Received by OSTI

NOV 25 1986

DOE/ID/12578--T1

DE87 002597

***Geopressurized-Geothermal
Project
Pleasant Bayou Well No. 2
Brazoria County, Texas***

***Workover Summary
February 15, 1986 to
April 3, 1986***

***Eaton Industries of Houston, Inc.
Eaton Operating Co., Inc.***

***Prepared for the
U.S. Department of Energy
Idaho Operations Office,
Under DOE Contract No. DE-AC07-85ID12578***

MASTER

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

Printed in the United States of America

Available from
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
NTIS Price Codes: Printed Copy A04
Microfiche A01

DISCLAIMER

This book was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights. References herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

LEGIBILITY NOTICE

A major purpose of the Technical Information Center is to provide the broadest possible dissemination of information contained in DOE's Research and Development Reports to business, industry, the academic community, and federal, state, and local governments. Non-DOE originated information is also disseminated by the Technical Information Center to support ongoing DOE programs.

Although large portions of this report are not reproducible, it is being made available only in paper copy form to facilitate the availability of those parts of the document which are legible. Copies may be obtained from the National Technical Information Service. Authorized recipients may obtain a copy directly from the Department of Energy's Technical Information Center.

Geopressured/Geothermal Project
Pleasant Bayou Well No. 2
Brazoria County, Texas

Workover Summary
February 15, 1986
to
April 3, 1986

✓ Eaton Industries of Houston, Inc.
Eaton Operating Company, Inc.
1980 Post Oak Boulevard
Suite 2000
Houston, Texas 77056

MASTER

Prepared for the U.S. Department of Energy
Idaho Operations Office
Idaho Falls, Idaho
Under Contract No. DE-AC07-85ID12578
Sponsored by the Office of the Assistant Secretary
for Conservation and Renewable Energy
Office of Renewable Energy Technologies
Washington, D.C.

TABLE OF CONTENTS

	Page
Discussion	1
Photographs.....	6
Figures	21
Glossary	27
Daily Activity Reports.....	30

PLEASANT BAYOU WELL NO. 2

BRAZORIA COUNTY, TEXAS

Due to a tubing leak in the 5-1/2" production tubing, a workover on Pleasant Bayou Well No. 2 was initiated July 5, 1983. Workover problems prohibited the completion of the work and subsequently the workover was suspended on August 15, 1983. The top of the 5-1/2" tubing was left at 13,750 feet. For approximately 30 months the well remained shut in. Eaton Operating Co., Inc. (Eaton) was awarded operation of the site in October, 1985. On February 15, 1986, under Eaton's supervision, Richards Drilling Company (RDC) Rig No. 12 was moved onto the location (Photograph No. 1). The wellhead was removed, and blowout preventors were installed over the well.

Next, the mud pumps (Photograph No. 2) and pump manifolds (Photograph No. 3) were connected. The mud tanks were spotted in place (Photograph No. 4) and the choke (Photograph No. 5) and ram operation panel (Photograph No. 6) were installed. Then the blowout preventors and manifolds were tested to 3000 psi working pressure for low pressure test and 10,000 psi for high pressure test. Since the Christmas Tree was difficult to remove due to scale and corrosion, a visual inspection was made of various flowlines and production equipment. Photograph No. 7 shows a shielded flowline and a bare pipe flowline. No scale was apparent. Photograph No. 8

Eaton Industries of Houston, Inc.

Eaton Operating Co., Inc.

1980 Post Oak Blvd., Suite 2000

Houston, Texas 77056

is a different section of bare flowline located in another area of the field which also contained little or no scale. The separator (Photograph No. 9), salt water disposal filters (Photograph No. 10), and salt water disposal well (Photograph No. 11) were inspected and showed little or no scale buildup. For the next forty-nine (49) days, Eaton supervised and planned each step of the workover of Well No. 2 until the job was finalized on April 3, 1986.

On February 16, 1986, roustabouts and rotary workers (Photograph No. 12) began going in the hole with pipe and bit to circulate and condition the old workover fluid (16 pounds per gallon) to a depth of 3000 feet. The well schematic (Figure 1, Page 22) shows the condition of the Pleasant Bayou Well No. 2 as of August 15, 1983, prior to this workover. The drilling mud was found to be contaminated with calcium chloride and the barite had separated from the mud. A mud solids separator (Photograph No. 13), in addition to the shale shakers, was necessary to adequately remove excess hardened barite from the drilling fluid. A mill was used to remove set-up mud and barite in the casing to the top of the 9-5/8" Model 3 retrievable bridge plug at 13,725 feet (Figure 2). Using a Halliburton retrieving tool (Figure 2), the bridge plug was removed (Photograph 14). Next, 8-1/8" wash pipe and rotary shoe were used to wash over the tubing to 13,926 feet.

