

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
INDIVIDUAL WELL RECORD  
OUTER CONTINENTAL SHELF OPERATIONS

Sale 71

6B2

Area Harrison Bay  
Block 284  
Lease No. Y-0338  
Unit Area N/A  
Well No. 1  
API No. 55-231-00005

Date 01/14/88

Field Wild Cat Adj. State Alaska Water Depth 61'  
KB to Ocean Floor 169.5  
Elev. KB to WL. 108.5

Lessee \_\_\_\_\_ Type of Lease, Sec. \_\_\_\_\_

Operator Tenneco Oil Company

UIM ZONE: SURFACE LOCATION Lat: N 70° 43' 00.99"  
Long: W 150° 25' 40.11" BOTTOM-HOLE

Lambert Grid: X = N=7, 847, 664m Y = E=594, 782m Lambert Grid: X = \_\_\_\_\_ Y = \_\_\_\_\_

Area \_\_\_\_\_ Block \_\_\_\_\_ Area \_\_\_\_\_ Block \_\_\_\_\_

\_\_\_\_\_ 1102 feet from (north) (south) line \_\_\_\_\_ feet from (north) (south) line

\_\_\_\_\_ 3995 feet from (east) (west) line \_\_\_\_\_ feet from (east) (west) line

Drilling Rig Name and Type SSDC Matt

Drilling Approved 07/31/86 Drilling Ceased 11/30/86

Drilling Commenced 09/23/86 Completion Date 12/19/86

Meas. Depth 9866 Vert. Depth 9866 Plugged Back Depth 195

Completion Status P & A S.R.A. Approved 01/14/88

Prod. Interval #1 Interval Perf.  
Initial Prod.: Choke Press. BOPD BWPD MCF/D GOR GR.

Prod. Interval #2 Interval Perf.  
Initial Prod.: Choke Press. BOPD BWPD MCF/D GOR GR.

Prod. Interval #3 Interval Perf.  
Initial Prod.: Choke Press. BOPD BWPD MCF/D GOR GR.

Changes in Well Status

Formation, Depth, Production, Etc.

Date \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_ Rec'd APD MMS 331C 04/10/86  
Rec'd CR: MMS 330 01/27/87

AREA

FILE 6B-2

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE:  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:                      SUBSEQUENT REPORT OF:

ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>	<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>	<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>	<input type="checkbox"/>

(Other) \_\_\_\_\_

5. LEASE NO.  
OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS  
RKB 108.5' (MSL) OF SAME

14. WATER DEPTH  
61'

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

16. 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.)\*

Permanent Abandonment Procedure - See Attachments

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Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

17. I hereby certify that the foregoing is true and correct  
SIGNED Robert G. M... [Signature] TITLE Sr. Env/Safety Coord. DATE 1/27/87

(This space for Federal or State office use)  
APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

Shell (OCS) laws pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, may be obtained from the local District Office.

Item 4: Location should be described in accordance with the instructions of the local District Office. In the Gulf of Mexico Region, indicate the distance in feet to the nearest block lines.

Item 16: Proposals to abandon a well and subsequent reports of abandonment should include the reasons for the abandonment; data on any former or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspections looking to approval of the abandonment.

DISTRICT SUPERVISOR

1/28/87

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

I. ABANDONMENT PROCEDURE BELOW 9 5/8" CASING

(Isolation of Zones in Open Hole and Isolation of Open Hole)

- A. TIH with drillpipe and 282' of 2 7/8" stinger; CBU; Spot 200' cement with 105 sacks\* plug 8800' - 8600'.
- B. Pull into 9 5/8-in. casing and CBU; POH.
- C. PU a 9 5/8-in EZSV retainer and TIH; Set retainer at 7437' (75' above 9 5/8-in. shoe); Test retainer with 50,000# of weight; Squeeze 338' of cement below the 9 5/8-in. shoe to 7850' (230 sacks\*) and place 50' of cement (20 sacks\*) on top of the retainer.
- D. Pressure test casing to 3500 psi; POH.

\* Class G + Friction Reducer + Retarder

See attached Schematic for additional information required in Item 16.

II. ABANDONMENT PROCEDURE - DRILL STEM TEST #1

(Perforated Interval - 7005'-7060')

- A. PU a 9 5/8-in. EZSV retainer and TIH; Set retainer at 6955' (50' above top of perforated interval).
- B. Test retainer with 20,000# of weight; Pressure test casing with 3500 psi.
- C. Sting in and displace produced fluids from Drill Stem Test #1 into formation.
- D. Squeeze cement from 6955' - 7160' (100' below the bottom of the perforated interval) with 73 sacks\* and place 56' of cement (20 sacks\*) on top of the retainer; POH.
- E. PU a 9 5/8-in. EZSV retainer (plug configuration) and TIH on wireline; Set retainer at 5000'.

\* Class G + Friction Reducer + Retarder

III. ABANDONMENT PROCEDURE - DRILL STEM TEST #3

(Perforated Interval - 4650'-4704')

- A. Reverse tubing, unseat packer, and circulate.
- B. POH; LD tubing, D.S.T. tools, and perforating guns.

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- C. PU 9 5/8-in. EZSV retainer and TIH on 5-in. drillpipe; Set retainer at 4600' (50' above top of perforated interval).
- D. Test retainer with 20,000# of weight; Pressure test casing with 1500 psi.
- E. Sting in and displace produced fluids from Drill Stem Test #3 into formation.
- F. Squeeze cement from 4600' - 4804' (100' below the bottom of the perforated interval) with 73 sacks\* and place 56' of cement (20 sacks\*) on top of the retainer; POH.

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\* Class G cement.

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IV. PERMANENT ABANDONMENT PROCEDURE - 9 5/8" CASING

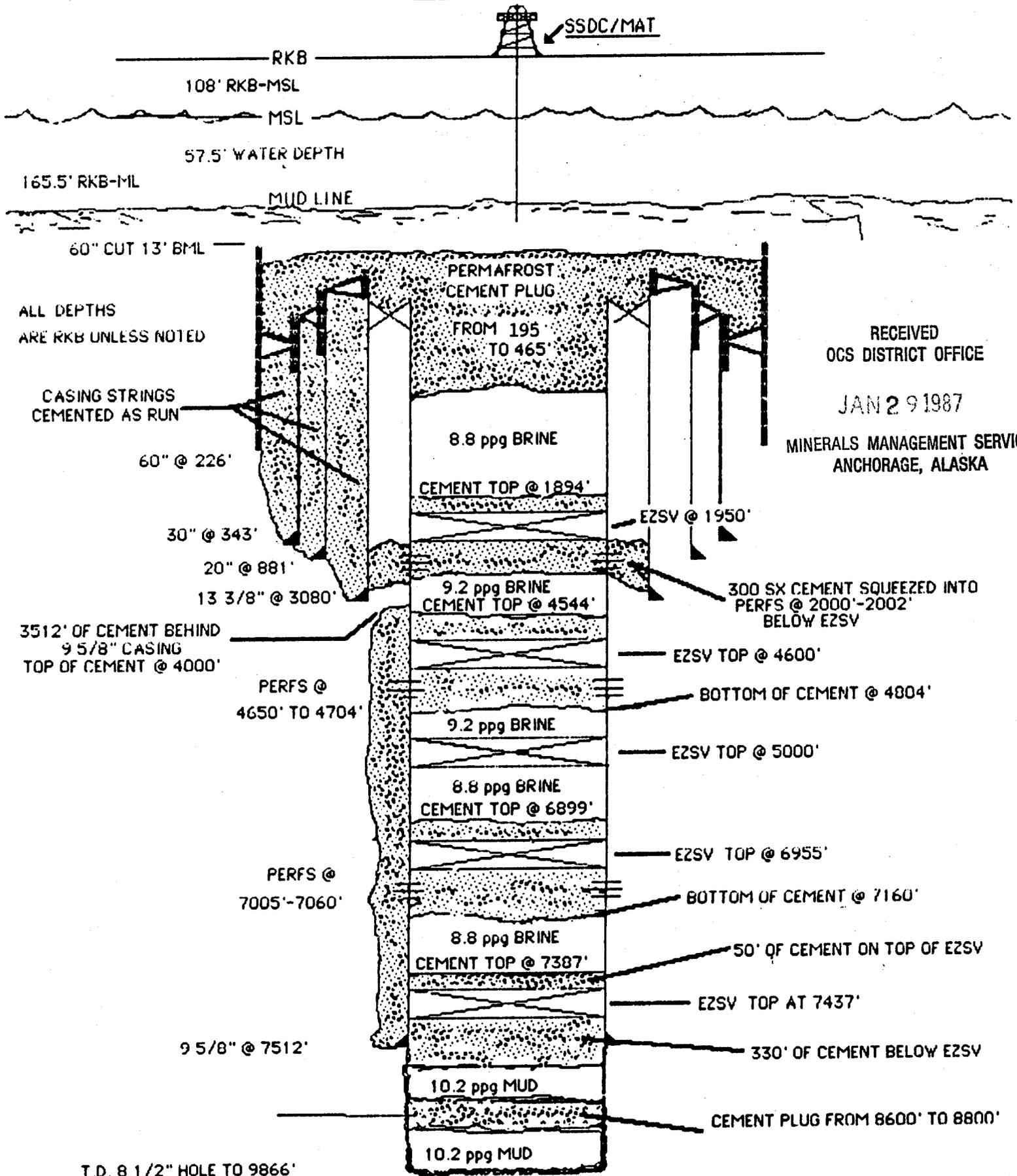
MINERALS MANAGEMENT SERVICE  
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- A. RU Schlumberger; Punch holes in 9 5/8-in. casing (2000' - 2002') - 4SPF.
- B. PU 9 5/8-in. EZSV retainer and TIH on 5-in. drill pipe; Set retainer at 1950' (50'± above top of perforated interval).
- C. Test retainer with 20,000 lbs. of weight; Pressure test casing with 1500 psi.
- D. Squeeze cement in 9 5/8-in. x 13 3/8-in. annulus from 2000' - 3080' leaving cement in 9 5/8-in. casing 1950' - 2002'; (300 sacks\* total); Place 56' of cement (20 sacks) on top of the retainer.
- E. Circulate and spot freeze-depressed fluid treated with corrosion inhibitor from 1500' - 465'; 8.8 ppg brine.
- F. POH, LD excess drill pipe.
- G. Spot cement plug 150' BML - 300' BML in 9 5/8-in. casing (56 sacks\*\*); POH.
- H. ND high pressure riser and stack; POH with same and LD.
- I. Jump divers and retrieve bell guide.
- J. Jump divers and cut 60"13' BML and retrieve same.
- K. Spot cement \*\* 150' BML to 10' above wellhead (200 sacks).
- L. Operations completed and well plugged and abandoned at 1700 hours on 12/19/86.

\* Class G cement + 1% CFR-Z + 1% CaCl<sub>2</sub>

\*\* Permafrost cement

TENNECO OIL COMPANY  
 PHOENIX PROSPECT  
PLUG AND ABANDONMENT



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ALL DEPTHS  
 ARE RKB UNLESS NOTED

CASING STRINGS  
 CEMENTED AS RUN

3512' OF CEMENT BEHIND  
 9 5/8" CASING  
 TOP OF CEMENT @ 4000'

300 SX CEMENT SQUEEZED INTO  
 PERFS @ 2000'-2002'  
 BELOW EZSV

T.D. 8 1/2" HOLE TO 9866'

F. Wendling 4/22/86  
Ejaj 4/22/86

APR 22 1986

Mr. F. J. Green, Operations Manager  
Tenneco Oil Exploration and Production  
Tenneco Building  
P.O. Box 2511  
Houston, TX 77001

Dear Mr. F. J. Green:

We have received your April 9, 1986, letter wherein you requested biological and cultural clearance for Lease OCS-Y 0338, Phoenix Prospect in the Beaufort Sea Sale 71 area. Our April 16, 1986, letter from our District Office advised that the environmental training program and biological and cultural site clearance for the lease would be addressed in a separate letter.

The environmental orientation program prepared by Standard Alaska Production Co. which you propose to use has been approved for use by all lessees in the Beaufort Sea. This program must be shown to all Tenneco, contractor, and subcontractor personnel prior to, or immediately upon, reporting to the staging area or work site. Documentation of participation should be kept at the work site to facilitate confirmation of training by the Minerals Management Service inspectors.

With respect to biological site clearance, we have reviewed the geotechnical and geophysical data submitted by your company and have concluded that it will not be necessary to conduct a biological survey. We have conferred with the chairman of the Beaufort Sea Sale 71 Biological Task Force, who concurred with our findings. Cultural resource surveys will also not be required based on a review of the geophysical data submitted by your company.

If you have any questions regarding these requirements, please contact our office at (907) 261-4188.

Sincerely,

(Orig. Sgd.) Rodney A. Smith

Regional Supervisor  
Field Operations

✓ bcc: OCS-Y 0338 (area/diat)  
Chron (area/diat/ora)  
CC  
RD Chron

FWendling:pam:4/21/86:bio cult clear  
Final:kdr:4/22/86

0338  
APD

**Tenneco Oil  
Exploration and Production**

A Tenneco Company

Frontier Exploration Division

Tenneco Building  
P.O. Box 2511  
Houston, Texas 77001  
(713) 757-2131



April 9, 1986

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APR 10 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

Mr. Brian Schoof  
District Supervisor  
U. S. Dept. of Interior  
Minerals Management Service  
District Office  
949 E. 36th Avenue  
Anchorage, Alaska 99510

Re: Application for Permit to Drill  
OCS Y-0338 #1  
Block 284, Harrison Bay NR 5-4  
Beaufort Sea, Alaska

Dear Mr. Schoof:

Tenneco Oil Company (Tenneco) respectfully submits its Application for Permit to Drill (APD) the wildcat test OCS Y-0338 #1 on our Phoenix Prospect located in Harrison Bay, Alaska. Three (3) proprietary copies of the APD are enclosed herewith for your review and approval. Two (2) public information copies are being transmitted concurrently to the Regional Supervisor.

As noted in the APD, several components of the total permit package are in preparation and will be submitted when finalized in the immediate future. In the interim, we request the review and conditional approval by the District Office of the enclosed APD materials and the shallow geohazards report submitted on March 19, 1986. As we indicated in our meeting on that date, Tenneco has a tight logistics schedule for supplying the SSDC/MAT drilling unit by barge from Hay River, Canada. Equipment and supplies must be delivered to Hay River between the dates of May 15 and June 15 for barge transport down the Mackenzie River. Therefore, the timely review and provisional approval of our well design and drilling plans are important to our logistics schedule. We are aware that final approval of the APD will be contingent upon final approval of the SSDC/MAT drilling unit, predrill inspections and an oil spill response exercise as well as the outstanding components of the total permit package.

Please be advised that Tenneco will use the environmental training program prepared and recently revised by Standard Alaska Production Co. to brief the drilling and field operations personnel of the environmental, social and cultural concerns of the North Slope arctic region as required by Lease Stipulation No. 3. We understand that Tenneco need not submit the Standard environmental training program for MMS review and approval.

6B.1

Yo 338#1

**Tenneco Oil  
Exploration and Production**

Mr. Brian Schoof

-2-

April 9, 1986

With reference to the February 28, 1985 letter from the Regional Supervisor, Field Operations, we request that the proposed well site be granted a biological and cultural clearance. Our shallow geohazards report together with the fathometer and side-scan sonar data have determined that the well site is free of boulders, cobbles, or other hard material at the seafloor. No biological populations or habitats which may require additional protection pursuant to Lease Stipulation No. 8 have been identified in the geohazards and soils boring field work.

The contents of the APD submitted to the District Office are considered confidential and proprietary. We request the MMS to employ such procedures for its internal handling of this document containing privileged information.

Your earliest attention to this submittal will be sincerely appreciated. If there are any questions regarding this submittal, please contact me at (713) 757-2280.

Sincerely yours,

  
Angus J. Mackay  
Senior Land Specialist

AJM/rj

Enclosure

cc: Rodney A. Smith, Regional Supervisor, with Public Information copies  
Al Scouler, Tenneco, Anchorage, Ak

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MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

**BAROID ppm LOG  
SHOW EVALUATION REPORT**

COMPANY TENNECO OIL CO.  
 WELL PHOENIX NO. 1  
 LOCATION BEAUFORT SEA, AK  
 FORMATION \_\_\_\_\_  
 DEPTH 7648'  
 PROBABLE PRODUCTION GAS

**MUD ANALYSIS**

*\* From Hot Wire Unit \**

	BACKGROUND	NET INCREASE	
		PLOT 1	PLOT 2
		DEPTH <u>7648'</u>	DEPTH _____
METHANE-ppm C <sub>1</sub>	400	81000	
ETHANE-ppm C <sub>2</sub>	15	4400	
PROPANE-ppm C <sub>3</sub>	-	3100	
BUTANE-ppm C <sub>4</sub>	-	1800	
PENTANE+-ppm C <sub>5+</sub>	-	700	
METHANE %-UNITS/L	4	810	
TOTAL %-UNITS/L	5	1264	
CHLORIDES	3100	3100	

DRILLING RATE: FT/HR X MIN/FT \_\_\_\_\_  
 FROM 7647 TO 7648

LITHOLOGY Core No. 1

REMARKS Interval occurs during core no. 1 depth  
7592.-7652. Appears to be one foot zone as gas  
dropped off to background.

