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March 18, 2020

NYSDEC Regional Permit Administrator
c/o Nancy M. Baker
Region 4 Headquarters
Division of Environmental Permits
1130 North Westcott Rd.
Schenectady, NY 12306

Subject: Global Companies LLC – Albany Terminal
Title V Facility Permit No. 4-0101-00112/00029
Permit Modification Application

Dear Ms. Baker,

On behalf of Global Companies LLC (Global), Envirospec Engineering, PLLC (Envirospec) is submitting the attached application for a Title V Facility Permit Modification at the Global Companies – Albany Terminal (Terminal) located at 50 Church Street, Albany, New York 12202. The Terminal currently operates under Title V Facility Permit No. 4-0101-00112/00029, which expired 03/02/2016 but was extended under the State Administrative Procedures Act when Global submitted a timely and sufficient renewal application in August 2015.

The enclosed application package includes the following:

- Title V Certification & P.E. Certification
- Title V Permit Application Forms
- List of Exempt Activities
- Method Used to Determine Compliance
- Emissions Unit Matrix
- Annotated Permit
- Project Emission Potential (PEP)
- Potential to Emit Calculations
- Part 212 Modeling Protocol
- Site Plan
- Full Environmental Assessment Form (EAF) and EAF Supplement

The purpose of this permit modification is to redistribute and redefine facility product throughput limits to increase operational flexibility at the Terminal by allowing the loading of refined product across the Facility subject to certain throughput limitations, install additional controls to more efficiently capture and reduce volatile organic compound (VOC) and benzene emissions and to significantly reduce crude oil throughput (collectively referred to as the “Project”). The project will reduce the potential to emit (PTE) VOCs from the Terminal by approximately 45 tons per year (tpy).

The Project includes the following specific components:

- Decrease the allowable crude oil loading throughput limit at the Marine Rack (1-RACK3) from 1.8 billion to 450 million gallons per year while increasing total allowable facility throughput of refined product (gasoline, ethanol, distillate, biodiesel and blendstock (including naphtha, natural gasoline, alkylate, isomerate, reformate and raffinate)) by 450 million gallons for a total reduction in Terminal throughput of approximately 950 million gallons. Reconfigure the facility caps to allow flexibility in the type and volume of products distributed at the individual loading areas to adjust to changing market conditions, while ensuring against major changes in truck or rail traffic by limiting throughput at each rack to currently allowable levels.
- Reduce the emissions limit applicable to the primary marine vapor combustion unit (VCU) (VCUM2) at the Marine Rack from 3 mg/L to 2 mg/L and implement a permit condition for negative pressure loading at the marine rack to control fugitive emissions, when allowable.
- Reduce the emissions limit applicable to the Rail Loading Rack VCU (VCURR) from 10 mg/L to 2 mg/L and implement negative pressure loading (vacuum assist) to control fugitive loading emissions.
- Install exempt boilers and associated piping for storing biodiesel in Tanks 30 and 33.
- Add two loading positions to the truck loading rack to improve efficiency and reduce customer wait time and truck idling time.
- Add seven loading positions at the rail loading rack to allow railcars to be loaded more efficiently and eliminate the need for interim movement of railcars to load certain trains.

Although the Terminal is designed to be operated with the emission controls (VCU/VRU and vac assist), the permit application includes several alternate operating scenarios (AOS) for the loading racks to address possible contingencies as follows:

- Loading at the truck rack with no vac assist as a result of equipment failure.
- Loading at the rail rack with no vac assist as a result of equipment failure
- Loading inerted vessels at the marine dock (VCU 1), which would require no vac assist, but would be assuming 99.9% capture efficiency.
- Loading inerted vessels at the marine dock (VCU 2), which would require no vac assist, but would be assuming 99.9% capture efficiency.

The proposed AOSs and associated permit language are outlined on the attached application forms. The Project is further detailed on the included EAF Supplement Report.

This application is complete based on the requirements in 6 NYCRR 201-6.2(d), as outlined below:

- Identifying information
  - Provided on the Application Forms.
- A description of the facility's processes and products (by Standard Industrial Classification or North American Industry Classification System code)
  - Provided on the Application Forms and Emissions Unit Matrix.
- Emissions-related information
  - Provided on the Application Forms.
- Air pollution control information

    - Provided on the Application Forms.
- Other information that may be necessary to implement and enforce applicability requirements
    - Provided on the Application Forms.
- An explanation of any proposed exemptions from otherwise applicable Federal requirements
    - No proposed exemptions are requested at this time.
- A description of any proposed exempt activities and/or emission units.
    - This information is provided on the enclosed List of Exempt Activities Form.
- Information necessary to define operational flexibility proposed in accordance with section 201-6.4
    - Proposed Alternate Operating Scenarios are included on the Application Forms.
- Acid rain information (if applicable)
    - This facility is not subject to acid rain provisions.
- Certification by a responsible official.
    - Provided on Application Forms.

The application includes an analysis of the Project under the nonattainment New Source Review (NSR) program (see the Project Summary and NSR Analysis). That analysis shows that the Project Emission Potential (PEP) is well below the 40 ton per year significant modification threshold for volatile organic compounds established under 6 NYCRR Part 231.

The application also includes a Part 212 Modeling Protocol outlining Global's proposed approach to analyzing emissions under 6 NYCRR Part 212.

Finally, the application package includes a Full EAF, together with a Supplement Report, which contains detailed information about the Project and its potential impacts. The Supplement Report is intended to provide DEC with the information necessary to fully understand the Project from a State Environmental Quality Review Act perspective.

As you know, during the past year Global has devoted substantial resources and time reaching out to the community and will continue to do so in accordance with the Public Participation Plan.

Should you have any questions please feel free to contact me at (518) 453-2203.

Sincerely,

Gianna Aiezza

Gianna Aiezza, PE
Principal Engineer
Envirospec Engineering, PLLC

Cc: Tom Keefe - Global

New York State Department of Environmental Conservation
Air Permit Application

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

DEC ID	Application ID	Application Type
4-0101-00112	4-0101-00112/00029	State Facility × Title V

Section I - Certification

Certification	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information required to complete this application, I believe the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.	
Responsible Official Tom Keefe	Title VP EHS Operations
Signature	Date 3-16-2020

Professional Engineer Certification	
I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments as they pertain to the practice of engineering. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.	
Professional Engineer Gianna Aiezza	NYS License No. 018422
Signature	Date 3/18/2020

Section II - Identification Information

Type of Permit Action Requested

New | Renewal | × Significant Modification | Administrative Amendment | Minor Modification

Application for the construction of a new facility | Application involves the construction of new emission unit(s)

Facility Information	
Name Global Companies LLC - Albany Terminal	
Location Address 50 Church Street - Port of Abany	
× City / Town / Village Albany	Zip 12202

Owner/Firm Information				Business Taxpayer ID
Name Global Companies LLC				043443029
Street Address 800 South Street				
City Waltham	State/Province MA	Country United States	Zip 02454	
Owner Classification: Federal	State	Municipal	× Corporation/Partnership	Individual

Owner/Firm Contact Information			
Name Tom Keefe			Phone (781) 398-4132
E-mail Address TKeefe@Globalp.com			Fax (781) 398-9212
Affiliation Global Companies LLC		Title VP EHS Operations	
Street Address 800 South Street			
City Waltham	State/Province MA	Country United States	Zip 02454

Facility Contact Information			
Name Charles Furman			Phone (518) 445-1302
E-mail Address CFurman@Globalp.com			Fax (518) 436-6788
Affiliation Global Companies LLC		Title Terminal Manager	
Street Address 50 Church Street			
City Albany	State/Province NY	Country United States	Zip 12202

New York State Department of Environmental Conservation
Air Permit Application

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

DEC ID
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Project Description ☐ Continuation Sheet(s)
See cover letter and attached project summary.

Section III - Facility Information

Facility Classification
☐ Hospital ☐ Residential ☐ Educational/Institutional ☐ Commercial ☒ Industrial ☐ Utility

Affected States (Title V Applications Only)
☒ Vermont ☒ Massachusetts ☐ Rhode Island ☐ Pennsylvania ☐ Tribal Land: ___________________
☐ New Hampshire ☒ Connecticut ☐ New Jersey ☐ Ohio ☐ Tribal Land: ___________________

SIC Code(s)			NAICS Code(s)			
5171						

Facility Description ☐ Continuation Sheet(s)
The facility is classified as a petroleum terminal consisting of storage tanks permitted for various products such as gasoline, ethanol, crude, blendstock, additive and distillate. There is a truck loading rack, a railcar loading rack, a railcar offloading facility and a marine loading dock. Gasoline/ethanol loading is controlled by a vapor recovery unit at the truck rack and vapor combustion units at the railcar rack and marine loading dock.

Compliance Statements (Title V Applications Only)

I certify that as of the date of this application the facility is in compliance with all applicable requirements. ☒ Yes ☐ No

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block on page 8 of this form along with the compliance plan information required. For all emission units at the facility that are operating <u>in compliance</u> with all applicable requirements, complete the following:

☒ This facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit, except those emission units referenced in the compliance plan portion of this application.

☒ For all emission units subject to any applicable requirements that will become effective during the term of the permit, this facility will meet such requirements on a timely basis.

☒ Compliance certification reports will be submitted at least once per year. Each report will certify compliance status with respect to each applicable requirement, and the method used to determine the status.

Facility Applicable Federal Requirements ☒ Continuation Sheet(s)

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	60	A	11					
40	CFR	60	A	11	d				
40	CFR	60	Kb	113b	a				
40	CFR	60	Kb	115b	a				

Facility State Only Requirements ☐ Continuation Sheet(s)

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	211		2					
	ECL	19	0301						
6	NYCRR	201	1	4					

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Section III - Facility Information

Facility Applicable Federal Requirements (continuation)

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	60	Kb	116b					
40	CFR	60	A	12					
40	CFR	60	A	13					
40	CFR	60	A	14					
40	CFR	60	A	15					
40	CFR	60	A	4					
40	CFR	60	XX	502	b				
40	CFR	60	XX	502	e				
40	CFR	60	XX	502	f				
40	CFR	60	XX	502	g				
40	CFR	60	XX	502	i				
40	CFR	60	A	7	a				
40	CFR	60	A	7	b				
40	CFR	60	A	7	c				
40	CFR	60	A	7	d				
40	CFR	60	A	7	e				
40	CFR	60	A	7	f				
40	CFR	60	A	7	g				
40	CFR	60	A	8	a				
40	CFR	60	A	8	b				
40	CFR	60	A	8	c				
40	CFR	60	A	8	d				
40	CFR	60	A	8	e				
40	CFR	60	A	8	f				
40	CFR	60	A	9					
40	CFR	63	BBBBBB	11081	a				
40	CFR	63	BBBBBB	11083	b				
40	CFR	63	BBBBBB	11087					
40	CFR	63	BBBBBB	11088					
40	CFR	63	BBBBBB	11089					
40	CFR	63	BBBBBB	11092	a				

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Section III - Facility Information

Facility Applicable Federal Requirements (continuation)									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	63	BBBBBB	11092	a	2			
40	CFR	63	BBBBBB	11092	a	3			
40	CFR	63	BBBBBB	11094	b				
40	CFR	63	BBBBBB	11094	c				
40	CFR	63	BBBBBB	11092	b	1	i	A	
40	CFR	63	BBBBBB	11094	d				
40	CFR	63	BBBBBB	11094	e				
40	CFR	63	BBBBBB	11094	f				
40	CFR	63	BBBBBB	11095	a				
40	CFR	63	BBBBBB	11095	b				
40	CFR	63	BBBBBB	11098					
40	CFR	63	BBBBBB	11092	b	1	iii	A	
40	CFR	68							
40	CFR	82	F						
40	CFR	64							
6	NYCRR	200		6					
6	NYCRR	200		7					
6	NYCRR	201	1	7					
6	NYCRR	201	1	8					
6	NYCRR	201	3	2	a				
6	NYCRR	201	3	3	a				
6	NYCRR	202	1	1					
6	NYCRR	202	1	2					
6	NYCRR	202	1	3	a				
6	NYCRR	202	2	1					
6	NYCRR	202	2	5					
6	NYCRR	211		1					
6	NYCRR	212	3	1	c	4	i		
6	NYCRR	215		2					
6	NYCRR	225	3	3	a				
6	NYCRR	229		1	d	2	i		

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Facility Applicable Federal Requirements (continuation)									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	229		1	d	2	iv		
6	NYCRR	229		1	d	2	v		
6	NYCRR	229		3	a				
6	NYCRR	229		3	d				
6	NYCRR	229		3	e	1			
6	NYCRR	231	11	2	c				
6	NYCRR	201	6						
6	NYCRR	201	7						
6	NYCRR	212		2					
6	NYCRR	225	1	2					
6	NYCRR	225	1	6	b				
6	NYCRR	225	1	6	c				

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Facility Compliance Certification

☒ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause

☐ Applicable Federal Requirement ☐ State Only Requirement	☐ Capping	CAS Number	Contaminant Name

Monitoring Information

☐ Work Practice Involving Specific Operations ☐ Ambient Air Monitoring ☒ Record Keeping/Maintenance Procedures

Compliance Activity Description

Work Practice Type Code	Process Material Code	Process Material Description	Reference Test Method

Monitored Parameter Code	Monitored Parameter Description	Manufacturer's Name/Model Number

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description

Facility Emissions Summary

☐ Continuation Sheet(s)

CAS Number	Contaminant Name	Potential to Emit (tons/yr)	Actual Emissions (pounds/yr)
0NY075 - 00 - 5	PM-10		
0NY750 - 02 - 5	PM-2.5		
007446 - 09 - 5	Sulfur Dioxide		
0NY210 - 00 - 0	Oxides of Nitrogen		
000630 - 08 - 0	Carbon Monoxide		
007439 - 92 - 1	Lead (elemental)		
0NY998 - 00 - 0	Total Volatile Organic Compounds		
0NY100 - 00 - 0	Total Hazardous Air Pollutants		
0NY750 - 00 - 0	Carbon Dioxide Equivalents		
	1,1 Biphenyl		
	2-Methyl-Phenol		

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

☒ Applicable Federal Requirement
☐ State Only Requirement

☒ Capping

CAS No.	Contaminant Name
0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

Facility-wide refined product throughput (blendstock, distillate, ethanol, gasoline, biodiesel) shall be limited to keep individual and total HAP emissions less than 9.5 tons/yr and 23.75 tons/yr, respectively: that is, less than the applicability thresholds of40 CFR 63, Subpart R. Refined product throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

This capping condition is applicable for 1-RACKT, RPT; 2-RACTR, RPR; 3-RACKM, RPM, BSM.

The process material selected is gasoline, however this limit applies to all refined products.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	017	Gasoline	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
1,929,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

☒ Applicable Federal Requirement
☐ State Only Requirement
☒ Capping

CAS No.	Contaminant Name
0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

Blendstock throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr: less than the applicability thresholds of 40 CFR 63, Subpart R. Blendstock throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42. Throughput limits were calculated using a Marine VCU emission rate of 2 mg/L (VCUM2), and with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Blendstock throughputs shall be included in the annual compliance report.

This capping condition is applicable for 3-RACKM, BSM.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	011	Other Liquid Fuels	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
380,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

Refined product throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr: less than the applicability thresholds of 40 CFR 63, Subpart R. Refined product throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42. Throughput limits were calculated using a Marine VCU emission rate of 2 mg/L (VCUM2), and with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Refined product throughputs shall be included in the annual compliance report.

This capping condition is applicable for 3-RACKM, RPM. The process material selected is gasoline, however this limit applies to all refined products.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	017	Gasoline	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
900,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☒ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

Crude Oil throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr; less than the applicability thresholds of 40 CFR 63, Subpart R. Crude oil throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42. Throughput limits were calculated a Marine VCU emission rate of 2 mg/L (VCUM2) with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Crude Oil throughputs shall be included in the annual report.

This capping condition is applicable for 3-RACKM, CDM.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	271	Crude Oil	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
450,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

- ☒ Applicable Federal Requirement
- ☐ State Only Requirement
- ☒ Capping

CAS No.	Contaminant Name
0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☒ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

Refined product throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr: less than the applicability thresholds of 40 CFR 63, Subpart R. Refined product throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42. Throughput limits were calculated using a Rail Vapor Combustion Unit (VCU) emission rate of 2 mg/L
with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Refined product throughputs shall be included in the annual report.

This capping condition is applicable for 2-RACKR, RPR. The process material selected is gasoline, however this limit applies to all refined products.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	017	Gasoline	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
300,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

Refined product throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr: less than the applicability thresholds of 40 CFR 63, Subpart R. The refined product throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6. Emissions for this cap were calculated using the most current version of AP-42 factors. Throughput limits were calculated using a Truck Rack Vapor Recovery Unit (VRU) emission rate of 2 mg/L with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Refined product throughputs shall be included in the annual compliance report.

This capping condition is applicable for 1-RACKT, RPT. The process material selected is gasoline, however this limit applies to all refined product.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	017	Gasoline	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
880,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

☒ Applicable Federal Requirement
☐ State Only Requirement

☒ Capping

CAS No.	Contaminant Name
0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The emissions rate of the Marine Vapor Combustion Unit (VCUM2) shall be limited to keep total HAP emissions below 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr which is less than the applicability thresholds of 40 CFR 63, Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.
VCUM2 will be operated at a maximum emission rate of 2 mg/L.

