~~ORD~~
FO

HALL-HOUSTON OIL COMPANY SN 8208

700 Louisiana, Suite 2100/Houston, Texas 77002

file

Telephone
(713) 228-0711
Fax
(713) 225-7600
(713) 225-7601

November 1, 1993

Mr. Chris Oynes
Acting Regional Director
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Attn: MS 5232

RE: Right-of-Way Grant OCS-G 9332
Abandonment of 4.5-inch Bulk Gas Pipeline
High Island Area, Blocks A-14 to A-173

Gentlemen:

Your letter dated July 15, 1993, relinquished the above captioned pipeline right-of-way grant and further waived removal of the 8.94 miles of line pipe.

Hall-Houston Oil Company would like to inform your office that the above referenced pipeline was abandoned in accordance with 30 CFR 250.156(a)(1) on October 17, 1993.

Thank you for your consideration with this matter. If further information is necessary, please do not hesitate to call.

Sincerely,

Gary L Hall

Gary L. Hall
Chairman

GLH:KC

xc: Kathy Camp - Regulatory
Lorene Roy - Land Department
Central File
Pipeline Book

c:\wp51\data\pa\plaban

Sn 8208

MINERALS MANAGEMENT SERVICE
RECEIVED
NOV 05 1993
FIELD OPERATIONS
Gulf of Mexico OCS Region, New Orleans, La.

Gulf of Mexico OCS Region
MMS
NOV 4 1993
Office of the Regional Director

SN 8208

8208

In Reply Refer To: MS 5421
OCS-G 9332

July 15, 1993

ACTION

Hall-Houston Oil Company

Right-of-way

RELINQUISHMENT OF RIGHT-OF-WAY GRANT
ABANDONMENT OF PIPELINE

On October 5, 1987, Apache Oil & Gas Transmission, Inc. filed an application for a right-of-way two hundred feet (200') in width for the construction, maintenance, and operation of a 4.5-inch bulk gas pipeline, 8.92 miles in length, from Hall-Houston Oil Company's Well No. 2 in Block A-14, High Island Area, across Blocks A-13 and A-12, High Island Area; Blocks A-179 and A-178, High Island Area, East Addition, to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition. By Action dated November 2, 1987, the application was approved and the right-of-way granted. Proof of construction was subsequently accepted on April 21, 1988, on 8.94 miles of pipeline.

On June 15, 1988, Apache Oil & Gas Transmission, Inc. assigned unto NRM Operating Company, L.P. all of Assignor's interest in subject right-of-way, effective April 15, 1988.

On August 15, 1988, NRM Operating Company, L.P. assigned unto Hall-Houston Oil Company all of Assignor's interest in subject right-of-way, effective April 15, 1988.

On July 12, 1993, Hall-Houston Oil Company requested relinquishment of the above-described right-of-way in its entirety. Additionally, grantee requested permission to abandon in place the subject pipeline in accordance with 30 CFR 250, Subpart J.

Inasmuch as grantee has agreed to comply with 30 CFR 250, Subpart J, removal of the 8.94 miles of line pipe is hereby waived. However, in the future, should it be determined that this pipeline constitutes a hazard to navigation or commercial fishing operations or unduly interferes with other uses of the OCS, Hall-Houston Oil Company shall be required to remove it.

Therefore, relinquishment of the right-of-way grant associated with the above-described pipeline that is to be abandoned in place is hereby accepted, effective July 12, 1993.

7/21/93

Hall-Houston Oil Company shall, within 30 days after completion of the abandonment, submit a report to this office informing the Minerals Management Service of the date the abandonment was completed and verify such abandonment was completed as approved.

(Orig. Sgd.) J. ROGERS PEARCY

J. Rogers Pearcy
Regional Director

cc: Case File

MHHOLMES/

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
GULF OF MEXICO OCS REGION
1201 ELMWOOD PARK BOULEVARD
NEW ORLEANS, LOUISIANA 70123-2394

In Reply Refer To: MS 5421
OCS-G 9332

July 15, 1993

ACTION

Hall-Houston Oil Company — Right-of-way

RELINQUISHMENT OF RIGHT-OF-WAY GRANT
ABANDONMENT OF PIPELINE

On October 5, 1987, Apache Oil & Gas Transmission, Inc. filed an application for a right-of-way two hundred feet (200') in width for the construction, maintenance, and operation of a 4.5-inch bulk gas pipeline, 8.92 miles in length, from Hall-Houston Oil Company's Well No. 2 in Block A-14, High Island Area, across Blocks A-13 and A-12, High Island Area; Blocks A-179 and A-178, High Island Area, East Addition, to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition. By Action dated November 2, 1987, the application was approved and the right-of-way granted. Proof of construction was subsequently accepted on April 21, 1988, on 8.94 miles of pipeline.

On June 15, 1988, Apache Oil & Gas Transmission, Inc. assigned unto NRM Operating Company, L.P. all of Assignor's interest in subject right-of-way, effective April 15, 1988.

On August 15, 1988, NRM Operating Company, L.P. assigned unto Hall-Houston Oil Company all of Assignor's interest in subject right-of-way, effective April 15, 1988.

On July 12, 1993, Hall-Houston Oil Company requested relinquishment of the above-described right-of-way in its entirety. Additionally, grantee requested permission to abandon in place the subject pipeline in accordance with 30 CFR 250, Subpart J.

Inasmuch as grantee has agreed to comply with 30 CFR 250, Subpart J, removal of the 8.94 miles of line pipe is hereby waived. However, in the future, should it be determined that this pipeline constitutes a hazard to navigation or commercial fishing operations or unduly interferes with other uses of the OCS, Hall-Houston Oil Company shall be required to remove it.

Therefore, relinquishment of the right-of-way grant associated with the above-described pipeline that is to be abandoned in place is hereby accepted, effective July 12, 1993.

Hall-Houston Oil Company shall, within 30 days after completion of the abandonment, submit a report to this office informing the Minerals Management Service of the date the abandonment was completed and verify such abandonment was completed as approved.

J. Rogers Pearcy
Regional Director

cc: Case File

HALL-HOUSTON OIL COMPANY

700 Louisiana, Suite 2100/Houston, Texas 77002

Telephone
(713) 228-0711
Fax
(713) 225-7600
(713) 225-7601

July 1, 1993

Mr. Daniel J. Bourgeois
Regional Supervisor, Field Operations
U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Attention: MS 5231

RE: Application to Abandon Pipeline
R-O-W Grant OCS-G 9332, Segment No. 8208
High Island Area

Gentlemen:

In accordance with 30 CFR 250.157(c), Hall-Houston Oil Company requests approval to abandon the above referenced DOT pipeline in place.

Reason: Well protector Caisson No. 2 is being removed in July 1993.

Procedure: In accordance with 30 CFR 250.156(a)(1), the pipeline will be flushed and pumped with seawater, cut at the base of each riser in HI A-14 and HI A-173, ends plugged and buried at least 3 feet. The pipeline will be abandoned in a manner that will not constitute a hazard to navigation, commercial fishing operations, or unduly interfere with other uses in the OCS.

Length of Segment to be Abandoned/Relinquished: 47,182 feet

In support of the application to abandon R-O-W Grant OCS-G 9332, the following attachments are being submitted in triplicate:

1. "As-built" pipeline plat
2. Relinquishment of Pipeline R-O-W

Hall-Houston Oil Company anticipates commencing the abandonment operations during July 1993; therefore, your earliest approval will be greatly appreciated. Thank you for your cooperation with this matter.

Sincerely,

HALL-HOUSTON OIL COMPANY

Wayne P. Hall
President

WPH:KC
attachments

c:\wp51\data\pa\plabnltr.a14

RELEASE OF PIPELINE RIGHT-OF-WAY

HALL-HOUSTON OIL COMPANY, as owner and holder, hereby releases, relinquishes, and surrenders to the United States of America, all of its right, title, and interest in and to that certain pipeline right-of-way, OCS-G 9332, granted to Hall-Houston Oil Company, by the United States of America, Minerals Management Service, dated November 2, 1987 and described as follows, to wit:

> Right-of-way two hundred feet (200') feet in width for the construction, operation, and maintenance of a 4-1/2-inch bulk gas pipeline, 8.92 miles in length from Hall-Houston Oil Company's proposed Well No. 2 in Block A-14, High Island Area, across blocks A-13 and A-12, High Island Area; Blocks A-179 and A-178, High Island Area, East Addition, to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition.

Hall-Houston Oil Company requests relinquishment of the right-of-way in its entirety due to the termination of the OCS-G 6177 oil and gas lease covering High Island Area, Block A-14 and the abandonment of the pipeline because of cessation of production.

Executed this 1st day of July, 1993.

WITNESSES:

Jennifer Cook

Robyn L. Arnold

HALL-HOUSTON OIL COMPANY

BY: Wayne P. Hall

Wayne P. Hall
President

THE STATE OF TEXAS §

COUNTY OF HARRIS §

On this 1st day of July, 1993, before me appeared **WAYNE P. HALL**, to me personally known, who, being by me duly sworn (or affirmed) did say that he is the **President** of **HALL-HOUSTON OIL COMPANY** and that the instrument was signed on behalf of the corporation and that **Wayne P. Hall** acknowledged the instrument to be the free act and deed of the corporation.

My Commission Expires:

_____

Leslie D. Moore

NOTARY PUBLIC IN AND FOR
THE STATE OF TEXAS

LESLIE D. MOORE
Notary Public, State of Texas
My Commission Expires 4/30/95

assign\pr-hi93.32

ACCEPTED
J. Roger Hearn
Regional Director
Effective Date JUL 12 1993

7/12/93

To: Adjudication Unit (MS 5421)

From: Pipeline Unit, Field Operations (MS 5232)

Subject: Right-of-Way Relinquishment/Abandonment

Company: Hall Houston Oil Co.

Right-of-Way Number: 9332

The subject abandonment has been reviewed and has been found to be in compliance with 30 CFR 250.157(c).

✓ Pipeline abandoned in place

_____ Pipeline abandoned by removal

_____ Pipeline never constructed

Mike Comer

Enclosure

RECEIVED
JUL 13 1993
MINERALS MANAGEMENT SERVICE
LEASING & ENVIRONMENT

BEST AVAILABLE COPY

A-3

A-172

A-173
OCS-G-6203

A-12
OCS-G-6176

A-179
OCS-G-6207

A-178
OCS-G-6206

A-14
OCS-G-6177

A-13
OCS-G-8156

A-180

X = 3,610,000'
X = 3,620,000'
X = 3,630,000'
X = 3,640,000'
Y = 500,000'
Y = 490,000'
Y = 480,000'
Y = 470,000'

Hall-Houston
Blk. A173-A
X = 3,652,095.09'
Y = 499,833.83'
Lat. 29°06'26.977" N.
Long. 93°49'27.956" W.

B/L X = 3,650,035.81'
Y = 498,381.05'

X = 3,650,747.27' B/L
Y = 498,960.00'

APACHE 12"

FLOW

X = 3,634,195.81' B/L
Y = 486,888.94'

B/L X = 3,628,941.51'
Y = 483,120.00'

X = 3,618,355.81' B/L
Y = 475,464.91'

WELLS 2,3

Hall-Houston
Wells No. 2 & 3
X = 3,614,126.45'
Y = 471,958.73'
Lat. 29°02'07.668" N.
Long. 93°56'49.195" W.

AS BUILT DUAL 4" GAS PIPELINES

TOTAL LENGTH = 47,182.15' = 8.94 MI.

PT.	X	Y
Wells 2,3	3,614,126.45	471,958.73
1	3,614,402.38	472,248.58
2	3,615,239.73	473,205.68
3	3,615,732.72	473,610.19
4	3,616,116.57	473,958.59
5	3,616,616.68	474,184.99
6	3,617,561.21	474,883.24
7	3,618,007.03	475,212.95
8	3,618,517.65	475,581.82
9	3,619,906.88	476,549.75
10	3,620,411.22	476,921.69
11	3,620,832.81	477,268.13
12	3,621,823.35	477,936.34
13	3,622,278.84	478,252.68
14	3,622,767.49	478,651.92
15	3,623,758.75	479,330.35
16	3,624,148.59	479,631.08
17	3,624,651.54	479,982.57
18	3,625,629.09	480,719.15
19	3,625,993.04	481,010.93
20	3,627,933.33	482,431.81
21	3,628,863.45	483,065.95
22	3,629,864.34	483,759.03
23	3,630,808.05	484,441.61
24	3,632,669.52	485,792.29
25	3,633,909.62	486,680.90
26	3,635,016.23	487,485.34
27	3,635,973.32	488,138.27
28	3,636,934.51	488,869.44
29	3,637,839.63	489,499.04
30	3,639,334.72	490,611.69
31	3,640,267.07	491,259.62
32	3,641,137.15	491,876.09
33	3,642,023.64	492,520.23
34	3,642,989.52	493,278.51
35	3,643,876.74	493,910.42
36	3,645,700.78	495,223.27
37	3,646,720.50	495,968.74
38	3,647,642.42	496,642.30
39	3,648,581.31	497,331.65
40	3,649,609.56	498,076.58
41	3,650,084.77	498,416.02
42	3,650,555.68	498,750.18
43	3,650,928.41	499,158.38
A173-A	3,652,095.09	499,833.83

NOTE

ALL COORDINATES SHOWN ARE BASED ON THE TEXAS (Lambert) PLAN COORDINATE SYSTEM, SOUTH CENTRAL ZONE

STATE OF LOUISIANA
SHUBLE J. TENNEY, JR.
REG. No. 4335
REGISTERED
LAND SURVEYOR

CERTIFIED CORRECT AS TO HORIZONTAL POSITION OF AS BUILT PIPELINE

Shuble J. Tenney Jr.
Registered Land Surveyor No. 4335
State of Louisiana
John E. Chance & Associates, Inc.

PREPARED FOR OFFSHORE P/L'S INC.

APACHE OIL & GAS TRANSMISSION, INC.