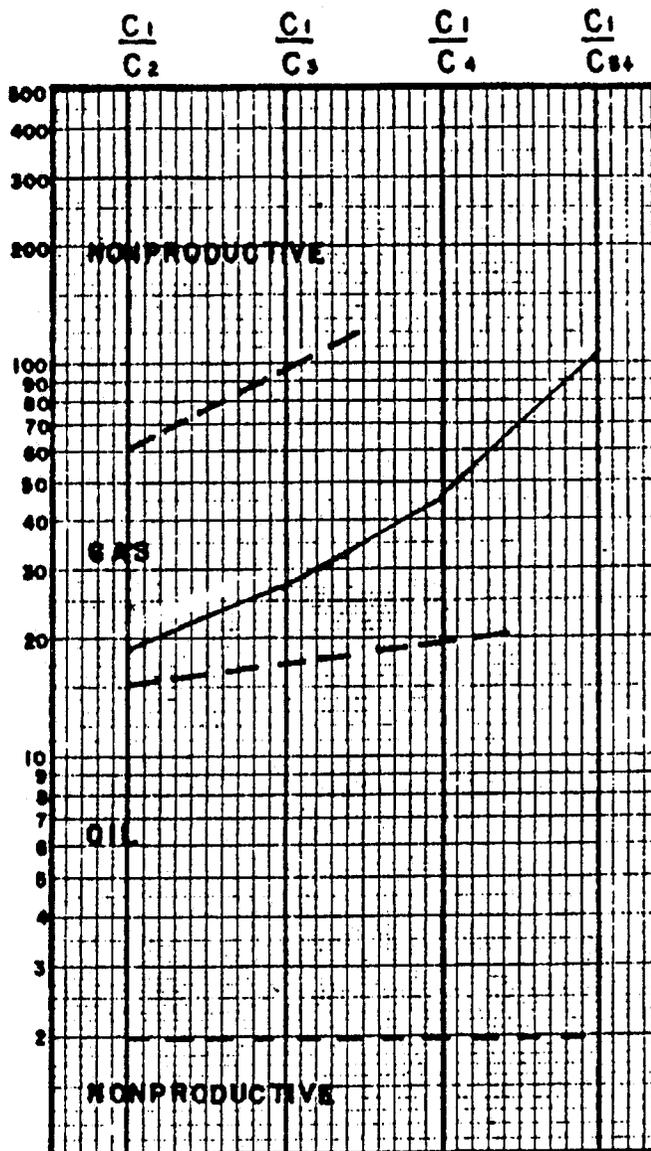
NEW ORDERS \_\_\_\_\_

CALLED IN BY W. ANDERSON

TALKED TO F. WALLE

DATE 11/6/86 TIME 12:30 AM \_\_\_\_\_ PM X

**HYDROCARBON RATIOS**



USE ONLY GAS INCREASE OVER BACKGROUND  
 C<sub>1</sub> 80600 M C<sub>2</sub> 3100 M C<sub>3</sub> 1800 M C<sub>4</sub> 700 M  
 C<sub>5</sub> 4400 M  
 C<sub>1</sub>/C<sub>2</sub> 18 C<sub>1</sub>/C<sub>3</sub> 26 C<sub>1</sub>/C<sub>4</sub> 45 C<sub>1</sub>/C<sub>5</sub> 115

1. PLOT RATIOS ON LINES INDICATED.
2. EVALUATE SECTION FOR PROBABLE PRODUCTION AS INDICATED BY THE PLOTTED CURVE WITHIN THE FOLLOWING LIMITS:
  - a. PRODUCTIVE DRY GAS ZONES MAY SHOW ONLY C<sub>1</sub> BUT ABNORMALLY HIGH C<sub>1</sub> ONLY SHOWS ARE USUALLY INDICATIVE OF SALT WATER.
  - b. IF THE C<sub>1</sub>/C<sub>2</sub> RATIO FALLS LOW IN THE OIL SECTION AND THE C<sub>1</sub>/C<sub>2</sub> RATIO FALLS HIGH IN THE GAS SECTION THE ZONE IS PROBABLY NONPRODUCTIVE.
  - c. IF ANY RATIO (C<sub>1</sub>/C<sub>2</sub> EXCEPTED IF OIL MUD IS USED) IS LOWER THAN A PRECEDING RATIO THE ZONE IS PROBABLY NONPRODUCTIVE. FOR EXAMPLE, IF C<sub>1</sub>/C<sub>2</sub> IS LESS THAN C<sub>1</sub>/C<sub>3</sub>, THE ZONE IS PROBABLY WET.
  - d. THE RATIOS MAY NOT BE DEFINITIVE FOR TIGHT, LOW PERMEABILITY ZONES.

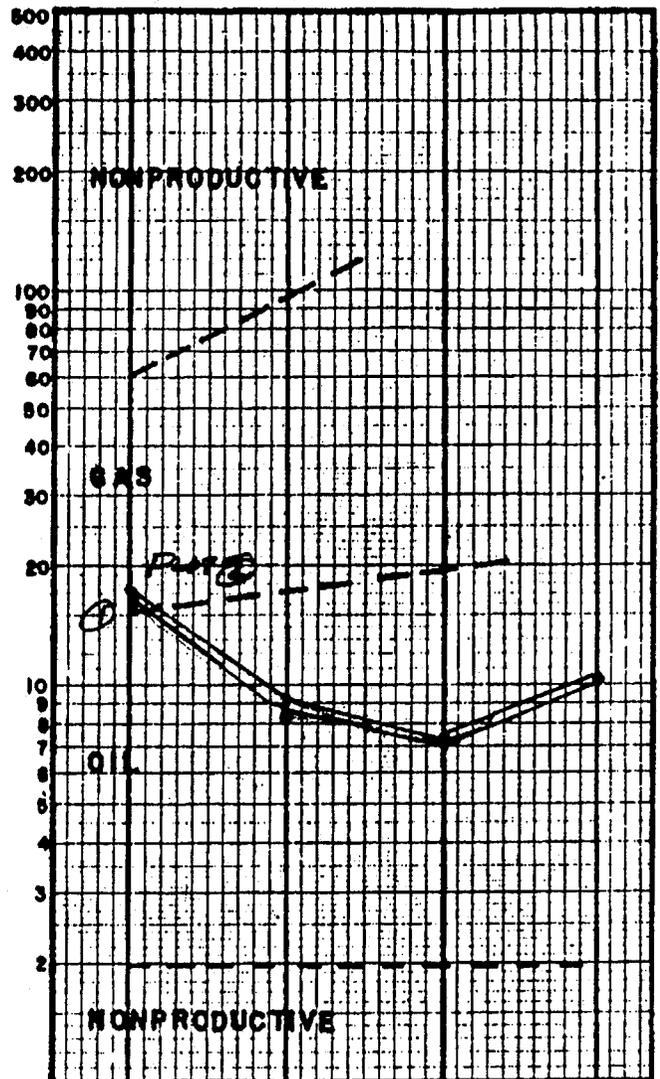
0338 6B

**BAROID ppm LOG  
SHOW EVALUATION REPORT**

COMPANY TENNECO OIL CO.  
 WELL PHOENIX No. 1  
 LOCATION BEAUFORT SEA, AK  
 FORMATION \_\_\_\_\_  
 DEPTH 4654-4695'  
 PROBABLE PRODUCTION INCONCLUSIVE

**HYDROCARBON RATIOS**

$\frac{C_1}{C_2}$        $\frac{C_1}{C_3}$        $\frac{C_1}{C_4}$        $\frac{C_1}{C_{5+}}$



**MUD ANALYSIS (STEAM STILL)**

	BACKGROUND	NET INCREASE	
		PLOT 1	PLOT 2
		DEPTH <u>4670</u>	DEPTH <u>4695</u>
$\div 1000$			
METHANE - ppm C <sub>1</sub>	3.0	76.5	68.7
ETHANE - ppm C <sub>2</sub>	.2	4.7	4.1
PROPANE - ppm C <sub>3</sub>	.4	9.1	7.9
BUTANE - ppm C <sub>4</sub>	6.0	11.1	9.6
PENTANE+ - ppm C <sub>5+</sub>	.3	7.6	7.1
METHANE % - UNITS -			
TOTAL % UNITS -	60	1020	950
CHLORIDES	7000		

DRILLING RATE: FT/HR  $\sqrt$  MIN/FT -  
 FROM 49 TO 215

LITHOLOGY CLY-SLTST, SS-clr, amb, grn  
w/ dominant brn oil str, f gr, rd-sbrnd,  
srt, dk brn oil mtr, fri, qtz, vis por

REMARKS dul or-yel flor in all ss,  
flash wh-yel cut flor, Brn cut. low

C<sub>2</sub> readings indicate heavy oil or  
Non productive zone.

NEW ORDERS \_\_\_\_\_

USE ONLY GAS INCREASE OVER BACKGROUND

C<sub>1</sub>° \_\_\_\_\_ M C<sub>3</sub>° \_\_\_\_\_ M C<sub>4</sub>° \_\_\_\_\_ M C<sub>5+</sub>° \_\_\_\_\_ M  
 C<sub>2</sub>° \_\_\_\_\_ M  
 C<sub>1</sub>/C<sub>2</sub>° \_\_\_\_\_ C<sub>1</sub>/C<sub>3</sub>° \_\_\_\_\_ C<sub>1</sub>/C<sub>4</sub>° \_\_\_\_\_ C<sub>1</sub>/C<sub>5+</sub>° \_\_\_\_\_

1. PLOT RATIOS ON LINES INDICATED.
2. EVALUATE SECTION FOR PROBABLE PRODUCTION AS INDICATED BY THE PLOTTED CURVE WITHIN THE FOLLOWING LIMITS:
  - a. PRODUCTIVE DRY GAS ZONES MAY SHOW ONLY C<sub>1</sub> BUT ABNORMALLY HIGH C<sub>1</sub> ONLY SHOWS ARE USUALLY INDICATIVE OF SALT WATER.
  - b. IF THE C<sub>1</sub>/C<sub>2</sub> RATIO FALLS LOW IN THE OIL

**BAROID ppm LOG  
SHOW EVALUATION REPORT**

COMPANY TENNECO OIL CO.  
 WELL PHOENIX NO. 1  
 LOCATION BEAUFORT SEA, AK.  
 FORMATION TOROK  
 DEPTH 7004-7028  
 PROBABLE PRODUCTION GAS

**MUD ANALYSIS**

	BACKGROUND	NET INCREASE	
		PLOT 1	PLOT 2
		DEPTH <u>7010</u>	DEPTH _____
METHANE - ppm C <sub>1</sub>	5163	40731	
ETHANE - ppm C <sub>2</sub>	237	3189	
PROPANE - ppm C <sub>3</sub>	167	1715	
BUTANE - ppm C <sub>4</sub>		1070	
PENTANE+ - ppm C <sub>5+</sub>		22	
METHANE %X UNITS	.5%	4.1%	
TOTAL %X UNITS	.6%	5.7%	
CHLORIDES			

DRILLING RATE: FT/HR X MIN/FT \_\_\_\_\_  
 FROM 35 TO 96

LITHOLOGY SS-wh, gy, frnsl, tr brn stn, vf gr, w srtd,  
rnd - sbrnd, qtz, calc cmt, v fri, gld flor, yel-gn strmg ct,  
lt yel resid ring

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

NEW ORDERS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

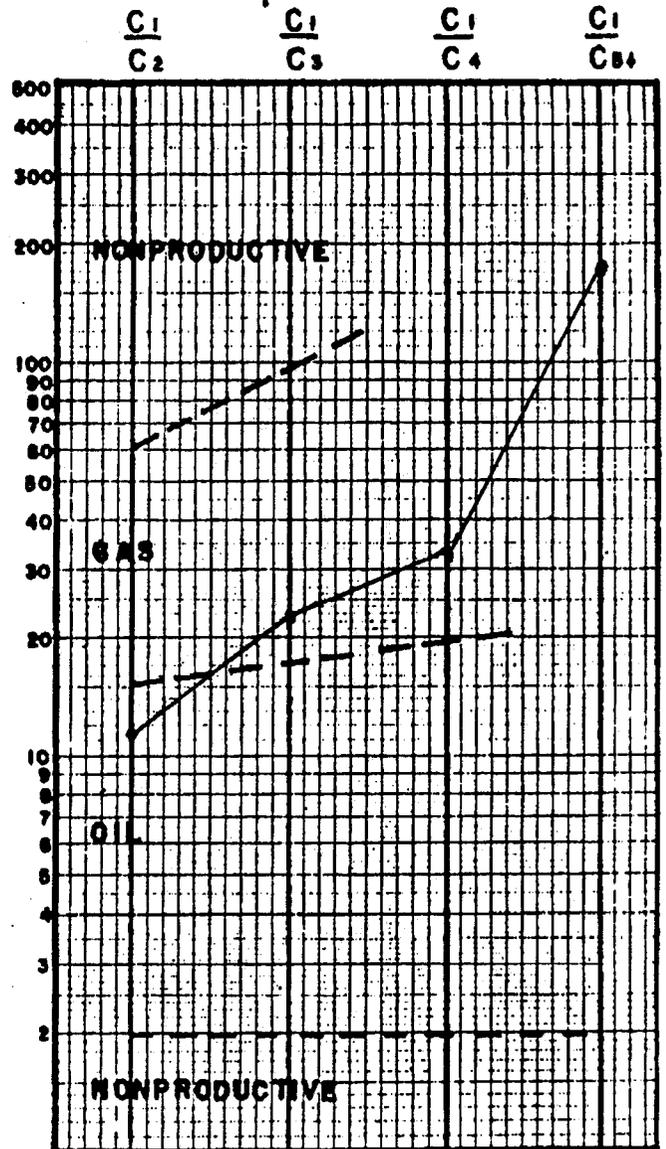
CALLED IN BY \_\_\_\_\_

TALKED TO \_\_\_\_\_

DATE 10/27/86 TIME 19:00 AM \_\_\_\_\_ PM X

BR-30615

**HYDROCARBON RATIOS**



USE ONLY GAS INCREASE OVER BACKGROUND  
 C<sub>1</sub>: 35.6 M C<sub>3</sub>: 1.5 M C<sub>4</sub>: 1.1 M C<sub>5+</sub>: .02 M  
 C<sub>2</sub>: 3.0 M  
 C<sub>1</sub>/C<sub>2</sub>: 11.8 C<sub>1</sub>/C<sub>3</sub>: 23.7 C<sub>1</sub>/C<sub>4</sub>: 32.3 C<sub>1</sub>/C<sub>5+</sub>: 178

1. PLOT RATIOS ON LINES INDICATED.
2. EVALUATE SECTION FOR PROBABLE PRODUCTION AS INDICATED BY THE PLOTTED CURVE WITHIN THE FOLLOWING LIMITS:
  - a. PRODUCTIVE DRY GAS ZONES MAY SHOW ONLY C<sub>1</sub> BUT ABNORMALLY HIGH C<sub>1</sub> ONLY SHOWS ARE USUALLY INDICATIVE OF SALT WATER.
  - b. IF THE C<sub>1</sub>/C<sub>2</sub> RATIO FALLS LOW IN THE OIL SECTION AND THE C<sub>1</sub>/C<sub>4</sub> RATIO FALLS HIGH IN THE GAS SECTION THE ZONE IS PROBABLY NONPRODUCTIVE.
  - c. IF ANY RATIO (C<sub>1</sub>/C<sub>5+</sub> EXCEPTED IF OIL MUD IS USED) IS LOWER THAN A PRECEDING RATIO THE ZONE IS PROBABLY NONPRODUCTIVE. FOR EXAMPLE, IF C<sub>1</sub>/C<sub>4</sub> IS LESS THAN C<sub>1</sub>/C<sub>3</sub> THE ZONE IS PROBABLY WET.
  - d. THE RATIOS MAY NOT BE DEFINITIVE FOR TIGHT, LOW PERMEABILITY ZONES.

12-15-87  
 0338 65

**BAROID ppm LOG  
SHOW EVALUATION REPORT**

COMPANY TENNECO OIL CO.  
 WELL PHOENIX NO. 1  
 LOCATION BEAUFORT SEA, AK.  
 FORMATION TOROK  
 DEPTH 7040-7054  
 PROBABLE PRODUCTION GAS

**MUD ANALYSIS**

	BACKGROUND	NET INCREASE	
		PLOT 1	PLOT 2
		DEPTH <u>7040</u>	DEPTH _____
METHANE - ppm C <sub>1</sub>	5163	28978	
ETHANE - ppm C <sub>2</sub>	237	1667	
PROPANE - ppm C <sub>3</sub>	167	927	
BUTANE - ppm C <sub>4</sub>		541	
PENTANE+ - ppm C <sub>5+</sub>			
METHANE % X UNITS	.5%	2.9%	
TOTAL % X UNITS	.6%	3.7%	
CHLORIDES			

DRILLING RATE: FT/HR X MIN/FT \_\_\_\_\_  
 FROM 35 TO 88

LITHOLOGY SS-wh, lt ay, trnsl, tr brn, vf gr, w srt'd,  
rnd - sbrnd, qtz, calc cmt, v fri, gld flor, yel strmg ct  
flor, lt yel resid ring

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

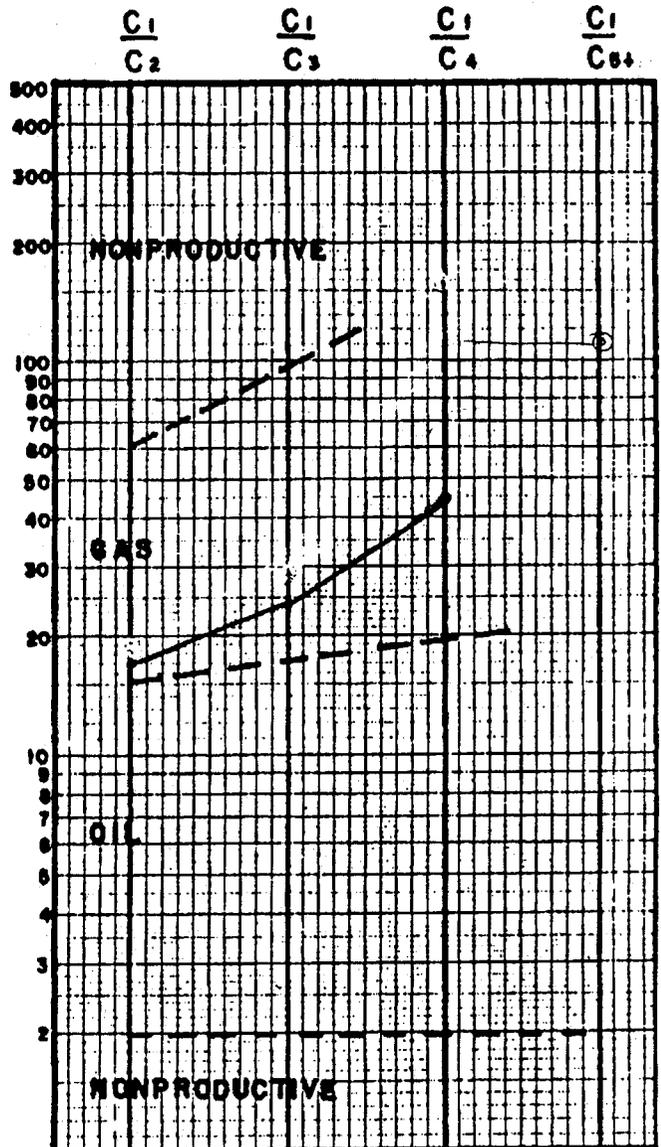
NEW ORDERS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

CALLED IN BY \_\_\_\_\_  
 TALKED TO \_\_\_\_\_

DATE 10/27/86 TIME 20:00 AM \_\_\_ PM X

BR-30615

**HYDROCARBON RATIOS**



USE ONLY GAS INCREASE OVER BACKGROUND  
 C<sub>1</sub>: 23.8 M C<sub>3</sub>: .760 M C<sub>4</sub>: .541 M C<sub>5+</sub>: \_\_\_\_\_ M  
 C<sub>2</sub>: 1.4 M  
 C<sub>1</sub>/C<sub>2</sub>: 17 C<sub>1</sub>/C<sub>3</sub>: 24.5 C<sub>1</sub>/C<sub>4</sub>: 44 C<sub>1</sub>/C<sub>5+</sub>: \_\_\_\_\_

1. PLOT RATIOS ON LINES INDICATED.
2. EVALUATE SECTION FOR PROBABLE PRODUCTION AS INDICATED BY THE PLOTTED CURVE WITHIN THE FOLLOWING LIMITS:
  - a. PRODUCTIVE DRY GAS ZONES MAY SHOW ONLY C<sub>1</sub> BUT ABNORMALLY HIGH C<sub>1</sub> ONLY SHOWS ARE USUALLY INDICATIVE OF SALT WATER.
  - b. IF THE C<sub>1</sub>/C<sub>2</sub> RATIO FALLS LOW IN THE OIL SECTION AND THE C<sub>1</sub>/C<sub>2</sub> RATIO FALLS HIGH IN THE GAS SECTION THE ZONE IS PROBABLY NONPRODUCTIVE.
  - c. IF ANY RATIO (C<sub>1</sub>/C<sub>n</sub> EXCEPTED IF OIL MUD IS USED) IS LOWER THAN A PRECEDING RATIO THE ZONE IS PROBABLY NONPRODUCTIVE. FOR EXAMPLE, IF C<sub>1</sub>/C<sub>2</sub> IS LESS THAN C<sub>1</sub>/C<sub>3</sub>, THE ZONE IS PROBABLY WET.
  - d. THE RATIOS MAY NOT BE DEFINITIVE FOR TIGHT, LOW PERMEABILITY ZONES.

