STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AC 29-195816
Hillsborough County

Mr. Tom Rigg
Manager of Florida Operations
GATX Terminals Corporation
100 GATX Drive
Tampa, Florida 33605

_____/

Enclosed is Permit Number AC 29-195816 to construct (modify) petroleum storage tank No. 80-5, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 7-25-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

(Clerk) 7-25-91 (Date)

Copies furnished to:
Bill Thomas, SWD
Jerry Campbell, EPCHC

P 832 539 828

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Tom Riggs	
Street & No. GATX	
P.O., State & ZIP Code Tampa Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date 7-25-91 AC 29-195816	
AC 48-195815, 955	

PS Form **3800**, June 1990

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Tom Riggs
Mgr. of Fla. Operations
GATX Term. Corp.
100 GATX Dr.
Tampa, Fl 33605

4a. Article Number P 832 539 828

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 7-29-91

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

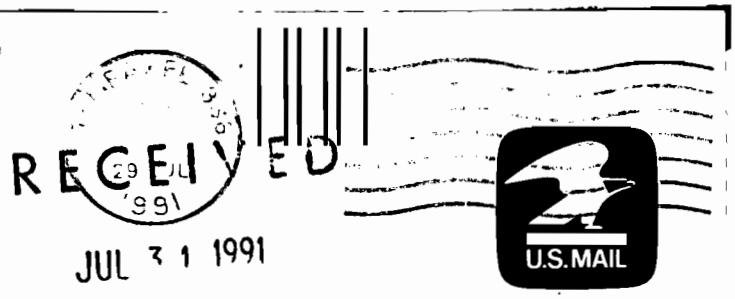
6. Signature (Agent) [signature]

PS Form **3811**, October 1990 ☆U S GPO 1990—273-861 **DOMESTIC RETURN RECEIPT**

BEST AVAILABLE COPY

United States Postal Service

Official Business



JUL 31 1991

Division of Air
Resources Management

PENALTY FOR PRIVATE
USE, $300

Print your name, address and ZIP Code here

•Patty Adams, DER, BAR•
2600 Blair Stone Rd-Twin Towers
Tallahassee, FL 32399-2400

Final Determination

GATX Terminals Corporation
Tampa, Hillsborough County, Florida

Petroleum Storage Tank No. 80-5

Permit No. AC 29-195816

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

July 19, 1991

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct an 80,000 barrel gasoline storage tank at GATX Terminals Corporation in Tampa, Hillsborough County, Florida, was distributed on June 20, 1991. The Notice of Intent to Issue was published in The Tampa Tribune on June 29, 1991. Copies of the evaluation were available for public inspection at the Environmental Protection Commission of Hillsborough County in Tampa and the Department's offices in Tampa and Tallahassee.

No comments were submitted during the public notice period. The final action of the Department will be to issue construction permit AC 29-195816 as proposed in the Technical Evaluation and Preliminary Determination.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
GATX Terminals Corporation
100 GATX Drive
Tampa, Florida 33605

Permit Number: AC 29-195816
Expiration Date: July 1, 1993
County: Hillsborough
Latitude/Longitude: 27°55'01"
82°26'30"
Project: Petroleum Storage Tank No. 80-5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the installation of an 80,000 barrel petroleum storage tank (112 ft. in diameter x 48 ft. high) equipped with a Petrex, Inc. internal floating roof having double wiper seals at the terminal (SIC 5171) located at 100 GATX Drive, Hillsborough County, Florida. The UTM coordinates of this facility are Zone 17, 358.0 km E and 3088.7 km N. This permit replaces the authority to construct tank No. 80-5 that was granted by construction permit No. AC 29-159753.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachment:

1. Application received April 18, 1991.
2. GATX letter dated April 17, 1991.

PERMITTEE: **Permit No. AC 29-195816**
Central Florida Pipeline Corp. **Expiration Date: July 1, 1993**

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

GENERAL CONDITIONS:

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The tank's throughput shall not exceed 2,880,000 barrels of petroleum fuel having a weighted average vapor pressure greater than 6.9 psia during any 12 month period. The permittee shall maintain records that show the quantity of volatile organic compounds handled in this tank.

2. This tank shall comply with all the applicable requirements of 40 CFR 60, Subpart Kb-Standards of Performance for Volatile Organic Liquid Storage Vessels (July 1, 1990). Applicable sections are 40 CFR 60.112b, 60.113B, 60.115b, and 60.116b.

3. This storage tank may be in service continuously (8,760 hours/year).

PERMITTEE:
Central Florida Pipeline Corp.

Permit No. AC 29-195816
Expiration Date: July 1, 1993

SPECIFIC CONDITIONS:

4. This tank shall be equipped with an internal floating roof having double wiper seals. Any liquid leaks in the pump, piping, or tank shall be repaired promptly.

5. This tank and associated equipment shall not discharge air pollutants which cause or contribute to an objectionable odor (F.A.C. Rule 17-2.620).

6. Volatile organic compounds (VOC) emissions from this tank, as determined by the procedures described in AP-42, Compilation of Air Pollutant Emission Factors, Section 4.3, shall not exceed 8.96 TPY. If the parameters that the estimated emissions are based on change, the permittee shall recalculate the emissions from this tank and submit the data to the Environmental Protection Commission of Hillsborough County.

7. The Environmental Protection Commission of Hillsborough County shall be notified in writing at least 30 days in advance of the compliance inspection.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

9. An application for an operation permit must be submitted to the Environmental Protection Commission of Hillsborough County at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. 17-4.220).

Issued this 25 day
of July, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

FN

STEVE SMALLWOOD, P.E., Director
Division of Air Resources Mgmt.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy Signed

DATE: July 19, 1991

SUBJ: Approval of Construction Permit AC 29-195816
GATX Terminals Corporation

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation for the above mentioned company to construct an 80,000 barrel gasoline storage tank.

No comments were received during the public notice period.

I recommend your approval and signature.

CF/WH/plm

Attachments

Check Sheet

Company Name: ~~Allied~~ GATX Terminals Cross References:

Permit Number: AC 29-195816 ☐

PSD Number: ☐

Permit Engineer: ☐

Application:

- ☑ Initial Application
  - ☐ Incompleteness Letters
  - ☐ Responses
  - ☐ Waiver of Department Action
  - ☐ Department Response
  - ☐ Other

Intent:

- ☑ Intent to Issue
- ☑ Notice of Intent to Issue
- ☑ Technical Evaluation
- ☐ BACT Determination
- ☑ Unsigned Permit
  - Correspondence with:
    - ☐ EPA
    - ☐ Park Services
    - ☐ Other
- ☑ Proof of Publication
  - ☐ Petitions - (Related to extensions, hearings, etc.)
  - ☐ Waiver of Department Action
  - ☐ Other

Final Determination:

- ☑ Final Determination
- ☑ Signed Permit
- ☐ BACT Determination
  - ☐ Other

Post Permit Correspondence:

- ☐ Extensions/Amendments/Modifications
- ☐ Other

REVISION #3 KKW 06/02/94

GATX

GATX TERMINALS CORPORATION

100 GATX DRIVE
TAMPA, FL 33605
TWX: 810-876-0804
TELECOPIER: 813-247-4274
MAIN OFFICE: 813-248-2148

July 8, 1991

Mr. C. H. Fancy
Bureau Chief of Air Section
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: GATX Terminals Corporation
AC29-195816
Petroleum Storage Tank No. 80-5
Notice of Intent to Issue

Dear Mr. Fancy:

In accordance with the requirements set forth in Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., GATX Terminals Corporation herewith submits proof of publication of the Notice of Intent to Issue construction (modification) permit for Petroleum Storage Tank No. 80-5 at its Tampa, Florida terminal.

This notice was published in the June 29, 1991 issue of the Tampa Tribune.

Sincerely,
GATX TERMINALS CORPORATION

Caren I. Lennie
Environmental Coordinator

CIL:mrr
cl-f80-5

c: J. McDonald, FDER-Southwest
J. Campbell, EPCHC
W. Hanks

GATX TERMINALS CORPORATION
100 GATX DRIVE
TAMPA, FL 33605

Mr. C. H. Fancy
Bureau Chief of Air Section
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

.....

LEGAL NOTICE

in the matter of .....

ISSUE PERMIT

.....

.....

was published in said newspaper in the issues of .....

June 29, 1991

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa, in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

R Putney

Notary Public, State of Florida
My Commission Expires Sept. 3, 1994
Bonded Thru Troy Fain - Insurance Inc.

Sworn to and subscribed before me, this 1 *day of* July *A.D. 19* 91

Scott D. Williams

(SEAL)

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
REGULATION
NOTICE OF INTENT
TO ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a permit (AC 29-195816) to GATX Terminals Corporation, 100 GATX Drive, Tampa, Florida 33605 to construct (modify) a 80,000 barrel petroleum (gasoline or diesel fuels) storage tank (No. 80-5) which is equipped with double seals on the internal floating roof. Total volatile organic compounds (VOC) emissions from tank No. 80-5 are estimated to be 8.96 TPY. These emissions will not cause a violation of any ambient air quality standard. A determination of Best Available Control Technology (BACT) was not required by the regulations. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of
Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida
32399-2400

Department of
Environmental Regulation
Southwest District
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347

Environmental Protection
Commission
of Hillsborough County
1410 N. 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of publication of this notice will be considered in the Department's final determination.

3282 6/29/91

P 832 539 851

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Mr. Tom Rigg, GATX	
Street & No. 100 GATX Drive	
P.O., State & ZIP Code Tampa, FL 33605	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 6-20-91 Permit: AC 29-195816	

PS Form 3800, June 1990

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Tom Rigg
Manager of Florida Operations
GATX Terminals Corp.
100 GATX Drive
Tampa, FL 33605

4a. Article Number
P 832 539 851

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent) 6/24/91

PS Form 3811, October 1990 ☆U S GPO 1990—273-861 **DOMESTIC RETURN RECEIPT**

United States Postal Service

Official Business

PENALTY FOR PRIVATE
USE, $300

RECEIVED

JUN 27 1991

Print your name, address and ZIP Code here

Division of Air
Resources Management

Dept. of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Attn: Patty Adams

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

June 20, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Tom Rigg
Manager of Florida Operations
GATX Terminals Corporation
100 GATX Drive
Tampa, Florida 33605

Dear Mr. Rigg:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit to construct (modify) petroleum storage tank No. 80-5 at your terminal in Tampa, Hillsborough County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

Barry D. Andrews

for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/plm

Attachments

c: Bill Thomas, SWD
Jerry Campbell, EPCHC

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

GATX Terminals Corporation
100 GATX Drive
Tampa, Florida 33605

DER File No. AC 29-195816
Hillsborough County

_____/

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, GATX Terminals Corporation, applied on April 18, 1991, to the Department of Environmental Regulation for a permit to construct (modify) petroleum storage tank No. 80-5 at the GATX Terminal located at 100 GATX Drive, Tampa, Hillsborough County, Florida 33605.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes and Florida Administrative Code Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, Florida Statutes and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a

waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for Barry D. Andrews

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 6-20-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kyri Debes 6-20-91
Clerk Date

Copies furnished to:

Tom Rigg, GATX

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF INTENT TO ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a permit (AC 29-195816) to GATX Terminals Corporation, 100 GATX Drive, Tampa, Florida 33605 to construct (modify) a 80,000 barrel petroleum (gasoline or diesel fuels) storage tank (No. 80-5) which is equipped with double seals on the internal floating roof. Total volatile organic compounds (VOC) emissions from tank No. 80-5 are estimated to be 8.96 TPY. These emissions will not cause a violation of any ambient air quality standard. A determination of Best Available Control Technology (BACT) was not required by the regulations. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by

any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Southwest District
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347

Environmental Protection Commission
of Hillsborough County
1410 N. 21st Street
Tampa, Florida 33605

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

GATX Terminals Corporation
Tampa, Hillsborough County, Florida

Petroleum Storage Tank No. 80-5
File No. AC 29-195816

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

June 20, 1991

I. Application

A. Applicant

GATX Terminals Corporation
100 GATX Drive
Tampa, Florida 33605

B. Project and Location

Mr. Tom Rigg, GATX Terminals Corporation's Manager of Florida Operations, submitted an application for a permit to construct (modify) a 80,000 barrel petroleum (gasoline and diesel fuels) storage tank (No. 80-5) on April 18, 1991. This application corrects the emission estimate used to obtain the original construction permit for this tank (AC 29-159753), substitutes a Pretex, Inc. for the Mayflower internal floating roof originally proposed, and increases the tank's throughput from 1,860,000 bbl/yr to 2,880,000 bbl/yr of fuel. The application was considered complete on receipt. This tank will be installed at GATX's terminal (SIC 5171) located at 100 GATX Drive, Tampa, Hillsborough County, Florida 33605. The UTM coordinates of this site are Zone 17, 358.0 km E and 3088.7 km N.

Tank No. 80-5 is a 112 ft. diameter by 48 ft. high fixed roof tank equipped with internal floating roofs having double wiper seals. It has a capacity of 80,000 barrels. It will be used to store gasoline and diesel fuels. Based on an annual throughput of 2,880,000 barrels of gasoline, the volatile organic compounds (VOC) emissions are estimated to be 8.96 TPY.

II. Rule Applicability

The proposed project, construction (modification) of a petroleum storage tank at a petroleum product terminal (SIC 5171), is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code (F.A.C.).

The source will be in an area designated nonattainment for ozone (F.A.C. Rule 17-2.410), unclassifiable for particulate matter and sulfur dioxide (F.A.C. Rule 17-2.430), and attainment for the other criteria pollutants (F.A.C. Rule 17-2.420).

The terminal is a major facility because VOC emissions exceed 100 TPY. The proposed project will not cause a significant emission rate increase as defined by F.A.C. Chapter 17-2, Table 500-2. Therefore, the project is not subject to Prevention of Significant Deterioration regulations, F.A.C. Rule 17-2.500 or new source review for nonattainment areas (F.A.C. Rule 17-2.510).

As the project results in an increase in VOC emissions, it is subject to F.A.C. Rule 17-2.520 (Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements), F.A.C.

Rule 17-2.620 (General Pollutant Emission Limiting Standards), and F.A.C. Rule 17-2.660 (NSPS), specifically 40 CFR 60, Subpart Kb, Standard of Performance for VOC Storage Vessels.

III. Technical Evaluation

An estimate of the total VOC emissions from the proposed storage tank was made by using the procedures given in AP-42, Compilation of Air Pollutant Emission Factors, Section 4.3, Storage of Organic Liquids.

The calculated emissions from the proposed tank, based on a throughput of 2,880,000 barrels per year, is 2.0 lbs/hr (avg) or 8.96 TPY.

The applicant submitted data showing the emissions would be less than the quantity predicted above. Use of improved seals on the Petrex floating roof are estimated to reduce VOC emissions from the tank to 4.36 TPY. The emission limits in this permit are based on the more conservative estimates given in AP-42.

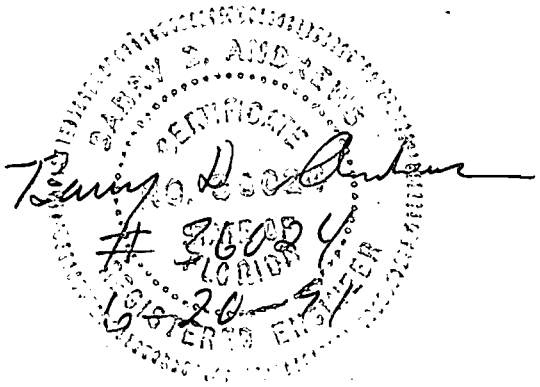
The EPA presently has a contractor reviewing the test data provided by Petrex, Inc. that showed the seals on the floating roof reduces the deck seam emissions below those estimated by AP-42. The Department will amend the emission limits in this permit if EPA approves the lower emission factor for the Petrex, Inc. roof design under the guidance of 40 CFR 60.114b.

IV. Air Quality Analysis

It is the judgement of the Department that the estimated VOC emissions from the proposed tanks will not create a health hazard or cause/contribute to an ambient air quality violation.