AS BUILT DUAL 4" GAS PIPELINES

BLOCK A-14 TO BLOCK A-173

HIGH ISLAND AREA
GULF OF MEXICO

SCALE: 1" = 2000' | DATE: DEC. '87 | SHEET 1 OF 1

In Reply Refer To: MS 5232 SN 8208 MAY 28 1993

MConner 5/26/93
Alvarado

Hall-Houston Oil Company
Attention: Ms. Kathy Camp
700 Louisiana, Suite 2100
Houston, Texas 77002

Gentlemen:

Pursuant to the authority granted by 30 CFR 250.150(b), your request dated May 12, 1993, for the modification of pipeline Right-of-Way OCS-G 9332, Segment No. 8208, to allow for the temporary cessation of operation of the associated 4 1/2-inch pipeline is hereby approved, subject to the following conditions:

1. The annual rental required by 30 CFR 250.159(c)(2) shall continue to be due and payable in December of each calendar year.

2. If the associated pipeline is not being used for the purpose for which the pipeline right-of-way grant was made by May 12, 1995, the grant shall be deemed to have expired in accordance with 30 CFR 250.159(e).

3. If, at any time prior to May 12, 1995, it is determined that the use of the associated pipeline is to be permanently discontinued, an application to relinquish the pipeline right-of-way grant shall be submitted to this office for approval.

Sincerely,

(Orig. Sgd.) Kent E. Stauffer

D. J. Bourgeois
Regional Supervisor
Field Operations

bcc: 1502-01 (P/L OCS-G 9332) w/orig application (MS 5232)
1502-01 (P/L OCS-G 9332) w/cy of application (MS 5033)
MS 5270 w/attachment

MConner:km:5/19/93

G 9332

ow mbp
6/2/93

HALL-HOUSTON OIL COMPANY
700 Louisiana, Suite 2100/Houston, Texas 77002

Telephone
(713) 228-0711
Fax
(713) 225-7600
(713) 225-7601

May 12, 1993

Mr. Daniel J. Bourgeois
Regional Supervisor, Field Operations
U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Attention: MS 5231

RE: "Out of Service" R-O-W Pipeline
R-O-W No. OCS-G 9332, Segment No. 8208
High Island Area, Block A-14

Gentlemen:

In accordance with 30 CFR 250.158(c), Hall-Houston Oil Company would like to inform your office that the above referenced DOI pipeline from High Island A-14, Well No. 2 to the "A" Platform in High Island Area, Block A-173 is "out of service".

Lease OCS-G 6177, Well No. 2 loaded up and was shut-in March 10, 1992. This 4-inch pipeline was filled with seawater and blind flanged at each end with a tap and needle valve installed pending permanent abandonment of the well and caisson.

A request to abandon the pipeline in place in accordance with 30 CFR 250.156(a)(1), along with the relinquishment of the R-O-W grant is forthcoming from our Land Department.

If further information is necessary, please do not hesitate to call.

Sincerely,

Kathy Camp
Regulatory & Environmental Manager

KC

c:\wp51\data\cseprod\oosplltr

SN 8208

HALL-HOUSTON OIL COMPANY
700 Louisiana, Suite 2610/Houston, Texas 77002

Telephone
(713) 228-0711
Fax
(713) 225-7600

October 16, 1990

Mr. Daniel J. Bourgeois
Regional Supervisor, Field Operations
U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Blvd.
New Orleans, Louisiana 70123-2394

Attention: MS 5231

RE: Riser Guard Installation

Gentlemen:

Hall-Houston Oil Company has reviewed all pipeline risers installed before April 1, 1988. In order to avoid potential damage to any unprotected pipeline risers, Hall-Houston has installed riser guards throughout our fields. If risers were protected by boat landings, then a riser guard was not installed.

Enclosed, for your files, is the "as-built" riser guard drawing(s) for the following pipeline(s):

OCS-G 9332 & 9333 - (2) 4.5" from High Island A-14, Wells 2 & 3 to High Island A-173 "A"

If further information is required, please advise.

Sincerely,

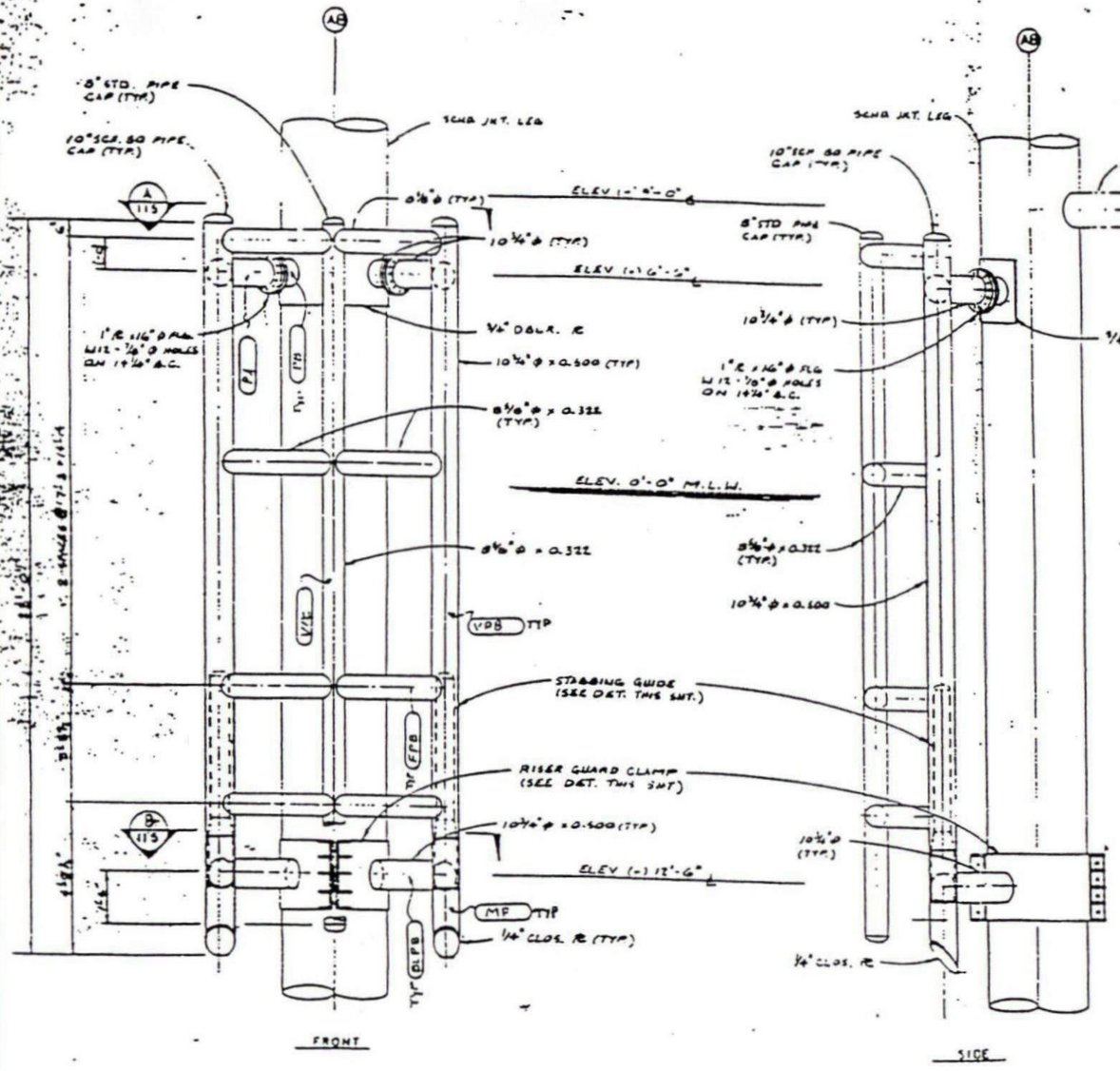
Kathy Camp/ba

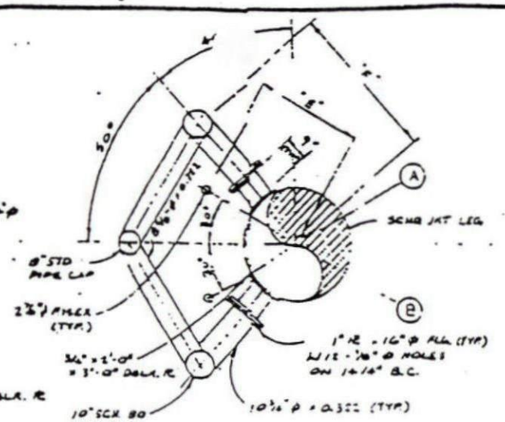
Kathy Camp
Manager, Regulatory Affairs

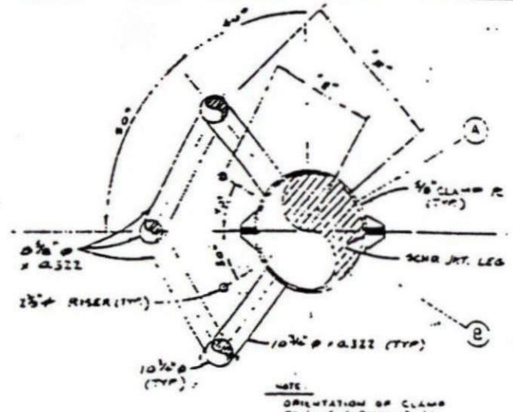
KC:ba

enclosure(s)

risergrd.txt

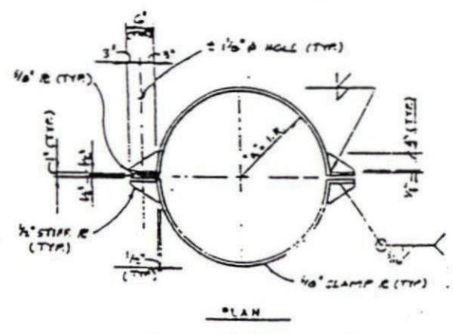




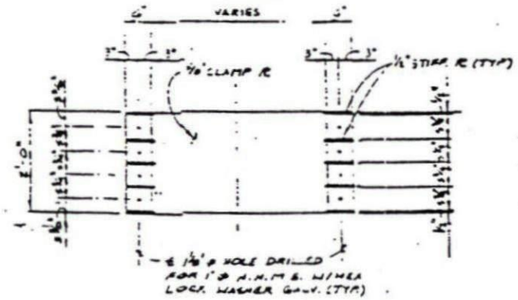


SECTION A 115
SCALE — ½" = 1'-0"

SECTION B 115
SCALE — ½" = 1'-0"

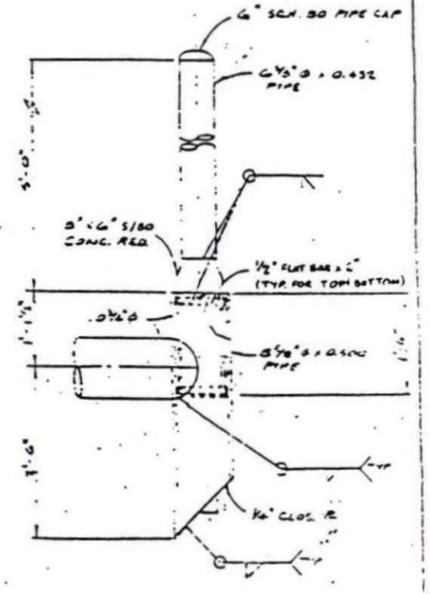


PLAN



ELEVATION

CLAMP DETAIL
SCALE — ¼" = 1'-0"



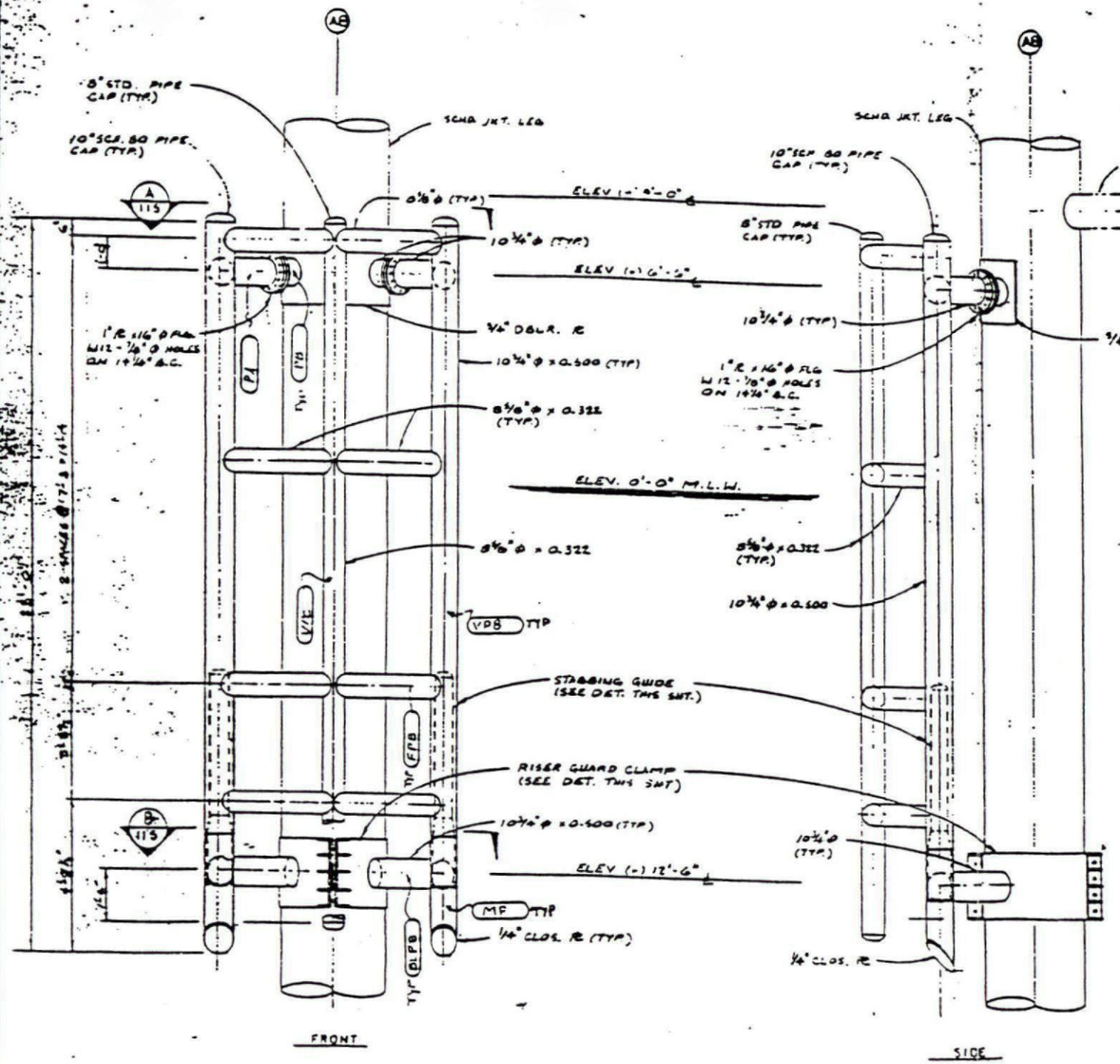
STABBING GUIDE DETAIL
SCALE — 1" = 1'-0"

HALL-HOUSTON OIL COMPANY

TECHNICAL ENGINEERING CONSULTANTS
GRETNA LOUISIANA

TITLE: RISER GAURD
H.I. - A 14

CLIENT: OFFSHORE PIPELINES, INC.



