Final Determination

Marathon Oil Company

Hillsborough County

Permit Number:

AC 29-48488

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

June 4, 1982

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 29-48488

MARATHON OIL COMPANY
HILLSBOROUGH COUNTY

DATE OF ISSUANCE

June 15, 1982

DATE OF EXPIRATION

MARCH 31, 1984

Victoria J. Tschinkel

VICTORIA J. TSCHINKEL
SECRETARY

DER FORM PERM 11-42

Marathon Oil Company

The Bureau of Air Quality Management (BAQM) has reviewed the construction permit application submitted by Marathon Oil Company for the addition of two truck loading racks at their bulk terminal in Tampa. The notice of the Department's intent to issue was published in the Tampa Tribune on the 2nd of May, 1982. The technical package was available for public inspection at the DER Southwest District Office in Tampa, the Hillsborough County EPC Office in Tampa, and at BAQM Office in Tallahassee.

No letters or comments were received on the proposed action as a result of the public comment period. Therefore the construction permit will be issued with the conditions as given in the proposed permit.

THE TAMPA TRIBUNE

Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared G. T. Gleason, who on oath says that he is Controller 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 NOTICE THE DEPT. OF ENVIRONMENTAL REGULATION INTENDS TO ISSUE A PERMIT TO MARATHON OIL COMPANY, FOR THE PURPOSE DESCRIBED HEREIN.

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

MAY 2, 1982

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.

G. T. Gleason

Sworn to and subscribed before me, this 11TH *day of* MAY, *A.D. 19* 82

Linda L. Remen

Notary Public, State of Florida at Large
My Commission Expires Jan. 25, 1983

(SEAL)

RECEIVED
MAY 17 1982
D.E.R.
Bureau of Accounting and Budgeting

PROPOSED AGENCY ACTION

The Department of Environmental Regulation (DER) gives notice of its intent to issue a permit to Marathon Oil Company for construction of two additional truck loading racks at their facility in Tampa, Hillsborough Co. A determination of Best Available Control Technology (BACT) was not required.

A person who is substantially affected by the proposed decision may request a hearing in accordance with Section 120.57, F.S., and Ch. 17-1 and 28-5, Fl. Administrative Code. The request for hearing must be filed (received) in the Office of General Counsel, DER, 2600 Blair Stone Road, Tallahassee, within 14 days of this notice. Failure to file a request for hearing within this period shall constitute a waiver of any right. The application, technical evaluation and departmental intent are available for public inspection during normal business hours at the following locations:

DER, Bureau of Air Quality Mgt., 2600 Blair Stone Rd., Tallahassee, Fl 32301

Dept. of Environ. Reg., SW District, 7601 Highway 301 North Tampa

Hillsborough Co. Environmental Protection Commission, 1900 9th Ave., Tampa

Other comments on this action may be submitted in writing to Bill Thomas if the Tallahassee office within 30 days of this notice.

M2497 May 2, 1982

397
16
05_05_82

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

BOB GRAHAM
GOVERNOR
Victoria J. Tschinkel
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: Marathon Oil Company
Findlay, Ohio 45840

PERMIT/CERTIFICATION NO. AC 29-48488

COUNTY: Hillsborough

PROJECT: Truck Loading Rack

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

Construction of two loading positions for the transfer of petroleum products from storage tanks to tank trucks.

Attachments:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).

2. Marathon Oil Company terminal base emissions inventory, dated February 18, 1982.

3. Page A-3, "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals," EPA 450/2-77-026, Appendix A.

PERMIT NO.: AC 29-48488
APPLICANT: Marathon Oil Company

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact 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. 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, 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.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnei presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 29-48488
APPLICANT: Marathon Oil Company

SPECIFIC CONDITIONS

1. Maximum allowable hydrocarbon emissions from the loading rack/vapor recovery system shall not exceed 4.7 grains/gallon of gasoline loaded or 194.1 tons/year.

2. Compliance with the hydrocarbon mass emission limitation of Specific Condition No. 1 shall be determined in accordance with the method referred in 17-2.700(6)(c)2.b.(i), F.A.C. At least 30 days prior to the date of compliance testing, the DER Southwest District Office or its designee shall be notified in order to witness the test.