V. Conclusion

Based on the information provided by GATX Terminals Corporation, the Department has reasonable assurance that the proposed project, construction of petroleum storage tank 80-5, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:
GATX Terminals Corporation
100 GATX Drive
Tampa, Florida 33605

Permit Number: AC 29-195816
Expiration Date: July 1, 1993
County: Hillsborough
Latitude/Longitude: 27°55'01"
82°26'30"
Project: Petroleum Storage Tank No. 80-5

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the installation of an 80,000 barrel petroleum storage tank (112 ft. in diameter x 48 ft. high) equipped with a Petrex, Inc. internal floating roof having double wiper seals at the terminal (SIC 5171) located at 100 GATX Drive, Hillsborough County, Florida. The UTM coordinates of this facility are Zone 17, 358.0 km E and 3088.7 km N. This permit replaces the authority to construct tank No. 80-5 that was granted by construction permit No. AC 29-159753.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachment:

1. Application received April 18, 1991.
2. GATX letter dated April 17, 1991.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

GENERAL CONDITIONS:

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The tank's throughput shall not exceed 2,880,000 barrels of petroleum fuel having a weighted average vapor pressure greater than 6.9 psia during any 12 month period. The permittee shall maintain records that show the quantity of volatile organic compounds handled in this tank.

2. This tank shall comply with all the applicable requirements of 40 CFR 60, Subpart Kb-Standards of Performance for Volatile Organic Liquid Storage Vessels (July 1, 1990). Applicable sections are 40 CFR 60.112b, 60.113B, 60.115b, and 60.116b.

3. This storage tank may be in service continuously (8,760 hours/year).

SPECIFIC CONDITIONS:

4. This tank shall be equipped with an internal floating roof having double wiper seals. Any liquid leaks in the pump, piping, or tank shall be repaired promptly.

5. This tank and associated equipment shall not discharge air pollutants which cause or contribute to an objectionable odor (F.A.C. Rule 17-2.620).

6. Volatile organic compounds (VOC) emissions from this tank, as determined by the procedures described in AP-42, Compilation of Air Pollutant Emission Factors, Section 4.3, shall not exceed 8.96 TPY. If the parameters that the estimated emissions are based on change, the permittee shall recalculate the emissions from this tank and submit the data to the Environmental Protection Commission of Hillsborough County.

7. The Environmental Protection Commission of Hillsborough County shall be notified in writing at least 30 days in advance of the compliance inspection.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

9. An application for an operation permit must be submitted to the Environmental Protection Commission of Hillsborough County at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. 17-4.220).

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
STEVE SMALLWOOD, P.E., Director
Division of Air Resources Mgmt.

GATX

GATX TERMINALS CORPORATION

100 GATX DRIVE
TAMPA, FL 33605
TWX: 810-876-0804
TELECOPIER: 813-247-4274
MAIN OFFICE: 813-248-2148

April 17, 1991

Mr. C. H. Fancy, P. E.
Bureau Chief of Air Section
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Hillsborough County - AP Permit No. AC29-159753
Orange County - AP Permit No. AC48-159517
Permit Modification Application

Dear Mr. Fancy:

GATX Terminals Corporation (GATX) and its subsidiary, Central Florida Pipeline Corporation (CFPL), have been issued Florida Department of Environmental Regulation (FDER) Permits AC29-159753 and AC48-159517, respectively, for the construction of 80,000 barrel petroleum storage tanks at the Tampa and Taft facilities.

In review of the emissions calculations provided in support of the construction permit applications, GATX noted that an incorrect assumption of zero deck seam loss was used in the emissions calculations, when, in fact, a deck seam loss should be assumed. The revised calculations, reflecting the appropriate deck seam loss, are provided as attachments to the enclosed applications to modify a permit for construction of a new source.

The incorporation of a deck seam loss results in the following VOC emissions changes:

<u>AC29-159753, Tank 80-5</u>

Assuming:	Zero deck seam loss, Mayflower IFR 1,860,000 barrels per year throughput	1.80 tons/yr. (presently permitted)
Assuming:	Deck seam loss, Mayflower IFR 1,860,000 barrels per year throughput	6.89 tons/yr.

<u>AC48-159517, Tanks 80-4 and 80-5</u>

Assuming:	Zero deck seam loss, Mayflower IFR 3,258,000 barrels per year throughput	1.9 tons/yr. (per tank) (presently permitted)

Assuming:	Deck seam loss, Mayflower IFR 3,258,000 barrels per year throughput	6.94 tons/yr. (per tank)

GATX has also decided to install internal floating roofs (IFR) manufactured by Petrex, Inc., rather than those manufactured by Mayflower Vapor Seal Corporation as presented in the original construction permit applications. The Petrex design provides more efficient vapor emissions control than the Mayflower design. The resultant calculated emissions using the lower deck seam loss factor are noted below:

AC29-159753, Tank 80-5

Assuming:	Deck seam loss, Petrex IFR 1,860,000 barrels per year throughput	4.36 tons/yr.

AC48-159517, Tanks 80-4 and 80-5

Assuming:	Deck seam loss, Petrex IFR 3,258,000 barrels per year throughput	4.41 tons/yr. (per tank)

Design information for the Petrex IFR is provided as attachments to the enclosed applications.

GATX has recognized a need to increase the annual throughput on all three tanks to accommodate a forecasted increase in demand. The anticipated throughput for Tank 80-5 (AC29-159753) increases the original permitted throughput of 1,860,000 barrels per year to 2,880,000 barrels per year; and the anticipated throughput for Tanks 80-4 and 80-5 (AC48-159517) increases from 3,258,000 barrels per year (per tank) to 4,000,000 barrels per year (per tank). The resultant calculated emissions are noted below:

AC29-159753, Tank 80-5

Assuming:	Deck seam loss, Petrex IFR 2,880,000 barrels per year throughput	4.39 tons/yr.

AC48-159517, Tanks 80-4 and 80-5

Assuming:	Deck seam loss, Petrex IFR 4,000,000 barrels per year throughput	4.43 tons/yr. (per tank)

As discussed with Mr. Willard Hanks of FDER on April 17, 1991, GATX is proceeding with construction of these tanks, and will be installing the higher efficiency Petrex internal floating roofs.

GATX herewith respectfully submits applications for the modification of construction permits AC29-159753 and AC48-159517. These applications reflect a correction in the original permit application calculations (i.e., assumption of a deck seam loss), installation of the Petrex internal floating roof and increased annual throughput.

The application fees of $200 per application are enclosed for the modification of these two permits.

GATX appreciates FDER's time in discussing these permit modification applications prior to this submittal. Please contact me at (813) 241-1125 or 248-2148 if GATX can provide any assistance in your review of these applications.

Sincerely,
GATX TERMINALS CORPORATION

Elaine R. Macinski
Environmental and Safety Manager

ERM:mrr
em-fan

c: T. Rigg
S. Strehler
W. Hanks, FDER
C. Collins, C. Dist
B. Thomas, SW Dist
D. Graziani, EPCHC

362

63-614
631

CENTRAL FLORIDA PIPELINE CORPORATION 02-90
PHONE 813 248-2148
1904 HEMLOCK AVENUE
TAMPA, FL 33605

APRIL 17, 19 91

PAY TWO HUNDRED AND 00/100---------- DOLLARS $ 200.00

TO THE ORDER OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

FOR PERMIT #AC48-15917

C&S The Citizens and Southern National Bank of Florida Hillsborough County

[redacted]

0884

63-614/631

GATX TERMINALS CORPORATION 02-90
PHONE 813 248-2148
100 GATX DRIVE
TAMPA, FL 33605

APRIL 17, 19 91

PAY TWO HUNDRED AND 00/100---------- DOLLARS $ 200.00

TO THE ORDER OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

FOR PERMIT #AC29-159753

NOT VALID AFTER 90 DAYS

C&S The Citizens and Southern National Bank of Florida Hillsborough County

[redacted]

#200pd.
4-18-91
Recpt.#151263

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

AC29-195816

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: One (1) Petroleum Storage Tank [XX] New[1] [ ] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [XX] Modification

COMPANY NAME: GATX Terminals Corporation COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Tank No. 80-5

SOURCE LOCATION: Street 100 GATX Drive City Tampa

UTM: East 17-358.0 KM North 3088.7 KM

Latitude 27 ° 55 ' 01 "N Longitude 82 ° 26 ' 30 "W

APPLICANT NAME AND TITLE: Tom Rigg, Manager of Florida Operations

APPLICANT ADDRESS: 100 GATX Drive, Tampa, Florida 33605

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of GATX Terminals Corporation

I certify that the statements made in this application for a modification permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Tom Rigg

Tom Rigg, Manager of Florida Operations
Name and Title (Please Type)

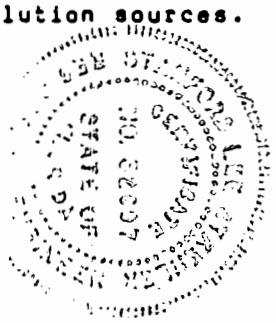
Date: 4/17/91 Telephone No. (813) 248-2148

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discha an effluent that complies with all applicable statutes of the State of Florida and th rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.



Signed Stan Strehler

Stanford L. Strehler, P.E.
Name (Please Type)

GATX Terminals Corporation
Company Name (Please Type)

100 GATX Drive, Tampa, Florida 33605
Mailing Address (Please Type)

Florida Registration No. 032697 Date: 4.17.91 Telephone No. (813) 248-2148

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See attached sheet

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon receipt of amended permit Completion of Construction phased construction over two (2) years

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Cost for pollution controls approximately $110,000.00

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Previous D.E.R. Permit No. AC29-159753, issued 06/02/89, expires 04/28/94.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr N/A ; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes

   a. If yes, has "offset" been applied? No

   b. If yes, has "Lowest Achievable Emission Rate" been applied? No

   c. If yes, list non-attainment pollutants. VOC's

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Yes

   a. If yes, for what pollutants? VOC's

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): For throughput of tank, see calculations sheet

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
VOC's	1.00	4.39	N/A	N/A	8,780	4.39	N/A

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

A. Emission shown is total for one (1) tank. See attached calculations.

B. Potential emission as defined in Rule 17-2-

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Internal Floating Roof with double ~~vapor mounted urethane~~ foam log seals	VOC's	N/A	N/A	N/A

E. Fuels N/A

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION N/A

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. See Calculations
To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. See Calculations
Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. See Calculations
With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.) See Petrex Internal Floating Roof Systems for a typical IFR. New tank will be of similar design.

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. See Calculations
An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. See attached
An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevent portion of USGS topographic map).

8. See attached
An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

See attached

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY N/A

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy [2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION N/A

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^{2*} _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

pecify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

SECTION II

GENERAL PROJECT INFORMATION

QUESTION A:

GATX Terminals Corporation proposes to contruct one (1) 80,000 Bbl. cone roof gasoline storage tank. The new tank shall be equipped with an internal floating roof with a double vapor mounted urethane foam log seal.

This tank will be in compliance with FDER Rule 17-2 and 40CFR60 Subpart Kb.

Upon completion of construction GATX Terminals Corporation desires to include the above one (1) tank under existing terminal tankage permit by amendment.

Vapor mounted primary
Rim mounted secondary

Using AP42-4.3

EMISSIONS LOSS CALCULATIONS
TANK NO. 80-5
GASOLINE IFR - 112' DIAM.

$LT = L_R + L_W + L_F + L_D$ Throughput Amounts: 2,880,000

Rim Seal Loss -

$LR = Ks\ V^n\ P^*\ D\ M_V\ K_C$

LR = Rim seal loss

Ks = Seal factor	2.5
V = Avg. wind speed	0 - not req'd w/IFR
n = Seal related wind speed exp.	0
P* = Vapor pressure function	0.157
D = Tank diameter	112'
M_V = Avg/ vapor molecular wt.	64
K_C = Product factor	1

2.5 x 0.157 x 112 x 64 x 1 = 2813.44 lbs.
1.41 TPY

EMISSIONS LOSS CALCULATIONS
TANK NO. 80-5
GASOLINE IFR - 112' DIAM.

Withdrawal Loss -

$$L_W = \frac{(0.943)\,QCWL}{D}\left[1 + \frac{NcFc}{D}\right]$$

L_W = Withdrawal loss (lb./yr.)

**using constr. appl. thruput

Q = Throughput	2,880,000
C = Shell clingage factor	.0015
W_L = Avg. organic liquid density	5.6
D = Tank diameter	112'
Nc = Number of columns	0
Fc = Effective column diameter	0.7

$$\frac{(0.943)\,(2{,}880{,}000)\,(.0015)\,(5.6)}{112}\left[1 + \frac{0 \times 0.7}{112}\right]$$

(203.69) (1.00) = 203.69 lbs./yr.
. 10 TPY

EMISSION LOSS CALCULATIONS
TANK NO. 80-5
GASOLINE IFR - 112' DIAM.

Deck Fitting Loss -

$L_F = F_F P^* M_v K_c$

L_F = Fitting loss (lbs./yr.)

F_F = Total deck fitting loss factor:

Deck Fittings	N_F (K_F)
Access Hatch	2 (1.6)
Column Well	0 (19)
Ladder Well	1 (56)
Vacuum Breaker	1 (.07)
Roof Legs	0 ** (7.9)
ATG Well, unbolted w/gasket	1 (15)

** Roof legs will be capped.

[3.2 + 0 + 56 + 0.7 + 0 + 15] = 74.90

P^*	= Vapor pressure function	0.157
M_v	= Avg. vapor molecular wt.	64
K_c	= Product factor	1

74.90 x 0.157 x 64 x 1 = 752.60 lbs./yr.
.38 TPY

EMISSION LOSS CALCULATIONS
TANK NO. 80-5
GASOLINE IFR - 112' DIAM.

Deck Seam Loss -

$L_D = K_D S D^2 P^* M_v K_c$

L_D = Deck seam loss (lb./yr.)

K_D = Deck seam loss per unit seam length factor — 0.12*

S = Deck seam loss factor — 0.33

D = Tank diameter — 112'

P* = Vapor pressure function — 0.157

M_v = Avg. molecular wt. — 64

K_c = Product factor — 1

$0.12 \times 0.33 \times 112^2 \times 0.157 \times 64 \times 1 =$

$0.12 \times 0.33 \times 12{,}544 \times 0.157 \times 64 \times 1 =$ 4,991.27 lbs./yr.

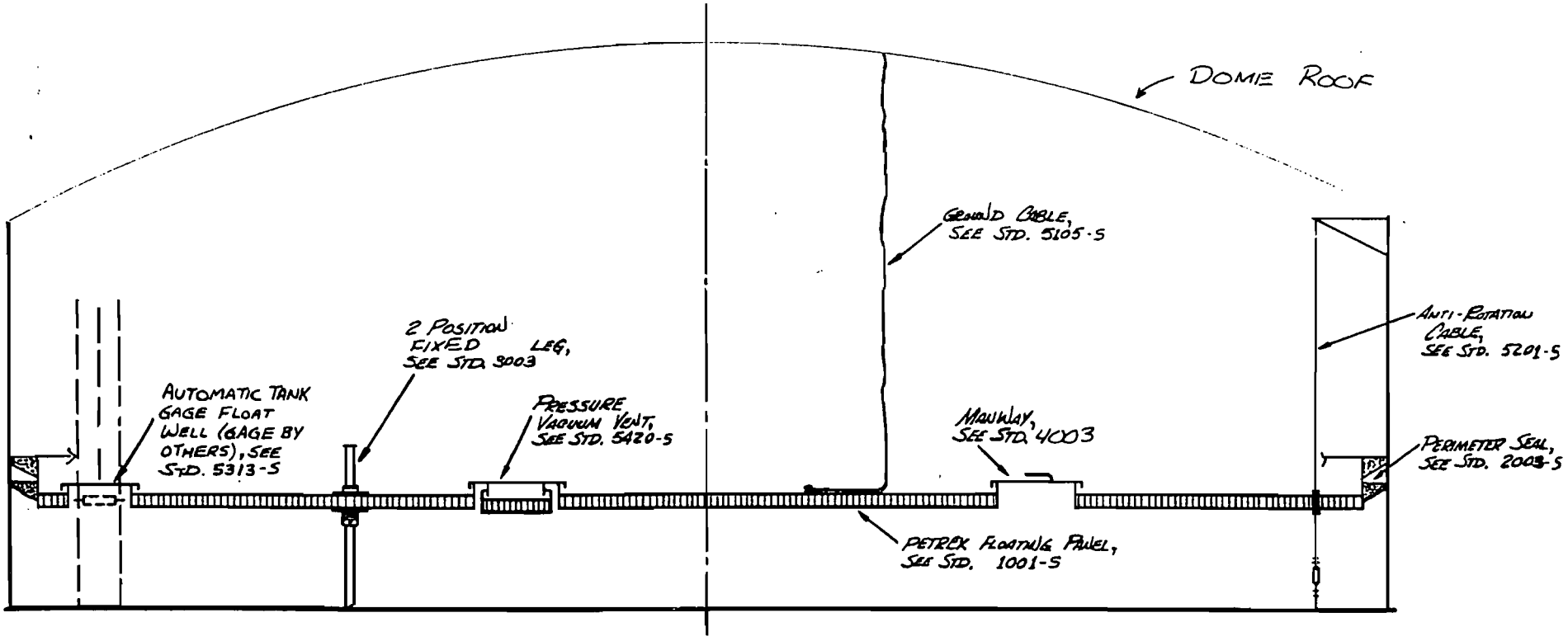
2.50 TPY

*This number reflects reduction factor incorporated per test summary. See Attachment II.