Then jars (Photograph 15) and an overshot were added to the workover string to aid in removing the fish. Jarring for eighteen (18) hours failed to release the 5-1/2" tubing from the two Otis WD production packers at 13,967 feet and 13,970.35 feet (Figure 3). The overshot became stuck. In order to release the overshot, an explosive primer cord string shot was fired and the jars and overshot were pulled out of the hole. While running the string shot inside the 5-1/2", Dialog encountered hard fill in the tubing at 13,777 feet, 20 feet below the top of the fish. Wash pipe and a rotary shoe were used to wash and burn over the 5-1/2" pipe to 13,985 feet.

To obtain additional pipe strength for jarring, the E grade drill pipe was changed to S-195 drill pipe. After jarring on the fish for five hours, approximately 220 feet of 5-1/2" tubing and seals (Photograph Nos. 16 and 17) were recovered from the well. The Otis seals (Item 7 in Figure 3) were ceramic-like, due to the high bottom-hole temperature of 294°F. The damaged 5-1/2" production tubing contained dried barite (Photograph No. 18). Other joints of 5-1/2" production pipe recovered in the first workover attempt showed scale buildup (Photograph No. 19) below the collar in several joints of tubing. In the same photograph scale buildup was exposed by removing the collar on another joint of pipe. This indicates that some type of downhole scale treatment will be necessary to keep the production string scale-free.

On March 4, 1986, an 8-1/2" mill (Photograph No. 20) was used to mill on the slips of the Otis packer. During the next few days various pieces of junk were recovered. Photograph Nos. 21 and 22 are thin pieces of pipe (junk) from the inside of the Otis seal assembly. Junk, possibly pipe protectors (Photograph No. 23), was recovered above the TIW adaptor (Item C, Figure 3, and Photograph No. 24). Photograph No. 25 shows the recovery of the 4-1/2" pipe fish which was approximately 27 feet in length. This 4-1/2" production pipe is inside and connected by the grapples of the overshot. Recovery included pieces of the Otis WD packer body, seal assembly, and TIW adaptors. The top of the fish (4-1/2" pipe) was now at 14,012.5 feet.

The next seven days, March 14, 1986 to March 20, 1986, were spent cleaning out the inside of the 4-1/2" production pipe with a 3-3/8" mill and using 5-1/2" wash pipe to clean settled barite from the outside of the 4-1/2" pipe. Photograph No. 26 shows the top portion of the 4-1/2" pipe recovered on March 20, 1986. This recovery completed the clean-out of the Pleasant Bayou Well No. 2. A 5-3/4" mill (with a casing scraper in 9-5/8") was run to a total depth of 14,733 feet.

Photograph No. 27 shows scale on the outside of the 4-1/2" production pipe located below the TIW seals. This indicates that downhole scale treatment will be necessary to

prevent this type of buildup on the exterior of the tail pipe as well as scale buildup on the inside of the production string as previously noted in Photograph No. 19.

A Brown Oil Tools packer was set at 13,950 feet and 5-1/2" production tubing was stabbed into this packer. Figure 4 is a diagram of the current condition of Pleasant Bayou Well No. 2. The wellhead (Figure 5) was installed and tested on March 25, 1986. The well was flowed at a limited rate of 14,500 barrels of brine per day. Bottom hole pressures and temperatures were recorded and then the well was shut in on April 3, 1986, awaiting connection for further testing.

The following pages contain photographs, figures, oil field definitions, and the daily activity reports.

PHOTOGRAPHS

6.

RDC Rig No. 12 (1)

Mud Pumps (2)

Pump Manifolds (3)

Mud Tanks (4)

Choke Operation
Panel (5)

Ram Operation
Panel (6)

Shielded and Bare
Pipe Flowlines (7)

Flowline (8)

Separator (9)

Filters (10)

Salt Water Disposal
Well (11)

Rotary Workers (12)

Mud Solids
Separator (13)

Retrievable Bridge
Plug (14)

Jars (15)

Seals (16)

Seals (17)

Production Tubing
with Dried Barite
(18)

Scale Buildup In
Tubing (19)

Mills (20)

Pipe Section from
Inside Seal
Assembly (21)

Pipe from Inside
Seal Assembly (22)

Possible Pipe
Protectors (23)

TIW Adaptor (24)

4-1/2" Tubing Fish
with Overshot (25)

4-1/2" Tubing Fish
Top (26)

Scale on Tail Pipe
(27)

FIGURES

21.

Eaton Industries of Houston, Inc.

Eaton Operating Co., Inc.

1980 Post Oak Blvd., Suite 2000

Houston, Texas 77056

**PLEASANT BAYOU WELL NO. 2
BRAZORIA COUNTY, TEXAS**

**FIGURE 1.
CONDITION OF WELL 8/15/83**

Pleasant Bayou Well No. 2
 Brazoria County, Texas
 Current Condition April 3, 1986

Figure 4.

PLEASANT BAYOU WELL NO. 2.
CURRENT WELLHEAD CONFIGURATION
APRIL 3, 1986

NOTE: THESE VALVES ARE 5-1/8" (5-1/16" Drift)
WITH 7-1/16" 15,000# API
FLANGES.