0338 12-15-87  
 615

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

SUBMIT IN DUPLICATE\*

LEASE NO.

OCS Y-0338

6. AREA & BLOCK

Harrison Bay NR 5-4, Block 284

7. WELL NO.

#1

8. UNIT AGREEMENT NAME

N/A

9. FIELD

Wildcat

10. EXPLORATION

DEVELOPMENT

11. ADJACENT STATE

Alaska

12. API NO.

55-231-00005

WELL-COMPLETION OR RECOMPLETION REPORT AND LOG\*

1a. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other \_\_\_\_\_

b. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP-EN  PLUG BACK  DIFF. RESVR.  Other \_\_\_\_\_

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR  
3201 "C" Street, Suite 406

4. LOCATION OF WELL (Report location in accordance with instructions)\*  
At surface Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
At top prod. interval reported below  
At total depth

13. DATE SPUDDED 9/23/86 14. DATE T.D. REACHED 11/30/86 15. DATE COMPL. OR OPERATIONS FINALIZED 12/19/86 16. ELEVATION\* RKB 108.5' DF Same 17. WATER DEPTH 61'

18. TOTAL DEPTH, MD & TVD 9866' 19. PLUG BACK, T.D., MD & TVD Abandoned 20. IF MULTIPLE COMPL., HOW MANY\* None

21. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD) N/A  
RECEIVED  
OCS DISTRICT OFFICE  
22. WAS DIRECTIONAL SURVEY MADE Yes

23. TYPE ELECTRIC AND OTHER LOGS RUN See Attachment #2  
JAN 27 1987  
24. WAS WELL CORED Yes

25. CASING RECORD (Report all strings set in well)  
MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

CASING SIZE & GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	AMOUNT PULLED
See Attachment #2				

26. LINER RECORD

SIZE & GRADE	TOP (MD)	BOTTOM (MD)	CU. FT. CEMENT	SCREEN (MD)
N/A				

27. TUBING RECORD

SIZE & GRADE	DEPTH SET (MD)	PACKER SET (MD)
N/A		

28. PERFORATION RECORD (Interval, size and number)

DST#1, 7005'-7060' - 5" gun w/12 SPF, 120° Phasing  
DST#3, 4650'-4704' - 5" gun w/12 SPF, 120° Phasing  
P&A 2000' - 2002' - 4 SPF

29. ACID, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6955'-7160'	Squeeze 73 sacks cement
4600'-4804'	Squeeze 73 sacks cement
1950'-2002'	Squeeze 300 sacks cement

30\* See Attachment #4 PRODUCTION

DATE FIRST PRODUCTION \_\_\_\_\_ PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) \_\_\_\_\_ WELL STATUS (Producing or shut-in) P & A

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.)

31. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) N/A TEST WITNESSED BY J. Reeves & R. Riggins

32. LIST OF ATTACHMENTS Attachment #1 Well History, Attachment #2 Casing, Cementing and Logging Report, Attachment #3 Coring Summary, Attachment #4 Drill Stem Testing, Attachment #5 Geologic Markers

33. Subsurface Safety Valve: Manu. and Type N/A Set @ \_\_\_\_\_ Ft.

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records  
SIGNED Robert J. Medley TITLE Sr. Enr./Safety Coord DATE 1/27/87

General: This form is designed for summarizing a complete and correct well completion report and log. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to procedures and practices may be obtained from the local District Office. See instructions on items 20, 21, and 30 below, regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable regulations. All attachments should be listed on this form, see item 32.

Item 4: Locations should be described in accordance with the instructions of the local District Office. In the Gulf of Mexico Region, indicate the distance in feet to the nearest block lines.

Item 16: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Item 20 and 21: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 20 and in item 21 show the producing interval, or intervals, top(s), bottom(s), and name(s) (if any) for only the interval reported in item 30. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 30: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for item 20 and 21 above.)

35. SUMMARY OF POROUS ZONES: SHOW ALL ZONES CONTAINING HYDROCARBONS; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL, TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES				36. GEOLOGIC MARKERS		
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	
					MEAS. DEPTH	TRUE VERT. DEPTH
See Attachments #3 and 4				See Attachment #5		

ATTACHMENT #1

OCS Y-0338, HB 284#1

WELL HISTORY

Initiated limited site preparation activities on SSDC at 23:00 9/5/86. This included driving the 60" caisson to 226' and washed from the 226'-354' with a 26" bit and opened to 42" hole. The 30" structural casing was set and cemented at 343' with 1750 sacks of Canadian permafrost. The diverter system was nipped up and operations suspended pending approval to spud well.

Approval to drill and set the 20" conductor casing was obtained for MMS on 9/19/86 and concurrence from State of Alaska on 9/22/86. Well was spudded at 01:30 on 9/23/86. This section was drilled with two (2) 26" bits from 354'-915' and the 20" casing was set and cemented with 2262 sacks of Canadian permafrost at 881'. A 24" riser was run and a 20 3/4" 3000 psi stack nipped up.

After an open water/freeze-up oil spill drill was conducted on 9/28/86, approval to drill out from under the 20" casing to TD was received on 10/2/86. Drilled a 17 1/2" hole from 915'-3126' with two (2) 17 1/2" bits and set 13 3/8" casing at 3080' with 2400 sacks of Canadian permafrost followed by 672 sacks of Class "G". Placed 300 sacks of Canadian permafrost in the 13 3/8" x 20" annulus at 581'. The cement in 13 3/8" was drilled out and the external casing packer set. The 24" riser was nipped down and a 18" high pressure riser nipped up with the 1000 psi BOP's. Drilled a 12 1/4" hole from 3162'-7549' with four (4) 12 1/2" bits. Schlumberger rigged up and ran logs to 7549'. Cut a core with a reverse circulating basket to 7552'. Set 9 5/8" casing with float shoe, float collar and Vetco hanger at 7512; with 1500 sacks of Class "G".

Drilled 8 1/2" hole from 7522'-9866' with seven (7) drill bits and seven (7) core bits. Correlation logs were run at a depth of 8377'. Continued to TD and ran open hole logs. D.S.T. were run in two zones and the well was plugged and abandoned at 17:00 on 12/19/86.

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ATTACHMENT #2  
 OCS Y-0338, HB 284#1  
 CASING, CEMENTING AND LOGGING REPORT

I. CASING AND CEMENTING

<u>Casing Size &amp; Grade</u>	<u>Wgt. (lb/ft.)</u>	<u>Depth Set (MD)</u>	<u>Hole Size</u>	<u>Cementing Record</u>
30" - X52	310	343'	42"	1750 SX Canadian Permafrost
20" - X70	133	881'	26"	2262 SX Canadian Permafrost
13 3/8"- L80	72	3080'	17½"	2400 SX Canadian Permafrost 672 SX Class "G"
9 5/8"- L80	47	7512'	12¼"	1500 SX Class "G"

60" Drive pipe cut back to 13' BML

II. LOGS

A. Schlumberger Logs Run

<u>Log</u>	<u>Hole Section</u>
DISFL/GR/BHCS	17½"
TEMP/GR	"
DISF/LSS/GR	12¼"
LDT/CNL/NGT	"
CNL/GR	"
SHDT (4arm)	"
RFT	"
DIL/GR/SP	8½"
LDT/CNL/GR	"
LSS/GR	"
DIL/GR/LSS	"
LDT/CNL/NGT/MSFL	"
SHDT	"
RFT	"
VSP	"

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B. MWD/Directional Surveys

Teleco provided these services and logged in both the 12¼" and 8½" sections.

C. Mud Logging

Baroid provided mud logging services from spud to TD.

More detailed information on logging runs will be/has been provided with submittal of information required in Condition #4 of Conditions of Approval to Drill (7/31/86).

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ANCHORAGE, ALASKA

ATTACHMENT #3  
 OCS Y-0338, HB 284#1  
 CORING SUMMARY

<u>Core #</u>	<u>Core Barrel Length</u>	<u>Interval Cored</u>	<u>Footage Cored</u>	<u>Footage Recovered</u>	<u>Penetrate Rate</u>
1	61'	7592'-7653'	61'	61'	4.1
2	61'	7653'-7714'	61'	61'	5.5
3	92'	7730'-7816'	86'	86'	24.9
4	"	7816'-7889'	73'	71.5'	16.0
5	"	7889'-7980'	91'	92.5'	5.1
6	"	7920'-8045'	65'	65'	6.3
7	"	8045'-8137'	92'	92'	8.2
8	"	8137'-8213'	76'	75'	9.5
9	"	8213'-8276'	63'	63'	6.0
10	"	8276'-8358'	82'	82'	6.8
11	"	8358'-8362'	4'	1'	--
12	"	8377'-8424'	47'	37'	9.2
13	"	8424'-8494'	70'	70'	23.3
14	"	8494'-8544'	50'	50'	6.2

Sidewall Cores

Sidewall cores were taken at the casing point for the 13 3/8", 9 5/8" casing and at the bottom of the 8 1/2" hole. Interpretive data will be submitted with core analysis required in Condition #7 of OCS Conditions of Approval to Drill (7/31/86).

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DRILLSTEM TEST DATA

DST #1 DST#1 was conducted on the TOROK formation, interval 7005' to 7060', on December 7 through December 9, 1986. The zone was perforated with 12 shots per foot through 9-5/8" casing with tubing conveyed guns, interval 7005'-7060' MD and TVD, utilizing 1500 psi underbalance. The well did not surface. Swabbing operations were commenced; seventeen swab runs were made in 21 hours, recovering a total of 57 bbls. consisting of 30 bbls. water cushion and 27 bbls. formation fluid (water -13,000 ppm Cl.). An additional 35 bbls. of formation fluid was reversed out, for a total recovery of 62 bbls. (formation fluid) during the test. The tool was open a total of 34 hours, 33 minutes. Final fluid analysis was: 99% water, 1% oil and solids, Cl. 12,500 ppm, pH 6.1, Weight 8.4 ppg, Oil Gravity 15.4°API. The well was closed in for 1 hour and 05 minutes for pressure build up.

	<u>Date</u>	<u>Time</u>	<u>Pressure*</u> (psi)
IHH	12-7-86	1800	3459
IFP	12-7-86	1850	1550
ISIP	12-7-86	2005	2987
FFP	12-9-86	0638	2240
FSIP	12-9-86	0743	2800

Average Swab Rate: 65.1 BPD (Water)  
No Measurable Gas  
Chloride Content of water: 12,500 ppm

\*Pressure gauge located at 6946 feet.

<u>Cushion Type</u>	<u>Length</u>	<u>Amount</u>
Fresh Water	3465.00'	25.5 bbl.

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FEB 17 1987

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ANCHORAGE, ALASKA

6.B.2

DRILLSTEM TEST DATA

DST #2 DST #2 was conducted on the West-Sak formation, interval 4650' to 4704', on December 11 through December 13, 1986. The zone was perforated with 12 shots per foot through 9-5/8" casing with tubing conveyed guns, interval 4650'-4704' MD and TVD, utilizing 340 psi underbalance. The well surfaced fluid after 3 hours. The well failed to flow at a measurable rate, and swabbing operations were commenced to obtain recovery from the well. A total of nineteen swab runs were made in 18 hours, recovering a total of 125 bbls. consisting of 38 bbls. water cushion and 87 bbls. formation fluid (oil - 21.3° API). An additional 35 bbls. of formation fluid was reversed out, for a total of 122 bbls. (formation fluid) during the test. The tool was open a total of 24 hours and 52 minutes during the test. Final fluid analysis was: 100% Oil, 0% BS&W, Oil Gravity 21.3° API, Gas TSTM, GOR-Not Measurable. The well was closed in for 12-1/2 hours for pressure build up.

	<u>Date</u>	<u>Time</u>	<u>Pressure*</u> <u>(psi)</u>
IHH	12-11-86	1130	2493
IFP	12-11-86	1134	1810
ISIP	12-11-86	1237	2053
FFP	12-12-86	1326	1731
FSIP	12-13-86	0200	1850

Average Swab Rate: 166.7 BPD (Water)  
No Measurable Gas  
Oil Gravity: 21.3° API

\*Pressure gauge located at 4570 feet.

<u>Cushion Type</u>	<u>Length</u>	<u>Amount</u>
Fresh Water	3880.75'	28.5 bbl.

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ATTACHMENT NO. 4

PHOENIX DRILL STEM TESTS

D.S.T. #1 The initial D.S.T. of the Phoenix well was performed on December 7, 8, and 9, 1986. The well was perforated through 9 5/8" casing with tubing conveyed guns from 7005'-7060' MD and TVD (1,500 psi under balance). The well did not surface and swabbing operations were commenced. A total of 17 swab runs were made with a total fluid recovery of 57 Bbls. The final fluid analysis yielded the following results: 99% Water; 1% Oil and Solids; CL = 12,000 ppm; pH = 6.2; Wt. = 8.4 ppg and Oil Gravity = to 15.4° API.

Reservoir Pressure = 3042 psi.

D.S.T. #2 D.S.T. #2 was not performed due to results from D.S.T. #1.

D.S.T. #3 D.S.T. #3 was performed on December 11, 12 and 13, 1986. The well was perforated through 9 5/8" casing with tubing conveyed guns from 4650'-4704' MD and TVD (340 psi under balance). The well surfaced after 3 hours and swabbing operations were commenced in an attempt to increase the flow rate. The well never flowed at a measureable rate and a total of 19 swab runs yielded 125 Bbls. of fluid recovery before operations were suspended. The final fluid analysis yielded the following results: 100% Oil; BS & W = 0; Oil Gravity = 21.3° API; GOR was not measureable.

Reservoir Pressure = 2053 psi.

<u>Test #</u>	<u>Cushion Type</u>	<u>Length</u>	<u>Amount</u>	<u>Under Balance</u>
DST #1	Fresh Water	3465.00'	25.5 BBL.	1495 psi
DST #3	"	3880.75'	28.5 BBL.	338 psi

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**Tenneco Oil**  
**Exploration & Production**  
A Tenneco Company

Calais I Office Center  
3201 "C" Street, Suite 406  
Anchorage, Alaska 99503  
(907) 561-5458



January 23, 1987

Mr. Brian Schoof  
District Supervisor  
Minerals Management Service  
District Office  
949 E. 36th Avenue, Suite 503  
Anchorage, AK 99510

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JAN 26 1987  
*[Signature]*  
MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

Re: Additional Information  
Required for Condition #5  
of the Condition for  
Approval to Drill (7/31/86)

Dear Mr. Schoof:

Please incorporate the following Geological Marker information to our Completion Report submittal (1/16/87) for the Phoenix Well #1.

<u>Name</u>	<u>Measured Depth</u>
Pliocene	510'
Miocene - Pliocene	930'
Eocene	1620'
Paleocene	2160'
Late Cretaceous	4200'
Early Cretaceous	6030'
Triassic - Jurassic	7710'
Permo - Triassic	8040'
Pennsylvanian	8690'
Mississippian	9560'
Pre - Mississippian	9680'

If you should have any questions, please do not hesitate to contact me at (907) 561-5458.

Yours truly,

*Robert J. Medler*

Robert J. Medler  
Sr. Env./Safety Coordinator

/jlm

ATTACHMENT #5

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

5. LEASE NO.

OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS (MSL)  
RKB 108.5 ft DF Same

14. WATER DEPTH  
61 ft.

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:

ACIDIZE	<input type="checkbox"/>	SUBSEQUENT REPORT OF:	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>		<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>		<input type="checkbox"/>
(Other) See Below			

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ANCHORAGE, ALASKA

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

16. 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.)\*

Abandonment Procedure Below 9 5/8" Casing - See Attachment  
(Verbal Approval Received: Nabil Masri (12-3-86))

Drill Stem Testing Procedure (D.S.T. #1, #2, & #3) - See Attachment  
(Verbal Approval Received: Nabil Masri (12-5-86))

Abandonment Procedure - Drill Stem Test #1 - See Attachment  
(Verbal Approval Received: Nabil Masri (12-9-86) & Brian Schoof (12-9-86))

Note: D.S.T. #2 (6580'-6700') will not be performed.

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED [Signature] TITLE Drilling Superintendent DATE 12-9-86

(This space for Federal or State office use)

APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE DEC 11 1986  
CONDITIONS OF APPROVAL, IF ANY:

U. S. GOVERNMENT COPY

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OCS DISTRICT OFFICE

DEC 10 1986

Date: 12-3-86

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

ABANDONMENT PROCEDURE BELOW 9 5/8" CASING

(Isolation of Zones in Open Hole and Isolation of Open Hole)

- 1) TIH with drillpipe and 282' of 2 7/8" stinger; CBU; Spot 200' cement plug 8800' - 8600'.  
(105 sacks Class G + Friction Reducer + Retarder)
- 2) Pull into 9 5/8-in. casing and CBU; POH
- 3) PU a 9 5/8-in EZSV retainer and TIH; Set retainer at 7437' (75' above 9 5/8-in. shoe); Test retainer with 20,000# of weight; Squeeze 338' of cement below the 9 5/8-in shoe to 7850' (230 sacks\*) and place 50' of cement ( 20 sacks\*) on top of the retainer.

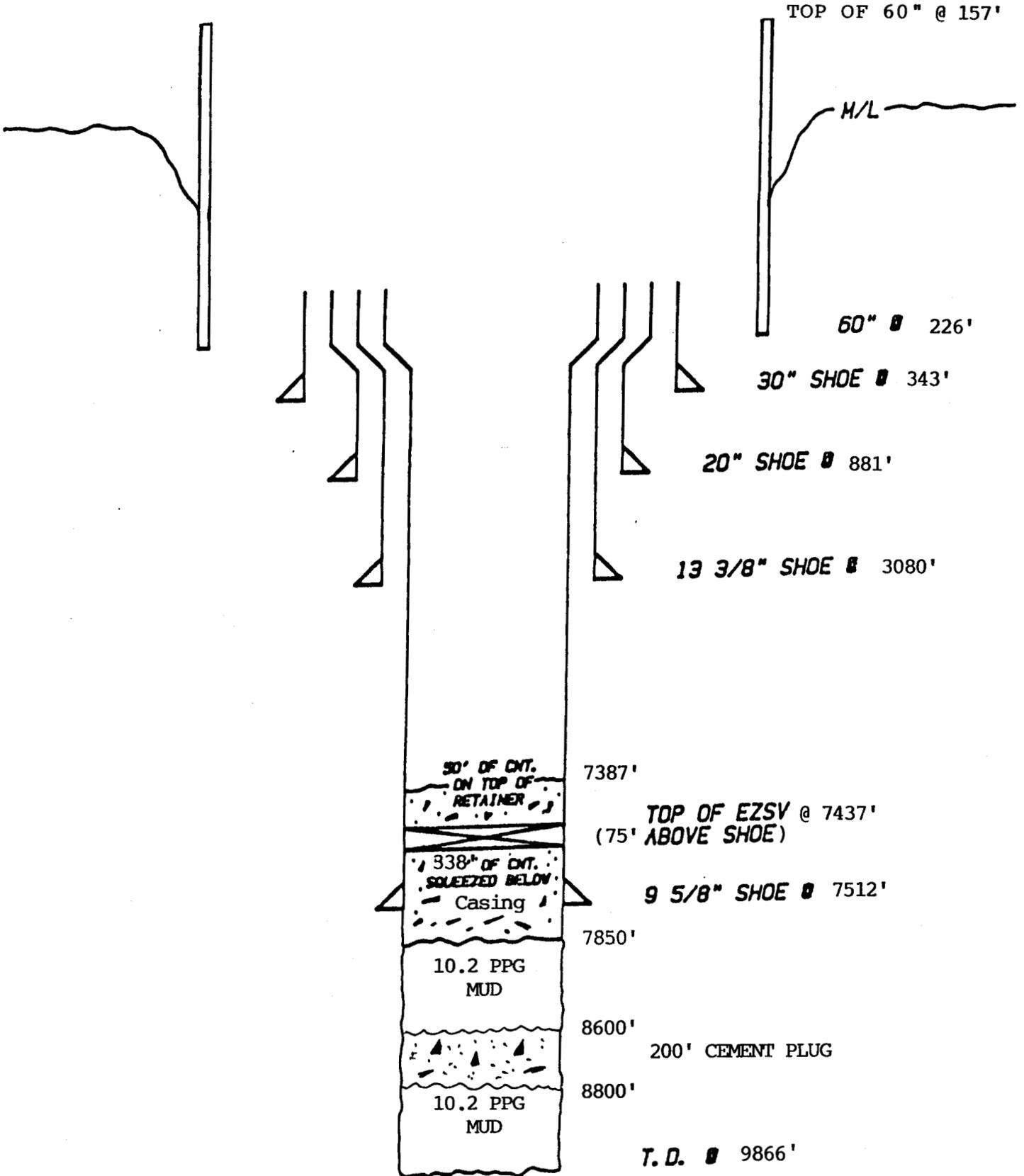
\*Same slurries as above.