BEST AVAILABLE COPY

HALL-HOUSTON OIL COMPANY

TECHNICAL ENGINEERING CONSULTANTS
GRETNA, LOUISIANA

TITLE
RISER GAURD
H.I. - A 14

CLIENT OFFSHORE PIPELINES, INC.

SN 8208

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
GULF OF MEXICO OCS REGION
1201 ELMWOOD PARK BOULEVARD
NEW ORLEANS, LOUISIANA 70123-2394

TAKE PRIDE IN AMERICA

MINERALS MANAGEMENT SERVICE
RECEIVED
AUG 18 1988
FIELD OPERATIONS
Gulf of Mexico OCS Region, New Orleans, La.

In Reply Refer To: LE-3-1
OCS-G 9332

Instrument:

Filed : August 11, 1988
Executed : August 5, 1988
Approved : August 15, 1988
Effective: April 15, 1988

NRM Operating Company, L.P.
Assignor

Hall-Houston Oil Company
Assignee

ACTION: ASSIGNMENT APPROVED

Right-of-Way

The approval of this assignment is restricted to record title interest only, and by virtue of this approval, the Assignee is subject to, and shall fully comply with, all applicable regulations now or to be issued under the Outer Continental Shelf Lands Act, as amended.

Assignor assigned unto Assignee all of Assignor's right, title, and interest.

Record title interest is now held as follows:

OCS-G 9332 Blocks A-14, A-13, and A-12, High Island Area; Blocks A-179, A-178, and A-173, High Island Area, East Addition

Hall-Houston Oil Company 100%

H. P. Sieverding
Regional Supervisor
Leasing and Environment

cc: Assignor
Assignee
Case File

on map
9/27/88
KT

BEST AVAILABLE COPY

HALL-HOUSTON OIL COMPANY

RepublicBank Center
700 Louisiana, Suite 2390
Houston, Texas 77002
(713) 228-0711

August 9, 1988

RECEIVED

AUG 11 1988

Minerals Management Service
Leasing & Environment

Minerals Management Service
Adjudication Unit, LE-3-1
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

RE: OCS-G 9332
Assignment of Right-of-Way

Gentlemen:

We have enclosed the below Assignment for filing with the Minerals Management Service:

> Three fully executed copies of Assignment of Right-of-Way pertaining to Pipeline Right-of-Way OCS-G 9332, between NRM Operating Company, L.P., Assignor and Hall-Houston Oil Company, Assignee.

Our check number 11157 includes a $50.00 filing fee for the above Assignment.

Please refer to New Orleans Misc. File No. 846 for Hall-Houston Oil Company for documents qualifying said party to hold rights-of-way on the Outer Continental Shelf of the Gulf of Mexico. Hall-Houston Oil Company agrees to comply with and to be bound by the terms and conditions of the right-of-way grant.

We hereby request that the above Assignment be approved effective April 15, 1988 and the approved copy be returned to Lorene C. Roy at the above address.

Very truly yours,

HALL-HOUSTON OIL COMPANY

Gary L. Hall
Chairman

GLH/LCR/sbd
Enclosures

SENT VIA FEDERAL EXPRESS

.361

RECEIVED
AUG 11 1988
Minerals Management Service
Leasing & Environment

ASSIGNMENT OF RIGHT-OF-WAY

FO-2-2
OCS-G 9332

UNITED STATES OF AMERICA	§	KNOW ALL MEN BY
OUTER CONTINENTIAL SHELF LANDS	§	THESE PRESENTS, THAT
OFFSHORE TEXAS	§	

WHEREAS, under date of November 2, 1987, the United States Department of the Interior, Minerals Management Service, approved an Application for Right-of-Way submitted by Apache Oil & Gas Transmission, Inc. described as follows:

> A right-of-way 200 feet in width for the construction, operation and maintenance of a 4 1/2-inch bulk gas pipeline, (OCS-G 9332) 8.92 miles in length, from Hall-Houston Oil Company's Well No. 2 in Block A-14, High Island Area, across Blocks A-13 and A-12, High Island Area; Blocks A-179 and A-178, High Island Area, East Addition to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition (the foregoing being hereinafter referred to as the "Right-of-Way".)

WHEREAS, Apache Oil & Gas Transmission, Inc. transferred said Right-of-Way to NRM Operating Company, L.P., a Delaware limited partnership (hereinafter referred to as "Assignor") effective April 15, 1988.

WHEREAS, said Right-of-Way was transferred by mistake to Assignor and Assignor desires to correct such mistake by transferring said Right-of-Way to Hall-Houston Oil Company (hereinafter referred to as "Assignee") effective April 15, 1988.

NOW, THEREFORE, Assignor, in consideration of the sum of Ten Dollars ($10) cash in hand paid and other good and valuable considerations, the receipt and adequacy of which are hereby acknowledged, does hereby grant, bargain, sell, assign and convey unto Assignee, its successors and assigns, the Right-of-Way described above.

TO HAVE AND TO HOLD the Right-of-Way unto Assignee, its successors and assigns, forever, subject to the terms and provisions of the Right-of-Way and this Assignment and Assignor does hereby bind itself, its successors and assigns, to warrant and defend, all and singular, title to the Right-of-Way unto Assignee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through or under Assignor, but not otherwise.

APPROVED

Regional Supervisor

APR 15 1988

Effective Date

IT IS UNDERSTOOD AND AGREED that such transfer shall cause the Assignee to assume all costs, expenses and other obligations chargeable under the Right-of-Way to such interest and shall likewise operate to give and grant to the Assignee all benefits owing thereunder to the ownership of such interest.

IN WITNESS WHEREOF, Assignor has executed this Assignment of Right-of-Way effective as of April 15, 1988, subject to the approval by the Minerals Management Service under the provisions of 30 CFR §256.97, et.seq.

ATTEST:

By: _____

Title: Assistant Secretary

WITNESSES: Janice L. White

Susan Sokora

ASSIGNOR

NRM OPERATING COMPANY, L.P.,
Natural Resource Management
Corporation, General Partner

By: _____
Steven C. Haworth

Title: Senior Vice President

ACCEPTANCE OF ASSIGNMENT

Hall-Houston Oil Company, Assignee herein, expressly assumes and agrees to discharge all duties and obligations arising out of or imposed by and under each and all of the terms and provisions of the Right-of-Way.

ATTEST:

By: _____

Title: Secretary

WITNESSES: Sheri Detmiller

Nina Ambrosino

ASSIGNEE

HALL-HOUSTON OIL COMPANY

By: _____
Wayne P. Hall

Title: President

STATE OF TEXAS §

COUNTY OF DALLAS §

The foregoing instrument was acknowledged before me this 5th day of August, 1988 by Steven C. Haworth, the Senior Vice President of Natural Resource Management Corportion, General Partner of NRM Operating Company, L.P.

Julie F. Rollins
Notary Public

Julie F. Rollins
Notary Public, State of Texas
My Commission Expires 10/19/91

JHB/jfr

j.05/5&6

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
GULF OF MEXICO OCS REGION

1201 ELMWOOD PARK BOULEVARD
NEW ORLEANS, LOUISIANA 70123-2394

SN 8208

In Reply Refer To: LE-3-1
OCS-G 9332

Instrument:

Filed : April 21, 1988
Executed : April 15, 1988
Approved : June 15, 1988
Effective: April 15, 1988

Apache Oil & Gas
Transmission, Inc.
Assignor

NRM Operating Company, L.P.
Assignee

ACTION: ASSIGNMENT APPROVED Right-of-Way

The approval of this assignment is restricted to record title interest only, and by virtue of this approval, the Assignee is subject to, and shall fully comply with, all applicable regulations now or to be issued under the Outer Continental Shelf Lands Act, as amended.

Assignor assigned unto Assignee all of Assignor's right, title and interest in the right-of-way identified below.

Record title interest is now held as follows:

OCS-G 9332 Blocks A-14, A-13 and A-12, High Island Area;
Blocks A-179, A-178, and A-173, High Island Area, East Addition

NRM Operating Company, L.P. 100%

J. Rogers Pearcy
Regional Director

cc: Assignor
Assignee
Case File

On NRP 6/24/88 KT

NRM

26th Floor • San Jacinto Tower • 2121 San Jacinto Street • Dallas, Texas 75201 • (214) 880-0243

RECEIVED

APR 21 1988

Minerals Management Service
Leasing & Environment

April 19, 1988

Minerals Management Service
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

ATTN: Adjudication
LE-3-1

RE: Pipeline Right-of-Way
OCS-G 9327, OCS-G 9329,
OCS-G 9332 and OCS-G 9333

Gentlemen:

Enclosed please find three (3) fully executed originals of each of the Assignments of the above referenced pipeline right-of-ways from Apache Oil & Gas Transmission, Inc. to NRM Operating Company, L.P.

Also enclosed is our check in the amount of $100.00 to cover the filing fees for these assignments.

Please refer to your New Orleans Miscellaneous File No 904 for Apache Oil & Gas Transmission, Inc. and No. 982 for NRM Operating Company, L.P. for documents qualifying said parties to hold leases and rights-of-way on the Outer Continental Shelf in the Gulf of Mexico.

We hereby request that these assignments be approved effective as of April 15, 1988 and that one approved copy be returned to the undersigned.

Yours truly,

NRM OPERATING COMPANY, L.P.,
Natural Resource Management
Corporation, General Partner

Steven C. Haworth
Senior Vice President

JHB/jfr

cc: Apache Oil & Gas Transmission, Inc.
RepublicBank Center
700 Louisiana, Suite 2390
Houston, TX 77002
ATTN: Lorene Roy

JHB/12

ASSIGNMENT OF RIGHT-OF-WAY

FO-2-2
OCS-G 9332

UNITED STATES OF AMERICA	§	KNOW ALL MEN BY
OUTER CONTINENTIAL SHELF LANDS	§	THESE PRESENTS, THAT
OFFSHORE TEXAS	§	

WHEREAS, under date of November 2, 1987, the United States Department of the Interior, Minerals Management Service, approved an Application for Right-of-Way submitted by Apache Oil & Gas Transmission, Inc. described as follows:

> A right-of-way 200 feet in width for the construction, operation and maintenance of a 4 1/2-inch bulk gas pipeline, (OCS-G 9332) 8.92 miles in length, from Hall-Houston Oil Company's Well No. 2 in Block A-14, High Island Area, across Blocks A-13 and A-12, High Island Area; Blocks A-179 and A-178, High Island Area, East Addition to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition (the foregoing being hereinafter referred to as the "Right-of-Way".)

WHEREAS, Apache Oil & Gas Transmission, Inc., ("Assignor") desires to transfer said Right-of-Way to NRM Operating Company, L.P., a Delaware limited partnership ("Assignee").

NOW, THEREFORE, Assignor, in consideration of the sum of Ten Dollars ($10) cash in hand paid and other good and valuable considerations, the receipt and adequacy of which are hereby acknowledged, does hereby grant, bargain, sell, assign and convey unto Assignee, its successors and assigns, the Right-of-Way described above.

TO HAVE AND TO HOLD the Right-of-Way unto Assignee, its successors and assigns, forever, subject to the terms and provisions of the Right-of-Way and this Assignment and Assignor does hereby bind itself, its successors and assigns, to warrant and defend, all and singular, title to the Right-of-Way unto Assignee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through or under Assignor, but not otherwise.

IT IS UNDERSTOOD AND AGREED that such transfer shall cause the Assignee to assume all costs, expenses and other obligations chargeable under the Right-of-Way to such interest and shall likewise operate to give and grant to the Assignee all benefits owing thereunder to the ownership of such interest.

APPROVED
J. Rogers Pearcy
Regional Director
Effective Date APR 15 1988

IN WITNESS WHEREOF, Assignor has executed this Assignment of Right-of-Way effective as of April 15, 1988, subject to the approval by the Minerals Management Service under the provisions of 30 CFR §256.97, et.seq.

ATTEST:

By: _____

Title: Secretary

WITNESSES: _____

_____

ASSIGNOR

APACHE OIL & GAS TRANSMISSION, INC.

By: _____

Title: Vice President

ACCEPTANCE OF ASSIGNMENT

NRM Operating Company, L.P., Assignee herein, expressly assumes and agrees to discharge all duties and obligations arising out of or imposed by and under each and all of the terms and provisions of the Right-of-Way.

ATTEST:

By: _____

JOHN H. BLAIR

Title: Assistant Secretary

WITNESSES: _____

_____

ASSIGNEE

NRM OPERATING COMPANY, L.P.,
Natural Resource Management
Corporation, General Partner

By: _____

Title: STEVEN C. HAWORTH
SENIOR VICE PRESIDENT

STATE OF TEXAS §

COUNTY OF HARRIS §

The foregoing instrument was acknowledged before me this 15th day of April, 1988 by Wayne P. Hall, the Vice President of Apache Oil & Gas Transmission, Inc., a Texas Corporation.

