OFF. MGR. APPROVAL | INVOICE NO. | INVOICE DATE

NAME OF CARRIER	ROUTE	DATE ORDERED	POINT OF ORIGIN	BL/Sales Order No.
S&S Chemicals		Sat 01/14/95	Williston,ND	004492 11:02 AM 1400

CONSIGNEE & ADDRESS: S&S CHEMICAL
P.O. Box 2387
WILLISTON, ND 58802

SHIP TO: ship to same
same
same

S&S Chemical & Oil Inc.
FED ID #83-0208750
WILLISTON, ND
(701) 774-3655 – FAX: (701) 572-3297

CUSTOMER ORDER NO.	CAR/TRAILER NO.	F.O.B.	FREIGHT TERMS/AMOUNT
RAY	#6 scott	SHIP TO ADDRESS	☐ PREPAID ☐ COLLECT ☒ PPD & CHARGE

PRODUCT CODE	QUANTITY SHIPPED	Pkg/ Type	Unit Wt./lbs.	H.M.	PRODUCT & DESCRIPTION	WEIGHT/lbs.	PRICE	AMOUNT
	7		#		Return Mud Van From Murphy Oil Freight	lbs	$ 55.00	$ 385.00
	-91				Bar		-6.00	(546.00)
	-3				DeFoamer "A"		-48.25	(144.75)
	-1				Liquid Hec. 5gal.		-111.20	(111.20)
	-1				Dessco		(33.00	(33.00)
	~~Fr~~				~~Freight~~		~~55.00~~	$45.00
	3 days				Van rent 15.00			
arrival TIME on LOCATION					TIME departed from LOCATION			(404.95)
					TAX EXEMPT NO. montana sale			

PLACARDS REQUIRED: none required

TOTAL WEIGHT lbs

DELIVERY TIME & DATE:

PLACARDS RECEIVED: X

Sub Total	
Retail Sales Tax @ %	
TOTAL AMOUNT OF SALES ORDER	

FOR CHEMICAL EMERGENCY
Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC – DAY OR NIGHT
800-424-9300

VALUATION – MAXIMUM LIABILITY OF 2.50 PER POUND UNLESS DECLARED VALUATION STATES OTHERWISE.
VALUATION $

TERMS: Net 30 days. Interest charged on all past due accounts (1½% per month Annual rate 21%) plus attorney fees.

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.
Per L. Leininger

Shipper, Per
Agent Per
RECEIVED IN GOOD ORDER
BY –

NOT NEGOTIABLE – (This Bill of Lading – Express Shipping Contract is to be Signed by Shipper and Carrier)

ACCOUNTING

NAME OF CARRIER: S&S Chemicals | ROUTE:

DATE ORDERED: Wed 01/11/95 | POINT OF ORIGIN: Williston, ND | BL/Sales Order No. 004481 05:19 PM 7396

CONSIGNEE & ADDRESS: S & S CHEMICAL
WILLISTON ND

SHIP TO: MURPHY OIL EPU#8D
H & H WELL SERVICE
ROOSEVELT CO MT

S&S Chemical & Oil Inc.
FED ID #83-0208750
WILLISTON, ND
(701) 774-3655 – FAX: (701) 572-3297

CUSTOMER ORDER NO.: RAY REEDE | CAR/TRAILER NO.: #6/Van# | F.O.B.: SHIP TO ADDRESS | FREIGHT TERMS/AMOUNT: ☐ PREPAID ☐ COLLECT ☒ PPD & CHARGE

PRODUCT CODE	QUANTITY SHIPPED	Pkg./Type	Unit Wt./lbs.	H.M.	PRODUCT & DESCRIPTION	WEIGHT/lbs.	PRICE	AMOUNT
WIBAR---06	250	bag	100 #		Barite	25,000 lbs	$6.00	$1,500.00
WIDEOAMA13	3	can	45		Defoam A	135	48.25	$ 144.75
WIDQHEC-13	2	can	45		Liquid Hec Viscosifier	90	111.20	222.40
WIDESCO-01	2	bag	25		Chrome Free Desco Thinner	50	33.00	66.00
WIVANRENT					Start Van Rent 1-12-95		10.00	
WIFreight	7hrs				Feeight charges		$55.00/Hr.	385.00
					P			

arrival TIME on LOCATION 9:00AM CST TIME departed from LOCATION 11:00 CST

TAX EXEMPT NO. mt sale

PLACARDS REQUIRED: ~~none required~~

TOTAL WEIGHT 25,275 lbs

DELIVERY TIME & DATE:

PLACARDS RECEIVED: X

Sub Total

Retail Sales Tax @ 5 %

TOTAL AMOUNT OF $

TERMS: Net 30 days
Annual ra

FOR CHEMICAL EMERGENCY
Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC – DAY OR NIGHT
800-424-9300

VALUATION – MAXIMUM LIABILITY OF 2.50 PER POUND UNLESS DECLARED VALUATION STATES OTHERWISE.

VALUATION $

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per d arnson

Shipper, Pe

Agent.

NOT NEGOTIABLE – (This Bill of Lading – Express Shipping Contract is to be Signed by Shipper and Carrier)

ACCOUNTING

NAME OF CARRIER: S&S Chemicals

ROUTE:

DATE ORDERED: Sat 01/14/95

POINT OF ORIGIN: Williston

CONSIGNEE & ADDRESS: S&S CHEMICAL
P.O. Box 2387
WILLISTON, ND 58802

SHIP TO: ship to same
same
same

F.O.B.: SHIP TO ADDRESS

FREIGHT TERMS/

CUSTOMER ORDER NO.: RAY

CAR/TRAILER NO.: #6 scott

PRODUCT CODE	QUANTITY SHIPPED	Pkg./ Type	Unit Wt./lbs.	H.M.	PRODUCT & DESCRIPTION
	7				Return Mud Van From Murphy Oil
	-91				Bent
					Defoam "A"
	-3				Liquid Flec 5gal
	-1				Desco
	-1				~~Freight~~
	~~1~~ 3 days				Van rent 150

arrival TIME on LOCATION

TIME departed from LOCATION

TAX EXEMPT NO. montana sale

PLACARDS REQUIRED: none required

PLACARDS RECEIVED: X

DELIVERY TIME & DATE:

FOR CHEMICAL EMERGENCY
Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC - DAY OR NIGHT
800-424-9300

VALUATION: MAXIMUM LIABILITY OF 2.50 PER POUND UNLESS DECLARED VALUATION STATES OTHERWISE:

VALUATION $

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per Leininger

Shipping Contract No. BY

Sub Tota

Retail Sa

TERMS

Shippe

Agent.

WIBAR 06 25
WIDEX
WIFLEC 3
WIDESCO 01
WIVANRENT
WIFreight

arrival TIME on LOCATION

PLACARDS REQUIRED:

DELIVERY TIME & DATE:

FOR CHEMICAL EMERGENCY
Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC - DAY OR NIGHT
800-424-9300

VALUATION

VALUATION $

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable r

NOT NEGOTIABLE

Per

TRETOLITE

369 Marshall Avenue • St. Louis, Missouri 63119-1897
314 961-3500 • Fax: 314 968-6219

WATER ANALYSIS REPORT

Company	: Muphy Oil Corp,	Date	: 12-7-95
Address	: Poplar, Mt.	Date Sampled	: 12-4-95
Lease	: 8-D S.W.D.	Analysis No.	: 1
Well	: 8-D S.W.D.		
Sample Pt.	: Well Head		

	ANALYSIS		mg/L		* meq/L
1.	pH	7.7			
2.	H2S	pos.			
3.	Specific Gravity	1.065			
4.	Total Dissolved Solids		114612.8		
5.	Suspended Solids				
6.	Dissolved Oxygen		2 ppm		
7.	Dissolved CO2		600		
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)				
11.	Bicarbonate	HCO3	366.0	HCO3	6.0
12.	Chloride	Cl	68166.0	Cl	1922.9
13.	Sulfate	SO4	1680.0	SO4	35.0
14.	Calcium	Ca	3600.0	Ca	179.6
15.	Magnesium	Mg	245.3	Mg	20.2
16.	Sodium (calculated)	Na	40555.3	Na	1764.0
17.	Iron	Fe	0.2		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		10000.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

```
+------+                    +------+
|  180 | *Ca <----- *HCO3   |    6 |
|------|   /------->        |------|
|   20 | *Mg -----> *SO4    |   35 |
|------|      <---------/   |------|
| 1764 | *Na -----> *Cl     | 1923 |
+------+                    +------+
```

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	6.0	486
CaSO4	68.1	35.0	2381
CaCl2	55.5	138.7	7694
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	20.2	961
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	1764.0	103091

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Ron Neubauer

WATER ANALYSIS REPORT

Company	: Murphy Oil Co.	Date	: 12-19-97
Address	: Poplar, Mt.	Date Sampled	: 12-18-97
Lease	: 8-D	Analysis No.	: 2
Well	: 8-D S.W.D.		
Sample Pt.	: Pump		

	ANALYSIS		mg/L		* meq/L
1.	pH	7.0			
2.	H2S	Pos.			
3.	Specific Gravity	1.100			
4.	Total Dissolved Solids		134069.0		
5.	Suspended Solids		clear		
6.	Dissolved Oxygen		1.5		
7.	Dissolved CO2		450		
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)				
11.	Bicarbonate	HCO3	244.0	HCO3	4.0
12.	Chloride	Cl	80826.0	Cl	2280.0
13.	Sulfate	SO4	1200.0	SO4	25.0
14.	Calcium	Ca	3888.0	Ca	194.0
15.	Magnesium	Mg	799.2	Mg	65.8
16.	Sodium (calculated)	Na	47111.6	Na	2049.2
17.	Iron	Fe	0.1		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		13000.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

194	*Ca <----- *HCO3	4
	/------->	
66	*Mg -----> *SO4	25
	<---------/	
2049	*Na -----> *Cl	2280

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	4.0	324
CaSO4	68.1	25.0	1701
CaCl2	55.5	165.0	9157
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	65.8	3130
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2049.2	119757

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

REMARKS:

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Ken Kolstad

BAKER PETROLITE
A Baker Hughes company

TRETOLITE

PETROLITE
369 Marshall Avenue • St. Louis, Missouri 63119-1897
314 961-3500 • Fax: 314 968-6219

WATER ANALYSIS REPORT

ompany	: Murphy Oil Corp.	Date	: 12-3-96
ddress	: Poplar, Mt.	Date Sampled	: 11-25-96
ease	: 8-D S.W.D.	Analysis No.	: 1
ell	: 8-D S.W.D.		
ample Pt.	: Well Head		

	ANALYSIS		mg/L		* meq/L
1.	pH	6.8			
2.	H2S	Positive			
3.	Specific Gravity	1.070			
4.	Total Dissolved Solids		103270.2		
5.	Suspended Solids		Sample Cle		
6.	Dissolved Oxygen		.5 ppm		
7.	Dissolved CO2		450		
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)				
11.	Bicarbonate	HCO3	341.0	HCO3	5.6
12.	Chloride	Cl	61770.0	Cl	1742.5
13.	Sulfate	SO4	1400.0	SO4	29.2
14.	Calcium	Ca	2160.0	Ca	107.8
15.	Magnesium	Mg	875.8	Mg	72.1
16.	Sodium (calculated)	Na	36723.3	Na	1597.4
17.	Iron	Fe	0.1		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		9000.0		

PROBABLE MINERAL COMPOSITION

```
*milli equivalents per Liter
+------+                    +------+
|   108| *Ca <----- *HCO3   |     6|
|------|   /------->        |------|
|    72| *Mg -----> *SO4    |    29|
|------|     <---------/    |------|
|  1597| *Na -----> *Cl     |  1742|
+------+                    +------+
```

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	5.6	453
CaSO4	68.1	29.2	1984
CaCl2	55.5	73.0	4053
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	72.1	3430
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	1597.4	93350

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Ron Neubauer

WATER ANALYSIS REPORT

ɔany	: Murphy Oil Co.	Date	: 1/5/99
ɛess	: Poplar, Mt.	Date Sampled	: 1/4/99
ɜe	: S.W.D.	Analysis No.	: 1
.	: 8-D		
ɔle Pt.	: Pump		

ANALYSIS		mg/L		* meq/L
pH	7.5			
H2S	pos.			
Specific Gravity	1.060			
Total Dissolved Solids		106416.7		
Suspended Solids				
Dissolved Oxygen		.0		
Dissolved CO2		400		
Oil In Water				
Phenolphthalein Alkalinity (CaCO3)				
Methyl Orange Alkalinity (CaCO3)				
Bicarbonate	HCO3	305.0	HCO3	5.0
Chloride	Cl	63900.0	Cl	1802.5
Sulfate	SO4	1300.0	SO4	27.1
Calcium	Ca	2350.0	Ca	117.3
Magnesium	Mg	1095.0	Mg	90.1
Sodium (calculated)	Na	37410.7	Na	1627.3
Iron	Fe	1.0		
Barium	Ba	0.0		
Strontium	Sr	55.0		
Total Hardness (CaCO3)		10000.0		

PROBABLE MINERAL COMPOSITION

lli equivalents per Liter

```
----+                          +------+
 117| *Ca <----- *HCO3         |    5|
----|    /------->             |------|
  90| *Mg -----> *SO4          |   27|
----|      <---------/         |------|
1627| *Na -----> *Cl           | 1803|
----+                          +------+
```

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	5.0	405
CaSO4	68.1	27.1	1843
CaCl2	55.5	85.2	4727
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	90.1	4289
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	1627.3	95097

ɪration Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

ɪr Petrolite Chemical Group

Respectfully submitted,
Tom Willer
Tom Willer

BAKER PETROLITE
A Baker Hughes company

(2)

United Corrosion Consultants Ltd.
7605 - 18 Street, Box 5560 Station L
Edmonton, Alberta, Canada T6C 4E9
Tel: (403) 440-1356 Telex: 037-3366
Telefax: (403) 440-4413

Edmonton, Alberta
November 28, 1988

Murphy Oil U.S.A. Inc.
Box 547
Popular, Montana
59255

Attention: Mr. Ray Reede

Dear Sir:

Please find enclosed the as built cathodic protection system drawing for the East Popular Field, well #8D located at the 11-10-28-51 site.

Yours very truly,

UNITED CORROSION CONSULTANTS LTD.

