Terminal, Transport & Rail

Marathon Petroleum Company LP

539 South Main Street
Findlay, OH 45840
Tel: 419.422.2121

February 17, 2015

WVDEP – Division of Air Quality
601 57th Street
Charleston, WV 25304

Sent via Certified Mail

Re: Permit R13-1999E
Class I Administrative Update
Marathon Petroleum Company LP
Charleston Light Products Terminal
204 Ferry Street, Charleston WV 25314

To Whom It May Concern:

Pursuant to 45CSR13-4.2.a.8, this information package is submitted for a Class I Administrative Update to the permit and facility referenced above. Marathon Petroleum Company LP is requesting this change to provide for operational flexibility in the storage of petroleum fuel blend stocks (both gasoline and ethanol) to provide for tank inspections, maintenance and repairs as necessary at the Charleston LP Terminal. This change seeks to broaden the tank content description of the tanks listed below. These tanks have internal floating roofs and associated air pollution controls as identified in the permit. Enclosed is a completed NSR (45CSR13) Form and Tanks 4.09 emission calculation reports demonstrating that this change will not result in an increase in emissions, but would actually result in emission reductions.

Total VOC Emissions (lbs. VOC) Calculation Report by Tanks 4.09. using 2014 Rolling Report Throughputs

MPC ID	Emission Unit ID	Emission Point ID	Gasoline Service	Ethanol Service	Difference (reduction)
40-1	A-1	013	1,156.02	76.05	(1,079.97)
48-2	A-2	07	2,162.04	286.54	(1,875.50)
12-30	A-30	04	2,411.14	175.30	(2,235.84)
16-31	A-31	014	2,885.09	170.11	(2,714.98)

Should you have any questions, please contact me at 606-326-2541 or via email at ablambert@marathonpetroleum.com.

Sincerely,

Brad Lambert / DMB

Brad Lambert
Environmental Professional
Marathon Petroleum Company LP

Enclosures (3): 1-hardcopy submittal and 2-CD media copies

cc: posted to electronic Environmental Manual (Air; Permits; Permit to Operate Applications)

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**

☒ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**

☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**

☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Marathon Petroleum Company LP

2. Federal Employer ID No. ***(FEIN):***
311537655

3. Name of facility *(if different from above):*
Marathon Petroleum Company – Charleston LP Terminal

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
539 South Main Street
Findlay, OH 45840

5B. Facility's present physical address:
204 Ferry Street
Charleston WV 25304

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☐ **YES** ☒ **NO**

- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

- If **YES,** please explain: Site is wholly owned and operated by Marathon Petroleum Company LP
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): bulk petroleum terminal

10. North American Industry Classification System **(NAICS)** code for the facility:
424710

11A. DAQ Plant ID No. (for existing facilities only):
039–00009

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-1999E

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

From north bound on Corridor G turn right onto McCorkle Avenue. Proceed to next marked street on right, turn right onto Thayer Street. Proceed to Ferry Street, turn right. Facility entrance is on the right.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
12.E. UTM Northing (KM): 423117	12F. UTM Easting (KM): 579.50	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Revise the "Material" description (section 4.1.1) and elsewhere to include "ethanol" in addition to "gasoline" for the tanks described in submittal.

14A. Provide the date of anticipated installation or change: 03/01/2015 – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen:	14B. Date of anticipated Start-Up if a permit is granted: / /

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known)*. A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known)*. Provide this information as **Attachment D.** ***All units are already permitted. No change in applicable regulations or standards***

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ General Emission Unit, specify
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☐ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Storage Tanks

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ Wet Collecting System
☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Governmental Agency
☐ Authority of Partnership
☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE T J Aydt *(Please use blue ink)* DATE: 02-17-2015 *(Please use blue ink)*

35B. Printed name of signee: Timothy J. Aydt		35C. Title: Marathon Petroleum Company LP By: MPC Investment LLC, its General Partner By: T. J. Aydt, Deputy Assistant Secretary
35D. E-mail:	36E. Phone:	36F. FAX:
36A. Printed name of contact person (if different from above): Wm. Greg Moore		36B. Title: Compliance Manager
36C. E-mail: WGMoore@MarathonPetroleum.com	36D. Phone: 419-421-3774	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☐ **Attachment C: Installation and Start Up Schedule**
- ☐ **Attachment D: Regulatory Discussion**
- ☐ **Attachment E: Plot Plan**
- ☐ **Attachment F: Detailed Process Flow Diagram(s)**
- ☐ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☐ **Attachment I: Emission Units Table**
- ☐ **Attachment J: Emission Points Data Summary Sheet**
- ☐ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☐ **Attachment L: Emissions Unit Data Sheet(s)**
- ☐ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☐ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☐ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☐ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
MARATHON PETROLEUM COMPANY LP
204 FERRY ST
CHARLESTON, WV 25314-1105