This capping condition is applicable for 3-RACKM, RPM, BSM, and CDM.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
			Method 25A or 25B, Method 21, Method 2A

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
2		318	milligrams per liter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
60	Maximum - Not to Exceed Stated Value - See Monitoring Description	14	As Required - See Permit Monitoring Description	15	Annually (Calendar)

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Facility Compliance Certification (continuation)									
Rule Citation									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☒ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

The emissions rate of the Marine Vapor Combustion Unit (VCUM1) shall be limited to keep total HAP emissions below 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr which is less than the applicability thresholds of 40 CFR 63, Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.
VCUM1 will be operated at a maximum emission rate of 10 mg/L.

This capping condition is applicable for 3-RACKM, RPM, BSM, and CDM.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
			Method 25A or 25B, Method 21, Method 2A

Parameter Code	Parameter Description	Manufacturer Name/Model No.
0NY502000	40 CFR 60-63 - Total Organic Compounds (TOC)	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
10		318	milligrams per liter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
60	Maximum - Not to Exceed Stated Value - See Monitoring Description	14	As Required - See Permit Monitoring Description	15	Annually (Calendar)

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Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

- ☒ Applicable Federal Requirement
- ☐ State Only Requirement
- ☒ Capping

CAS No.	Contaminant Name
0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☒ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

The emissions rate for the Vapor Recovery Unit (VRUTK) shall be limited to keep total HAP emissions below 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr which is less than the applicability thresholds of 40 CFR 63, Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.
VRUTK will be operated at a maximum emission rate of 2 mg/L.

This capping condition is applicable for 1-RACKT, RPT.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
			Method 25A or 25B, Method 21, Method 2A

Parameter Code	Parameter Description	Manufacturer Name/Model No.
0NY502000	40 CFR 60-63 - Total Organic Compounds (TOC)	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
2		318	milligrams per liter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
60	Maximum - Not to Exceed Stated Value - See Monitoring Description	14	As Required - See Permit Monitoring Description	15	Annually (Calendar)

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Rule Citation									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☒ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

The emissions rate of the Rail Vapor Combustion Unit (VCURR) shall be limited to keep total HAP emissions below 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr which is less than the applicability thresholds of 40 CFR 63 Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.
VCURR will be operated at a maximum emission rate of 2 mg/L.

This capping condition is applicable for 2-RACKR, RPR.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
			Method 25A or 25B, Method 21, Method 2A

Parameter Code	Parameter Description	Manufacturer Name/Model No.
0NY502000	40 CFR 60-63 - Total Organic Compounds (TOC)	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
2		318	milligrams per liter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
60	Maximum - Not to Exceed Stated Value - See Monitoring Description	14	As Required - See Permit Monitoring Description	15	Annually (Calendar)

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Rule Citation									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

☒ Applicable Federal Requirement
☐ State Only Requirement
☒ Capping

CAS No.	Contaminant Name
0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

Samples from tanks storing crude oil will be collected monthly for RVP sampling if new crude oil is introduced into the tank since the previous sample. RVP of crude oil will be limited to 12.5 psi based on an annual average. The annual average will be rolled monthly.

Records of the monthly crude oil samples taken in accordance with the Department approved protocol for RVP for tanks storing crude oil shall be kept on site for a period of five years.

This capping condition is applicable for 1-TANK1, CR1

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.
36	Reid vapor pressure	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
12.5		291	pounds per square inch

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
63	see monitoring description			15	Annually (Calendar)

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Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☒ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

The emissions rate of the vapor control devices shall be limited to keep total HAP emissions below 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr which is less than the applicability thresholds of 40 CFR 63 Subpart R. Facility wide emissions were determined using the most current AP-42 formulas. The throughput limits were calculated for various operating scenarios. For the purpose of determining compliance based on source-wide throughput of crude oil, the following equivalencies shall be used to determine compliance with alternative operating scenarios. Each kilogallon (Kgal) of crude oil is equivalent to:

Operating Scenario Loading Equivalent (Kgal) = to One (1) Kgal of Crude Oil	Crude Operating Scenario (OS)
1	#CRD1: Loading at marine dock at 2 mg/L with vac assist
0.81	#CRD2: Marine loading of inerted vessels at 2 mg/L (99.9%)
0.2	#CRD3: Marine loading with VCUM1 (10 mg/L) with vac assist

Compliance will be determined based on the following equation:

Total Throughput of refined products (kgal) = (kgal loaded from OS #1) + (kgal loaded from OS #2 / 0.81) + (kgal loaded from OS #3 / 0.2)

This capping condition is applicable for 3-RACKM - CDM, FGM.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	271	Crude Oil	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
450,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The emissions rate of the vapor control devices shall be limited to keep total HAP emissions below 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/yr which is less than the applicability thresholds of 40 CFR 63 Subpart R. Facility wide emissions were determined using the most current version of AP-42. The throughput limits were calculated for various operating scenarios.
This capping condition is applicable for refined product loading at all loading racks. The facility may load up to 1.929 billion gallons of any refined product. For the purpose of determining compliance based on source-wide throughput of gasoline, the following equivalencies shall be used to determine compliance with alternative operating scenarios. Each kilogallon (Kgal) of gasoline is equivalent to:

Operating Scenario Loading Equivalent (Kgal) = to One (1) Kgal of Gasoline	Refined Product Operating Scenario (OS)
1	#1: Loading at truck, rail and/or marine at 2 mg/L with vac assist
0.81	#2: Marine loading of inerted vessels at 2 mg/L (99.9%)
0.2	#3: Marine loading with VCUM1 (10 mg/L) with vac assist
0.2	#4: Truck loading with no vac assist (2 mg/L and 8 mg/L fugitives)
0.2	#5: Rail loading with no vac assist (2 mg/L and 8 mg/L fugitives)

Compliance will be determined based on the following equation:

Total Throughput of refined products (kgal) = (kgal loaded from OS #1) + (kgal loaded from OS #2 / 0.81) +
(kgal loaded from OS #3 / 0.2) + (kgal loaded from OS #4 / 0.2) + (kgal loaded from OS #5 / 0.2)

This capping condition is applicable for 1-RACKT - RPT, FGT, 2-RACK2R - RPR, FGR & 3-RACKM - RPM, BSM, FGM. The process material selected is gasoline, however this limit applies to all refined product.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
03	17	Gasoline	

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
1,929,000,000		15	gallons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
71	Annual Total Rolled Monthly	05	Monthly	15	Annually (Calendar)

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Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	201	7						

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☒ Capping	0NY998-00-0 and 0NY100-00-0	VOC and Total HAP

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☒ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

Tank maintenance emissions will not exceed 22 tons on a rolling annual basis.

Emissions will be calculated using the latest version of AP-42.

This capping condition is applicable for 1-TANK1, RP1, CR1, BS1

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
		34	tons

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	annual maximum rolled monthly	05	monthly	15	Annually (Calendar)

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Rule Citation									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	64							

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☐ Capping	0NY998-00-0	VOC

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☒ Monitoring of Process or Control Device Parameters as a Surrogate
- ☐ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

A CEMS is used as the continuous monitoring parameter for CAM. Daily drift checks are performed automatically by the system. Daily drift checks are used to evaluate if the CEM needs to be calibrated.

The following parameters will be monitored when the CEMS is not operational:
Indicator 1: Temperature - The temperature of the carbon bed will be monitored and recorded daily via a probe inserted in the carbon bed. If the temperature is between 175 and 200 degrees F, a second temperature reading will be obtained during the next loading cycle of that carbon bed. If the temperature exceeds 200 degrees F during a loading cycle of either carbon bed, an excursion has occurred. If the second temperature reading exceeds 175 degrees F, an excursion has occurred.
Indicator 2: Vacuum - The facility will monitor the operating vacuum of each carbon bed during a regeneration cycle once per day and manually record the vacuum.
The greatest vacuum during one regeneration cycle of each bed shall be manually recorded based on the gauge reading. The duration of the reading shall be one complete cycle. If the recorded value for either bed is less than the limit, a second reading shall be collected during the course of the net regeneration cycle of the bed, approximately 30 minutes per cycle. An excursion occurs if the operating vacuum of two consecutive regeneration cycles for a bed fails to attain at least 26" in Hg during both regeneration cycles of the bed.

The facility shall comply with 40 CFR 64.7 and 64.9. Records shall be maintained in accordance with Part 201-6.4(c)(1) and (c)(2).

This condition is applicable for VRUTK

Work Practice	Process Material		Reference Test Method
Type	Code	Description	

Parameter		Manufacturer Name/Model No.
Code	Description	

Limit		Limit Units	
Upper	Lower	Code	Description

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description
30	6-hour rolling average	03	Daily	14	Semi-Annually (Calendar)

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Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	63	BBBBBB	11092	b				

☒ Applicable Federal Requirement
☐ State Only Requirement
☐ Capping

CAS No.	Contaminant Name

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The Terminal will use a VRU with a Continuous Emissions Monitoring System (CEMS) capable of measuring organic compound concentration per 40 CFR 63.11092(b)(1)(i)(A). The average hydrocarbon outlet percent will be monitored to ensure it does not exceed a six hour average limit of 0.2 vol% propane (2000 ppm), which corresponds to the permitted limit of 2 mg/L. The averaging time is a six hour rolling average. In the event of CEMS downtime, alternative monitoring parameters will be observed in accordance with 40 CFR 63.11092(b)(1)(i)(B).

Each calendar month the vapor collection system and vapor processing system shall be inspected during loading events for total organic compounds liquid or vapor leaks. For purposes of this paragraph, sight, sound or smell are acceptable inspection/detection methods. Each detection of a leak shall be recorded and the source of the leak repaired

This condition applies to VRUTK

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
30	6-hour rolling average	03	Daily	14	Semi-Annually (Calendar)

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Rule Citation									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	64							

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☐ Capping	0NY998-00-0	VOC

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The combustion temperature shall be monitored pursuant to 40 CFR 64.3(a) by a continuous temperature monitor. The temperature monitoring device shall have an accuracy of one percent (1%) of the temperature being measured in degree Centigrade or plus or minus five tenth degree Centigrade (+/- 0.5 degrees C) whichever is greater.

The monitored operating parameter value (MOPV) shall be determined from manufacturer's guarantee until the next performance test.
An excursion occurs if the average temperature is below the MOPV as monitored by the CPMS for

any 6 hour period rolling period. The facility shall also comply with monitoring and recordkeeping requirements of 40 CFR 64.7 and 64.9. Reports shall include, at a minimum, the following information, as applicable:

A summary of the information on (1) the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and corrective actions taken; and (2) the number,
duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

The following parameters will be monitored when temperature monitoring is not operational:
Once each day, while VCUM1 is operating, the permittee will inspect the VCU for proper operation. Proper operation is that the pilot is lit for loading operations and the Ultraviolet Flame detection equipment indicates the presence of a flame. An excursion occurs if the product is being loaded without the pilot flame being lit.

This condition is applicable for VCUM1

Work Practice	Process Material		Reference Test Method
Type	Code	Description	
	128	VOC	

Parameter		Manufacturer Name/Model No.
Code	Description	
03	Temperature	

Limit		Limit Units	
Upper	Lower	Code	Description
		44	degrees Fahrenheit

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description
30	6-hr Rolling Average	14	As Required - See permit monitoring description	15	Annually (Calendar)

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Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	64							

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☐ Capping	0NY998-00-0	VOC

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☒ Monitoring of Process or Control Device Parameters as a Surrogate
- ☐ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

The combustion temperature shall be monitored pursuant to 40 CFR 64.3(a) by a continuous temperature monitor. The temperature monitoring device shall have an accuracy of one percent (1%) of the temperature being measured in degree Centigrade or plus or minus five tenth degree Centigrade (+/- 0.5 degrees C) whichever is greater.

The monitored operating parameter value (MOPV) shall be determined from manufacturer's guarantee until the next performance test .

An excursion occurs if the average temperature is below the MOPV as monitored by the CPMS for any 6 hour period rolling period. The facility shall also comply with monitoring and recordkeeping requirements of 40 CFR 64.7 and 64.9. Reports shall include, at a minimum, the following information, as applicable:
A summary of the information on (1) the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and corrective actions taken; and (2) the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

The following parameters will be monitored when temperature monitoring is not operational:
Once each day, while VCUM2 is operating, the permittee will inspect the VCU for proper operation. Proper operation is that the pilot is lit for loading operations and the Ultraviolet Flame detection equipment indicates the presence of a flame. An excursion occurs if the product is being loaded without the pilot flame being lit.

This condition is applicable for VCUM2

Work Practice	Process Material		Reference Test Method
Type	Code	Description	
	128	VOC	

Parameter		Manufacturer Name/Model No.
Code	Description	
03	Temperature	

Limit		Limit Units	
Upper	Lower	Code	Description
		44	degrees Fahrenheit

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description
30	6-hr Rolling Average	14	As Required - See permit monitoring description	15	Annually (Calendar)

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Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	63	BBBBBB	11092	b				

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☐ Capping	0NY998-00-0	VOC

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☒ Record Keeping/Maintenance Procedures

Description

The Terminal will begin using a Continuous Monitoring System (CMS) capable of measuring temperature per 40 CFR 63.11092(b)(1)(iii)(A). The compliance temperature will be determined from the manufacturer's guarantee until the next performance test at which time it will be determined from the test. The Terminal will follow Alternative Monitoring for compliance per 40 CFR 63.11092(b)(1)(iii)(B) in the event of CPMS downtime.

The averaging time is a six hour rolling average.

Each calendar month, the vapor collection system and vapor processing system shall be inspected during loading events for total organic compounds liquid or vapor leaks. For purposes of this paragraph, sight, sound or smell are acceptable inspection/detection methods. Each detection of a leak shall be recorded and the source of the leak repaired

This condition applies to VCURR

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
30	6-hour rolling average	03	Daily	14	Semi-Annually (Calendar)

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Facility Compliance Certification (continuation)									
Rule Citation									
Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	64							

		CAS No.	Contaminant Name
☒ Applicable Federal Requirement ☐ State Only Requirement	☐ Capping	0NY998-00-0	VOC

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☒ Monitoring of Process or Control Device Parameters as a Surrogate
- ☐ Work Practice Involving Specific Operations
- ☐ Record Keeping/Maintenance Procedures

Description

The combustion temperature shall be monitored pursuant to 40 CFR 64.3(a) by a continuous temperature monitor. The temperature monitoring device shall have an accuracy of one percent (1%) of the temperature being measured in degree Centigrade or plus or minus five tenth degree Centigrade (+/- 0.5 degrees C) whichever is greater.
The monitored operating parameter value (MOPV) shall be determined from the manufacturer's guarantee until the next performance test .
An excursion occurs if the average temperature is below the MOPV as monitored by the CPMS for any 6 hour period rolling period. The facility shall also comply with monitoring and recordkeeping requirements of 40 CFR 64.7 and 64.9. Reports shall include, at a minimum, the following information, as applicable:

A summary of the information on (1) the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and corrective actions taken; and (2) the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

The following parameters will be monitored when temperature monitoring is not operational:
Once each day, while the Rail Vapor Combustion Unit (VCURR) is operating, the permittee will inspect the VCU for proper operation. Proper operation is that the pilot is lit for loading operations and the Ultraviolet Flame detection equipment indicates the presence of a flame. An excursion occurs if the product is being loaded without the pilot flame being lit.

This condition is applicable for VCURR

Work Practice	Process Material		Reference Test Method
Type	Code	Description	
	128	VOC	

Parameter		Manufacturer Name/Model No.
Code	Description	
03	Temperature	

Limit		Limit Units	
Upper	Lower	Code	Description
		44	degrees Fahrenheit

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description
30	6-hr Rolling Average	14	As Required - See permit monitoring description	15	Annually (Calendar)

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Section IV - Emission Unit Information

Emission Unit Description	☒ Continuation Sheet(s)
Emission Unit	1-TANK1

This emission unit represents storage tanks at the facility.