_____
Notary Public

LORENE C. ROY
Notary Public
STATE OF TEXAS
My Comm. Exp. May 19, 1991

JHB/jfr

j.05/5&6

UNITED STATES

DEPARTMENT OF THE INTERIOR

MINERALS MANAGEMENT SERVICE

No. 1204147

May 9, 1988
DATE

Pipeline Assignments, OCS-G 9327,
9329, 9332, 9333
PARENT SERIAL NUMBER

Blocks A-173, A-178, A-177, A-176, A-184, High Island Area,
East Addition; Blocks 338, 339, 340, 341, 342, W. Cameron Area,
West. Addition
SUBJECT

APPLICANT:

NRM Operating Company, L.P.
26th Floor, San Jacinto Tower
2121 San Jacinto Street
Dallas, Texas 75201

REMITTER IF DIFFERENT THAN APPLICANT:

PURPOSE	FUND SYMBOL	AMOUNT
FILING FEE EARNED	140850 (17)	$100 00
ADVANCE FILING FEE AND/OR RENTAL	14X6800 (17)	
ONE-FIFTH BONUS	14X6875 (17)	
FIRST YEAR'S RENTAL		
FOUR-FIFTHS BONUS		
TOTAL		$100 00

Check No. 1924, dated 4/19/88, Citibank (Delaware) Citicorp

REMARKS _____

_____

_____

_____ BY _____ DATE _____

DO NOT ACCEPT THIS COPY AS A RECEIPT

UNEARNED FILE COPY

MMS-0001
Jan. 10, 1983

BEST AVAILABLE COPY

SN 5208

Britton 4-20-88
Howard 4/20/88
Stauffer 4/20/88

In Reply Refer To: FO-2-2
OCS-G 9332

APR 2 1 1988

ACTION

Apache Oil & Gas Transmission, Inc.	:	Pipe Line Right-of-Way
	:	
	:	Date of Permit: 11-2-87
	:	
	:	Proof of Construction
	:	Received: 4-6-88

Proof of Construction Accepted

The above-captioned grantee has submitted the evidence required by the law and Regulation 30 CFR 256.95(a). The proof of construction is hereby accepted and approved. Deviation from the original plat has been noted, and the new plat made a part of the record.

The maximum allowable operating pressure for this pipeline will be 2,160 psig.

The total length of the "as-built" pipeline right-of-way is 8.94 miles.

(Orig. Sgd.) J. Rogers Pearcy

J. Rogers Pearcy
Regional Director

bcc: P/L OCS-G 9332 (w/attachments) (K. Faust) (FO-2-2)
P/L OCS-G 9332 (FO-2-2)
ORD Reading File
OPS-6 (w/copy of location plat)
L. Boehm (LE-3-1)

ABritton:mcs:4/19/88:LEXITYPE Disk 6

for mcs 4/21/88 KF

APACHE
OIL & GAS TRANSMISSION, INC.

RepublicBank Center
700 Louisiana, Suite 2390
Houston, Texas 77002
(713) 225-4187
(713) 225-6312

April 5, 1988

Mr. J. Rogers Pearcy
U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

Attention: FO-2-2

RE: As-Built Survey Plan and Hydrostatic Test Results
for Pipeline Right-of-Way OCS-G 9332
High Island Area, Block A-14

Gentlemen:

In accordance with OCS Order No. 9.2.3, Apache Oil & Gas Transmission, Inc. hereby submits the following information in support of the installation of one (1) 4.5-inch pipeline (OCS-G 9332) from Hall-Houston Oil Company's Well No. 2 in Block A-14, High Island Area to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition.

Apache Oil & Gas Transmission, Inc. successfully performed a hydrostatic test on the subject line on March 5, 1988, as reflected on the enclosed test charts (submitted in duplicate).

Additionally, enclosed are three (3) certified "as-built" survey plats.

Should you have any questions concerning this matter, please contact the undersigned at your earliest convenience.

Sincerely,

Gary L. Hall/kc

Gary L. Hall
Chairman

GLH:KC

enclosures

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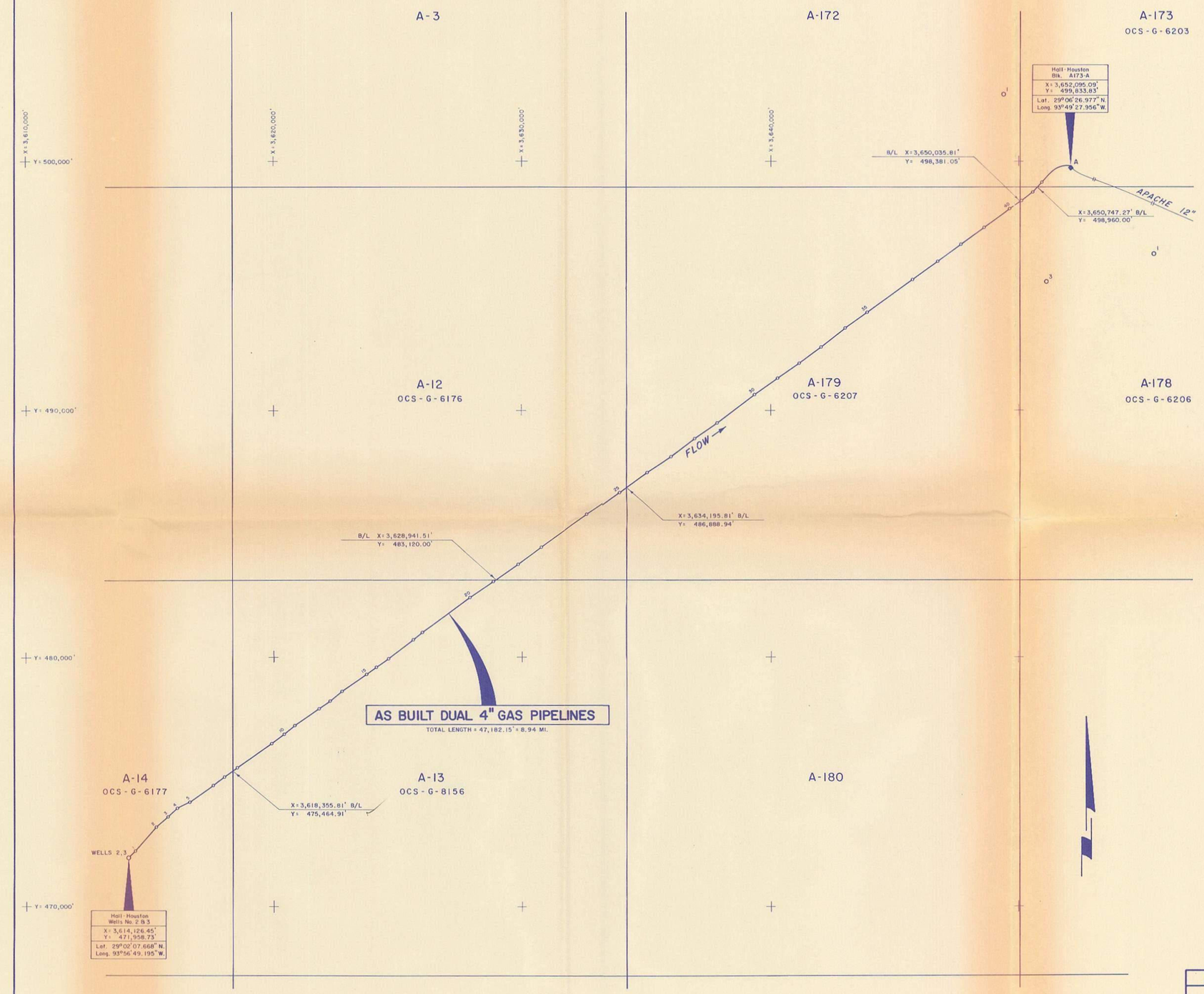

AS BUILT DUAL 4" GAS PIPELINES

TOTAL LENGTH = 47,182.15' = 8.94 MI.

PT.	X	Y
Wells 2,3	3,614,126.45	471,958.73
1	3,614,402.38	472,248.58
2	3,618,239.73	473,205.68
3	3,615,732.72	473,610.19
4	3,616,116.57	473,958.59
5	3,616,616.68	474,184.99
6	3,617,561.21	474,883.24
7	3,618,007.03	475,212.95
8	3,618,517.65	475,581.82
9	3,619,906.88	476,549.75
10	3,620,411.22	476,921.69
11	3,620,832.81	477,268.13
12	3,621,823.35	477,936.34
13	3,622,278.84	478,252.68
14	3,622,767.49	478,651.92
15	3,623,758.75	479,330.35
16	3,624,148.59	479,631.08
17	3,624,651.54	479,982.57
18	3,625,629.09	480,719.15
19	3,625,993.04	481,010.93
20	3,627,933.33	482,431.81
21	3,628,863.45	483,065.95
22	3,629,864.34	483,759.03
23	3,630,808.05	484,441.61
24	3,632,669.52	485,792.29
25	3,633,909.62	486,680.90
26	3,635,016.23	487,485.34
27	3,635,973.32	488,138.27
28	3,636,934.51	488,869.44
29	3,637,839.63	489,499.04
30	3,639,334.72	490,611.69
31	3,640,267.07	491,259.62
32	3,641,137.15	491,876.09
33	3,642,023.64	492,520.23
34	3,642,989.52	493,278.51
35	3,643,876.74	493,910.42
36	3,645,700.78	495,223.27
37	3,646,720.50	495,968.74
38	3,647,642.42	496,642.30
39	3,648,581.31	497,331.65
40	3,649,609.56	498,076.58
41	3,650,084.77	498,416.02
42	3,650,555.68	498,750.18
43	3,650,928.41	499,158.38
A173-A	3,652,095.09	499,833.83

NOTE

ALL COORDINATES SHOWN ARE BASED ON THE TEXAS (Lambert) PLAN COORDINATE SYSTEM, SOUTH CENTRAL ZONE

STATE OF LOUISIANA
SHUBLE J. TENNEY, JR.
REG. No. 4335
REGISTERED
LAND SURVEYOR

CERTIFIED CORRECT AS TO HORIZONTAL POSITION OF AS BUILT PIPELINE

Shuble J. Tenney Jr.
Registered Land Surveyor No. 4335
State of Louisiana
John E. Chance & Associates, Inc.

PREPARED FOR OFFSHORE P/L'S INC.

OCS-G 9332

APACHE OIL & GAS TRANSMISSION, INC.

AS BUILT DUAL 4" GAS PIPELINES

BLOCK A-14 TO BLOCK A-173

HIGH ISLAND AREA

GULF OF MEXICO

SCALE: 1" = 2000' | DATE: DEC. '97 | SHEET 1 OF 1

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OCS-G 9337

HYDROSTATIC TEST REPORT

COMPANY: Hall-Houston

PROJECT: HI A-14 #2 TESTED BY: Offshore Pipelines

TEST SECTION: _____ LENGTH: _____

PIPE: 4 1/2 O.D. X ____ W.T., GRADE ____ MANUFACTURER: _____

PRESSURE RECORDER: MFG DEADCO SERIAL NO.: P11200

DATE CALIBRATED: 2-29-88

DEAD WEIGHT GAUGE: MFG DEADCO SERIAL NO.: 1667

DATE CALIBRATED: 2-29-88

FILL PUMP: MFG/TYPE: Haskel 33-01155 HP3A23 LOCATION: _____

PRESSURE PUMP: MFG/TYPE: _____ LOCATION: _____

PRESSURIZATION STARTED: TIME/DATE: 0900 3/5 COMPLETED: TIME/DATE: 0950 3/5

TEST STARTED: TIME/DATE: 0950 3-5-88 PRESSURE 3240 PSIG

AMBIENT TEMP.: _____ °F PIPE TEMP.: _____ °F

TEST COMPLETED: TIME/DATE 1150 3-5-88 PRESSURE 3240 PSIG

AMBIENT TEMP.: _____ °F PIPE TEMP.: _____ °F

REMARKS: _____

Test pump from Industrial Pressure Inc
Belle Chase, La.

WITNESS: COMPANY: _____ DATE: _____

CONTRACTOR: Jimmy Rocco DATE: 3-5-88

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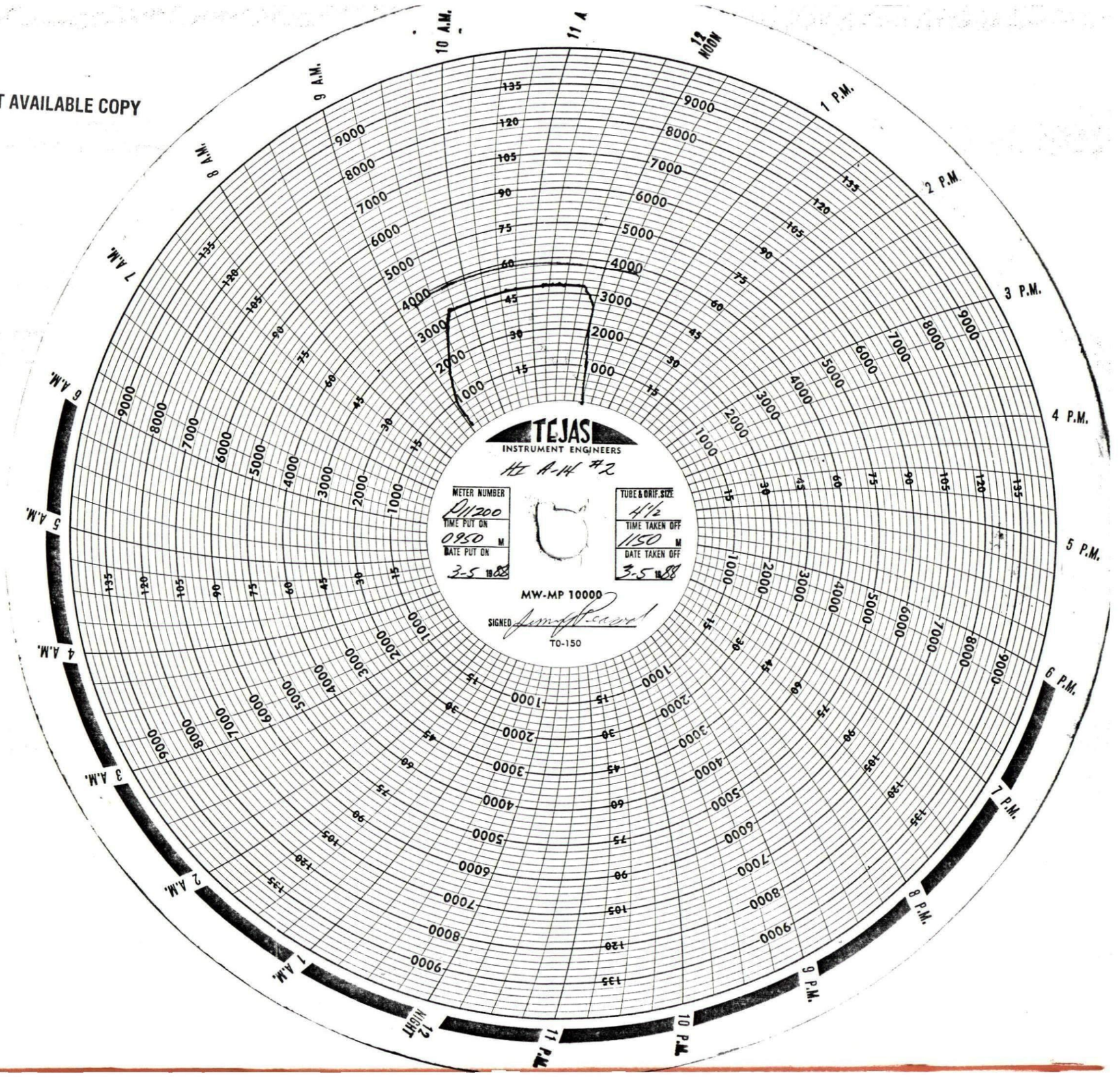

BEST AVAILABLE COPY

OCS-G 9332
ID#: G 9333

NOTIFICATION OF PIPELINE INSTALLATION/HTP

REPORT RECEIVED BY

Name: Autry Britton

Date: 11-4-87

REPORT GIVEN BY

Name: Kathy Crum (Apache Agent)

Phone: (713) 558-0607

Company: Apache Oil & Gas Inc.