BUSINESS REGISTRATION ACCOUNT NUMBER: **1026-1720**

This certificate is issued on: **12/21/2011**

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

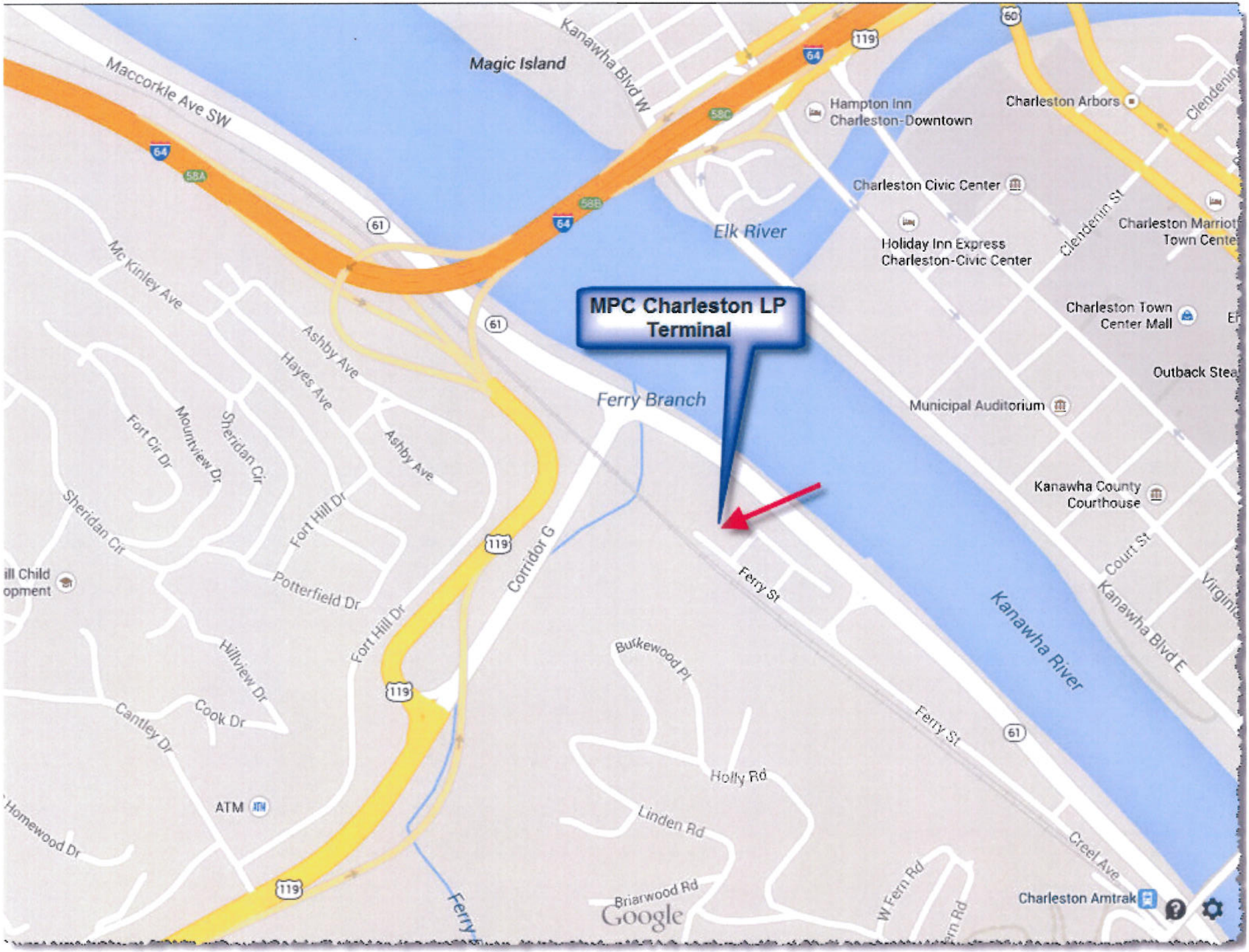
This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1486730880

ATTACHMENT B


MPC Charleston LP Terminal
Magic Island
Kanawha Blvd W
Maccorkle Ave SW
Hampton Inn Charleston-Downtown
Charleston Arbors
Charleston Civic Center
Elk River
Holiday Inn Express Charleston-Civic Center
Clendenin St
Charleston Marriott Town Center
Charleston Town Center Mall
Outback Stea
Mc Kinley Ave
Ashby Ave
Hayes Ave
Ferry Branch
Municipal Auditorium
Fort Cir Dr
Mountview Dr
Sheridan Cir
Kanawha County Courthouse
Fort Hill Dr
Corridor G
Ferry St
Court St
Potterfield Dr
Kanawha River
Kanawha Blvd E
Hillview Dr
Burkewood Pl
Cook Dr
Cantley Dr
Holly Rd
ATM
Linden Rd
Homewood Dr
Creel Ave
Briarwood Rd
W Fern Rd
Charleston Amtrak
Google

ATTACHMENT H

(Material) Safety Data Sheet

NFPA	WHMIS	Personal Protective Equipment	Transport Symbol

Preparation Date: 12-Jul-2012 **Revision Date:** 12-Jul-2012 **Revision Number:** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:
Fuel Ethanol

Product Code:
017609

Use of the Substance / Preparation:
Fuel.

Contact Manufacturer:
Archer Daniels Midland Company
4666 Faries Parkway
Decatur, IL 62526, USA
Telephone Number: (+1) 217-424-5200

Emergency response telephone number:
Chemtrec 1-800-424-9300 (CCN 1635)

2. HAZARDS IDENTIFICATION

Emergency Overview

Flammable Liquid. Vapors may cause flash fire or explosion. Vapors may be irritating to eyes, nose, throat, and lungs.

Appearance	Physical State	Odor
Clear Bright	Liquid	Characteristic

Potential Health Effects

Principle Routes of Exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Acute Effects	
Eyes	Contact with eyes may cause irritation.
Skin	May cause skin irritation. May be absorbed through the skin in harmful amounts. Repeated exposure may cause skin dryness or cracking.
Inhalation	Inhalation of vapours in high concentration may cause irritation of respiratory system. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion	Ingestion may cause irritation to mucous membranes. May cause drowsiness and dizziness. Lack of coordination. Nausea. Vomiting. Abdominal pain. Unconsciousness. Coma.
Chronic Effects	Avoid repeated exposure.
Main Symptoms	Vomiting. Nausea. Coma.
Aggravated Medical Conditions	Liver disorders. Kidney disorders. Skin disorders. Central nervous system. Respiratory disorders. Blood disorders.
Potential Environmental Effects	See Section 12 for additional ecological information.
Toxicological information	See Section 11 for additional toxicological information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Alcohols

The following component(s) in this product are considered hazardous under applicable OSHA (USA), WHMIS (Canada), and/or NOM-002-SCT-2003 (Mexico) regulations

Chemical Name	CAS-No	Weight %	North American Hazard Indicator
Ethyl alcohol	64-17-5	95-98	yes (Flammable liquid) (D2B - Materials causing other toxic effects, toxic material - Canada)
Natural Gasoline	8006-61-9	2-5	yes (Flammable liquid) (D2A - Materials causing other toxic effects, very toxic material - Canada)

4. FIRST AID MEASURES

General Advice If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eyes wide open while rinsing. If symptoms persist, call a physician.

Skin Contact If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.

Inhalation Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician. Artificial respiration and/or oxygen may be necessary.

Ingestion Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician.

Notes to Physician Treat symptomatically.

Protection of First-aiders Use personal protective equipment. Remove all sources of ignition.