1. Rented DSA Flange (7-1/16" 15,000 [BX-156] x
3-1/16" 10,000 [BX-154])
2. Willis Choke (3-1/16 10,000 [BX-154] x
(from Gladys McCall) 4-1/16" 10,000 [BX-155])
3. Flange with 2" SCH 160 Nipple
(flange 4-1/16" 10,000, [BX-155])
(From Gladys McCall)
4. 2" Chicksan piping (Rented)

FIGURE 5.

GLOSSARY

Pertaining to
Pleasant Bayou Well No. 2

- Adaptor A device used to connect the 5-1/2" tubing to the 4-1/2" tubing (Item C, Figure 3 and Photograph 24).
- Blowout Preventors An assembly of heavy-duty valves and equipment attached immediately above the casing to control well pressure.
- Bridge Plug A retrievable expendable plug (Figure 2 and Photograph 14) used to isolate the producing zone at 14,644' from the surface.
- Casing Steel pipe which protects the hole from caving in (Figure 1, Page 22).
- Casing Scraper A cylindrical workover device attached to tubing used to clean the inside walls of casing.
- Choke A device which uses hydraulic fluid to activate a steel orifice to restrict and control the flow of fluid (Photograph 5).
- Collar A coupling device used to join two lengths of pipe with threads on the inside (Photograph 19).
- Drilling Bit, Mill, Rotary Shoe Grinding or cutting tools attached to pipe used to drill or to pulverize material or junk during a workover (Photograph 20).
- Filters Devices which remove solid materials from salt water to prevent plugging of the salt water disposal well (Photograph 10).
- Fish An object accidentally lost in the hole or an object difficult to remove from the well. See Junk (Photographs 23, 26).
- Flowline Steel pipe through which fluids travel from the well to storage, sales, or to the salt water disposal well (Photographs 7, 8).

- Grapples Steel rings or slips inside an overshot which engages a fish and enables the fish to be removed from the well.
- Going in the hole A common phrase which refers to lowering pipe into the well bore (Photograph 12).
- Jars A tool (Photograph 15) capable of delivering a large impact in order to free stuck pipe.
- Junk Debris or objects that are lost in the hole/well. (See Fish). (Photographs 21, 22, 23).
- Mill See Drilling bit.
- Mud pumps A pumping machine which circulates mud through the piping during a workover (Photograph 2).
- Mud tanks Portable metal tanks which hold drilling mud or other fluids (Photograph 4).
- Mud solids separator Equipment which separates large volumes of solids from the drilling mud using centrifugal cones and shaker screens. See Shale shaker. (Photograph 13).
- Open hole A well without casing.
- Overshot A tool or device designed as a barrel which fits over the fish in the hole with grapples to catch the fish (Photograph 25).
- Packer A sealing device with an inside passage for fluids (Item A, Figure 3) used to isolate the casing from the producing zone at 14,644'.
- Pipe protectors Metal covers used to protect the threads on steel pipe (Photograph 23).
- Production tubing Steel pipe through which the well is produced (Photographs 18, 19).
- Pump Manifolds A system of plumbing, pipes, which routes and delivers mud from the mud pumps to other pipe during a workover (Photograph 3).

- Ram Closing and sealing element of a blowout preventor which is activated by hydraulic fluid to seal pipe or open hole to control pressure (Photograph 6).
- Rotary shoe See Drilling bit.
- Salt water disposal well A well through which brine is returned to subsurface formations (Photograph 11).
- Seals Rubber and steel gaskets on the production tubing used to seal off the tubing in the packer from the casing (Item 7, Figure 3, Photographs 16, 17).
- Separator A piece of horizontal equipment which is used to separate brine, oil and gas into individual components (Photograph 9).
- Shale shaker A vibrating screen which separates cuttings and/or solids from the mud.
- Slips Pieces of metal (Figure 2, Photograph 14) used to prevent rotation, and downward and upward movement of bridge plugs and packers.
- Stabbed To align the 5-1/2" tubing so it can be inserted into the packer.
- String shot A tool with a measured primer cord explosive used to loosen a connection to back out stuck pipe.
- Wash pipe Pipe that is used to wash over stuck pipe.
- Wellhead (Christmas Tree) An assembly of valves and equipment above ground that controls the flow of liquids or gas from the well (Figure 5).
- Workover An operation in which the damaged 5-1/2" tubing was replaced, the well was cleaned to the bottom of the 7" liner (Figure 1), and the well was restored to production.

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 1

2/15/86 Present Activity: Bleeding 480 psi from 9-5/8" casing.

Last 24 Hrs: Finish rigging up and preparing to install BOPs.

Daily Cost: \$ -0-

Cum. Cost: \$ -0-

Report No. 2

02/16/86 Present Activity: Rigging up.

Last 24 Hrs: Bled off mud pressure (480 PSI). Well not flowing. Rig down tree (Difficult due to scale & corrosion). Rig up BOPs and choke. Rigged up 6' higher than normal all hookups on rig had to be changed. Rig elevation 32'.