- 4) Pressure test casing to 3500 psi; POH.

See Attached Schematic

Verbal approval received: Nabil Masri - MMS (12-3-86).

*J. Lamb Henrich*  
Drilling Superintendent  
Tenneco Oil Company



TOP OF 60" @ 157'

M/L

60" @ 226'

30" SHOE @ 343'

20" SHOE @ 881'

13 3/8" SHOE @ 3080'

30' OF CNT.  
ON TOP OF  
RETAINER

7387'

TOP OF EZSV @ 7437'  
(75' ABOVE SHOE)

938' OF CNT.  
SQUEEZED BELOW  
Casing

9 5/8" SHOE @ 7512'

7850'

10.2 PPG  
MUD

8600'

200' CEMENT PLUG

10.2 PPG  
MUD

8800'

10.2 PPG  
MUD

T.D. @ 9866'

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, Ak 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:

ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>	<input type="checkbox"/>
PERMANENT ABANDONMENT	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>	<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>	<input type="checkbox"/>

(Other) See below.

16. 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.)\*

Abandonment Procedure - Drill Stem Test #3 - See Attachment

Permanent Abandonment Procedure - See Attachment

5. LEASE NO.  
OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS (MSL)  
RKB 108.5 ft. DF Same

14. WATER DEPTH  
61 ft.

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

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MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED Frank Henke TITLE Drilling Superintendent DATE 12-12-86

(This space for Federal or State office use)  
APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE DEC 12 1986  
CONDITIONS OF APPROVAL, IF ANY:

U. S. GOVERNMENT COPY

G.B.2  
Y0338#1

**Tenneco Oil**  
**Exploration & Production**  
A Tenneco Company

Calais I Office Center  
3201 "C" Street, Suite 406  
Anchorage, Alaska 99503  
(907) 561-5458



December 5, 1986

Mr. Brian Schoof  
District Supervisor  
Minerals Management Service  
District Office  
949 E. 36th Avenue, Suite 503  
Anchorage, AK 99510

**RECEIVED**  
**DCS DISTRICT OFFICE**

**DEC 05 1986**  
**MINERALS MANAGEMENT SERVICE**  
**ANCHORAGE, ALASKA**

Re: DRILL STEM TESTING  
Phoenix #1  
OCS-Y-0338

Dear Mr. Schoof:

Tenneco will begin testing the Phoenix Well #1 in the near future. Three tests are proposed for the Well. All tests will be performed in the 9 5/8" casing. The intervals to be tested are as follows:

D.S.T. #1 - 7005' - 7060'  
D.S.T. #2 - 6580' - 6700'  
D.S.T. #3 - 4650' - 4704'

Enclosed for your review are the following items pertaining to the testing operations:

- I. D.S.T. PROCEDURE
- II. PROPOSED DOWNHOLE TOOL SCHEMATIC
- III. SURFACE EQUIPMENT SCHEMATIC
- IV. SURFACE SAFETY SYSTEM SCHEMATIC
- V. WELLBORE SCHEMATIC SHOWING ISOLATION OF PERFORATED INTERVALS

Tenneco requests that this information be kept confidential. If you have any questions please call me.

Sincerely,

*Frank Henicke*

F. G. Henicke  
Drilling Superintendent

FGH:BJM:mh  
Enclosures

PHOENIX WEST TESTING PROCEDURE  
DST #1

DEC 05 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

NOTE: All cased hole logging and squeezing is to have been accomplished prior to the start of well test operations.

1. Test casing to 3500 psi.
2. Inspect all downhole tools and function test PCT tool with hand pump to ensure valve opens prior to running in the hole. Make up tool string described in Figure 1. Pressure test tool string to 3500 psi.
3. Run in hole with 3½-in tubing (enough to provide a 3500-ft water cushion above the PCT). See attached tubing handling procedure.
4. After loading water cushion (tagged with nitrates), pressure test tubing string to 3500 psi for 10 minutes.
5. Run test string to packer setting depth taking fluid level reading every 500 ft with Fluid Level Services (FLS) instrument.
6. Rig up surface equipment and test surface equipment to 3500 psi with glycol treated water.
7. Run GR/Neutron/CCL to put packer on depth. Set packer. Collapse slip joints and HRT and pick up 2½'.
8. Open PCT with 1500 psi annular pressure. Confirm PCT opening by FLS.
9. Wait five minutes, then fire perforating guns with 2000 psi annular pressure. Perforate with Schlumberger 5-in gun with twelve (12) shots per foot, 120° phasing. Perforated zone is 7005-7060 (55').
10. Flow well for five-minute initial flow. Take check shots with FLS to establish fluid levels at approximately 30-second intervals.
11. Shut-in PCT by releasing 1500 psi annular pressure. Confirm PCT is closed with FLS. Leave well shut-in for 60 minutes.
12. Open well for second flow period by pressuring up PCT to 1500 psi.
13. When fluids flow to surface, direct fluids through variable choke into storage tanks and gauge, taking samples as required. Gradually increase flow to a stable rate. If fluid is water proceed to Step 17.
14. If well flows oil to surface, allow well to stabilize. Produced fluids should be directed through heater and separator. Take samples of fluids from separator for PVT analysis. Flow well as directed after obtaining a stabilized rate. If no multirate testing is required go to Step 19.

15. Shut-in PCT for buildup (at least  $1\frac{1}{2}$  times flow period).
16. If additional multirate testing is required, open PCT and bring well up to previous stabilized rate. Increase flow rate in increments as needed until a maximum rate is obtained.
17. If produced fluid is water, flow a minimum of one (1) hour. (Confirm that fluid is formation fluid). Proceed to Step 19.
18. If fluids do not reach surface during second flow period, allow well to die and confirm using FLS instruments. Rig up swabbing unit and attempt to swab well in. If well does not flow, proceed to Step 19.
19. Shut well in with permanent closure of dual ball sampler with 3000 psi annular pressure. Open reversing valve\* and reverse out produced fluid, taking samples as required.
20. Reverse out three (3) tubing volumes and ensure well is dead. Check with reservoir engineer to ensure adequate SI time. Rig down surface equipment.
21. Release packer and circulate 2X bottoms up. POOH with tool string. Drain dual ball sampler at surface to confirm surface fluid samples and transfer sample to suitable container.
22. Read SSDP pressure gauges and analyze test data.
23. Prepare and ship samples to Houston.
24. Run EZSV in hole on 5-inch drill pipe and set above perforations at 6950'. Inject produced fluids into formation if warranted. Squeeze perforations and abandon zone as per Alaska OCS Orders.
25. Pull drill pipe and EZSV running tool. Prepare for next test.

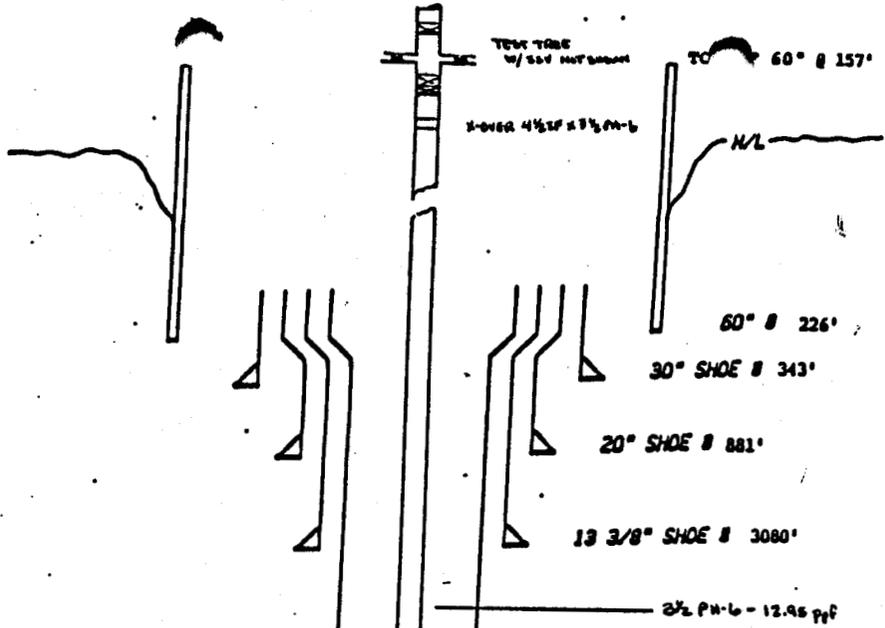
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\* Reversing can be done utilizing the MIDRV (Multiple ID Reversing Valve) with 1500 psi tubing pressure or with SSARV (Single Shot Annular Reversing Valve) with 3000 psi annular pressure.



PHOENIX TEST #1  
 PERFORATION INTERVAL  
 7005' - 7060'  
 12 SPF - 120° PHASING

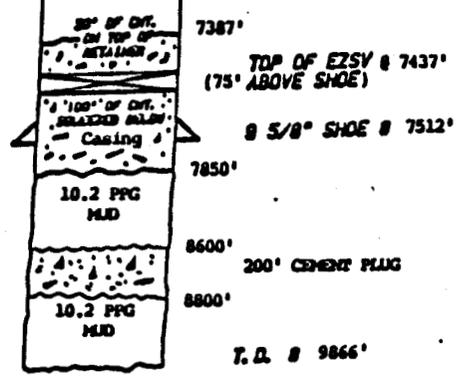
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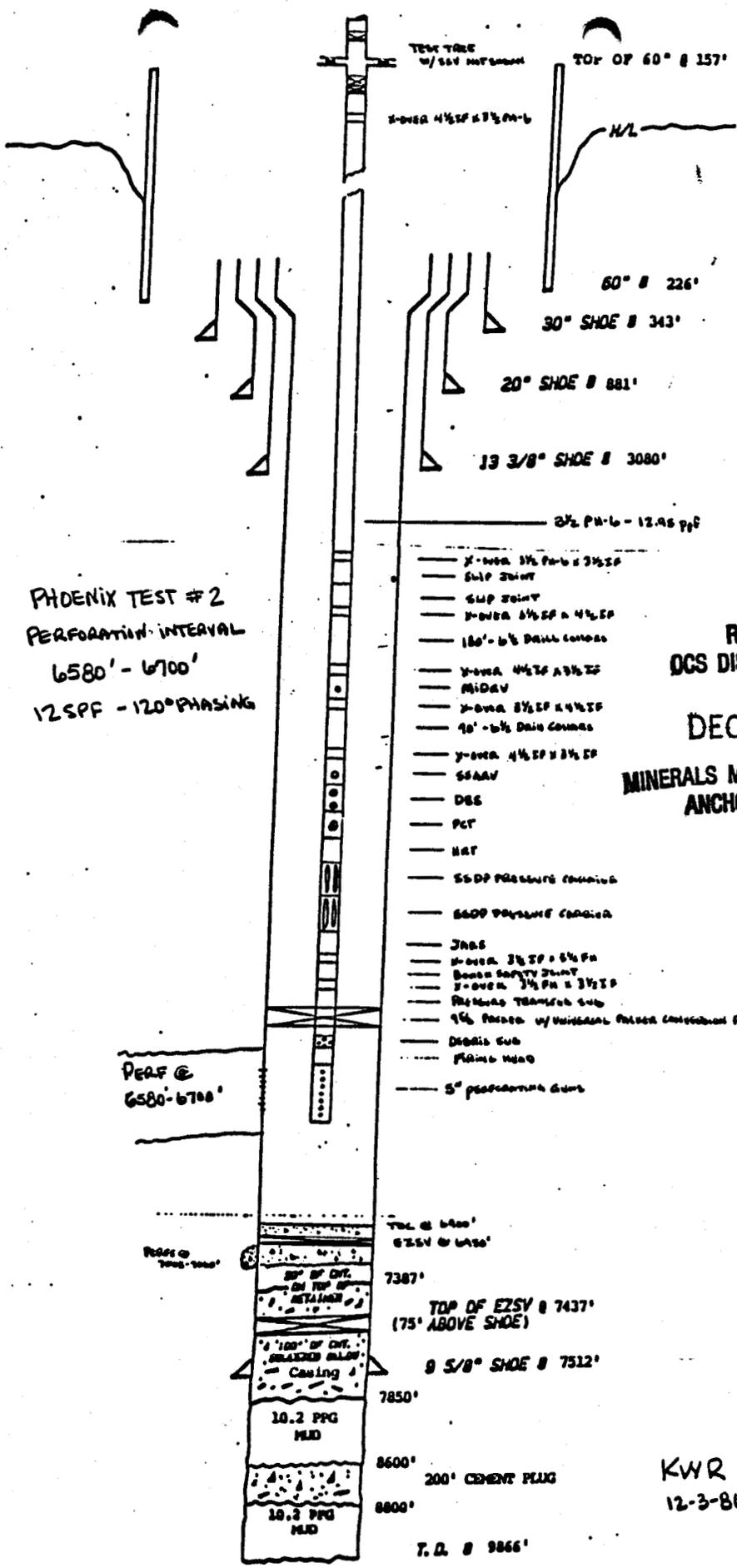
MINERALS MANAGEMENT SERVICE  
 ANCHORAGE, ALASKA

- 2 1/2" PH-6 - 12.95 ppg
- 2" OVER 3 1/2" SP x 3 1/2" SP
- SLIP JOINT
- SLIP JOINT
- 2" OVER 3 1/2" SP x 4 1/2" SP
- 180' - 6 1/2" DRILL COLLARS
- 2" OVER 4 1/2" SP x 3 1/2" SP
- MIDWAY
- 2" OVER 3 1/2" SP x 4 1/2" SP
- 90' - 6 1/2" DRILL COLLARS
- 2" OVER 4 1/2" SP x 3 1/2" SP
- SCAV
- DCS
- PCT
- HAT
- 5600 PRESSURE COLLARS
- 6600 PRESSURE COLLARS
- JAIL
- 2" OVER 3 1/2" SP x 4 1/2" SP
- BOTTOM SUPPORT JOINT
- 2" OVER 3 1/2" PH x 3 1/2" SP
- PERFORATION TUBING SUB
- 9 1/2" PRESSURE WELDED PULVERIZED PORTLAND CEMENT
- DEBRIS SUB
- PLUMB HEAD
- 5" PERFORATION GUNS

Perf @  
 7005' - 7060'



KWR  
 12-3-86



PHOENIX TEST #2  
 PERFORMANCE INTERVAL  
 6580' - 6700'  
 12SPF - 120° PHASING

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- 2- OVER 3 1/2" PA-6 & 3 1/2" SP
- S&S POINT
- S&S POINT
- 2- OVER 3 1/2" SP & 4 1/2" SP
- 180' - 6 1/2" DRILL COLLARS
- 2- OVER 4 1/2" SP & 3 1/2" SP
- MIDWAY
- 2- OVER 3 1/2" SP & 4 1/2" SP
- 10' - 6 1/2" DRILL COLLARS
- 2- OVER 4 1/2" SP & 3 1/2" SP
- S&S AV
- DCS
- PCT
- NAT
- S&S PRESSURE COLLARS
- S&S PRESSURE COLLARS
- JMS
- 2- OVER 3 1/2" SP & 3 1/2" PA
- DOWN SAFETY POINT
- 2- OVER 3 1/2" PA & 3 1/2" SP
- PHOENIX THERMOC. SUB
- 1 1/2" PACKER w/ MINERAL FILLER COLLECTION RATEP
- DEDIC. SUB
- PLUMB HEAD
- 5" PERFORMANCE GUM

PERF @  
 6580'-6700'

PERF @  
 7000'-7050'

TOT. @ 6400'  
 6250' @ 6450'

7387'

TOP OF EZSY @ 7437'  
 (75' ABOVE SHOE)

9 5/8" SHOE @ 7512'

7850'

10.2 PPG MUD

8600'

200' CEMENT PLUG

8800'