5. FIRE-FIGHTING MEASURES

Flammable Properties Flammable. Vapors may form explosive mixtures with air. Vapors may cause flash fire or explosion. Material may burn with invisible flame. Material may pose fire hazard because it is dispersed (or spread) by water.

Suitable Extinguishing Media Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO_2) Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate area and fight fire from a safe distance Cool closed containers exposed to fire with water spray

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Hazardous Combustion Products Carbon monoxide (CO), Carbon dioxide (CO_2), Thermal decomposition can lead to release of irritating gases and vapours.

Explosion Data

Sensitivity to mechanical impact No information available.

Sensitivity to static discharge Yes

Specific Hazards Arising from the Chemical Keep product and empty container away from heat and sources of ignition. Risk of ignition.

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health 1
Flammability 3
Stability and Reactivity 0
Physical hazard -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. Use personal protective equipment.

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Clean-up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Take precautionary measures against static discharges.

7. HANDLING AND STORAGE

Handling Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from open flames, hot surfaces and sources of ignition. Wear personal protective equipment. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. Use product only in closed system.

Storage Keep in properly labelled containers. Keep away from heat. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Components with workplace control parameters.

Chemical Name	ACGIH TLV	OSHA PEL	MEXICO	NIOSH
Ethyl alcohol	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³	IDLH: 3300 ppm 10% LEL TWA: 1000 ppm TWA: 1900 mg/m³

Legend

ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Values. TWA - Time weighted average. Ceiling - Ceiling Limit Value. STEL - Short Term Exposure Limit. OSHA PEL - Occupational Safety and Health Administration Permissible Exposure Limits. NIOSH IDLH - National Institute of Occupational Safety and Health Immediately Dangerous to Life or Health. LEL - Lower explosion limit. Skin - Skin Absorption. OHSA - Ontario Occupational Health and Safety Act Exposure Limits. MEXICO - Mexico Occupational Exposure Limits.

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Apply technical measures to comply with the occupational exposure limits. However it is the duty of the user to verify this and follow given exposure limits at the workplace.

General Hygiene Considerations When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment

Eye/face Protection. Tightly fitting safety goggles. Face-shield.

Skin and Body Protection Long sleeved clothing. Chemical resistant apron. Antistatic boots. Neoprene gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used.

Respiratory Protection Wear a positive-pressure supplied-air respirator. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear Bright
Physical State	Liquid
Odor	Characteristic
Odor Threshold	No information available
pH	No information available
Flash Point	-20.5 °C / -5 °F Open Cup
Autoignition Temperature	> 365 °C / 689 °F
Boiling point	73.9 - 79.4 °C / 165 - 175 °F
Melting/Freezing Point	No information available
Decomposition temperature	No information available
Oxidizing Properties	No information available
Flammability Limits in Air	Upper: 19% Lower: 3.3%
Specific Gravity	0.79 at 60ºF (Water = 1.0)
Water Solubility	Miscible
Evaporation Rate	3.2 [Butyl acetate = 1.0]
Vapor Pressure	reid, psi, 100°F = 3.5
Vapor Density	1.6 (Air = 1.0)
Partition Coefficient (n-octanol/water)	No information available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	Strong oxidizing agents. Inorganic substances. Strong acids. Alkali. Bromine pentafluoride. Ammonia. Peroxides. Perchlorates.
Hazardous Decomposition Products	No information available.
Possibility of Hazardous Reactions	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

LD50 Oral: No information available
LD50 Dermal: No information available
LC50 Inhalation: No information available

Toxicology data for the components

Chemical Name	Weight %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl alcohol	95-98	7060 mg/kg Rat		
Natural Gasoline	2-5			300 g/m³ Rat 5 min

Chronic Effects

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	Weight %	OSHA	ACGIH	NTP	MEXICO	IARC
Ethyl alcohol	95-98	Present	A3		A4	Group 1
Natural Gasoline	2-5	Present				Group 2B

NOTE: Ethanol is only classified as carcinogenic as ingested in alcoholic beverages.

Legend

OSHA: (Occupational Safety & Health Administration)
Present - Carcinogen or potential carcinogen to be identified under OSHA's Hazard Communication Standard
ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen.

NTP: (National Toxicity Program)
Not Listed
Mexico: (Official Mexican Norm NOM-010-STPS-1999)
A4 - Not Classifiable as a Human Carcinogen.
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

Irritation
Rabbit eye: 500 mg / 24H MLD (ethanol)
Rabbit skin: 20 mg / 24H MOD (ethanol)
Sensitization
No information available.
Mutagenic Effects
No information available.
Developmental Effects
No information available.

Corrosivity
No information available.

Neurological Effects
No information available.
Reproductive Effects
May damage fertility or the unborn child through ingestion.
Target Organ Effects
Liver. Respiratory system. Eyes. Skin. Central nervous system (CNS). Blood. Reproductive System. Kidney.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Ecotoxicity effects
Component Information:

Chemical Name	Weight %	Acute Fish Toxicity	Daphnia (Water flea)	Fresh Water Algae	Other
Ethyl alcohol	95-98	LC50: 96h 12.0-16.0ml/L (Oncorhynchus mykiss) static LC50: 96h 13400-15100mg/L (Pimephales promelas) flow-through LC50: 96h 100mg/L (Pimephales promelas) static	LC50: 48h 9268 - 14221 mg/L (Daphnia magna) EC50: 24h 10800 mg/L (Daphnia magna) EC50: 48h 2 mg/L (Daphnia magna)		
Natural Gasoline	2-5	LC50: 96h 56mg/L (Oncorhynchus mykiss)		EC50: 72h 4700 mg/L (Pseudokirchneriella subcapitata)	

Chemical Name	Weight %	log Kow
Ethyl alcohol	95-98	-0.32
Natural Gasoline	2-5	6

Persistence/Degradability No information available.
Bioaccumulation/ Accumulation No information available.
Mobility Miscible with water.

13. DISPOSAL CONSIDERATIONS

Whenever possible, as rules and regulations allow, please recycle or manage materials to minimize waste.

Waste Disposal Methods Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction. Hazardous as supplied. The classification and disposal method of waste material resulting from this product should be determined by the user at the time of disposal. Can be incinerated, when in compliance with local regulations.

Contaminated Packaging Empty containers should be decontaminated and taken for local recycling, recovery or waste disposal. Also after use, do not open with force or burn.