PIPELINE INSTALLATION

Date of Installations: 11-9-87

Contractor and Barge No: Offshore Pipeline Inc. #701 Heliport Location: On Barge

Size of Pipeline: 4½ (each pipeline) 8.92 Miles

Service: BL KG

From: Structure Well # 2 & 3 To: Structure/SSTI Platform A

Block A-14 Block A-173

Lease High Island Area, East Addition Lease A-F, E.A.

Where Construction begins: Well # 2 & 3 on A-F, E.A.

Length of time barge will be on job:

District Notified Date:

Time:

Person Contacted:

Date of Inspection: Date Inspection Report Received:

PIPELINE HTP

Date of Test:

Location of Recorder:

Location of Heliport:

District Notified Date:

Time:

Person Contacted:

Date of Inspection: Date Inspection Report Received:

Remarks:

Note: Upon Completion of the P/W-P/C Construction the Barge will move to Start Construction on the following Segments # 8160, 8161, 8162, and 8143

Britton 10-29-87
Howard 10/30/87
Stauffer 10/30/87

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SN 9332

NOV 0 2 1987

In Reply Refer To: FO-2-2
OCS-G 9332

High Island Area
High Island Area, East Addition

Apache Oil & Gas Transmission, Inc.

Right-of-Way

ACTION: APPLICATION APPROVED

Your application for a right-of-way 200 feet in width for the construction, operation, and maintenance of a 4 1/2-inch bulk gas pipeline, 8.92 miles in length, from Hall-Houston Oil Company's Well No. 2 in Block A-14, High Island Area, across Blocks A-13 and A-12, High Island Area; Blocks A-179 and A-178, High Island Area, East Addition, to Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition, dated October 1, 1987, with its attachments, is hereby approved subject to the following:

The unidentified magnetic anomalies listed below may represent a historic shipwreck or associated cultural debris. In accordance with Notice to Lessees and Operators No. 75-3 (Revision No. 1, Enclosure No. 3), you shall either determine that an anomaly does not have historic significance or avoid it when conducting the proposed activities as indicated below:

Line No.	Shot Point No.	Intensity (gammas)	Avoidance Distance (feet)
12	104.52	7	250
13	96.18	50	500

The maximum allowable operating pressure (MAOP) for this pipeline will be 2,160 psig.

(Orig. Sgd.) J. Rogers Pearcy

J. Rogers Pearcy
Regional Director

bcc: P/L OCS-G 9332 (K. Faust) (FO-2-2)
P/L OCS-G 9332 (FO-2-2)
ORD Reading File
LE-5
LE-3-1
FO-7

ABritton:jj:10/28/87:Disk 6

UNITED STATES GOVERNMENT
MEMORANDUM

BEST AVAILABLE COPY

October 23, 1987

To: Regional Supervisor, Field Operations, GOM OCS Region (FO)

From: Regional Supervisor, Leasing and Environment, GOM OCS Region (LE)

Subject: National Environmental Policy Act Review for Pipeline Right-of-Way Application OCS-G 9332

Action Submitted: October 5, 1987

Action Commencement: October 30, 1987

Apache Oil & Gas Transmission, Inc.
Pipeline Right-of-Way Application
High Island Blocks A-14, A-13, A-12, High Island East Addition, Blocks A-179, A-178, and A-173

The operator proposes to construct a 4 1/2-inch O.D. natural gas/condensate pipeline from Hall-Houston Well No. 2 in Block A-14 to production Platform "A" in Block A-173; a length of approximately 47,117.71 feet (8.92 miles).

Our National Environmental Policy Act (NEPA) review of the subject action is complete. The following environmental protective measure intended to avoid or mitigate potential impacts associated with the action is provided for inclusion in the Right-of-Way approval letter:

The unidentified magnetic anomalies or side-scan sonar contacts listed below may represent archaeological resources. In accordance with NTL No. 75-3 (Revision No. 1, Enclosure No. 3), you shall either determine that the potential archaeological resources do not have historic significance, or you shall avoid them when conducting proposed activities as indicated by the avoidance criteria below:

Block	Line No.	Shot Point	Avoidance Criteria
A-173	12	104.52	76m(250ft)
A-178	13	96.18	152m(500ft)

H. P. Sieverding

cc: Pipeline File OCS-G 9332 (LE-5)

ODeWald:mbw:ocsg9332.row

UNITED STATES GOVERNMENT
MEMORANDUM

Date: 10-9-87

To: Right-of-Way Pipeline File OCS-G 9332 FO (~~FE~~)

Through: Supervisor, Platform/Pipeline Unit, Plans, Platform and Pipeline Section, Field Operations, Gulf of Mexico OCS Region (FO-2-2)

From: Petroleum Engineer, Platform/Pipeline Unit, Plans, Platform and Pipeline Section, Field Operations, Gulf of Mexico OCS Region (FO-2-2)

Subject: Pipeline Right-of-Way Application, Technical Review, Apache Oil & GAS Transmission, Inc., OCS-G 9332

Size (inches)	Length (feet)	Service	From	To
4.5	47,117	BLKG	Well No. 2 Block A-14 High Island Area	Platform A Block A-173 High Island, East Addition

Recommendations:

✓ 1. The technical aspects of the proposed pipeline are acceptable in accordance with appropriate Regulations and Standards.

____ 2. Advise applicant of Notice to Lessees and Operators No. 83-3.

____ 3. Valve protection cover shall not protrude above the level of the mud line.

____ 4. Subsea valves and taps associated with this pipeline shall be provided with a minimum of three feet of cover, either through burial, with sandbags, or other acceptable method.

✓ 5. MAOP will be 2160 PSIG.

A. Britton

cc: 1502-01 OCS-G 9332 (w/orig appln) (Seg. 8208) (FO-2-2)
OPS-6 (w/cy of plat) ✓

ABritton:jj:LEXITYPE Disk 6

on map 10/28/87 KT

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PIPELINE RIGHT-OF-WAY APPLICATION "ENGINEERING CHECKLIST"

MINERALS MANAGEMENT SERVICE
GOM REGIONAL OFFICE

Date: 10-9-87

OCS-G 9332

A. Description of pipeline and location of proposed route (i.e., size of pipe, product to be transported, from where to where, platform number, name, block number, area, and distance in feet and miles): For a 4½-inch Natural gas and Condensate Pipeline, 47,117 ft. or 8.92 miles in length, from Hall-Houston Oil Company's Well No. 2 in Block A-14 High Island Area TO Hall-Houston Oil Company's Platform A in Block A-173, High Island Area, East Addition.

B. Safety Flow Schematic - Verify that the information shown on the safety flow schematic diagram contains the following:

✓ 1. **Pressure source is drawn into the schematic with the following:**

   a. **source (i.e., name)** Well

   b. **design working pressure** SITP = 1400 PSIG.

   c. **high-low pressure sensor settings** _____

✓ 2. **"ANSI" ratings of all valves, flanges, and fittings between the source and the connecting pipeline are shown.**

— 3. **Pressure relief valves, where applicable, are shown with the setting set no higher than the maximum working pressure (MWP) of the vessel.**

N/A 4. **If the maximum input source pressure is greater than the maximum allowable operating pressure (MAOP) of the pipeline, redundant safety equipment is required.**

✓ 5. **MAOP of proposed pipeline does not exceed MAOP of connecting pipeline.**

✓ 6. **The pipeline leaving the platform receiving production from the platform is equipped with high-low pressure sensors to directly or indirectly shut-in the well or wells on the platform.**

✓ 7. **The pipeline delivering production to the production facilities on the platform is equipped with an automatic fail-close valve tied into the automatic and remote shut-in system.**

N/A 8. **The pipeline crossing the platform which does not deliver production to the platform, but which may or may not receive production from the platform, is equipped with high-low pressure sensors connected to an automatic fail-close valve located in the upstream portion of the pipeline at the platform. In addition, the sensors are tied into either the platform's automatic and remote shut-in system or an independent remote shut-in system.**

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✓ 9. The pipeline boarding the platform/pipeline is equipped with a check valve.

✓ 10. The pipeline leaving the platform is equipped with a check valve.

✓ 11. The high-low pressure sensors on the departing pipeline is located upstream of the check valve.

N/A 12. Where applicable, high-low sensors are located downstream of the back pressure regulator.

N/A 13. If there is liquid injection into the line, are pumps associated with the injection? (Yes or No) _____

✓ 14. Direction of flow indicated.

✓ 15. Pipe specifications (i.e., size, grade, weight, and wall thickness).

✓ 16. Total length of proposed pipeline (feet and miles).

N/A 17. MAOP of connecting pipeline.

✓ 18. Statement that design meets or exceeds DOT Regulations 192 or 195, as applicable, and/or applicable OCS orders, registered engineer's seal, registration number, date, and signature.

✓ 19. Area and block number of proposed pipeline/platform.

✓ 20. Cathodic protection specifications.

C. Design Information - Verify that the pipeline design information given in the application and/or on the data sheet is complete and correct:

✓ 1. Product to be transported: Buck Gas

✓ 2. Pipeline, riser, and subsea valve assembly specifications:

(1) Size 4.5" Wall Thickness .337" Grade B Weight 14.98 lbs/ft.

(2) Size _____ Wall Thickness _____ Grade _____ Weight _____ lbs/ft.

(3) Size _____ Wall Thickness _____ Grade _____ Weight _____ lbs/ft.

b. Riser:

(1) Size 4.5" Wall Thickness .337" Grade B Weight 14.98 lbs/ft.

(2) Size _____ Wall Thickness _____ Grade _____ Weight _____ lbs/ft.

(3) Size _____ Wall Thickness _____ Grade _____ Weight _____ lbs/ft.

c. Subsea valve assembly:

(1) Size _____ Wall Thickness _____ Grade _____ Weight _____ lbs/ft.

(2) Size _____ Wall Thickness _____ Grade _____ Weight _____ lbs/ft.

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3. Water depth: Maximum -65' Minimum -62'

4. Type of corrosion protection:

a. Impressed current system

b. Sacrificial anode system

(1) Type of anode Zinc

(2) Spacing interval 530 ft.

(3) Weight of unit anode given by applicant 33 lbs. ea.

c. If platform anodes are used, are they considered adequate?

Yes _____ No _____

d. If pipeline anodes are used:

Formula: $Le_{p/l} = 3.82 \times 10^4 \times W^o/DIR =$ 38200 × 33/4.5 × 530 × 26 = 20 yrs.

Where:
W^o = Weight of Anode unit (lbs)
D = Dia. of pipe (inches)
I = Separation between anodes (ft.)
R = the following lbs/amp/year (Rate of Consumption)
Aluminum or Galvalum = 7.6
Zinc = 26
Magnesium = 17.5

Does the calculated life expectancy equal or exceed 20 years?

Yes _____ No _____

5. Description of protective coating:

a. Pipeline — 14 mils of fusion bonded epoxy

b. Riser — 14 mils of fusion bonded epoxy

c. Subsea valve assembly

N/A 6. Description of weighted coating:

a. Preconcrete coating _____

b. Density of concrete _____ PCF

c. Thickness of concrete _____

d. Thickness of asphalt _____

7. Calculate the specific gravity (one of the following formulae may be used)

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✓ a. For epoxy coating: $SG = 2.865W/D^2$ $= 2.865 \times 14.98/20.25 = 2.12$

b. Density comparison with fluid material: $SG = \frac{W+P}{\frac{A}{R}}$

c. Lines with a specific thickness of concrete:

$$SG = \frac{RC}{R} + \frac{K_2}{(T-K_1)^2}\left(\frac{W+P}{K_3} - \frac{RC}{R}\right)$$

d. Lines having two coatings of enamel and a felt wrap, or only asphaltmastic coating:

$$SG = \frac{W+P}{K_3}$$

Where:
SG = specific gravity
RC = density of concrete (lb/cu. ft.)
K_1, K_2, K_3 = coefficients
T = thickness of concrete coating (inches)
W = weight of bare pipe (lb/ft)
P = weight of coating
R = density of fluid material (lb/cu. ft.); i.e., sea water = 64 lbs/cu. ft.
D = diameter of pipe (inches)
A = cross-sectional area

✓ 8. Given specific gravity

a. 2.13 b. _____ c. _____

9. Gravity or density of product(s) _____

✓ 10. Design capacity of pipeline 5MMSCFD

✓ 11. Given Hydrostatic Test Pressure: Line Pipe 3240 Psig Hold Time 2 hrs.

Preinstallation Test _____ Riser 3240 Psig Hold Time 2 hrs.