Daily Cost: \$63,851

Cum. Cost: \$63,851

Report No. 3

02/17/86 Present Activity: Circulate out contaminated mud.

Last 24 Hrs: Finished rigging up. Tested BOP's and manifolds etc. (3000 psi low, 10,000 psi high) Caliper and pick up bottom hole assembly with casing scraper. Went in hole to 3000'. Circulated in 16.0#/GAL, mud out 11#/GAL. Went in hole to 6000' circulated out 14.#/GAL and 11#/GAL mud. (Contaminated mud has 46,000 ppm chlorides.)

Daily Cost: \$17,654

Cum. Cost: \$81,505

Report No. 4

02/18/86 Present Activity: Run in hole with bit.

Last 24 Hrs: Transferred contaminated mud to frac tank. Continued run in hole to 8970', circulate out 175 bbls of badly contaminated (46,000 PPM-Cl) mud. Continue run in hole to 9091', requiring +30,000 lbs weight. Pulled out of hole and removed casing scraper. Shut down +2 hours to repair motor. Started running in hole with bit.

Daily Cost: \$13,510

Cum. Cost: \$95,015

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 5

2/19/86 Present Activity: Drilling set up mud and barite at 12,378' (200'/Hr).

Last 24 Hrs: Finished in hole, drilling and reaming set up mud and barite to 12,378'.

Daily Cost: \$8,448 Cum. Cost: \$103,463

Report No. 6

2/20/86 Present Activity: Run in hole with rotary shoe.

Last 24 Hrs: Continue washing and reaming from 12,378' to 13,700'. Circulate and condition mud. Shut down 4-1/2 hrs to replace motor on drawworks. Pulled out of hole. Started run in hole with rotary shoe to clean out to bridge plug.

Daily Cost: \$10,642 Cum. Cost: \$114,105

Report No. 7

2/21/86 Present Activity: Circulate prior to pulling out of hole with Halliburton plug.

Last 24 Hrs: Continue to run in hole. Washed over stem of Halliburton plug at 13,726'. Pull out of hole and lay down rotary shoe. Run in hole with Halliburton retrieving tool. Latched on to plug at 13,726' and worked plug free. Circulate and condition mud prior to pulling out of hole with plug.

Daily Cost: \$9,751 Cum. Cost: \$124,416

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 8

2/22/86 Present Activity: Running wash pipe.

Last 24 Hrs: Circulate bottoms up. Pull out of hole with bridge plug and laid down with retrieving tool. Pick up 8 joints 8-1/8" wash pipe and shoe. Work in hole to top of fish at 13,757', washing over fish to 13,869'.

Daily Cost: \$11,168 Cum. Cost: \$135,584

Report No. 9

2/23/86 Present Activity: Going in hole with overshot.

Last 24 Hrs: Washed over 5-1/2" tubing to 13,926'. Circulated and pull out of hole. Picked up new bottom hole assembly with overshot and jars and go in hole to top of fish at 13,757'.

Daily Cost: \$7,526 Cum. Cost: \$143,110

Report No. 10

2/24/86 Present Activity: Jar on fish.

Last 24 Hrs: Engaged top of fish at 13,757', overshot pulled off. Pull out of hole and redressed overshot, and added an extension sub. Run in hole and engaged top of fish. Jar 9 Hrs. with 100,000#, unable to free fish.

Daily Cost: \$11,194 Cum. Cost; \$154,304

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 9

2/23/86 Present Activity: Going in hole with overshot.

Last 24 Hrs: Washed over 5-1/2" tubing to 13,926'. Circulated and pull out of hole. Picked up new bottom hole assembly with overshot and jars and go in hole to top of fish at 13,757'.

Daily Cost: \$7,526 Cum. Cost: \$143,110

Report No. 10

2/24/86 Present Activity: Jar on fish.

Last 24 Hrs: Engaged top of fish at 13,757', overshot pulled off. Pull out of hole and redressed overshot, and added an extension sub. Run in hole and engaged top of fish. Jar 9 Hrs. with 100,000#, unable to free fish.

Daily Cost: \$11,194 Cum. Cost: \$154,304

Report No. 11

2/25/86 Present Activity: Run in hole with 8 joints of 8-1/2" washpipe.

Last 24 Hrs: Unable to jar fish loose and unable to release overshot grapple from top of fish. Run Dialog string shot and fired opposite overshot, freeing grapple. Pull out of hole and lay down overshot and grapple. Started back in hole with rotary shoe and 8 joints of washpipe to continue washing over 5-1/2" tubing. While running Dialog hard fill was encountered inside the 5-1/2" tubing 20' below the top of the fish at 13,777'.

Daily Cost: \$11,749 Cum. Cost: \$166,053

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 12

2/26/86 Present Activity: Pull out of hole with wash pipe.

Last 24 Hrs: Continue to run in hole with 8 joints of wash pipe and rotary shoe. Washed over top of fish from 13,757' to 13,926'. Washed and burned to 13,979', shoe appeared to wear out. Circulate out cuttings. Started pulling out of hole to replace rotary shoe.