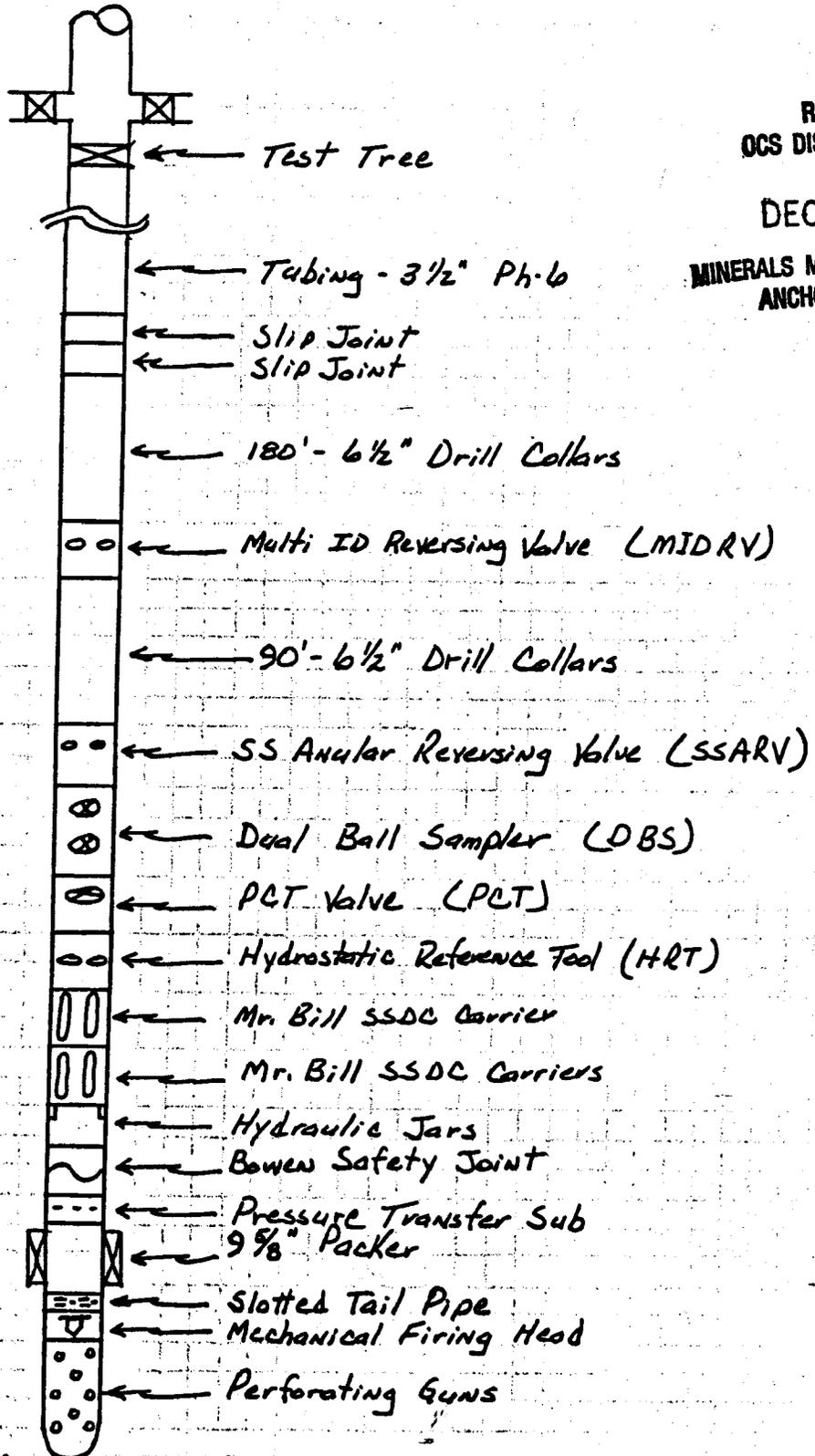
10.2 PPG MUD

T. D. @ 9866'

KWR  
 12-3-86



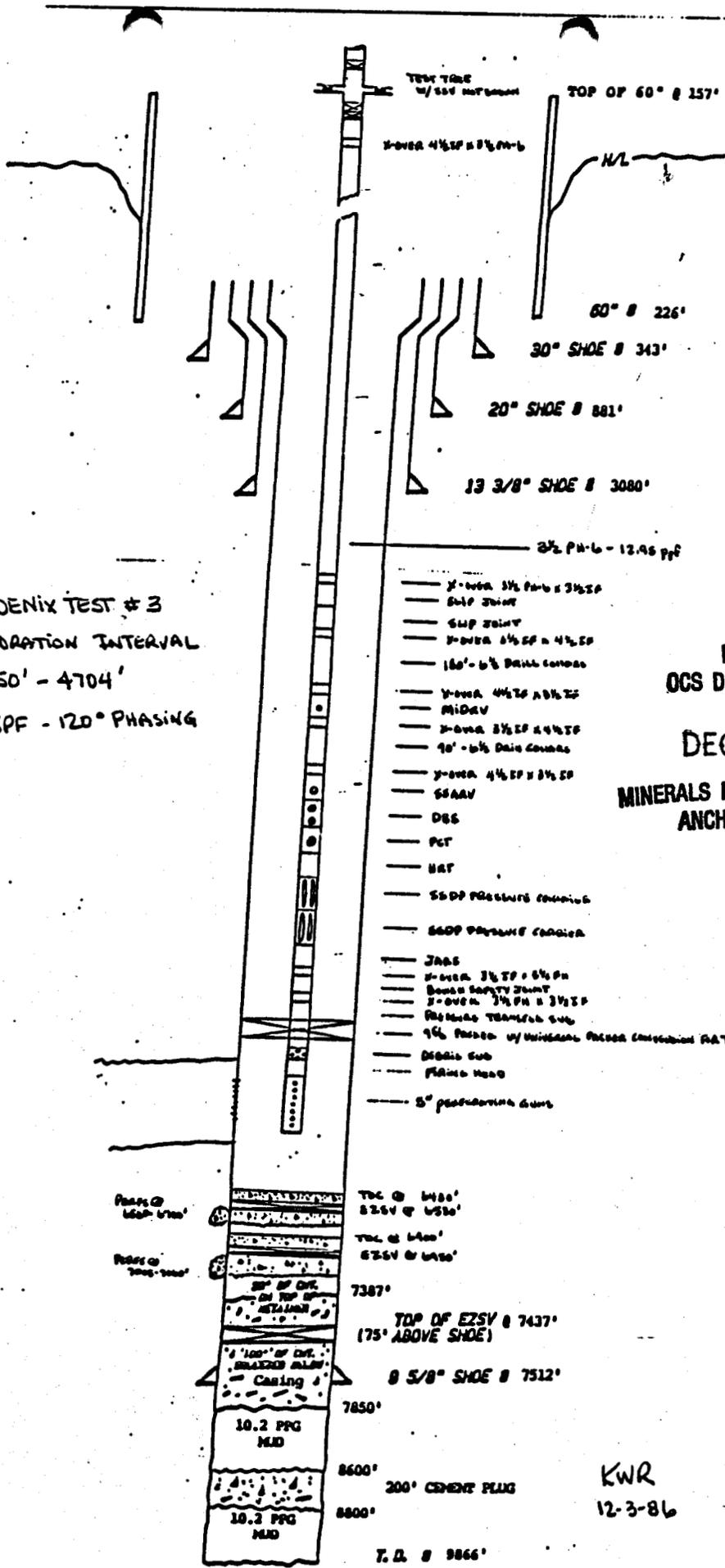
COMPANY TENNECO Oil Co. DEPT. Frontier Projects  
 SUBJECT Phoenix Project - Drill Stem Test Tool String  
 LOCATION Beaufort Sea BY K.J.P. DATE 12/5/86



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PHOENIX TEST # 3  
 PERFORATION INTERVAL  
 4650' - 4704'  
 12SPF - 120° PHASING

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 ANCHORAGE, ALASKA

- 2" OVER 3 1/2" PH x 3 1/2" SP
- SLIP JOINT
- SLIP JOINT
- 2" OVER 3 1/2" SP x 4 1/2" SP
- 1 1/2" - 1 1/2" DRILL COLLARS
- 2" OVER 4 1/2" SP x 4 1/2" SP
- MIDVAL
- 2" OVER 3 1/2" SP x 4 1/2" SP
- 90° - 1 1/2" DRILL COLLARS
- 2" OVER 4 1/2" SP x 3 1/2" SP
- SSAAV
- DCS
- PCT
- NAT
- SSDF PRESSURE CONTROL
- SSDF PRESSURE CONTROL
- JACS
- 2" OVER 3 1/2" SP x 3 1/2" PH
- BOND SAFETY JOINT
- 2" OVER 3 1/2" PH x 3 1/2" SP
- REMOVAL TOOLBIT SUB
- 1 1/2" FORCE OF UNIVERSAL PRESSURE CONTROL RATEP
- DRILL SUB
- FLAME HEAD
- 5" PERFORATING GUN

TOP @ 4880'  
 525V @ 4880'  
 TOP @ 4880'  
 525V @ 4880'  
 7387'  
 TOP OF EZSV @ 7437'  
 (175' ABOVE SHOE)  
 @ 5/8" SHOE @ 7512'  
 7850'  
 10.2 PPG MUD  
 8600'  
 200' CEMENT PLUG  
 8800'  
 10.2 PPG MUD  
 T. D. @ 9866'

KWR  
 12-3-86

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Date: 12-9-86

DEC 10 1986

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

ABANDONMENT PROCEDURE - DRILL STEM TEST #1

(Perforated Interval - 7005' - 7060')

- 1) PU a 9 5/8-in EZSV retainer and TIH; Set retainer at 6955' (50' above top of perforated interval).
- 2) Test retainer with 20,000 # of weight; Pressure test casing with 3500 psi.
- 3) Sting in and displace produced fluids from Drill Stem Test #1 into formation.
- 4) Squeeze cement from 6955' - 7160' (100' below the bottom of the perforated interval) with 73 sacks\* and place 56' of cement (20 sacks\*) on top of the retainer; POH.
- 5) PU a 9 5/8-in EZSV retainer (plug configuration) and TIH on wireline; Set retainer at 4900'.

\* Class G + Friction Reducer + Retarder

See Attached Schematic.

Verbal approval received: Nabil Masri - MMS (12-9-86) &  
Brian Schoof - (12-9-86).

Frank Henrich  
Drilling Superintendent  
TENNECO OIL COMPANY

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:

ACIDIZE	<input type="checkbox"/>	SUBSEQUENT REPORT OF:	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>		<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>		<input type="checkbox"/>

(Other) See Below

5. LEASE NO.  
OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS (MSL)  
RKB 108.5 ft DF Same

14. WATER DEPTH  
61 ft.

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DEC 10 1986

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

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

16. 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.)\*

Abandonment Procedure Below 9 5/8" Casing - See Attachment  
(Verbal Approval Received: Nabil Masri (12-3-86))

Drill Stem Testing Procedure (D.S.T. #1, #2, & #3) - See Attachment  
(Verbal Approval Received: Nabil Masri (12-5-86))

Abandonment Procedure - Drill Stem Test #1 - See Attachment  
(Verbal Approval Received: Nabil Masri (12-9-86) & Brian Schoof (12-9-86))

Note: D.S.T. #2 (6580'-6700') will not be performed.

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED [Signature] TITLE Drilling Superintendent DATE 12-9-86

(This space for Federal or State office use)

APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE DEC 11 1986  
CONDITIONS OF APPROVAL, IF ANY:

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DEC 10 1986

Date: 12-3-86

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

ABANDONMENT PROCEDURE BELOW 9 5/8" CASING

(Isolation of Zones in Open Hole and Isolation of Open Hole)

- 1) TIH with drillpipe and 282' of 2 7/8" stinger; CBU; Spot 200' cement plug 8800' - 8600'.  
(105 sacks Class G + Friction Reducer + Retarder)
- 2) Pull into 9 5/8-in. casing and CBU; POH
- 3) PU a 9 5/8-in EZSV retainer and TIH; Set retainer at 7437' (75' above 9 5/8-in. shoe); Test retainer with 20,000# of weight; Squeeze 338' of cement below the 9 5/8-in shoe to 7850' (230 sacks\*) and place 50' of cement ( 20 sacks\*) on top of the retainer.

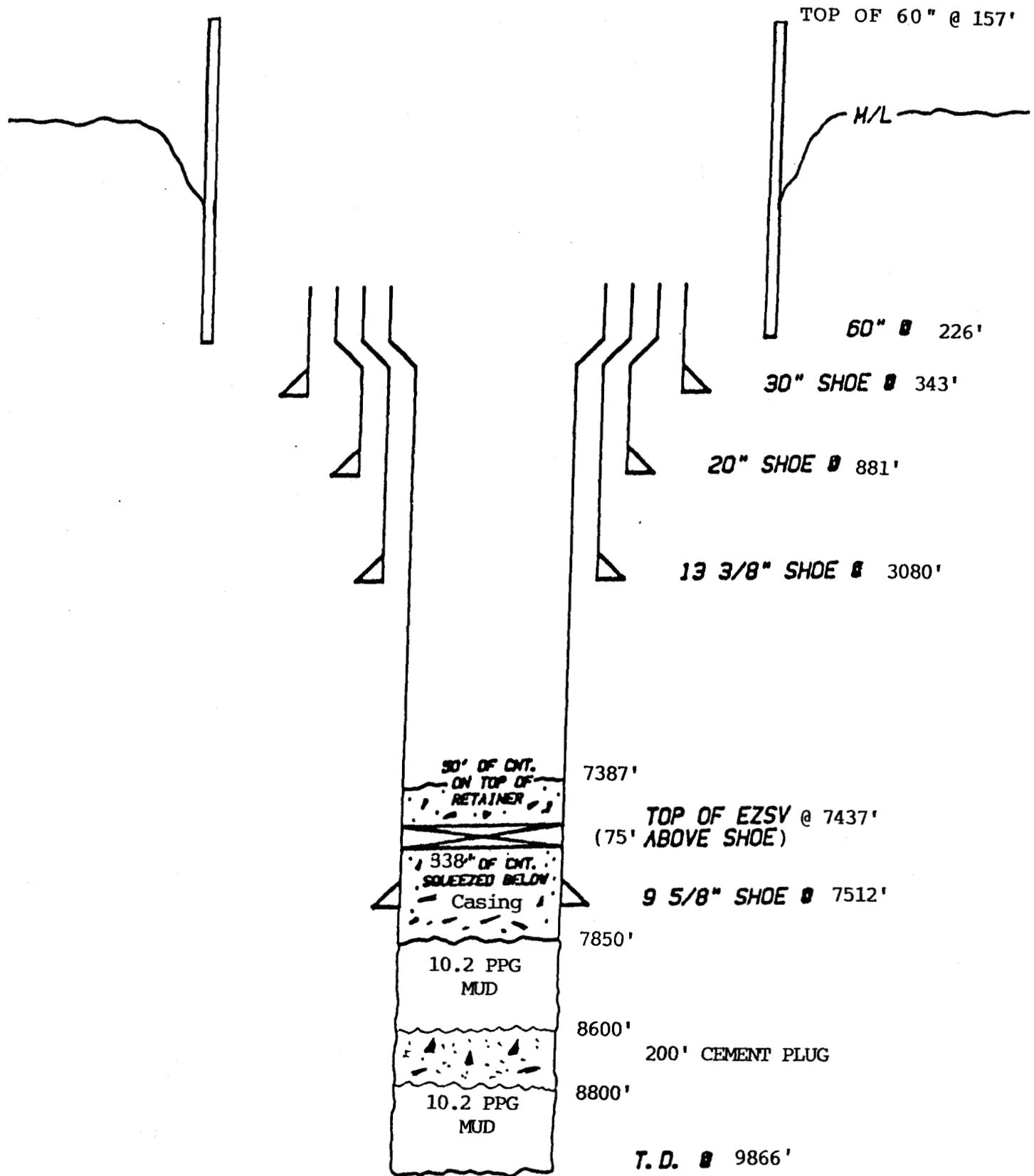
\*Same slurries as above.

- 4) Pressure test casing to 3500 psi; POH.

See Attached Schematic

Verbal approval received: Nabil Masri - MMS (12-3-86).

*Frank Hernandez*  
Drilling Superintendent  
Tenneco Oil Company



**Tenneco Oil**  
**Exploration & Production**  
A Tenneco Company

Calais I Office Center  
3201 "C" Street, Suite 406  
Anchorage, Alaska 99503  
(907) 561-5458



December 5, 1986

Mr. Brian Schoof  
District Supervisor  
Minerals Management Service  
District Office  
949 E. 36th Avenue, Suite 503  
Anchorage, AK 99510

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**OCS DISTRICT OFFICE**

**DEC 05 1986**  
**MINERALS MANAGEMENT SERVICE**  
**ANCHORAGE, ALASKA**

Re: DRILL STEM TESTING  
Phoenix #1  
OCS-Y-0338

Dear Mr. Schoof:

Tenneco will begin testing the Phoenix Well #1 in the near future. Three tests are proposed for the Well. All tests will be performed in the 9 5/8" casing. The intervals to be tested are as follows:

D.S.T. #1 - 7005' - 7060'  
D.S.T. #2 - 6580' - 6700'  
D.S.T. #3 - 4650' - 4704'

Enclosed for your review are the following items pertaining to the testing operations:

- I. D.S.T. PROCEDURE
- II. PROPOSED DOWNHOLE TOOL SCHEMATIC
- III. SURFACE EQUIPMENT SCHEMATIC
- IV. SURFACE SAFETY SYSTEM SCHEMATIC
- V. WELLBORE SCHEMATIC SHOWING ISOLATION OF PERFORATED INTERVALS

Tenneco requests that this information be kept confidential. If you have any questions please call me.

Sincerely,

*Frank Henicke*  
F. G. Henicke  
Drilling Superintendent

FGH:BJM:mh  
Enclosures

PHOENIX WEST TESTING PROCEDURE  
DST #1

DEC 05 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

NOTE: All cased hole logging and squeezing is to have been accomplished prior to the start of well test operations.

1. Test casing to 3500 psi.
2. Inspect all downhole tools and function test PCT tool with hand pump to ensure valve opens prior to running in the hole. Make up tool string described in Figure 1. Pressure test tool string to 3500 psi.
3. Run in hole with 3½-in tubing (enough to provide a 3500-ft water cushion above the PCT). See attached tubing handling procedure.
4. After loading water cushion (tagged with nitrates), pressure test tubing string to 3500 psi for 10 minutes.
5. Run test string to packer setting depth taking fluid level reading every 500 ft with Fluid Level Services (FLS) instrument.
6. Rig up surface equipment and test surface equipment to 3500 psi with glycol treated water.
7. Run GR/Neutron/CCL to put packer on depth. Set packer. Collapse slip joints and HRT and pick up 2½'.
8. Open PCT with 1500 psi annular pressure. Confirm PCT opening by FLS.
9. Wait five minutes, then fire perforating guns with 2000 psi annular pressure. Perforate with Schlumberger 5-in gun with twelve (12) shots per foot, 120° phasing. Perforated zone is 7005-7060 (55').
10. Flow well for five-minute initial flow. Take check shots with FLS to establish fluid levels at approximately 30-second intervals.
11. Shut-in PCT by releasing 1500 psi annular pressure. Confirm PCT is closed with FLS. Leave well shut-in for 60 minutes.
12. Open well for second flow period by pressuring up PCT to 1500 psi.
13. When fluids flow to surface, direct fluids through variable choke into storage tanks and gauge, taking samples as required. Gradually increase flow to a stable rate. If fluid is water proceed to Step 17.
14. If well flows oil to surface, allow well to stabilize. Produced fluids should be directed through heater and separator. Take samples of fluids from separator for PVT analysis. Flow well as directed after obtaining a stabilized rate. If no multirate testing is required go to Step 19.

15. Shut-in PCT for buildup (at least 1½ times flow period).
16. If additional multirate testing is required, open PCT and bring well up to previous stabilized rate. Increase flow rate in increments as needed until a maximum rate is obtained.
17. If produced fluid is water, flow a minimum of one (1) hour. (Confirm that fluid is formation fluid). Proceed to Step 19.
18. If fluids do not reach surface during second flow period, allow well to die and confirm using FLS instruments. Rig up swabbing unit and attempt to swab well in. If well does not flow, proceed to Step 19.
19. Shut well in with permanent closure of dual ball sampler with 3000 psi annular pressure. Open reversing valve\* and reverse out produced fluid, taking samples as required.
20. Reverse out three (3) tubing volumes and ensure well is dead. Check with reservoir engineer to ensure adequate SI time. Rig down surface equipment.
21. Release packer and circulate 2X bottoms up. POOH with tool string. Drain dual ball sampler at surface to confirm surface fluid samples and transfer sample to suitable container.
22. Read SSDP pressure gauges and analyze test data.
23. Prepare and ship samples to Houston.
24. Run EZSV in hole on 5-inch drill pipe and set above perforations at 6950'. Inject produced fluids into formation if warranted. Squeeze perforations and abandon zone as per Alaska OCS Orders.
25. Pull drill pipe and EZSV running tool. Prepare for next test.