Total Loss

$LT = L_R + L_W + L_F + L_D =$

1.41 + .10 + .38 + 2.50 = 4.39 TPY



TYPICAL SECTION THRU DOME ROOF TANK

W/PETREX INTERNAL FLOATING ROOF RESTING ON LEGS IN LOW POSITION

TYPICAL NUMBER OF FLOATING ROOF FITTINGS FOR 112 Ø TANK

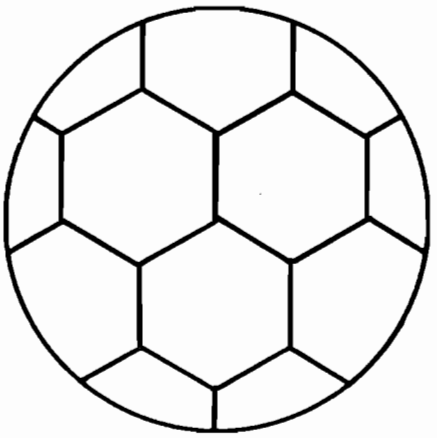
No.	Description
38	Adjustable Legs
-	Column Seals
2	Manways
2	Pressure Vacuum Vent
1	Auto. Tank Gage Float Well
-	Gage Funnel
3	Ground Cables
1	Anti-Rotation Cable
-	Center Vent
-	Shell Vents

PETREX Inc.

P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-2050

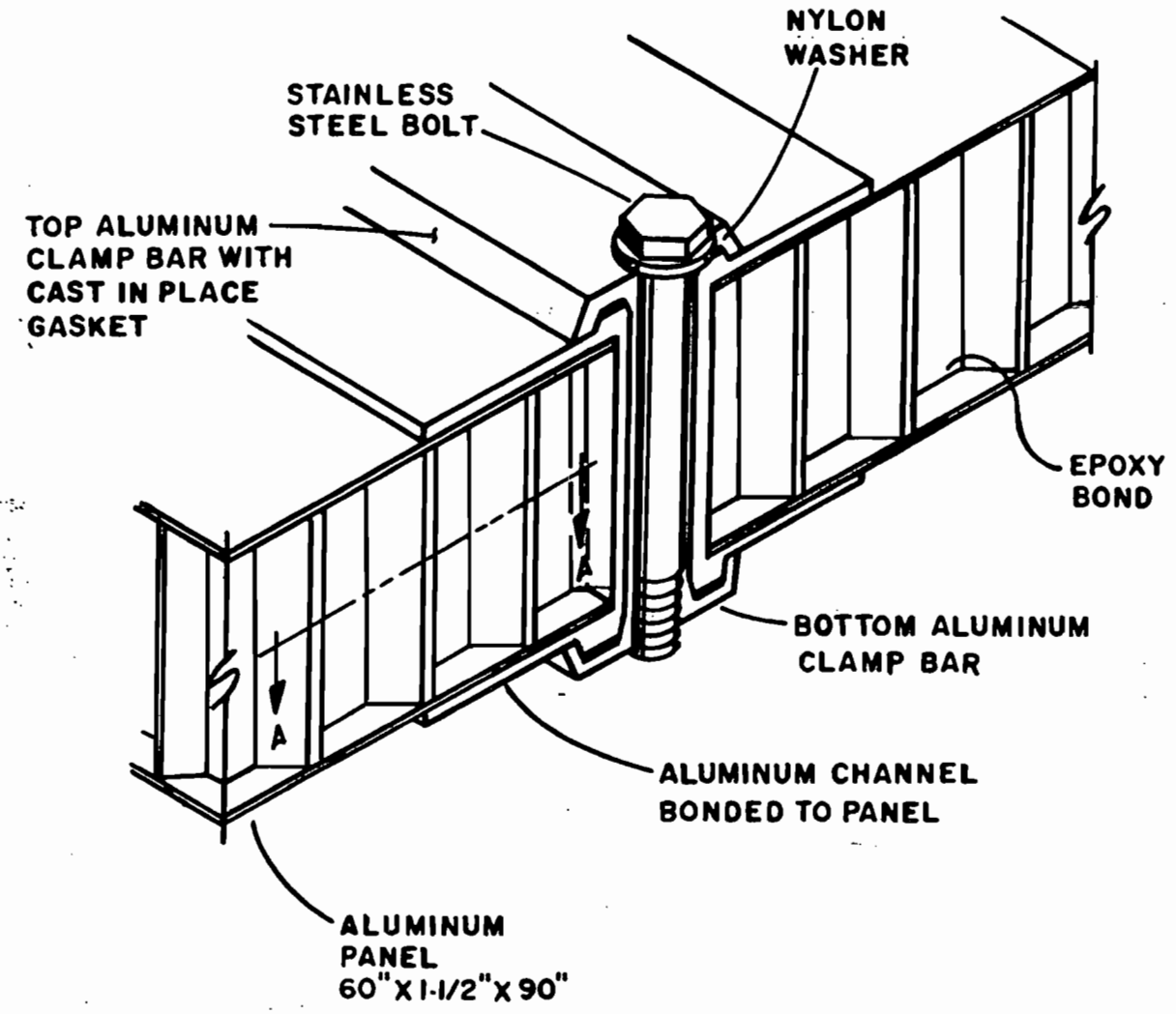
TYPICAL SELECTION AND DETAILS OF THE PETREX INTERNAL FLOATING ROOF SYSTEM

DATE	BY	CK		JOB	NO	REV.
10-15-81	MAT	WLW	4/18/91	92906	-	0

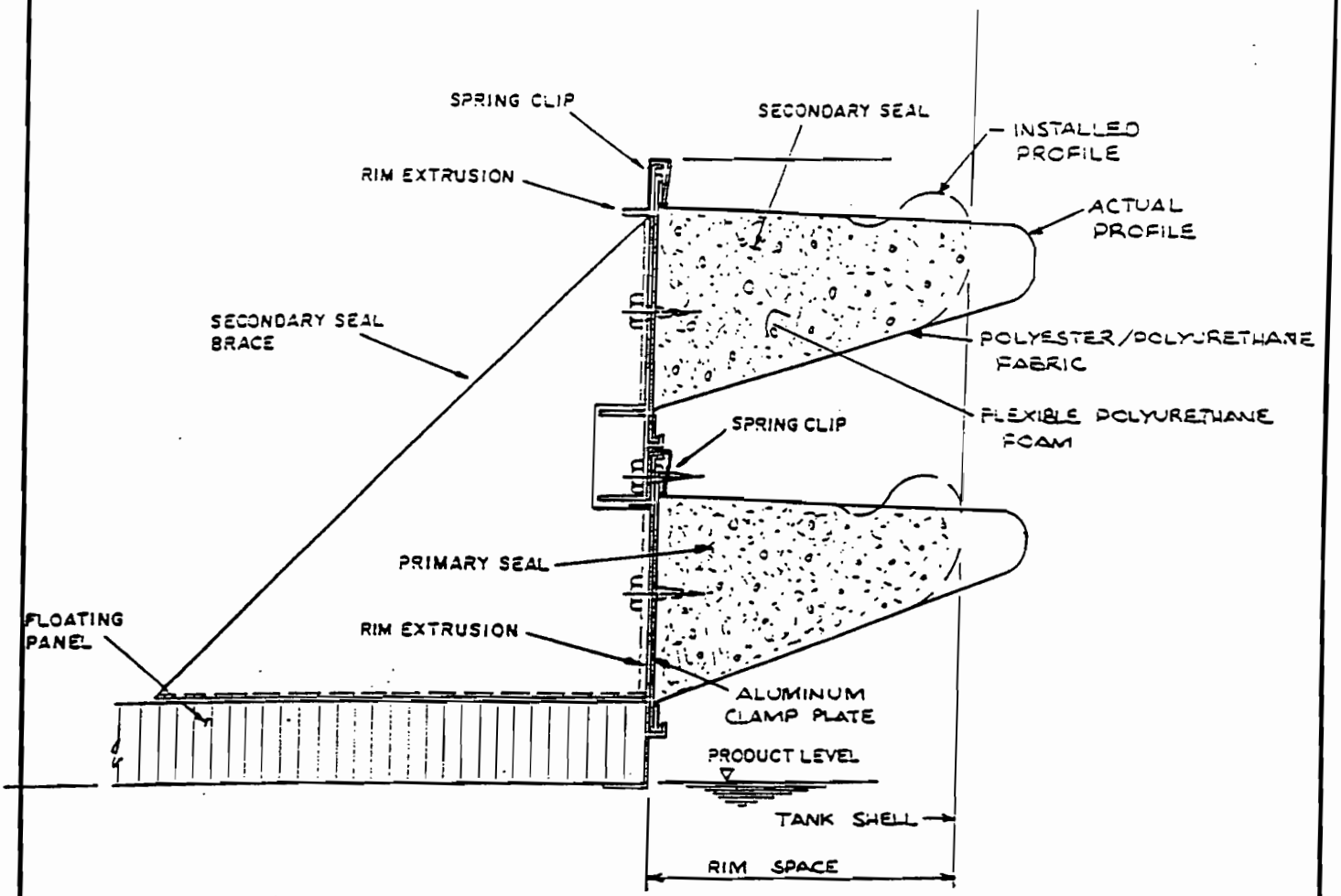


SECTION A-A

HONEYCOMB CORE OF PANEL

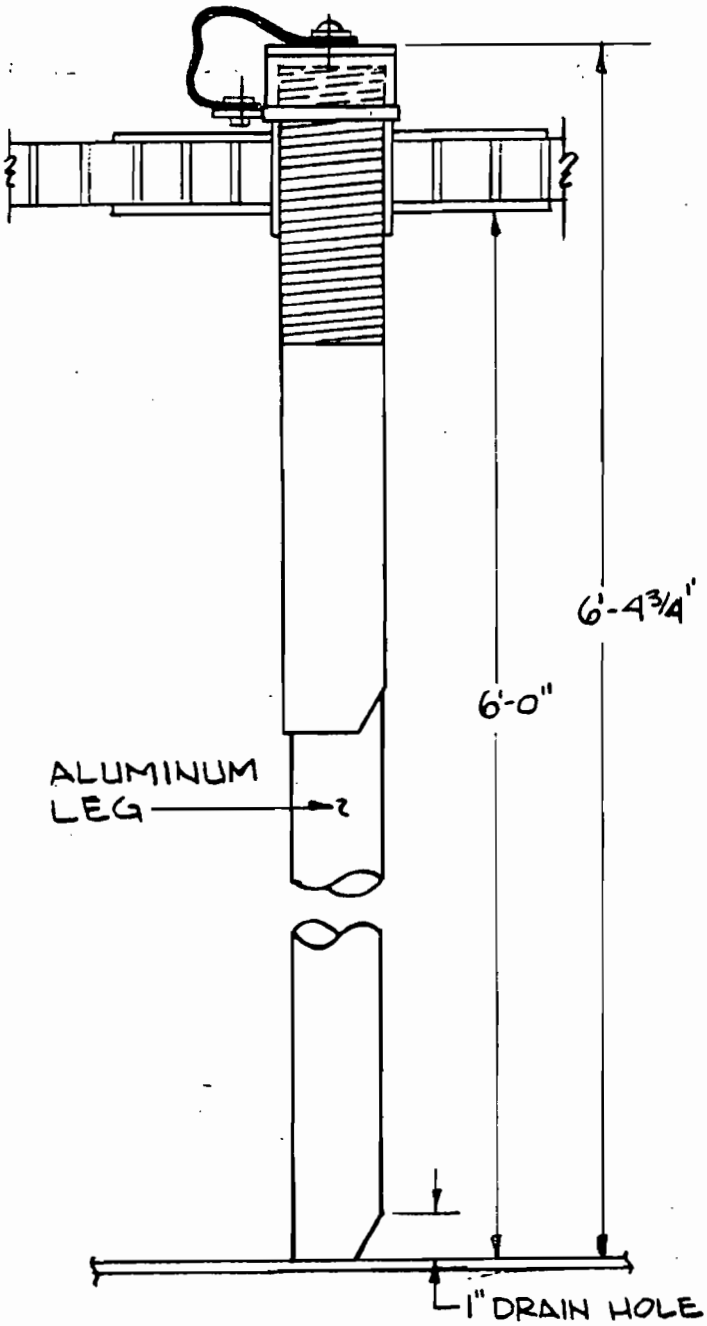


PETREX Inc. P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-2050	BY WISE CK DATE 1-10-90	PANEL JOINING DETAIL	DRAWING NO. STD. 1001-S	REV. 4

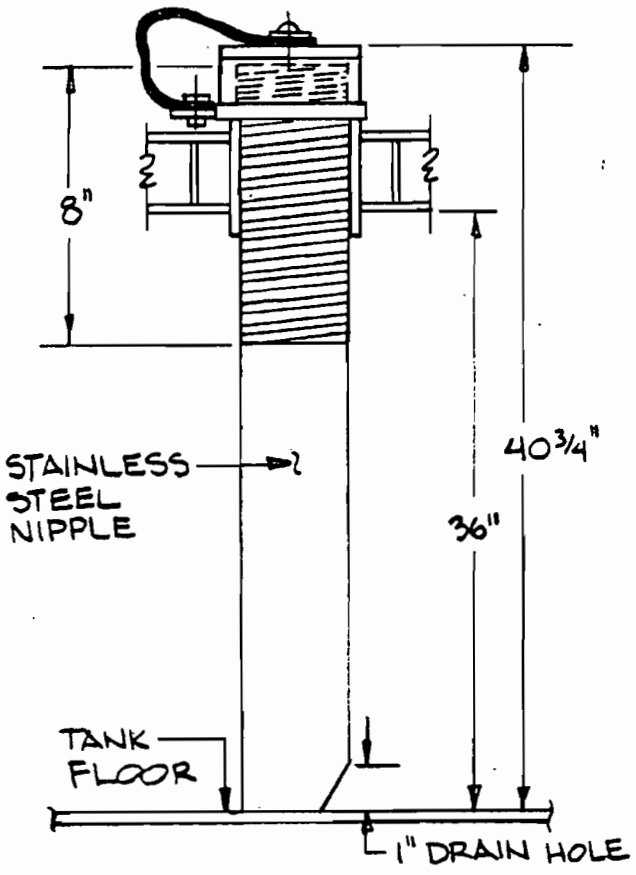


PETREX Inc. P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-2050	BY WISE CK DATE 11-3-88	PRIMARY AND SECONDARY SEAL DETAIL	DRAWING NO. STD.2003-S	REV. 1