Daily Cost: \$20,407 Cum. Cost: \$186,460

Report No. 13

2/27/86 Present Activity: Pull out of hole with washpipe and shoe.

Last 24 Hrs: Finish pulling out of hole and replace rotary shoe. Ran in hole and burned over fish from 13,974' to 13,982' in 10-1/2 hrs. Shoe worn out. Circulate bottoms up and start pulling out of hole.

Daily Cost: \$15,286 Cum. Cost: \$201,746

Report No. 14

2/28/86 Present Activity: Milling on packer slips at 13,983'.

Last 24 Hrs: Trip for new shoe. Reaming 3' to bottom 13,979'-13,982'. Wasing and RMG 13,982'-13,983'.

Daily Cost: \$12,085 Cum. Cost: \$213,831

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 14

2/28/86 Present Activity: Milling on packer slips at 13,983'.

Last 24 Hrs: Trip for new shoe. Reaming 3' to bottom 13,979'-13,982'. Washing and RMG 13,982'-13,983'.

Daily Cost: \$12,085 Cum. Cost: \$213,831

Report No. 15

3/1/86 Present Activity: Pick up fishing assembly with overshot.

Last 24 Hrs: Continue to wash over fish 13,982'-13,985'. Circulate bottoms up and start pulling out of hole. Unload S-135 drillpipe. Continue pulling out of hole and laid down 180 joints grade E drillpipe. Start running in hole with overshot assembly.

Daily Cost: \$10,059 Cum. Cost: \$223,890

Report No. 16

3/2/86 Present Activity: Start jarring on fish.

Last 24 Hrs: Continue to run in hole with overshot. Changed drilling line. Picked up 181 joints S-135 drillpipe and run in hole. Circulate bottoms up and engage top of fish at 13,754' and start jarring.

Daily Cost: \$11,660 Cum. Cost: \$235,550

Report No. 17

3/3/86 Present Activity: Running in hole with 8-1/2" mill.

Last 24 Hrs: Jarred on fish 5 hours. Worked fish free. Pull out of hole and recover 4 joints 5-1/2" tubing, "R" nipple, 1-joint 5-1/2" tubing, crossover, locator sub, and 5.77' of seal assembly. Overall length of fish = 219.91'. Top of remaining fish estimated at 13,973.91'. The 5.77' of seals do not appear to have been in packer. Bottom 2 joints of 5-1/2" appear to be packed with dry barite. Made up 8-1/2" mill and started running in hole.

Daily Cost: \$9,836 Cum. Cost: \$245,386

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 17

3/3/86 Present Activity: Running in hole with 8-1/2" mill.

Last 24 Hrs: Jarred on fish 5 hours. Worked fish free. Pull out of hole and recover 4 joints 5-1/2" tubing, "R" nipple, 1-joint 5-1/2" tubing, crossover, locator sub, and 5.77' of seal assembly. Overall length of fish = 219.91'. Top of remaining fish estimated at 13,973.91'. The 5.77' of seals do not appear to have been in packer. Bottom 2 joints of 5-1/2" appear to be packed with dry barite. Made up 8-1/2" mill and started running in hole.

Daily Cost: \$9,836 Cum. Cost: \$245,386

Report No. 18

3/4/86 Present Activity: Run in hole with burn shoe.

Last 24 Hrs: Continue to run in hole with 8-1/2" mill. Tag top of fish at 13,979'. Milled top of fish to 13,974.5'. Condition bottoms up and start pulling out of hole. Ran in hole and milled fish 13,974.5' to 13,977'. Condition bottoms up and pull out of hole. Recover portion of slip segment in boot basket. Picked up 8-3/8" x 5" burning shoe and start running in hole.

Daily Cost: \$11,516 Cum. Cost: \$256,902

EATON OPERATING COMPANY
Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 19

3/5/86 Present Activity: Run in hole with new burn shoe.

Last 24 Hrs: Continue to run in hole with burn shoe. Washed over top of fish at 13,977'. Washed to 13,980'. Milled 13,980'-13,984', encountered excessive drag. Started pulling up, stuck, jarred loose, and pulled above top of fish. Unable to go back down past top of fish at 13,977'. Slug and pull out of hole. Replaced burn shoe and started running in hole with new burn shoe.

Daily Cost: \$15,062

Cum. Cost: \$271,964

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 20

3/6/86 Present Activity: Continue milling at 13,986.5'.

Last 24 Hrs: Finish run in hole with new burn shoe. Wash
over top of fish at 13,977'. Milled
13,984'-13,985.5' in 16 hours. No progress
in next 4 hours. May be spinning on junk.

Daily Cost: \$11,271 Cum. Cost: \$283,235

EATON OPERATING COMPANY

**Pleasant Bayou Well No. 2
Daily Activity Report**

Report No. 21

3/7/86 Present Activity: Pull out of hole with overshot-grapple assembly.