Building Information				☐ Continuation Sheet(s)
Building ID	Building Name	Length (ft)	Width (ft)	Orientation

Emission Unit	Emission Unit Emissions Summary			☒ Continuation Sheet(s)
-				
CAS Number	Contaminant Name			
0NY998-00-0	VOC			
ERP (lbs/yr)	Potential to Emit		Actual Emissions	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS Number	Contaminant Name			
ERP (lbs/yr)	Potential to Emit		Actual Emissions	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS Number	Contaminant Name			
ERP (lbs/yr)	Potential to Emit		Actual Emissions	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS Number	Contaminant Name			
ERP (lbs/yr)	Potential to Emit		Actual Emissions	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)

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Emission Point Information

☒ Continuation Sheet(s)

Emission Point	00T31					
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	45		1,500			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
		602.056	4720.645			
Emission Point	00T32					
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	45		1,500			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
		602.056	4720.645			
Emission Point	00T39					
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	45		1,500			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
		602.056	4720.645			

Emission Source/Control Information

☒ Continuation Sheet(s)

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model Number
TK031	I				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
4,200,000	15	gallons				

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model Number
TK032	I				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
4,200,000	15	gallons				

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model Number
TK039	I				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
4,200,000	15	gallons	091	Floating Roof		

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Section IV - Emission Unit Information

Emission Point Information (continuation)

Emission Unit	1-TANK1			Emission Point	0T114	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		1,440			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.833	4720.724			

Emission Unit	1-TANK1			Emission Point	0T115	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		1,800			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.833	4720.724			

Emission Unit	1-TANK1			Emission Point	0T117	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		1,320			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.833	4720.724			

Emission Unit	1-TANK1			Emission Point	0T118	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		1,200			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.694	4270.675			

Emission Unit	1-TANK1			Emission Point	0T119	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		960			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.762	4720.654			

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Emission Point Information (continuation)						
Emission Unit	1-TANK1				Emission Point	0T120
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		960			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.924	4720.601			
Emission Unit	1-TANK1				Emission Point	0T121
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		1,800			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.833	4720.724			
Emission Unit	1-TANK1				Emission Point	0T130
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	48		900			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		602.053	4720.551			
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

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Emission Source/Control (continuation)							
Emission Unit	1-TANK1						
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK114	I						
Design Capacity	Design Capacity Units Code	Design Capacity Units Description		Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
3,887,898	15	gallons					
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK115	I						
Design Capacity	Design Capacity Units Code	Design Capacity Units Description		Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
5,851,902	15	gallons					
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK117	I						
Design Capacity	Design Capacity Units Code	Design Capacity Units Description		Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
3,028,032	15	gallons					
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK118	I						
Design Capacity	Design Capacity Units Code	Design Capacity Units Description		Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
2,426,550	15	gallons					
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK119	I						
Design Capacity	Design Capacity Units Code	Design Capacity Units Description		Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
1,619,268	15	gallons					
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK120	I						
Design Capacity	Design Capacity Units Code	Design Capacity Units Description		Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
1,640,940	15	gallons					

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Emission Source/Control (continuation)

Emission Unit: 1-TANK1

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK121	I						

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
5,370,204	15	gallons				

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK130	I						

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
1,512,714	15	gallons				

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK31C	K				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK32C	K				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
TK39C	K				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
T114C	K				091	Floating Roof	

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

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Section IV - Emission Unit Information

Emission Source/Control (continuation)							
Emission Unit	1-TANK1						
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.
ID	Type				Code	Description	
T115C	K				091	Floating Roof	
Design Capacity	Design Capacity Units		Waste Feed		Waste Type		
	Code	Description	Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.
ID	Type				Code	Description	
T117C	K				091	Floating Roof	
Design Capacity	Design Capacity Units		Waste Feed		Waste Type		
	Code	Description	Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.
ID	Type				Code	Description	
T118C	K				091	Floating Roof	
Design Capacity	Design Capacity Units		Waste Feed		Waste Type		
	Code	Description	Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.
ID	Type				Code	Description	
T119C	K				091	Floating Roof	
Design Capacity	Design Capacity Units		Waste Feed		Waste Type		
	Code	Description	Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.
ID	Type				Code	Description	
T120C	K				091	Floating Roof	
Design Capacity	Design Capacity Units		Waste Feed		Waste Type		
	Code	Description	Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.
ID	Type				Code	Description	
T121C	K				091	Floating Roof	
Design Capacity	Design Capacity Units		Waste Feed		Waste Type		
	Code	Description	Code	Description	Code	Description	

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Section IV - Emission Unit Information

Emission Source/Control (continuation)								
Emission Unit	1-TANK1							
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
T130C	K				091	Floating Roof		
Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description		
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description		
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description		
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description		
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description		
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description		

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Process Information

☒ Continuation Sheet(s)

Emission Unit	1-TANK1	Process	RP1

Process Description

Refined product storage tanks used for storage and distribution of refined products (gasoline, ethanol, distillate).

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
4-03-010-99				

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hours/Day	Days/Year		

Emission Point Identifier(s)

00T31, 00T32	00T39, 0T114	0T115, 0T117	0T118	0T119	0T120	0T121

Emission Source/Control Identifier(s)

TK031, TK31C	TK032, TK32C	TK039, TK39C	TK114, T114C	TK115, T115C	TK117, T117C	TK118, T118C
TK119, T119C	TK120, T120C	TK121, T121C				

Emission Unit	1-TANK1	Process	BS1

Process Description

Blendstock storage tanks used for storage and distribution of blendstock.

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
4-03-010-99				

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hours/Day	Days/Year		

Emission Point Identifier(s)

0T114	0T115	0T117	0T119	0T121		

Emission Source/Control Identifier(s)

TK114	TK115	TK117	TK119	TK121		
T114C	T115C	T117C	T119C	T121C		

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Section IV - Emission Unit Information

Process Information (continuation)

Emission Unit	1-TANK1	Process	CR1

Description

Crude Oil storage tanks used for storage and distribution of crude oil.

Source Classification Code (SCC)	Total Throughput Quantity/Hr	Total Throughput Quantity/Yr	Throughput Quantity Units Code	Throughput Quantity Units Description
4-03-010-99				

☐ Confidential ☐ Operating at Maximum Capacity	Operating Schedule Hrs/Day	Operating Schedule Days/Yr	Building	Floor/Location

Emission Point Identifier(s)

00T31, 00T32	00T39, 0T114	0T115, 0T117	0T118	0T119	0T120	0T121

Emission Source/Control Identifier(s)

TK031, TK31C	TK032, TK32C	TK039, TK39C	TK114, T114C	TK115, T115C	TK117, T117C	TK118, T118C
TK119, T119C	TK120, T120C	TK121, T121C				

Emission Unit	1-TANK1	Process	PCW

Description

Wastewater tank contaminated with gasoline/distillate.

Source Classification Code (SCC)	Total Throughput Quantity/Hr	Total Throughput Quantity/Yr	Throughput Quantity Units Code	Throughput Quantity Units Description

☐ Confidential ☐ Operating at Maximum Capacity	Operating Schedule Hrs/Day	Operating Schedule Days/Yr	Building	Floor/Location

Emission Point Identifier(s)

0T130						

Emission Source/Control Identifier(s)

TK130	T130C					

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Emission Unit Description (continuation)	
Emission Unit	1-RACKT

Truck loading rack

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Emission Point Information (continuation)

Emission Unit	1-RACKT				Emission Point	0TRK1
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
17	19	0	12			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		602.004	4720.713			

Emission Unit	1-RACKT				Emission Point	0TRK2
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

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Section IV - Emission Unit Information

Emission Source/Control (continuation)

Emission Unit: 1 - R A C K T

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
RACKT	I						Truck Rack

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
880,000,000	18	gallons per year				

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
VRUTK	K	06/01/1990	08/01/1990		047	Vapor Recovery Sys	Zink Model AA 1218-11-7

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
VACTK	K						Vac Assist

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

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Section IV - Emission Unit Information

Process Information (continuation)			
Emission Unit	1-RACKT	Process	RPT

Description

Emissions from loading refined products at Truck Rack.

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
4-04-001-53				

☐ Confidential
☐ Operating at Maximum Capacity

Operating Schedule		Building	Floor/Location
Hrs/Day	Days/Yr		

Emission Point Identifier(s)

0TRK1						

Emission Source/Control Identifier(s)

RACKT	VRUTK					

Emission Unit	1-RACKT	Process	FGT

Description

Fugitive emissions from loading trucks at Truck Rack.

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
4-04-001-51				

☐ Confidential
☐ Operating at Maximum Capacity

Operating Schedule		Building	Floor/Location
Hrs/Day	Days/Yr		

Emission Point Identifier(s)

0TRK2						

Emission Source/Control Identifier(s)

RACKT	VACTK					

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Section IV - Emission Unit Information

Emission Unit Description (continuation)	
Emission Unit	2-RACKR

Rail loading rack.

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Emission Point Information (continuation)

Emission Unit	2-RACKR			Emission Point	0RRK1	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
19	37	0	90			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.86	4620.358			

Emission Unit	2-RACKR			Emission Point	0RRK2	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-			Emission Point		
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-			Emission Point		
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

Emission Unit	-			Emission Point		
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

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Section IV - Emission Unit Information

Emission Source/Control (continuation)								
Emission Unit	2-RACKR							
Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
RACKR	I	01/01/1975	01/01/1975				Rail Rack	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
300,000,000	18	gallons per year						
Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
VCURR	K	01/01/1975	01/01/1975		127	Thermal Oxidation		
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
VACRR	K						vac assist	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

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Section IV - Emission Unit Information

Process Information (continuation)

Emission Unit	2-RACKR	Process	RPR

Description

Emissions associated with loading refined product into rail cars at Rail Rack.

Source Classification Code (SCC)	Total Throughput Quantity/Hr	Quantity/Yr	Throughput Quantity Units Code	Description
4-04-001-53				

☐ Confidential
☐ Operating at Maximum Capacity

Operating Schedule Hrs/Day	Days/Yr	Building	Floor/Location

Emission Point Identifier(s)

0RRK1						

Emission Source/Control Identifier(s)

RACKR	VCURR					

Emission Unit	2-RACKR	Process	FGR

Description

Emissions associated with fugitive emissions from loading rail cars at Rail Rack.

Source Classification Code (SCC)	Total Throughput Quantity/Hr	Quantity/Yr	Throughput Quantity Units Code	Description
4-04-001-51				

☐ Confidential
☐ Operating at Maximum Capacity

Operating Schedule Hrs/Day	Days/Yr	Building	Floor/Location

Emission Point Identifier(s)

0RRK2						

Emission Source/Control Identifier(s)

RACKR	VACRR					

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Section IV - Emission Unit Information

Emission Unit Description (continuation)	
Emission Unit	3-RACKM

Marine loading of refined products and crude oil at the marine dock.

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Section IV - Emission Unit Information

Emission Point Information (continuation)						
Emission Unit	3-RACKM				Emission Point	0MDR1
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	36		72			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		601.833	4720.724			
Emission Unit	3-RACKM				Emission Point	0MDR2
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	36		72			
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
		602.056	4720.645			
Emission Unit	3-RACKM				Emission Point	0MDR3
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

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Section IV - Emission Unit Information

Emission Source/Control (continuation)							
Emission Unit	3-RACKM						
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
RACKM	I						Marine Dock
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code / Description
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
VCUM1	K				127	Thermal Oxidation	
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code / Description
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
VCUM2	K				127	Thermal Oxidation	Zink ZCM-2-6-35-X-2
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code / Description
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
VACMD	K						vac assist
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code / Description
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code / Description
Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
Design Capacity	Design Capacity Units Code	Design Capacity Units Description			Waste Feed Code	Waste Feed Description	Waste Type Code / Description

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Section IV - Emission Unit Information

Process Information (continuation)

Emission Unit	3-RACKM	Process	RPM

Description

Emissions from loading refined products into marine vessels.

Source Classification Code (SCC)	Total Throughput Quantity/Hr	Total Throughput Quantity/Yr	Throughput Quantity Units Code	Throughput Quantity Units Description
4-06-002-98				

☐ Confidential
☐ Operating at Maximum Capacity

Operating Schedule Hrs/Day	Operating Schedule Days/Yr	Building	Floor/Location

Emission Point Identifier(s)

0MDR1	0MDR2					

Emission Source/Control Identifier(s)

RACKM	VCUM1	VCUM2				

Emission Unit	3-RACKM	Process	BSM

Description

Emissions from loading blendstock into marine vessels.

Source Classification Code (SCC)	Total Throughput Quantity/Hr	Total Throughput Quantity/Yr	Throughput Quantity Units Code	Throughput Quantity Units Description
4-06-002-98				

☐ Confidential
☐ Operating at Maximum Capacity

Operating Schedule Hrs/Day	Operating Schedule Days/Yr	Building	Floor/Location

Emission Point Identifier(s)

0MDR1	0MDR2					

Emission Source/Control Identifier(s)

RACKM	VCUM1	VCUM2				

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Section IV - Emission Unit Information

Process Information (continuation)

Emission Unit	3-RACKM	Process	CDM

Description

Emissions from loading crude oil into marine vessels.

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
4-06-002-98				

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hrs/Day	Days/Yr		

Emission Point Identifier(s)

0MDR1	0MDR2					

Emission Source/Control Identifier(s)

RACKM	VCUM1	VCUM2				

Emission Unit	3-RACKM	Process	FGM

Description

Emissions associated with fugitive emissions from loading marine vessels at dock.

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
4-04-001-51				

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hrs/Day	Days/Yr		

Emission Point Identifier(s)

0MDR3						

Emission Source/Control Identifier(s)

RACKM	VACMD					

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Section IV - Emission Unit Information

Emission Unit Description (continuation)	
Emission Unit	1-FUGTV

Facility-wide fugitive emissions from pumps, valves, and misc appurtenances.

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Section IV - Emission Unit Information

Emission Point Information (continuation)						
Emission Unit	1-FUGTV				Emission Point	EPFUG
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal
Emission Unit	-				Emission Point	
Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (km)	NYTM (N) (km)	Building	Distance to Property Line (ft)	Date of Removal

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Section IV - Emission Unit Information

Emission Source/Control (continuation)

Emission Unit: 1-FUGTV

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
FUGTV	I						Facility Wide Fugitives

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

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Section IV - Emission Unit Information

Process Information (continuation)						
Emission Unit	1-FUGTV				Process	FUG
Description						
Facility-wide emissions from pumps, valves, flanges, and misc appurtenances.						

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hrs/Day	Days/Yr		

Emission Point Identifier(s)						
EPFUG						

Emission Source/Control Identifier(s)						
FUGTV						

Emission Unit	-		Process	
Description				

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hrs/Day	Days/Yr		

Emission Point Identifier(s)						

Emission Source/Control Identifier(s)						

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Determination of Non-Applicability (Title V Applications Only) ☐ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause

Emission Unit	Emission Point	Process	Emission Source	
				Applicable Federal Requirement State Only Requirement

Non-Applicability Description

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause

Emission Unit	Emission Point	Process	Emission Source	
				Applicable Federal Requirement State Only Requirement

Non- Applicability Description

Compliance Plan ☐ Continuation Sheet(s)

For any emission units which are <u>not in compliance</u> at the time of permit application, the applicant shall complete the following:

Consent Order		Certified progress reports are to be submitted every 6 months beginning / /

Emission Unit	Process	Emission Source	Applicable Federal Requirement									
			Title	Type	Part	Subpart	Section	Subdiv.	Parag.	Subparag.	Clause	Subcl.

Remedial Measures and Intermediate Milestones	R/I	Date Scheduled

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Supporting Documentation and Attachments	
Required Supporting Documentation	**Date of Document**
☒ List of Exempt Activities (attach form)	
☒ Plot Plan	
☒ Process Flow Diagram	
☒ Methods Used to Determine Compliance (attach form)	
☒ Emissions Calculations	
Optional Supporting Documentation	**Date of Document**
☒ Air Quality Model Protocol	
☐ Confidentiality Justification	
☐ Ambient Air Quality Monitoring Plan or Reports	
☐ Stack Test Protocol	
☐ Stack Test Report	
☐ Continuous Emissions Monitoring Plan	
☐ Lowest Achievable Emission Rate (LAER) Demonstration	
☐ Best Available Control Technology (BACT) Demonstration	
☐ Reasonably Available Control Technology (RACT) Demonstration	
☐ Toxic Impact Assessment (TIA)	
☐ Environmental Rating Demonstration	
☐ Operational Flexibility Protocol/Description of Alternate Operating Scenarios	
☐ Title IV Permit Application	
☐ Emission Reduction Credit (ERC) Quantification (attach form)	
☐ Baseline Period Demonstration	
☐ Use of Emission Reduction Credits (attach form)	
☐ Analysis of Contemporaneous Emissions Increase/Decrease	
Other Supporting Documentation	**Date of Document**

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List of Exempt Activities

Instructions
Applicants for Title V facility permits must provide a listing of each exempt activity, as described in 6 NYCRR Part 201-3.2(c), that is currently operated at the facility. This form provides a means to fulfill this requirement. In order to complete this form, enter the number and building location of each exempt activity. Building IDs used on this form should match those used in the Title V permit application. If a listed activity is not operated at the facility, leave the corresponding information blank.

Combustion

Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(1)	Stationary or portable combustion installations where the furnace has a maximum heat input capacity less than 10 mmBtu/hr burning fuels other than coal or wood; or a maximum heat input capacity of less than 1 mmBtu/hr burning coal or wood. This activity does not include combustion installations burning any material classified as solid waste, as defined in 6 NYCRR Part 360, or waste oil, as defined in 6 NYCRR Subpart 225-2.	11	2 existing furnaces, 3 existing boilers, 6 new boilers
(2)	Space heaters burning waste oil at automotive service facilities, as defined in 6 NYCRR Subpart 225-2, generated on-site or at a facility under common control, alone or in conjunction with used oil generated by a do-it-yourself oil changer as defined in 6 NYCRR Subpart 374-2.		
(3)(i)	Stationary or portable internal combustion engines that are liquid or gaseous fuel powered and located within the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury, and have a maximum mechanical power rating of less than 200 brake horsepower.		
(3)(ii)	Stationary or portable internal combustion engines that are liquid or gaseous fuel powered and located outside of the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury, and have a maximum mechanical power rating of less than 400 brake horsepower.		
(3)(iii)	Stationary or portable internal combustion engines that are gasoline powered and have a maximum mechanical power rating of less than 50 brake horsepower.		
(4)	Reserved.		
(5)	Gas turbines with a heat input at peak load less then 10 mmBtu/hour		

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(6)	Emergency power generating stationary internal combustion engines, as defined in 6 NYCRR Part 200.1(cq), and engine test cells at engine manufacturing facilities that are utilized for research and development, reliability performance testing, or quality assurance performance testing. Stationary internal combustion engines used for peak shaving and/or demand response programs are not exempt.	6	Existing Generators
Combustion Related			
(7)	Non-contact water cooling towers and water treatment systems for process cooling water and other water containers designed to cool, store or otherwise handle water that has not been in direct contact with gaseous or liquid process streams.		
Agricultural			
(8)	Feed and grain milling, cleaning, conveying, drying and storage operations including grain storage silos, where such silos exhaust to an appropriate emissions control device, excluding grain terminal elevators with permanent storage capacities over 2.5 million U.S. bushels, and grain storage elevators with capacities above one million bushels.		
(9)	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.		
Commercial - Food Service Industries			
(10)	Flour silos at bakeries, provided all such silos are exhausted through an appropriate emission control device.		
(11)	Emissions from flavorings added to a food product where such flavors are manually added to the product.		
Commercial - Graphic Arts			
(12)	Screen printing inks/coatings or adhesives which are applied by a hand-held squeegee. A hand-held squeegee is one that is not propelled though the use of mechanical conveyance and is not an integral part of the screen printing process.		
(13)	Graphic arts processes at facilities located outside the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury whose facility-wide total emissions of volatile organic compounds from inks, coatings, adhesives, fountain solutions and cleaning solutions are less than three tons during any 12-month period.		