3. The hourly loading rate of gasoline over the new racks and the existing racks combined shall not exceed the maximum design loading rate recommended by the vapor recovery unit manufacturer or 320,000 gallons/hour.

4. Annual operating reports shall be submitted to the DER Southwest District Office or its designee. This report shall contain continuous monitoring records as well as gasoline throughput records.

5. During the compliance tests gasoline loading rates shall be representative of "normal operation" as outlined in the attached EPA test method guideline, Appendix A, section 5-2.

6. Prior to 90 days before the expiration of this permit a complete application for an operating permit and compliance test results shall be submitted to the DER Southwest District Office or its designee. Full operation of the source may then be conducted in compliance with the terms of this permit until expiration or receipt of an operating permit.

Expiration Date: March 31, 1984

Issued this 15 day of June, 1982.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Signature

than three 8-hour test repetitions.

5.2 Terminal Status During Test Period

The test procedure is designed to measure control system performance under conditions of normal operation. Normal operation will vary from terminal-to-terminal and from day-to-day. Therefore, no specific criteria can be set forth to define normal operation. The following guidelines are provided to assist in determining normal operation.

5.2.1 Closing of Loading Racks

During the test period, all loading racks shall be open for each product line which is controlled by the system under test. Simultaneous use of more than one loading rack shall occur to the extent that such use would normally occur.

5.2.2 Simultaneous use of more than one dispenser on each loading rack shall occur to the extent that such use would normally occur.

5.2.3 Dispensing rates shall be set at the maximum rate at which the equipment is designed to be operated. Automatic product dispensers are to be used according to normal operating practices.

5.3 Vapor Control System Status During Tests

Applicable operating parameters shall be monitored to demonstrate that the processing unit is operating at design levels. For intermittent vapor processing units employing a vapor holder, each test repetition shall include at least one fully automatic operation cycle of the vapor holder and processing device. Tank trucks shall be essentially leak free as determined by EPA Mobile Source Enforcement Division.

A.6 BASIC MEASUREMENTS AND EQUIPMENT REQUIRED

6.1 Basic measurements required for evaluation of emissions from gasoline bulk loading terminals are described below. The various sampling points

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: _____ [ ] New[1] [X] Existing[1]

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

COMPANY NAME: MARATHON OIL COMPANY COUNTY: HILLSBOROUGH

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) TRANSPORT TRUCK LOADING (9th and 10th rack)

SOURCE LOCATION: Street 20th and GRANT STREETS City TAMPA

UTM: East _____ North _____

Latitude 27-56 Min., 37 Sec. N Longitude 86-26 Min., 12 Sec. W

APPLICANT NAME AND TITLE: L. R. HOOPER, MANAGER, ENVIRONMENTAL & TRANSPORTATION

APPLICANT ADDRESS: 539 SOUTH MAIN STREET, FINDLAY, OHIO 45840

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of MARATHON OIL COMPANY

I certify that the statements made in this application for a AMENDMENT TO AIR CONSTRUCTION PERMIT AC29-22148 (filed 6-20-79) 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: _____

G. N. NICHOLSON, VICE PRESIDENT, MARKETING U.S.
Name and Title (Please Type)

Date: MAR. / ,1982 Telephone No. 419/422-2121

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 the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the 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: _____

C. F. Fernandez
Name (Please Type)

(Affix Seal)

same as above
Company Name (Please Type)

101 S. 13th St., Tampa, Fla. 33602
Mailing Address (Please Type)

Florida Registration No. 6087 Date: 3/5/82 Telephone No. (813) 223-4030

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

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.

AMENDING EIGHT (8) BOTTOM LOADING RACKS TO TEN (10) BOTTOM LOADING RACKS. SEE Dwg. 88-087-1

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

Start of Construction _____ Completion of Construction LATE 1983

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.)

TWO (2) BOTTOM LOADING ISLANDS $600,000.

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

AC29-22148

PERMIT IC29 ISSUED 3-22-76; EXPIRED 10-1-76.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes ____ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr _____ ; if seasonal, describe: _____

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

1. Is this source in a non-attainment area for a particular pollutant?
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?