Don Pearson, C.E.T.
Engineering Design and Drafting
Technologist

DP/mh
Attachment

united

United Corrosion Consultants Ltd.
P.O. Box 2006
Williston, North Dakota
58802-2006
Phone (701) 572-4207
Fax (701) 572-9550

WORK TICKET

WORK TICKET NO.: 3046
DATE ORDERED: 6-21-93
DATE COMPLETED: 6-21-93
STATE TAX EXEMPT ☐ IN ☑
EXPT #: Mont

CUSTOMER'S ORDER NO.: Verbal	AFE #:	CHARGE #: EPU-8D
FIELD / AREA: East Popular Unit	LOCATION:	
FIELD CONTACT / OFFICE:		FIELD PHONE:
BILL TO: Murphy Oil USA Inc		ATTENTION:
ADDRESS: Box 547		
CITY: Popular Montana	ZIP: 59255	
DESCRIPTION OF WORK:		

A. LABOR	HOURS	RATE	TOTAL
Sen Corr Tech	1.0 hr	60.00/hr	60.00

B. VEHICLE	UNIT #	HOURS/miles	RATE	TOTAL

C. MISCELLANEOUS	TOTAL

SUB TOTAL 60.00

D. MATERIALS — SHIPPED ☑ INSTALLED ☐ DELIVERED ☐

QTY.	DESCRIPTION	UNIT COST	TOTAL
~~2~~	~~[illegible]~~		
4	Raychem Splice K.TS	280.00	880.00
4	Positive Splices	15	60
20'	#6 HMWPE cable	65¢/ft	13.00

Gerald Hopkins

APPROVED BY:
RECEIVED BY:
PLEASE PRINT NAME:
DATE:

SUBTOTAL MAT'LS: 153.00
TAX: Mont
SUBTOTAL OTHER: 60.00
FREIGHT:
TOTAL: $ 213.00

REMARKS: As Lefo 5.2 volts - 7.8 amps
P/S 800 mv off 945 mv on

Copy #1 United Copy (White) #2 To be submitted with invoice (Yellow) #3 Customer copy (Green)

OILWELL
Division of United States Steel Corporation

SERVICE REPORT

TOTAL CHARGES SUBJECT TO CHANGE WHEN ADDITIONAL TIME IS USED DUE TO CIRCUMSTANCES BEYOND THE CONTROL OF OILWELL

REPORT NO.: 9

REPRESENTATIVE: Lee Taylor	REPRESENTIVE HEADQUARTERS: Casper, Wyo — EPU Salt Wells Div. #4
CUSTOMER: Murphy Oil Corp	DATES WORK PERFORMED: Feb 2, 3, 4 1981
RIG NUMBER / LEASE: 8D water Disposal unit / WELL NO.	REQUESTED BY: Mallow / CUSTOMER ORDER NO.
LOCATION: 12 m. NE Poplar Mont.	PRODUCT: Triplex pump / TYPE OR MODEL: 346P
☒ NEW ☐ USED	SIZE: 3 3/4" Cohard / SERIAL NO.: P115A-1173 RHD

NATURE OF PROBLEM

Start up New unit

DESCRIPTION OF WORK PERFORMED AND BREAKDOWN OF TIME EACH DAY:

2-2-81 Leave Casper 3 Am Drive to location Arrive 1pm Check unit. Found paper towell ~~[illegible]~~ plugging #3 Cross head Oil Lube Holes Removed Towel & Pre Lube Cross heads Check Cross head Clearances .008 .008 .006 Clean protective Coating off of plunger Extension & lubricate packing Check oil pump & Chain & Install murphy pressure Switch gauge (20 p. 27) Atempt to operate unit But motor Would not Run. Leave location 4pm Drive to motel 5:30 pm
2-3-81 Leave motel 8 Am Arrive location 9 Am waiton customer TO Replace motor. Start unit & operate Several Hrs Check Brg & oil Temps All okay Leave location 2 pm.

No Relief Valve. No oil Safety wiring. customer to Hook up & Check
181 Spm 550 # Discharge press
14 pump Sheave
10" motor Sheave 125 Hp 1175 Rpm motor

CHARGING PROCEDURES: See Reverse Side.

EXPENSE DATA

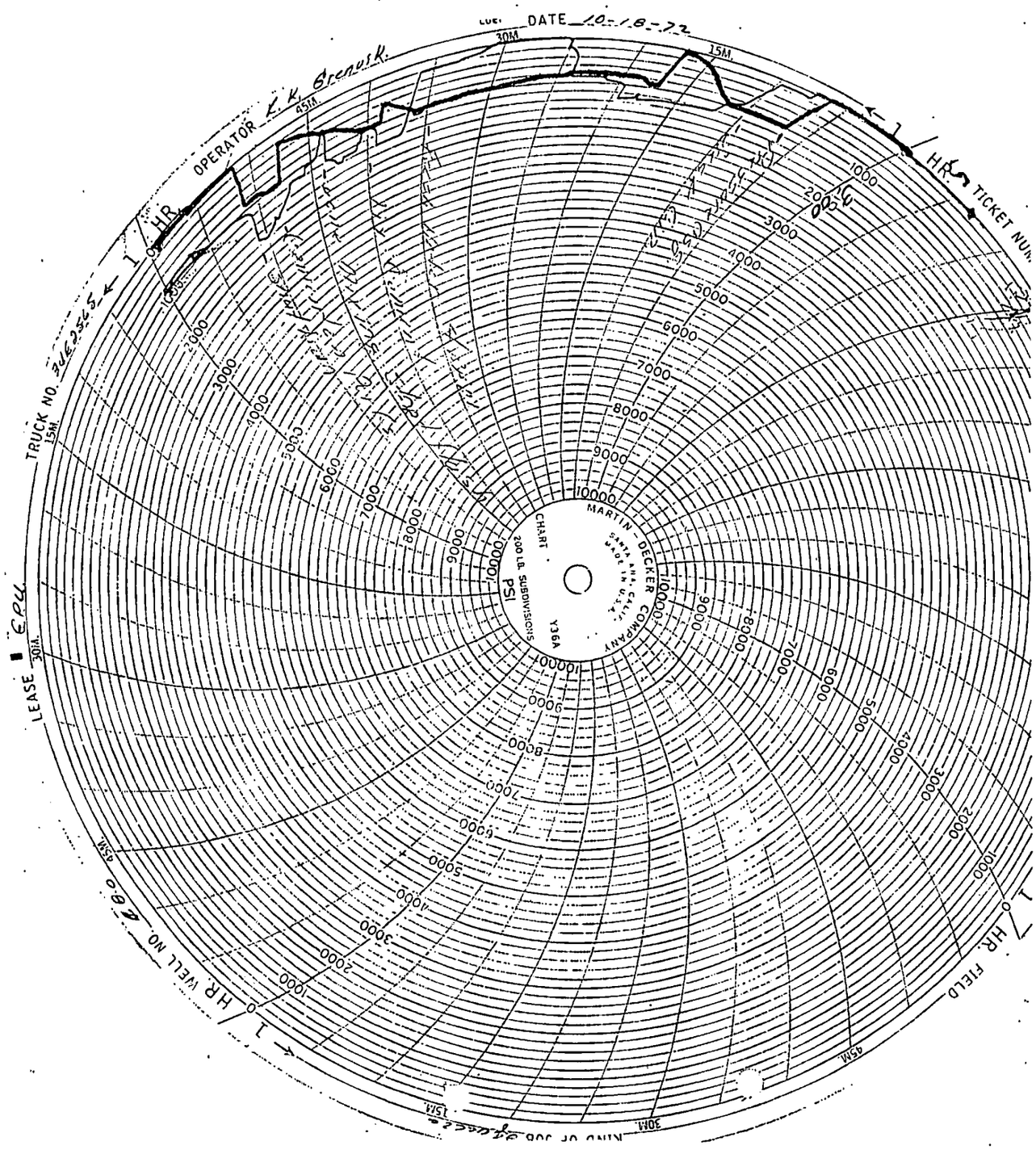
FOR SERVICE REPRESENTATIVE USE ONLY			OFFICE USE ONLY	
DOMESTIC	FOREIGN	ITEM	UNIT COST	EXTENSION
		HOURS/DAYS REGULAR PAY	$	$
		HOURS/DAYS OVERTIME	$	$
		HOURS/DAYS DOUBLE TIME	$	$
		MILES	$	$

NUMBER				
	MEALS	$	APPROVED BY SUPERVISOR	$
	NIGHT LODGING	$		$
	LOCAL TRANSPORTATION (AUTO RENTAL, TAXI, ETC.)	$	CHARGE	$
	AIR FARE	$	NO CHARGE	$
	MISCELLANEOUS (LAUNDRY, PHONE, ETC.)	$	TOTAL	$

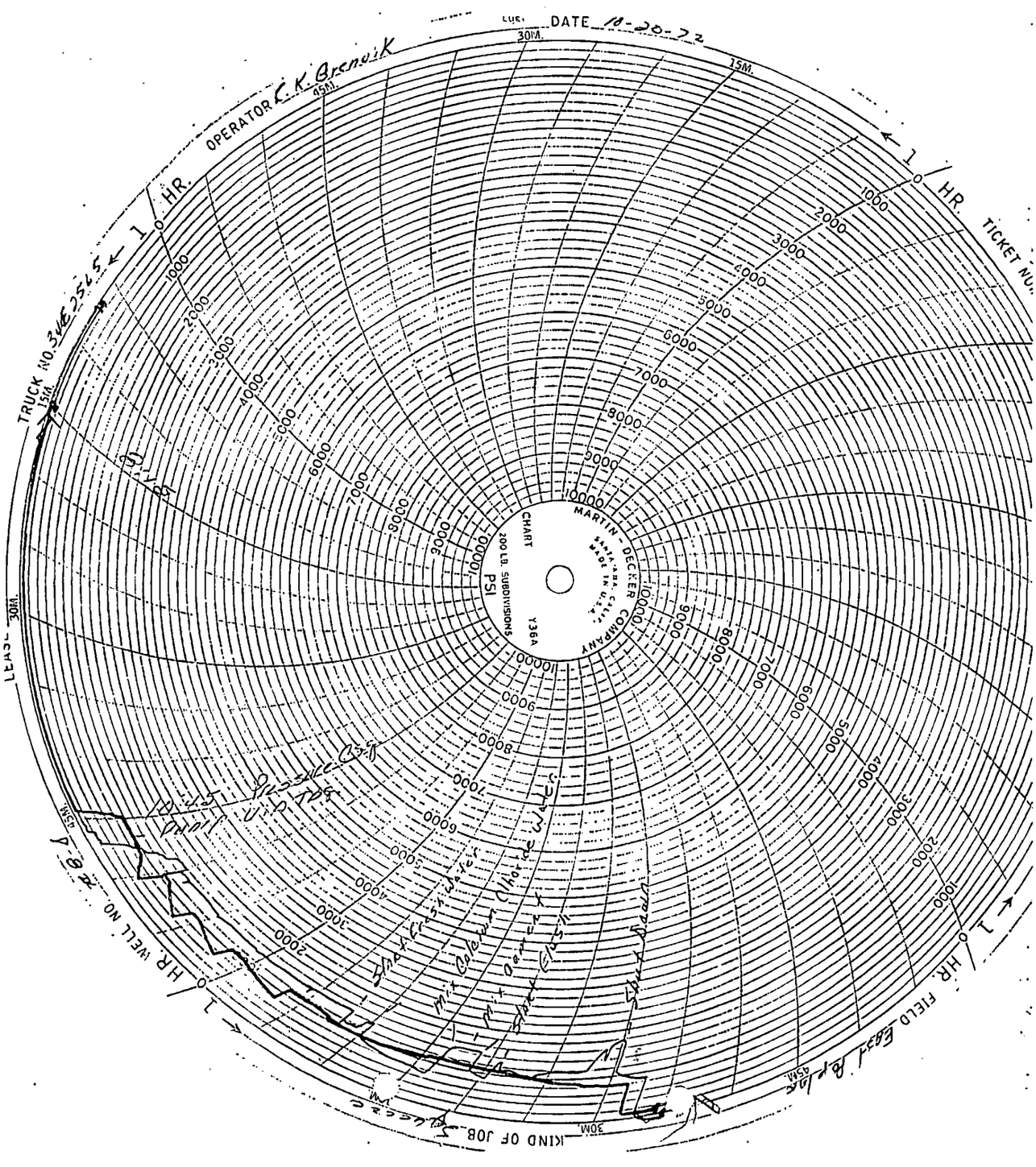
APPROVED BY	CUSTOMER OR HIS REPRESENTATIVE: Nicky R. Hagadone		DATE: 2/3/81
CHARGE DATA	NAME OF STORE	INVOICE NUMBER	DATE

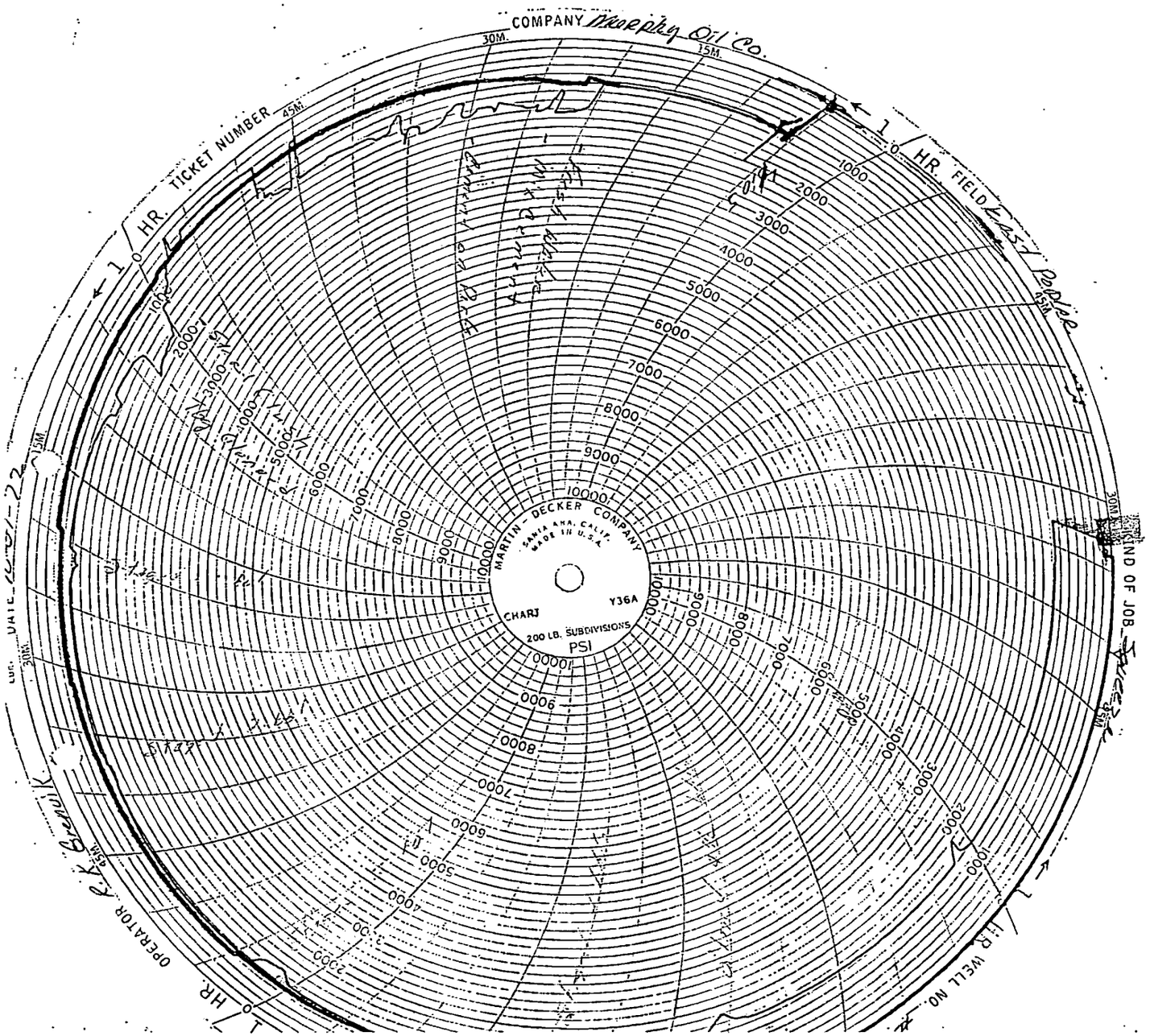
FORM NO. 2 8 4 6 REV. 7-79
PRINTED IN U.S.A.