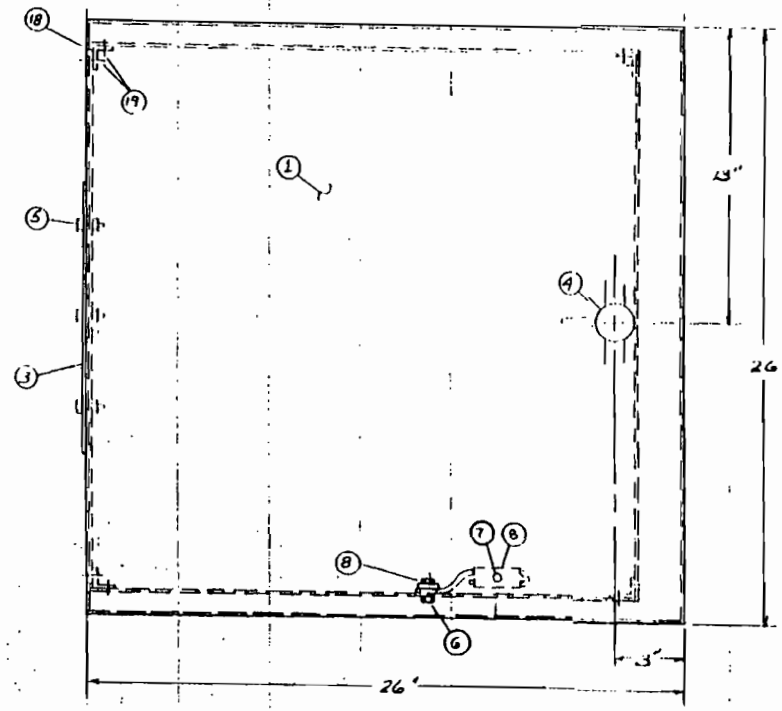
HIGH LEG POSITION

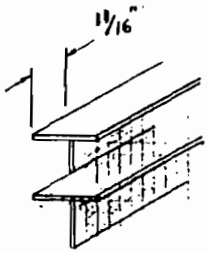


LOW LEG POSITION



PETREX Inc. P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-2050	BY JAM CK DATE 2·21·91	LEG ASSEMBLY W/ NIPPLE AS LOW LEG	DRAWING NO. STD. 3003 SUPPLEMENT	REV. 0

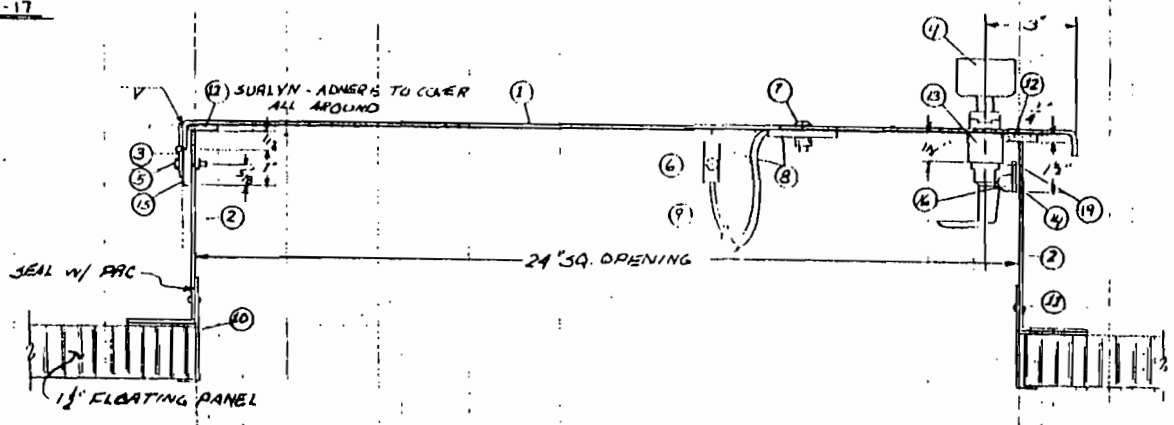




NOTCH ENDS - ITEM-17

BILL OF MATERIALS		
MARK	REQD.	DESCRIPTION
1	1	1/8" ALUM. HATCH COVER 26" SQ. W/ 3/8" LIP
2	4	1/8" ALUM. PLATE 6 3/8" x 29 7/16". W/ 2" LIP
3	1	ALUM HINGE 1 1/2" x 1/16" x 12" LG.
4	1	HANDLE ASSEMBLY
5	3	1/4"-20 x 3/4" LG. ALUM. HEX. HD. BOLTS W/ NUTS & WASHERS
6	1	1/4"-20 x 3/4" LG. S.S. HEX HD. BOLTS W/ NUTS & WASHERS
7	1	1/4"-20 x 3/4" LG. S.S. PAN HD. BOLTS W/ NUTS & WASHERS
▲ 8	2	1/4" x 13/16" x 2" LG. ALUM. CLAMP BAR
9	1	S.S. CABLE 1/8" Ø x 36" LG. W/ TERMINALS
▲ 10	2	COLUMN WELL EXT. (STD 4001) x 23 7/8" LG.
11	12	POP RIVETS 1/8" Ø x 5/16" LG.
12	1	SURLYN GASKET 1" x 1/4" x VV" LG.
13	1	1" x 3/4" x 3 1/2" LG. SPACER BLOCK
▲ 14	1	3/8" x 1/8" x 3 1/2" LG. SPACER SURLYN
15	1	1/4" x 1" x 12" LG. ALUM. BAR
16	1	LATCH CATCH
17	2	COLUMN WELL EXT. (STD. 4001) 25" LG (NOTCH)
▲ 18	4	ANGLE 1" x 1" x 1/8" x 3" LG. ALUM
▲ 19	20	RIVET 3/16" DIA. x 1" LG. ALUM

NOTE:
LATCH CATCH MODIFIED WITH ALUM. HARDWARE PARTS (1/4"-20 x 2 3/4" S/S PAN HD. + 2 FLAT WASHERS 1/4" x 1/4" x 1/8")

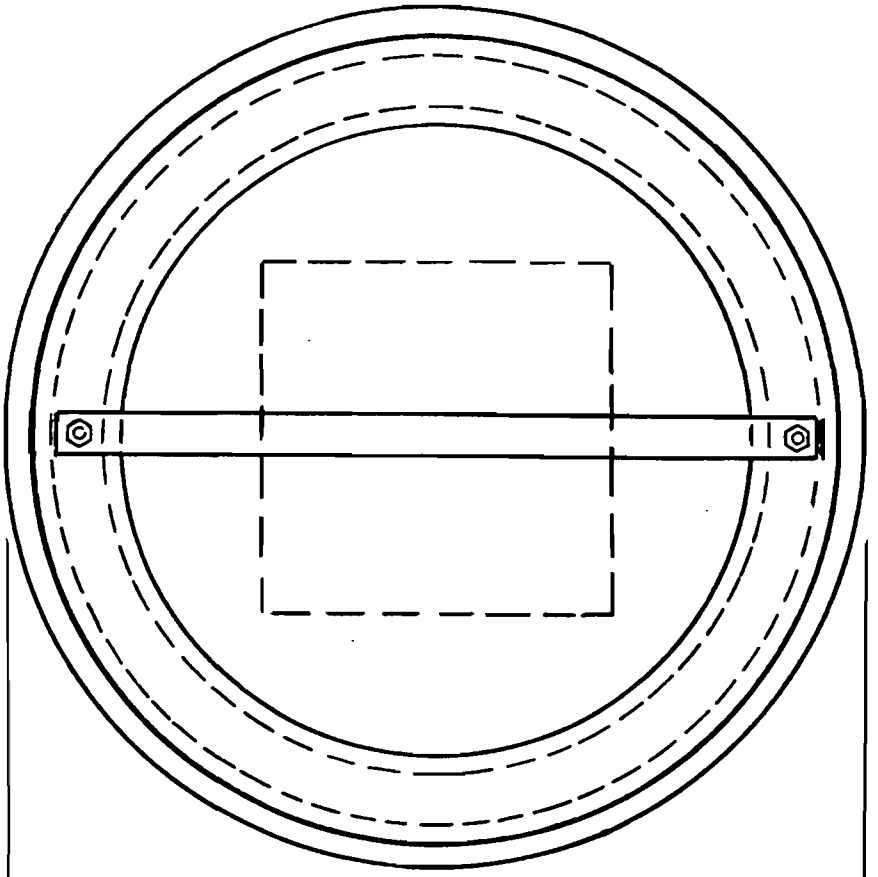


BRUNING 40-330 50004-1

PETREX Inc.
P.O. Box 607 · Warren, Pennsylvania 16365 · (814) 723-2050

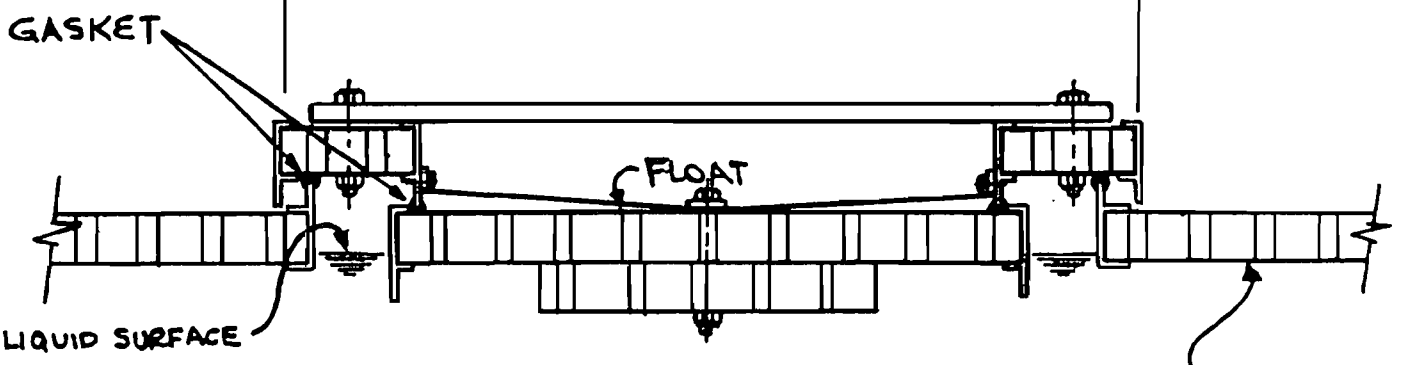
TYP. 24" SQUARE ALUMINUM HATCH WITH HANDLE ASSEMBLY