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) LOADING RACKS

1. Total Process Input Rate (lbs/hr): GASOLINE 578,000,000 Gal/yr.

2. Product Weight (lbs/hr): FUEL OIL 54,000,000 Gal/yr.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
HC			344.53 Tn/yr.				

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
EDWARDS VAPOR RECOVERY	HC	90%		MANUFACTURER's
UNIT Two (2) DE-3200				WARRANTY

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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 Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation.
2. 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. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. 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, etc.).
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. An 8½" 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. An 8½" 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 relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:
3. Capital Cost:
4. Life:
5. Operating Cost:
6. Energy:
7. Maintenance Cost:
8. Manufacturer:
9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

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.

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 on 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.

*Specify bubbler (B) or continuous (C).

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.

1

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

$\Delta T = 17 f^\circ$ $V_w = 8.2$ MPH
$T_{AVE} = 77.4 ^\circ f$ $P_{Gasa} = 8.0$ Psia

TK# 21-2 Cov'd Fl. 21,900 bbl cap.; 70'ϕ×40'; White Gasoline; Thru-put = 23,979,680 gal/yr.

$L_s = K_s V^N P^* D M_v K_c E_f$ $K_s = 0.7$ $N = 0.4$

$$P^* = \frac{\left(\frac{8.0}{14.7}\right)}{\left[1 + \left(1 - \frac{8.0}{14.7}\right)^{1/2}\right]^2} = 0.1939$$

$L_s = 0.7 (8.2)^{0.4} 0.1939 (70) 64 (1.0)(1.0) =$

$L_s = 1411$ lbs/yr $= 0.71$ Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943 (570,745) .0015 (6.0)}{70}$

$L_w = 69$ lb/yr $= 0.03$ Tn/yr HC

$L_T = L_s + L_w = 0.71 + 0.03 = 0.74$ Tn/yr HC

TK# 21-8 Cov'd Fl. 21,900 bbl cap.; 70'ϕ×40'; White Gasoline; Thru-put = 23,979,680 gal/yr

See TK# 21-2 for calculations

$L_T = L_s + L_w = 0.71 + 0.03 = 0.74$ Tn/yr HC

TK# 35-7 Cov'd Fl. 32,500 bbl cap.; 80'ϕ×40', White Gasoline; Thru-put = 12,404,000 gal/yr.

$L_s = K_s V^N p^* D M_v K_c E_f = 0.7(8.2)^{0.4} 0.1939(80)64(1)(1)$

$L_s = 1612$ lb/yr $= 0.81$ Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943 (295,333) .0015 (6.0)}{80}$

$L_w = 33$ lb/yr $= 0.02$ Tn/yr HC

$L_T = L_s + L_w = 0.81 + 0.02 = 0.83$ Tn/yr HC

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

TK #55-3 Open Fl. 52,700 bbl cap.; 90'ϕ x 48'; White Gasoline; Thru-put = 37,155,000 gal/yr.

$L_s = K_s V^N P^{*}_{1.5} D M_v K_c E_f$ $\quad K_s = 1.2$, $N = 1.5$

$L_s = 1.2\,(8.2)\,0.1939\,(90)\,64\,(1)(.) = 15.74$ Tn/yr HC

$L_w = \dfrac{.943\,Q\,C\,W_L}{D} = \dfrac{.943\,(884,643).0015\,(6.0)}{90}$

$L_w = 83.42$ lb/yr $= 0.04$ Tn/yr HC

$L_T = L_s + L_w = 15.74 + 0.04 = \underline{15.78}$ Tn/yr HC

TK #55-4 Open Fl. 52,700 bbl cap.; 90'ϕ x 48'; White Gasoline; Thru-put = 41,964,440 gal/yr.