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4	-	0	1	0	1	-	0	0	1	1	2

Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(14)	Graphic label and/or box labeling operations where the inks are applied by stamping or rolling.		
(15)	Graphic arts processes which are specifically exempted from regulation under 6 NYCRR Part 234, with respect to emissions of volatile organic compounds which are not given an A rating as described in 6 NYCRR Part 212.		
Commercial - Other			
(16)	Gasoline dispensing sites registered with the department pursuant to 6 NYCRR Part 612.		
(17)	Surface coating and related activities at facilities which use less than 25 gallons per month of total coating materials, or with actual volatile organic compound emissions of 1,000 pounds or less from coating materials in any 12-month period. Coating materials include all paints and paint components, other materials mixed with paints prior to application, and cleaning solvents, combined. This exemption is subject to the following: (i) The facility is located outside of the New York City metropolitan area or the Orange County towns of Blooming Grove, Chester, Highlands, Monroe, Tuxedo, Warwick, or Woodbury; and (ii) All abrasive cleaning and surface coating operations are performed in an enclosed building where such operations are exhausted into appropriate emission control devices.		
(18)	Abrasive cleaning operations which exhaust to an appropriate emission control device.		
(19)	Ultraviolet curing operations.		
Municipal/Public Health Related			
(20)	Landfill gas ventilating systems at landfills with design capacities less than 2.5 million megagrams (3.3 million tons) and 2.5 million cubic meters (2.75 million cubic yards), where the systems are vented directly to the atmosphere, and the ventilating system has been required by, and is operating under, the conditions of a valid 6 NYCRR Part 360 permit, or order on consent.		
Storage Vessels			
(21)	Distillate fuel oil, residual fuel oil, and liquid asphalt storage tanks with storage capacities below 300,000 barrels.	5	Tanks 28, 29, 30, 33 and 64

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(22)	Pressurized fixed roof tanks which are capable of maintaining a working pressure at all times to prevent emissions of volatile organic compounds to the outdoor atmosphere.		
(23)	External floating roof tanks which are of welded construction and are equipped with a metallic-type shoe primary seal and a secondary seal from the top of the shoe seal to the tank wall.		
(24)	External floating roof tanks which are used for the storage of a petroleum or volatile organic liquid with a true vapor pressure less than 4.0 psi (27.6 kPa), are of welded construction and are equipped with one of the following: (i) a metallic-type shoe seal; (ii) a liquid-mounted foam seal; (iii) a liquid-mounted liquid-filled type seal; or (iv) equivalent control equipment or device.		
(25)	Storage tanks, including petroleum liquid storage tanks as defined in 6 NYCRR Part 229, with capacities less than 10,000 gallons, except those subject to 6 NYCRR Part 229 or Part 233.		
(26)	Horizontal petroleum or volatile organic liquid storage tanks.	14	Additive Tks
(27)	Storage silos storing solid materials, provided all such silos are exhausted through an appropriate emission control device. This exemption does not include raw material, clinker, or finished product storage silos at Portland cement plants.		
Industrial			
(28)	Processing equipment at existing sand and gravel and stone crushing plants which were installed or constructed before August 31, 1983, where water is used for operations such as wet conveying, separating, and washing. This exemption does not include processing equipment at existing sand and gravel and stone crushing plants where water is used for dust suppression.		
(29)(i)	Sand and gravel processing or crushed stone processing lines at a non-metallic mineral processing facility that are a permanent or fixed installation with a maximum rated processing capacity of 25 tons of minerals per hour or less.		

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(29)(ii)	Sand and gravel processing or crushed stone processing lines at a non-metallic mineral processing facility that are a portable emission source with a maximum rated processing capacity of 150 tons of minerals per hour or less.		
(29)(iii)	Sand and gravel processing or crushed stone processing lines at a non-metallic mineral processing facility that are used exclusively to screen minerals at a facility where no crushing or grinding takes place.		
(30)	Reserved.		
(31)	Surface coating operations which are specifically exempted from regulation under 6 NYCRR Part 228, with respect to emissions of volatile organic compounds which are not given an A rating pursuant to 6 NYCRR Part 212.		
(32)	Pharmaceutical tablet branding operations.		
(33)	Thermal packaging operations, including, but not limited to, therimage labeling, blister packing, shrink wrapping, shrink banding, and carton gluing.		
(34)	Powder coating operations.		
(35)	All tumblers used for the cleaning and/or deburring of metal products without abrasive blasting.		
(36)	Presses used exclusively for molding or extruding plastics except where halogenated carbon compounds or hydrocarbon solvents are used as foaming agents.		
(37)	Concrete batch plants where the cement weigh hopper and all bulk storage silos are exhausted through fabric filters, and the batch drop point is controlled by a shroud or other emission control device.		
(38)	Cement storage operations not located at Portland cement plants where materials are transported by screw or bucket conveyors.		
(39)(i)	Cold cleaning degreasers with an open surface area of 11 square feet or less and an internal volume of 93 gallons or less or, having an organic solvent loss of 3 gallons per day or less.		
39(ii)	Cold cleaning degreasers that use a solvent with a VOC content or five percent or less by weight, unless subject to the requirements of 40 CFR 63 Subpart T.		

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Rule Citation 201-3.2(c)	Description	Number of Activities	Building Location
(39)(iii)	Conveyorized degreasers with an air/vapor interface smaller than 22 square feet (2 square meters), unless subject to the requirements of 40 CFR 63 Subpart T.		
(39)(iv)	Open-top vapor degreasers with an open-top area smaller than 11 square feet (1 square meter), unless subject to the requirements of 40 CFR 63 Subpart T.		
Miscellaneous			
(40)	Ventilating and exhaust systems for laboratory operations. Laboratory operations do not include processes having a primary purpose to produce commercial quantities of materials.	1	Testing Lab
(41)	Exhaust or ventilating systems for the melting of gold, silver, platinum and other precious metals.		
(42)	Exhaust systems for paint mixing, transfer, filling or sampling and/or paint storage rooms or cabinets, provided the paints stored within these locations are stored in closed containers when not in use.		
(43)	Exhaust systems for solvent transfer, filling or sampling, and/or solvent storage rooms provided the solvent stored within these locations are stored in containers when not in use.		
(44)	Research and development activities, including both stand-alone and activities within a major facility, until such time as the administrator completes a rule making to determine how the permitting program should be structured for these activities.		
(45)	The application of odor counteractants and/or neutralizers.		
(46)	Hydrogen fuel cells.		
(47)	Dry cleaning equipment that uses only water-based cleaning processes or those using liquid carbon dioxide.		
(48)	Manure spreading, handling and storage at farms and agricultural facilities.		

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Methods Used to Determine Compliance

Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
FACILITY	6 NYCRR 200.6	No emissions contravened any applicable ambient air quality standard	In compliance as of March 2020
FACILITY	6 NYCRR 200.7	VCU Inspections, preventative maintenance records	In compliance as of March 2020
FACILITY	6 NYCRR 201-1.7	Wastes generated from air cleaning devices are managed in accordance with NYSDEC rules regarding hazardous and non hazardous wastes	In compliance as of March 2020
FACILITY	6 NYCRR 201-1.8	Wastes generated from air cleaning devices were managed in accordance with NYSDEC rules regarding hazardous and non hazardous wastes	In compliance as of March 2020
FACILITY	6 NYCRR 201-3.2 (a)	Exempt and Trivial Source Inventory	In compliance as of March 2020
FACILITY	6 NYCRR 201-3.3 (a)	Exempt and Trivial Source Inventory	In compliance as of March 2020
FACILITY	6 NYCRR Subpart 201-6	Review definitions	In compliance as of March 2020
FACILITY	6 NYCRR Subpart 201-6	Review permit emission unit definitions	In compliance as of March 2020
FACILITY	6 NYCRR Subpart 201-6	Review definitions	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (a) (4)	Requested information was provided in a reasonable timeframe	In compliance as of March 2020

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Methods Used to Determine Compliance

Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
FACILITY	6 NYCRR 201-6.5 (a) (7)	Accounting System	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (a) (8)	Global will allow access to the Department or authorized representative	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (c)	Any deviations are reported in semiannual reports.	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (c) (2)	Specific records kept include VCU Inspection Records / Annual and Semi Annual Reports/throughput records, Certificates of Analyses, Annual Emissions Statements, Bills of Lading	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (c) (3) (ii)	Semiannual Monitoring and Deviation Reports	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (d) (5)	Schedule of Compliance progress reports are submitted as required	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (e)	Annual Compliance Report and Certification	In compliance as of March 2020
FACILITY	6 NYCRR 201-6.5 (f) (6)	Off permit notifications are submitted as required	In compliance as of March 2020
FACILITY	6 NYCRR Subpart 201-7	Emissions Statement and 12 month rolling throughput spreadsheet	In compliance as of March 2020
3-RACKM, RPM, CRD, BSM, VCUM1	6 NYCRR Subpart 201-7	VCU Performance Test Report	In compliance as of March 2020

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
3-RACKM, RPM, CRD, BSM, VCUM2	6 NYCRR Subpart 201-7	VCU Performance Test Report	In compliance as of March 2020
1-RACKT, RPT, VRUTK	6 NYCRR Subpart 201-7	VRU Performance Test Report	In compliance as of March 2020
2-RACKR, RPR, VCURR	6 NYCRR Subpart 201-7	VCU Performance Test Report	In compliance as of March 2020
1-RACKT, RPT, VRUTK	6 NYCRR Subpart 201-7	VRU Inspections, CEMS Data preventative maintenance records	In compliance as of March 2020
2-RACKR, RPR, VCURR	6 NYCRR Subpart 201-7	VCU Inspections, preventative maintenance records, Performance Test Reports	In compliance as of March 2020
1-TANK1, CR1	6 NYCRR Subpart 201-7	Terminal Records / Product Information	In compliance as of March 2020
2-RACKR, RPR	6 NYCRR Subpart 201-7	Throughput records maintained at terminal	In compliance as of March 2020
3-RACKM, CDM	6 NYCRR Subpart 201-7	Throughput records maintained at terminal	In compliance as of March 2020
3-RACKM, BSM	6 NYCRR Subpart 201-7	Throughput records maintained at terminal	In compliance as of March 2020
1-RACKT, 2-RACKR, 3-RACKM	6 NYCRR Subpart 201-7	Throughput records maintained at terminal	In compliance as of March

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
3-RACKM, RPM	6 NYCRR Subpart 201-7	Throughput records maintained at terminal	In compliance as of March 2020
1-RACKT, RPT	6 NYCRR Subpart 201-7	Throughput records maintained at terminal	In compliance as of March 2020
FACILITY	6 NYCRR 202-1.2	Notification of Performance Test are submitted as necessary	In compliance as of March 2020
FACILITY	6 NYCRR 202-1.3 (a)	Performance Test Reports are submitted within 60 days of a test	In compliance as of March 2020
FACILITY	6 NYCRR 202-2.1	Annual Emission Statement	In compliance as of March 2020
FACILITY	6 NYCRR 202-2.5	Emissions Statement and supporting documents are available for >5 years.	In compliance as of March 2020
FACILITY	6 NYCRR 211.1	General ambient air quality monitoring procedures	In compliance as of March 2020
3-RACKM, RPM, VCUM1	6 NYCRR 212.4 (a)	Performance Test Report	In compliance as of March 2020
FACILITY	6 NYCRR 212.10 (c) (4) (i)	Performance Test	In compliance as of March 2020
FACILITY	6 NYCRR 215.2	No open burning occurred at the Facility	In compliance as of March 2020

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
FACILITY	6 NYCRR 225-1.2 (a) (2)	Certificates of Analysis / Product information (Maintained at Terminal)	In compliance as of March 2020
FACILITY	6 NYCRR 225-1.6 (b)	Certificates of Analysis	In compliance as of March 2020
FACILITY	6 NYCRR 225-1.6 (d)	Samples are taken according to ASTM or other applicable standards	In compliance as of March 2020
FACILITY	6 NYCRR 225-3.3 (a)	Certificates of Analysis	In compliance as of March 2020
FACILITY	6 NYCRR 229.1 (d) (2) (i)	Terminal Records, IFR Inspections, API Inspection Reports.	In compliance as of March 2020
FACILITY	6 NYCRR 229.1 (d) (2) (iv)	VRU and VCU Performance Test Reports on File at the terminal	In compliance as of March 2020
FACILITY	6 NYCRR 229.1 (d) (2) (v)	Terminal Records, IFR Inspections, API Inspection Reports.	In compliance as of March 2020
FACILITY	6 NYCRR 229.3 (a)	Terminal Records, IFR Inspections, API Inspection Reports.	In compliance as of March 2020
1-RACKT, RPT, 2-RACKR, RPR	6 NYCRR 229.3 (d)	VRU and VCU Performance Test Reports on File at the terminal	In compliance as of March 2020
1-TANK1	6 NYCRR 229.3 (e) (1)	Terminal Records, IFR Inspections, API Inspection Reports.	In compliance as of March 2020

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Methods Used to Determine Compliance

Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
3-RACKM, FGM, RACKM, CDM VCUM2, VCUM1	6 NYCRR 231-11.2 (c)	NSR Summary Report	In compliance as of March 2020
3-RACKM, FGM, RPM, CDM, 1-TANK1, CR1, TK031, TK114, TK115, TK032	6 NYCRR 231-11.2 (c)	NSR Summary Report	In compliance as of March 2020
FACILITY	40 CFR 60.4	NSPS Notification Letters	In compliance as of March 2020
FACILITY	40 CFR 60.7 (a)	NSPS Notifications	In compliance as of March 2020
FACILITY	40 CFR 60.7 (b)	NSPS Notifications	In compliance as of March 2020
1-RACKT, 1- TANK1, RP1, BS1, CR1, TK115, TK032, TK039,TK031, TK114	40 CFR 60.7 (c)	Excess emissions reports are submitted when required	In compliance as of March 2020
FACILITY	40 CFR 60.7 (d)	Excess emissions reports are submitted when required	In compliance as of March 2020
FACILITY	40 CFR 60.7 (e)	Excess emission reports are submitted when required	In compliance as of March 2020
FACILITY	40 CFR 60.7 (f)	Applicable Records are maintained at the terminal	In compliance as of March 2020
FACILITY	40 CFR 60.7 (g)	Administrator is copied on all applicable notices	In compliance as of March 2020

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
FACILITY	40 CFR 60.8 (a)	Performance Test Report; NSPS Notifications	In compliance as of March 2020
FACILITY	40 CFR 60.8 (b)	Performance Test Protocols	In compliance as of March 2020
FACILITY	40 CFR 60.8 (c)	Performance Test Protocols submitted and reviewed by administrator	In compliance as of March 2020
FACILITY	40 CFR 60.8 (d)	Performance Test Protocols	In compliance as of March 2020
FACILITY	40 CFR 60.8 (e)	Terminal Operating Procedures	In compliance as of March 2020
FACILITY	40 CFR 60.8 (f)	Test Protocols submitted and reviewed by administrator	In compliance as of March 2020
FACILITY	40 CFR 60.9	Global complies with public notice requirements as directed by the Administrator.	In compliance as of March 2020
FACILITY	40 CFR 60.11	Opacity Observations	In compliance as of March 2020
FACILITY	40 CFR 60.11 (d)	Terminal operating procedures	In compliance as of March 2020
FACILITY	40 CFR 60.12	Operation of the terminal is reviewed by the Terminal Manager and Operations Manager.	In compliance as of March 2020

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
FACILITY	40 CFR 60.13	Compliance reporting is completed semi-annually.	In compliance as of March 2020
FACILITY	40 CFR 60.14	Compliance is reported semi-annually.	In compliance as of March 2020
FACILITY	40 CFR 60.15	Reconstruction notices submitted when required	In compliance as of March 2020
1-TANK1, RP1, TK114, TK115, TK039	40 CFR 60.113b (a)	Internal Floating Roof inspections,API Inspection Reports	In compliance as of March 2020
1-TANK1, RP1, TK031, TK114, TK115, TK032, TK039	40 CFR 60.115b (a)	Internal Floating Roof inspection records. Notifications are submitted as required.	In compliance as of March 2020
1-TANK1, RP1, TK031, TK114, TK115, TK032, TK039	40 CFR 60.116b	Terminal Records / Product Information	In compliance as of March 2020
1-RACKT	40 CFR 60.502 (b)	VRU and VCU Performance Test Reports on File at the terminal	In compliance as of March 2020
1-RACKT	40 CFR 60.502 (e)	The Terminal Automation System ensures that trucks loading at the facility have valid certificates	In compliance as of March 2020
FACILITY	40 CFR 60.502 (f)	Tank Truck Certification Program	In compliance as of March 2020
FACILITY	40 CFR 60.502 (g)	The Terminal Automation System prevents loading without being properly connected	In compliance as of March 2020