DATE	BY	CK		JOB		QTY
11-18-82	SEB.			STD. 4003		4



PLAN VIEW

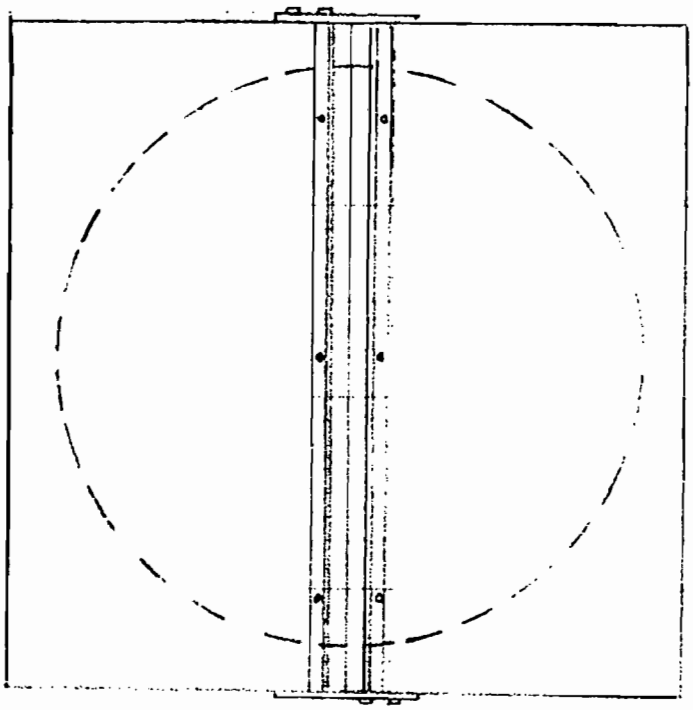
31 3/4" ϕ

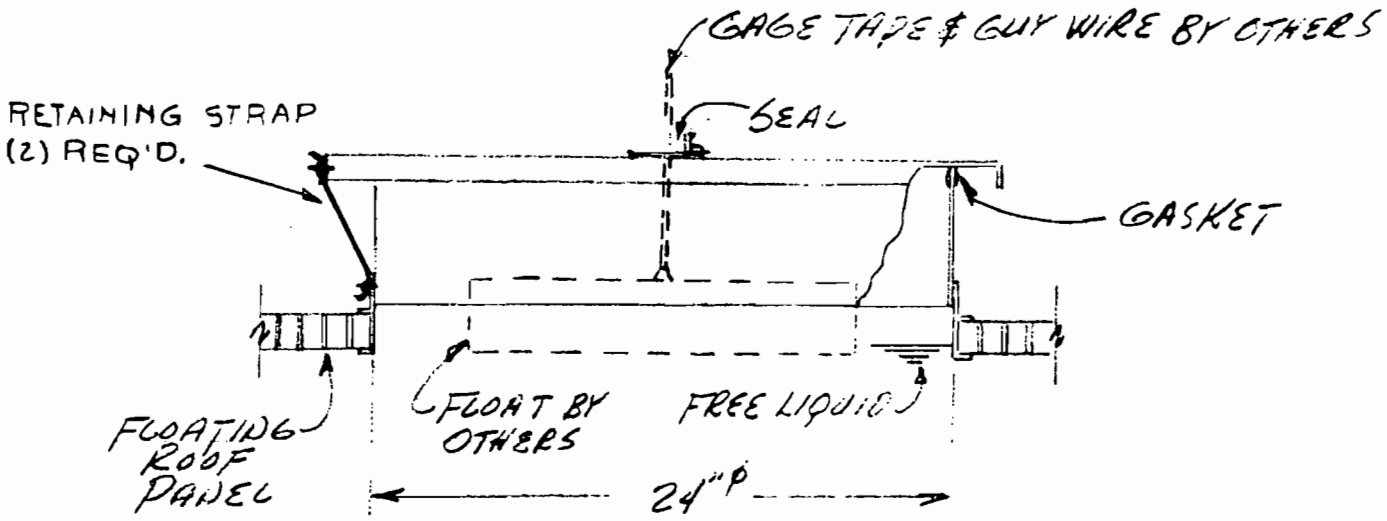


ELEVATION

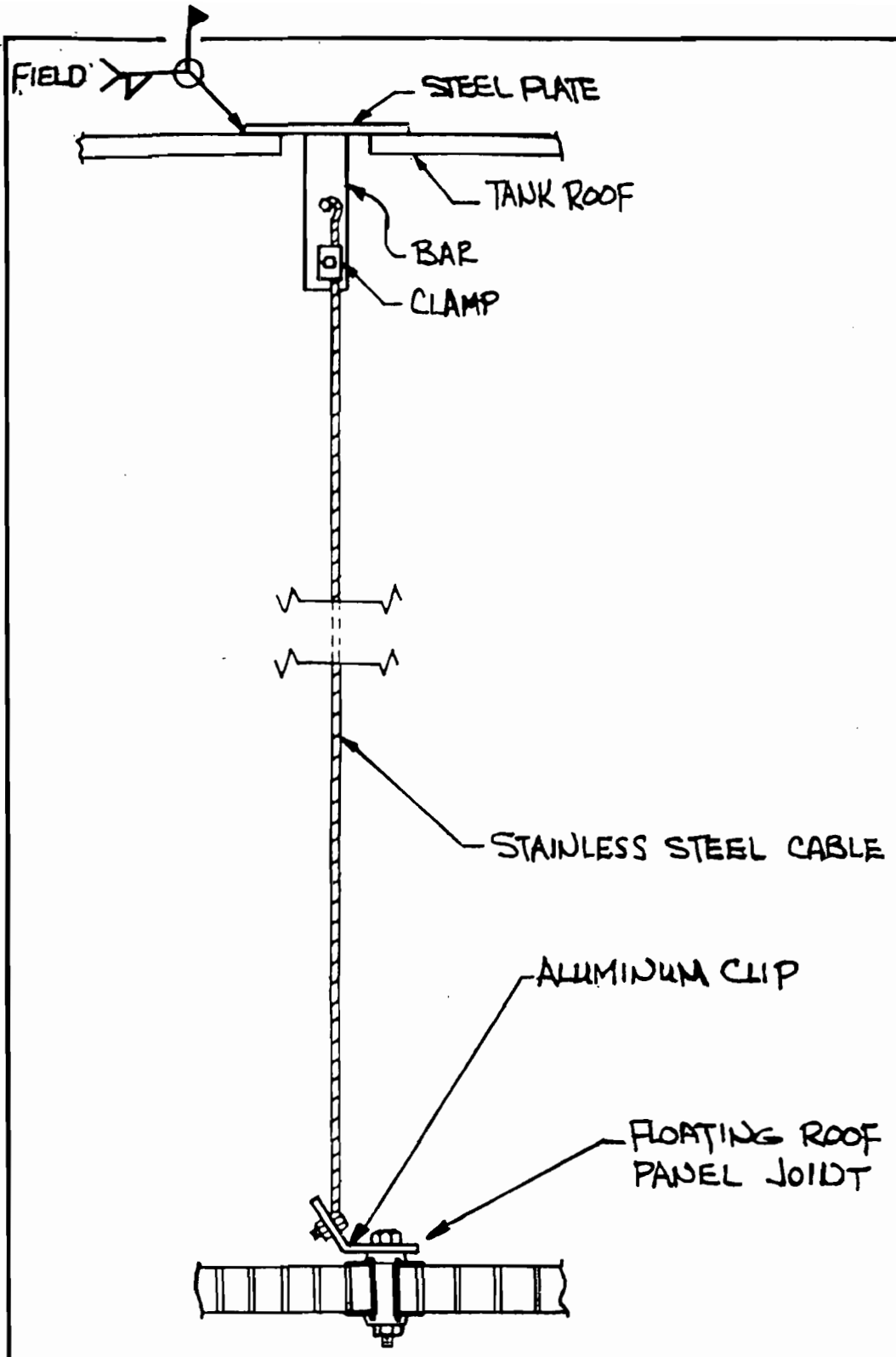
PV VENT SHOWN IN CLOSED POSITION. IN THE OPEN POSITION, THE FLOAT WILL HANG FROM A STRAP IN THE OPEN POSITION.

PETREX INC. WARREN, PA.	BY D.W.G. CK ' DATE 9-28-81	PV VENT	DRAWING NO. STD 5420-S	REV 2





PETREX Inc. P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-2050	BY D.W.G. CK W.L.W DATE 1-21-85	AUTOMATIC GAGE FLOAT WELL	DRAWING NO. 5313-5	REV. 1

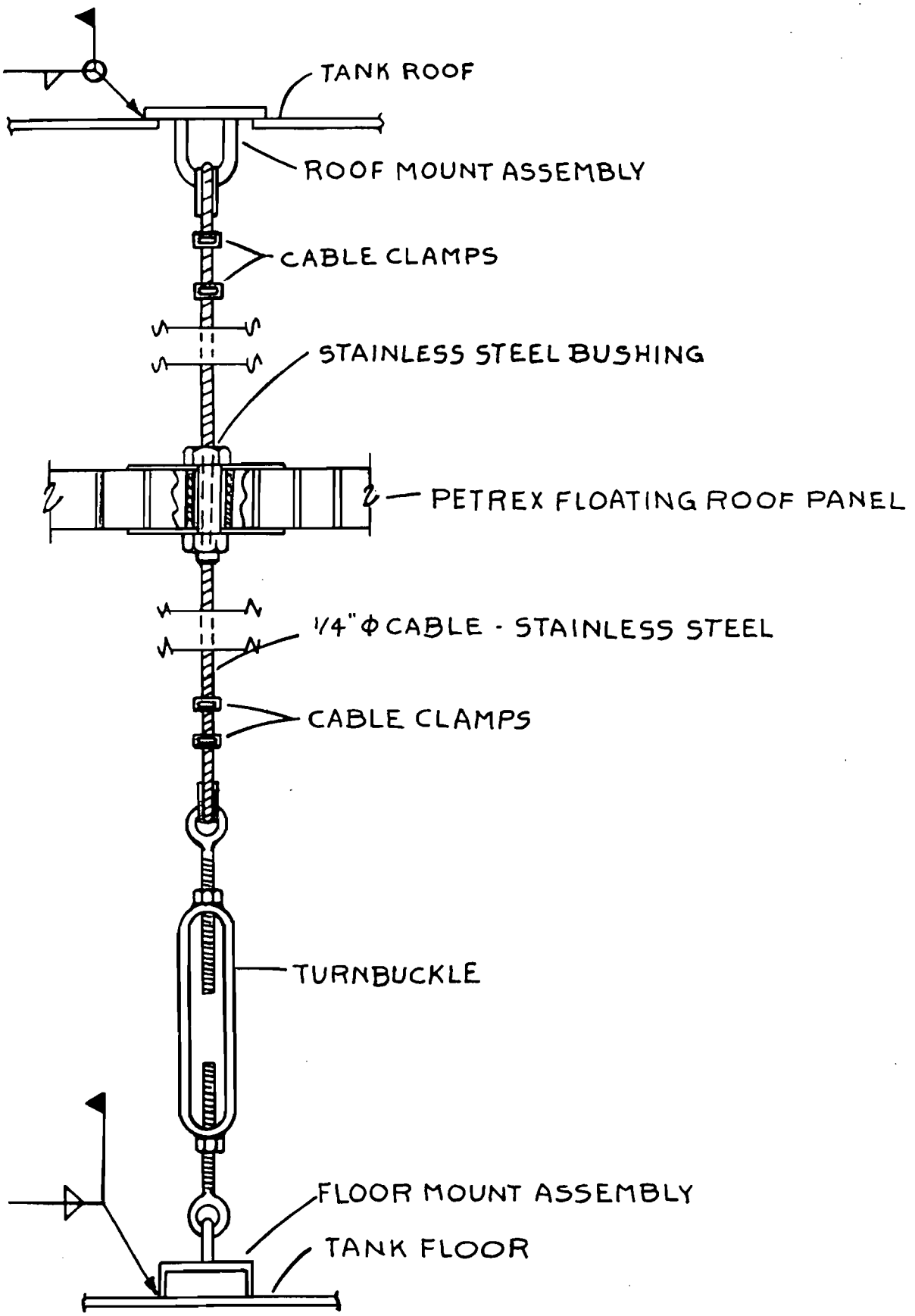


GROUND CABLE INSTALLATION

CUST. NO.		DRAWN DW6
LOCATION		SCALE NONE
TK. NO.	SIZE	DATE 9-28-81

PETREX INC
WARREN, PENNA.

DRAWING NO.
STD 5105-S



PETREX Inc. P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-2050	BY D.W.G. CK DATE 9-28-81	ANTI-ROTATION CABLE ASSEMBLY	DRAWING NO. STD. 5201-5	REV. 1

SPECIFICATIONS FOR INTERNAL FLOATING ROOFS

1. SCOPE

The roof shall be full-surface contact type designed to eliminate the presence of air-vapor mixture under the floating roof and shall meet these specifications and the intent of the latest edition of API Standard 650, Appendix H.

2. MATERIAL

a.	Aluminum Extrusions:	Alloy 6063 T6 or equal.
b.	Aluminum Panels:	Skin - .014 minimum, Alloy 3003 H16 or equal. Core - 1-inch ACG NP Honeycomb
c.	Adhesive:	Compatible with product stored and materials joined and have an expected service life equal to the service life of the roof.
d.	Aluminum Plate:	Alloy 3003 H16 or equal.
e.	Stainless Steel Plate:	ASTM A 240 Type 304.
f.	Aluminum Pipe:	Alloy 6061 T6 or equal.
g.	Seal:	Foam - Polyurethane, ASTM D 3453 or equal. Wrap - Polyurethane coated fabric, .025 minimum thickness.
h.	Fasteners:	Structural: Stainless steel Nonstructural: Aluminum

3. DESIGN

a. The roof and accessories shall be so designed as to allow the internal floating roof to operate throughout its normal travel without manual attention and without damage to any part of the tank or floating roof.

b. The roof shall be designed and built to float and rest in a reasonably horizontal pattern.

c. All basic components, except for the seal materials, are to be metal. For JP-4 or JP-5 service all metal parts in contact with the product shall be aluminum or stainless steel.

d. The internal floating roof shall be designed to safely support at least two men (500 pounds over one square foot) walking anywhere on the roof while the roof is floating or resting on its supports, without damaging the floating roof and without allowing product on the roof. For floating roofs less than 30 feet in diameter this criteria is reduced to 250 pounds over one square foot.

e. The floating roof shall be naturally buoyant and provide buoyancy to support at least three times its own weight, and shall not sink if punctured anywhere. Buoyancy is based on a product with a specific gravity of 0.70.

f. Complete electrical continuity of the floating roof and the full surface of the liquid shall be provided, with surface resistance less than 0.000725 ohms per foot DC at 70° F.

g. Panels shall be joined together by means of a bolted and gasketed clamp and channel member bonded to the panel edge. The joint shall transmit the design loads without failure or leakage.

4. SUPPORT LEGS

a. Floating roof shall be provided with two position legs: low position 36" and high position 78". However, the low position can be preset at any height.

b. Changing high/low position must be accomplished from top side of floating roof and while tank is in service. In addition the legs shall be completely removable from the top side of the floating roof, while in service if necessary.

c. Each leg must be capable of vertical adjustment of $\pm$ 3" in the event that the tank bottom settles after tank is in service. Adjustment to be made from top side of floating roof while tank is in service.

d. Legs and attachments to be designed to support a uniform load of 12.5 lb. per sq. ft.

e. Legs to be 2" Ø aluminum or stainless steel (0.150 minimum wall).

f. Legs shall be self-draining (notched or perforated).

5. SEAL

a. The space between the outer periphery of the floating roof and the tank shell shall be sealed by primary and secondary flexible sealing devices.

b. The seals shall be flexible foam covered with coated fabric wrap.

c. All materials used as part of the seals shall be durable in the tank's environment, abrasion resistant and shall not discolor or contaminate the liquid stored.

d. The seals shall be designed to accomodate +2, -4, inches of local deviation between the floating roof and the shell.

e. Seal construction shall be such that the seal can be installed, removed and replaced by hand from the top of the floating roof.

f. The primary vapor mounted seal shall function above the liquid level and be free draining without trapping any liquid.

g. The secondary seal is to be installed above the primary seal.

6. PENETRATIONS

Columns, ladders, and other rigid vertical appurtenances that penetrate the floating roof shall have a vapor seal provided which will permit a local deviation of $\pm$ 5 inches. Appurtenances shall be plumb within a tolerance of 3 inches. Gasketed sliding cover plates, which are free to move with the appurtenance relative to the cover, shall be sized to allow the full movement without exposing product within the opening.

A rim shall be provided around the floating roof periphery and shall extend 6 inches minimum above the liquid to contain product turbulence. Columns, ladders, and other openings shall extend 3 inches above the liquid.

7. MANWAYS

At least one manhole shall be provided for access to and ventilation of the tank when theroof is on its supports and the tank is empty. It shall be at least 30 in. I.D. and may be of the gasketed loose-cover type, provided the height of the manway neck is such as to prevent the product contents from flowing onto the roof.

8. GAUGING

The floating roof shall have an 8" Ø opening for gauging from the tank roof. The opening is to be located directly below the gauge hatch on the tank roof. On the top side of the floating roof the opening shall have a flapper type seal and a 20" Ø funnel.

9. AUTOMATIC TANK GAGE

The floating roof shall have a covered and gasketed float well for automatic gage. The float well shall be a minimum of 24" diameter and provide sufficient clearance for the float.

10. GROUNDING

Floating roof shall be electrically bonded to the tank. This shall be accomplished with flexible cables from the tank roof to the floating roof (minimum of two, uniformly distributed). They shall be 1/8-inch diameter stainless steel aircraft cable to insure strength, corrosion resistance, joint reliability, flexibility, and service life.

11. ANTI-ROTATION

The floating roof shall be prevented from rotation by means of a vertical cable firmly fixed to the tank roof and bottom. The cable shall pass through a stainless steel bushing mounted in the floating roof. The cable shall be 1/4 stainless steel aircraft type and made taut by means of a turnbuckle. All cable fittings shall be Type 304 stainless steel.

12. VENTS

a. Floating Roof: A pressure/vacuum gasketed vent shall be provided on the floating roof to prevent overstressing of the floating roof or seal. This vent shall be adequate to evacuate air and gasses from underneath the roof when the roof is on its supports during filling operations. It shall also be adequate to release any vacuum generated underneath the roof after it settles on its supports during withdrawal operations. It shall not open while the roof is fully afloat due to pressure or vacuum.

b. Tank Shell: Circulation vents shall be located above the seal of the floating roof when the tank is full. The maximim spacing shall be 32 ft. but in no case shall there be less than four equally spaced vents. The total open area of these vents shall be equal to, or greater than 0.2 sq. ft. per foot of tank diameter. Vents shall be covered with rain hood and coarse screen.

c. Fixed Roof: An open vent shall be provided at the center or at the highest elevation of the fixed roof. It shall have a weather cover and a maximum open area of 50 sq. in. Vent opening shall be covered with a coarse screen.

13. EMERGENCY OVERFLOWS

Tank shell vents may be used as emergency overflows with at least 50% of the circulation venting area remaining unobstructed during overflow event.

14. MATERIAL PLACEMENT

Placement of the floating roof materials into the tank shall be through an opening (provided by others) 2-foot by 6-foot in the tank fixed roof.

15. TESTING

Testing for buoyancy and leaks is unnecessary as panels are inherently buoyant with over 8,000 flotation cells per panel.

16. EXPERIENCE

The internal floating roof contractor must have at least 5 years experience furnishing and installing full-surface contact floating roofs as described in this specification and provide a list of twenty-five installations, including owner, location, size and year completed.

17. WARRANTY

The internal floating roof contractor must warrant its work for a period of one year from the date of completion of its work to the extent that it will repair any defects which may appear because of faulty design, workmanship or material furnished.