$L_s = K_s V^N P^{*} D M_v K_c E_f$

$L_s = 1.2\,(8.2)^{1.5}\,0.1939\,(90)\,64\,(1)(.) = 15.74$ Tn/yr HC

$L_w = \dfrac{.943\,Q\,C\,W_L}{D} = \dfrac{.943\,(999,153).0015\,(6.0)}{90}$

$L_w = 94$ lb/yr $= 0.05$ Tn/yr HC

$L_T = L_s + L_w = 15.74 + 0.05 = \underline{15.79}$ Tn/yr HC

TK #80-6 Open Fl. 78,800 bbl cap.; 110'ϕ x 48'; White Gasoline; Thru-put = 59,949,200 gal/yr.

$L_s = K V^N P^{*} D M_v K_c E_f = 1.2\,(8.2)^{1.5}\,0.1939\,(110)\,64\,(.)(.)$

$L_s = 38,464$ lb/yr $= 19.23$ Tn/yr HC

$L_w = \dfrac{.943\,Q\,C\,W_L}{D} = \dfrac{.943\,(1,427,362).0015\,(6.0)}{110}$

$L_w = 110$ lb/yr $= 0.06$ Tn/yr HC

$L_T = L_s + L_w = 19.23 + 0.06 = \underline{19.29}$ Tn/yr HC

Tampa, Florida Terminal - Marathon Oil Co. Baseline Emission Study

TK #13-27 Open Fl. 12,899 bbl cap.; 49'ϕ × 42'; White Gasoline; Thru-put = 11,989,840 gal/yr.

$L_s = K_s V^N P^* D M_v K_c E_f = 1.2(8.2)^{1.5} 0.1939(49) 64 (.)(.)$

L_s = 1734 lb/yr = 8.57 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(285,472).0015(6.0)}{49}$

L_w = 49 lb/yr = 0.02 Tn/yr HC

$L_T = L_s + L_w = 8.57 + 0.02 =$ **8.59 Tn/yr HC**

TK #17-31 Cov'd Fl. 16,514 bbl cap; 50'ϕ × 48'; White Gasoline; Thru-put = 4,060,266 gal/yr.

$L_s = K_s V^N P^* D M_v K_c E_f = 0.7(8.2)^{0.4} 0.1939(50) 64 (.)(.)$

L_s = 1008 lb/yr = 0.50 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(96,673).0015(6.0)}{50}$

L_w = 16 lb/yr = 0.01 Tn/yr HC

$L_T = L_s + L_w = 0.50 + 0.01 =$ **0.51 Tn/yr HC**

TK #27-23 Open Fl, 26,857 bbl cap.; 70'ϕ × 40'; White Gasoline; Thru-put = 23,979,680 gal/yr.

$L_s = K_s V^N P^* D M_v K_c E_f = 1.2(8.2)^{1.5} 0.1939(70) 64 (.)(.) =$

L_s = 24,477 lb/yr = 12.24 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(570,945).0015(60)}{70}$

L_w = 69.23 lb/yr = 0.03 Tn/yr HC

$L_T = L_s + L_w = 12.24 + 0.03 =$ **12.27 Tn/yr HC**

TK #30-13 Cov'd Fl. 28,000 bbl cap.; 67'ϕ × 48'; White Gasoline; Thru-put = 21,342,000 gal/yr.

$L_s = K_s V^N P^* D M_v K_c E_f = 0.7(8.2)^{.4} 0.1939(67) 64 (.)(.$

L_s = 1350 lb/yr = 0.68 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(508,143).0015(60)}{67}$

L_w = 64 lb/yr = 0.03 Tn/yr

$L_T = L_s + L_w = 0.68 + 0.03 =$ **0.71 Tn/yr HC**

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

TK # 33-29 Open Fl. 32,638 cap.; 70'ø x 48'; White
Gasoline; Thru-put = 23,979,680 gal/yr

$L_S = K_S V^N P^* D M_v K_c E_f = 1.2 (8.2)^{1.5} 0.1939 (70) 64 (.) (.)$

$L_S = 24,477$ lb/yr = 12.24 Tn/yr HC

$L_W = \frac{.943 Q C W_c}{D} = \frac{.943 (570,945) .0015 (6.0)}{70}$

$L_W = 69$ lb/yr = 0.03 Tn/yr HC

$L_T = L_S + L_W = 12.24 + 0.03 =$ 12.27 Tn/yr HC

TK # 43-21 Open Fl. 42,514 bbl cap.; 80'ø x 48'; White
Gasoline; Thru-put = 29,974,600 gal/yr.