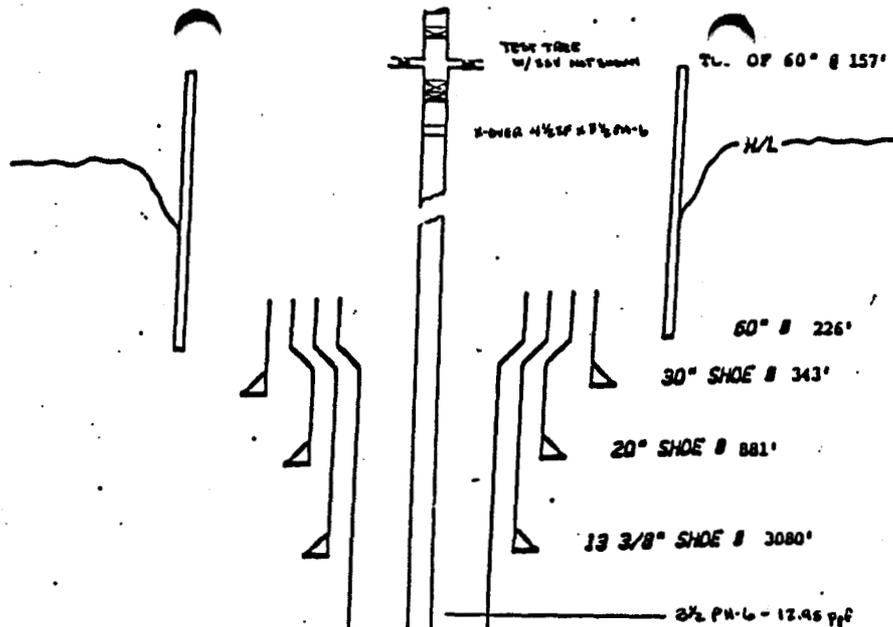
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OCS DISTRICT OFFICE

DEC 05 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

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\* Reversing can be done utilizing the MIDRV (Multiple ID Reversing Valve) with 1500 psi tubing pressure or with SSARV (Single Shot Annular Reversing Valve) with 3000 psi annular pressure.

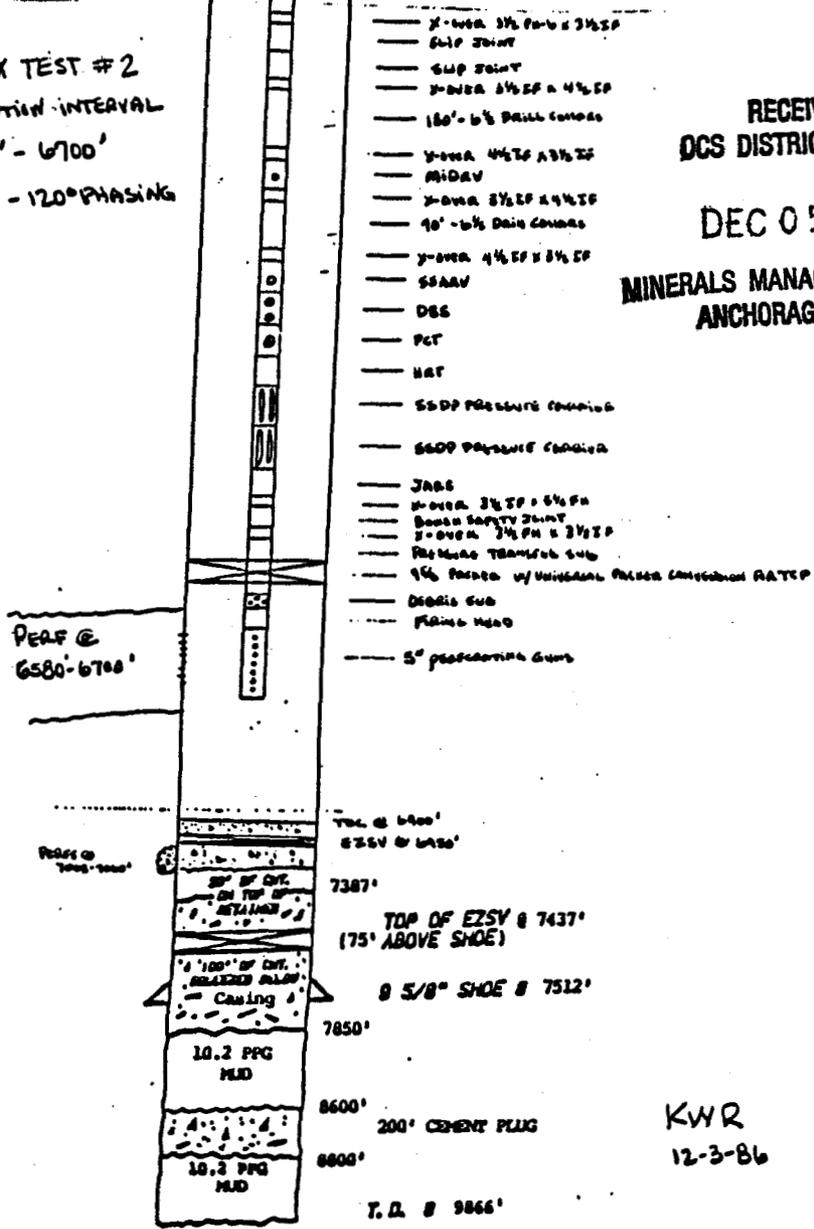


PHOENIX TEST #2  
 PERFORMANCE INTERVAL  
 6580' - 6700'  
 12 SPF - 120° PHASING

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 OCS DISTRICT OFFICE

DEC 05 1986

MINERALS MANAGEMENT SERVICE  
 ANCHORAGE, ALASKA

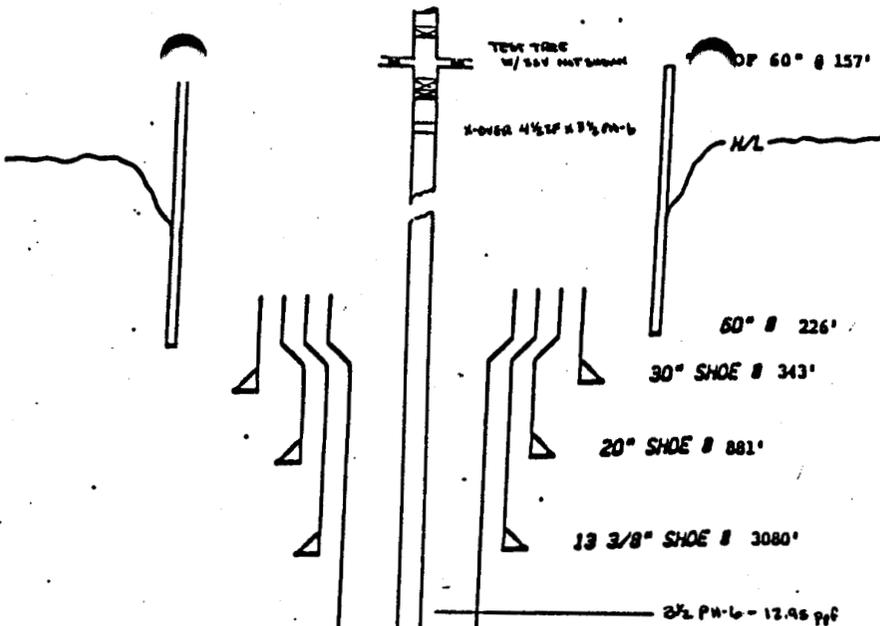


PERF @  
 6580-6700'

PERF @  
 7000-7000'

KWR  
 12-3-86

T. D. @ 9866'



PHOENIX TEST #1  
 PERFORATION INTERVAL  
 7005' - 7060'  
 12 SPF - 120° PHASING

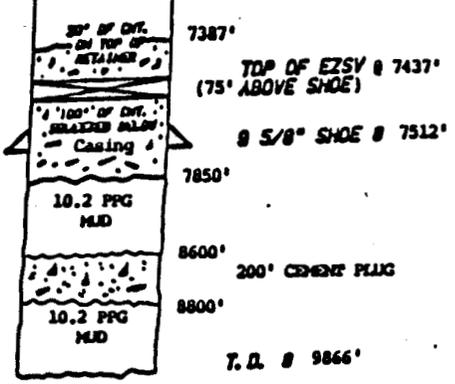
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MINERALS MANAGEMENT SERVICE  
 ANCHORAGE, ALASKA

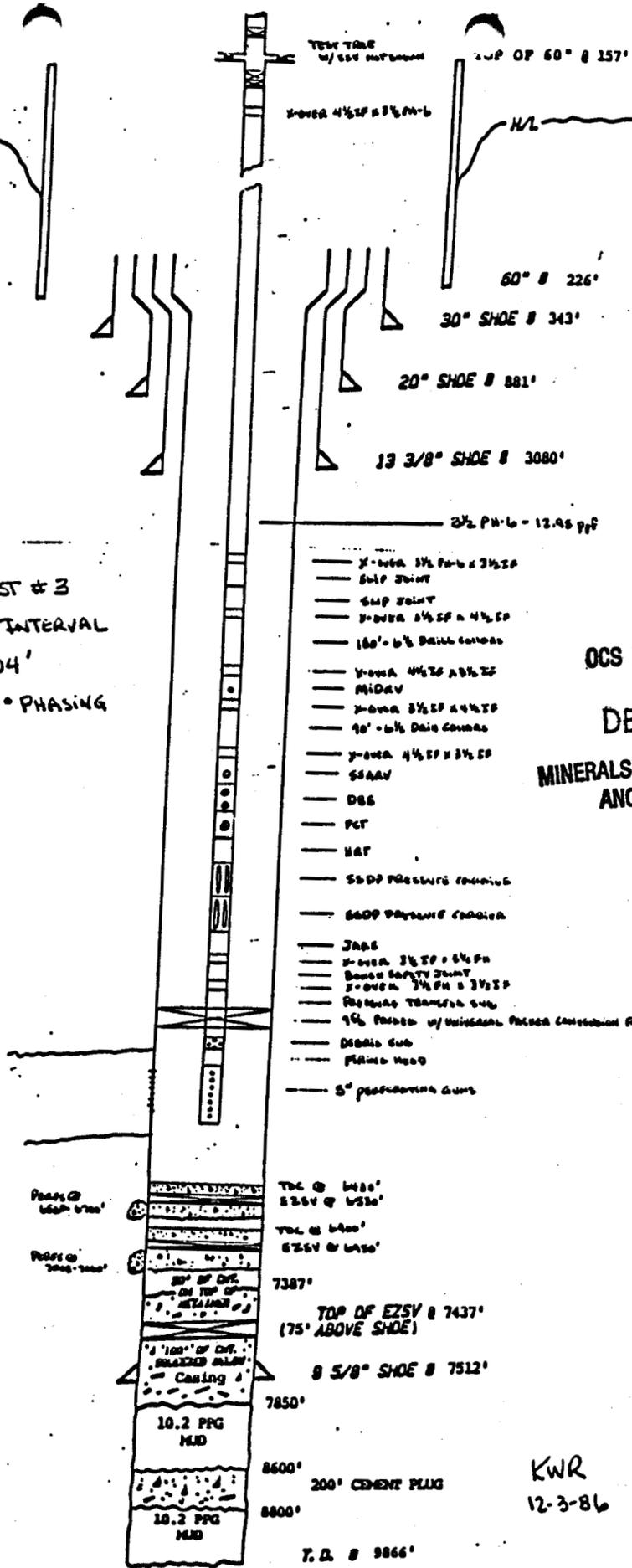
- X-OVER 3 1/2" PH-B x 3 1/2" SF
- SLP JOINT
- SLP JOINT
- X-OVER 3 1/2" SF x 4 1/2" SF
- 180' - 6 1/2" DRILL COLLARS
- X-OVER 4 1/2" SF x 3 1/2" SF
- MID-DEV
- X-OVER 3 1/2" SF x 4 1/2" SF
- 90' - 6 1/2" DRILL COLLARS
- X-OVER 4 1/2" SF x 3 1/2" SF
- SSAAV
- DSG
- PCT
- NAT
- SSOP PRESSURE COLLAR
- SSOP PRESSURE COLLAR
- JAGS
- X-OVER 3 1/2" SF x 4 1/2" SF
- BONE SAFETY JOINT
- X-OVER 3 1/2" PH x 3 1/2" SF
- PACKING TOOL-JOINT SUB
- 9 1/2" PACKER W/ UNIVERSAL PACKER CONVERSION RATEP
- DEBRIS SUB
- PLUMB HEAD
- 5" PERFORATING GUNS

Perf @  
 7005' - 7060'



KWR  
 12-3-86

PHOENIX TEST #3  
 PERFORATION INTERVAL  
 4650' - 4704'  
 12SPF - 120° PHASING



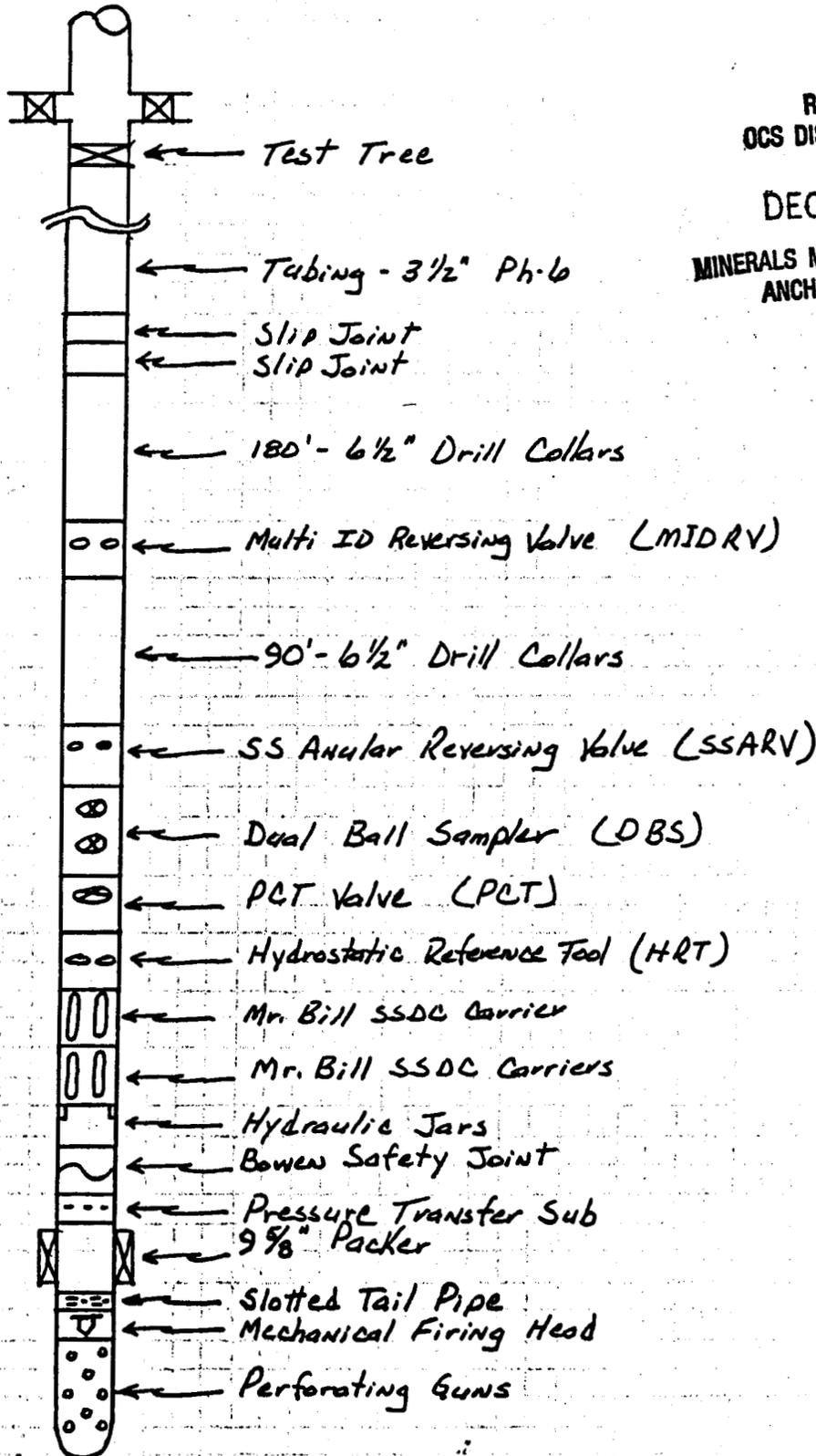
RECEIVED  
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DEC 05 1986  
 MINERALS MANAGEMENT SERVICE  
 ANCHORAGE, ALASKA

KWR  
 12-3-86



COMPANY TENNECO Oil Co. DEPT. Frontier Projects  
 SUBJECT Phoenix Project - Drill Stem Test Tool String  
 LOCATION Beaufort Sea BY K.J.P. DATE 12/5/86



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MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

RECEIVED  
OCS DISTRICT OFFICE

Date: 12-9-86

DEC 10 1986

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

ABANDONMENT PROCEDURE - DRILL STEM TEST #1

(Perforated Interval - 7005' - 7060')

- 1) PU a 9 5/8-in EZSV retainer and TIH; Set retainer at 6955' (50' above top of perforated interval).
- 2) Test retainer with 20,000 # of weight; Pressure test casing with 3500 psi.
- 3) Sting in and displace produced fluids from Drill Stem Test #1 into formation.
- 4) Squeeze cement from 6955' - 7160' (100' below the bottom of the perforated interval) with 73 sacks\* and place 56' of cement (20 sacks\*) on top of the retainer; POH.
- 5) PU a 9 5/8-in EZSV retainer (plug configuration) and TIH on wireline; Set retainer at 4900'.

\* Class G + Friction Reducer + Retarder

See Attached Schematic.

Verbal approval received: Nabil Masri - MMS (12-9-86) &  
Brian Schoof - (12-9-86).

Frank Henrich  
Drilling Superintendent  
TENNECO OIL COMPANY

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

5. LEASE NO.  
OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS (MSL)  
RKB 108.5 ft. DF Same

14. WATER DEPTH  
61 ft.

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:

ACIDIZE	<input type="checkbox"/>	SUBSEQUENT REPORT OF:	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>		<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>		<input type="checkbox"/>

(Other) See Below

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

16. 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.)\*

Revised Drill Stem Testing Procedure (D.S.T. #3) - See Attachment.

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DEC 10 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED Frank Beards TITLE Drilling Superintendent DATE 12-10-86

(This space for Federal or State office use)

APPROVED Nick K... TITLE DISTRICT SUPERVISOR DATE DEC 10 1986  
CONDITIONS OF APPROVAL, IF ANY:

OCS Y-0338 #1  
API 55-231-00005  
BLK 284, HARRISON BAY NR 5-4

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PHOENIX WELL TESTING PROCEDURE  
D.S.T. #3

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

NOTE: All cased hole logging and squeezing is to have been accomplished prior to the start of well test operations.