18. SPECIAL ITEMS

The following items may be required if checked and specified on attached sheets:

_____ Gauge pipe

_____ Ladder

_____ Gauge ladder

_____ Roof hatch 30" x 30", for tank roof.

_____ Gauge hatch 8" Ø, for tank roof

_____ Floating swingline with track

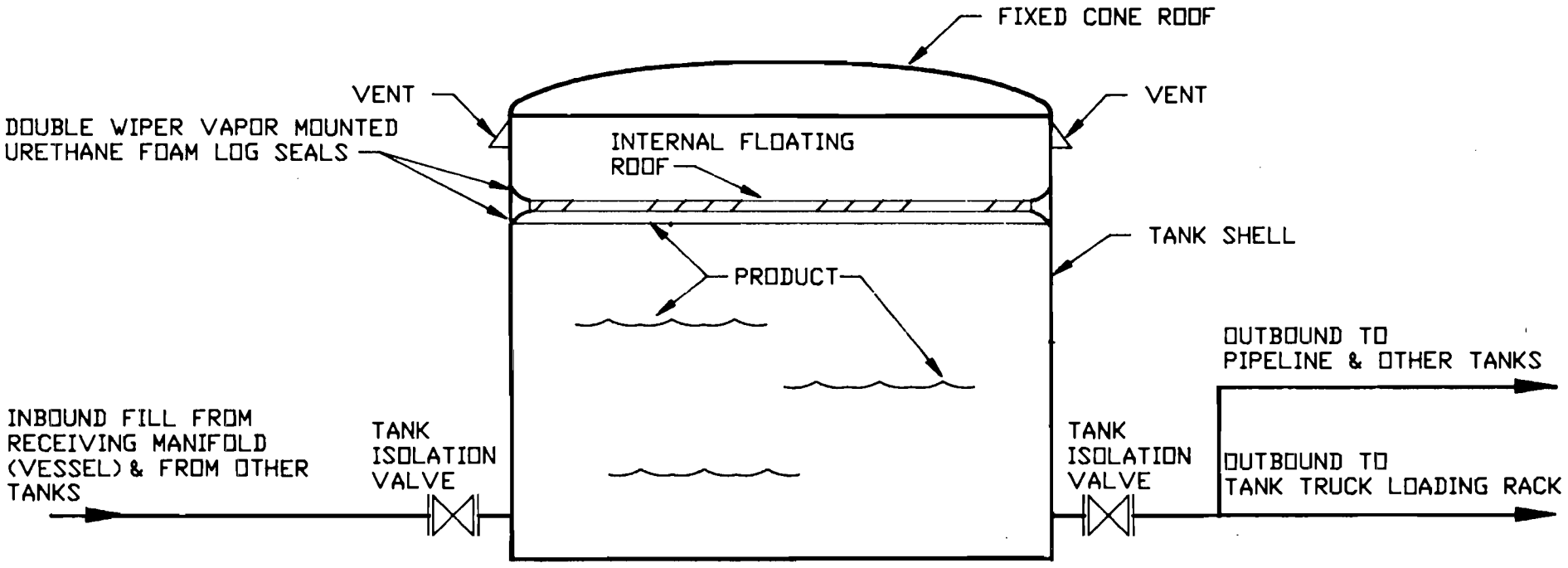
_____ Leg pads

_____ Foam dam

_____ _____

_____ _____

_____ _____

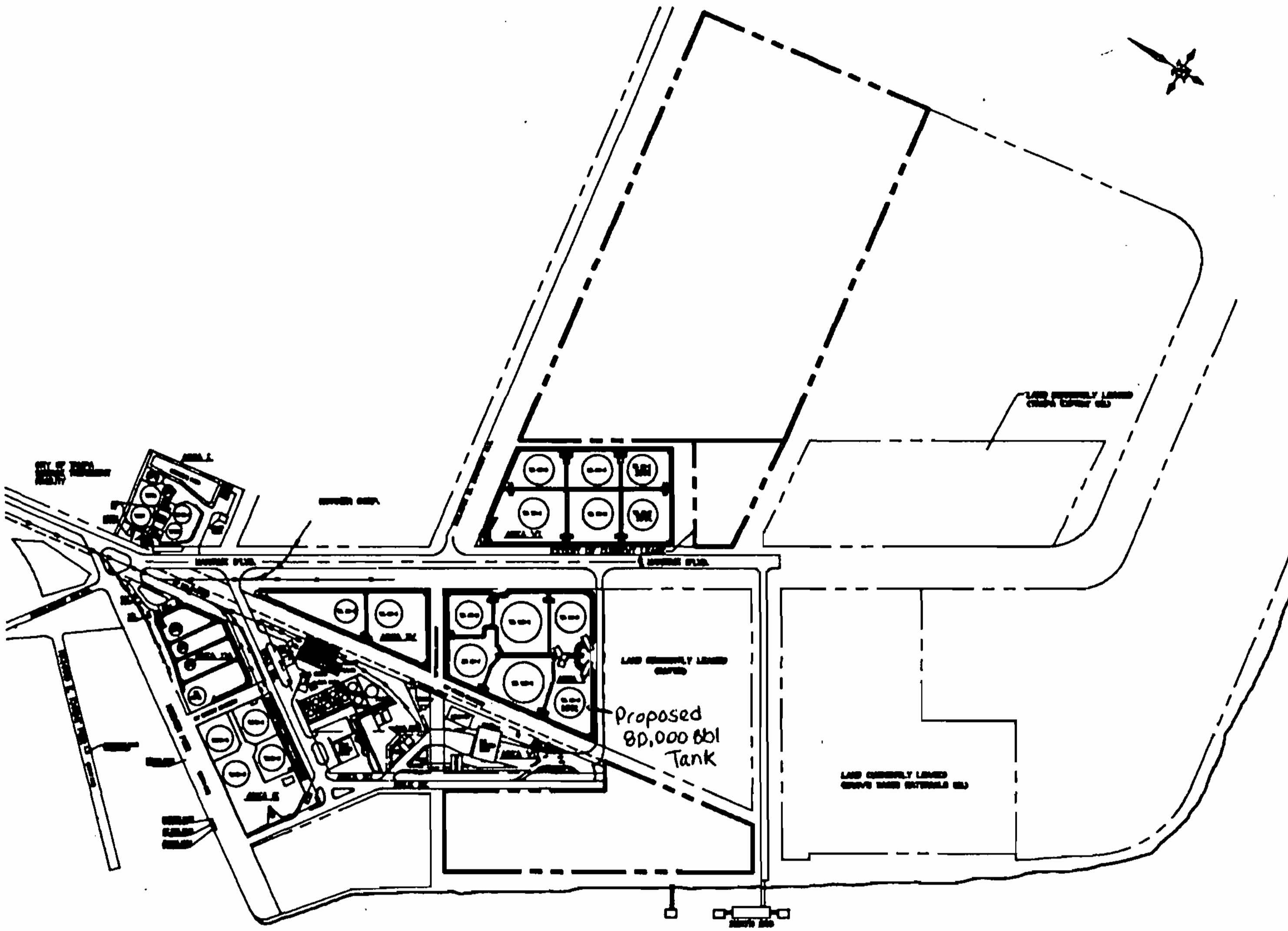


FLOW DIAGRAM

DJL 4/91

TANKS

NO.	SIZE	CAPACITY	PRODUCT
10	60'ØX37' C.R.	16,000 Bbl.	CAUSTIC SODA
10-1	46'ØX46' C.R.	16,000 Bbl.	PHOSPHORIC ACID
10-2	44'ØX37' C.R.	16,000 Bbl.	CAUSTIC SODA
10-3	46'ØX46' C.R.	16,000 Bbl.	EMPTY
10-4	46'ØX46' C.R.	16,000 Bbl.	EMPTY
11	70'ØX37' C.R.	26,000 Bbl.	PHOSPHORIC ACID
12	70'ØX37' C.R.	26,000 Bbl.	PHOSPHORIC ACID
16-1	46'ØX46' C.R.	16,000 Bbl.	SPRAY OIL
25-1	67'ØX40' C.R.	25,000 Bbl.	CAUSTIC SODA
25-2	67'ØX40' C.R.	25,000 Bbl.	CAUSTIC SODA
40-1	85'ØX40' I.F.R.	40,000 Bbl.	U/L 89
40-1	87'ØX33' C.R.	42,000 Bbl.	JET FUEL
42-2	87'ØX38' C.R.	42,000 Bbl.	JET FUEL
42-3	87'ØX33' C.R.	42,000 Bbl.	JET FUEL
42-4	87'ØX38' C.R.	42,000 Bbl.	JET FUEL
55-1	105'ØX40' E.F.R.	55,000 Bbl.	U/L 87
55-2	100'ØX40' E.F.R.	55,000 Bbl.	REG.
70-1	112'ØX40' C.R.	70,000 Bbl.	JET FUEL
70-2	112'ØX40' C.R.	70,000 Bbl.	DIESEL
80-1	120'ØX40' E.F.R.	80,000 Bbl.	PREM. 93
80-2	112'Øx48' I.F.R.	80,000 Bbl.	DIESEL
80-3	112'Øx48' I.F.R.	80,000 Bbl.	PREM. 93
80-4	112'Øx48' I.F.R.	80,000 Bbl.	87 U/L
80-5	112'Øx48' I.F.R.	80,000 Bbl.	
80-6	112'Øx48' I.F.R.	80,000 Bbl.	
80-7	112'Øx48' I.F.R.	80,000 Bbl.	
101	10'-6"ØX31' HORIZ.	20,000 Gal.	BUTYL CELLOSOLVE
102	10'-6"ØX31' HORIZ.	20,000 Gal.	ACETONE
103	10'-6"ØX31' HORIZ.	20,000 Gal.	[illegible]
104	10'-6"ØX31' HORIZ.	20,000 Gal.	METHYL ISOBUTYL KETONE
105	10'-6"ØX31' HORIZ.	20,000 Gal.	[illegible]
106A	10'-6"ØX31' HORIZ.	7,500 Gal.	EMPTY
106B		6,500 Gal.	PROPYL ACETATE
106C		6,500 Gal.	ISOBUTYL ACETATE
107A	10'-6"ØX31' HORIZ.	7,000 Gal.	BUTYL ACETATE
107B		6,500 Gal.	ETHYLENE GLYCOL
107C		6,500 Gal.	[illegible]
108A	10'-6"ØX31' HORIZ.	7,000 Gal.	BUTANOL
108B		6,500 Gal.	[illegible]
108C		6,500 Gal.	CELLOSOLVE ACETATE
109A	10'-6"ØX31' HORIZ.	7,000 Gal.	PROPYLENE GLYCOL
109B		6,500 Gal.	PROPANOL [illegible]
109C		6,500 Gal.	EMPTY
120-1	135'ØX40' I.F.R.	120,000 Bbl.	PREM. 93
120-2	135'ØX40' I.F.R.	120,000 Bbl.	U/L 87
201	24'ØX31' C.R.	2,500 Bbl.	EMPTY
202	24'ØX31' C.R.	2,500 Bbl.	[illegible]
203	24'ØX31' C.R.	2,500 Bbl.	EMPTY
204	24'ØX31' C.R.	2,500 Bbl.	[illegible]
205	24'ØX31' C.R.	2,500 Bbl.	EMPTY
301	34'ØX31' C.R.	5,000 Bbl.	METHANOL
302	22'ØX38' C.R.	175,000 Gal.	
350	13'ØX38' C.R.	35,000 Gal.	[illegible]
351	13'ØX38' C.R.	35,000 Gal.	METHYL ETHYL KETONE
401	46'-6"ØX33' C.R.	10,000 Bbl.	METHANOL



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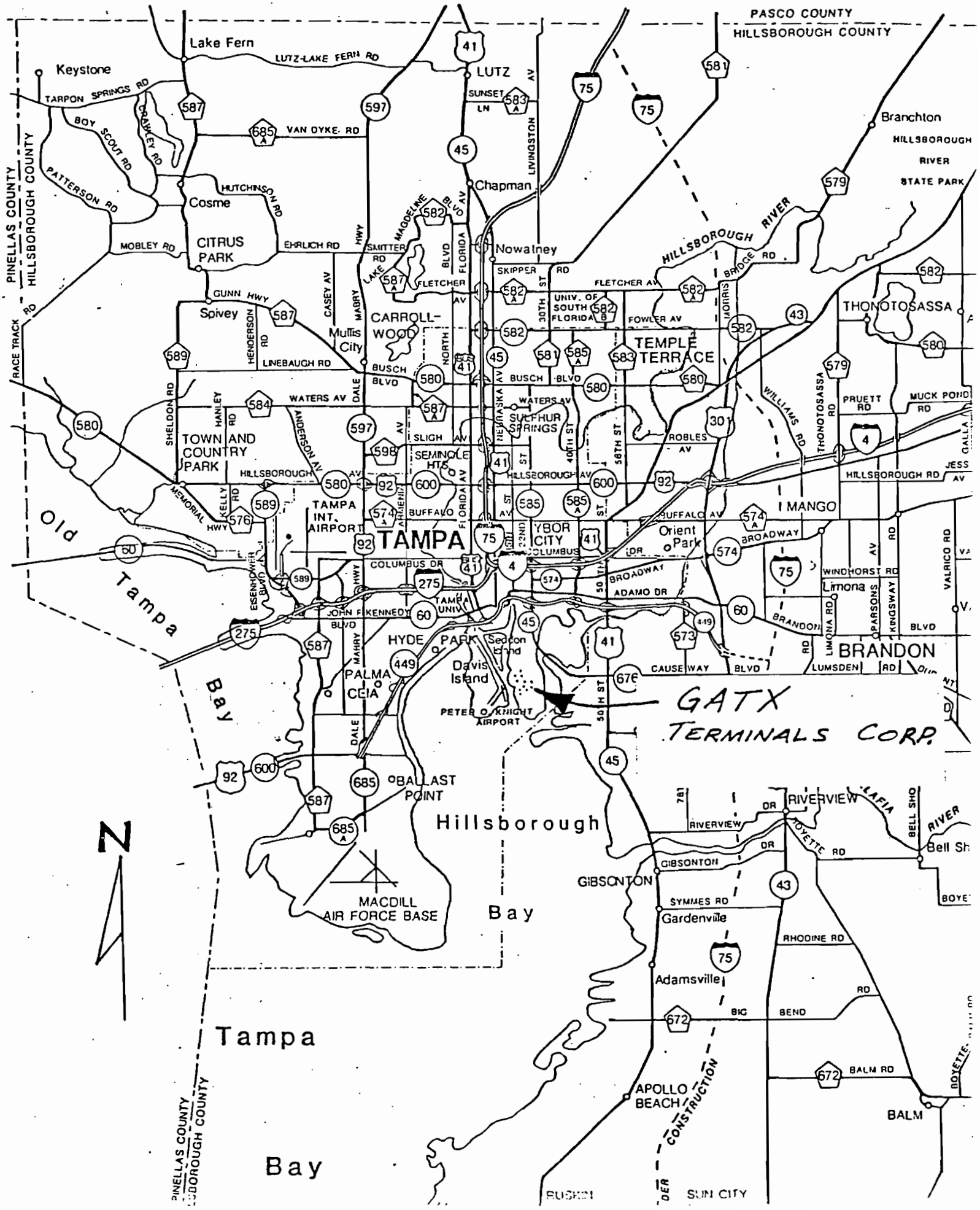
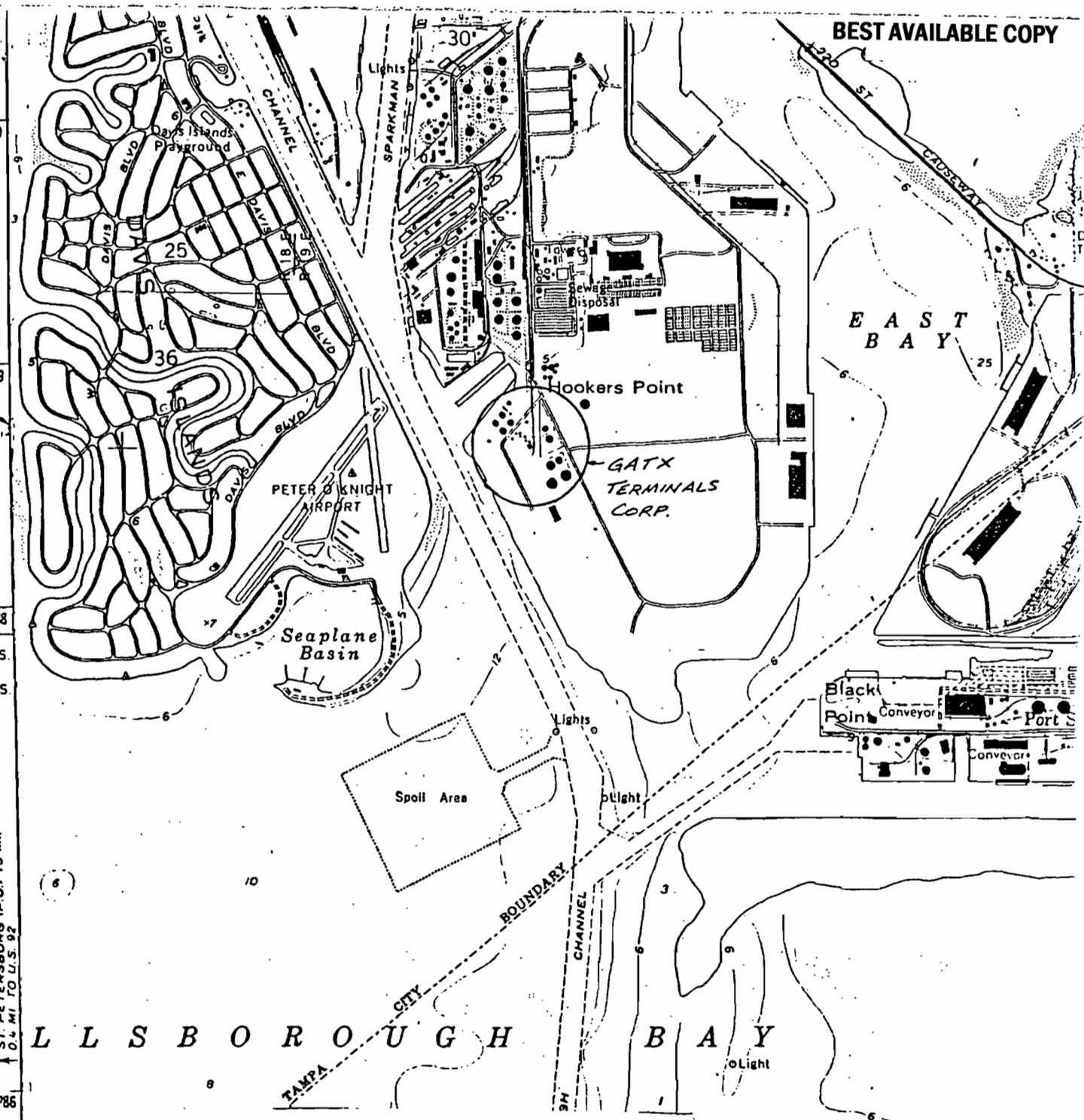
DATE DRAWN	8/17/90
DRAWING SCALE	N.T.S.