$L_S = K_S V^N P^* D M_v K_c E_f = 1.2 (8.2)^{1.5} 0.1939 (80) 64 (.) (.)$

$L_S = 27,974$ lb/yr = 13.99 Tn/yr HC

$L_W = \frac{.943 Q C W_c}{D} = \frac{.943 (713,681) .0015 (6.0)}{80}$

$L_W = 76$ lb/yr = 0.04 Tn/yr

$L_T = L_S + L_W = 13.99 + 0.04 =$ 14.03 Tn/yr HC

TK # 43-28 Open Fl. 42,768 bbl cap.; 80'ø x 48'; White
Gasoline; Thru-put = 35,969,520 gal/yr.

$L_S = K_S V^N P^* D M_v K_c E_f = 1.2 (8.2)^{1.5} 0.1939 (80) 64 (.) (.) =$

$L_S = 27,974$ lb/yr = 13.99 Tn/yr HC

$L_W = \frac{.943 Q C W_c}{D} = \frac{.943 (856,417) .0015 (6.0)}{80}$

$L_W = 90.86$ lb/yr = 0.05 Tn/yr HC

$L_T = L_S + L_W = 13.99 + 0.05 =$ 14.04 Tn/yr HC

TK # 54-22 Cov'd Fl. 54,041 bbl cap.; 90'ø x 48'; White
Gasoline; Thru-put = 41,964,440 gal/yr.

$L_S = K_S V^N P^* D M_v K_c E_f = 0.7 (8.2)^{.4} 0.1939 (90) 64 (.) (.)$

$L_S = 1814$ lb/yr = 0.91 Tn/yr HC

$L_W = \frac{.943 Q C W_c}{D} = \frac{.943 (999,153) .0015 (6.0)}{90}$

$L_W = 94.22$ lb/yr = 0.05 Tn/yr HC

$L_T = L_S + L_W = 0.91 + 0.05 =$ 0.96 Tn/yr HC

5 Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

TK#55-10 Open Fl. 52,700 bbl. cap.; 90'ø x 48'; White Gasoline; Thru-put = 41,964,440 gal/yr.

$L_s = K_s V^N p^* D M_v K_c E_f = 1.2(8.2)^{1.5} 0.1939(90) 64(.)(.)$

$L_s = 31,470$ lb/yr = 15.74 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(999,153).0015(6.0)}{90}$

$L_w = 94$ lb/yr = 0.05 Tn/yr HC

$L_T = L_s + L_w = 15.74 + 0.05 =$ 15.79 Tn/yr HC

TK#55-14 Open Fl. 52,700 bbl. cap.; 90'ø x 48'; White Gasoline; Thru-put = 11,090,000 gal/yr

$L_s = K_s V^N p^* D M_v K_c E_f = 1.2(8.2)^{1.5} 0.1939(90) 64(.)($

$L_s = 31,470$ lb/yr = 15.74 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(264,048).0015(6.0)}{90}$

$L_w = 24.90$ lb/yr = 0.01 Tn/yr

$L_T = L_s + L_w = 15.74 + 0.01 =$ 15.75 Tn/yr HC

TK#80-15 Open Fl. 77,800 bbl. cap.; 120'ø x 40'; White Gasoline; Thru-put = 59,949,200 gal/yr.

$L_s = K_s V^N p^* D M_v K_c E_f = 1.2(8.2)^{1.5} 0.1939(120) 64(.)(.$

$L_s = 41,961$ lb/yr = 20.98 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(1,427,362).0015(6.0)}{120}$

$L_w = 101$ lb/yr = 0.05 Tn/yr

$L_T = L_s + L_w = 20.98 + 0.05 =$ 21.03 Tn/yr HC

TK#80-16 Open Fl. 77,800 bbl. cap.; 120'ø x 40'. White Gasoline; Thru-put = 59,949,200 gal/yr.