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Methods Used to Determine Compliance			
Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
1-RACK1	40 CFR 60.502 (i)	PM Records	In compliance as of March 2020
FACILITY	40 CFR 63.11081 (a)	Terminal Records	In compliance as of March 2020
FACILITY	40 CFR 63.11083 (b)	Notice of Compliance Status	In compliance as of March 2020
1-TANK1, RP1	40 CFR 63.11087	IFR inspection reports, API inspection reports.	In compliance as of March 2020
1-RACKT, RPT, 2-RACKR, R2R	40 CFR 63.11088	VRU and VCU Performance Test reports on file at the terminal	In compliance as of March 2020
1-RACKT, FGT, 2- RACKR, FGR ,1-FUGTV	40 CFR 63.11089	Monthly Inspection Forms; List of equipment in gasoline service	In compliance as of March 2020
1-RACKT, RPT, 2-RACKR, RPR	40 CFR 63.11092 (a)	Test Protocol submitted to Administrator	In compliance as of March 2020
FACILITY	40 CFR 63.11092 (a) (2)	Notice of Compliance Status	In compliance as of March 2020
FACILITY	40 CFR 63.11092 (a) (3)	Notice of Compliance Status	In compliance as of March 2020
1-RACKT, RPT, 2-RACKR, RPR	40 CFR 63.11092 (b) (1) (i) ('B') ('1')	Continuous Emissions Monitoring Data	In compliance as of March 2020

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Methods Used to Determine Compliance

Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
1-RACKT, RPT, 2-RACKR, RPR	40 CFR 63.11092 (b) (1) (i) ('B') ('2'	A CEMS is installed. Alternative monitoring forms when CEMS is down.	In compliance as of March 2020
2-RACKR, RPR, VCURR	40 CFR 63.11092 (b) (1) (iii)	Preventative Maintenance, VCU Inspection and Monitoring Plan, Daily Inspection Forms.	In compliance as of March 2020
1-RACKT, FGT	40 CFR 63.11094 (b)	Terminal Automation system and backup files	In compliance as of March 2020
1-RACK1, FGT	40 CFR 63.11094 (c)	Terminal Automation system and backup files	In compliance as of March 2020
1-RACKT, FGT, 2-RACKR, FGR, 1-FUGTV	40 CFR 63.11094 (d)	List of Equipment in Gasoline Service, Monthly inspection forms	In compliance as of March 2020
1-RACKT, FGT, 2-RACKR, FGR, 1-FUGTV	40 CFR 63.11094 (e)	Monthly Inspection Forms	In compliance as of March 2020
1-RACKT, RPT, VRUTK, 2-RACKR, RPR, VCURR	40 CFR 63.11094 (f)	VCU Record-keeping and VRU CEMS Monitoring Data	In compliance as of March 2020
1-RACKT, FGT, RPT 2- RACKR, FGR, RPR, 1-TANK1, RP1	40 CFR 63.11095 (a)	Subpart BBBBBB Monitoring report	In compliance as of March 2020
1-RACKT, FGT, RPT, 2-RACKR, FGR, RPR	40 CFR 63.11095 (b)	If necessary, excess emissions reports are submitted with the Subpart BBBBBB semiannual monitoring reports	In compliance as of March 2020
FACILITY	40 CFR 63.11098	Review table	In compliance as of March 2020

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Methods Used to Determine Compliance

Emission Unit ID	Applicable Requirement	Method Used to Determine Compliance	Compliance Date
2-RACKR, RPR, VCURR	40 CFR Part 64	PM Records	In compliance as of March 2020
1-RACKT, RPT, VRUTK	40 CFR Part 64	PM Records	In compliance as of March 2020
1-RACKT, RPT, VRUTK	40 CFR Part 64	VRU Automation System and CEMS Unit	In compliance as of March 2020
3-RACKM, CDM, VCUM2, VCUM1	40 CFR Part 64	Marine VCU Prestartup Checklist	In compliance as of March 2020
1-RACKT, FGT, 2-RACKR, FGR, 1-FUGTV	40 CFR Part 64	VCU PM records	In compliance as of March 2020
FACILITY	40 CFR Part 68	Fuels are exempt from program and no other chemicals are utilized which exceed threshold	In compliance as of March 2020
FACILITY	40 CFR Part 82, Subpart F	Only Certified Contractors are used to work on refrigerant systems	In compliance as of March 2020
FACILITY	ECL 19-0301	Review list of contaminants	In compliance as of March 2020
FACILITY	ECL 19-0301 (3) (b)	Terminal Records / Product Information	In compliance as of March 2020
FACILITY	6 NYCRR 201-1.4	Facility has not requested an affirmative defense during the permit period.	In compliance as of March 2020

Emission Unit Matrix

Emission Unit ID	Emission Unit Description	Process ID	Process Description	SCC Code	Source ID	Source Description	Control ID	Control Description	Emission Point ID
1-TANK1	This emission unit represents storage tanks at the facility.	RP1	Refined product storage tanks used for storage and distribution at terminal.	4-03-010-99	TK031	4,200,000 gallon tank	TK31C	Internal Floating Roof	00T31
					TK032	4,200,000 gallon tank	TK32C	Internal Floating Roof	00T32
					TK039	4,200,000 gallon tank	TK39C	Internal Floating Roof	00T39
					TK114	3,887,898 gallon tank	T114C	Internal Floating Roof	0T114
					TK115	5,851,902 gallon tank	T115C	Internal Floating Roof	0T115
					TK117	3,028,032 gallon tank	T117C	Internal Floating Roof	0T117
					TK118	2,426,550 gallon tank	T118C	Internal Floating Roof	0T118
					TK119	1,619,268 gallon tank	T119C	Internal Floating Roof	0T119
					TK120	1,640,940 gallon tank	T120C	Internal Floating Roof	0T120
					TK121	5,370,204 gallon tank	T121C	Internal Floating Roof	0T121
		BS1	Blendstock storage tanks used for storage and distribution at terminal.		TK114	3,887,898 gallon tank	T114C	Internal Floating Roof	0T114
					TK115	5,851,902 gallon tank	T115C	Internal Floating Roof	0T115
					TK117	3,028,032 gallon tank	T117C	Internal Floating Roof	0T117
					TK119	1,619,268 gallon tank	T119C	Internal Floating Roof	0T119
					TK121	5,370,204 gallon tank	T121C	Internal Floating Roof	0T121
		CR1	Crude Oil storage tanks used for storage and distribution at terminal.	4-03-010-99	TK031	4,200,000 gallon tank	TK31C	Internal Floating Roof	00T31
					TK032	4,200,000 gallon tank	TK32C	Internal Floating Roof	00T32
					TK039	4,200,000 gallon tank	T039C	Internal Floating Roof	00T39
					TK114	3,887,898 gallon tank	T114C	Internal Floating Roof	0T114
					TK115	5,851,902 gallon tank	T115C	Internal Floating Roof	0T115
					TK117	3,028,032 gallon tank	T117C	Internal Floating Roof	0T117
					TK118	2,426,550 gallon tank	T118C	Internal Floating Roof	0T118
					TK119	1,619,268 gallon tank	T119C	Internal Floating Roof	0T119
					TK120	1,640,940 gallon tank	T120C	Internal Floating Roof	0T120
					TK121	5,370,204 gallon tank	T121C	Internal Floating Roof	0T121
		PCW	Wastewater tank contaminated with gasoline/distillate.	NOT NEEDED	TK130	1,512,714 gal wastewater tank	T130C	Internal Floating Roof	0T130
1-RACKT	Truck loading rack	RPT	Emissions from VRU at truck rack while loading refined products	4-04-001-53	RACKT	Truck Rack	VRUTK	Vapor Recovery Unit	0TRK1
		FGT	Fugitive emissions from loading trucks at Rack 1	4-04-001-51	RACKT	Truck Rack	VACTK	Vac Assist Vapor Reduction System	0TRK2
2-RACKR	Rail loading rack	RPR	Emissions from VCU at rail rack while loading refined products	4-04-001-53	RACKR	Rail Rack	VCURR	Vapor Combustion Unit	0RRK1
		FGR	Fugitive emissions from loading railcars at Rack 2	4-04-001-51	RACKR	Rail Rack	VACRR	Vac Assist Vapor Reduction System	0RRK2
3-RACKM	Marine loading dock	RPM	Emissions from VCU at marine dock while loading refined products	4-06-002-98	RACKM	Marine Dock	VCUM1	Vapor Combustion Unit 1 for RP3/BS3/CD3	0MDR1
							VCUM2	Vapor Combustion Unit 2 for RP3/BS3/CD3	0MDR2
		BSM	Emissions from VCU at marine dock while loading blendstock	4-06-002-98	RACKM	Marine Dock	VCUM1	Vapor Combustion Unit 1 for RP3/BS3/CD3	0MDR1
							VCUM2	Vapor Combustion Unit 2 for RP3/BS3/CD3	0MDR2
		CDM	Emissions from Rack 3 while loading crude oil	4-06-002-98	RACKM	Marine Dock	VCUM1	Vapor Combustion Unit 1 for RP3/BS3/CD3	0MDR1
							VCUM2	Vapor Combustion Unit 2 for RP3/BS3/CD3	0MDR2
		FGM	Fugitive emissions from loading marine vessels at Rack 3	4-04-001-51	RACKM	Marine Dock	VACMD	Vac Assist Vapor Reduction System	0MDR3
1-FUGTV	Facility wide fugitive emissions	FUG	Facility wide fugitive emissions from pumps, valves, flanges & misc appurtances		FUGTV	Fugitive emissions			EPFUG
1-PWMRP	petroleum/water mixture reclamation process	PWM	Emissions from Air Stripper treated through catalytic oxidation	Not needed	PWMRP	Air Stripper	CATOX	Catalytic oxidation	002WW

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air Title V Facility
Permit ID: 4-0101-00112/00029
Mod 0 Effective Date: 03/03/2011 Expiration Date: 03/02/2016

Mod 1 Effective Date: 08/10/2011 Expiration Date: 03/02/2016

Mod 2 Effective Date: 08/29/2011 Expiration Date: 03/02/2016

Mod 3 Effective Date: 11/02/2011 Expiration Date: 03/02/2016

Mod 4 Effective Date: 11/07/2012 Expiration Date: 03/02/2016

Permit Issued To:GLOBAL COMPANIES LLC
800 SOUTH STREET
WALTHAM, MA 02453

Facility: GLOBAL COMPANIES LLC - ALBANY TERMINAL
50 CHURCH ST - ~~PORT OF ALBANY~~
ALBANY, NY 12202

Contact: ~~DARRELL BOEHLKE~~ CHARLES FURMAN
GLOBAL CO ALBANY TERMINAL
50 CHURCH ST
ALBANY, NY 12202
(518) 436-6570

Description:
~~This modification authorizes the storage of crude oil and loading into barges at the facility's marine loading terminal. A new Vapor Combustion Unit (VCU) will be utilized to control air emissions. The facility increased the overall emissions profile with this modification.~~

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: ANGELO A MARCUCCIO
NYSDEC
1130 N WESTCOTT RD
SCHENECTADY, NY 12306-2014

Authorized Signature: _________________________________ Date: ___ / ___ / _____

Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

LIST OF CONDITIONS

DEC GENERAL CONDITIONS
****** General Provisions ******
For the purpose of your Title V permit, the following section contains state-only enforceable terms and conditions.
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:
The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:
A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 3: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 3.1:
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 3.2:
The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Item 3.3:
Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Condition 1-1: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 1-1.1:
The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

Condition 4: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 4.1:
The Department reserves the right to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

****** Facility Level ******

Condition 5: Submission of application for permit modification or renewal-REGION 4 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 5.1:
Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 4 Headquarters
Division of Environmental Permits
1130 North Westcott Rd.
Schenectady, NY 12306-2014
(518) 357-2069

Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - TITLE V PERMIT

IDENTIFICATION INFORMATION

Permit Issued To:GLOBAL COMPANIES LLC
800 SOUTH STREET
WALTHAM, MA 02453

Facility: GLOBAL COMPANIES LLC - ALBANY TERMINAL
50 CHURCH ST - PORT OF ALBANY
ALBANY, NY 12202

Authorized Activity By Standard Industrial Classification Code:
5171 - PETROLEUM BULK STATIONS & TERMINALS

Mod 0 Permit Effective Date: 03/03/2011 Permit Expiration Date: 03/02/2016

Mod 1 Permit Effective Date: 08/10/2011 Permit Expiration Date: 03/02/2016

Mod 2 Permit Effective Date: 08/29/2011 Permit Expiration Date: 03/02/2016

Mod 3 Permit Effective Date: 11/02/2011 Permit Expiration Date: 03/02/2016

Mod 4 Permit Effective Date: 11/07/2012 Permit Expiration Date: 03/02/2016

LIST OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS
Facility Level

1 6 NYCRR 200.6: Acceptable Ambient Air Quality
2 6 NYCRR 201-6.5 (a) (7): Fees
3 6 NYCRR 201-6.5 (c): Recordkeeping and reporting of compliance monitoring
4 6 NYCRR 201-6.5 (c) (2): Monitoring, Related Recordkeeping, and Reporting Requirements.
5 6 NYCRR 201-6.5 (c) (3) (ii): Compliance Certification
2-1 6 NYCRR 201-6.5 (e): Compliance Certification
6 6 NYCRR 202-2.1: Compliance Certification
7 6 NYCRR 202-2.5: Recordkeeping requirements
8 6 NYCRR 215.2: Open Fires - Prohibitions
9 6 NYCRR 200.7: Maintenance of Equipment
10 6 NYCRR 201-1.7: Recycling and Salvage
11 6 NYCRR 201-1.8: Prohibition of Reintroduction of Collected Contaminants to the air
12 6 NYCRR 201-3.2 (a): Exempt Sources - Proof of Eligibility
13 6 NYCRR 201-3.3 (a): Trivial Sources - Proof of Eligibility
14 6 NYCRR 201-6.5 (a) (4): Standard Requirement - Provide Information
15 6 NYCRR 201-6.5 (a) (8): General Condition - Right to Inspect
16 6 NYCRR 201-6.5 (d) (5): Standard Requirements - Progress Reports
17 6 NYCRR 201-6.5 (f) (6): Off Permit Changes
18 6 NYCRR 202-1.1: Required Emissions Tests
20 40 CFR Part 68: Accidental release provisions.
21 40CFR 82, Subpart F: Recycling and Emissions Reduction
22 6 NYCRR Subpart 201-6: Emission Unit Definition
24 6 NYCRR Subpart 201-7: Facility Permissible Emissions
*3-1 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*4-1 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*4-2 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*1-3 6 NYCRR Subpart 201-7: Capping Monitoring Condition
~~*2-3 6 NYCRR Subpart 201-7: Capping Monitoring Condition~~
*4-3 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*1-4 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*4-4 6 NYCRR Subpart 201-7: Capping Monitoring Condition
~~*4-5 6 NYCRR Subpart 201-7: Capping Monitoring Condition~~
*4-6 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*1-7 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*4-7 6 NYCRR Subpart 201-7: Capping Monitoring Condition
31 6 NYCRR 202-1.2: Notification
32 6 NYCRR 202-1.3 (a): Acceptable procedures
1-8 6 NYCRR 211.1: Air pollution prohibited
~~33 6 NYCRR 212.2: Compliance Certification~~
~~34 6 NYCRR 212.4 (a): Emissions from new emission sources and/or modifications~~
~~35 6 NYCRR 212.4 (a): Compliance Certification~~
4-8 6 NYCRR 212.10 (c) (4) (i): Compliance Certification

NOTE: * preceding the condition number indicates capping.

FEDERALLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
The items listed below are not subject to the annual compliance certification requirements under Title V. Permittees may also have other obligations under regulations of general applicability.

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;
(2) The equipment at the permitted facility causing the emergency was at the time being properly operated;
(3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
(4) The facility owner and/or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item B: Public Access to Recordkeeping for Title V Facilities - 6 NYCRR 201-1.10 (b)
The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6 NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.

Item C: Timely Application for the Renewal of Title V Permits - 6 NYCRR 201-6.3 (a) (4)
Owners and/or operators of facilities having an issued Title V permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Item D: Certification by a Responsible Official - 6 NYCRR 201-6.3 (d) (12)
Any application, form, report or compliance certification required to be submitted pursuant to the federally enforceable portions of this permit shall contain a certification of truth, accuracy and completeness by a responsible official. This certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Item E: Requirement to Comply With All Conditions - 6 NYCRR 201-6.5 (a) (2)
The permittee must comply with all conditions of the Title V facility permit. Any permit non-compliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

Item F: Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6 NYCRR 201-6.5 (a) (3)
This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Item G: Cessation or Reduction of Permitted Activity Not a Defense - 6 NYCRR 201-6.5 (a) (5)
It shall not be a defense for a permittee in an enforcement action to claim that a cessation or reduction in the permitted activity would have been necessary in order to maintain compliance with the conditions of this permit.

Item H: Property Rights - 6 NYCRR 201-6.5 (a) (6)

This permit does not convey any property rights of any sort or any exclusive privilege.

Item I: **Severability - 6 NYCRR 201-6.5 (a) (9)**

If any provisions, parts or conditions of this permit are found to be invalid or are the subject of a challenge, the remainder of this permit shall continue to be valid.

Item J: **Permit Shield - 6 NYCRR 201-6.5 (g)**

All permittees granted a Title V facility permit shall be covered under the protection of a permit shield, except as provided under 6 NYCRR Subpart 201-6. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit, or the Department, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the major stationary source, and the permit includes the determination or a concise summary thereof. Nothing herein shall preclude the Department from revising or revoking the permit pursuant to 6 NYCRR Part 621 or from exercising its summary abatement authority. Nothing in this permit shall alter or affect the following:

i. The ability of the Department to seek to bring suit on behalf of the State of New York, or the Administrator to seek to bring suit on behalf of the United States, to immediately restrain any person causing or contributing to pollution presenting an imminent and substantial endangerment to public health, welfare or the environment to stop the emission of air pollutants causing or contributing to such pollution;

ii. The liability of a permittee of the Title V facility for any violation of applicable requirements prior to or at the time of permit issuance;

iii. The applicable requirements of Title IV of the Act;

iv. The ability of the Department or the Administrator to obtain information from the permittee concerning the ability to enter, inspect and monitor the facility.