GATX TERMINALS CORPORATION
TAMPA TERMINAL

GENERAL ARRANGEMENT - PLOT PLAN

BEST AVAILABLE COPY





TAMPA QUADRANGLE

FLORIDA—HILLSBOROUGH CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)

SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

DEPTH CURVES AND SOUNDINGS IN FEET—GULF COAST LOW WATER DATUM

THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

THE MEAN RANGE OF TIDE IS APPROXIMATELY 2 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092

A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

1 290 000 FEET

27°52'30"

82°55'

27'30"

(GIBSONTON)

ATTACHMENT II

American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005
202-682-8145

J. K. Walters
Director, Measurement Coordination

December 18, 1989
RE: 330

Mr. W. L. Wagner, P.E.
President
PETREX Inc.
2349 Dorcon Road
P. O. Box 907
Warren, Pennsylvania 16365

Dear Mr. Wagner:

Your January 24, 1989 letter requested that API 2519 be revised to include an additional K_d factor for bolted, gasketed and washer tanks.

That request was reviewed by the API Committee on Evaporation Loss Measurement and referred to a task group. The task group found that there would be value in being able to calculate emissions since there is increased interest in retrofitting tanks with internal floaters.

The group also found that owners of PETREX tanks could use the factor provided by PETREX. However, the factor is not yet suitable as a general factor in API Publication 2519. The value of K_d may vary with the type of gasketing material used and on the configuration of the clamping mechanism. Further tests are necessary since your "completely sealed container" may not necessarily represent results obtained under actual tank conditions.

If you believe API should do more work in this area, it would be appropriate to run a budget proposal by CELM for consideration in the 1991 API budget. If you wish to pursue this, please give me a call.

Very truly yours,

J. K. Walters/kcs

cc: Members - CELM

PETREX Inc.

2349 Dorcon Road • P. O. Box 907 • Warren, Pennsylvania 16365
Telephone 814-723-2050 • Telefax 814-723-2055 • Telex 510 101 3005

January 24, 1989

American Petroleum Institute
1220 L Street N.W.
Washington, DC 20005

Attention: J. K. Walters

Subject: API 2519, Third Edition
June 1983

Gentlemen:

This letter requests that API 2519 be revised to include an additional K_d factor for bolted, gasketed, and washered deck seams.

This request is based on a 12-month bench test that we conducted comparing both the standard and gasketed bolted seam. We recommended for a fully gasketed and caulked bolted seam $K_d = 0.12$.

The basis for this recommendation and description of the test is included in the attached report.

We have installed many floating roofs using a gasketed bolting seam with significant reduction of evaporation loss.

Also enclosed are evaporation loss summary sheets for a 30', 60' and 120' diameter tank using both standard and gasketed bolting seams. The reduction in evaporation loss is certainly noteworthy.

If you have questions or need additional information please contact us.

Very truly yours,

PETREX, Inc.

W. L. Wagner

W. L. Wagner, P.E.
President

WLW/br

Encls.

PETREX Inc.

2349 Dorcon Road • P. O. Box 907 • Warren, Pennsylvania 16365
Telephone 814-723-2050 • Telefax 814-723-2055 • Telex 510 101 3005

SUBJECT: Test for Vapor Loss through Clamp Bars used on PETREX Internal Floating Roof System.

Purpose

To determine the effect on vapor loss of casting a gasketing into the grooves of the top clamp bar of bolted panel joint.

Procedure

Three pans were covered with honeycomb panels. The panels were sealed to the pans with 1/2" fillet of PR 1422. After the sealer had cured, one cell in each panel was pierced and the pans were filled with an equal amount of gasoline. The pierced cell was then sealed with PR 1422. One panel had the standard joint construction down the middle. One panel had a gasketed joint down the middle. The third panel was without a joint to establish the integrity of the panel to pan sealing method. See attached sketches. The three test pans are weighed periodically.

Test Material

-- Three aluminum pans approximately 9-1/2" x 2-3/4" x 17-1/2".
- Premium unleaded gasoline from United Refinery.
- Aluminum honeycomb panel 12" x 1-1/2" x 20".
- Channel extrusions.
- Top and bottom clamp bars with 1/4" bolts.
- Nylon washers.
- PR 1422 B2 sealer.

Test Equipment

This test will expose both the standard and gasketed clamp bars to the exact same environmental conditions. Therefore the relative improvement in reducing vapor loss will be meaningful. Elevated temperature and wind effect

were not included in the test because of the addition of complexity to the set-up. Again the results would still have the same relative values.

Some consideration was given to having the test panels simulate actual floating conditions. Again this would have unnecessarily made the test more complex, e.g. vapor loss through seal area and re-supply of evaporated gasoline.

In actual condition the volume of the vapor space under the clamp bar is about 25 times less than the test set-up.

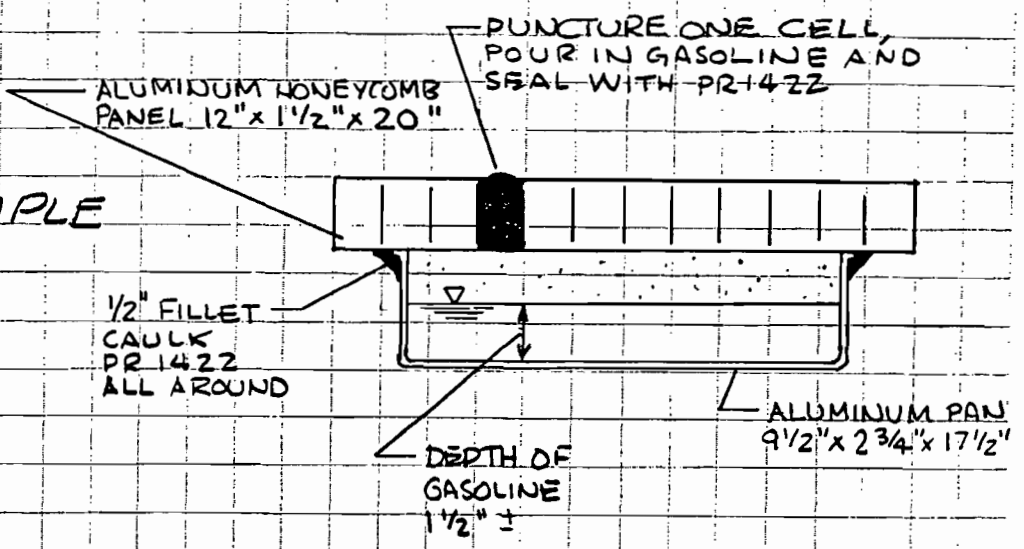
The larger volume in the test set-up will tend to breathe more than in actual conditions, therefore the test results are conservative, with the real vapor loss through the gasketed clamp bar being less than the tests indicated.

PETREX INC. P.O. BOX 907 • WARREN, PA. 16365

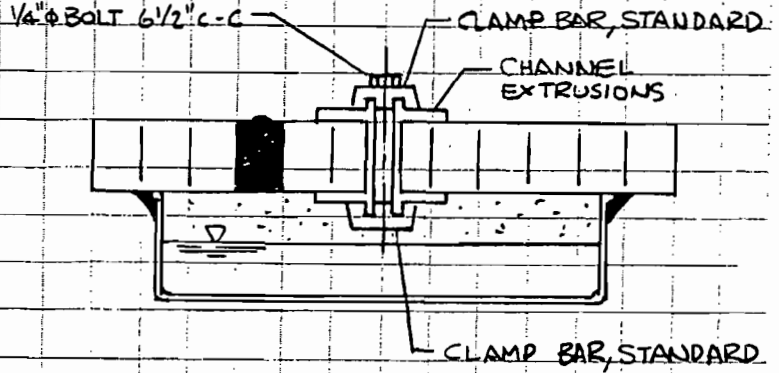
BY: WLW DATE: 3.5.84 SUBJECT: TEST SET UP JOB NO. _____

CK: _____ DATE: _____ PAGE 3 OF _____

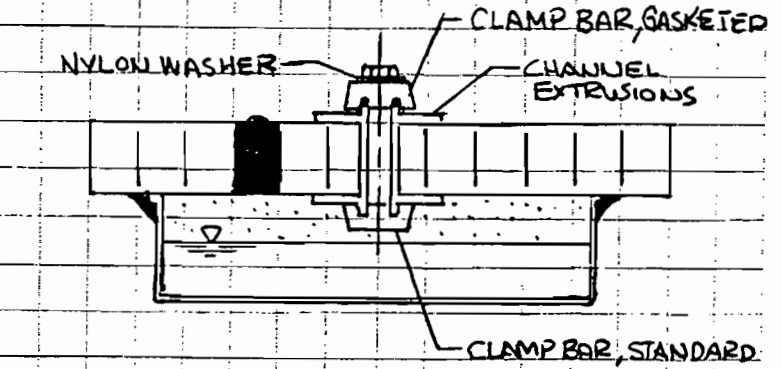
TEST 1
REFERENCE SAMPLE



TEST 2
STANDARD CLAMP BAR

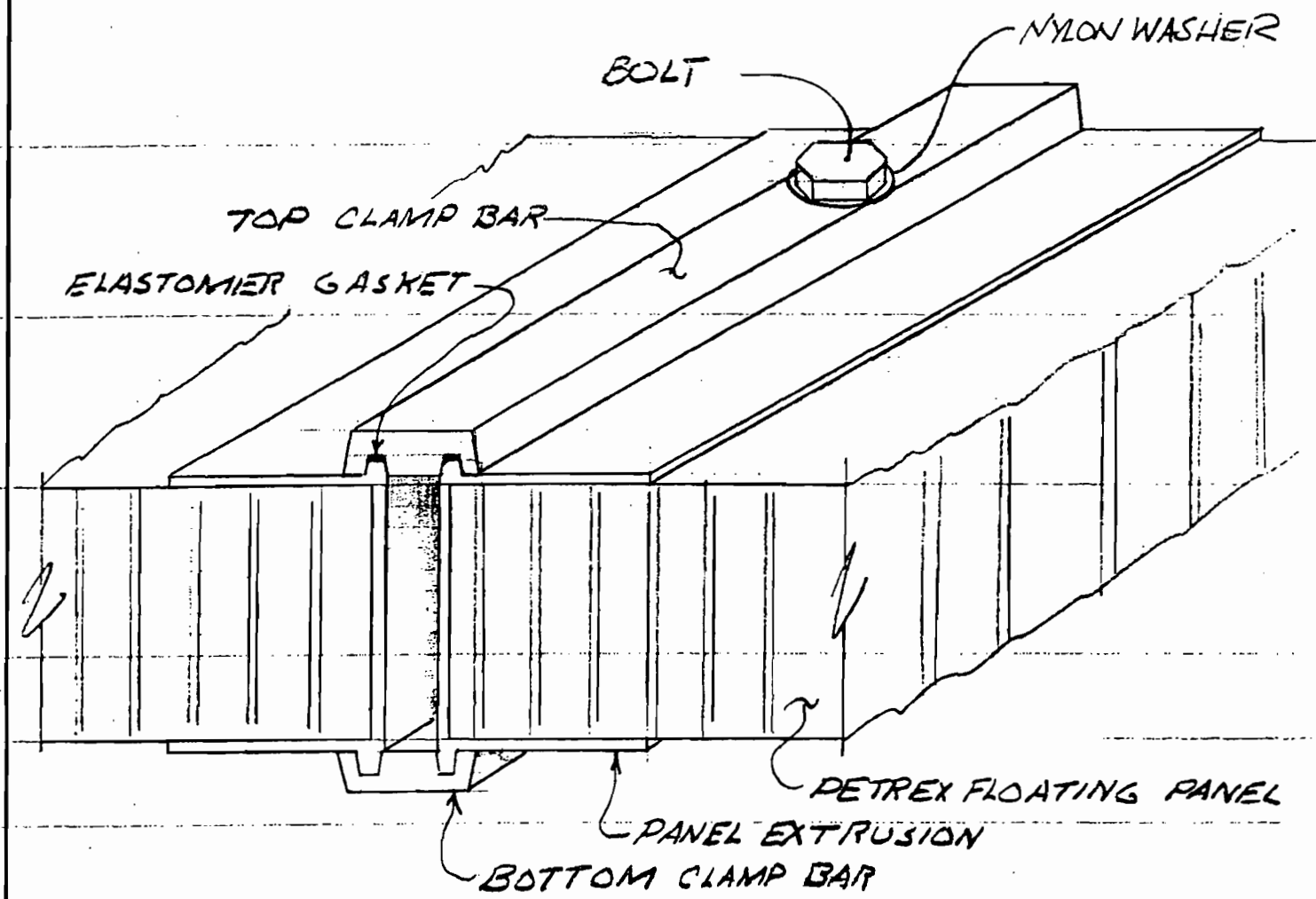


TEST 3
GASKETED CLAMP BAR



STANDARD CLAMP BAR

GASKETED CLAMP BAR

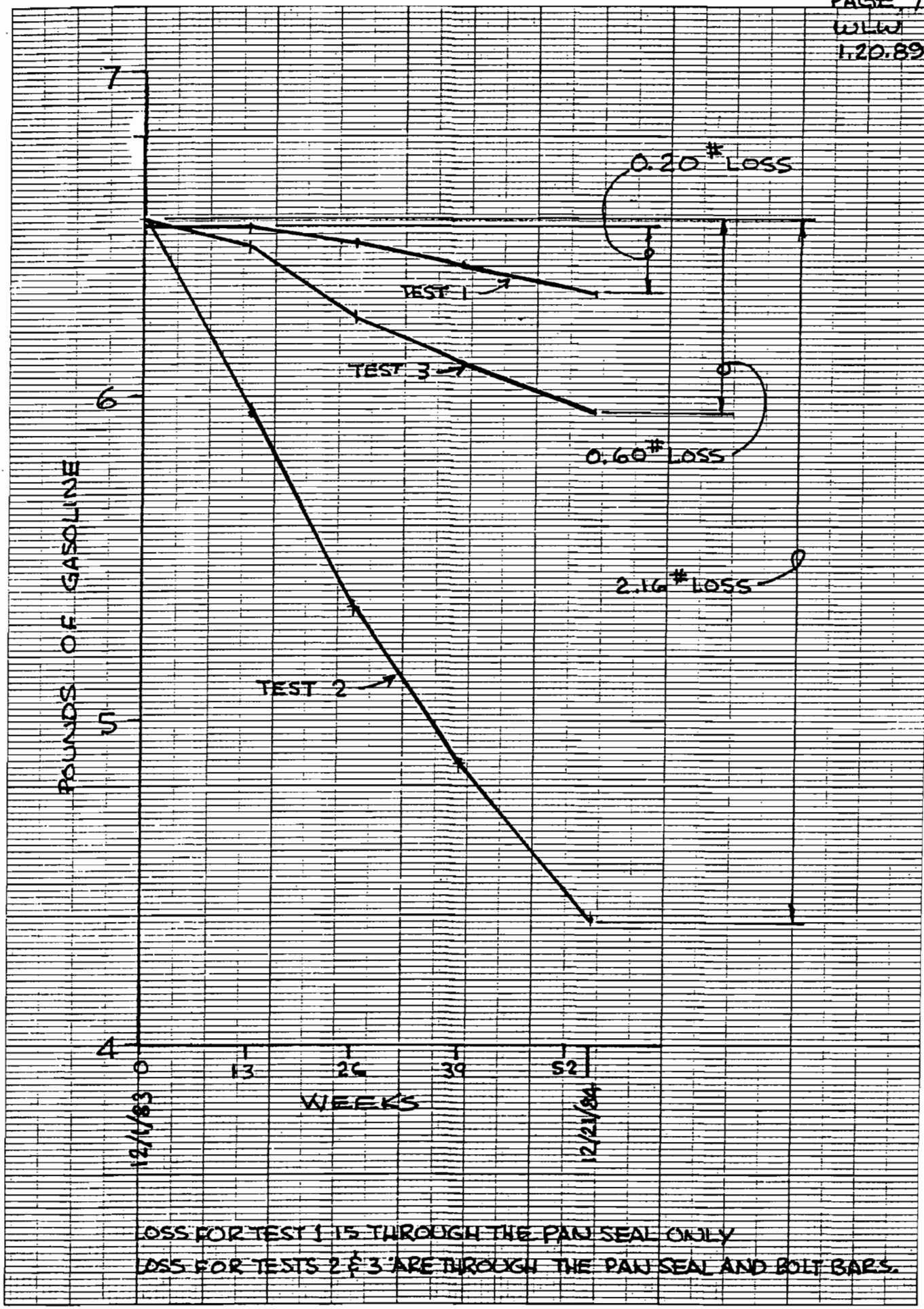


PETREX Inc. P.O. Box 907 • Warren, Pennsylvania 16365 • (814) 723-9050	BY SEB CK WLW DATE 7/18/83	CAST IN PLACE TOP CLAMP BAR GASKET	DRAWING NO.	REV. 0