$L_T =$ 21.03 Tn/yr HC see TK#80-15 calculation

TK#80-17 Open Fl. 78,800 bbl. cap.; 110'ø x 48'; White Gasoline; Thru-put = 59,949,200 gal/yr.

$L_s = K_s V^N p^* D M_v K_c E_f = 1.2(8.2)^{1.5} 0.1939(110) 64(.)(.$

$L_s = 38,464$ lb/yr = 19.23 Tn/yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943(1,427,362).0015(6.0)}{110} = 0.06$ Tn/y

$L_T = L_s + L_w = 19.23 + 0.06 =$ 19.29 Tn/yr HC

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

TK #80-18 Open Fl. 78,800 bbl. cap.; 110'Ø x 48'; White Gasoline; Thru-put = 39,517,000 gal/yr

$L_s = K_s V^N p^* D M_v K_c E_f = 1.2 (8.2)^{1.5} 0.1939 (110) 64 (1) (1)$

$L_s = 38,464$ lb/yr = 19.23 Tn/Yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943 (940,881) .0015 (6.0)}{110}$

$L_w = 72.59$ lb/yr = 0.04 Tn/Yr HC

$L_T = L_s + L_w = 19.23 + 0.04 =$ 19.27 Tn/Yr HC

TK #80-19 Cov'd Fl. 80,000 bbl. cap.; 110'Ø x 48'; White Gasoline; Thru-put = 59,949,200 gal/yr.

$L_s = K_s V^N p^* D M_v K_c E_f = 0.7 (8.2)^{.4} 0.1939 (110) 64 (1) (1)$

$L_s = 2217$ lb/yr = 1.11 Tn/Yr HC

$L_w = \frac{.943 Q C W_L}{D} = \frac{.943 (1,427,362) .0015 (6.0)}{110}$

$L_w = 110$ lb/yr = 0.06 Tn/Yr

$L_T = L_s + L_w = 1.11 + 0.06 =$ 1.17 Tn/Yr HC

Tampa, Florida Terminal – Marathon Oil Co.
Baseline Emission Study

TK # 30-9 Cone Roof (Vapor Miser) 28,650 bbl cap.; 70'ϕ x 44'; White; No. 1 Fuel Oil; Thru-put = 8,540,000 gal/yr

$L_B = 2.26 \times 10^{-2} M \left(\frac{.011 \rightarrow P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{0.50} F_P C K_C$

$L_B = 2.26 \times 10^{-2} (130) \; .0075 (1556) (4.84) \; 4.12 (1)(1)(1) =$

$L_B = 684 \text{ lbs/yr} = 0.34 \text{ Tn/yr}$

$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (130) (.011) (1)(1) =$

$L_W = \frac{0.0343 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{8{,}540{,}000 \text{ gal}}{\text{yr}} = 293 \text{ lb/yr} = 0.15 \text{ Tn/yr}$

$L_T = L_B + L_W = 0.34 + 0.15 = 0.49 \text{ Tn/yr}$

TK # 11-30 Cone Roof 11,320 bbl. cap.; 48'ϕ x 35'; White No. 2 Fuel Oil; Thru-put = 3,660,000 gal/yr.

$L_B = 2.26 \times 10^{-2} M \left(\frac{0.0090 \rightarrow P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{.50} F_P C K_C$

$L_B = 2.26 \times 10^{-2} (130) \; .0065 (810.12) \; 4.37 (4.12) (1)(1)(1) =$

$L_B = 278.54 \text{ lb/yr} = 0.14 \text{ Tn/yr}$

$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (130) (.0090) (1)(1) =$

$L_W = \frac{0.028 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{3{,}660{,}000 \text{ gal}}{\text{yr}} = 102.72 \text{ lb/yr} = 0.05 \frac{\text{Tn}}{\text{yr}}$

$L_T = L_B + L_W = 0.14 + 0.05 = 0.19 \text{ Tn/yr}$ HC

TK # 17-32 Cone Roof 16,724 bbl. cap.; 50'ϕ x 48'; White No. 2 Fuel Oil; Thru-put = 4,880,000 gal/yr.