Last 24 Hrs: Continue burning over fish 13,986.5' to 13,987'. Pull out of hole and recover 12" split pieces of seal assembly plus 108 cubic inches of small junk. Run in hole to 1695' with overshot-grapple assembly. Cut and slip drilling line. Continue to run in hole to top of fish at 13,977'. Engage fish with grapple at 13,983'. Jar fish loose with 170,000 lbs. over weight of string. Start pull out of hole.

Daily Cost: \$10,258 Cum. Cost: \$293,493

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 22

3/8/86 Present Activity: Milling at 13,988'.

Last 24 Hrs: Pull out of hole with fishing assembly. Recovered 7.4' of seal assembly. Break down overshot. Pick up 8-1/2" mill and 2 boot baskets. Trip in hole. Milling 13,986'-13,988'. (bottom 14" of seal assembly had been in seal bore)

Daily Cost: \$10,809 Cum. Cost: \$304,302

Report No. 23

3/9/86 Present Activity: Burning at 13,989'.

Last 24 Hrs: Milling at 13,988'. Mix slug and pump. Pull out of hole. Laid down mill. Pick up burning shoe and wash pipe. Clean boot baskets. Recovered 60", 3 of junk. (mill 25% worn on bottom, slightly tapered) Trip in hole with burning shoe. Burning 13,988'-13,989' (10 hours). (made 1st 4" in one hour)

Daily Cost: \$10,553 Cum. Cost: \$314,855

Report No. 24

3/10/86 Present Activity: Pull out of hole with overshot grapple assembly.

Last 24 Hrs: Continue burning over fish 13,989'-13,990'. Pull out of hole with burning shoe. Recover 3 strips of packer body, 8 pairs of slip segments, plus 50 cubic inches of small pieces. Run in hole with overshot grapple assembly. Engaged top of fish at 13,989', worked fish free without jarring. Started pulling out of hole.

Daily Cost: \$8,235 Cum. Cost: \$323,090

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 25

3/11/86 Present Activity: Pull out of hole with burning shoe.

Last 24 Hrs: Finish pulling out of hole with grapple - no recovery. Run in hole with burning shoe assembly. Burned over fish 13,990'-13,991' in 7-3/4 hours. Washed 13,991' to 14,011' in 1/4 hour. Circulate bottoms up and started pulling out of hole.

Daily Cost: \$13,391 Cum. Cost: \$336,481

EATON OPERATING COMPANY

**Pleasant Bayou Well No. 2
Daily Activity Report**

Report No. 26

3/12/86 Present Activity: Continue jar on fish.

Last 24 Hrs: Finish pulling out of hole with burn shoe. Laid down burn shoe assembly and pull up overshot-grapple assembly. Ran in hole and worked over top of fish at 13,988'. Engaged fish with grapple at 13,998'. Jar on fish 9-1/2 hours with 175,000 lbs. over weight of string - no movement.

Daily Cost: \$10,398 Cum. Cost: \$346,879

EATON OPERATING COMPANY

**Pleasant Bayou Well No. 2
Daily Activity Report**

Report No. 27

3/13/86 Present Activity: Running in hole with 2-7/8" drillpipe stinger and 3-3/8" mill.

Last 24 Hrs: Continue to jar on fish while pressuring up. Unable to work free. Unable to release grapple from fish. Attempt blind back-off while waiting on Dia-Log. String appeared to back-off, but did not see loss of weight. Rigged up Dia-Log and ran CCL-log tool to 14,008' (10' below grapple), back-off appeared to be in fish. Pull out of hole, recovering 26.65' of fish (includes pieces of WD packer body, crossover, Otis seal assembly, Otis seal bore extension, and 2-TIW adapters). Estimate top of fish at 14,012.5'. Pick up 2-7/8" PAC drillpipe stinger with 3-3/8" mill and start running in hole.

Daily Cost: \$11,150 Cum. Cost: \$358,029

EATON OPERATING COMPANY

**Pleasant Bayou Well No. 2
Daily Activity Report**

Report No. 28

3/14/86 Present Activity: Pull out of hole with 3-3/8" mill.

Last 24 Hrs: Continue to run in hole with 3-3/8" mill.
Entered top of fish at 14,012.5' and washed
to Otis "xn" nipple at 14,497'. Circulate
hole clean and started pulling out of hole.

Daily Cost: \$10,682 Cum. Cost: \$368,711

EATON OPERATING COMPANY

Pleasant Bayou Well N. 2
Daily Activity Report

Report No. 29

3/15/86 Present Activity: Pulling wear bushing to test BOP's.

Last 24 hrs.: Lay down 3-3/8" mill. Make up bottom hole assembly with screw-in sub. Run in hole to 14,012', but unable to engage fish. Pull out of hole and wait on pilot mill. Start testing BOP's.

Daily Cost: \$10,270

Cum. Cost: \$378,981

Report No. 30

3/16/86 Present Activity: Run in hole with second pilot mill.