TEST RESULTS

Weight of Gasoline (weight of pans not included)	Test 1 Ref.	Test 2 Raw	Test 3 Gasket
12.01.83, Start	6.52	6.55	6.55
04.02.84, 3 Months	6.52	5.95	6.46
07.02.84, 6 Months	6.47	5.35	6.24
10.02.84, 9 Months	6.40	4.87	6.10
12.21.84, End 385 DAYS.	6.32	4.39	5.95

PETREX



LOSS FOR TEST 1 IS THROUGH THE PAN SEAL ONLY
LOSS FOR TESTS 2 & 3 ARE THROUGH THE PAN SEAL AND BOLT BARS.

Recalculation of K_d:

API 2519 deck seam loss factor is a combination of two tests conducted by API in 1982:

1) Phase 1R, bolted skin and pontoon
2) Phase 3, bolted honeycomb panels

Both tests utilized metal-to-metal seam construction. PETREX has redesigned the seam to incorporate gaskets and bolthead washers that increase the efficiency of the seam. This redesign was bench tested for 385 days and the results are given below.

The deck seam loss factor is based on Equation 11:

$$F_d = K_d S_d D^2$$

Only K_d, deck seam loss per units seam length factor, is affected by the addition of gasketed bolt bars to the honeycomb panels.

$$K_d = \frac{c\ (\pi/4)\ (365\ \text{days/year})}{(0.1036}$$

c = average loss per foot of deck seam. In API 2519, c is an average of the tests for Phase 1R and Phase 3.

The results of a 385-day bench test are summarized below:

No. 1 Reference Sample

12/01/83	Day 0	6.52 pounds of gasoline
12/21/84	Day 385	6.32
		0.20 pounds loss through caulking

No. 2 Standard Bolt Bar

12/01/83	Day 0	6.55 pounds of gasoline
12/21/84	Day 385	4.39
		2.16 pounds loss through clamp bars and caulking

No. 3 Gasketed Bolt Bar

12/01/83	Day 0	6.55 pounds of gasoline
12/21/84	Day 385	5.95
		0.60 pounds loss through clamp bars and caulking

Considering the loss through the bolt bars only (deduct loss through pan seal) the gasketed bolt bar reduced the vapor losses by . . .

$$\frac{(2.16 - 0.20) - (0.60 - 0.20)}{(2.16 - 0.20)} \times 100 = 79\% \text{ reduction}$$

The current API 2519 K_d value is calculated as follows:

Phase 1R $c = 0.44 \times 10^{-4} \ \frac{\text{lb - mole/yr}}{\text{ft}}$

Phase 3 $c = \underline{2.04 \times 10^{-4}}$

Average $c = 2.48 \times 10^{-4}/2 = 1.24 \times 1^{-4} \ \frac{\text{lb mole/yr}}{\text{ft}}$

$$K_d = \frac{(1.24 \times 10^{-4})\ (\pi/4)\ (365)}{0.1036} = 0.34 \ \frac{\text{lb - mole/yr}}{\text{ft}}$$

By incorporating the 79% reduction of vapor loss into the API 2519 format the revised K_d calculated as follows:

← 79% REDUCTION

Phase 1R $c = 0.44 \times 10^{-4} \qquad \frac{\text{lb mole/yr}}{\text{ft}}$

Phase 3 $c = \underline{(1-0.79)\ 2.04 \times 10^{-4}}$

Average $c = 0.868 \times 10^{-4}/2 = 0.434 \times 10^{-4} \quad \frac{\text{lb - mole/yr}}{\text{ft}}$

$$K_d = \frac{(0.434 \times 10^{-4})\ (\pi/4)\ (365)}{0.1036} = 0.12 \ \frac{\text{lb mole/yr}}{\text{ft}}$$

PETREX

INTERNAL FLOATING ROOF EVAPORATION LOSSES

CUSTOMER: BMJ Oil Co. LOCATION: Warren PA

TANK NO: 1 TANK SIZE: 30 FT ø X 40 FT

TOTAL EVAPORATION LOSS:	2618 LBS PER YEAR
	12 BBL PER YEAR

BASED ON THE FOLLOWING DATA & ASSUMPTIONS AND API 2519:

STOCK & TANK

STOCK TYPE: GASOLINE
REID VAPOR PRESSURE: 10 psi
AVERAGE ANNUAL STOCK STORAGE TEMP: 47 °F
TANK COLOR: WHITE
TRUE VAPOR PRESSURE: 5.4 psia
VAPOR MOLEC WGT: 64
DENSITY: 5.84 LBS/GAL
SHELL CONDITION: LIGHT RUST
AVERAGE NET THROUGHPUT: 60000 BBL/YR
NUMBER OF COLUMNS: 1
TYPE OF COLUMNS: 8-INCH DIAMETER PIPE COLUMNS
EFFECTIVE COLUMN DIAMETER: .7 FT

INTERNAL FLOATING ROOF

DECK SEAMS: NON-WELDED
DECK CONSTRUCTION: RECTANGULAR PANELS 5 FT BY 7.5 FT
RIM SEAL SYSTEM: VAPOR-MOUNTED PRIMARY SEAL PLUS SECONDARY SEAL
DECK FITTINGS:

ACCESS HATCH: UNBOLTED COVER,GASKETED	1
AUTO TANK GAGE: UNBOLTED COVER,GASKETED	1
COLUMN WELL: SLIDING COVER,GASKETED	1
LADDER WELL: SLIDING COVER,GASKETED	1
DECK LEG: ADJUSTABLE	10 -
VACUUM BREAKER: GASKETED	1

PETREX, INC
P.O. BOX 907
WARREN, PA 16365
TEL: (814) 723-2050

PETREX NO: 123
BY: WLW DATE: 1-24-89

INTERNAL FLOATING ROOF EVAPORATION LOSSES

CUSTOMER: BMJ Oil Co. LOCATION: Warren PA

TANK NO: 1 TANK SIZE: 30 FT ø X 40 FT

TOTAL EVAPORATION LOSS: 2142 LBS PER YEAR

10 BBL PER YEAR

18.2% REDUCTION

BASED ON THE FOLLOWING DATA & ASSUMPTIONS AND API 2519:

STOCK & TANK

STOCK TYPE: GASOLINE
REID VAPOR PRESSURE: 10 psi
AVERAGE ANNUAL STOCK STORAGE TEMP: 47 °F
TANK COLOR: WHITE
TRUE VAPOR PRESSURE: 5.4 psia
VAPOR MOLEC WGT: 64
DENSITY: 5.84 LBS/GAL
SHELL CONDITION: LIGHT RUST
AVERAGE NET THROUGHPUT: 60000 BBL/YR
NUMBER OF COLUMNS: 1
TYPE OF COLUMNS: 8-INCH DIAMETER PIPE COLUMNS
EFFECTIVE COLUMN DIAMETER: .7 FT

INTERNAL FLOATING ROOF

DECK SEAMS: NON-WELDED GASKETED
DECK CONSTRUCTION: RECTANGULAR PANELS 5 FT BY 7.5 FT
RIM SEAL SYSTEM: VAPOR-MOUNTED PRIMARY SEAL PLUS SECONDARY SEAL
DECK FITTINGS:

ACCESS HATCH: UNBOLTED COVER,GASKETED	1
AUTO TANK GAGE: UNBOLTED COVER,GASKETED	1
COLUMN WELL: SLIDING COVER,GASKETED	1
LADDER WELL: SLIDING COVER,GASKETED	1
DECK LEG: ADJUSTABLE	10
VACUUM BREAKER: GASKETED	1

PETREX, INC
P.O. BOX 907
WARREN, PA 16365
TEL: (814) 723-2050

PETREX NO: 123
BY: WLW DATE: 1-24-89

INTERNAL FLOATING ROOF EVAPORATION LOSSES

CUSTOMER: BMJ Oil Co. LOCATION: Warren PA

TANK NO: 2 TANK SIZE: 60 FT ø X 40 FT

TOTAL EVAPORATION LOSS:	5795 LBS PER YEAR
	27 BBL PER YEAR

BASED ON THE FOLLOWING DATA & ASSUMPTIONS AND API 2519:

STOCK & TANK

STOCK TYPE: GASOLINE
REID VAPOR PRESSURE: 10 psi
AVERAGE ANNUAL STOCK STORAGE TEMP: 47 °F
TANK COLOR: WHITE
TRUE VAPOR PRESSURE: 5.4 psia
VAPOR MOLEC WGT: 64
DENSITY: 5.84 LBS/GAL
SHELL CONDITION: LIGHT RUST
AVERAGE NET THROUGHPUT: 240000 BBL/YR
NUMBER OF COLUMNS: 1
TYPE OF COLUMNS: 8-INCH DIAMETER PIPE COLUMNS
EFFECTIVE COLUMN DIAMETER: .7 FT

INTERNAL FLOATING ROOF

DECK SEAMS: NON-WELDED
DECK CONSTRUCTION: RECTANGULAR PANELS 5 FT BY 7.5 FT
RIM SEAL SYSTEM: VAPOR-MOUNTED PRIMARY SEAL PLUS SECONDARY SEAL
DECK FITTINGS:

ACCESS HATCH: UNBOLTED COVER,GASKETED	1
AUTO TANK GAGE: UNBOLTED COVER,GASKETED	1
COLUMN WELL: SLIDING COVER,GASKETED	1
LADDER WELL: SLIDING COVER,GASKETED	1
DECK LEG: ADJUSTABLE	17
VACUUM BREAKER: GASKETED	1

PETREX, INC
P.O. BOX 907
WARREN, PA 16365
TEL: (814) 723-2050

PETREX NO: 123
BY: WLW DATE: 1-24-89

INTERNAL FLOATING ROOF EVAPORATION LOSSES

CUSTOMER: BMJ Oil Co. LOCATION: Warren PA

TANK NO: 2 TANK SIZE: 60 FT ø X 40 FT

TOTAL EVAPORATION LOSS: 3888 LBS PER YEAR

~~18 BBL PER YEAR~~

32.9% REDUCTION

~~BASED ON THE FOLLOWING DATA & ASSUMPTIONS AND API 2519:~~

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TANK COLOR: WHITE
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DENSITY: 5.84 LBS/GAL
SHELL CONDITION: LIGHT RUST
~~AVERAGE NET THROUGHPUT: 240000 BBL/YR~~
NUMBER OF COLUMNS: 1
TYPE OF COLUMNS: 8-INCH DIAMETER PIPE COLUMNS
~~EFFECTIVE COLUMN DIAMETER: .7 FT~~

INTERNAL FLOATING ROOF

DECK SEAMS: NON-WELDED GASKETED
DECK CONSTRUCTION: RECTANGULAR PANELS 5 FT BY 7.5 FT
~~RIM SEAL SYSTEM: VAPOR-MOUNTED PRIMARY SEAL PLUS SECONDARY SEAL~~
DECK FITTINGS:

ACCESS HATCH: UNBOLTED COVER,GASKETED	1
~~AUTO-TANK-GAGE: UNBOLTED COVER,GASKETED~~	~~1~~
COLUMN WELL: SLIDING COVER,GASKETED	1
LADDER WELL: SLIDING COVER,GASKETED	1
~~DECK LEG: ADJUSTABLE~~	~~17~~
VACUUM BREAKER: GASKETED	1

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INTERNAL FLOATING ROOF EVAPORATION LOSSES

CUSTOMER: BMJ Oil Co. LOCATION: Warren PA

TANK NO: 3 TANK SIZE: 120 FT ø X 40 FT

TOTAL EVAPORATION LOSS: 17976 LBS PER YEAR

84 BBL PER YEAR

BASED ON THE FOLLOWING DATA & ASSUMPTIONS AND API 2519:

STOCK & TANK

STOCK TYPE: GASOLINE
REID VAPOR PRESSURE: 10 psi
AVERAGE ANNUAL STOCK STORAGE TEMP: 47 °F
TANK COLOR: WHITE
TRUE VAPOR PRESSURE: 5.4 psia
VAPOR MOLEC WGT: 64
DENSITY: 5.84 LBS/GAL
SHELL CONDITION: LIGHT RUST
AVERAGE NET THROUGHPUT: 960000 BBL/YR
NUMBER OF COLUMNS: 7
TYPE OF COLUMNS: 8-INCH DIAMETER PIPE COLUMNS
EFFECTIVE COLUMN DIAMETER: .7 FT

INTERNAL FLOATING ROOF

DECK SEAMS: NON-WELDED
DECK CONSTRUCTION: RECTANGULAR PANELS 5 FT BY 7.5 FT
RIM SEAL SYSTEM: VAPOR-MOUNTED PRIMARY SEAL PLUS SECONDARY SEAL
DECK FITTINGS:

ACCESS HATCH: UNBOLTED COVER,GASKETED	1
AUTO TANK GAGE: UNBOLTED COVER,GASKETED	1
COLUMN WELL: SLIDING COVER,GASKETED	7
LADDER WELL: SLIDING COVER,GASKETED	1
DECK LEG: ADJUSTABLE	41
VACUUM BREAKER: GASKETED	1

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INTERNAL FLOATING ROOF EVAPORATION LOSSES

CUSTOMER: BMJ Oil Co. LOCATION: Warren PA

TANK NO: 3 TANK SIZE: 120 FT ø X 40 FT

TOTAL EVAPORATION LOSS: 10351 LBS PER YEAR

48 BBL PER YEAR

42.4% REDUCTION

BASED ON THE FOLLOWING DATA & ASSUMPTIONS AND API 2519:

STOCK & TANK

STOCK TYPE: GASOLINE
REID VAPOR PRESSURE: 10 psi
AVERAGE ANNUAL STOCK STORAGE TEMP: 47 °F
TANK COLOR: WHITE
TRUE VAPOR PRESSURE: 5.4 psia
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