14. TRANSPORT INFORMATION

Domestic transport regulations (USA)

DOT

DOT Shipping Description	UN1987, Alcohols, n.o.s. (Ethanol, Natural Gasoline), 3, II
UN-No	UN1987
Proper Shipping Name	Alcohols, n.o.s.
Hazard Class	3
Packing Group	II

Chemical Name	CAS-No	Weight %	Reportable Quantity (RQ)
Benzene	71-43-2	< 0.1	10 lb / 4.54 kg

Domestic transport regulations (Canada)

TDG

UN-No	UN1170
Proper Shipping Name	ETHANOL more than 24% ethanol, by volume
Hazard Class	3
Packing Group	II

Domestic transport regulations (Mexico)

MEX

UN-No	UN1987
Hazard Class	3
Packing Group	II

International transport regulations

ICAO

UN-No	UN1987
Proper Shipping Name	Alcohols, n.o.s
Hazard Class	3
Packing Group	II

IATA

UN-No	UN1987
Proper Shipping Name	Ethanol
Hazard Class	3
Packing Group	II
ERG Code	3L

IMDG/IMO

UN-No	UN1987
Proper Shipping Name	Ethanol
Hazard Class	3
Packing Group	II
EmS No.	F-E, S-D

15. REGULATORY INFORMATION

International Inventories

The components of this product are reported in the following inventories:

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	AICS	ENCS ISHL	CHINA	PICCS	KECL	NZLoC
Ethyl alcohol	Yes	Yes	No	Yes 200-578-6	No	Yes	Yes 2-202	Yes	Yes	Yes KE-13217	Yes
Natural Gasoline	Yes	Yes	No	Yes 232-349-1	No	Yes	No	Yes	Yes	Yes KE-21971	Yes

USA

Federal Regulations

Ozone Depleting Substances:

No Class I or Class II material is known to be used in the manufacture of, or contained in, this product.

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.
SARA 302
This product is not known to contain any chemicals which are expected to be subject to the reporting requirements of the Act or regulations contained in 40 CFR 302

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
May contain trace HAPs.

State Regulations
California Proposition 65

Chemical Name	CAS-No	Weight %	Category
Ethyl alcohol	64-17-5	95-98	Developmental
Methyl alcohol	67-56-1	TRACE	Developmental
Benzene	71-43-2	< 0.1	Carcinogen Male Reproductive Developmental
Acetaldehyde	75-07-0	TRACE	Carcinogen

• Ethanol is only considered a Prop 65 chemical as "ethyl alcohol IN alcoholic beverages" and not as used in fuel or industrial applications

State Right-to-Know
Component Information

Chemical Name	Weight %	Massachusetts	Minnesota	New Jersey	Pennsylvania
Ethyl alcohol	95-98	Yes	Yes	Yes 0844	Yes
Natural Gasoline	2-5	Yes	Yes	Yes 0957	No
Methyl alcohol	TRACE	Yes	Yes	Yes 1222	Yes Environmental hazard
Benzene	< 0.1	Yes	Yes	No	Yes Environmental hazard Special hazardous substance
Acetaldehyde	TRACE	Yes	Yes	Yes 0001	Yes
Acetone	TRACE	Yes	Yes	Yes 0006	Yes Environmental hazard

Canada

WHMIS Product Classification
B2 - Flammable liquid. D2A - Materials causing other toxic effects, very toxic material.
WHMIS Ingredient Disclosure List IDL
Component Information

Chemical Name	Weight %	WHMIS IDL	Threshold limits
Ethyl alcohol	95-98	Listed	0.1%
Natural Gasoline	2-5	Listed	1%

(NPRI) Canadian National Pollutant Release Inventory
Component Information

Chemical Name	Weight %	NPRI
Ethyl alcohol	95-98	Part 5 Substance
Natural Gasoline	2-5	Part 4 Substance
Methyl alcohol	TRACE	Part 1, Group 1 Substance; Part 5 Substance
Benzene	< 0.1	Part 1, Group 1 Substance; Part 5 Substance
Acetaldehyde	TRACE	Part 1, Group 1 Substance Part 4 Substance
Acetone	TRACE	Part 4 Substance

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

Mexico

Mexico - Grade Serious risk, Grade 3

16. OTHER INFORMATION

Prepared By: ADM Fuels & Industrials
Preparation Date: 12-Jul-2012
Revision Date: 12-Jul-2012
Revision Number: 1
Revision Summary Implementation into software system

The information provided on this (M)SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of (M)SDS

ATTACHMENT N

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 12-30
City:	Charleston
State:	WV
Company:	MPC
Type of Tank:	Internal Floating Roof Tank
Description:	016844:30

Tank Dimensions

Diameter (ft):		43.00
Volume (gallons):		466,678.00
Turnovers:		18.83
Self Supp. Roof? (y/n):	N	
No. of Columns:		1.00
Eff. Col. Diam. (ft):		1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Detail	
Deck Type:	Bolted	
Construction:	Sheet	
Deck Seam:	Sheet: 5 Ft Wide	
Deck Seam Len. (ft):		290.44

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	17
Stub Drain (1 in. Diameter)/None	1
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Sleeve	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 12-30 - Internal Floating Roof Tank
Charleston, WV

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Ethanol - Denatured	Jan	45.77	41.75	49.79	55.00	0.3866	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Feb	47.56	43.02	52.10	55.00	0.4132	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Mar	52.57	47.25	57.88	55.00	0.4959	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Apr	58.95	50.83	63.07	55.00	0.5799	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

Ethanol - Denatured	May	61.13	54.69	67.57	55.00	0.6713	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jun	64.81	58.34	71.27	55.00	0.7617	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jul	66.29	60.27	72.31	55.00	0.8011	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Aug	65.57	59.79	71.34	55.00	0.7817	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Sep	62.41	56.76	68.05	55.00	0.7016	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Oct	56.93	51.37	62.50	55.00	0.5796	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Nov	52.31	47.72	56.89	55.00	0.4913	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Dec	47.80	43.92	51.67	55.00	0.4168	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 12-30 - Internal Floating Roof Tank
Charleston, WV