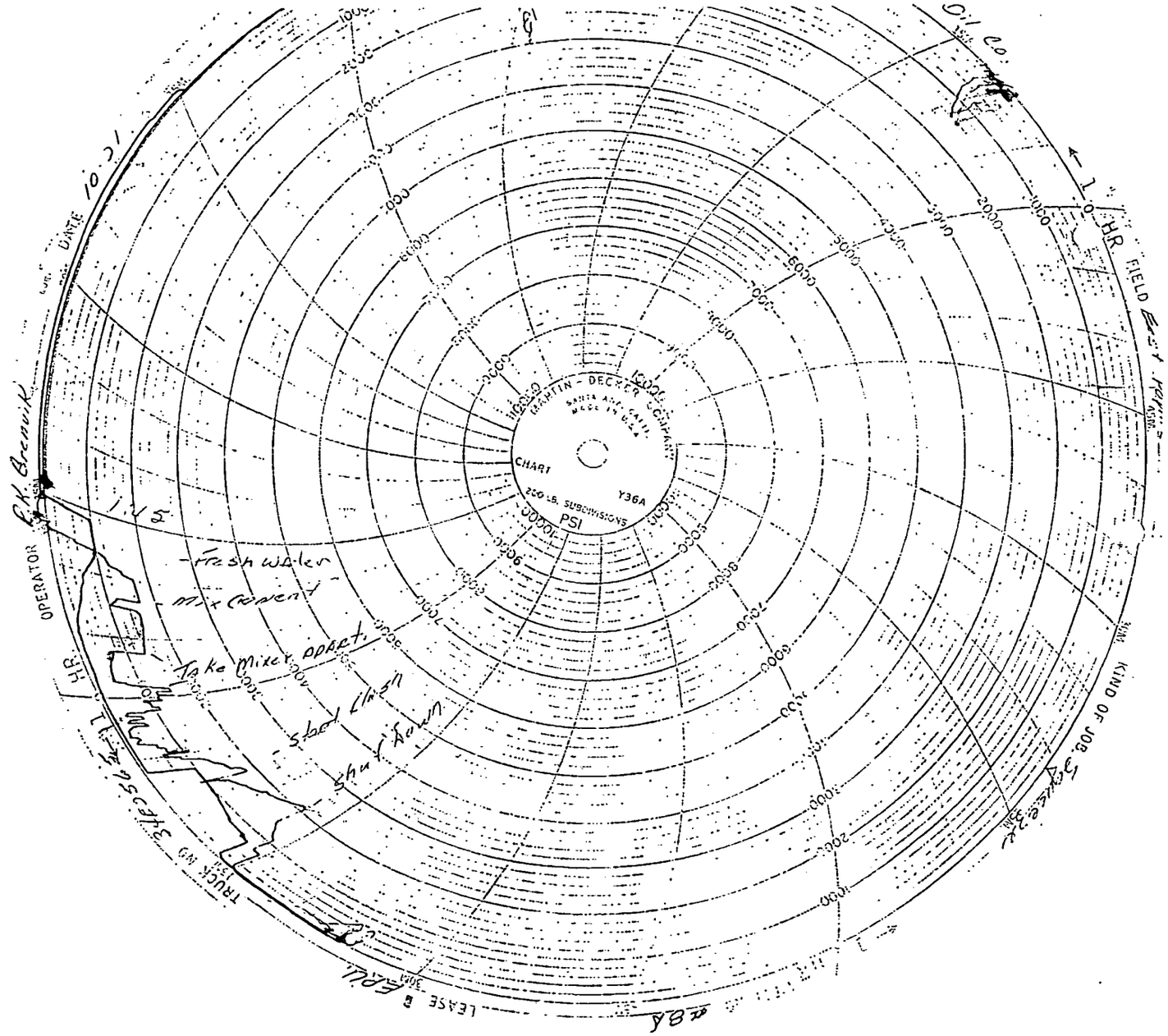
CUSTOMER


DATE 10-18-72
OPERATOR L. K. Grenusk
TICKET NUM
TRUCK NO.
LEASE
WELL NO.
FIELD
KIND OF JOB
MARTIN-DECKER COMPANY
SANTA ANA, CALIF.
MADE IN U.S.A.
CHART
200 LB. SUBDIVISIONS
PSI
Y36A
1 HR.
15M.
30M.
45M.

TICKET NUMBER
DATE 10-19-72
COMPANY Murphy Oil Co.
FIELD
OPERATOR
TRUCK NO.
KIND OF JOB
MARTIN - DECKER COMPANY
SANTA ANA, CALIF.
MADE IN U.S.A.
CHART
200 LB. SUBDIVISIONS
Y36A
PSI
1 HR.
15M
30M
45M


DATE 10-20-72
OPERATOR C.K. Grenvik
TRUCK NO. 34E2565
LEASE
HR. WELL NO.
HR. TICKET NO.
HR. FIELD
KIND OF JOB
MARTIN - DECKER COMPANY
CHART
200 LB. SUBDIVISIONS
PSI
Y36A
Pressure Bag
Pump Vin Tbg
Mix Calcium Chloride Water
Mix Cement
Start Flush
Start Down
Start Crest Water
Start Down
Squeeze
30M.
45M.
15M.


COMPANY Murphy Oil Co.
TICKET NUMBER
HR.
FIELD East Poplar
KIND OF JOB
WELL NO.
OPERATOR
DATE
MARTIN - DECKER COMPANY
SANTA ANA, CALIF.
MADE IN U.S.A.
CHART
Y36A
200 LB. SUBDIVISIONS
PSI
30M.
15M.
45M.



Oil Co.
1 HR
FIELD East Park
KIND OF JOB Squeeze
DATE 10-21
OPERATOR
R.K. Brenvik
1:45
Fresh water
Mix Cement
Take Mixer apart
Start Clash
Shut Down
TRUCK NO
LEASE
CHART
Y36A
200 LB. SUBDIVISIONS
PSI
MARTIN - DECKER COMPANY

WATERSAVER COMPANY, INC.

3560 WYNKOOP STREET • DENVER, COLORADO 80216 • (303) 623-4111

MAR 1993
RECEIVED
BOARD OF OIL & GAS CONS.
STATE OF MONT.
BILLINGS

Data Sheet SORV - 72

SPECIFICATION

Physical Properties For

OIL RESISTANT VINYL (P.V.C.)

		.020 Gauge	.030 Gauge
Tensile	L	2950	2800
	T	2600	2450
Elongation %	L	440	520
	T	460	520
Modulus 100% PSI	L	1150	1050
	T	1050	950
Greves Tear PSI	L	290	290
	T	300	300
Water Extraction		.70% Gain	.36% Gain
Volatility		.97%	.65%
Cold Crack		+ 10° F	
Specific Gravity		1.29	
Color		Grey or Black	

These typical property values are intended as a guide and are not specification limits.

Williston Basin Inspection, Inc.

PHONE 701-572-5031 — BOX 20 — WILLISTON, NORTH DAKOTA 58801

FOR: WELL-PRO | P.O. NO. | DATE: 11-9-92 | INVOICE № A-5578

	Serial No.	Box	Condition	Pin	Condition	Description	Company
1	16-05	2 7/8 REG	OK	BOWEN	OK	SPEAR	MURPHY
2		BOWEN	OK			SPEAR NUT	
3	1-311	2 3/8 IF	OK	2 7/8 REG	OK	XO	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

SUMMARY

TOTAL JOINTS INSPECTED

Ø Pins, Re-Thd. Ø Boxes, Re-Thd.

Ø Pins, Cracked Ø Boxes, Cracked

Ø Crooked Ø Plugged

NONE JOINTS TO REWORK

____ Pins, Reface @ $ ____ .00 Each	$ ____ .00
____ Boxes, Reface @ $ ____ .00 Each	$ ____ .00
2 Pins @ $ 9 .00 Each	$ 18 .00
3 Boxes @ $ 9 .00 Each	$ 27 .00
TOTAL INVOICE	$ 45 .00

Cracks - Red Paint Other Defects - Green Paint OK - White Paint

NOTE: Defects located by Visual, Magnaglo, or Ultrasonic Inspection

ACCEPTED BY Pat Burgess

(2)

YAPUNCICH, SANDERSON & BROWN LABORATORIES
BILLINGS, MONTANA

WATER ANALYSIS REPORT

Lab. No. 12260-3

Field: East Poplar Unit
County: State:
Well No.:
Location:
Formation:
Depths:
Operator: Murphy Oil Corporation
Date Sampled:
DST No.: Sample:
Date Analyzed: 7-21-75
Other Data: Salt Water Station No. 3 & 4 South End.
Clear, colorless water. H_2S present. injection water

Constituents	PPM	MEQ.	MEQ. %
Sodium	52,884	2300.33	48.81
Calcium	911	45.45	0.95
Magnesium	137	11.23	0.24
Sulfate	1,914	39.80	0.84
Chloride	82,000	2312.40	49.05
Carbonate	0	0.00	0.00
Bicarbonate	293	4.80	0.11

Total Solids in Parts per Million
By evaporation
After ignition
Calculated 137,990
pH 6.3
Specific Gravity @ 60°F 1.094
Resistivity @ 68°F ohms/meter³ 0.068

Chloride as NaCl 135,218 PPM.

Total Solids From Resistivity as NaCl 136,991 PPM.

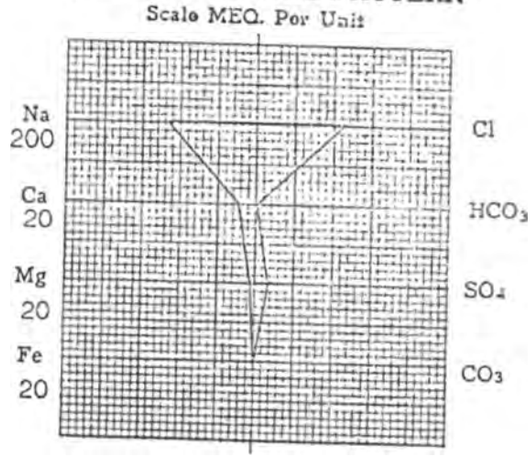
NOTE: Sodium and potassium reported as sodium. MEQ. = milliequivalents per liter. PPM = parts per million (milligrams per liter). 1 PPM equivalent to [illegible]

1. Bromine 8 ppm
2. Iodine <1 ppm

(< is less than)

WATER ANALYSIS PATTERN

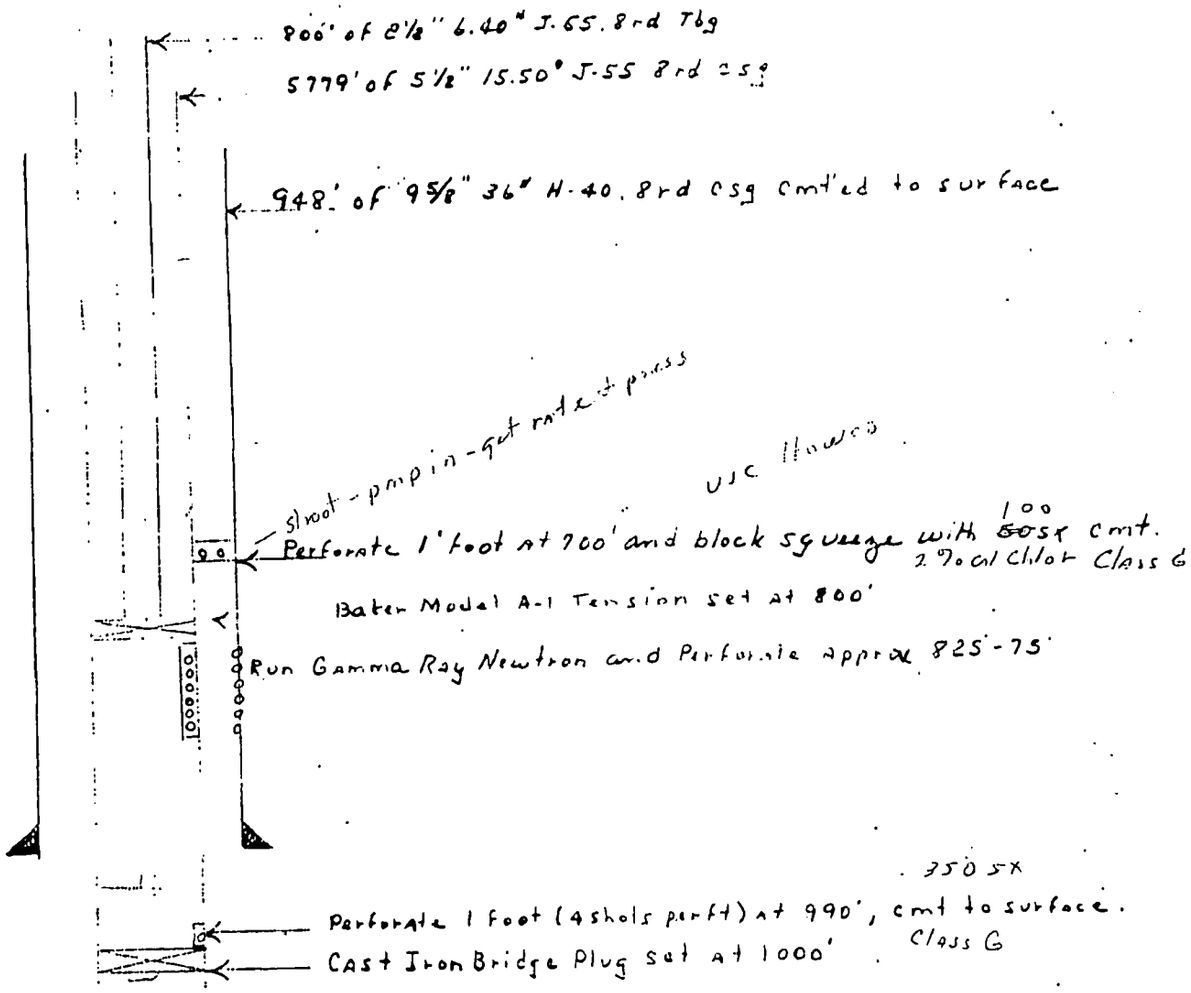
Scale MEQ. Per Unit



U. S. Geological Survey
RECEIVED
OCT 19 1977
Billings, Montana

Murphy Oil Corp.