$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{.50} F_P C K_C$

$L_B = 2.26 \times 10^{-2} (130) \; .0065 (869.4) \; 5.06 (4.12) (1)(1)(1) =$

$L_B = 346.12 \text{ lb/yr} = 0.17 \text{ Tn/yr}$

$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (130) (.0090) (1)(1) =$

~~$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (13$~~

$L_W = \frac{0.028 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{4{,}880{,}000 \text{ gal}}{\text{yr.}} = 137.03 \text{ lb/yr} = 0.07 \frac{\text{Tn}}{\text{yr}}$

$L_T = L_B + L_W = 0.17 + 0.07 = 0.24 \text{ Tn/yr}$ HC

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

TK #24-24 Cone Roof 24,113 bbl. cap.; 60'ø x 48'; white
No. 1 Fuel Oil; Thru-put = 9,585,417 gal/yr.

$$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{0.50} F_p C K_c$$

$L_B = 2.26 \times 10^{-2} (130)(.0075)\ 1191.8\ (5.06)\ 4.123 (1)(1)(1) =$

$L_B = 547.87$ lb/yr = 0.27 Tn/yr HC

$L_W = 2.40 \times 10^{-2} M P K_N K_c = 2.40 \times 10^{-2} (130)(.011)(1)(1) =$

$L_W = \frac{0.0343 \text{ lb}}{1,000 \text{ gal}} \times \frac{9,585,417 \text{ gal}}{\text{yr.}} = 0.16$ Tn/yr HC

$L_T = L_B + L_W = 0.27 + 0.16 =$ **0.43 Tn/yr HC**

TK #25-12 Cone Roof 23,600 bbl. cap.; 68'ø x 36'; white
No. 1 Fuel Oil; Thru-put = 7,320,000 gal/yr.

$$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{0.50} F_p C K_c$$

$L_B = 2.26 \times 10^{-2} (130)(.0075)\ 1480\ (4.37)\ 4.123 (1)(1)(1) =$

$L_B = 587.58$ lb/yr = 0.29 Tn/yr HC

$L_W = 2.40 \times 10^{-2} M P K_N K_c = 2.40 \times 10^{-2} (130)(.011)(1)(1) =$

$L_W = \frac{0.0343 \text{ lb}}{1,000 \text{ gal}} \times \frac{7,320,000 \text{ gal}}{\text{yr.}} = 0.13$ Tn/yr

$L_T = L_B + L_W = 0.29 + 0.13 =$ **0.42 Tn/yr HC**

TK #33-26 Cone Roof 32,708 bbl. cap.; 70'ø x 48'; white
No. 1 Fuel Oil; Thru-put = 13,237,005 gal/yr.

$$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{0.50} F_p C K_c$$

$L_B = 2.26 \times 10^{-2} (130)(.0075)\ 1556\ (5.06)\ 4.123 (1)(1)(1) =$

$L_B = 715.30$ lb/yr = 0.36 Tn/yr HC

$L_W = 2.40 \times 10^{-2} M P K_N K_c = 2.40 \times 10^{-2} (130)(.011)(1)(1) =$

$L_W = \frac{0.0343 \text{ lb}}{1,000 \text{ gal}} \times \frac{13,237,005 \text{ gal}}{\text{yr}} = 0.23$ Tn/yr HC

$L_T = L_B + L_W = 0.36 + 0.23 =$ **0.59 Tn/yr**

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

TK# 38-25 Cone Roof 38,897 bbl. cap.; 95'ø x 30'; White No. 2 Fuel Oil; Thru-put = 12,200,000 gal/yr.

$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{0.50} F_P C K_C$

$L_B = 2.26 \times 10^{-2} (130)(.0065)\ 2639.14\ (3.98)\ 4.123\ (1)(1)(1)$

$L_B = 827.04$ lb/yr = 0.41 Tn/yr

$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (130)(.0090)(1)(1) =$

$L_W = \frac{0.028 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{12{,}200{,}000 \text{ gal}}{\text{yr}} = 0.17$ Tn/yr HC

$L_T = L_B + L_W = 0.41 + 0.17 = 0.58$ Tn/yr HC

TK# 80-11 Cone Roof 78,400 bbl. cap.; 48'ø x 35'; White No. 2 Fuel Oil; Thru-put = 24,400,000 gal/yr.