Item K: **Reopening for Cause - 6 NYCRR 201-6.5 (i)**

This Title V permit shall be reopened and revised under any of the following circumstances:

i. If additional applicable requirements under the Act become applicable where this permit's remaining term is three or more years, a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire, unless the original permit or any of its terms and conditions has been extended by the Department pursuant to the provisions of Part 201-6.7 and Part 621.

ii. The Department or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

iii. The Department or the Administrator determines that the Title V permit must be revised or reopened to assure compliance with applicable requirements.

iv. If the permitted facility is an "affected source" subject to the requirements of Title IV of the Act, and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

Proceedings to reopen and issue Title V facility permits shall follow the same procedures as apply to initial permit issuance but shall affect only those parts of the permit for which cause to reopen exists.

Reopenings shall not be initiated before a notice of such intent is provided to the facility by the Department at least thirty days in advance of the date that the permit is to be reopened, except that the Department may provide a shorter time period in the case of an emergency.

Item L: **Permit Exclusion - ECL 19-0305**

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York

(NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: **Federally Enforceable Requirements - 40 CFR 70.6 (b)**
All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

MANDATORY FEDERALLY ENFORCEABLE PERMIT CONDITIONS SUBJECT TO ANNUAL CERTIFICATIONS AT ALL TIMES

The following federally enforceable permit conditions are mandatory for all Title V permits and are subject to annual compliance certification requirements at all times.

Condition 1: **Acceptable Ambient Air Quality**
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 200.6

Item 1.1:
Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Condition 2: **Fees**
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (a) (7)

Item 2.1:
The owner and/or operator of a stationary source shall pay fees to the Department consistent with the fee schedule authorized by ECL 72-0303.

Condition 3: **Recordkeeping and reporting of compliance monitoring**
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (c)

Item 3.1:

The following information must be included in any required compliance monitoring records and reports:

(i) The date, place, and time of sampling or measurements;

(ii) The date(s) analyses were performed;

(iii)The company or entity that performed the analyses;

(iv) The analytical techniques or methods used including quality assurance and quality control procedures if required;

(v) The results of such analyses including quality assurance data where required; and

(vi) The operating conditions as existing at the time of sampling or measurement.

Any deviation from permit requirements must be clearly identified in all records and reports. Reports must be certified by a responsible official, consistent with Section 201-6.3 of this Part 201.

Condition 4: Monitoring, Related Recordkeeping, and Reporting Requirements.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (c) (2)

Item 4.1:
Compliance monitoring and recordkeeping shall be conducted according to the terms and conditions contained in this permit and shall follow all quality assurance requirements found in applicable regulations. Records of all monitoring data and support information must be retained for a period of at least 5 years from the date of the monitoring, sampling, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

Condition 5: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (c) (3) (ii)

Item 5.1:
The Compliance Certification activity will be performed for the Facility.

Item 5.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
To meet the requirements of this facility permit with respect to reporting, the permittee must:

Submit reports of any required monitoring at a minimum frequency of every 6 months, based on a calendar year reporting schedule. These reports shall be submitted to the Department within 30 days after the end of a reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by the responsible official for this facility.

Notify the Department and report permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations shall be submitted to the permitting authority based on the following schedule:

(1) For emissions of a hazardous air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence.

(2) For emissions of any regulated air pollutant, excluding those listed in paragraph (1) of this section, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours.

(3) For all other deviations from permit requirements, the report shall be contained in the 6 month monitoring report required above.

(4) This permit may contain a more stringent reporting requirement than required by paragraphs (1), (2) or (3) above. If more stringent reporting requirements have been placed in this permit or exist in applicable requirements that apply to this facility, the more stringent reporting requirement shall apply.

If above paragraphs (1) or (2) are met, the source must notify the permitting authority by telephone during normal business hours at the Regional Office of jurisdiction for this permit, attention Regional Air Pollution Control Engineer (RAPCE) according to the timetable listed in paragraphs (1) and (2) of this section. For deviations and incidences that must be reported outside of normal business hours, on weekends, or holidays, the DEC Spill Hotline phone number at 1-800-457-7362 shall be used. A written notice, certified by a responsible official consistent with 6 NYCRR Part 201-6.3(d)(12), must be submitted within 10 working days of an occurrence for deviations reported under (1) and (2). All deviations reported under paragraphs (1) and (2) of this section must also be identified in the 6 month monitoring report required above.

The provisions of 6 NYCRR 201-1.4 shall apply if the permittee seeks to have a violation excused unless otherwise limited by regulation. In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets. Notwithstanding any recordkeeping and reporting requirements in 6 NYCRR 201-1.4, reports of any deviations shall not be on a less frequent basis than the reporting periods described in paragraphs (1) and (4) above.

In the case of any condition contained in this permit with a reporting requirement of "Upon request by regulatory agency" the permittee shall include in the semiannual report, a statement for each such condition that the monitoring or recordkeeping was performed as required or requested and a listing of all instances of deviations from these requirements.

In the case of any emission testing performed during the previous six month reporting period, either due to a request by the Department, EPA, or a regulatory requirement, the permittee shall include in the semiannual report a summary of the testing results and shall indicate whether or not the Department or EPA has approved the results.

All semiannual reports shall be submitted to the Administrator (or his or her representative) as well as two copies to the Department (one copy to the regional air pollution control engineer (RAPCE) in the regional office and one copy to the Bureau of Quality Assurance (BQA) in the DEC central office). Mailing addresses for the above referenced persons are contained in the monitoring condition for 6 NYCRR Part 201-6.5(e), contained elsewhere in this permit.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.

Subsequent reports are due every 6 calendar month(s).

Condition 2-1: Compliance Certification
Effective between the dates of 08/29/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (e)

Item 2-1.1:
The Compliance Certification activity will be performed for the Facility.

Item 2-1.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Requirements for compliance certifications with terms and conditions contained in this facility permit include the following:

i. Compliance certifications shall contain:
- the identification of each term or condition of the permit that is the basis of the certification;
- the compliance status;
- whether compliance was continuous or intermittent;
- the method(s) used for determining the compliance status of the facility, currently and over the reporting period consistent with the monitoring and related recordkeeping and reporting requirements of this permit;
- such other facts as the Department may require to determine the compliance status of the facility as specified in any special permit terms or conditions; and
- such additional requirements as may be specified elsewhere in this permit related to compliance certification.

ii. The responsible official must include in the annual certification report all terms and conditions contained in this permit which are identified as being subject to certification, including emission limitations, standards, or work practices. That is, the provisions labeled herein as "Compliance Certification" are not the only provisions of this permit for which an annual certification is required.

iii. Compliance certifications shall be submitted annually. Certification reports are due 30 days after the anniversary date of four consecutive calendar quarters. The first report is due 30 days after the calendar quarter that occurs just prior to the permit anniversary date, unless another quarter has been acceptable by the Department.

iv. All compliance certifications shall be submitted to the Administrator (or his or her representative) as well as two copies to the Department (one copy to the regional air pollution control engineer (RAPCE) in the regional office and one copy to the Bureau of Quality Assurance (BQA) in the DEC central office). Please send annual compliance certifications to Chief of the Stationary Source Compliance Section, the Region 2 EPA representative for the Administrator, at the following address:

USEPA Region 2
Air Compliance Branch
290 Broadway
New York, NY 10007-1866

The address for the RAPCE is as follows:

NYSDEC
1130 North Westcott Road
Schenectady, NY 12306-2014

The address for the BQA is as follows:

NYSDEC
Bureau of Quality Assurance
625 Broadway
Albany, NY 12233-3258

Monitoring Frequency: ANNUALLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2012.
Subsequent reports are due on the same day each year

Condition 6: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 202-2.1

Item 6.1:
The Compliance Certification activity will be performed for the Facility.

Item 6.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission statements shall be submitted on or before April 15th each year for emissions of the previous calendar year.

Monitoring Frequency: ANNUALLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due by April 15th for previous calendar year

Condition 7: Recordkeeping requirements
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 202-2.5

Item 7.1:
(a) The following records shall be maintained for at least five years:

(1) a copy of each emission statement submitted to the department; and

(2) records indicating how the information submitted in the emission statement was determined, including any calculations, data, measurements, and estimates used.

(b) These records shall be made available at the facility to the representatives of the department upon request during normal business hours.

Condition 8: Open Fires - Prohibitions
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 215.2

Item 8.1:
Except as allowed by Title 6 NYCRR Section 215.3, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item 8.2
Per Section 215.3, burning in an open fire, provided it is not contrary to other law or regulation, will be allowed as follows:
(a) On-site burning in any town with a total population less than 20,000 of downed limbs and branches (including branches with attached leaves or needles) less than six inches in diameter and eight feet in length between May 15th and the following March 15th. For the purposes of this subdivision, the total population of a town shall include the population of any village or portion thereof located within the town. However, this subdivision shall not be construed to allow burning within any village.
(b) Barbecue grills, maple sugar arches and similar outdoor cooking devices when actually used for cooking or processing food.
(c) Small fires used for cooking and camp fires provided that only charcoal or untreated wood is used as fuel and the fire is not left unattended until extinguished.
(d) On-site burning of agricultural wastes as part of a valid agricultural operation on contiguous agricultural lands larger than five acres actively devoted to agricultural or horticultural use, provided such waste is actually grown or generated on those lands and such waste is capable of being fully burned within a 24-hour period.
(e) The use of liquid petroleum fueled smudge pots to prevent frost damage to crops.
(f) Ceremonial or celebratory bonfires where not otherwise prohibited by law, provided that only untreated wood or other agricultural products are used as fuel and the fire is not left unattended until extinguished.
(g) Small fires that are used to dispose of a flag or religious item, and small fires or other smoke producing process where not otherwise prohibited by law that are used in connection with a

religious ceremony.
(h) Burning on an emergency basis of explosive or other dangerous or contraband materials by police or other public safety organization.
(i) Prescribed burns performed according to Part 194 of this Title.
(j) Fire training, including firefighting, fire rescue, and fire/arson investigation training, performed under applicable rules and guidelines of the New York State Department of State's Office of Fire Prevention and Control. For fire training performed on acquired structures, the structures must be emptied and stripped of any material that is toxic, hazardous or likely to emit toxic smoke (such as asbestos, asphalt shingles and vinyl siding or other vinyl products) prior to burning and must be at least 300 feet from other occupied structures. No more than one structure per lot or within a 300 foot radius (whichever is bigger) may be burned in a training exercise.
(k) Individual open fires as approved by the Director of the Division of Air Resources as may be required in response to an outbreak of a plant or animal disease upon request by the commissioner of the Department of Agriculture and Markets, or for the destruction of invasive plant and insect species.
(l) Individual open fires that are otherwise authorized under the environmental conservation law, or by rule or regulation of the Department.

MANDATORY FEDERALLY ENFORCEABLE PERMIT CONDITIONS SUBJECT TO ANNUAL CERTIFICATIONS ONLY IF APPLICABLE

The following federally enforceable permit conditions are mandatory for all Title V permits and are subject to annual compliance certification requirements only if effectuated during the reporting period. [NOTE: The corresponding annual compliance certification for those conditions not effectuated during the reporting period shall be specified as "not applicable".]

Condition 9: Maintenance of Equipment
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 200.7

Item 9.1:
Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications, required to operate such device effectively.

Condition 10: Recycling and Salvage
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-1.7

Item 10.1:
Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of the ECL.

Condition 11: Prohibition of Reintroduction of Collected Contaminants to the air
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-1.8

Item 11.1:
No person shall unnecessarily remove, handle or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Condition 12: Exempt Sources - Proof of Eligibility
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-3.2 (a)

Item 12.1:
The owner and/or operator of an emission source or unit that is eligible to be exempt may be required to certify that it operates within the specific criteria described in this Subpart. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other State and Federal air pollution control requirements, regulations, or law.

Condition 13: Trivial Sources - Proof of Eligibility
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-3.3 (a)

Item 13.1:
The owner and/or operator of an emission source or unit that is listed as being trivial in this Part may be required to certify that it operates within the specific criteria described in this Subpart. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other State and Federal air pollution control requirements, regulations, or law.

Condition 14: Standard Requirement - Provide Information
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (a) (4)

Item 14.1:
The owner and/or operator shall furnish to the department, within a reasonable time, any information that the department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the department copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee

may furnish such records directly to the administrator along with a claim of confidentiality, if the administrator initiated the request for information or otherwise has need of it.

Condition 15: General Condition - Right to Inspect
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (a) (8)

Item 15.1:
The department or an authorized representative shall be allowed upon presentation of credentials and other documents as may be required by law to:

(i) enter upon the permittee's premises where a facility subject to the permitting requirements of this Subpart is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(ii) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(iii) inspect at reasonable times any emission sources, equipment (including monitoring and air pollution control equipment), practices, and operations regulated or required under the permit; and

(iv) sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

Condition 16: Standard Requirements - Progress Reports
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (d) (5)

Item 16.1:
Progress reports consistent with an applicable schedule of compliance are to be submitted at least semiannually, or at a more frequent period if specified in the applicable requirement or by the department. Such progress reports shall contain the following:

(i) dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

(ii) an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

Condition 17: Off Permit Changes
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 201-6.5 (f) (6)

Item 17.1:
No permit revision will be required for operating changes that contravene an express permit term, provided that such changes would not violate applicable requirements as defined under this Part or contravene federally enforceable monitoring (including test methods), recordkeeping, reporting, or compliance certification permit terms and conditions. Such changes may be made

without requiring a permit revision, if the changes are not modifications under any provision of title I of the act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions) provided that the facility provides the administrator and the department with written notification as required below in advance of the proposed changes within a minimum of seven days. The facility owner or operator, and the department shall attach each such notice to their copy of the relevant permit.

(i) For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

(ii) The permit shield described in section 6 NYCRR 201-6.6 shall not apply to any change made pursuant to this paragraph.

Condition 18: Required Emissions Tests
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 202-1.1

Item 18.1:
For the purpose of ascertaining compliance or non-compliance with any air pollution control code, rule or regulation, the commissioner may require the person who owns such air contamination source to submit an acceptable report of measured emissions within a stated time.

Condition 20: Accidental release provisions.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40 CFR Part 68

Item 20.1:
If a chemical is listed in Tables 1,2,3 or 4 of 40 CFR §68.130 is present in a process in quantities greater than the threshold quantity listed in Tables 1,2,3 or 4, the following requirements will apply:

a) The owner or operator shall comply with the provisions of 40 CFR Part 68 and;

b) The owner or operator shall submit at the time of permit issuance (if not previously submitted) one of the following, if such quantities are present:

1) A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR §68.10(a) or,

2) A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan. Information should be submitted to:

Risk Management Plan Reporting Center
C/O CSC
8400 Corporate Dr
Carrollton, Md. 20785

Condition 21: Recycling and Emissions Reduction
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 82, Subpart F

Item 21.1:
The permittee shall comply with all applicable provisions of 40 CFR Part 82.

The following conditions are subject to annual compliance certification requirements for Title V permits only.

Condition 22: Emission Unit Definition
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 22.1(From Mod 4):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: ~~1-RACK1~~ 1-RACKT
Emission Unit Description:
Truck loading rack ~~with three gasoline/ethanol bays and five distillate bays.~~

Item 22.2(From Mod 4):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: ~~1-RACK2~~ 2-RACKR
Emission Unit Description:
Railcar loading rack ~~with two loading positions for distillate and gasoline/ethanol.~~

Item 22.3(From Mod 4):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: ~~1-RACK3~~ 3-RACKM
Emission Unit Description:
~~This emission unit represents marine loading of products at the dock.~~ Marine loading dock.

Add Emission Unit:
Description: 1-FUGTV facility wide fugitive emissions

~~**Item 22.4(From Mod 4):**
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-RACK4
Emission Unit Description:
Rail spur for distillate loading.~~

Item 22.5(From Mod 4):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: ~~1-TANKS~~ 1-TANK1
Emission Unit Description:

Add Emission Unit: 1-PWMRP:
Description: Petroleum/water mixture reclamation process

This emission unit represents storage tanks at the facility.

Condition 24: Facility Permissible Emissions
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 24.1:
The sum of emissions from the emission units specified in this permit shall not equal or exceed the following
Potential To Emit (PTE) rate for each regulated contaminant:

CAS No: 0NY100-00-0 ~~(From Mod 4)~~ PTE: 47,500 pounds per year
Name: HAP

CAS No: 0NY998-00-0 ~~(From Mod 4)~~ PTE: 205,300 ~~294,540~~ pounds per year
Name: VOC

Condition 3-1: Capping Monitoring Condition
Effective between the dates of 11/02/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 3-1.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR Part 63, Subpart R

Item 3-1.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 3-1.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 3-1.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time

period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 3-1.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 3-1.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: 1-RACK2 2-RACKR
Process: ~~R2E~~ RPR

~~Emission Unit: 1-RACK2~~
~~Process: R2G~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 3-1.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
~~Gasoline/Ethanol~~ Refined Product throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/year; ~~that is,~~ less than the applicability thresholds of 40 CFR 63, Subpart R. ~~This absolves the facility from that NESHAP.~~ ~~Gasoline/ Ethanol~~ Refined Product throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42 ~~emission factors, "TANKS" program, or other current emission factors~~. Throughput limits were calculated using a ~~Truck Vapor Recovery Unit emission rate of 2 mg/l~~, a Rail Vapor Combustion Unit emission rate of ~~10~~ 2 milligrams per liter, ~~and a Marine Vapor Combustion Unit emission rate of 10 mg/l~~ with negative pressure loading (vac assist) to eliminate fugitive emissions from loading rail cars.