EPU 8-D SWD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

UIC PROGRAM COMPLIANCE FIELD INSPECTION REPORT

COMPANY: Murphy Oil REPRESENTATIVE: Roy Reede

ADDRESS: PHONE: 406-707-3612

FIELD/WELL NAME: East Kelsey Unit # 7 D

LOCATION: ____/4; SEC. 10; T 27N; R 51E; COUNTY: Roosevelt STATE MT

File #

RECORDS INSPECTION

Injection Rate: Max. 4365 B/D; Ave. 4200 B/D; Pmt.Max. ____ B/D

Injection Pressure: Ave. 510 psig; Max. 575 psig; Pmt.Max. ____ psig

Cummulative Inj. Vol: 69603 Bbl. Pmt. #: MTS 2023-0023

Comments:

WELLHEAD INSPECTION

General Surface Condition: Good
[photos, (Y)(N)]

Injection Rate: 4170 B/D; 2) Meter Type: Halliburton
Location: (at well) (at pump)

Injection Press: (at wellhead) 575 psig; (at pump): ____ psig

Gauge Range: 1000 psig; Gauge Range: ____ psig

Annulus Press: 0 psig Other:

Injection Water Source:

Water Sample Location/Techniques/Analyses

General/Comments

INSPECTOR(S): [illegible]

DATE: 5/1/91 TIME: 7:55 AM

EPA R8 3560-18 (8-89)

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5

Casing/Tubing Annulus
Pressure Test

Name of Company: Murphy Oil Corporation Date: 9/27/85

Name of Well: #8-D Permit No.:

Name of Field East Poplar County: Roosevelt

Location of Well: NW 1/4 SE 1/4 Sec. 10 T-28N R-51E

Type of Well: SWD X ER Total Depth: 5765 Ft.

Type of Packer: Baker Model "A3 Lock Set"

Packer Setting Depth: 737

Surface Casing Size: 13 3/8 From: 0 Ft. To 100 Ft.
9 5/8 960

Casing Size: 5 1/2 From: 0 Ft. To 5765 Ft.

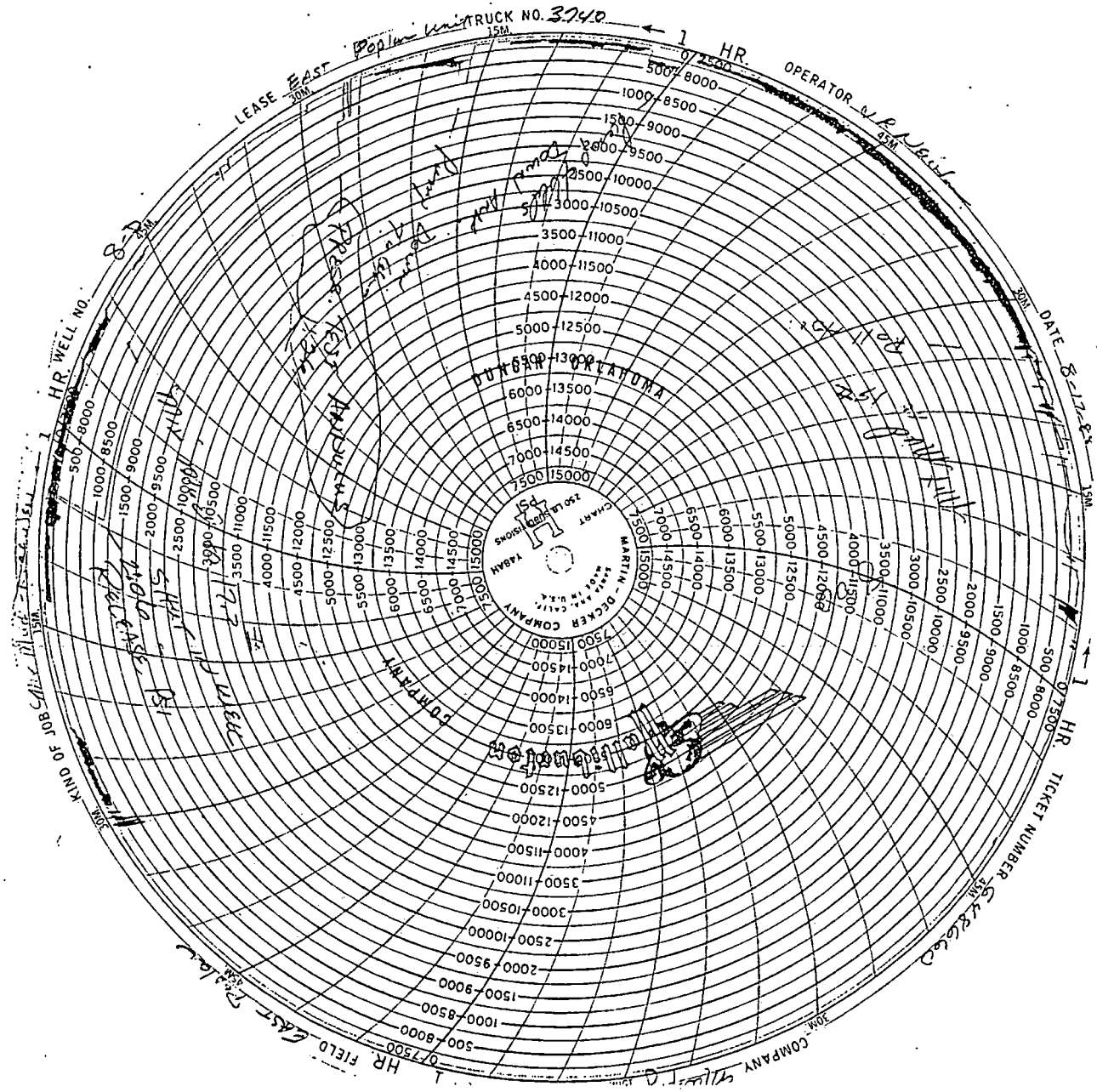
Tubing Size: 2 7/8 Amount: 737

Time of Test: 2:00 PM Pressure Gauge Reading:

0 Min:	1000
5	1000
10	1000
15	1000
20	1000
25	1000
30	1000
35	
40	
45	
50	
55	
60	

Passed Test
W E Engle

Inspected by: James Rowe
James Rowe


TRUCK NO. 3740
HR.
OPERATOR
DATE
TICKET NUMBER
COMPANY
HR. FIELD
KIND OF JOB
HR. WELL NO.
LEASE
DUNCAN OKLAHOMA
MARTIN - DECKER COMPANY
CHART
250 LB. SUBDIVISIONS
YABAN
COMPANY

File 4-D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

MECHANICAL INTEGRITY PRESSURE TEST
CASING/TUBING ANNULUS

Company Name: Murphy Oil Date: 11/17/92
Well Name: #8D Permit No. MTS 2023-0023
Field Name: East Poplar Unit County: Roosevelt, Mt.
Well Location: _____ Sec 10 T 28N R 51E
Well Type: SWD ✓ ER ____ 2H ____ Other: ____
Type of Packer: Baker Model G Total Depth: 5766
Packer Set at (depth): 738 FT
Surface Casing Size: 9 5/8" From: 0 FT to 960 FT
Casing Size: 5 1/2" From: 0 FT to 5766 FT
Tubing Size: 2 7/8" Tubing Pressure during Test: 560 psig
Time of Day: 1:07 am/pm

	Test #1		Test #2	
0 Min:	355	psig	360	psig
5	338	psig	348	psig
10	300	psig	352	psig
15		psig	350	psig
20	Casing	psig	352	psig
25	Head	psig	355	psig
30	Leak	psig	355	psig
35		psig	355	psig
40		psig	350	psig
45		psig	350	psig
50		psig		psig
55		psig		psig
60		psig		psig

Test Conducted by: Jim Corne
Inspected by: Billy B. Lane
Others Present: Debbie Madison Ft Peck Tribe

EPA R8 3560-1A (8-89)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

MECHANICAL INTEGRITY PRESSURE TEST
CASING/TUBING ANNULUS

Company Name: Murphy Exploration & Prod Co. Date: 1-13-95
Well Name: East Poplar Unit 8-D Permit No. MTS2023-0023
Field Name: East Poplar Unit County: Roosevelt
Well Location: _____ Sec 10 T 28N R 51E
Well Type: SWD X ER _____ 2H _____ Other: _____
Type of Packer: Baker Model G Total Depth: 5766'
Packer Set at (depth): 721 FT
Surface Casing Size: 9-5/8 From: 0 FT to 960 FT
Casing Size: 5-1/2 From: 0 FT to 5766 FT
Tubing Size: 2-7/8 Tubing Pressure during Test: 340 psig
Time of Day: 4:00 am/pm

	Test #1		Test #2	
0 Min:	500	psig	550	psig
5	480	psig	550	psig
10	460	psig	550	psig
15	well head leaking	psig	550	psig
20		psig	550	psig
25		psig	550	psig
30		psig	550	psig
35		psig		psig
40		psig		psig
45		psig		psig
50		psig		psig
55		psig		psig
60		psig		psig

Test Conducted by: Jerry Hagadone
Inspected by: Greg Kurtz Koch Trucking
Others Present: Dwayne Hagadone H & H Well SErvice

EPA R8 3560-1A (8-89)

Original - Regional Office Copy
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Received permission to start injecting into well from John Wardell @ 4:44 P.M 1-13-95

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

MECHANICAL INTEGRITY PRESSURE TEST
CASING/TUBING ANNULUS

Company Name: Murphy Exploration & Prod. Co. Date: May 3, 1995
Well Name: East Poplar Unit 8-D Permit No. MTS2023-0023
Field Name: East Poplar Unit County: Roosevelt
Well Location: _____ Sec 10 T 28N R 51E
Well Type: SWD X ER _____ 2H _____ Other: _____
Type of Packer: Baker Model G Total Depth: 5766'
Packer Set at (depth): 719 FT
Surface Casing Size: 9-5/8 From: 0 FT to 960 FT
Casing Size: 5-1/2 From: 0 FT to 5766 FT
Tubing Size: 2-7/8 Tubing Pressure during Test: 340 psig
Time of Day: 3:50 am/pm

	Test #1		Test #2	
0 Min:	390	psig		psig
5	390	psig		psig
10	390	psig		psig
15	390	psig		psig
20	390	psig		psig
25	390	psig		psig
30	390	psig		psig
35		psig		psig
40		psig		psig
45		psig		psig
50		psig		psig
55		psig		psig
60		psig		psig

Test Conducted by: Vern Sandau
Inspected by: Raymond Reede
Others Present: Dwayne Hagadone, H & H Well Service

EPA R8 3560-1A (8-89)

Received permission to start injecting into well from Bill Engle @ 4:40 p.m. May 5, 1995.

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8-8-95

STEP-RATE INJECTIVITY TEST DATA

	Injection Rate, BPM	Elapsed Time, min.	Injection Pres., psig		Injection Rate, BPM	Elapsed Time, min.	Injection Pres., psig
1.	1/2	0	348	2.	1	0	390
		5	364			5	403
		10	366			10	409
		15	366			15	417
		20	366			20	415
		25	370			25	417
		30	371			30	417
3.	2	0	448	4.	4	0	642
		5	469			5	615
		10	479			10	620
		15	481			15	615
		20	482			20	617
		25	483			25	612
		30	485			30	610
5.	6	0	700	6.	8	0	820
		5	715			5	800
		10	712			10	795
		15	706			15	818
		20	709			20	812
		25	695			25	860
		30	703			30	855

ISIP 523
5 min 482
10 min 470
15 min ~ 464

15

WORKOVER HISTORY NO. 1

May 26, 1959

Lease and Well Number: East Poplar Unit Well No. 8

Field: East Poplar County: Roosevelt State: Montana

Well Location: C NW SE Section 10, T28N, R51E

Status Prior to Present Job:

Date Completed: September 5, 1952 Date of Last Workover: None T.D.: 5786'

Producing Zones: "B1 & 2" Zones of Madison Formation ("C" Zone, DR plugged)

Perforations: 5614'-5623' and 5630'-5636' Cumulative Production through April, 1959: 520,969 BO and 671,995 BW

Justification for Workover: to repair leak in casing.

Summary of Workover:

5-14-59 T.D. 5786' - Ran DR latching plug and Lane Wells retreivable packer. Latched DR plug into packer at 5755', tested DR plug and 5-1/2" casing below "B-2" perforations at 5636' with 2500#, held ok. Tested casing above "B-1" perforations at 5614', would not hold. Found leak in 5-1/2" casing at approximately 3800' (tallying tubing to pin-down leak). Pumped into leak at the rate of 1 BPM at 1100#.

5-15-59 T.D. 5786' - Started in hole with Halliburton retreivable bridge plug and packer, steel core came out of tubing line, replaced same. Finished going in hole. Bridge plug failed.

5-16-59 T.D. 5786' - Started with Halliburton retreivable bridge plug and packer, would not go. Made trip and circulated hole. Made trip, bridge plug and packer went ok. Set bridge plug at 4001', tested with 2500#, held. Spotted jel on top of bridge plug, pin-pointed leak at 3852', set packer at 3864', tested with 2500#, held ok. Set packer at 3838'. Squeeze #1 -- with 75 sacks bulk Slo-set cement. Broke formation with 1100#, maximum squeeze pressure 1100#. Over-flushed tubing with 3BW, over-flushed casing with 2 BW while washing through leak. Let set 4 hours. Squeeze #2 -- with 50 sacks bulk Slo-set, tested bridge plug with 2500# maximum squeeze pressure 1200#, would not hold. Over-flushed tubing with 3 BW, casing with 2 BW while washing through leak. Let set overnight.