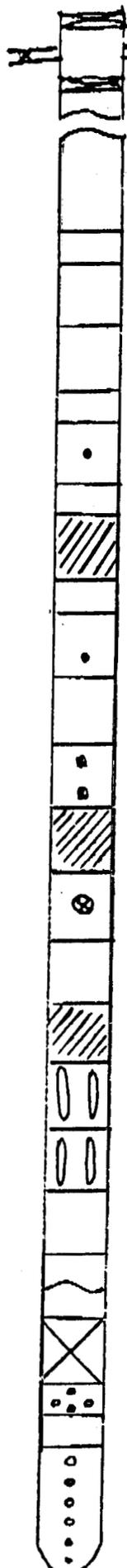
1. Test casing to 3500 psi.
2. Inspect all downhole tools and function test PCT tool with hand pump to ensure valve opens prior to running in the hole. Make up tool string described in Figure 1. Pressure test tool string to 3500 psi.
3. Run in hole with 3½-in tubing (enough cushion to provide for a 300 psi underbalance).
4. After loading water cushion (tagged with nitrates), pressure test tubing string to 3500 psi for 10 minutes.
5. Run test string to packer setting depth taking fluid level reading every 500 ft. with Fluid Level Services (FLS) instrument.
6. Rig up surface equipment and test surface equipment to 3500 psi with glycol treated water.
7. Run GR/Neutron/CCL to put packer on depth. Set packer. Collapse slip joints and HRT and pick up 2½'.
8. Open PCT with 1500 psi annular pressure. Confirm PCT opening by FSL.
9. Wait five minutes, then fire perforating guns with 2000 psi annular pressure. Perforate with Schlumberger 5-in gun with twelve (12) shots per foot, 120° phasing. Perforated zone is 4650-4704 (54').
10. Flow well for five-minute initial flow. Take check shots with FLS to establish fluid levels at approximately 30 second intervals.
11. Shut-in PCT by releasing 1500 psi annular pressure. Confirm PCT is closed with FLS. Leave shut-in for 60 minutes.
12. Open well for second flow period by pressuring up PCT to 1500 psi.
13. When fluids flow to surface, direct fluids through variable choke into storage tanks and gauge, taking samples as required. Gradually increase flow to a stable rate. If fluid is water proceed to Step 17.
14. If well flows oil to surface, allow well to stabilize. Produced fluids should be directed through heater and separator. Take samples of fluids from separator for PVT analysis. Flow well as directed after obtaining a stabilized rate. If no multirate testing is required go to Step 19.

15. Shut-in PCT for buildup (at least 1½ times flow period).
16. If additional multirate testing is required, open PCT and bring well up to previous stabilized rate. Increase flow rate in increments as needed until a maximum rate is obtained.
17. If produced fluid is water, flow a minimum of one (1) hour. (Confirm that fluid is formation fluid). Proceed to Step 19.
18. If fluids do not reach surface during second flow period, allow well to die and confirm using FLS instruments. Rig up swabbing unit and attempt to swab well in. If well does not flow, proceed to Step 19.
19. Shut well in with permanent closure of dual ball sampler with 3000 psi annular pressure. Open reversing valve\* and reverse out produced fluid, taking samples as required.
20. Reverse out three (3) tubing volumes and ensure well is dead. Check with reservoir engineer to ensure adequate SI time. Rig down surface equipment.
21. Release packer and circulate 2X bottoms up. POOH with tool string. Drain dual ball sampler at surface to confirm surface fluid samples and transfer sample to suitable container.
22. Read SSDP pressure gauges and analyze test data.
23. Prepare and ship samples to Houston.
24. Run EZSV in hole on 5-inch drill pipe and set above perforations at 6950'. Inject produced fluids into formation if warranted. Squeeze perforations and abandon zone as per Alaska OCS Orders.
25. Pull drill pipe and EZSV running tool. Prepare for next test.

---

\* Reversing can be done utilizing the MIDRV (Multiple ID Reversing Valve) with 1500 psi tubing pressure or with SSARV (Single Shot Annular Reversing Valve) with 3000 psi annular pressure.

12-10-86



TEST TREE

← Tubing 3 1/2" PH-6

X-over

← SLIP JOINT

← SLIP JOINT

X-over

← MIDRV

X-over

← 90' - 6 1/2" DRILL COLLARS

X-over

← SS RV

← 'R A' COLLAR

← DUAL BALL SAMPLER

← 30' - 4 3/4" DRILL COLLAR W/ DRAIN SUB

← PET

← HRT

← 90' - 4 3/4" DRILL COLLARS

← SSDP CARRIERS

← SSDP CARRIERS

← JARS

← BOWEN SAFETY JOINT

← 9 5/8 PACKER W/ UNIVERSAL PACKER CONVERSION FOR TCP

← PORTED SUB

← FIRING HEAD

← PERFORATING GUN - 12 SPF

TOP SHOT - 4650

BTM. SHOT - 4704

41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

5. LEASE NO.  
OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS (MSL)  
RKB 108.5 ft. DF Same

14. WATER DEPTH  
61 ft.

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:      SUBSEQUENT REPORT OF:

ACIDIZE	<input type="checkbox"/>		<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>		<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>		<input type="checkbox"/>

(Other) Casing Report

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

RECEIVED  
Anchorage, Alaska

NOV 10 1986

16. 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" Casing Report (see attachments)

REGIONAL OFFICE  
FIELD OPERATION  
MINERALS MANAGEMENT SERVICE

Received  
OCS District Office

NOV 07 1986

Minerals Management Service  
Anchorage, Alaska

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED Jason Kihoy TITLE Project Drilling Engineer DATE 11-06-86

(This space for Federal or State office use)

APPROVED Wahl Foran TITLE DISTRICT SUPERVISOR DATE NOV 10 1986

CONDITIONS OF APPROVAL, IF ANY:

U. S. GOVERNMENT COPY

AREA FILE 6.B.2  
Y0338#1

OCS Y-0338 #1  
 API 55-232-00005  
 BLOCK 284, HARRISON BAY NR 5-4

9 5/8" CASING REPORT

HOLE SIZE: 12 1/4" to 7544' (RKB) CASING SET AT: 7512.00' (RKB)  
 7342.50' (BML)

<u>PIECES</u>	<u>DESCRIPTION</u>	<u>WEIGHT (LBS/FT)</u>	<u>GRADE</u>	<u>THREADS</u>	<u>MADE-UP LENGTH (FT)</u>	<u>BTM RKB (FT)</u>	<u>TOP RKB (FT)</u>
1	FLOAT SHOE	47	L-80	BUTT	2.00	7512.00	7510.00
2	JTS 9 5/8" CASING	47	L-80	BUTT	77.38	7510.00	7432.62
1	FLOAT COLLAR	47	L-80	BUTT	1.58	7432.62	7431.04
185	JTS AND 2 PUP JTS 9 5/8" CASING	47	L-80	BUTT	7212.82	7431.04	218.22
1	13 5/8" x 9 5/8" HANGER & PUP JT	-	-	-	10.22	218.22	208.00

SET CASING AND CEMENTED WITH 1500 SACKS CLASS G + 1% CFR-2 + 0.4% HALAD 22-A  
 + 0.15% HR-7

WEIGHT - 15.6 LB/GAL

YIELD - 1.18 CUFT/SX

ESTIMATED TOP OF CEMENT - 4000' RKB

DRILLED CMT, FLOAT COLLAR, AND FLOAT SHOE; CLEAN OUT RATHOLE AND DRILL TO 7555' (RKB);  
 PERFORMED LEAK OFF TEST AS FOLLOWS:

14.0 PPG EMW (10.6 PPG MUD WITH 1350 PSI SURFACE PRESSURE);  
 ATTACHED WORKSHEET SHOWS GRAPH FOR LEAK OFF TEST.

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NOV 10 1986

REGIONAL SUPERVISOR  
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 MINERALS MANAGEMENT SERVICE

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 OCS District Office

NOV 07 1986

Minerals Management Service  
 Anchorage, Alaska

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(Expires July 31, 1986)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:

ACIDIZE	<input type="checkbox"/>	SUBSEQUENT REPORT OF:	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>		<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>		<input type="checkbox"/>

(Other) Casing Report

5. LEASE NO.  
OCS Y-0338

6. AREA & BLOCK  
Harrison Bay NR 5-4, Block 284

7. WELL NO.  
#1

8. UNIT AGREEMENT  
N/A

9. FIELD  
Wildcat

10. EXPLORATION   
DEVELOPMENT

11. ADJACENT STATE  
Alaska

12. API NO.  
55-231-00005

13. ELEVATIONS (MSL)  
RKB 108.5 ft. DF Same

14. WATER DEPTH  
61 ft.

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

RECEIVED  
Anchorage, Alaska

16. 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.)\*

13 3/8" Casing Report (see attachments)

NOV 04 1986  
REGIONAL SUPERVISOR  
FIELD OPERATION  
MINERALS MANAGEMENT SERVICE

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OCS DISTRICT OFFICE

OCT 30 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED Jason Kirkely TITLE Project Drilling Engineer DATE 10-29-86

(This space for Federal or State office use)

APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE NOV 3 1986

CONDITIONS OF APPROVAL, IF ANY:

U. S. GOVERNMENT COPY

OCS Y-0338 #1  
 API 55-231-00005  
 BLOCK 284, HARRISON BAY NR 5-4

13 3/8" CASING REPORT

HOLE SIZE: 17½" to 3126' (RKB) CASING SET AT: 3080.09 (RKB)  
 2910.59 (BML)

<u>PIECES</u>	<u>DESCRIPTION</u>	<u>WEIGHT (LBS/FT)</u>	<u>GRADE</u>	<u>THREADS</u>	<u>MADE-UP LENGTH (FT)</u>	<u>BTM RKB (FT)</u>	<u>TOP RKB (FT)</u>
1	Float Shoe	72	L-80	BUTT	2.17	3080.09	3077.92
2	JTS 13 3/8" Casing	72	L-80	BUTT	78.32	3077.92	2999.60
1	Float Collar	72	L-80	BUTT	1.58	2999.60	2998.02
69	JTS 13 3/8" Casing	72	L-80	BUTT	2693.70	2998.02	304.32
1	External Casing Packer (ECP)	72	L-80	BUTT	8.30	304.32	296.02
2	JTS 13 3/8" Casing	72	L-80	BUTT	77.38	296.02	218.64
1	13 3/8" IOM Vetco Wellhead	-	-	-	13.87	218.64	204.77

SET CASING AND MIXED 2400 SACKS CANADIAN PERMAFROST CEMENT + 5#/SX GILSONITE  
 + 0.07#/SX SODIUM CITRATE AND  
 672 SACKS CLASS G + 2% CaCl<sub>2</sub>

PERMAFROST: WEIGHT - 14.7 LB/GAL CLASS G: WEIGHT - 15.8 LB/GAL  
 YIELD - 1.11 CU FT/SX YIELD - 1.15 CU FT/SX

AFTER DROPPING TOP PLUG AND DISPLACING 37 BBLs, PRESSURE INCREASED TO 1800 PSI. LD 13 3/8" RUNNING STRING. WIH WITH HWDP TO 203' (RKB), MIXED AND BULLHEADED 300 SACKS OF ABOVE PERMAFROST SLURRY IN 20" x 13 3/8" ANNULUS. LD HWDP. TESTED 20" x 13 3/8" ANNULUS TO 250 PSI.

ABOVE DEVIATION IN PROCEDURE APPROVED VERBALLY BY BRIAN SCHOOF (MMS) ON 10/13/86.

DRILLED CEMENT IN 13 3/8" CASING FROM 225-324' (RKB). SET ECP. DRILLED CEMENT IN 13 3/8" CASING FROM 324-3080' (RKB). DRILLED TO 3136' (RKB) - (10' OF NEW HOLE) AND PERFORMED CASING SEAT TEST AS FOLLOWS:

12.5 PPG EMW (8.8 PPG MUD WITH 602 PSI SURFACE PRESSURE)

ATTACHED SCHEMATIC SHOWS WELLBORE CONFIGURATION THROUGH 13 3/8" CASING POINT.

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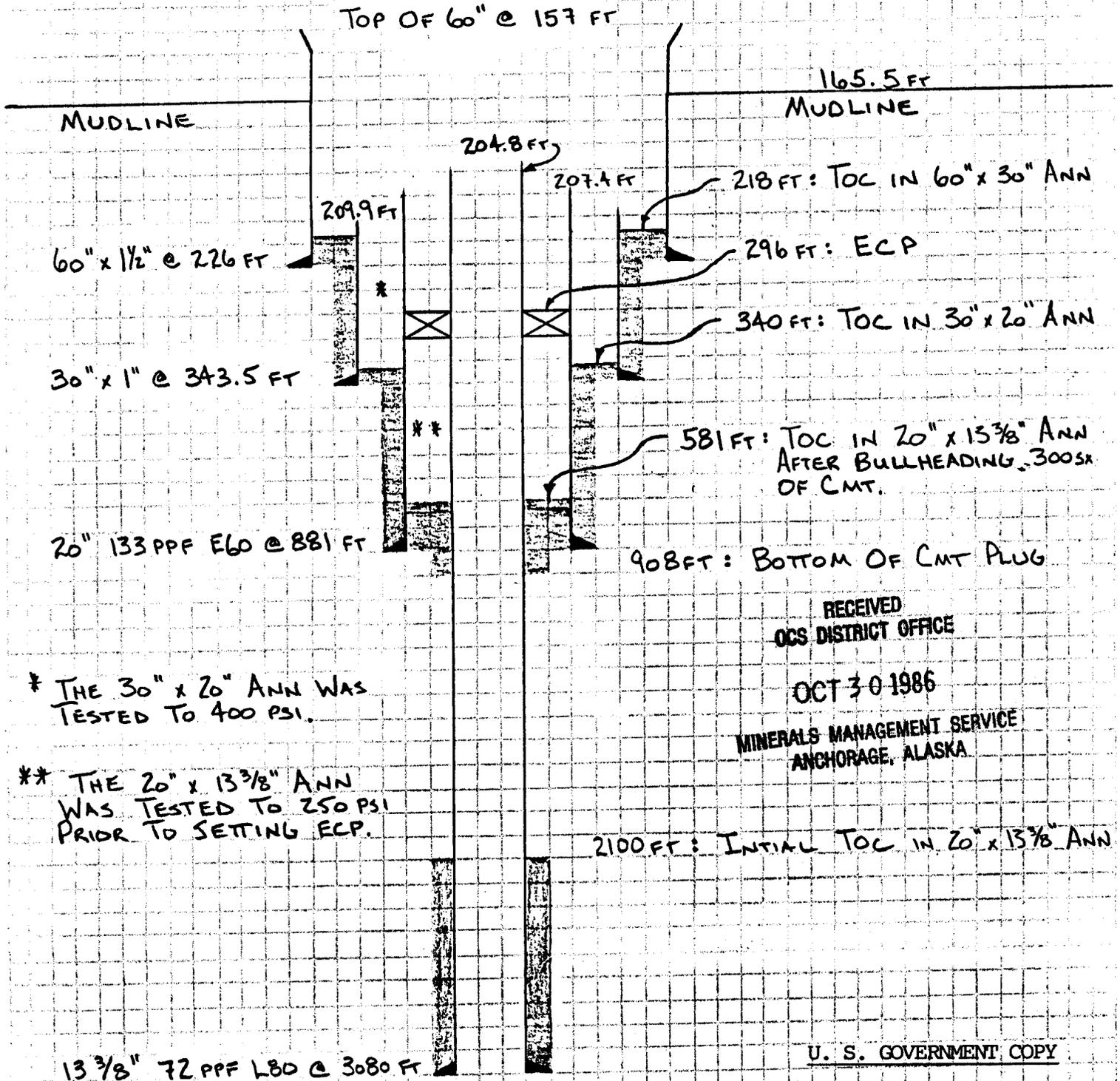
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 Anchorage, Alaska MINERALS MANAGEMENT SERVICE  
 ANCHORAGE, ALASKA

NOV 04 1986

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REGIONAL SUPERVISOR  
 FIELD OPERATIONS  
 MINERALS MANAGEMENT SERVICE

WELLBORE CONFIGURATION THROUGH 13 3/8" CASING POINT



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

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 MMS-331-C for such proposals.)

5. LEASE NO. OCS Y-0338
6. AREA & BLOCK Harrison Bay NR 5-4, Block 284
7. WELL NO.
8. UNIT AGREEMENT N/A
9. FIELD Wildcat
10. EXPLORATION <input checked="" type="checkbox"/> DEVELOPMENT <input type="checkbox"/>
11. ADJACENT STATE Alaska
12. API NO. 55-231-00005
13. ELEVATIONS (MSL) RKB 108.5 ft. DF Same
14. WATER DEPTH 61 ft.

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:

ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>	<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>	<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>	<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>	<input type="checkbox"/>
(Other) <u>Casing Report</u>		

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

16. 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.)\*

30" Casing Report (see attachment)

RECEIVED RECEIVED  
OCS DISTRICT OFFICE Anchorage, Alaska  
OCT 14 1986 OCT 21 1986

MINERALS MANAGEMENT SERVICE REGIONAL SUPERVISOR  
ANCHORAGE, ALASKA FIELD OPERATION  
MINERALS MANAGEMENT SERVICE

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED Jason Kirksey TITLE Project Drilling Engineer DATE 10-13-86

(This space for Federal or State office use)

APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE OCT 16 1986

CONDITIONS OF APPROVAL, IF ANY:

U.S. GOVERNMENT COPY

[Handwritten marks]

RECEIVED  
OCS DISTRICT OFFICE

OCT 14 1986

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

30" CASING REPORT

HOLE SIZE: 42" to 354' (RKB)      CASING SET AT: 343.51 (RKB)  
174.01 (BML)

PIECES	DESCRIPTION	WEIGHT (LBS/FT)	GRADE	THREADS	MADE-UP LENGTH (FT)	BTM RKB (FT)	TOP RKB (FT)
1	JT 30" W/FC & FS	310	X52	DRILQUIP (NF-60)	45.58	343.51	297.93
2	JTS 30" CASING	310	X52	DRILQUIP (NF-60)	81.51	297.93	216.42
1	30" VETCO WELLHEAD				6.50	216.42	209.92

SET AND CEMENTED WITH 1750 SACKS CANADIAN PERMAFROST CEMENT  
+ 5#/SX GILSONITE + 0.08#/SX SODIUM CITRATE

WEIGHT- 14.7 LB/GAL  
YIELD- 1.11 CUFT/SX

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-----

RECEIVED  
Anchorage, Alaska

OCT 21 1986

REGIONAL SUPERVISOR  
FIELD OPERATION  
MINERALS MANAGEMENT SERVICE

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

5. LEASE NO.

OCS Y-0338

6. AREA & BLOCK

Harrison Bay NR 5-4, Block 284

7. WELL NO.

8. UNIT AGREEMENT

N/A

9. FIELD

Wildcat

10.

EXPLORATION

DEVELOPMENT

11. ADJACENT STATE

Alaska

12. API NO.

55-231-00005

13. ELEVATIONS (MSL)

RKB 108.5 ft. DF Same

14. WATER DEPTH

61 ft.