Refined Product ~~Gasoline/Ethanol~~ throughputs shall be included in the annual report. The process material selected is gasoline, however this limit applies to all refined products.

Work Practice Type: PROCESS MATERIAL THRUPUT
Process Material: GASOLINE ETHANOL, DISTILLATE, BIODIESEL
Upper Permit Limit: ~~150,000,000 gallons~~ 300,000,000 gallons

Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due ~~1/30/2012.~~
Subsequent reports are due every 12 calendar month(s).

Condition 4-1: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-1.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR 63 Subpart R

Item 4-1.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-1.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-1.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-1.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4-1.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1E~~ RPT, FGT

Emission Unit: 2-RACKR
Process: RPR, FGR

~~Emission Unit: 1-RACK1~~

Emission Unit: 3-RACKM
Process: RPM, BSM, FGM

~~Process: R1G~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 4-1.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
~~Gasoline/Ethanol throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/year; that is, less than the applicability thresholds of 40 CFR 63, Subpart R. This absolves the facility from that NESHAP.~~

~~Emissions for this cap were calculated using the most current AP-42 emission factors, "TANKS" program, or other current emission factors. Throughput limits for this specific cap were calculated using a Truck Vapor Recovery Unit emission rate of 10 mg/l, a Rail Vapor Combustion Unit emission rate of 10 milligrams per liter, a Marine Vapor Combustion Unit emission rate of 10 mg/l.~~

~~This throughput alottment is useable during times when the Vacuum Assist Vapor Reduction System is not operational.~~

~~Gasoline/Ethanol throughputs shall be included in the annual report.~~

Replace with capping condition for Refined Product Alternate Operating Scenarios (AOSs).

Work Practice Type: PROCESS MATERIAL THRUPUT
Process Material: GASOLINE
Upper Permit Limit: ~~10,416,667 gallons~~
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 12 calendar month(s).

Condition 4-2: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-2.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the

purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR Part 63, Subpart R

Item 4-2.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-2.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-2.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-2.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4-2.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3E~~ RPM

~~Emission Unit: 1-RACK3~~
~~Process: R3G~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 4-2.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:

Refined Product
~~Gasoline/Ethanol~~ throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/year; ~~that is,~~ less than the applicability thresholds of 40 CFR 63, Subpart R. ~~This absolves the facility from that NESHAP.~~
Refined Product ~~Gasoline/Ethanol~~ throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42 ~~emission factors, "TANKS" program, or other current emission factors~~. Throughput limits were calculated using a ~~Truck Vapor Recovery Unit emission rate of 2 mg/l, a Rail Vapor Combustion Unit emission rate of~~ 2 ~~10 milligrams per liter, and a Marine Vapor Combustion Unit (Control: VCUML) emission rate of 10 mg/l and another~~ Marine Vapor Combustion Unit (Control: VCUM2) ~~with an~~ emission rate of 2 ~~3~~ mg/l. ~~An Air Quality Impact Analysis was conducted to ensure that impacts from the facility remained below most recent updated DAR-1 AGC/SGC values which were approved by Central Office on 6/28/2012.~~, and with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Add condition for Blendstock loading - see form

Refined Product
~~Gasoline/Ethanol~~ throughputs shall be included in the annual report. The process material selected is gasoline, however this limit applies to all refined products.

Work Practice Type: PROCESS MATERIAL THRUPUT
Process Material: ~~OTHER LIQUID FUELS~~ GASOLINE, ETHANOL, DISTILLATES, and BIODIESEL
Upper Permit Limit: ~~450,000,000 gallons~~
Monitoring Frequency: MONTHLY 900,000,000 gallons
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due ~~1/30/2013.~~
Subsequent reports are due every 12 calendar month(s).

Condition 1-3: Capping Monitoring Condition
Effective between the dates of 08/10/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 1-3.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR Part 63, Subpart R

Item 1-3.2:
Operation of this facility shall take place in accordance with the approved criteria, emission

limits, terms, conditions and standards in this permit.

Item 1-3.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 1-3.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 1-3.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 1-3.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3E~~ RPM

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3G~~ CDM

Emission Unit: 3-RACKM
Process: BSM

Control Device: VCUM1

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP
CAS No: 0NY998-00-0 VOC

Item 1-3.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: ~~INTERMITTENT EMISSION TESTING~~ WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
The emission rate of the Marine vapor combustion unit (VCUM1) shall be limited to keep total HAP emissions below 23.75 tons/year and keep individual HAP emissions below 9.5 tons/year which is less than the applicability thresholds of 40 CFR 63, Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

~~Facility wide emissions were determined using the most current AP-42 emission factors and "TANKS" program. The~~

~~throughput limits were calculated using a~~ The Marine Vapor Combustion Unit (VCUM1) will be operated at a maximum emission rate of 10 milligrams per liter.

This compliance test shall also demonstrate compliance with 6 NYCRR 212.4(a)

The vapor recovery unit shall be tested with report submitted to Department within 180 days after permit renewal issuance date or 180 days after complete construction and operability of VCU, to determine if the vapor combustion unit achieves the 10 milligrams per liter limit. The test shall be conducted in accordance with the procedures described in 6 NYCRR 202-1.

Parameter Monitored: 40 CFR 60-63 - TOTAL ORGANIC COMPOUNDS (TOC)
Upper Permit Limit: 10 milligrams per liter
Reference Test Method: Method 25A or 25B, Method 21, Method 2A
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2012.
Subsequent reports are due every 12 calendar month(s).

Condition 2-3: Capping Monitoring Condition
Effective between the dates of 08/29/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 2-3.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6

Item 2-3.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 2-3.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 2-3.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 2-3.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 2-3.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-TANKS~~
Process: CR1 Emission Source: TK031

Emission Unit: ~~1-TANKS~~
Process: CR1 Emission Source: TK114

Emission Unit: ~~1-TANKS~~
Process: CR1 Emission Source: TK115

Emission Unit: ~~1-TANKS~~
Process: CR1 Emission Source: ~~TNK32~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Replace this condition with (see form):

Applies to:
1-RACKT, RPT
2-RACKR, RPR
3-RACKM, RPM & BSM

Facility-wide refined product throughput (gasoline, ethanol, blendstock, distillate, biodiesel) shall be limited to keep individual and total HAP emissions less than 9.5 tons/yr and 23.75 tons/yr, respectively: that is, less than the applicability thresholds of40 CFR 63, Subpart R. Refined product throughput shall also be limited to keep total VOC emissions below the applicability threshold of 6 NYCRR 231-6.

Upper Permit Limit: 1,929,000,000 gallons

Item 2-3.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
The following sources TK114, TK115, TK031, and ~~TNK32~~ have the flexibility to be utilized as crude oil tanks. Although, at any one time only two of these sources can be utilized to store either gasoline or crude oil. The remaining two tanks will either be in distillate or ethanol service.

The current emission profile or Potential To Emit (PTE) at the facility incorporporates the aforemetioned scenario. The facility has taken this cap to remain within this current emission profile.

Work Practice Type: PARAMETER OF PROCESS MATERIAL
Process Material: CRUDE OIL TANKS

~~Parameter Monitored: CRUDE OIL~~
~~Upper Permit Limit: 2 tanks~~
~~Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION~~
~~Reporting Requirements: ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 1/30/2012.~~
~~Subsequent reports are due every 12 calendar month(s).~~

Condition 4-3: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-3.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

40 CFR Part 63, Subpart R

Item 4-3.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-3.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-3.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-3.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4-3.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ RPM, BSM, CDM Control Device: ~~Emission Source:~~ VCUM2

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 4-3.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: ~~INTERMITTENT EMISSION TESTING~~ WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
The emission rate of the Marine Vapor Combustion Unit (VCUM2) shall be limited to keep total HAP emissions below 23.75 tons/year and keep individual HAP emissions below 9.5 tons/year which is less than the applicability thresholds of 40 CFR 63, Subpart R. ~~This also absolves the facility from applicability from 6 NYCRR 231-6.~~ The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.
~~Facility wide emissions were determined using the most current AP-42 emission factors and "TANKS" program. The throughput limits were calculated using a Vapor Combustion Unit (VCU)~~ emission rate of 2 ~~3~~ milligrams per liter.
^ The Marine VCU (VCUM2) will be operated at a maximum

~~The vapor combustion unit shall be tested with report submitted to Department within 180 days after initial notification of startup to determine if the vapor combustion unit achieves the 3 milligrams per liter limit. The test shall be conducted in accordance with the procedures described in 6 NYCRR 202-1.~~

Parameter Monitored: 40 CFR 60-63 - TOTAL ORGANIC COMPOUNDS (TOC)
Upper Permit Limit: ~~3 milligrams per liter~~ 2 milligrams per liter
Reference Test Method: Method 25A or 25B, Method 21, Method 2A
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due ~~1/30/2013~~.
Subsequent reports are due every 12 calendar month(s).

Condition 1-4: Capping Monitoring Condition
Effective between the dates of 08/10/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 1-4.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to

the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

40 CFR Part 63, Subpart R

Item 1-4.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 1-4.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 1-4.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 1-4.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 1-4.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Emission Point: ~~00001~~ 0TRK1
Process: ~~R1G~~ RPT
~~Emission Source:~~ Control Device: VRUTK

Regulated Contaminant(s):

CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 1-4.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: ~~INTERMITTENT EMISSION TESTING~~ WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
The emission rate of the vapor recovery unit (VRUTK) shall be limited to keep total HAP emissions below 23.75 tons/year and keep individual HAP emissions below 9.5 tons/year which is less than the applicability thresholds of 40 CFR 63, Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

~~Facility wide emissions were determined using the most current AP-42 emission factors and "TANKS" program.~~ The ~~throughput limits were calculated using a~~
Truck Vapor Recovery Unit (VRUTK) will be operated at a maximum emission rate of 2 milligrams per liter.

~~The vapor recovery unit shall be tested with report submitted to Department within 180 days after permit renewal issuance date to determine if the vapor recovery unit achieves the 2 milligrams per liter limit. The test shall be conducted in accordance with the procedures described in 6 NYCRR 202-1.~~

Parameter Monitored: 40 CFR 60-63 - TOTAL ORGANIC COMPOUNDS (TOC)
Upper Permit Limit: 2 milligrams per liter
Reference Test Method: Method 25A or 25B, Method 21, Method 2A
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due ~~1/30/2012.~~
Subsequent reports are due every 12 calendar month(s).

Condition 4-4: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-4.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

40 CFR Part 63, Subpart R

Item 4-4.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-4.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-4.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This

certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-4.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4-4.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~
Process: ~~R1D~~

Emission Unit: ~~1-RACK2~~
Process: ~~R2D~~

Emission Unit: ~~1-RACK3~~
Process: ~~R3D~~

~~Emission Unit: 1-RACK4~~
~~Process: R4D~~

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP

Replace this condition with (see form):

Applies to:
1-TANK1, RP1, CR1, BS1

Tank maintenance emissions will not exceed 22 tons on a rolling annual basis.

Emissions will be calculated using the latest version of AP-42.

Item 4-4.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
Distillate oil throughput shall be limited to keep individual and total HAP emissions less than 9.5 tons/yr and 23.75 tons/yr, respectively; that is, less than the applicability thresholds of 40 CFR 63, Subpart R. This absolves the facility from that NESHAP.

Emissions for this cap were calculated using the most current AP-42 emission factors, "TANKS" program, or other current emission factors. Throughput limits were calculated using a Truck Vapor Recovery Unit emission rate of 2 mg/l, a Rail Vapor Combustion Unit emission rate of 10 milligrams per liter, and a Marine Vapor Combustion Unit (Control: VCUML) emission rate of 10 mg/l and another Marine Vapor Combustion Unit (Control: VCUM2) with an emssion rate of 3 mg/l. An Air Quality Impact Analysis was conducted to ensure that impacts from the facility remained below most recent updated DAR-1 AGC/SGC values which were approved by Central Office on 6/28/2012.

Distillate oil throughputs shall be included in the annual report.

Work Practice Type: PROCESS MATERIAL THRUPUT
Process Material: DISTILLATES - NUMBER 1 AND NUMBER 2 OIL
Upper Permit Limit: 229,300,000 gallons
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 12 calendar month(s).

Condition 4-5: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-5.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR Part 63, Subpart R

Item 4-5.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-5.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-5.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-5.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of

the Act.

Item 4-5.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ CDM

Emission Unit: 3-RACKM
Process: FGM

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 4-5.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
Crude Oil throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/year; that is, less than the applicability thresholds of 40 CFR 63, Subpart R. This absolves the facility from that NESHAP. Also to cap out of Volatile Organic Compunds (VOC) in regards to 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current AP-42 emission factors, "TANKS" program, or other current emission factors. Throughput limits were calculated using a Truck Vapor Recovery Unit emission rate of 2 mg/l, a Rail Vapor Combustion Unit emission rate of 10 milligrams per liter, and a Marine Vapor Combustion Unit (Control: ~~VCUML~~) emission rate of 10 mg/l and another Marine Vapor Combustion Unit (Control: VCUM2) with an emssion rate of 3 mg/l. An Air Quality Impact Analysis was conducted to ensure that impacts from the facility remained below most recent updated DAR-1 AGC/SGC values which were approved by Central Office on 6/28/2012.

Add Crude Oil Alternate Operating Scenarios condition.

This crude throughput alottment is useable during times when the Marine Vapor Combustion Unit (Source ID: VCUM2) is not operational.

In the event that VCUM2 is operable throughout the annual year this alottment can be converted to 50,000,000 gallons controlled through Source ID: VCUM2 for operational flexibility purposes.

Crude Oil throughputs shall be included in the annual report.

~~Work Practice Type: PROCESS MATERIAL THRUPUT~~
~~Process Material: CRUDE OIL~~
~~Upper Permit Limit: 20,000,000 gallons~~
~~Monitoring Frequency: MONTHLY~~
~~Averaging Method: ANNUAL TOTAL ROLLED MONTHLY~~
~~Reporting Requirements: ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 1/30/2013.~~
~~Subsequent reports are due every 12 calendar month(s).~~

Condition 4-6: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-6.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR Part 63, Subpart R

Item 4-6.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-6.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-6.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-6.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4-6.6:
The Compliance Certification activity will be performed for the facility:

The Compliance Certification applies to:

1-RACKT
Emission Unit: ~~1-RACK1~~
Process: ~~R1E~~ RPT

~~Emission Unit: 1-RACK1~~
~~Process: R1G~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 4-6.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
Refined Product ~~Gasoline/Ethanol~~ throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/year; that is, less than the applicability thresholds of 40 CFR 63, Subpart R. The refined product throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of ~~current~~ AP-42 ~~emission factors, "TANKS" program, or other current emission factors.~~ Throughput limits were calculated using a Truck Vapor Recovery Unit emission rate of 2 mg/l, ~~a Rail Vapor Combustion Unit emission rate of 10 milligrams per liter, and a Marine Vapor Combustion Unit (Control: VCUML) emission rate of 10 mg/l and another Marine Vapor Combustion Unit (Control: VCUM2) with an emssion rate of 3 mg/l. An Air Quality Impact Analysis was conducted to ensure that impacts from the facility remained below most recent updated DAR-1 AGC/SGC values which were approved by Central Office on 6/28/2012.~~ with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Refined product ~~Gasoline/Ethanol~~ throughputs shall be included in the annual report. The process material selected is gasoline, however this limit applies to all refined products.

Work Practice Type: PROCESS MATERIAL THRUPUT
Process Material: GASOLINE, ETHANOL, DISTILLATE, BIODIESEL
Upper Permit Limit: ~~639,583,333 gallons~~ 880,000,000
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due ~~1/30/2013.~~
Subsequent reports are due every 12 calendar month(s).

Condition 1-7: Capping Monitoring Condition
Effective between the dates of 08/10/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 1-7.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

40 CFR Part 63, Subpart R

Item 1-7.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 1-7.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 1-7.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 1-7.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 1-7.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

2-RACKR
Emission Unit: ~~1-RACK2~~ Emission Point: ~~00002~~ 0RRK1
Process: ~~R2G~~ RPR ~~Emission Source:~~ VCURR
Control Device:

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 1-7.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: ~~INTERMITTENT EMISSION TESTING~~
Monitoring Description:

The emission rate of the Rail vapor combustion unit (VCURR) shall be limited to keep total HAP emissions below 23.75 tons/year and keep individual HAP emissions below 9.5 tons/year which is less than the applicability thresholds of 40 CFR 63, Subpart R. The emission rate shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6

~~Facility wide emissions were determined using the most current AP-42 emission factors and "TANKS" program. The throughput limits were calculated using a Vapor Combustion Unit (VCU)~~ emission rate of 2 ~~10~~ milligrams per liter.
^
VCURR will be operated at a maximum

~~The vapor combustion unit shall be tested with report submitted to Department within 180 days after permit renewal issuance date to determine if the vapor combustion unit achieves the 10 milligrams per liter limit. The test shall be conducted in accordance with the procedures described in 6 NYCRR 202-1.~~

Parameter Monitored: 40 CFR 60-63 - TOTAL ORGANIC COMPOUNDS (TOC)
Upper Permit Limit: ~~10 milligrams per liter~~ 2 milligrams per liter
Reference Test Method: Method 25A or 25B, Method 21, Method 2A
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2012.
Subsequent reports are due every 12 calendar month(s).