5-17-59 T.D. 5786' - Attempted to test bridge plug, packer would not go below 3852'. Set packer at 3838', broke formation with 1800#. Made trip to pick up bit. Drilled hard cement 3852'-3870', dropped

Summary of Workover continued

through, ran bit to 3930' open, no cement. No cement reversed out jel and cement cuttings. Made trip to pick up packer. Tested bridge plug with 2500#, held ok. Spotted jel on top of bridge plug. Set packer at 3860', to test for another leak, none indicated. Squeeze #3 -- with 75 sacks Pozmix with 2% jel. Broke formation with 2000#, maximum squeeze pressure 3000#, would not hold. Over-flushed tubing with 3 BW. Washed through leak while pumping 3 BW down casing by packer. Shut in with 2000# pressure. Pressure dropped to 1400# in 15 minutes. Shut in overnight.

5-18-59 T.D. 5786' - Tested bridge plug with 3000#, held. Squeeze #4 with 50 sacks Pozmix, 2% gel. Broke formation with 2200#. Squeezed 42 sacks out in formation, maximum squeeze pressure 4000#. Released pressure, would not hold. Build pressure back to 4000#. Reversed out 8 sacks cement, holding 2000# back pressure. Let set 4 hours with 2500#. Released pressure and tested bridge plug with 3000#, held. Tested squeeze with 3000#, would not hold. Squeeze #5 -- with 25 sacks Pozmix, 2% gel. Broke formation with 4000#, 1/4 BPM. Squeeze 8.5 sacks out in formation, maximum squeeze pressure 4000#. Released pressure, would not hold. Build pressure back to 4000# and reversed out 16.5 sacks under 2000# back pressure. Let set 16 hours with 2000# on formation.

5-19-59 T.D. 5786' - Tested Squeeze #5 with 2000#, would not hold. Tested bridge plug with 4000#, held. Squeeze #6 -- with 25 sacks regular cement with HR-4 retarder added. Broke formation at 4000# at rate of 1/4 BPM. Squeeze 10 sacks out in formation, maximum squeeze pressure 4000#. Released pressure, would not hold. Build back to 4000# and reversed out 13 sacks cement, hold 2500# back pressure. Left 2½ sacks cement in casing. Let set 6 hours, then tested with 2000#, would not hold. Swabbed tubing dry down to seating nipple. Let set 1 hour, then made trip with swab. Recovered 3/10 of barrel fluid. Let set overnight, will check fillup.

5-20-59 T.D. 5786' - Fillup overnight = .4 BPH. Made trip with tubing to pick up 4-3/4" bit. Drilled out 20' of cement. Circulated 1-1/2 hours. Made trip to pick up packer. Tested bridge with 2000#, would not hold. Set packer below leak and tested with 2500#. Bled 200# in 9 minutes. (Note - tight place in casing at 3252') Started out of hole with tubing.

5-21-59 T.D. 5786' - Ran tubing and circulated. Ran rods with 2-1/2" x 2" x 12' x 24' Volumax pump.

5-22-59 T.D. 5786' - On 4 hour test, pumped at the rate of 714 BFPD, 95% water (36 BOPD, 678 BWPD).

5-23-59 T.D. 5786' - On 4 hour test, pumped at the rate of 705 BFPD, 93% water (50 BOPD, 655 BWPD).

5-24-59 T.D. 5786' - No test, power off 12 hours in South end of field.

Summary of Workover continued

5-25-59 T.D. 5786' - On 6 hour test, pumped at the rate of 734 BFPD, 92% water (675 BWPD, 50 BOPD), Chlorides 70,000 PPM. This is the workover potential, to drop from report.

Recap of Workover:

1. Perforations: 5614'-5623' and 5630'-5636' (unchanged)

2. Total Depth: 5786'

3. Workover Potential: pumping 734 BFPD, 92% water (675 BWPD, 59

4. Geologic Name of Producing Zones: "B1 & 2" Zones of Madison Formation

Results of Workover: casing leak repaired, Workover Successful.

Downhole Equipment:

Tubing Record: 108 jts. of 2-7/8", 6.50#, J-55, 8rd. thd., R-2, Class 2, American and 83 jts. of 2-3/8", 4.70#, J-55, 8rd. thd., R-2, Class 2, American tubing

Below RKB	11.30'
Top joint of 2-7/8" tubing	30.04'
107 jts. 2-7/8" tubing	3154.00'
Seating nipple	1.25'
Swedge 2-7/8" to 2-3/8"	.80'
83 jts. 2-3/8" tubing	2544.96'
Bottom of Tubing	5742.35'

Rod Record:

76	3/4" Plain Rods	1900'
12	7/8" Plain Rods	300'
38	7/8" Scraper Rods	950'

Pump Data: 2-1/2" x 2" x 12' x 24' Oil Well Pump

WORKOVER HISTORY NO. 2 (22)

May 15, 1962

Lease & Well No. East Popler Unit Well No. 8

Field East Poplar County Roosevelt State Montana

Well Location C NW SE Section 10, T28N, R51E

Status Prior to Present Job:

Date Completed September 5, 1952 Date Last Workover May 25, 1959

T.D. 5786' P.B.T.D. 5786' Producing Zone B-1 & 2 Zones of Madison

Latest Test Pumping 712 BFPD, 95% water (36 BOPD, 676 BWPD)

Justification for Workover:

Cement squeeze casing leak and D.O.C. squeeze B zone perforations in attempt to lower water cut and increase production.

Summary of Workover:

4-15-62 5786' PBTD. MI and RU plg unit. Pld rods and ran Dia-Log caliper in 2 7/8" tbg. Pld tbg out of hole. Laid down 83 jts of 2 3/8" tbg and replaced w/2 7/8" tbg. Ran Baker full bore pkr on tbg to 4100'. Closed well in overnight.

4-16-62 5786' PBTD. Set Baker full bore pkr at 4200'. Attempted to tst sqz job on hole in csg at 3852'. Had leak in tbg. Drop ball and started tstg tbg for leaks. Changed out 2 split jts and 4 collars. Shut down to change out tbg. Closed well in overnight.

4-17-62 5786' PBTD. Ran Baker full bore pkr w/79 jts of 2 3/8" tbg in hole. Set pkr and closed tbg tester. Tstd tbg to 3000#, held ok. Ran 2 7/8" tbg to 4110'. Closed tbg tester. Tstd tbg to 3000#, held ok. Set pkr at 4110' to tst hole in 5 1/2" csg at 3852'. Press csg to 1000#. Bled to 600# in 1 min. Reset pkr at 4117'. Press csg to 900#. Bled to zero in 5 min. Reset pkr at 3840'. Press csg to 1000#, held ok. Reset at 3860', held ok. Reset at 3990', held ok. Reset at 4105' circ through tbg. Reset at 4175' circ through tbg. Closed tbg tester. Tstd tbg to 2000#, held ok. Started working unloader sub. Retested for csg leak w/1000#, held ok. Went in hole to 5650'. Set pkr to tst D.R. plug at 5755'. Unable to make pkr hold. Pld pkr out of hole. Closed well in overnight.

4-18-62 5786' PBTD. Ran full bore pkr. Tstd D.R. plug and csg below B-2 perf. Located csg leak at 4006'. Made trip for bridge plug. Set bridge plug at 4068' and sptd 3 sxs of salt jel. Set pkr at 4002'. Sqz #1 w/75 sxs reg cmt w/HR-4 added. Max sqz press 2500#, would not hold. Rev out 1/4 bbl cmt. Overflushed 1 1/3 bbl at 1500#. Shut in overnight.

Summary of Workover: (continued)

4-19-62 5786' PBTD. Tbg press - 800#, csg - zero. Sqz #2 w/75 sxs reg cmt w/HR-4 added. Set pkr at 4026'. Press to 2000#, held ok. Reset at 4002'. Broke form w/2 bbls SW at rate of 1 BPM at 1600#. Spted cmt down tbg. Press csg to 1000#. Sqzd 58 sxs cmt in form at 3000#. Rel to pmp truck, would not hold. Repress to 3000# w/15 bbl. Shut down 1 min. Rel to truck, would not hold. Repress to 3000#. Shut down 2 min. Rel to truck. Bled back .5 bbl. Repress to 3000#, held ok. Rev out 3.5 bbls of cmt slurry. Held 1000# back press. Washed down to 4027'. Reset pkr at 4002'. Press to 1500# for 3 hrs, held ok. Rel pkr. Went in hole to 4027'. Found cmt. Unable to wash down to bridge plug. Made trip taken off full bore pkr. Went in hole w/retrieving head. Milled hard cmt from 4027' to 4032'. Making trip for bit.

4-20-62 5786' PBTD. Ran 4 5/8" bit in hole. Drill cmt from 4032' to 4046'. Washed and circ to top of bridge plug at 4063'. Tstd sqz job to 1500#, held ok. Made trip for Baker retrieving head. Rev circ to bridge plug w/75 bbls SW. Started working tbg trying to get over plug. Broke hose connection on pmp. Tbg plug while repairing connection. Press tbg to 2000#. Could not move plug. Press csg to 1500#, unable to move same. Started out of hole.

4-21-62 5786' PBTD. Finished trip to unplug tbg. Rev circ to top of bridge plug w/30 bbls SW. Picked up kelly milled over plug w/retrieving head. Pull plug out of hole. Ran tbg in hole w/2½"x2¼"x8' tbg liner pmp spaced at 3109'. Ran rods. Started well pmpg.

4-22-62 5786' PBTD. Pmpg. Will tst when fluid levels off.

4-23-62 5786' PBTD. Pmpg. 24 hr tst - 549 BFPD, 98% w/c (11 BO 538 BW). Chloride 56,000 ppm.

4-24-62 5786' PBTD. Pmpg on 64"x17 SPM. 18 hr tst - 554 BFPD, 98% w/c (11 BO 543 BW). Chloride 53,000 ppm.

4-25-62 5786' PBTD. Pmpg. No tst.

4-26-62 5786' PBTD. Pmpg. No tst. Sonic pmpg fluid level - 1757'. Pmpg depth - 3100'. Tbg fluid entry - 5510'.

4-27-62 5786' PBTD. No tst.

4-28-62 5786' PBTD. Pmpg on 64"x17 SPM. Pmpd 654 BFPD, 97% w/c (19 BO 635 BW). Chloride 55,000 ppm.

4-29-62 5786' PBTD. Pmpg on 64"x17 SPM. Pmpd 669 BFPD, 97% w/c (29 BO 649 BW). Chloride 56,000 ppm.

4-30-62 5786' PBTD. Pmpg on 64"x17 SPM. Pmpd 651 BFPD, 96% w/c (26 BO 625 BW). Chloride 55,000 ppm.

5-01-62 5786' PBTD. MR and RU plg unit. Pld rods and tbg. Ran Baker full bore pkr w/20' of tail pipe. Hydro tstd tbg in hole. Set pkr at 4200'. Tstd sqz job to 1000#, held ok. Finished going in hole. Tag top of D.R. plug at 5755'. Set pkr at 5725'. Tstd plug and csg to 2000#, held ok. Spted 5 sxs of jel on plug. Reset pkr above perf at 5614' to 5623' and 5630' to 5636'. Press csg to 1000#. Broke form w/SW at rate of 4.5 BPM. Disp wtr w/oil. Closed well in overnight.

Summary of Workover: (continued)

5-02-62 5786' PBTD. D.O.C. sqz B zone perf 5614-23' and 5630-35' w/75 sxs of Dacotah cmt. Disp 5 bbls crude oil down csg and 5 bbls down tbg. Set pkr 5604'. Press csg to 1000#. Bled 200# in 10 min. Repress to 1000#, would not hold. Indications of small csg leak. Rel pkr. Spted 10 bbls of crude oil w/10 gals of Hy-flow mix followed w/3 bbls of diesel. Reset pkr 5604'. Press csg to 800#. Pmpd 15.5 bbls of diesel cmt slurry follow w/3 bbls diesel. Form break down 2000# at 3 BPM. Sqzd w/4 bbls in. Max sqz press 3750#, held. Rel pkr. Attempted to rev out. Could not move cmt. Pmpd down tbg. Moved cmt. Rev out 11.5 bbls of cmt slurry. Tail end of slurry was contaminated and approx 1 bbl SW followed cmt. Held 800# back press. Reset pkr 5604'. Broke form w/2 bbls crude at 3300#, back to 3100#. Job complete 8:30 a.m. 5-1-62. Shut in w/800# on tbg and csg. Pkr in set position.

5-03-62 5786' PBTD. Swab tstd D.O.C. sqz. Swbd tbg dry. Swab tst as follows:
1st hr - 192 BFPD, w/c 50% (96 BO 96 BW)
2nd hr - 164 BFPD, w/c 50% (82 BO 82 BW)
3rd hr - 82 BFPD, w/c 70% (24 BO 58 BW)
4th hr - 192 BFPD, w/c 55% (86 BO 105 BW)
5th hr - 109 BFPD, w/c 60% (44 BO 65 BW)
Chloride 78,000 ppm. Csg started flug from csg leak. Estimated flow of 350 BPD. Rel pkr. Pld same out of hole. Ran Baker Model "R" pkr in hole w/seat nipl 4600'. Disp 50 bbls of crude oil down csg. Caught sample of wtr from csg leak - Chloride 44,000 ppm. Set pkr at 5601'. Closed well in.

5-04-62 5786' PBTD. Ran rods and 2½"x1¼"x16' insert pmp. Started well pmpg 11:00 a.m. on 64"x13 SPM.

5-05-62 5786' PBTD. Pmpg 64"x13 SPM. Pmpd 154 BFPD, w/c 76% (37 BO 117 BW). Chloride 82,000 ppm. Csg press - 610#.

5-06-62 5786' PBTD. Pmpg 64"x13 SPM. Pmpd 154 BFPD, w/c 86% (21 BO 133 BW). Chloride 82,000 ppm. Csg press - 610#.

5-07-62 5786' PBTD. Pmpg rate - 154 BFPD, 86% wtr (22 BO 132 BW). Csg press - 700#.

5-08-62 5786' PBTD. Pmpg rate - 180 BFPD, 87% wtr (23 BO 157 BW). Inc SPM from 13 to 14.5. Chloride 72,000 ppm.

5-09-62 5786' PBTD. Pmpg 64"x14.5 SPM. Rate 178 BFPD, 86% wtr (25 BO 153 BW). Csg press - 750#. Note pmpg on pkr C.P. from csg leak.