Recommended maximum hydrostatic body test for ANSI valves, flanges, and fittings are as follows:

ANSI 300 - 1,100 psig
ANSI 400 - 1,450 psig
ANSI 600 - 2,175 psig
ANSI 900 - 3,250 psig
ANSI 1,500 - 5,400 psig

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Note: Minimum hold times:

Gas =	**Line Pipe = 8 hrs. Riser = 4 hrs. (pretest) or DOT 192.507(c)**	**Liquid =**	**4 hrs. @ 125% of MOP Plus 4 hrs. @ 110% if leak inspection is not visable during test**

✓ 12. **Maximum Allowable Operating Pressure (MAOP) of line pipe:**

MAOP = $\frac{2 \text{ st} \times F \times E \times T}{D}$ **Note: F = .72; E = 1; T = 1**

a. MAOP = $\frac{2 \times 35{,}000 \times .337}{4.5} \times .72 = 3{,}774 \text{ Psig}$

b. MAOP =

c. MAOP =

✓ 13. **MAOP of riser pipe.**

Note: F = .50 for risers on natural gas transmission lines.
Note: F = .60 for risers on liquid pipelines.

a. MAOP = $\frac{2 \times 35{,}000 \times .337}{4.5} \times .60 = 3{,}145 \text{ Psig}$

b. MAOP =

L 14. **MAOP of flanges, fittings, and valves:**

2.4 x ANSI rating = $2.4 \times 900 = 2{,}160 \text{ Psig}$

✓ 15. **MAOP of proposed pipeline as determined in accordance with Title 49 CFR Part 195 or 192, as applicable, is** 2160 **psig.**

L 16. **Items 12, 13, and 14 above are equal to or more than the maximum allowable working pressure (MAWP) of source.**

L 17. **Verify: 1:25 maximum source pressure (MSP) $\leq$ hydrostatic test pressure (HTP) $\leq$ .95 (smaller IP @ SMYS of items 12 or 13 above)**

_____ $\leq$ 3240 $\leq$ 4980

Note: The recommended limit of test as a percentage of internal pressure @ specificed minimum yield strength is equal to 95%:

IP @ SMYS = $\frac{2 \times s \times t}{D}$ = $5{,}242 \text{ Psig}$

✓ 18. **Verify MAOP does not exceed the lowest of the following:**

a. Suomerged components: HTP/1.25 = $2{,}592 \text{ Psig}$

b. Riser: HTP/1.5 = _____

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N/A 19. Valve guards used: Yes ____ No ____

D. Installation Requirements:

✓ 1. All pipelines will be installed or laid to a minimum of three feet below the level of the mudline out to and including the 200 foot water depth, except at pipeline crossings. Any deviation must be justified at the time of application.

N/A 2. All valves and taps must be provided with a minimum of three feet of actual cover either with soil or sandbags or jetted to a minimum of three feet below the mudline. If MMS approved valve protection covers are used, the valves and taps are NOT required to have a minimum of three feet of actual cover or jetted three feet below the mudline. However, the top of the valve protection cover shall not protrude above the level of the mudline. Any deviation must be justified at the time of application.

E. Pipeline Crossings:

N/A 1. All pipeline crossings in water depths up to and including 200 feet shall be cement-bagged with a minimum of 18 inches between the lines with the uppermost line having a minimum of 3 feet of cover in the form of cement bags installed so as to provide a three foot horizontal to a one foot vertical (3:1) slope with a crown width that is one and one-half (1½) times the pipe diameter. Any deviation must be justified at the time of application.

N/A 2. All pipeline crossings in water depths greater than 200 feet shall be cement bagged with a minimum of 18 inches between the lines and installed so as to provide a three foot horizontal to a one foot vertical (3:1) slope. Any deviation must be justified at the time of application.

F. Construction Information:

✓ 1. Proposed construction commencement date — 10-30-87

____ 2. Method of construction

____ 3. Method of burial

✓ 4. Time required to lay pipe — 5 days

✓ 5. Time required to complete project — 30 days

G. Applicant complies with current OCS pipeline guidelines:

Yes ✓ No ____

OCS-G 9332

APACHE

OIL & GAS TRANSMISSION, INC.

RepublicBank Center
700 Louisiana, Suite 2390
Houston, Texas 77002
(713) 225-4187
(713) 225-6312

October 1, 1987

Mr. J. Rogers Pearcy
Regional Director
U. S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Attention: FO-2-2

RE: Application for a Pipeline Right-of-Way for
Apache Oil & Gas Transmission, Inc.'s Proposed
4.5-Inch O.D. Natural Gas Pipeline In and/or
Through High Island Area, Blocks A-12, A-13, A-14, A-172, A-173,
and A-179, Gulf of Mexico, Federal Waters, Offshore Texas

Gentlemen:

Pursuant to the authority granted in Section 5(e) of the Outer Continental Shelf Lands Act (67 Stat. 462) (43 U.S.C. 1331), as amended (92 Sta. 629), and in compliance with the regulations contained in Title 30 CFR, Part 256, Subpart N, Apache Oil & Gas Transmission, Inc. is filing this application in quadruplicate (original and three copies) for a right-of-way two hundred feet (200') in width for the construction, maintenance and operation of a 4.5-inch O.D. natural gas pipeline in the High Island Area, Gulf of Mexico. Apache Oil & Gas agrees that said right-of-way, if approved, will be subject to the terms and conditions of said regulations.

This 4.5-inch O.D. pipeline will be used to transport natural gas and condensate from Hall-Houston Oil Company's Caisson No. 2 (Well No. 2), OCS-G 6177, in High Island Area Block A-14, to a production platform "A" in High Island Area Block A-173. The pipeline will depart Hall-Houston Oil Company's Caisson No. 2 in a Northeasterly direction approximately 47,117 feet (8.92 miles) to the "A" platform in High Island Block A-173, all being in the Gulf of Mexico, federal waters, offshore, Texas. The proposed construction commencement date is October 30, 1987, with the time required to lay the pipe being estimated at 5 days with an overall completion of project time being estimated at 30 days.

This application (and any amendments made hereto) is made with our full knowledge and concurrence with the OCS Lands Act (43 U.S.C. 1331, et. seq.), as amended (P.L. 95-372), including the following: Sec. 5(e) addressing pipeline rights-of-way, requirements of the Federal Energy Regulatory Commis-

sion relating to notice of hearing, transportation and purchase of oil and gas without discrimination; Sec. 5(f)(1) addressing operation of pipelines in accordance with competitive principles, including open and nondiscriminatory access to both owner and non-owner shippers; Sec. 5(f)(2) which may allow exemption of the requirements in Sec. 5(f)(1); Sec. 5(e) addressing the assuring of maximum environmental protection, including the safest practices for pipeline installation; and Sec. 5(f)(1)(B) which may require expansion of throughput capacity of any pipeline except for the Gulf of Mexico or the Santa Barbara Channel.

Additionally, we expressly agree that if any site, structure, or object of historical or archaeological significance should be discovered during the conduct of any operations within the permitted right-of-way, we shall report immediately such findings to the Director, Gulf of Mexico OCS Region, and make every reasonable effort to preserve and protect the cultural resource from damage until said Director has given directions as to its preservation.

In accordance with applicable regulations, we have delivered a copy of the application and attachments thereto by certified mail, return receipt requested, to each lessee or right-of-way or easement holder whose lease, right-of-way or easement is so affected. A list of such lessees or right-of-way or easement holders is attached (see Attachment "A") and copies of the return receipts showing date and signature as evidence of service upon such lessees or right-of-way or easement holders will be forwarded to your office when received. In order to expedite the permit process, we have requested a letter from the lessee, right-of-way or easement holder expressing no objection to the proposed project. When obtained these letters will be forwarded to your office. The proposed right-of-way does not adjoin or subsequently cross state submerged lands.

Applicant agrees to be bound by the foregoing regulations, and further agrees to comply with the applicable stipulations as set forth in the OCS Pipeline Procedures Guidebook dated March, 1984, revised September, 1984.

In support of our application and for your review and use, the following maps, drawings and documents have been enclosed herewith and made a part hereof:

1. Index or vicinity map, Sheet 1 of 3 (four copies enclosed),

2. Route & Profile Map, Sheets 2 and 3 (four copies enclosed),

3. Engineering and hazard survey - see J. Chance & Associates. report booklet (two copies enclosed),

4. Attachment I - Schematic (four copies enclosed),

5. Attachment II - Pipe Specifications and General Information and Calculations, (four copies enclosed).

6. Originally signed copy of Nondiscrimination in Employment Stipulation is attached to each copy of the application.

7. Draft/Check No. 546 in the amount of $235.00 of which $100.00 covers the application fee and $135.00 covers the first year's rental on 8.92 miles of right-of-way.

Company contact on technical points or other information:

Ms. Kathy Camp
Apache Oil & Gas Transmission, Inc.
700 Louisiana, Suite 2390
Houston, Texas 77002
Telephone: 713/228-0711

"Apache Oil & Gas Transmission, Inc. hereby agrees to keep open at all reasonable times for inspection by the Minerals Management Service, the area covered by this right-of-way and all improvements, structures, and fixtures thereon and all records relative to the design, construction, operation, maintenance, and repairs, or investigations on or with regard to such area."

Please refer to your New Orleans Miscellaneous File No. 904 for a copy of a resolution approved by the Board of Directors authorizing the undersigned to sign for and on behalf of Apache Oil & Gas Transmission, Inc.

If the above information meets with your approval, we would appreciate your issuing the necessary decision for the right-of-way at your earliest convenience. Inquiries concerning this application should be directed to our regulatory agent at J. Connor Consulting, Attention: Ms. Kathy Camp (713) 558-0607.

Sincerely,

Gary L. Hall

Gary L. Hall
Chairman

GLH:KC:bna
Attachment and enclosures

cc: Lessees and Right-of-Way Holders as indicated on Attachment "A", all with Copy of Attachments and Enclosures

AMOCO PRODUCTION COMPANY
Attn: Mr. H. D. Lewis
P. O. Box 39500
Lafayette, Louisiana 70503
(Certified Mail: P-500 089 519)

SOHIO PETROLEUM COMPANY
Attn: Mr. E. P. Zseleczky, Jr.
9401 Southwest Frwy, Suite 1200
Houston, Texas 77074
(Certified Mail: P-500 089 520)

AMERADA HESS CORPORATION
Attn: Mr. A. Jack Evans
1200 Milam, 6th Floor
Houston, Texas 77002
(Certified Mail: P-500 089 521)

TXP OPERATING COMPANY
Attn: Mr. Robert H. Smith
P. O. Box 1396
Houston, Texas 77251
(Certified Mail: P-500 089 522)

PHILLIPS PETROLEUM CO.
Attn: Mr. V. Dirk Stiggins
P. O. Box 51107
Lafayette, Louisiana 70505
(Certified Mail: P-500 089 523)

MARATHON OIL COMPANY
Attn: Mr. J. G. Leach
P. O. Box 53266
Lafayette, Louisiana 70505
(Certified Mail: P-500 089 524)

AGENCY FROM WHOM CONSISTENCY CERTIFICATIONS IS REQUIRED:

None - The base of operations will be Galveston, Texas

ATTACHMENT "A"

The following Lessees and Rights-of-Way holders on even date with this application were furnished a copy of this application by Certified Mail, Return Receipt Requested (Note: The status of blocks listed below was current as of September 28, 1987, per research of MMS records by J. Connor Consulting.)

HIGH ISLAND AREA

BLOCK A-12

Amoco Production Company	OCS-G 6176	Oil & Gas Lease
Open		Pipeline R-O-W

BLOCK A-13

Sohio Petroleum Company	OCS-G 8156	Oil & Gas Lease
Open		Pipeline R-O-W

BLOCK A-14

Amerada Hess Corporation TXP Operating Company	OCS-G 6177	Oil & Gas Lease
Open		Pipeline R-O-W

HIGH ISLAND AREA, E. ADDITION

BLOCK A-173

Phillips Petroleum Company Amerada Hess Corporation Marathon Oil Company TXP Operating Company	OCS-G 6203	Oil & Gas Lease
Open		Pipeline R-O-W

BLOCK A-178

Amoco Production Company	OCS-G 6206	Oil & Gas Lease
Open		Pipeline R-O-W

BLOCK A-179

Amoco Production Company	OCS-G 6207	Oil & Gas Lease
Open		Pipeline R-O-W

UNITED STATES
DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

NONDISCRIMINATION IN EMPLOYMENT

As a condition precedent to the approval of the granting of the subject pipeline right-of-way, the grantee, Apache Oil & Gas Transmission, Inc., hereby agrees and consents to the following stipulation which is to be incorporated into the application for said right-of-way.

During the performance of this grant, the grantee agrees as follows:

> During the performance under this grant, the grantee shall fully comply with paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended (reprinted in 41 CFR 60-1.4(a)), which are for the purpose of preventing discrimination against persons on the basis of race, color, religion, sex or national origin. Paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended, are incorporated in this grant by reference.

Gary L. Hall
Signature of Grantee

Apache Oil & Gas Transmission, Inc.

October 1, 1987
Date

Apache Oil & Gas Transmission, Inc.
c/o Ms. Kathy Camp
J. Connor Consulting
P.O. Box 218753
Houston, Texas 77218

RE: Minerals Management Service Application by
Apache Oil & Gas Transmission, Inc., for a
Proposed 4.5-inch O.D. Natural Gas Pipeline
In and/or Through High Island Area, Blocks A-12, A-13, A-14, A-172,
A-173, and A-179, Gulf of Mexico, Federal Waters, Offshore Texas

Dear Ms. Camp,

Apache Oil & Gas Transmission, Inc., has submitted to our company a proposal for the construction of a 4.5-inch pipeline from Hall-Houston Oil Company's Caisson No. 2 in High Island A-14 (OCS-G 6177) to a production platform "A" in High Island Area, Block A-173. The route of the above referenced pipeline right-of-way crosses a portion of Blocks A-12, A-13, A-14, A-172, A-173, and A-179, all being in Federal Waters, offshore Texas.

Please be advised our company has no objection to the operations proposed.