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	0.6808	0.7284	0.8769	1.0285	1.1946	1.3598	1.4323	1.3966	1.2498	1.0280	0.8686	0.7349
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3866	0.4132	0.4959	0.5799	0.6713	0.7617	0.8011	0.7817	0.7016	0.5796	0.4913	0.4168
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	3.9189	3.4323	4.4723	3.8824	4.0545	3.4833	3.6905	3.8962	3.7185	4.4575	3.4273	4.1133
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	739,770.0000	647,905.0000	844,237.0000	732,876.0000	765,364.0000	657,536.0000	696,641.0000	735,485.0000	701,941.0000	841,435.0000	646,957.0000	776,464.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Deck Fitting Losses (lb):	4.9216	5.2657	6.3390	7.4345	8.6355	9.8298	10.3533	10.0954	9.0344	7.4309	6.2785	5.3120
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000
Deck Seam Losses (lb):	1.3662	1.4618	1.7597	2.0638	2.3972	2.7287	2.8741	2.8025	2.5079	2.0628	1.7429	1.4746
Deck Seam Length (ft):	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor(ft/sqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	10.8876	10.8882	13.4480	14.4091	16.2818	17.4016	18.3501	18.1907	16.5107	14.9792	12.3172	11.6348

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	15.1400
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	1.3675
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	17	7.90	0.00	0.00	65.5904
Stub Drain (1 in. Diameter)/None	1	1.20	0.00	0.00	0.5861
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	3.0280
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Sleeve	1	11.00	46.00	1.40	5.3723

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 12-30 - Internal Floating Roof Tank
Charleston, WV

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Ethanol - Denatured	12.58	46.55	90.93	25.24	175.30

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 12-30
City:	Charleston
State:	WV
Company:	MPC
Type of Tank:	Internal Floating Roof Tank
Description:	016844:30

Tank Dimensions

Diameter (ft):		43.00
Volume (gallons):		466,678.00
Turnovers:		18.83
Self Supp. Roof? (y/n):	N	
No. of Columns:		1.00
Eff. Col. Diam. (ft):		1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Detail	
Deck Type:	Bolted	
Construction:	Sheet	
Deck Seam:	Sheet: 5 Ft Wide	
Deck Seam Len. (ft):		290.44

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	17
Stub Drain (1 in. Diameter)/None	1
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Sleeve	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 12-30 - Internal Floating Roof Tank
Charleston, WV

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 15)	Jan	45.77	41.75	49.79	55.00	6.2354	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Feb	47.56	43.02	52.10	55.00	6.4550	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Mar	52.57	47.25	57.88	55.00	7.0989	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 13.5)	Apr	56.95	50.83	63.07	55.00	6.8440	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3

Gasoline (RVP 09)	May	61.13	54.69	67.57	55.00	4.7149	N/A	N/A	67.0000	92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jun	64.81	58.34	71.27	55.00	5.0642	N/A	N/A	67.0000	92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jul	66.29	60.27	72.31	55.00	5.2112	N/A	N/A	67.0000	92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Aug	65.57	59.79	71.34	55.00	5.1392	N/A	N/A	67.0000	92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 13.5)	Sep	62.41	56.76	68.05	55.00	7.5754	N/A	N/A	62.0000	92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 13.5)	Oct	56.93	51.37	62.50	55.00	6.8423	N/A	N/A	62.0000	92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 15)	Nov	52.31	47.72	56.89	55.00	7.0641	N/A	N/A	60.0000	92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Dec	47.80	43.92	51.67	55.00	6.4841	N/A	N/A	60.0000	92.00	Option 4: RVP=15, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 12-30 - Internal Floating Roof Tank
Charleston, WV

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	18.4266	19.3031	22.0109	21.6103	14.4161	15.7450	16.3186	16.0367	24.9678	21.6028	21.8588	19.4207
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.2354	6.4550	7.0989	6.8440	4.7149	5.0642	5.2112	5.1392	7.5754	6.8423	7.0641	6.4841
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	3.3201	2.9078	3.7890	3.2892	3.4350	2.9511	3.1266	3.3009	3.1503	3.7764	2.9036	3.4848
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	739,770.0000	647,905.0000	844,237.0000	732,876.0000	765,364.0000	657,536.0000	696,641.0000	735,485.0000	701,941.0000	841,435.0000	646,957.0000	776,464.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Deck Fitting Losses (lb):	133.1999	139.5360	159.1097	156.2143	104.2096	113.8156	117.9618	115.9239	180.4842	156.1600	158.0104	140.3859
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000	186.5000
Deck Seam Losses (lb):	36.9760	38.7349	44.1685	43.3647	28.9284	31.5950	32.7460	32.1802	50.1020	43.3497	43.8633	38.9708
Deck Seam Length (ft):	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor(ft/sqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	191.9226	200.4819	229.0781	224.4785	150.9891	164.1067	170.1529	167.4417	258.7043	224.8889	226.6361	202.2622

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	278.1466
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	25.1229
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	17	7.90	0.00	0.00	1,205.0031
Stub Drain (1 in. Diameter)/None	1	1.20	0.00	0.00	10.7670
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	55.6293
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Sleeve	1	11.00	46.00	1.40	98.6972

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 12-30 - Internal Floating Roof Tank
Charleston, WV

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 15)	101.02	16.41	730.24	202.71	1,050.38
Gasoline (RVP 09)	62.52	12.81	451.91	125.45	652.69
Gasoline (RVP 13.5)	68.18	10.22	492.86	136.82	708.07

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 16-31
City:	Charleston
State:	WV
Company:	MPC
Type of Tank:	Internal Floating Roof Tank
Description:	016844:31

Tank Dimensions

Diameter (ft):		50.00
Volume (gallons):		610,146.00
Turnovers:		5.10
Self Supp. Roof? (y/n):	N	
No. of Columns:		1.00
Eff. Col. Diam. (ft):		1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Fixed Roof Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Gasketed	17
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w/o Float	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 16-31 - Internal Floating Roof Tank
Charleston, WV

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Ethanol - Denatured	Jan	45.77	41.75	49.79	55.00	0.3866	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Feb	47.56	43.02	52.10	55.00	0.4132	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Mar	52.57	47.25	57.88	55.00	0.4959	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Apr	56.95	50.83	63.07	55.00	0.5799	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	May	61.13	54.69	67.57	55.00	0.6713	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jun	64.81	58.34	71.27	55.00	0.7617	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