5-10-62 5786' PBTD. Pmpg. No tst.

5-11-62 5786' PBTD. Pmpg on 64"x16 SPM. Pmpd 194 BFPD, w/c 84% (31 BO 163 BW). Chloride 78,000 ppm. Csg press - 750#.

5-12-62 5786' PBTD. Pmpg on 64"x16 SPM. Pmpd 196 BFPD, w/c 83% (33 BO 162 BW). Chloride 76,000 ppm. Csg press - 750#.

5-13-62 5786' PBTD. Pmpg on 64"x16 SPM. Pmpd 187 BFPD, w/c 83% (32 BO 155 BW). Chloride 78,000 ppm. Csg press - 750#.

5-14-62 5786' PBTD. Pmpg. 21 hr tst - 199 BFPD, 83% wtr (34 BO 165 BW). THIS IS WORKOVER POTENTIAL, TO DROP FROM REPORT.

RECEIVED
U.S. ENVIRONMENTAL PROTECTION AGENCY
DRINKING WATER BRANCH

EAST POPLAR UNIT NO. 8-D

Lease and Well No.: East Poplar Unit No. 8-D

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C NW-SE Section 10, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Of Last Workover: December 10, 1965 - P.A.

T.D.: 5786' Perforations: 5630-36' and 5614-23' - A 50 sack cement plug set from 5650' to 5200' Cumulative Production: B-1 & 2 411,424 BO 1,340,205 BW C-3 196,324 BO 171,409 BW Last Test: September 9, 1965 - Pumping at the rate of 103 BFPD 95% W.C. 5 BOPD 98 BWPD. The C-Zone is shut in with D.R. Plug - Watered Out.

JUSTIFICATION FOR WORKOVER:

East Poplar Unit No. 8 was P & A as being uneconomical December 10, 1965. East Poplar Unit No. 8 is to be converted into a Dakota Sand disposal well to take care of water from EPU "D", "H", "K", and "R" batteries. Production from these 4 batteries could possibly be increased, by selective workovers, 80-100 BOPD if salt water disposal facilities were available. At the present time salt water facilities are working to capacity.

SUMMARY OF WORKOVER:

10-17-72 First Report- 3200' PBTD Present Status - Prepairing to pull tubing, set bridge plug on Wireline, log and perforate for squeeze.

M I P U Rigged up and picked up 2-7/8" tubing. Ran 4-3/4" bit and 5-1/2" casing scraper. Tagged cement at 3193'. Rigged up power swivel and pump. Drld. cmt. and B.P. (4 hrs. and 10 mins.). Ran bit and scraper to 3818'. Shut down due to darkness.

RECEIVED

10-18-72 3794' PBTD Prepairing to break circulation and squeeze 5-1/2" casing.

Layed down bit and scrapper. Had to flare out top of 5-1/2" casing. Ran Gamma Ray - Neutron and Casing Collar Log from 3550' to 3100'. Set WASP bridge plug at 3800' with 1 sack of cement on top to 3794'. Tested casing and bridge plug to 1400 PSI, Held OK. Ran block squeeze gun and perforated at 3695'. Started hydrotesting tubing in hole. Unable to do so because of scale - Shut In due to darkness.

10-19-72 3794' PBTD Prepairing to break circ. and squeeze 5-1/2" casing to surface.

Unable to hydrotest tubing because of scale. Layed down tubing and picked up new string. Tested in hole to 3516'. Set packer and pumped into formation at 3695'. Would not circ. Pumped 50 sacks 1-1 Pozmix, 8% gel and overflushed 3-1/2 bbls. Shut In with 800 PSI on tubing.

Max. Pressure	=	1850 PSI
Max. Inj. Rate	=	3-[illegible] BPM
Immed. S.I.	=	1200 PSI
15 Min. S.I.	=	800 PSI

Shut in overnight.

10-20-72 3794' PBTD Prepairing to perforate and squeeze cement to surface from 3000'.

Tried to break circ. from 3695'. Unable to do so. Squeezed 100 sacks 1-1 Pozmix, 8% gel in formation and left 45' in pipe. Shut In with 800 PSI on tubing.

Max. Pressure	=	1850 PSI
Max. Inj. Rate	=	3-3/4BPM
Immed. S.I.	=	1250 PSI
15 Min. S.I.	=	850 PSI

Shut in overnight.

10-21-72 3794' PBTD Pressure testing Squeeze No. 2.

Pressure tested Squeeze No. 2. Would Not Hold. Pumped 90 bbls. salt water and 10 bbls. fresh water into perforations at 3695'. Followed by 50 sacks regular cement with 2% chcl. Left 50' of cement in pipe. Shut In under pressure to wait on cement.

Max. Pressure	=	1800 PSI
Max. Inj. Rate	=	4 BPM
Immed. S.I.	=	1200 PSI
15 Min. S.I.	=	1000 PSI

10-22-72 3794' PBTD Pressure testing Squeeze No. 3.

Pressure tested squeeze. Would not hold. Pumped in 1-1/2 bbls. at 400 PSI. Pulled out of hole with tubing and packer. Ran Baker drillable cement retainer on 2-7/8" tubing. Set at 3635'. Squeeze No. 4. Pumped 50 sacks 1-1 Pozmix with 2% CaCl. Cleared tool and pulled out of hole. Max. Injection Rate 2-1/2 BPM. Max. Injection Pressure 2000 PSI. Immediate S.I. 1500 PSI. 3 Min. S.I. 1100 PSI.

Ran 4 way block squeeze gun on Wireline and perforated at 3000'. Run in hole with Retrieve-O-Matic packer and set at 2713'. Pumped into formation at the rate of 4 BPM - 1800 PSI. Unable to circ. to surface. Pumped 310 sacks of 1-1 Pozmix (150 sacks 8% 160 sacks 2%) and 100 sacks regular cement with 2% CaCl. Cleared tool of cement and started to stage same. 1 bbl. at 20 min. intervals for a total of 5 bbls.. Max. Rate 2-1/2 BPM Max. Pressure 1900 PSI S.I. Tubing with 1400 PSI. 30 Min. S.I. 1350 PSI. Shut down for darkness and WOC.

10-23-72 3795' PBTD Prepairing to perforate and water frac the Dakota.

Hooked up portable pump and pressure tested squeeze # 4 down tubing with 1000 PSI. Pressure bled down 300 PSI in 26 mins.. Released packer and pulled out of hole. Ran 5-1/2" casing scraper and 4-3/4" bit to 2991'. Tagged cement. Drilled 10' of hard cement and 50' of cement stringers. Ran tubing to top of cement retainer at 3635'. Found 20' of fillup on retainer at 3615'. Pulled out of hole with bit and scraper. Ran Cement Bond Log. Ragged bond 2840' to 3060', excellent bond 3060' to 3080', and 3110' to 3155'. Ragged bond 3155' to 3500'. Run in hole with Retrieve-O-Matic packer to 3330'. Shut in for darkness.

10-24-72 3795' PBTD Waiting on equipment to complete pumping station. 20 PSI on tubing this A.M.

Perforated Dakota formation with 1-11/16" thru tubing gun, 4 holes per foot at three intervals, 3195-3255', 3335-3400', and 3430-3445' (3 runs). Pumped 200 BW into formation after each run. Set packer at 3114' and fraced entire Dakota formation with 200 Bbls. salt water. Dropped ball sealers and pumped 410 BW with no increase in pressure. Estimated rates and pressures are as follows with 390 BW.

Rate @	6 BPM	=	1500 PSI	=	8,640 BPD
Rate @	8 BPM	=	1950 PSI	=	11,520 BPD
Rate @	10 BPM	=	2300 PSI	=	14,400 BPD
Rate @	11½ BPM	=	2400 PSI	=	16,560 BPD

Well floed 1/2" stream of salt water after perforation of first interval and increased to 3" flow at end of job. Pulled out of hole with tubing and packer. Installed well head. Shut in well and rigged down pulling unit. Total salt water used on frac job = 1400 bbls.
TO DROP FROM REPORT.

EAST POPLAR UNIT NO. 8-D

WORKOVER HISTORY NO. 1

Lease and Well No.: East Poplar Unit No. 8-D

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C NW SE Section 10, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Of Last Workover: October, 1972

T.D.: 5786' PBTD: 3615' Perforations: 3195-3255', 3335-3400', & 3430-3445'

JUSTIFICATION FOR WORKOVER:

Injection pressure dropped from 920# to 90# indicating a casing leak.

SUMMARY OF WORKOVER:

7-21-77 Move in pulling unit and rig up.

7-22-77 Let well die. Tear down wellhead. Trip in hole with Bowen overshot and 2-7/8" grapple. Tag fish at 222'. Catch fish. Trip out of hole with 2-7/8" 2' steel sub and 16 joints of fiberglass tubing. Trip in hole with 2-1/2" Bowen releasing spear. Catch fiberglass tubing. Pull 2000# over weight of pipe and pull fiberglass into. Trip out of hole with 56 joints of fiberglass tubing. Trip in hole with spear. Catch fish and pull 15,000# over weight of pipe. Wouldn't pull loose. Tried to circulate, couldn't. Left 15,000# strain on pipe over night.

7-23-77 Tried to circulate pipe loose, couldn't. Pulled fiberglass tubing into 17,000# over weight of pipe. Trip out of hole with 14 joints fiberglass tubing. Trip in hole with spear. Caught fish. Pulled fiberglass tubing into 17,000# over weight of pipe. Trip out of hole. Got 7 joints fiberglass tubing. Trip in hole - caught fish. circulated well - fish worked loose. Trip out of hole with 14 joints of fiberglass tubing. Shut down waiting on packer and bridge plug.

7-24-77 Picked up Baker retrievable packer and bridge plug. Trip in hole set bridge plug at 3116'. Start out of hole testing casing every 4 stands. Casing tested good to 420' - packer wouldn't hold. Trip out of hole. Pick up MOWCO R-4 packer. Trip in hole - casing wouldn't hold pressure at 400' indicating a leak.

7-25-77 Took off casing head. Welded lift sub on 5-1/2" casing.

7-26-77 Pulled up casing - removed slips from wellhead. Rig up and shot off with Dialog rattle shot at 449.02'. Layed down casing. Picked up 449' of condition # 3 5-1/2" casing. Screwed into casing. Landed casing with 60,000# strain on slips. Put surface casing head on. Put blow out preventor on and tested 5-1/2" casing to 1000#, held OK. Shut down for day.

7-27-77 Trip in hole with Baker bridge plug retrieving tool. Caught plug. Trip out of hole. Lay down plug - trip in hole with tubing with saw toothed tubing collar on bottom. Tagged fill up at 3341'. Washed down to 3402'. Circulate - kept plugging off with fiberglass. Shut down for darkness.

7-28-77 Trip out of hole laying down steel tubing. Trip in hole with fiberglass tubing as follows:

Fiberglass sub glued into wellhead	1.00
52 Joints of 2-7/8" Rock Island, Cond. 2	1,045.34
66 Joints of 2-7/8" Wilson, Cond. 3	1,966.80
Packer	2.95
11 Joints of 2-7/8" Wilson, Cond. 3	327.80
RKB	12.00
	3,355.89'

7-29-77 Injection pressure started at 960#.

7-30-77 Rig down and move off pulling unit.
Injection pressure 1080#

RECEIVED
91 MAR 14 PM 3:49
U.S. ENVIRONMENTAL
DRINKING WATER BRANCH

EAST POPLAR UNIT NO. 8-D

WORKOVER HISTORY NO. 2

Lease and Well No.: East Poplar Unit No. 8-D

Field: East Poplar County: Roosevelt State: Montana

Well Location: C NW SE Section 10, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Last Workover: July, 1977

T.D.: 5786' PBTD: 3615' Perforations: 3195-3255', 3335-3400' and 3430-3445'

JUSTIFICATION FOR WORKOVER:

This well is currently being used as a salt water disposal well with water being injected into the Dakota Formation. The injection pressure has slowly increased to 1100 PSI. Acidizing has not lowered the pressure. The excessive pressure is causing pump part failures and lower injection disposal rates.

It is proposed to run a Gamma Ray Log thru the Judith River formation, to block squeeze and perforate best porosity. It is anticipated that the injection pressure will be below 450 PSI.

SUMMARY OF WORKOVER:

1-21-78	Move in and rig up pulling unit.
1-22-78	Shut down - Sunday
1-23-78	Start and service rig. Pull tubing and Model A-1 packer. Run in and set cast iron bridge plug at 1000'. Pull out and rig up perforating gun, run in and perforate 990-991'. Pull out of hole with perforating gun and rig up cement retainer. Run in and set at 960'. Rig up Halliburton, squeeze around surface casing with 350 sacks regular cement. Got cement to surface. Pulled tubing and shut down for night.

RECEIVED

PM 3:50

1-24-78 Start and service rig. Run in hole with bit. Hit cement at 690'. Drilled 50' of cement. Fell thru for 200'. Hit cement at 740' and drilled down to 852'. Pulled out of hole and run in with Go International. Perforated 700' to 701'. Shut down for night.

1-25-78 Shut down - Blizzard

1-26-78 Start and service rig. Run tubing and packer. Set packer at 660.55'. Squeeze thru perforations with 100 sacks regular cement with 2% calcuim chloride. Pressure back side to 500 PSI. Establish injection rate of 3 BPM - maximum PSI 2000. Mix cement - pump in at 2-1/2 BPM - 20.5 barrels, pumped 1-1/2 BPM - 3 barrels, start staging 1/4 BPM - 1000 PSI. Left 1/4 barrel cement in casing. Pulled 120' of tubing and set packer. Pressure tubing to 480 PSI. Shut down for night.

1-27-78 Start and service rig. Pull remaining tubing - pick up bit and casing scraper. Wash and drill down to 954'. Pump heavy water in hole, pull tubing and log. Perforate from 830' to 880', 4 holes per foot, 200 holes total. Shut down for night.

1-28-78 Start and service rig. Pick up and run 24 joints (744.38') of tubing and packer. Rig down and move off well.

1-29-78 Injection Pressure 630 PSI.

EAST POPLAR UNIT 8-D

WORKOVER HISTORY NO. 3

Lease and Well No: East Poplar Unit No. 8-D

Field: East Poplar County: Roosevelt State: Montana

Well Location: C NW SE Section 10, T28N, R51E

STATUS PRYOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Last Workover: Jan. 1978

T.D.: 5786' PBTD: 954' Perforations: 830'-880' 4 holes per ft, 200 holes total.