$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{0.51} \Delta T^{0.50} F_P C K_C =$

$L_B = 2.26 \times 10^{-2} (130)(.0065)\ (810.12)\ 4.37\ (4.123)(1)(1)(1)$

$L_B = 278.75$ lb/yr = 0.14 Tn/yr

$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (130)(.0090)(1)(1) =$

$L_W = \frac{0.028 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{24{,}400{,}000 \text{ gal}}{\text{yr}} = 0.34$ Tn/yr

$L_T = L_B + L_W = 0.14 + 0.34 = 0.48$ Tn/yr HC

TK# T-5 Cone Roof 464 bbl cap.; 11'ø x 31'; White Transmix; Thru-put = 190,488 gal/yr

$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7-P}\right)^{0.68} D^{1.73} H^{.51} \Delta T^{.50} F_P C K_C =$

$L_B = 2.26 \times 10^{-2} (130) \left(\frac{3.8}{14.7-3.8}\right)^{.488} 11^{1.73}\ 16^{.51}\ 17^{.50}\ (1)(.6)(1) =$

$63.330 \quad 4.112 \quad 4.123$

$L_B = 923.63$ lb/yr = 0.46 Tn/yr

$L_W = 2.40 \times 10^{-2} M P K_N K_C = 2.40 \times 10^{-2} (98)(3.8)(1)(1) =$

$L_W = \frac{8.94 \text{ lb}}{1{,}000 \text{ gal}} \times \frac{190{,}488 \text{ gal}}{\text{yr}} = 1702.5$ lb/yr = .85 Tn/yr

$L_T = L_B + L_W = 0.46 + 0.85 = 1.31$ Tn/yr HC

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

Summary

OTR - Gasoline: 578,000,000 gal/yr
Fuel Oil: 54,000,000

P/L Shipments Goso.: 147,060,266 gal/yr
F.O.: 29,822,422

Total Terminal Thru-put:
Gasoline: 725,060,266 gal
Fuel Oil: 83,822,422 gal

Tank Emissions

Tank #	Tn/yr	Tank #	Tn/yr
21-2	.74	55-14	15.75
21-8	.74	80-15	21.03
35-7	.83	80-16	21.03
55-3	15.78	80-17	19.29
55-4	15.79	80-18	19.27
80-6	19.29	80-19	1.17
13-27	8.59	30-9	0.49
17-31	0.51	11-30	0.19
27-23	12.27	17-32	0.24
30-13	0.71	24-24	0.43
33-29	12.27	25-12	0.42
43-21	14.03	33-26	0.59
42-28	14.04	38-25	0.58
54-22	0.96	80-11	0.48
55-10	15.79	T-5	1.31

Total = 234.61 Tn/yr HC

Tampa, Florida Terminal - Marathon Oil Co.
Baseline Emission Study

Loading Racks

Gasoline (OTR): 578,000,000 gal/yr

$$L_L = 12.46 \frac{SPM}{T} = 12.46 \frac{1.0\,(8.0)\,64}{459 + 77.4}$$

$$L_L = \frac{11.89\ lb}{1{,}000\ gal} \times \frac{578{,}000{,}000\ gal}{yr} \times \frac{1\ Ton}{2000\ lb} =$$

L_L = 3,437.14 Ton/yr HC w/o VR

L_L = 343.71 Ton/yr HC with VR @ 90% eff.

Diesel (OTR): 54,000,000 gal/yr

$$L_L = 12.46 \frac{S\ P\ M}{T} = 12.46 \frac{1.0\,(0.01)\,130}{459 + 77.4}$$

$$L_L = \frac{0.0302\ lb}{1{,}000\ gal} \times \frac{54{,}000{,}000\ gal}{yr} \times \frac{1\ Ton}{2{,}000\ lbs} =$$

$L_{L\ \text{Fuel Oil}}$ = 0.82 Tn/yr

$L_{L\ \text{Total}}$ = 343.71 + 82 = 344.53 Ton/yr HC from Loading Racks