_____
Signature

_____
Company

_____
Address

_____
City State Zip Code

_____
Date

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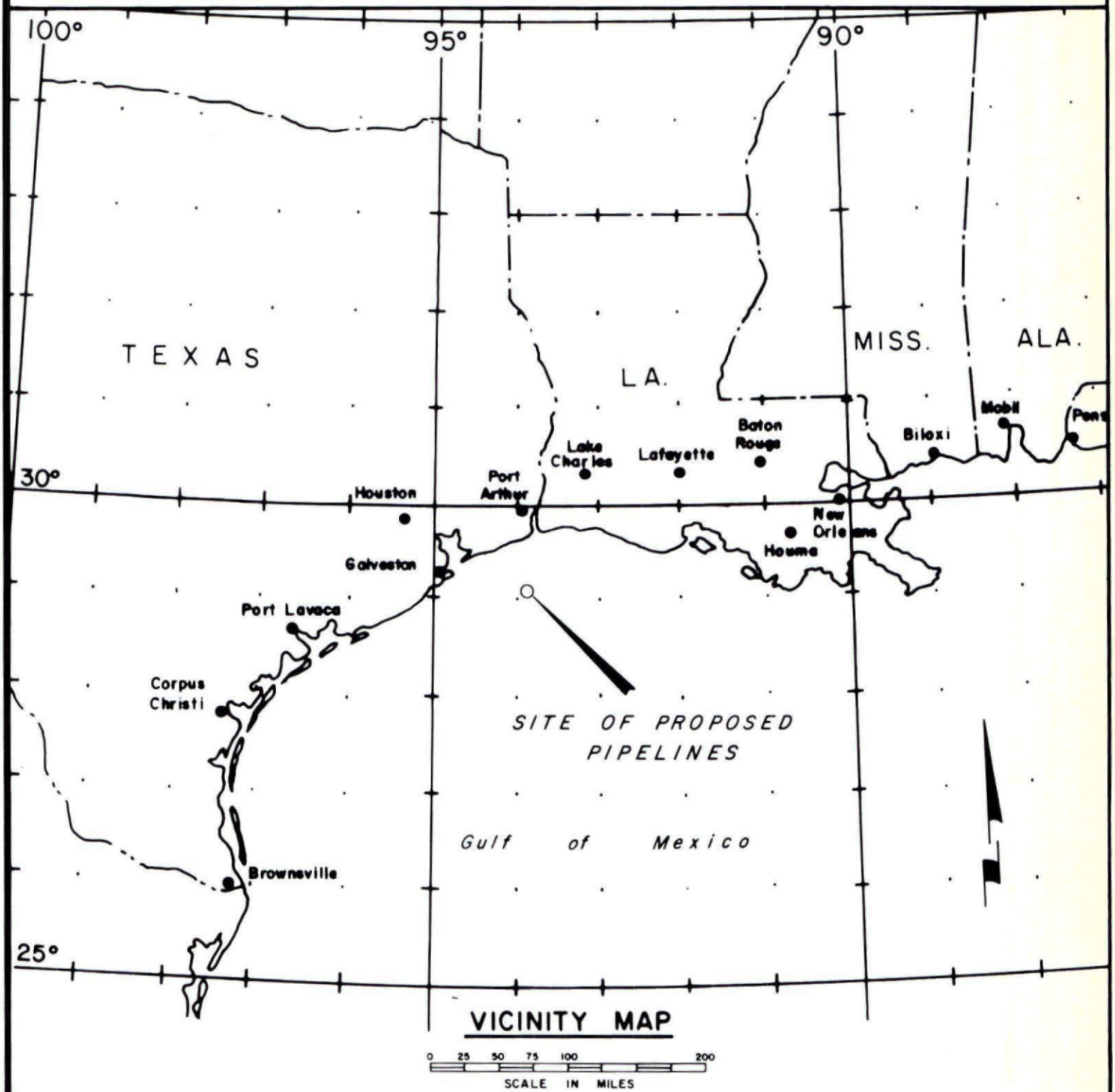

VICINITY MAP

0 25 50 75 100 200
SCALE IN MILES

G 9332

APPLICATION BY
APACHE OIL & GAS TRANSMISSION, INC.
HOUSTON, TEXAS
SEPT. 23, 1987

SHEET 1 OF 3

(2) PROPOSED 4" GAS PIPELINES
HIGH ISLAND AREA
GULF OF MEXICO

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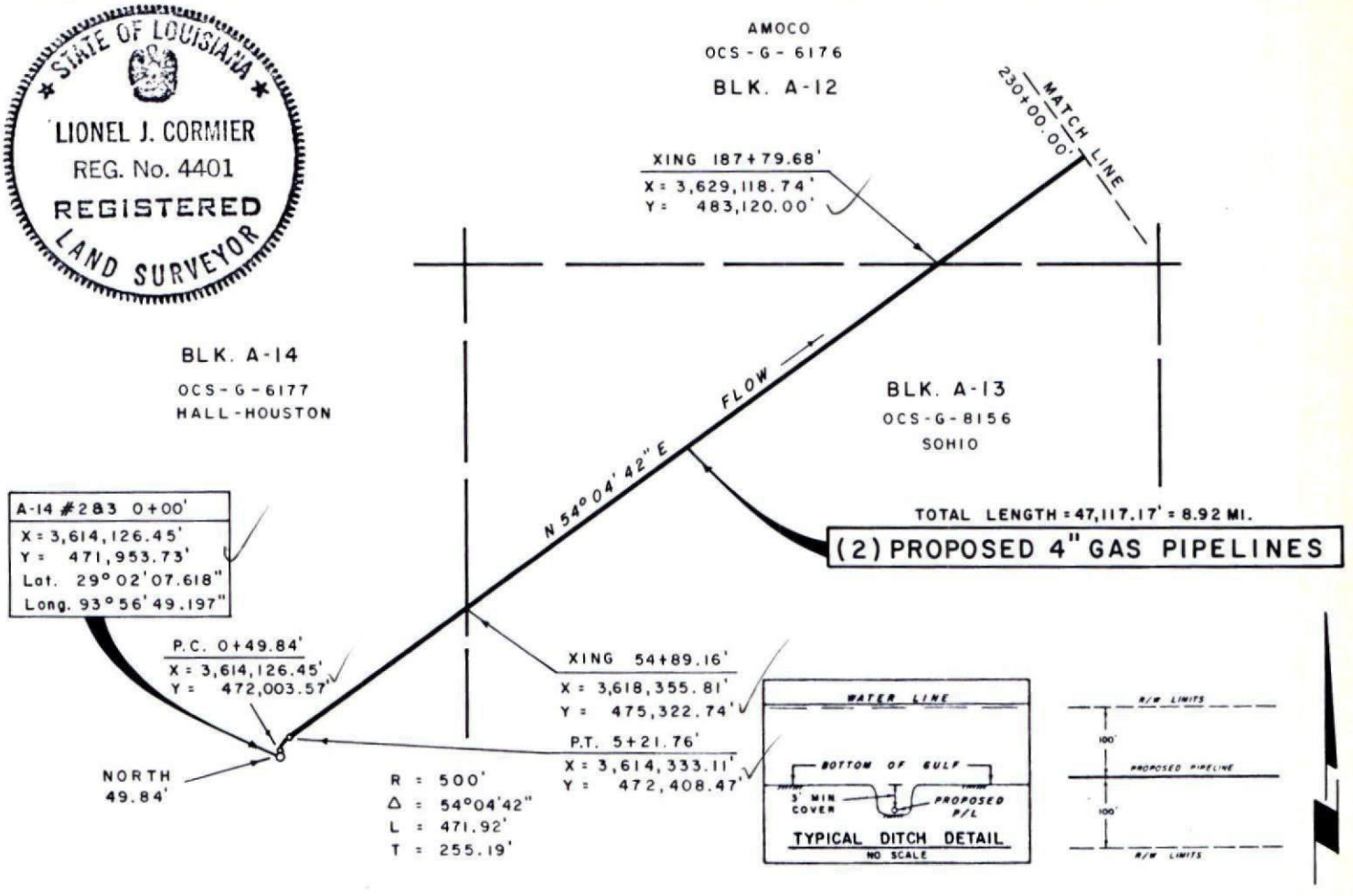
STATE OF LOUISIANA
LIONEL J. CORMIER
REG. No. 4401
REGISTERED
LAND SURVEYOR



THE RIGHT-OF-WAY OF PROPOSED PIPELINE IS ACCURATELY REPRESENTED.

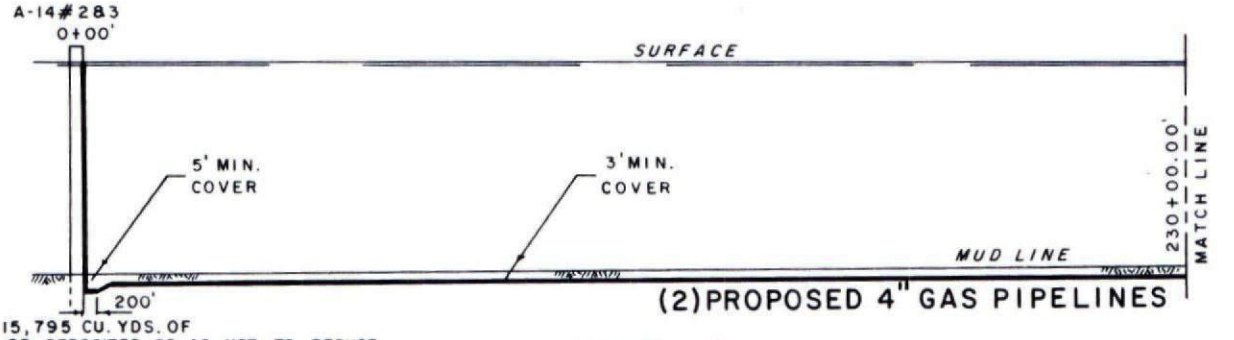
REGISTERED LAND SURVEYOR NO. 4401
STATE OF LOUISIANA
JOHN E. CHANCE & ASSOCIATES, INC.

PLAN

4000 2000 0 4000 FT.
SCALE

THE DESIGN CHARACTERISTICS OF THIS PIPELINE ARE IN COMPLIANCE WITH D.O.T. REGULATIONS.

AREA ENGINEER



APPROX. 15,795 CU. YDS. OF SPOIL TO BE DEPOSITED SO AS NOT TO REDUCE WATER DEPTH MORE THAN 0.5 FOOT.

PROFILE

0 2000 4000 FT.
HOR. SCALE

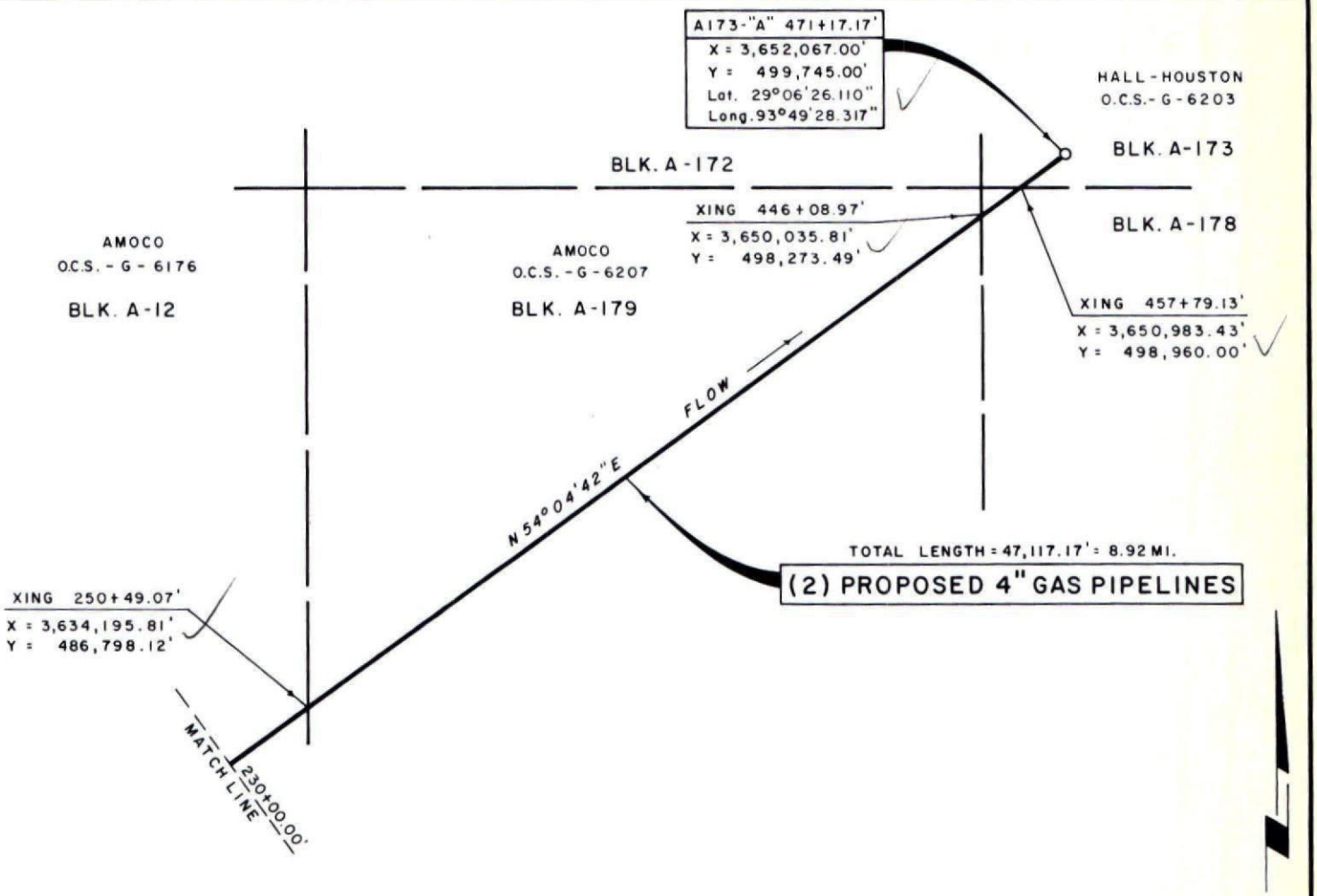
0 30 60 FT.
VERT. SCALE

APPLICATION BY
APACHE OIL & GAS TRANSMISSION, INC.
HOUSTON, TEXAS
SEPT. 23, 1987

SHEET 2 OF 3

(2) PROPOSED 4" GAS PIPELINES
HIGH ISLAND AREA
GULF OF MEXICO

BEST AVAILABLE COPY



THE RIGHT-OF-WAY OF PROPOSED PIPELINE IS ACCURATELY REPRESENTED.