SUMMARY OF WORKOVER: August 17, 1988

Rig up and mix 20 barrels mud 18.8#. Pump 12 barrels down casing 5 barrels down tubing. Release packer, pull tubing. Pump 3½ bbl down casing as we pulled tubing. 9 holes in tubing. Ran new packer and new tubing. Pumped 65 bbls of salt water and mix 5 gallon of 3410. Baker Model A-2 Lok-Set PKR.

EAST POPLAR UNIT 8-D

WORKOVER HISTORY NO. 4

Lease and Well No. East Poplar Unit NO. 8-D

Field: East Poplar County: Roosevelt State: Montana

Well Location: C NW SE Section 10, T28N, R51E

STATUS PRYOR TO PRESENT JOB:

Date Completed: September 5, 1952 Date Last Workover: August 1988

T.D.: 5786' PBTD: 954' Perforations: 830'-880' 4 holes per ft, 200 holes total.

SUMMARY OF WORKOVER:

11-1-88 Rig up and mix 20 barrels mud @ 18.4#. Pump 5 bbls down tubing 12 bbls down casing. Pull tubing pumped 3½ bbls down casing as we pulled tubing. 6 holes in tubing. Pump 50 bbls of salt water and mix 5 gallons of 3410. Ran Baker J-Slot Model A-D-1 PKR. Turn ¼" left to set and ¼" right to free.

20 joints tubing	616.28'	
A-D-1 PKR	2.85'	over all
2 joints tubing	58.94'	
	678.07'	

PRODUCTION &
INJECTION DATA

SURFACE EQUIPMENT

EPU-8D
Surf. E.
7P
N.D

EAST POPLAR UNIT NO. 8-D

WELL SURFACE EQUIPMENT

Well Head Equipment:

9-5/8" X 10" Casing Head - OCT Type C-18, 4000# with 2 - 2" LP SO Top Flanged, 10", Series 600

10" X 6" Spool, 600 Series with 2 - 2" Thrd. Outlets.

6" X 3" Cameron Valve, Serial No. 34926, 2000# Working Pressure, Size 2-1/8" X 2-9/16", R-13.

Lift Equipment:

None

Compressor Or Other Installations:

3" X 4-1/4" X 6" Type 346 P Plunger Pump, Oilwell Supply Company, Serial No. P-115-55 Plunger Size 3-3/4" Shaft Size 3" Sheave with pump 26" 5-C

Electro Dynamic Electric Motor, Frame 584, Type T.N., Code F-Des-B, Model A34-57781, 115% S.F., Cyc. 60, H.P. 125, RPM 1175, Volts 220/440, Amperes 304/152, Shaft Size 3-3/8".

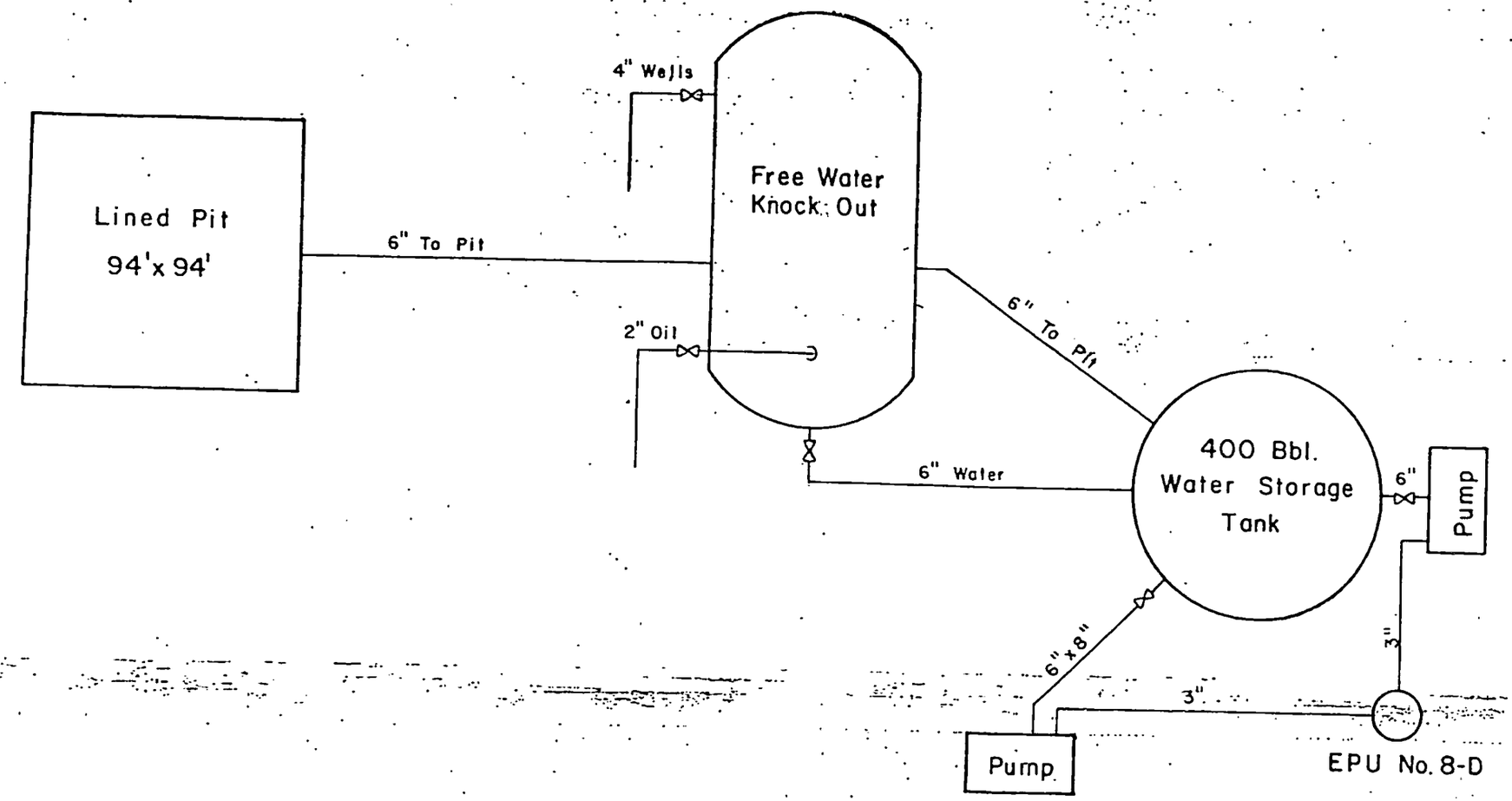
Storage Facilities:

12' Dia X 16' Hi 322 bbl. capacity Fiberglass Wilson Dura-Tank with deck, 18" man-hole, 8" thief hatch, 2-4" grooved connections, 1-2" grooved connections and 2-6" grooved connections.

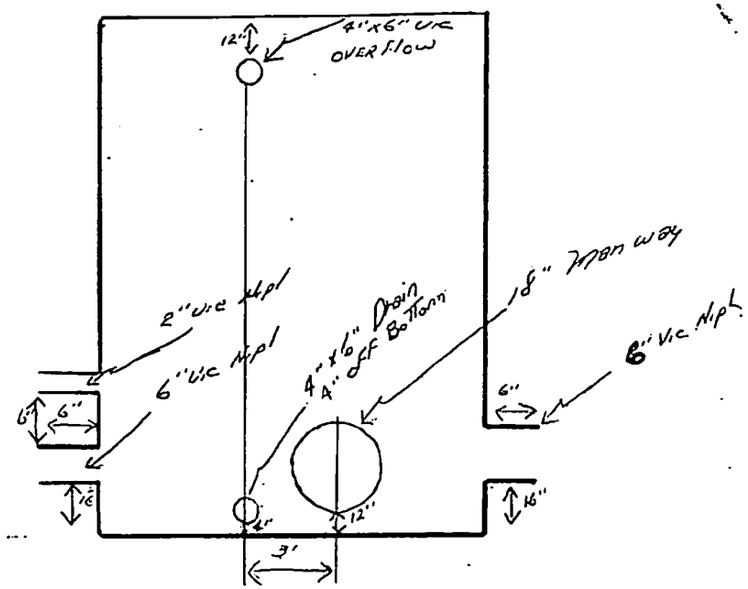
Flowline:

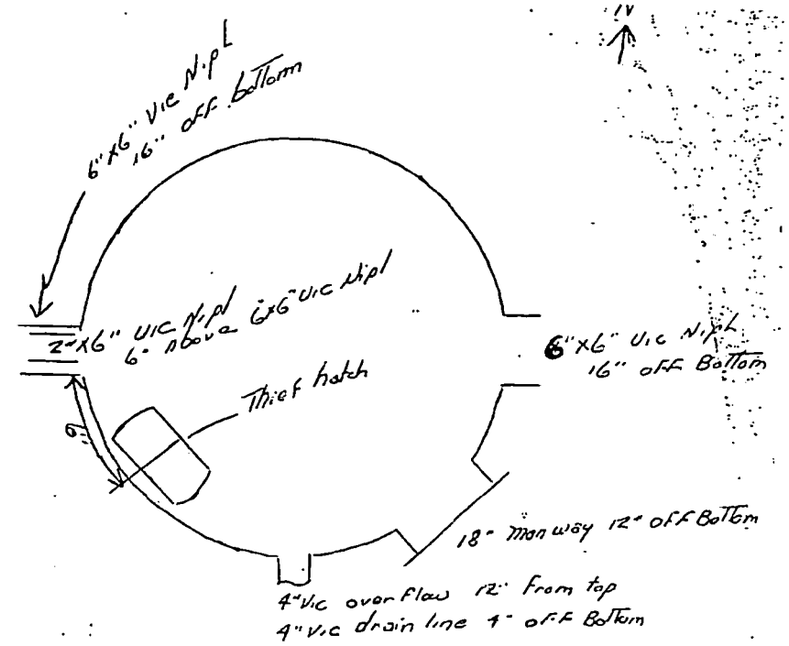
600' of 6" Bell and Spigot CIBA, 300 Line Pipe - Ties into existing salt water line at "P" Battery 2-90° 6" CIBA Ells, 300 Line Pipe 3-6" Dresser Sleeves

Building - 14' X 26' Tin Covered

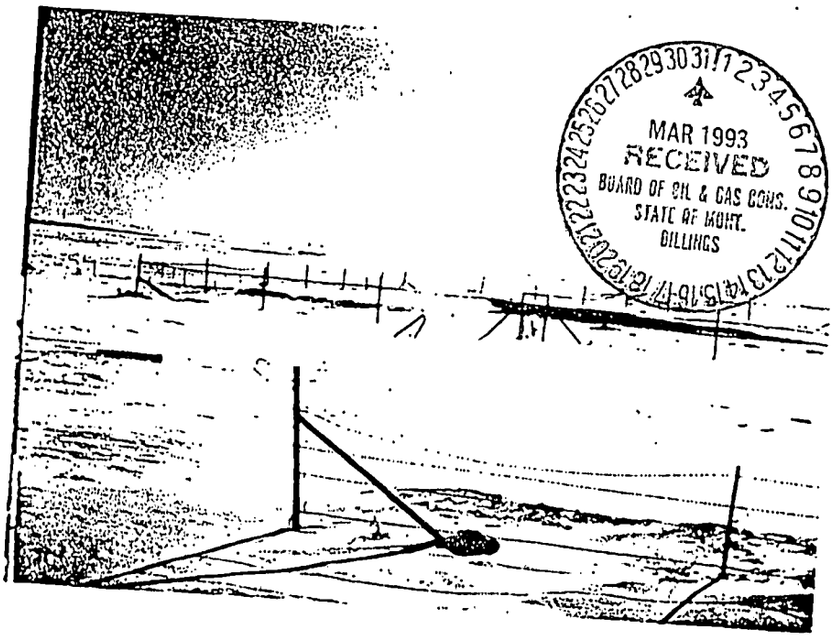


East Poplar Unit

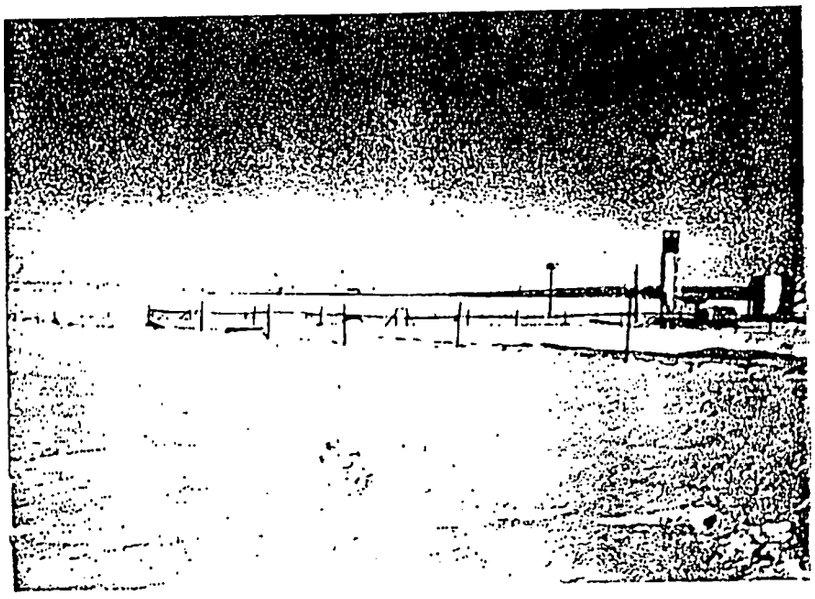

12"
4"x6" Vic
OVER Flow
2" Vic Nipl
6" Vic Nipl
4"x6" Drain
4" off Bottom
18" Man way
6" Vic Nipl
6"
6"
6"
16"
16"
4"
12"
3'


N
6"x6" Vic Nipl
16" off Bottom
2"x6" Vic Nipl
6" above 6"x6" Vic Nipl
Thief hatch
6"
6"x6" Vic Nipl
16" off Bottom
18" Man way 12" off Bottom
4" Vic over flow 12" from top
4" Vic drain line 4" off Bottom

Top View



MAR 1993
RECEIVED
BOARD OF OIL & GAS CONS.
STATE OF MONT.
BILLINGS



EPU 8-D

Ic Bill Melaar
Murphy Corp
Poplar Mount

Salt Wtr Sta
No. 4-D

ONE OILWELL SKID-MOUNTED PLUNGER PUMP UNIT, CONSISTING OF:

10-3-80

1 - PLUNGER PUMP - OILWELL Model 346-P, 6"-stroke, horizontal, single acting triplex plunger pump for water service, standard equipped with:
- Fluid Chamber - One-piece aluminum bronze, with integral suction and discharge manifolds, equipped with dual fluid connections
- Cylinder Heads and Valve Covers - Aluminum bronze, bolted type
- Valve Service - Stainless Steel with Delrin Discs
- Stuffing Boxes - Aluminum bronze, individually replaceable with screw type glands
- Packing - Utex Style 838 plunger packing, lip type design
- Power Frame - One-piece, fully enclosed, rib reinforced, iron casting
- Crankshaft - Alloy steel, fully heat treated, mounted in shim-adjusted, tapered roller bearings
- Connecting Rods - Marine type
- Crossheads - Cast-iron, cylindrical guides machined in the power frame
- Gear Reduction Unit - Integral, single helical 4.44:1 ratio
- Power End Lubrication - Combination splash flood and pressure lubrication
- Plunger Cradle Covers (Steel)
- Safety Switch - Murphy Crankcase Oil Pressure Switchgage
- Standard Equipment and Tools

And with:
- Plungers - Two-piece construction, consisting of standard-size Co-Hard plungers and chrome-plated extension rods
- Plunger lubricator - Model 55 with drive & guard

1 - UNITIZATION (Similar to Dwg. AP49-N1)
- Skid Base - Structural Steel (for up thru 200 HP Motor)
- Power Sheave - Provided by customer
- Pump Sheave - Provided by customer
- Belt Drive - Provided by customer
- Belt Guard and Brackets (per OSHA standards)
- Motor Slide Rails (for up thru 200 HP Motor)
- Accessory Hardware

Continued .....