Ethanol - Denatured	Jul	66.29	60.27	72.31	55.00	0.8011	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Aug	65.57	59.79	71.34	55.00	0.7817	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Sep	62.41	56.76	68.05	55.00	0.7016	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Oct	56.93	51.37	62.50	55.00	0.5796	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Nov	52.31	47.72	56.89	55.00	0.4913	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Dec	47.80	43.92	51.67	55.00	0.4168	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 16-31 - Internal Floating Roof Tank
Charleston, WV

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	2.9028	3.1058	3.7388	4.3849	5.0933	5.7977	6.1065	5.9544	5.3286	4.3828	3.7031	3.1331
Seal Factor A (lb-mole/ft-yr):	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3866	0.4132	0.4959	0.5799	0.6713	0.7617	0.8011	0.7817	0.7016	0.5796	0.4913	0.4168
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	0.0327	0.0000	2.3653	2.5586	2.9558	0.0000	0.0140	1.4089	1.8204	2.9487	0.0293	0.0064
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	7,211.0000	0.0000	520,842.0000	563,398.0000	650,861.0000	0.0000	3,074.0000	310,248.0000	400,857.0000	649,310.0000	6,447.0000	1,406.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Deck Fitting Losses (lb):	5.5391	5.9264	7.1344	8.3673	9.7190	11.0631	11.6523	11.3621	10.1680	8.3632	7.0663	5.9785
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000
Deck Seam Losses (lb):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	8.4747	9.0322	13.2385	15.3108	17.7681	16.8608	17.7728	18.7255	17.3170	15.6948	10.7987	9.1180

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	0.7814
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	6.8374
Fixed Roof Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1	47.00	0.00	0.00	22.9542
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	37.1174
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Gasketed	17	1.30	0.08	0.65	10.7934
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	3.0280
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w/o Float	1	43.00	270.00	1.40	21.0006

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 16-31 - Internal Floating Roof Tank
Charleston, WV

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Ethanol - Denatured	53.63	14.14	102.34	0.00	170.11

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 16-31
City:	Charleston
State:	WV
Company:	MPC
Type of Tank:	Internal Floating Roof Tank
Description:	016844:31

Tank Dimensions

Diameter (ft):		50.00
Volume (gallons):		610,146.00
Turnovers:		5.10
Self Supp. Roof? (y/n):	N	
No. of Columns:		1.00
Eff. Col. Diam. (ft):		1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	Rim-mounted

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Fixed Roof Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Gasketed	17
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w/o Float	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 16-31 - Internal Floating Roof Tank
Charleston, WV

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 15)	Jan	45.77	41.75	49.79	55.00	6.2354	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Feb	47.56	43.02	52.10	55.00	6.4550	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Mar	52.57	47.25	57.88	55.00	7.0989	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 13.5)	Apr	56.95	50.83	63.07	55.00	6.8440	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 09)	May	61.13	54.69	67.57	55.00	4.7149	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jun	64.81	58.34	71.27	55.00	5.0642	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3

Gasoline (RVP 09)	Jul	66.29	60.27	72.31	55.00	5.2112	N/A	N/A	67.0000	92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Aug	65.57	59.79	71.34	55.00	5.1392	N/A	N/A	67.0000	92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 13.5)	Sep	62.41	56.76	68.05	55.00	7.5754	N/A	N/A	62.0000	92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 13.5)	Oct	56.93	51.37	62.50	55.00	6.8423	N/A	N/A	62.0000	92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 15)	Nov	52.31	47.72	56.89	55.00	7.0641	N/A	N/A	60.0000	92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Dec	47.80	43.92	51.67	55.00	6.4841	N/A	N/A	60.0000	92.00	Option 4: RVP=15, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 16-31 - Internal Floating Roof Tank
Charleston, WV

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	78.5629	82.3001	93.8449	92.1371	61.4641	67.1299	69.5753	68.3734	106.4518	92.1051	93.1965	82.8013
Seal Factor A (lb-mole/ft-yr):	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000	2.2000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.2354	6.4550	7.0989	6.8440	4.7149	5.0642	5.2112	5.1392	7.5754	6.8423	7.0641	6.4841
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	0.0277	0.0000	2.0039	2.1676	2.5041	0.0000	0.0118	1.1937	1.5423	2.4982	0.0248	0.0054
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	7,211.0000	0.0000	520,842.0000	563,398.0000	650,861.0000	0.0000	3,074.0000	310,248.0000	400,857.0000	649,310.0000	6,447.0000	1,406.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Deck Fitting Losses (lb):	149.9124	157.0435	179.0731	175.8143	117.2847	128.0960	132.7624	130.4688	203.1294	175.7532	177.8358	158.0000
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000	209.9000
Deck Seam Losses (lb):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	228.5031	239.3436	274.9218	270.1191	181.2530	195.2258	202.3496	200.0358	311.1234	270.3565	271.0571	240.8067

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.3560
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	125.6146
Fixed Roof Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1	47.00	0.00	0.00	421.7062
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	681.9079
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Gasketed	17	1.30	0.08	0.65	198.2916
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	55.6293
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w/o Float	1	43.00	270.00	1.40	385.8163

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 16-31 - Internal Floating Roof Tank
Charleston, WV

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 15)	430.71	2.06	821.86	0.00	1,254.63
Gasoline (RVP 09)	266.54	3.71	508.61	0.00	778.86
Gasoline (RVP 13.5)	290.69	6.21	554.70	0.00	851.60

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 40-1
City:	Charleston
State:	WV
Company:	MPC
Type of Tank:	Domed External Floating Roof Tank
Description:	016844:1

Tank Dimensions

Diameter (ft):	80.00
Volume (gallons):	1,624,374.00
Turnovers:	3.08

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	2
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	11
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 40-1 - Domed External Floating Roof Tank
Charleston, WV