REGISTERED LAND SURVEYOR NO. 4401
STATE OF LOUISIANA
JOHN E. CHANCE & ASSOCIATES, INC.

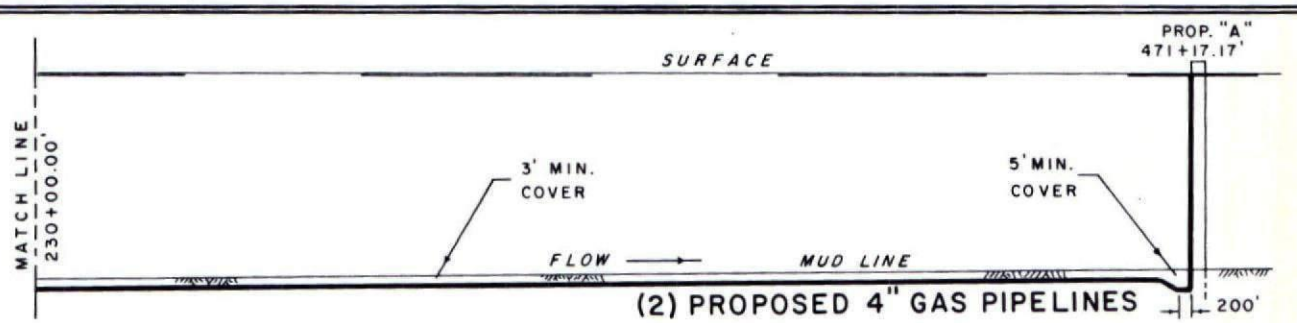
PLAN

4000 2000 0 4000 FT.

SCALE

THE DESIGN CHARACTERISTICS OF THIS PIPELINE ARE IN COMPLIANCE WITH D.O.T. REGULATIONS.

AREA ENGINEER



APPROX. 15,795 CU. YDS. OF SPOIL TO BE DEPOSITED SO AS NOT TO REDUCE WATER DEPTH MORE THAN 0.5 FOOT.

PROFILE

0 2000 4000 FT.
HOR. SCALE

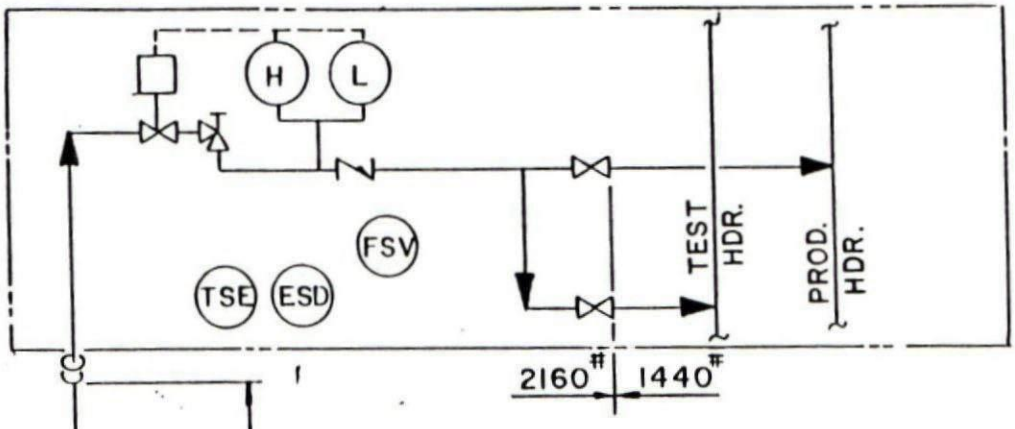
0 30 60 FT.
VERT. SCALE

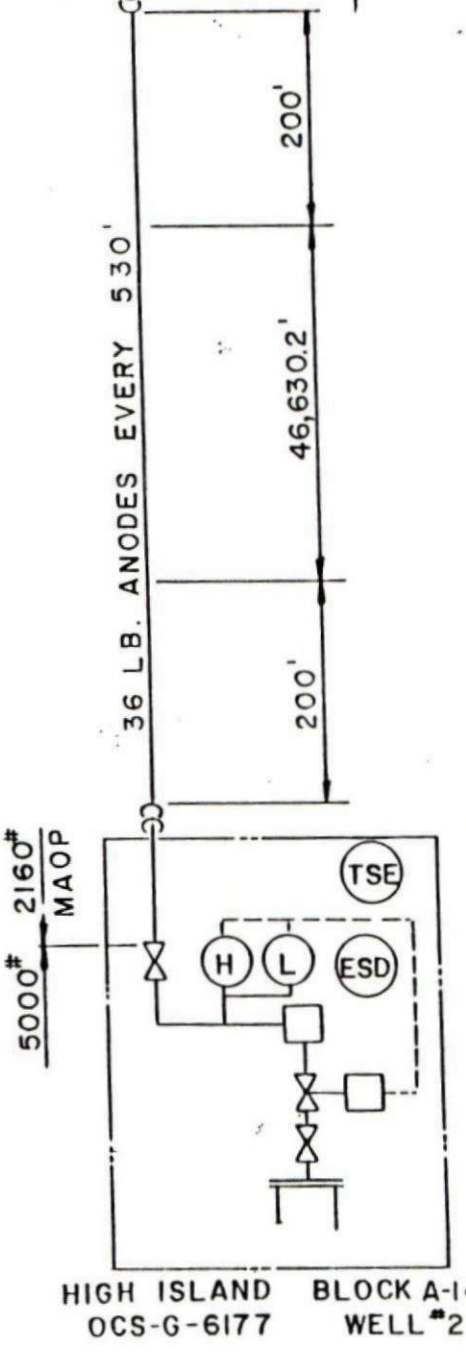
APPLICATION BY
APACHE OIL & GAS TRANSMISSION, INC.
HOUSTON, TEXAS
SEPT. 23, 1987

SHEET 3 OF 3

(2) PROPOSED 4" GAS PIPELINES
HIGH ISLAND AREA
GULF OF MEXICO

PRODUCTION PL. , FORM "A" HIGH ISL. D BLOCK A-173





HIGH ISLAND BLOCK A-14
OCS-G-6177 WELL #2

RISER A 4.5" O.D. x .337" W.T. ASTM A-106 GR.B
LINE PIPE B 4.5" O.D. x .337" W.T. ASTM A-106 GR.B

NOTES:

1. GAS WELL FLOWLINE COMPLIES W/APR RP 1111 AND OCS ORDER #9 REGULATIONS.
2. WELL #1 MAIN PASS BLOCK 89 COMPLIES W/OCS ORDER #5 AND ORDER #9 REGULATIONS.
3. CODES & SPECIFICATIONS:

VALVES FITTINGS	ANSI B16.5
PIPELINES	API RP 1111 ANSI B31.8

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STATE OF LOUISIANA
Ronald Marcomb, Jr.
REG. No. 19594
REGISTERED
PROFESSIONAL ENGINEER
IN
MECHANICAL ENGINEERING

Ronald Marcomb, Jr.

JUL 27 1987

APPLICATION BY
APACHE OIL & GAS TRANSMISSION CO.
HOUSTON, TEXAS
JULY 23 1987

ATTACHMENT I

PROPOSED 4"
GAS WELL PIPELINE
HIGH ISLAND BLOCK A-14 #2
GULF OF MEXICO

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ATTACHMENT II

GENERAL INFORMATION & CALCULATIONS

4.5" O.D. GAS WELL FLOWLINE

HIGH ISLAND BLOCK A-14 WELL #2

1. The water depth [(-) 65' MSL] along the proposed flowline route and in relationship to the natural bottom is set forth on the attached Pipeline Prelay Survey Drawing.

2. The description of the pipe and coating is as follows:

   a. Line Pipe: 4.5" O.D. x .337" W.T. ASTM A-106 Grade B seamless; bare weight = 14.98#/ft. Specific gravity in seawater (empty) = 2.131. Pipe will be coated with Scotchkote 205 fusion bonded epoxy 14 mils. Pipe joints will be protected with heat shrinkable wraparound pipe sleeves.

   b. Riser Pipe: 4.5" O.D. x .337" W.T. ASTM A-106 Grade B seamless; bare weight = 14.98#/ft.; coated with 14 mils of Scotchkote 205 fusion bonded epoxy. Welded joints will be protected with heat shrinkable wraparound pipe sleeves.

   c. Subsea side tap valve assembly: none.

   d. Internal Coating: The analysis of transported products will be monitored and preventative measures will be employed as necessary.

3. The proposed flowline is approximately 47,030.2 feet in horiztontal length. This does not include the approximate 85' of vertical riser piping on each platform. The line will transport natural gas and condensate. Shut in tubing pressure of the well is 1400 PSIG.

4. Valves and Flanges: Flowline valves and flanges will be ANSI Class 900 with rated working pressure of 2160 PSIG.

5. The design of the proposed flowline is in accordance with API RP 1111, API RP 14E, OCS Order #9 and ANSI B31.8. Each was applied within the scope of the intended code or regulation.

JUL 23 1987

6. The cathodic protection system for the flowline will use zinc tapered semi-cylindrical bracelet anodes. Calculations are as follows:

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a. Anticipated life line is 20 years.

b. Assumed maximum of 2% bare pipe.

c. Current 5 MA/sq. ft.

d. Zinc 26#/amp year

e. Anode spacing calculations:

Area/mile = 5280 ft./mi. x 3.14 x (4.5/12)ft.
= 6,217.2 sq.ft./mi.

Amps = 6,217.2 sq.ft./mi. x .02 x .005 amps/sq.ft.
= 0.622 amps/mi.

Line Life = 0.622 amps/mi. x 20 = 12.43 amp yr./mi.

#/mile = 12.43 amp yr/mi. x 26#/amp yr.
= 323.3#/mile

Anode quantity = (323.3#/mi.)/33# = 9.797/mi.

Anode spacing = (5280 ft/mi)/9.797/mi. = 539 ft.

Use one 33#(net) zinc anode every 530 feet.

7. The design pressure for the line pipe and riser:

a. Riser:

$t = PD/2S$

$= 2160 \times 4.5/2(17,500)$

$= .278 + 0.05$ C.A.

$= .328"$

P = internal design pressure = 2160 PSIG

t = nominal wall thickness inches

S = SMYS(35,000) x .5 = 17,500[per ANSI B31.8]

D = nominal outside diameter = 4.5"

Use 4.5" O.D. x .337" W.T. ASTM A-106 Grade B seamless.

Hydrostatic test pressure:

In accordance with API RP 14E

HTP = 1.5 x MAOP
= 1.5 x 2160
= 3240 PSIG

JUL 23 1987

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b. Line Pipe:

$t = PD/2S$

$= 2160(4.5)/2(25,200)$

$= .193 + 0.05$ C.A.

$= .243"$

P = internal design pressure = 2160 PSIG

t = nominal wall thickness inches

S = SMYS (35,000) x .72
= 25,200[per ANSI B31.8]

D = nominal outside diameter = 4.5"

Use 4.5" O.D. x .337" W.T. ASTM A-106 Grade B seamless.

Hydrostatic test pressure:

In accordance with API RP 1111 and OCS Order #9

HTP = 1.25 x MAOP + external pressure
= 1.25 x 2160 + 65(1.02)/2.31
= 2728.7 PSIG

Test to 3240 PSIG, same as riser.

8. The hydrostatic test will be conducted in accordance with applicable regulations. Test duration will be two hours. The test medium will be inhibited seawater. The test pressure is not more than 90% of the hoop stress pressure using 100% of the steel's SMYS.

$P = 2tS/D$

$= 2(.337)(35,000)/4.5$

$= 5242$ psig

90% of P = 4718 psig>3240 psig

P = max. hoop pressure

t = nominal wall thickness

S = SMYS (35,000)

D = nominal outside diameter

9. The specific gravity of the line pipe was calculated as follows:

The line pipe weighs 14.98 lbs/LF

The pipe displaces AREA(sq.in.)/144 x 62.4 x 1.02
= 7.03# water/ft

Specific gravity flowline = 14.98/7.03 = 2.131

The weight of coatings, anodes, and other materials was not considered in these calculations.

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10. The design capacity of the flowline is approximately 5 MMSCFD.

11. The proposed flowline will tie-in High Island Block A-14 Well #2 to the Hall-Houston platform "A" High Island Block A-173

12. The flowline segment at the well shall be protected by the following: One (1) low pressure monitoring device and set at 10% below the operating pressure and one (1) high pressure sensor set at 10% above the operating pressure but not greater than the MAOP of the pipeline.

    The operating pressure of the pipeline will be the flowing tubing pressure (FTP) of the well. The FTP will range from 1000 psig to 1300 psig depending on the control choking at the production platform and the required pressure to overcome the line pressure drop of the pipeline. At the higher FTP's, the set pressure of the PSH may exceed the shut-in tubing pressure (SITP).

    The flowline segment at the production platform shall be protected by the following: One (1) high pressure monitoring device set at 10% above the maximum operating pressure, but in no case above the design working pressure of 1440 psig, and one (1) low pressure monitoring device set at 10% below the operating pressure.

    The effect of any pressure variance above or below the set limits will cause the automatic and orderly shutdown of the well or the shutdown of the incoming flowline at the platform.

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PIPELINE SUMMARY

1. Line Pipe Specifications:

O.D.	W.T.	Material Spec.	Length	MAOP
4.5"	.337"	ASTM A-106 B	46,630.2'	2160 PSI

2. Riser Pipe Specifications:

O.D.	W.T.	Material Spec.	Length	MAOP
4.5"	.337"	ASTM A-106 B	570'	2160 PSI

3. Line Pipe Coating:

Scotchkote 205 thin film fusion bonded epoxy - 14 mils

4. Name of Product:

Natural gas and condensate.

5. Class Location:

Class I.

6. Governing Code: (where applicable)

API RP 1111, API RP 14E, OCS Order #9, and ANSI B31.8.

Application By:
Apache Oil & Gas Transmission Co.

4.5" O.D. Natural Gas
Well Flowline
High Island Block A-14 Well #2
Gulf of Mexico

- B142-SUMMARY -

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