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR

Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)

3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)

AT SURFACE: Lat. N 70° 43' 00.99" Long. W 150° 25' 40.11"

AT TOP PROD. INTERVAL:

AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:

ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>	<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>	<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>	<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>	<input type="checkbox"/>
(Other) <u>Casing Report</u>		

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

RECEIVED

16. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated completion dates, for 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.)\*

20 " Casing Report (see attachment)

OCT 21 1986

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REGIONAL SUPERVISOR  
FIELD OPERATION  
OCS DISTRICT OFFICE MINERALS MANAGEMENT SERVICE

OCT 14 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED Jason Kukay TITLE Project Drilling Engineer DATE 10-13-86

(This space for Federal or State office use)

APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE OCT 16 1986

CONDITIONS OF APPROVAL, IF ANY:

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6-5-2  
333-07

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OCT 14 1986

OCS Y-0338 #1  
API 55-231-00005  
BLOCK 284, HARRISON BAY NR 5-4

20" CASING REPORT

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

HOLE SIZE: 26" to 915' (RKB)      CASING SET AT: 880.84 (RKB)  
711.34 (BML)

PIECES	DESCRIPTION	WEIGHT (LBS/FT)	GRADE	THREADS	MADE-UP LENGTH (FT)	BTM RKB (FT)	TOP RKB (FT)
1	JT 20" W/FC & FS	133	X70	DRILQUIP (E-60)	38.88	880.84	841.96
15	JTS 20" CASING	133	X70	DRILQUIP (E-60)	612.46	841.96	229.50
1	ALT-2 PIN X E-60 PIN	133	X70	-	10.15	229.50	219.35
1	20 3/4" VETCO WELLHEAD				12.95	219.35	206.40

SET AND CEMENTED WITH 2262 SACKS CANADIAN PERMAFROST CEMENT  
+ 5#/SX GILSONITE + 0.07#/SX SODIUM CITRATE

WEIGHT- 14.7 LB/GAL  
YIELD- 1.11 CUFT/SX

U.S. GOVERNMENT COPY

*Estimated top of cement at 340' RKB*

*Jason Kirksey*

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

LEASE NO. OCS Y-0338
6. AREA & BLOCK Harrison Bay NR 5-4, Block 284
7. WELL NO. #1
8. UNIT AGREEMENT N/A
9. FIELD Wildcat
10. EXPLORATION <input checked="" type="checkbox"/> DEVELOPMENT <input type="checkbox"/>
11. ADJACENT STATE Alaska
12. API NO. 55-231-00005
13. ELEVATIONS (MSL) RKB 108.5 ft. DF Same
14. WATER DEPTH 61 ft.

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 MMS-331-C for such proposals.)

1. oil well  gas well  other Wildcat

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR (Where form is completed)  
3201 "C" Street, Suite 406, Anchorage, AK 99503

4. LOCATION OF WELL (Report location in accordance with instructions\* and Item 16.)  
AT SURFACE: See Below #16  
AT TOP PROD. INTERVAL:  
AT TOTAL DEPTH:

15. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA REQUEST FOR APPROVAL TO:

ACIDIZE	<input type="checkbox"/>	SUBSEQUENT REPORT OF:	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
PERFORATE	<input type="checkbox"/>		<input type="checkbox"/>
PERMANENT ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
TEMPORARY ABANDONMENT	<input type="checkbox"/>		<input type="checkbox"/>
ARTIFICIAL LIFT	<input type="checkbox"/>		<input type="checkbox"/>
(Other) Final Surface Location and RKB			

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OCS DISTRICT OFFICE  
SEP 18 1986  
MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA  
(NOTE: Report results of multiple completion or zone change on Form MMS-330.)

16. 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.)\*

The final certified surface location survey for the SSDC/MAT is:

3995 ft. FEL, 1102 ft. FNL (Harrison Bay NR 5-4, Block 284)

Geodetic Position - Lat. N 70° 43' 00.99"  
Long. W 150° 25' 40.11"

UTM, Zone 5 - N = 7,847,664 M  
E = 594,782 M

(See Attached Survey Plat)

Subsurface Safety Valve: Manu. and Type \_\_\_\_\_ Set @ \_\_\_\_\_ Ft.

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

SIGNED [Signature] TITLE Drilling Superintendent DATE 9/17/86

(This space for Federal or State office use)

APPROVED [Signature] TITLE DISTRICT SUPERVISOR DATE SEP 18 1986

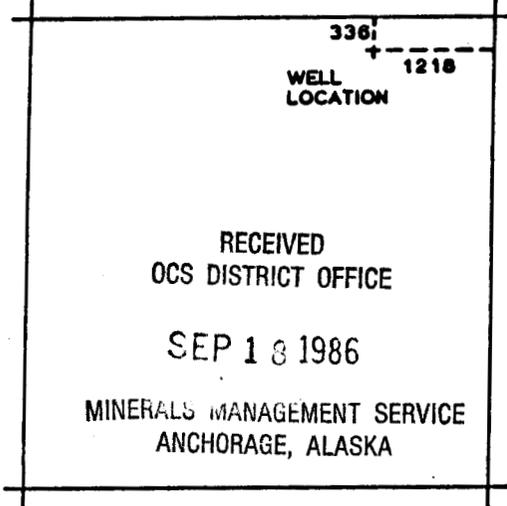
CONDITIONS OF APPROVAL, IF ANY:

AREA FILE G.B.2  
Y0338 #1

BLOCK 284

N=7,848,000  
E= 591,200

N=7,848,000  
E= 596,000



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OCS DISTRICT OFFICE

SEP 18 1986

MINERALS MANAGEMENT SERVICE  
ANCHORAGE, ALASKA

N=7,843,200  
E= 591,200

N=7,843,200  
E= 596,000



1"=2000 METERS

NOTES

1. LOCATION OF WELL WAS ACCOMPLISHED BY UTILIZING A FULLY AUTOMATED RADIO NAVIGATION SYSTEM WITH SHORE-STATIONS ESTABLISHED AT USC&GS STATIONS: ORION, TIKI AND FOX.
2. POSITION WAS VERIFIED BY UTILIZING TWO MAGNAVOX MX-1502 SATELLITE RECEIVERS AND TRANSLOCATING FROM USC&GS STATION NICHELE.
3. ALL DIMENSIONS AND COORDINATES ARE IN METERS UNLESS NOTED OTHERWISE.

OPERATOR..... TENNECO  
 RIG..... S50C  
 AREA..... HARRISON BAY  
 BLOCK..... 284  
 WELL..... PHOENIX  
 DATE..... 03-SEPT-1986  
 HEADING..... 102.8 TRUE

U. T. M. COORDINATES, ZONE 05

N= 7,847,664  
E= 594,782

GEODETIC POSTION, NAD-27

LAT. N 70 43 00.99  
LONG. W 150.25 40.11

WELL LOCATION DESCRIPTION

1218 METERS WEST OF THE EAST LINE  
AND 336 METERS SOUTH OF THE NORTH LINE,  
BLOCK 284, OCS PROTRACTION DIAGRAM  
NR 5-4, ALASKA.



CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA AND THAT THIS PLAT REPRESENTS A LOCATION SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL DETAILS ARE CORRECT.

SEPT. 3, 1986  
DATE

SURVEYOR

*Stanley E. King*

U. S. GOVERNMENT COPY  
LOCATION SURVEY FOR

OCS Y-0338, NO 1

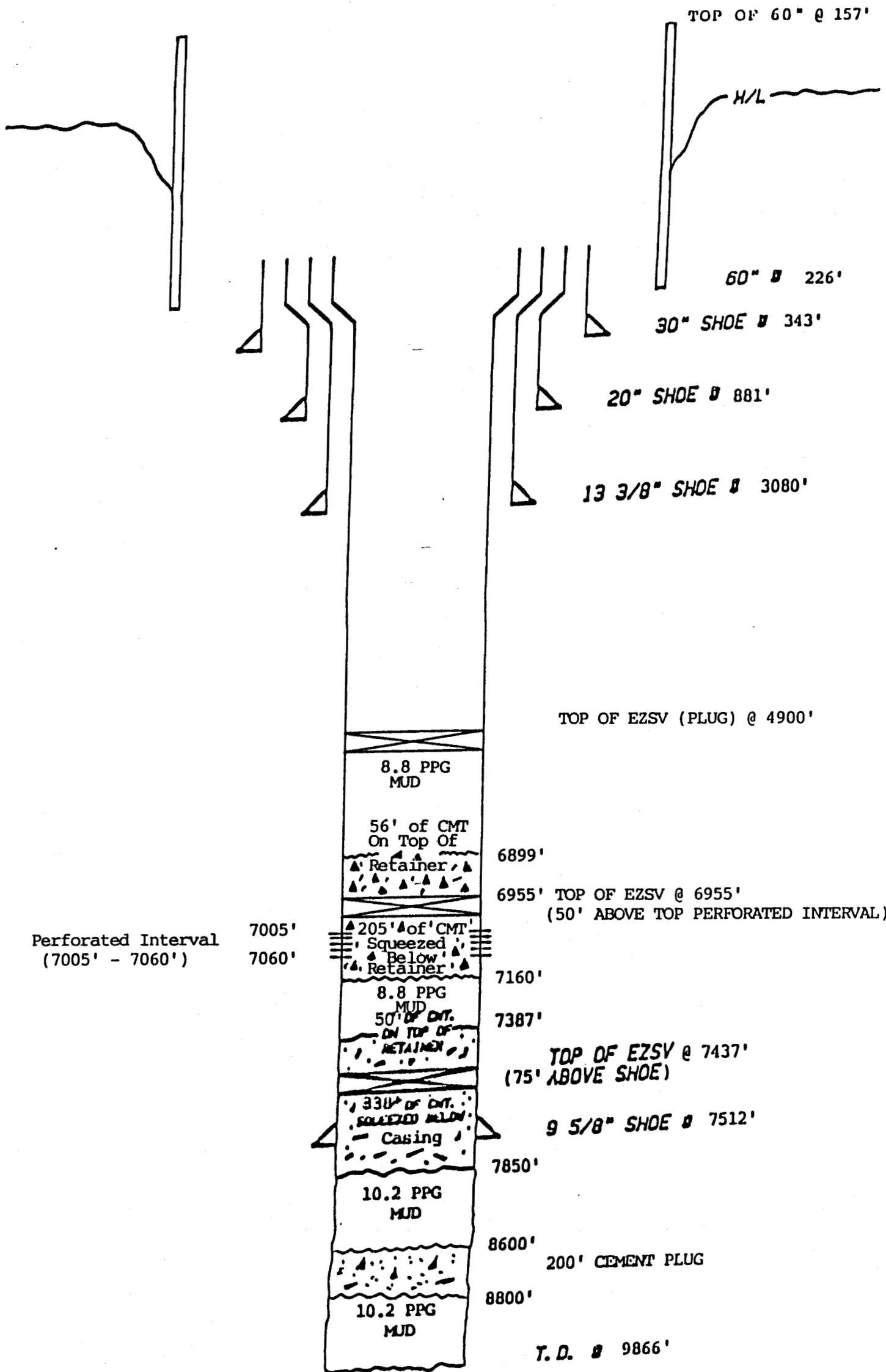
LOCATED IN THE HARRISON BAY AREA  
SURVEYED FOR

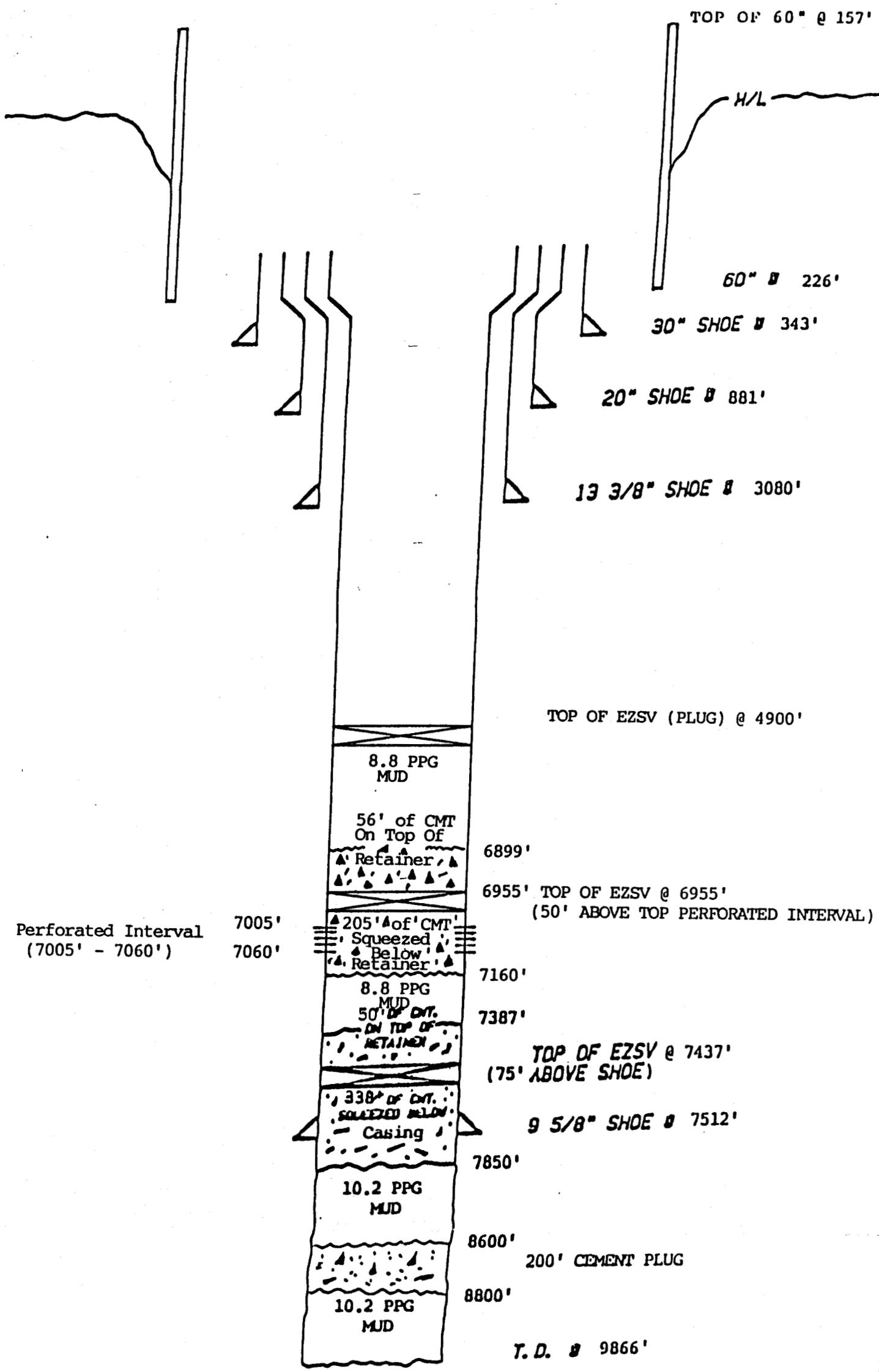
TENNECO OIL COMPANY

SURVEYED BY



INTERNATIONAL TECHNOLOGY LIMITED  
DENVER, COLORADO ANCHORAGE, ALASKA HOUSTON, TEXAS





Date: 12-3-86

OCS Y-0338 #1  
 API 55-232-00005  
 BLOCK 284, HARRISON BAY NR 5-4

ABANDONMENT PROCEDURE BELOW 9 5/8" CASING

(Isolation of Zones in Open Hole and Isolation of Open Hole)

- 1) TIH with drillpipe and 282' of 2 7/8" stinger; CBU; Spot 200' cement plug 8800' - 8600'.  
 (105 sacks Class G + Friction Reducer + Retarder)
- 2) Pull into 9 5/8-in. casing and CBU; POH
- 3) PU a 9 5/8-in EZSV retainer and TIH; Set retainer at 7437' (75' above 9 5/8-in. shoe); Test retainer with 20,000# of weight; Squeeze 338' of cement below the 9 5/8-in shoe to 7850' (230 sacks\*) and place 50' of cement ( 20 sacks\*) on top of the retainer.

\*Same slurries as above.

- 4) Pressure test casing to 3500 psi; POH.

See Attached Schematic

Verbal approval received by <sup>NABIL</sup> ~~Bill~~ Masri - MMS (12-3-86).

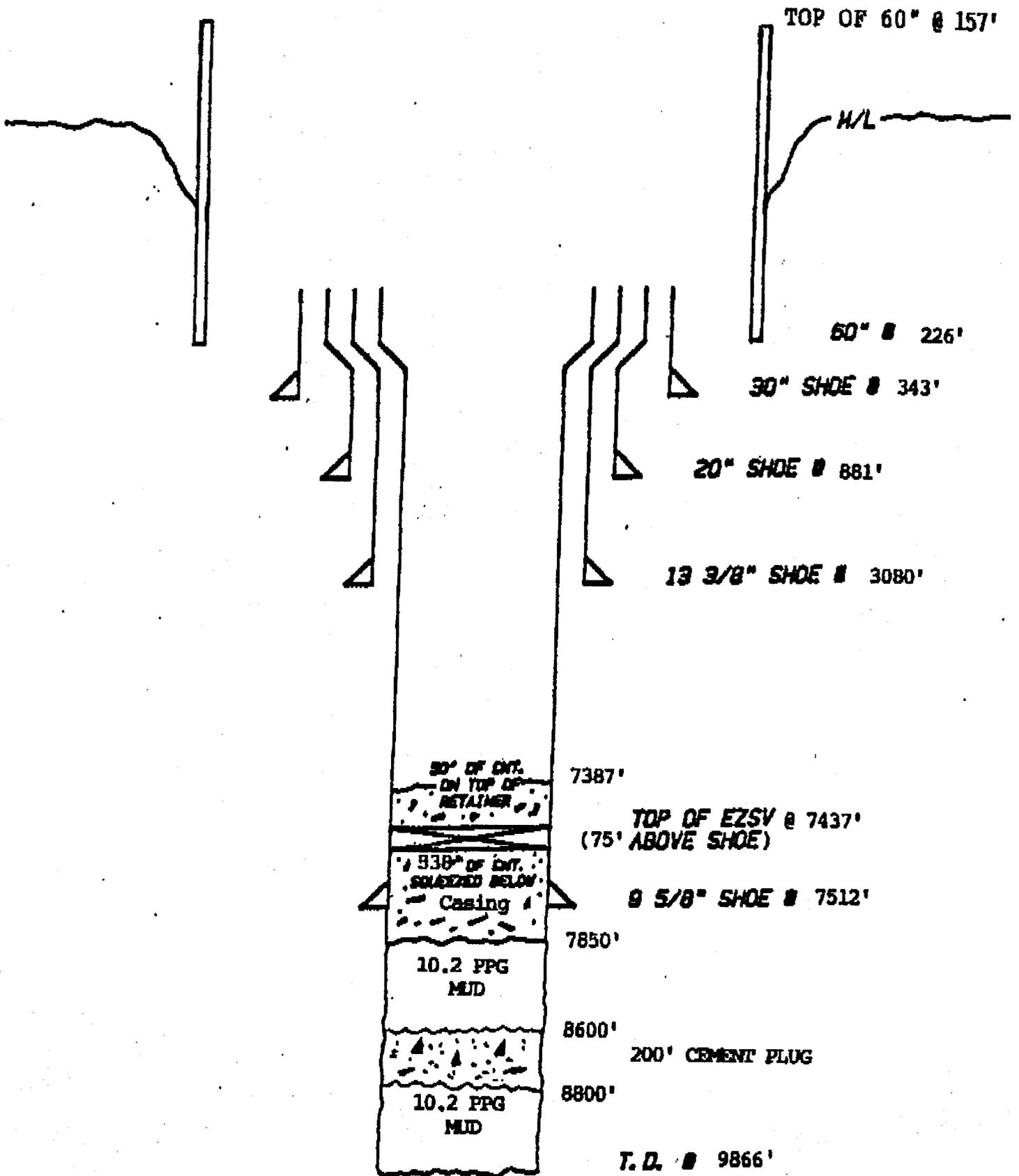
*Franz Henrich*  
 Drilling Superintendent  
 Tenneco Oil Company

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 OCS DISTRICT OFFICE

DEC 3 1986

MINERALS MANAGEMENT SERVICE  
 ANCHORAGE, ALASKA

AREA FILE 6.B.2  
 338 #1



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ANCHORAGE, ALASKA