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Ethanol - Denatured	Jan	45.77	41.75	49.79	55.00	0.3866	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Feb	47.56	43.02	52.10	55.00	0.4132	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Mar	52.57	47.25	57.88	55.00	0.4959	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Apr	56.95	50.83	63.07	55.00	0.5799	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	May	61.13	54.69	67.57	55.00	0.6713	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jun	64.81	58.34	71.27	55.00	0.7617	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jul	66.29	60.27	72.31	55.00	0.8011	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Aug	65.57	59.79	71.34	55.00	0.7817	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Sep	62.41	56.76	68.05	55.00	0.7016	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Oct	56.93	51.37	62.50	55.00	0.5796	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Nov	52.31	47.72	56.89	55.00	0.4913	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Dec	47.80	43.92	51.67	55.00	0.4168	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 40-1 - Domed External Floating Roof Tank
Charleston, WV

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	1.2667	1.3553	1.6315	1.9134	2.2225	2.5299	2.6647	2.5983	2.3252	1.9125	1.6159	1.3672
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Seal-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3866	0.4132	0.4959	0.5799	0.6713	0.7617	0.8011	0.7817	0.7016	0.5796	0.4913	0.4168
Tank Diameter (ft):	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	1.0214	0.9470	1.1855	1.1917	1.3814	1.0313	1.1580	1.1925	1.0880	1.4404	1.0889	1.2069
Net Throughput (gal/mo.):	367,068.0000	340,327.0000	426,023.0000	428,259.0000	496,432.0000	370,599.0000	416,138.0000	428,535.0000	390,984.0000	517,612.0000	391,321.0000	433,730.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000
Roof Fitting Losses (lb):	2.0953	2.2418	2.6988	3.1651	3.6764	4.1849	4.4078	4.2980	3.8463	3.1636	2.6730	2.2615
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Losses (lb):	4.3834	4.5441	5.5157	6.2703	7.2804	7.7461	8.2304	8.0888	7.2595	6.5165	5.3778	4.8356

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	0.7814
Automatic Gauge Float Well/Unbolted Cover, Gasketed	2	4.30	17.00	0.38	4.2001
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	11	2.00	0.37	0.91	10.7445
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1	41.00	48.00	1.40	20.0239
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	3.0280

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 40-1 - Domed External Floating Roof Tank
Charleston, WV

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Ethanol - Denatured	23.40	13.93	38.71	0.00	76.05

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 40-1
City:	Charleston
State:	WV
Company:	MPC
Type of Tank:	Domed External Floating Roof Tank
Description:	016844:1

Tank Dimensions

Diameter (ft):	80.00
Volume (gallons):	1,624,374.00
Turnovers:	3.08

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	2
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	11
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 40-1 - Domed External Floating Roof Tank
Charleston, WV

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 15)	Jan	45.77	41.75	49.79	55.00	6.2354	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Feb	47.56	43.02	52.10	55.00	6.4550	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Mar	52.57	47.25	57.88	55.00	7.0989	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 13.5)	Apr	56.95	50.83	63.07	55.00	6.8440	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 09)	May	61.13	54.69	67.57	55.00	4.7149	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jun	64.81	58.34	71.27	55.00	5.0642	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jul	66.29	60.27	72.31	55.00	5.2112	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Aug	65.57	59.79	71.34	55.00	5.1392	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 13.5)	Sep	62.41	56.76	68.05	55.00	7.5754	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 13.5)	Oct	56.93	51.37	62.50	55.00	6.8423	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 15)	Nov	52.31	47.72	56.89	55.00	7.0641	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Dec	47.80	43.92	51.67	55.00	6.4841	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 40-1 - Domed External Floating Roof Tank
Charleston, WV

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	34.2820	35.9128	40.9505	40.2053	26.8207	29.2930	30.3602	29.8356	46.4517	40.1913	40.6676	36.1315
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Seal-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.2354	6.4550	7.0989	6.8440	4.7149	5.0642	5.2112	5.1392	7.5754	6.8423	7.0641	6.4841
Tank Diameter (ft):	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	0.8654	0.8023	1.0043	1.0096	1.1703	0.8737	0.9810	1.0103	0.9217	1.2203	0.9225	1.0225
Net Throughput (gal/mo.):	367,068.0000	340,327.0000	426,023.0000	428,259.0000	496,432.0000	370,599.0000	416,138.0000	428,535.0000	390,984.0000	517,612.0000	391,321.0000	433,730.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000	80.0000
Roof Fitting Losses (lb):	56.7082	59.4057	67.7389	66.5062	44.3659	48.4556	50.2208	49.3531	76.8388	66.4831	67.2709	59.7675
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000	79.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Losses (lb):	91.8555	96.1208	109.6938	107.7211	72.3570	78.6223	81.5619	80.1991	124.2123	107.8947	108.8610	96.9215

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.3560
Automatic Gauge Float Well/Unbolted Cover, Gasketed	2	4.30	17.00	0.38	77.1633
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	11	2.00	0.37	0.91	197.3944
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1	41.00	48.00	1.40	367.8714
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	55.6293

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 40-1 - Domed External Floating Roof Tank
Charleston, WV

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 15)	187.94	4.62	310.89	0.00	503.45
Gasoline (RVP 13.5)	126.85	3.15	209.83	0.00	339.83
Gasoline (RVP 09)	116.31	4.04	192.40	0.00	312.74

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 48-2
City:	Charleston
State:	West Virginia
Company:	MPC
Type of Tank:	Domed External Floating Roof Tank
Description:	016844:2

Tank Dimensions

Diameter (ft):	86.00
Volume (gallons):	1,847,850.00
Turnovers:	37.24

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	13
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	10
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Ungask.	2
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 48-2 - Domed External Floating Roof Tank
Charleston, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Ethanol - Denatured	Jan	45.77	41.75	49.79	55.00	0.3866	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Feb	47.56	43.02	52.10	55.00	0.4132	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Mar	52.57	47.25	57.88	55.00	0.4959	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Apr	56.95	50.83	63.07	55.00	0.5799	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	May	61.13	54.69	67.57	55.00	0.6713	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jun	64.81	58.34	71.27	55.00	0.7617	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Jul	66.29	60.27	72.31	55.00	0.8011	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Aug	65.57	59.79	71.34	55.00	0.7817	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Sep	62.41	56.76	68.05	55.00	0.7016	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Oct	56.93	51.37	62.50	55.00	0.5796	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Ethanol - Denatured	Nov	52.31	47.72	56.89	55.00	0.4913	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

Ethanol - Denatured	Dec	47.80	43.92	51.67	55.00	0.4168	N/A	N/A	46.0700	46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 48-2 - Domed External Floating Roof Tank
Charleston, West Virginia