Last 24 hrs.: Test BOP's. Run in hole with pilot mill and milled 14,012.5' - 14,027'. Circulate bottoms-up, finding pieces of TIW seals. Recovered 6" long collar above mill, 5.25" ID x 5.875" OD and threaded inside.

Daily Cost: \$12,016

Cum. Cost: \$390,997

Report No. 31

3/17/86 Present Activity: Run in hole with spear.

Last 24 hrs.: Finish running in hole with second pilot mill. Milled on fish 14,027' to 14,028.3'. Fish appears to be spinning. Pull out of hole and lay down mill. Pick up 3.636" x 4.5" spear. Make up bottom hole assembly and start running in hole at 0600 hours.

Daily Cost: \$11,560

Cum. Cost: \$402,557

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 32

3/18/86 Present Activity: Milling on fish at 14,025'.

Last 24 Hrs: Finished run in hole with spear. Engage fish at 14,028 and worked fish up hole +2'. Drag fish up hole +10' with 30,000# drag. Spear broke off. Pull out of hole finding bottom 1.79' of spear broken off. Made up 5-3/4" flat bottom mill and run in hole. Tag fish at 14,020'. Milled on fish 14,020' to 14,025'.

Daily Cost: \$11,223 Cum. Cost: \$413,780

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 33

3/19/86 Present Activity: Circulate prior to pulling out of hole
with washpipe.

Last 24 Hrs: Fish fell 14,025' to 14,028'. Milled
14,028' to 14,033'. Pull out of hole and
pick up 16 joints of 5-1/2" washpipe. Run
in hole and worked over top of fish at
14,031'. Washed over fish to 14,510'.
Circulate and prepare to pull out of hole.

Daily Cost: \$10,826 Cum. Cost: \$424,606

EATON OPERATING COMPANY

Pleasant Bayou Well N. 2
Daily Activity Report

Report No. 34

3/20/86 Present Activity: Running in hole with overshot-grapple and mill guide shoe.

Last 24 hrs.: Finished pulling out of hole and lay down washpipe. Run in hole with overshot-grapple. Unable to engage top of fish at 14,031'. Pull out of hole, finding grapple broken. Run in hole with another overshot-grapple.

Daily Cost: \$13,641

Cum. Cost: \$438,247

Report No. 35

03/21/86 Present Activity: Circulate and condition mud at 14,733'.

Last 24 hrs.: Finish running in hole. Engaged top of fish at 14,031'. Jarred fish loose and pulled out of hole. Recovered complete fish, consisting of 10-full joints plus 1-piece of joint of 4-1/2" tubing, crossover, nipple, and mule shoe guide. Made up 5-3/4" mill with 9-5/8" casing scraper spaced above small string. Run in hole and washed 14,502' - 14,733' with mill. Casing scraper at 13,910'. Circulate and condition mud.

Daily Cost: \$12,195

Cum. Cost: \$450,442

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 36

03/22/86 Present Activity: Pull out of hole with wireline.

Last 24 hrs.: Circulate and condition mud. Pull out of hole with 5-3/4" mill. Nipple down bell nipple. Nipple up lubricator. Make up Brown Oil Tool packer. Run in hole on Dresser Atlas wireline. Set packer at 13,920'. Pull out of hole with wireline.

Daily Cost: \$19,118

Cum. Cost: \$469,560

Report No. 37

03/23/86 Present Activity: Rig up to run tubing.

Last 24 hrs.: Finish pulling out of hole. Rig down. Lay down drill collars and drill pipe. Change rams to 5-1/2". Rig up to run tubing.

Daily Cost: \$15,787

Cum. Cost: \$485,347

Report No. 38

03/24/86 Present Activity: Running 5-1/2" production tubing.

Last 24 hrs.: Changed and tested rams in blowout preventers. Started running 5-1/2" tubing. Making up each connection with torque turn. Testing each joint externally to 10,000 psi with Gator Hawk. Now have 270 joints (11,910') run in well.

Daily Cost: \$7,354

Cum. Cost: \$492,701

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2
Daily Activity Report

Report No. 39

3/25/86 Present Activity: Nipple down BOP's.

Last 24 Hrs: Finish running 5-1/2" tubing. Stabbed into packer at 13,950'. Tested seals and annulus to 2000 psi-O.K. Spaced out tubing hanger and rig up to reverse circulation. Pumped 70 bbls of 8.5 ppg spacer followed by 282 bbls of CaCl₂ into annulus. Mud returns from tubing became very thick, and pump pressure increased from 2000 to 4500 psi. Chloride in mud returns increased to 8900 ppm. (CaCl₂ apparently channeled thru mud) Stopped pumping. Casing pressure = 2500 psi. Bled +45 bbls off casing, pressure fell to zero. Opened BOP's. Lowered tubing and stabbed into packer. Engaged lock pins in the hanger. Filled tubing with 42 bbls of mud. Tested seals and annulus to 2500 psi - O.K. Replaced 5-1/2" rams in BOP's. Set bridge plug in 5-1/2" tubing at 89'. Started removing rig's BOP's.