1 - UNITIZATION (Similar to Dwg. AP49-N1) (Continued)
Assembled for but less customer's 150 HP, 1800 RPM
T.E.F.C. Motor, Painted, and Prepared for Shipment

UNIT PRICE: $ 27,522.00
UNIT WEIGHT: 5,606 Lbs. 6250
F.O.B.: MT. CARMEL, ILL.

OPTIONAL

For furnishing Ceramic Plungers in the 346-P in lieu of Co-Hard, 3¾"? add $139.00.

1 - OILWELL/Greer SPC-20 Suction Stabilizer (not mounted)

PRICE: $ 1,349.00
WEIGHT: 200 Lbs.

OPTIONAL

1 - Fluid Kinetics Model PDS4-24 Pulsation Dampener
PRICE: $ 1900.00
Del. 6 Weeks

17

CFM:cf

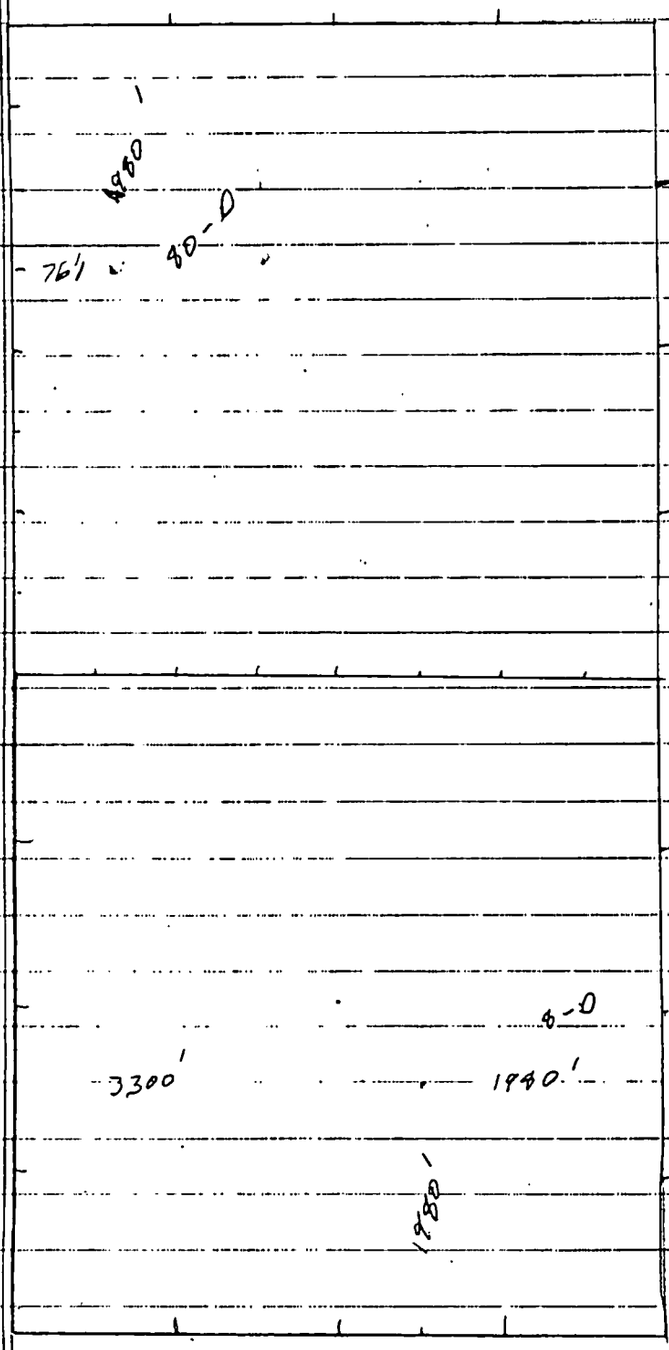
Paul L. Mallow
Oilwell -
Williston N.D.

16.76 skid + guard
25041 pump 425
795 lub
25836 pump +
plus $1000 F.O.B. Mt. Carmel Ill.

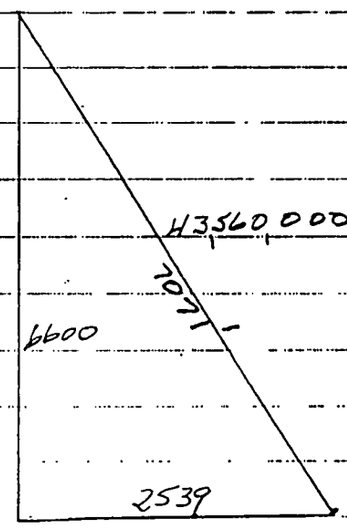
25,985

Associated LEGAL RULED PAD P3-C811WP

Line From 8-D to 80-D



7100' 4" F.g @ 4.41 per ft
31,311
Labor 16,000
$50,000



6,446,521
43,560,000
50,006,521

8-D = 2083 ELV
80-D = 2059 ELV

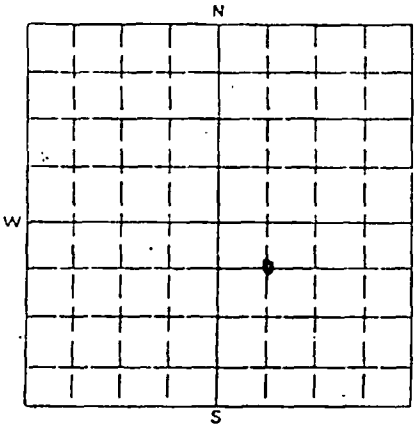
Plugging &
Abandonment

EPA

PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY	NAME AND ADDRESS OF OWNER/OPERATOR
East Poplar Unit 8-D	Murphy Oil USA, Inc. 200 Peach Street El Dorado, AR 71730

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

SURFACE LOCATION DESCRIPTION

¼ OF NW ¼ OF SE ¼ SECTION 10 TOWNSHIP 28N RANGE 51

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 1980 ft. from (N/S) S Line of quarter section

and 1980 ft. from (E/W) E Line of quarter section

TYPE OF AUTHORIZATION

- ☒ Individual Permit
- ☐ Area Permit
- ☐ Rule

Number of Wells 1

WELL ACTIVITY

- ☐ CLASS I
- ☐ CLASS II
  - ☒ Brine Disposal
  - ☐ Enhanced Recovery
  - ☐ Hydrocarbon Storage
- ☐ CLASS III

Lease Name EPU

Well Number 8-D

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT(LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
13 3/8	48#		94	17½
9 5/8	36#		954.47	12¼
5½	15.5#		5759.65	8 3/4

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☐ The Balance Method
- ☒ The Dump Bailer Method
- ☐ The Two-Plug Method
- ☐ Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLU
Size of Hole or Pipe in which Plug Will Be Placed (inches)	5½	5½					
Depth to Bottom of Tubing or Drill Pipe (ft.)	780'	100'					
Sacks of Cement To Be Used (each plug)	10	10					
Slurry Volume To Be Pumped (cu. ft.)	11.5	11.5					
Calculated Top of Plug (ft.)	694	14'					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)							
Type Cement or Other Material (Class III)							

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED *(If any)*

From	To	From	To
830	880		

Estimated Cost to Plug Wells

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED

Form Approved. OMB No. 2040-0042. Approval expires 9-30-86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

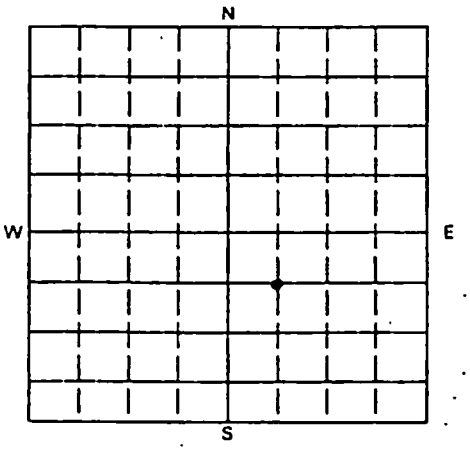
EPA

PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY
Murphy Oil USA, Inc.
Poplar, MT
East Poplar Unit 8-D

NAME AND ADDRESS OF OWNER/OPERATOR
Murphy Oil USA, Inc.
200 Peach St.
El Dorado, AR 71730

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
MT	Roosevelt	

SURFACE LOCATION DESCRIPTION
¼ OF NW ¼ OF SE ¼ SECTION 10 TOWNSHIP 28N RANGE 51E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1980 ft. from (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section

TYPE OF AUTHORIZATION
- ☒ Individual Permit
- ☐ Area Permit
- ☐ Rule

Number of Wells 1

WELL ACTIVITY
- ☐ CLASS I
- ☒ CLASS II
  - ☒ Brine Disposal
  - ☐ Enhanced Recovery
  - ☐ Hydrocarbon Storage
- ☐ CLASS III

Lease Name EPU
Well Number 8-D

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT(LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
13 3/8"	48#	1	94' approx	17 1/4
9 5/8	36#		954.47'	12 1/4
5 1/2	15.5		5759.65'	8 3/4

METHOD OF EMPLACEMENT OF CEMENT PLUGS
- ☒ The Balance Method
- ☐ The Dump Bailer Method
- ☐ The Two-Plug Method
- ☐ Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inches)	5½	5½					
Depth to Bottom of Tubing or Drill Pipe (ft.)	780'	100'					
Sacks of Cement To Be Used (each plug)	10	10					
Slurry Volume To Be Pumped (cu. ft.)	11.5	11.5					
Calculated Top of Plug (ft.)	694'	14'					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)							
Type Cement or Other Material (Class III)	G	G					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED *(If any)*

From	To	From	To
830'	880'		

Estimated Cost to Plug Wells

$25,000.00

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Alvin W. Simpson, Manager of Operations	Alvin W. Simpson	March 14, 1985

PA Form 7520-14 (3-84)

EAST POPLAR UNIT NO. 8

RECORD OF PLUGGING AND ABANDONMENT

Date: December 10, 1965

Lease and Well No.: East Poplar Unit No. 8

Field: East Poplar County: Roosevelt State Montana

Well Location: C NW SE Section 10, T28N, R51E

STATUS PRIOR TO ABANDONMENT:

Date Completed: September 5, 1952 Date of Last Workover: May 15, 1962

T.D.: 5786' Perforations: B-2 5630-5636' B-1 5614-5623' Producing Zone Madison B-1 & B-

Cumulative Production: B-1 & 2 411,424 BO, 1,340,205 BW C-3 196,324 BO 171,409 BW

JUSTIFICATION FOR ABANDONMENT:

Last test September 9, 1965: Pumping at the rate of 103 BFPD 95% Water 5 BOPD 98 BWPD. The rods parted and well was temporarily abandoned October 15, 1965 (uneconomical). The C-Zone is shut in with D.R. Plug - Watered Out.

SUMMARY OF ABANDONMENT:

Pulled rods and tubing. Removed packer, ran tubing in hole open ended. Set 50 sack cement plug from 5650' to 5200'. Set C.I. Bridge Plug on Schlumberger W.L. at 3200' with 1 sack of cement on top of plug. Put on casing head with master valve. Closed well in at surface. 5-1/2" O.D. Production String of Casing left in place.

DISPOSITION OF EQUIPMENT:

Pumping Unit sold, but not delivered, to Community Supply Company, Billings, Montana.

Century Electric Motor, 30 HP, Serial No. 8AL8630, was transfered to EPU Stock on Material Transfer No. 25242.

General Electric No. 3 Motor Control was transfered to EPU Stock on Material Transfer No. 25242.

Flowline left in place - Uneconomical to recover.

5-1/2" x 2-1/2" Larkin Type "R" Casing Head with 2-2" Side Outlets (complete), 1 - Std. 2" Bull Plug, 1 - Std. 2" x 6" Nipple, and 1 Cameron 2" valve 2000# WOG were transfered to EPU Stock on M.T. No. 25250. All equipment listed is Cond. 2.

EAST POPLAR UNIT NO. 8

RECORD OF PLUGGING AND ABANDONMENT

DRINKING WATER BRANCH

Date: December 10, 1965

Lease and Well No.: East Poplar Unit No. 8

Field: East Poplar County: Roosevelt State: Montana

Well Location: C NW SE Section 10, T28N, R51E

STATUS PRIOR TO ABANDONMENT:

Date Completed: September 5, 1952 Date Of Last Workover: May 15, 1962

T.D.: 5785' Perforations: B-2 5630-5636' B-1 5614-5623' Producing Zone: B-1 & B-2

Cumulative Production: B-1 & 2 411,424 BO 1,340,205 BW C-3 196,324 BO 171,409 BW

JUSTIFICATION FOR ABANDONMENT:

Last test September 9, 1965: Pumping at the rate of 103 BFPD 95% Water 5 BOPD 98 BWPD. The rods parted and the well was temporarily abandoned October 15, 1965 as uneconomical. The C-Zone is shut in with D.R. plug - Watered Out.

SUMMARY OF ABANDONMENT:

Pulled rods and tubing. Removed packer, ran tubing in hole open ended. Set 50 sack cement plug from 5650' to 5200'. Set C.I. bridge plug on Schlumberger wireline at 3200' with 1 sack of cement on top of plug. Put on casing head with master valve. Closed well in at surface. 5-1/2" O.D. production string of casing left in place.