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	1.3617	1.4569	1.7538	2.0569	2.3892	2.7197	2.8645	2.7932	2.4996	2.0559	1.7371	1.4697
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Seal-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3866	0.4132	0.4959	0.5799	0.6713	0.7617	0.8011	0.7817	0.7016	0.5796	0.4913	0.4168
Tank Diameter (ft):	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	15.4016	13.9970	16.8941	14.0439	14.4415	13.8211	14.6320	14.6435	13.4687	16.3511	13.7496	15.8850
Net Throughput (gal/mo.):	5,949,908.0000	5,407,281.0000	6,526,476.0000	5,425,405.0000	5,578,988.0000	5,339,330.0000	5,652,593.0000	5,657,032.0000	5,203,178.0000	6,316,691.0000	5,311,687.0000	6,136,654.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000
Roof Fitting Losses (lb):	4.5495	4.8676	5.8598	6.8724	7.9826	9.0866	9.5706	9.3322	8.3514	6.8691	5.8038	4.9104
Value of Vapor Pressure Function:	0.0069	0.0074	0.0089	0.0104	0.0121	0.0137	0.0145	0.0141	0.0126	0.0104	0.0088	0.0074
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Losses (lb):	21.3129	20.3215	24.5077	22.9733	24.8133	25.6274	27.0671	26.7689	24.3197	25.2761	21.2905	22.2652

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	0.7814
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	6.8374
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	13	2.00	0.37	0.91	12.6981
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	10	7.90	0.00	0.00	38.5826
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Ungask.	2	2.30	0.00	0.00	2.2466
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1	41.00	48.00	1.40	20.0239
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	3.0280

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 48-2 - Domed External Floating Roof Tank
Charleston, West Virginia

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Ethanol - Denatured	25.16	177.33	84.06	0.00	286.54

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Charleston : 48-2
City:	Charleston
State:	West Virginia
Company:	MPC
Type of Tank:	Domed External Floating Roof Tank
Description:	016844:2

Tank Dimensions

Diameter (ft):	86.00
Volume (gallons):	1,847,850.00
Turnovers:	37.24

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	13
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	10
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Ungask.	2
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Charleston, West Virginia (Avg Atmospheric Pressure = 14.25 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Charleston : 48-2 - Domed External Floating Roof Tank
Charleston, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 15)	Jan	45.77	41.75	49.79	55.00	6.2354	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Feb	47.56	43.02	52.10	55.00	6.4550	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 15)	Mar	52.57	47.25	57.88	55.00	7.0989	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3
Gasoline (RVP 13.5)	Apr	56.95	50.83	63.07	55.00	6.8440	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 09)	May	61.13	54.69	67.57	55.00	4.7149	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jun	64.81	58.34	71.27	55.00	5.0642	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Jul	66.29	60.27	72.31	55.00	5.2112	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 09)	Aug	65.57	59.79	71.34	55.00	5.1392	N/A	N/A	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3
Gasoline (RVP 13.5)	Sep	62.41	56.76	68.05	55.00	7.5754	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 13.5)	Oct	56.93	51.37	62.50	55.00	6.8423	N/A	N/A	62.0000			92.00	Option 4: RVP=13.5, ASTM Slope=3
Gasoline (RVP 15)	Nov	52.31	47.72	56.89	55.00	7.0641	N/A	N/A	60.0000			92.00	Option 4: RVP=15, ASTM Slope=3

Gasoline (RVP 15)	Dec	47.80	43.92	51.67	55.00	6.4841	N/A	N/A	60.0000	92.00	Option 4: RVP=15, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Charleston : 48-2 - Domed External Floating Roof Tank
Charleston, West Virginia

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	36.8532	38.6062	44.0218	43.2207	28.8323	31.4900	32.6372	32.0733	49.9356	43.2057	43.7176	38.8413
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Seal-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.2354	6.4550	7.0989	6.8440	4.7149	5.0642	5.2112	5.1392	7.5754	6.8423	7.0641	6.4841
Tank Diameter (ft):	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	13.0483	11.8583	14.3127	11.8980	12.2349	11.7093	12.3963	12.4060	11.4107	13.8527	11.6487	13.4578
Net Throughput (gal/mo.):	5,949,908.0000	5,407,281.0000	6,526,476.0000	5,425,405.0000	5,578,988.0000	5,339,330.0000	5,652,593.0000	5,657,032.0000	5,203,178.0000	6,316,691.0000	5,311,687.0000	6,136,654.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000	86.0000
Roof Fitting Losses (lb):	123.1296	128.9867	147.0805	144.4040	96.3311	105.2108	109.0435	107.1597	166.8390	144.3538	146.0643	129.7723
Value of Vapor Pressure Function:	0.1428	0.1496	0.1706	0.1621	0.1001	0.1093	0.1133	0.1113	0.1873	0.1621	0.1694	0.1505
Vapor Molecular Weight (lb/lb-mole):	60.0000	60.0000	60.0000	62.0000	67.0000	67.0000	67.0000	67.0000	62.0000	62.0000	60.0000	60.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000	172.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Losses (lb):	173.0310	179.4512	205.4150	199.5227	137.3982	148.4101	154.0770	151.6390	228.1852	201.4121	201.4306	182.0714

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	14.3560
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	125.6146
Floating Roof Pan Leg (3 in. Dia.) [30 in. Sleeve]/Adjustable, Pontoon Area, Ungasketed	13	2.00	0.37	0.91	233.2843
Floating Roof Pan Leg / Hanger Well [12 in.Sleeve]/Adjustable, Ungasketed	10	7.90	0.00	0.00	708.8253
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Ungask.	2	2.30	0.00	0.00	41.2734
Slotted Guide-Pole [8 in.] / Sample Well [21 in.]/Gask. Sliding Cover, w. Pole Wiper	1	41.00	48.00	1.40	367.8714
Vacuum Breaker (10 in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	55.6293

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Charleston : 48-2 - Domed External Floating Roof Tank
Charleston, West Virginia

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 09)	125.03	48.75	417.75	0.00	591.52
Gasoline (RVP 13.5)	136.36	37.16	455.60	0.00	629.12
Gasoline (RVP 15)	202.04	64.33	675.03	0.00	941.40