Daily Cost: \$44,084 Cum. Cost: \$536,785

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2

Daily Reports

03/26/86

Present Operations: Cleaning rig's mud tanks.

Last 24 hrs: Unable to install tubing hanger adaptor. Hanger appears to be oversized. Removed hanger and sent into machine shop to be modified ± 0.10 " on OD and taper. Re-installed hanger and tested connection to 10,000 psi with Gator Hawk. Landed hanger and installed adaptor. Tested seals to 10,000 psi. Retrieved bridge plug at 89'. Tested 5-1/2" x 9-5/8" annulus to 2500 psi. Started cleaning mud tanks.

Daily Cost: \$7,249.

Cum. Cost: \$544,034.

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2

Daily Reports

03/27/86

Present Operations: Rigging down Richard's rig.

Last 24 hrs: Finish cleaning mud tanks. Released rig at 12 Noon, 3/26/86. Started rigging down. Hauled 581 bbls of 16.0 ppg mud to TD Drilling Fluids. Hauled 700 bbls of CaCl_2 to Tetra Services. Load out and return rental equipment.

Daily Cost: \$377,232.

Cum. Cost: \$921,266.

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2

Daily Reports

03/28/86 Present Operations: Continue rigging Richards rig.
Last 24 hrs: Finished laying derrick down. Removed blind flange from lower master valve. Installed tree. Continued rigging down Richards.
Daily Cost: \$2,549. Cum. Cost: \$923,815.

03/29/86 Present Operations: Spot coiled tubing unit on location.
Last 24 hrs: Finish rigging down substructure and drawworks. Spot work platform around tree. Open hydraulic master valve. Tighten bolts on tree. Repair tubing spool wing valve.
Daily Cost: \$1,685. Cum. Cost: \$925,500.

03/30/86 Present Operations: Jetting mud out of tubing with coiled tubing and water at 2000'.
Last 24 hrs: Rig up Cudd pump truck. Found hydraulic master valve leaking. Started pumping into wing valve, determine lower master and swab valves leaking. Set Brown bridge plug at 26' in 5-1/2" tubing. Repair valves, found leak below lower master. Lifted tree, cleaned groove and replaced ring gasket. Retrieved bridge plug. Pumped out plug in tubing below packer with 4000 psi. Riggged up coiled tubing and started jetting mud out of 5-1/2" tubing string.
Daily Cost: \$8,158. Cum. Cost: \$933,658.

03/31/86 Present Operations: Well SI while hauling off brine. SITP = 4250 psi.
Last 24 hrs: Jetted well with water to 5500', well started flowing. Strip out of hole with coiled tubing. Unloaded well for one hour, recovering ⁺60 bbls, Willis choke plugged with metal cuttings and dehydrated mud. Installed Haliburton twin choke manifold. Unloaded ⁺360 bbls in 1/2 hour on 1-3/4" and 1" choke. SI well while hauling off brine. Unloaded ⁺450 bbls in 1-1/2 hrs. on 1/2" choke with FTP = 3950. SI well to haul brine.
Daily Cost: \$11,038. Cum. Cost: \$944,696.

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2

Daily Reports

04/01/86

Present Operations: Running in hole with pressure bomb.

Last 24 hrs: Flowed well for 3/4 hr. on 48/64" choke with FTP = 3655. Recovered approx. 500 bbls of brine. Avg. flow rate of 14,500 bbls per day. SI well and hauled off brine. Rigged up Milton Cooke lubricator and 20' of 1-3/4" sinker bars. Unable to get bars thru tree. Flowed ⁺8 bbls, still unable to get bars thru tree. Replaced bars with 20' of lead weighted bars. Lead bars fell very slow in the top 600'. Continued running in hole, bars stopped at 14,044' (wireline meas.), apparent top of 7" liner. Unable to work bars into top of liner. Pull out of hole with bars. Rigged up pressure bomb. SITP = 4232.24 psig. Started running in hole with bomb, falling very slow.

Daily Cost: \$5,603.

Cum. Cost: \$950,299.

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2

Daily Reports

04/02/86

Present Operations: Service tree and clean up location.

Last 24 hrs: Continue running in hole with BHP bomb, stopped at 14,021' (wireline meas.) Record BHP at 13,996', BHP = 10,698.3 psig. Temp. = 293.6°F. Pull out of hole with bomb. Released M. Cooke. Serviced lower master valve.

Note:

<u>DATE</u>	<u>DEPTH</u>	<u>PSIA</u>
9-10-80	14,674' (RKB = 33')	11,166.0
4-01-86	" "	11,031.4

Daily Cost: \$7,050.

Cum. Cost: \$957,349.

EATON OPERATING COMPANY

Pleasant Bayou Well No. 2

Daily Reports

04/03/86

Present Operations: Wait on rig to move off location.

Last 24 hrs: Service and inject grease into WKM valves on tree. Back fill pit and clean up area around wellhead.

Daily Cost: \$1,914.

Cum. Cost: \$959,263.