Condition 4-7: Capping Monitoring Condition
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4-7.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 231-6
40 CFR Part 63, Subpart R

Item 4-7.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4-7.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4-7.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4-7.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4-7.6:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ CDM

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 HAP

Item 4-7.7:
Compliance Certification shall include the following monitoring:

Capping: Yes
Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
Crude Oil throughput shall be limited to keep total HAP emissions less than 23.75 tons/yr and keep individual HAP emissions below 9.5 tons/year; ~~that is,~~ less than the applicability thresholds of 40 CFR 63, Subpart R. ~~This absolves the facility from that NESHAP.~~ Crude oil throughput shall also be limited to keep total VOC emissions below the applicability thresholds of 6 NYCRR 231-6.

Emissions for this cap were calculated using the most current version of AP-42 ~~emission factors, "TANKS" program, or other current emission factors~~. Throughput limits were calculated using a ~~Truck Vapor Recovery Unit emission rate of 2 mg/l, a Rail Vapor Combustion Unit emission rate of~~

~~10~~ ~~2~~ ~~milligrams per liter, and~~ a ~~Marine Vapor Combustion Unit (Control: VCUML) emission rate of 10 mg/l and another~~ Marine Vapor Combustion Unit (Control: VCUM2) ~~with an~~ emssion rate of ~~3~~ 2 mg/l, ~~An Air Quality Impact Analysis was conducted to ensure that impacts from the facility remained below most recent updated DAR-1 AGC/SGC values which were approved by Central Office on 6/28/2012.~~
and with negative pressure loading (vac assist) to eliminate fugitive emissions from loading.

Crude Oil throughputs shall be included in the annual report.

Work Practice Type: PROCESS MATERIAL THRUPUT
Process Material: CRUDE OIL
Upper Permit Limit: ~~1,800,000,000 gallons~~ 450,000,000 gallons
Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due ~~1/30/2013.~~
Subsequent reports are due every 12 calendar month(s).

Condition 31: Notification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 202-1.2

Item 31.1:
A person who is required by the commissioner to submit a stack test report shall notify the commissioner, in writing, not less than 30 days prior to the test, of the time and date of the test. Such notification shall also include the acceptable procedures to be used to stack test including sampling and analytical procedures. Such person shall allow the commissioner, or his representative, free access to observe stack testing being conducted by such person.

Condition 32: Acceptable procedures
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 202-1.3 (a)

Item 32.1:
Emission testing, sampling and analytical determinations to ascertain compliance with this Subchapter shall be conducted in accordance with test methods acceptable to the commissioner. The Reference Methods contained in part 60, appendix A and part 61, appendix B of title 40 of the Code of Federal Regulations and all future technical revisions, additions or corrections made thereto shall be considered as acceptable test methods for those sources and contaminants for which they are expressly applicable, except where the commissioner has issued a specific method to be used instead of a Reference Method contained in these Federal regulations or where the commissioner determines that one or more alternate methods are also acceptable. The person who owns or operates an air contamination source shall submit the emission test report in triplicate, to the commissioner within 60 days after the completion of tests. In the event such source owner/operator can demonstrate to the commissioner such time is not sufficient, he may request in writing and be granted an extension. Where an opacity emission standard is applicable

to the source tested, the emission test report shall include the opacity observation.

Condition 1-8: Air pollution prohibited
Effective between the dates of 08/10/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 211.1

Item 1-8.1:
No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

Condition 33: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 212.2

Item 33.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 000064-17-5 ETHYL ALCOHOL (ETHANOL)

Item 33.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
When an application is made for a permit to construct or for a certificate to operate for a process emission source, the commissioner will issue an environmental rating for each air contaminant from each emission point in accordance with Table 1 of this Part. Since ethanol has a low toxicity the environmental rating assessed will be a C.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 34: Emissions from new emission sources and/or modifications
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 212.4 (a)

Item 34.1:
This Condition applies to:

Emission Unit: ~~1RACK3~~
Process: ~~R3E~~

Item 34.2:
No person shall cause or allow emissions that exceed the applicable permissible emission rate as determined from Table 2, Table 3, or Table 4 of 6 NYCRR Part 212 for the environmental rating issued by the commissioner.

Condition 35: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR ~~212.4 (a)~~ 212-3.1

Item 35.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: 1-RACK3 Emission Point: 00003
Process: R3E Emission Source: VCUML

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 35.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The Volatile Organic Compound (VOC) shall be reduced by a weight percent greater than or equal to 90% to ensure compliance with the emission standard in Table 2.
The emission rate was figured with a maximum loading rate of 168,000 gallons/hr while using the emission factor from AP-42 of 3.9 lbs/ 1000 gallons loaded equals an emission rate of 655 lbs/hour uncontrolled therefore the aforementioned emission standard applies. This condition also satisfies 6 NYCRR 212.10 RACT control of 81% by weight reduction.

Parameter Monitored: VOC
Lower Permit Limit: 90 percent by weight
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE AT ANY TIME
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2012.
Subsequent reports are due every 12 calendar month(s).

Condition 4-8: Compliance Certification
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 212.10 (c) (4) (i)

Item 4-8.1:
The Compliance Certification activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 4-8.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Volatile organic compound emission points which are equipped with a capture system and a control device with an overall removal efficiency of at least 81 percent are equipped with reasonably available control technology.

Manufacturer Name/Model Number: ~~John Zink Vapor Combustion Unit~~
Parameter Monitored: VOC
Upper Permit Limit: 81 percent by weight
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 12 calendar month(s).

Condition 36: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 225-1.2 (a) (2)

Item 36.1:
The Compliance Certification activity will be performed for the Facility.

Item 36.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
No person shall use, purchase, sell, or offer for sale any distillate fuel oil which has a sulfur content greater than the limit presented below. A log of the sulfur

content in oil per delivery must be maintained on site for a minimum of five years after the date of the last entry.

Work Practice Type: PARAMETER OF PROCESS MATERIAL
Process Material: DISTILLATES - NUMBER 1 AND NUMBER 2 OIL
Parameter Monitored: SULFUR CONTENT
Upper Permit Limit: 1.5 percent by weight
Monitoring Frequency: PER DELIVERY
Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB)
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 37: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

1.6
Applicable Federal Requirement:6 NYCRR 225-~~1.8~~ (b)

Item 37.1:
The Compliance Certification activity will be performed for the Facility.

Item 37.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Any person who sells oil and/or coal must retain, for at least three years, records containing the following information:

i. fuel analyses and data on the quantities of all oil and coal received; and

ii. the names of all purchasers, fuel analyses and data on the quantities of all oil and coal sold.

Such fuel analyses must contain as a minimum:

i. data on the sulfur content, ash content, specific gravity and heating value of residual oil;

ii. data on the sulfur content, specific gravity and heating value of distillate oil; and

iii. data on the sulfur content, ash content and heating value of coal.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 38: Sampling, compositing, and analysis of fuel samples
Effective between the dates of 03/03/2011 and 03/02/2016

1.6
Applicable Federal Requirement:6 NYCRR 225-~~1.8~~ (d)

Item 38.1:
All sampling, compositing, and analysis of fuel samples, taken to determine compliance with 6 NYCRR Part 225-1, must be done in accordance with methods acceptable to the commissioner.

Condition 39: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 225-3.3 (a)

Item 39.1:
The Compliance Certification activity will be performed for the Facility.

Item 39.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
Any gasoline sold or supplied to a retailer or wholesale purchaser-consumer, shall have a Reid vapor pressure (RVP) no greater than 9.0 pounds per square inch (psi), during the period May 1st through September 15th of each year. Sampling and testing will be done according to a protocol approved by the Department.

Add condition for Crude monthly RVP sampling - see form

Work Practice Type: PARAMETER OF PROCESS MATERIAL
Process Material: GASOLINE
Parameter Monitored: REID VAPOR PRESSURE
Upper Permit Limit: 9.0 pounds per square inch absolute
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB)
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2012.
Subsequent reports are due every 12 calendar month(s).

Condition 40: Petroleum fixed roof tanks - a
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 229.1 (d) (2) (i)

Item 40.1:
This Condition applies to:
1-TANK1
Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ RPM

Item 40.2:
The tank must be retrofitted with an internal floating roof or equivalent control.

Condition 41: Gasoline terminals - a
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 229.1 (d) (2) (iv)

Item 41.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT

Emission Unit: ~~1RACK2~~ 2-RACKR

Item 41.2:
The gasoline vapor collection and control systems must capture gasoline vapors during loading and unloading of gasoline transport vehicles and must condense, absorb, adsorb, or combust the gasoline vapors so emissions do not exceed 0.67pounds per 1000 gallons of gasoline loaded or unloaded. Any equivalent control system is acceptable.

Condition 42: VOL storage tanks greater than 20,000 gallons - a
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 229.1 (d) (2) (v)

Item 42.1:
This Condition applies to:

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~ET1~~

Item 42.2:
The storage tank must be equipped with an internal floating roof with a liquid-mounted primary seal and gasket fittings or equivalent control. Replacement of other than liquid-mounted seals is to be performed when the tank is cleaned and gas-freed for other purposes.

Condition 43: Internal floating roofs required in fixed roof tanks storing petroleum products
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 229.3 (a)

Item 43.1:
This Condition applies to:

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~GA1~~ RP1

Item 43.2:
No person may store petroleum liquid in a fixed roof tank subject to 6 NYCRR Part 229 unless:

1. the tank has been retrofitted with an internal floating roof or equivalent control; and

2. the vapor collection and vapor control systems are maintained and operated in such a way as to ensure the integrity and efficiency of the system.

Condition 44: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 229.3 (d)

Item 44.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Item 44.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The gasoline vapor collection and control systems must capture gasoline vapors during loading and unloading of gasoline transport vehicles and must condense, absorb, adsorb, or combust gasoline vapors so emissions do not exceed 0.67 pounds/1000 gallons.

Parameter Monitored: VOC
Upper Permit Limit: 0.67 pounds per 1000 gallons
Monitoring Frequency: PER DELIVERY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 45: VOL fixed roof storage tank requirements
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 229.3 (e) (1)

Item 45.1:
This Condition applies to:

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~ET1~~ BS1, CR1

Item 45.2:
For a fixed roof storage tank storing volatile organic liquids, the tank must be equipped with an internal floating roof with a liquid-mounted primary seal and gasket fittings or equivalent control. Replacement of other than liquid-mounted seals is to be performed when the tank is cleaned and gas-free for other purposes.

Condition 4-9: Compliance Certification
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 231-11.2 (c)

Item 4-9.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK3~~ 3-RACKM — Emission Point: ~~00003~~
Process: ~~FG3~~ FGM — Emission Source: ~~RACK3~~

Emission Unit: ~~1-RACK3~~ 3-RACKM — Emission Point: ~~00003~~
Process: ~~R3E~~ RPM — Emission Source: ~~RACK3~~

Emission Unit: ~~1-RACK3~~ — Emission Point: ~~00003~~
Process: ~~R3G~~ — Emission Source: ~~RACK3~~

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: CR1 — Emission Source: TK031

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: CR1 — Emission Source: TK114

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: CR1 — Emission Source: TK115

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: CR1 — Emission Source: ~~TNK32~~ TK032

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ — ~~Emission Source: TK031~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ — ~~Emission Source: TK114~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ RP1 Emission Source: TK114

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ RP1 Emission Source: TK115

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ RP1 Emission Source: TK039 ~~TNK39~~

Item 4-9.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

For a modification with a project emission potential which is less than 50 percent of the applicable significant project threshold in Table 3, Table 4 or Table 6 of Subpart 231-13 of this Part, but equals or exceeds 50 percent of the applicable significant project threshold when emissions excluded in accordance with Clause 231-4.1(b)(40)(i)(c) of this Part are added, or for a modification with a project emission potential which equals or exceeds 50 percent of the applicable significant project threshold in Table 3, Table 4 or Table 6 of Subpart 231-13 of this Part, the facility owner or operator must submit an application to modify the facility permit under the minor permit provisions of Subpart 201-6 of this Title or obtain a preconstruction permit under the provisions of Subpart 201-6 of this Title, and must:

(1) maintain the following information for a minimum of five years:

(i) a description of the modification.

(ii) an identification of each new or modified emission source(s) including the associated processes and emission unit.

(iii) the calculation of the project emission potential for each modified emission source(s) including supporting documentation.

(iv) the date the modification commenced operation.

(2) monitor the emissions of each regulated NSR contaminant from the emission source(s) that will increase as a result of the modification, and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the modification, or for a period of 10 years following resumption of regular operations after the change if the modification increases the design capacity of or potential to emit the regulated NSR contaminant at such emission source(s).

(3) submit a report to the department within 30 days after the end of each year during which records must be generated in accordance with Paragraph 231-11.2(c)(2) of this Part. The report must contain:

(i) the name, address, and telephone number of the major facility.

(ii) the annual emissions as calculated pursuant to Paragraph (c)(2) of this Section.

(iii) a comparison of actual annual emissions to the projected actual emissions and, if applicable, an explanation as to why the actual annual emissions exceeded the projected actual emissions.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 12 calendar month(s).

Condition 4-10: Compliance Certification
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:6 NYCRR 231-11.2 (c)

Item 4-10.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

3-RACKM
Emission Unit: ~~1-RACK3~~
Process: ~~FG3~~ FGM Emission Source: ~~RACK3~~

3-RACKM
Emission Unit: ~~1-RACK3~~
Process: ~~R3C~~ CDM Emission Source: VCUM2

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ CDM Emission Source: ~~VCUML~~ VCUM1

Item 4-10.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

For a modification with a project emission potential which is less than 50 percent of the applicable significant project threshold in Table 3, Table 4 or Table 6 of Subpart 231-13 of this Part, but equals or exceeds 50 percent of the applicable significant project threshold when emissions excluded in accordance with Clause 231-4.1(b)(40)(i)(c) of this Part are added, or for a modification with a project emission potential which equals or exceeds 50 percent of the applicable significant project threshold in Table 3, Table 4 or Table 6 of Subpart 231-13 of this Part, the facility owner or operator must submit an application to modify the facility permit under the minor permit provisions of Subpart 201-6 of this Title or obtain a preconstruction permit under the provisions of Subpart 201-6 of this Title, and must:

(1) maintain the following information for a minimum of five years:

(i) a description of the modification.

(ii) an identification of each new or modified emission source(s) including the associated processes and emission unit.

(iii) the calculation of the project emission potential for each modified emission source(s) including supporting documentation.

(iv) the date the modification commenced operation.

(2) monitor the emissions of each regulated NSR contaminant from the emission source(s) that will increase as a result of the modification, and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the modification, or for a period of 10 years following resumption of regular operations after the change if the modification increases the design capacity of or potential to emit the regulated NSR contaminant at such emission source(s).

(3) submit a report to the department within 30 days after the end of each year during which records must be generated in accordance with Paragraph 231-11.2(c)(2) of this Part. The report must contain:

(i) the name, address, and telephone number of the major facility.

(ii) the annual emissions as calculated pursuant to Paragraph (c)(2) of this Section.

(iii) a comparison of actual annual emissions to the projected actual emissions and, if applicable, an explanation as to why the actual annual emissions exceeded the projected actual emissions.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 12 calendar month(s).

Condition 46: EPA Region 2 address.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.4, NSPS Subpart A

Item 46.1:
This Condition applies to:

1-RACKT
Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~ET1~~ RP1 Emission Source: TK031

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~ET1~~ RP1 Emission Source: TK114

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~ET1~~ RP1 Emission Source: TK115

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~ET1~~ RP1 Emission Source: ~~TNK32~~ TK032

Emission Unit: 1~~TANKS~~ 1-TANK1
Process: ~~ET1~~ RP1 Emission Source: ~~TNK39~~ TK039

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TK114~~

These changes apply to all Subpart A conditions (Conditions 46 through 66). They should also apply to process BS1 and CD1.

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 46.2:
All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the following address:

Director, Division of Enforcement and Compliance Assistance
USEPA Region 2
290 Broadway, 21st Floor
New York, NY 10007-1886

Copies of all correspondence to the administrator pursuant to this part shall also be submitted to the NYSDEC Regional Office issuing this permit (see address at the beginning of this permit) and to the following address:

NYSDEC
Bureau of Quality Assurance
625 Broadway
Albany, NY 12233-3258

Condition 47: Modification Notification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(a), NSPS Subpart A

Item 47.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TK031~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TK114~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK32~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK39~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TK114~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 47.2:
Any owner or operator subject to 40 CFR Part 60 shall furnish the Administrator and this office with the following information:

- a notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless the change is specifically exempted under 40 CFR Part 60. The notice shall be post marked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productivity capability of the facility before and after the change, and the expected completion date of the change. The Administrator and/or this Department may request additional information regarding the change.

Condition 48: Recordkeeping requirements.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(b), NSPS Subpart A

Item 48.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

Emission Unit: ~~1TANKS~~

~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TNK39~~

Item 48.2:
Affected owners or operators shall maintain records of occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

Condition 49: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(c), NSPS Subpart A

Item 49.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

~~Emission Unit: 1-RACK1~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1-TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1-TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1-TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1-TANKS~~
~~Process: GA1~~ ~~Emission Source: TNK39~~

~~**Item 49.2:**~~
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Affected owners or operators shall submit an excess

emissions report and/or a summary report form (as defined in 40 CFR 60.7(d)) semi-annually (or more frequently as required by the applicable Subpart or the Administrator), to the Administrator. These reports shall be post marked no later than 30 days after each six (6) month period (or as appropriate), and shall contain the following information:

1) the magnitude of excess emissions computed, any conversion factors used, the date and time of each occurrence, and the process operating time during the reporting period;

2) specific identification of each period of excess emissions that occur during startup, shutdown, or malfunction, where the nature, cause, and corrective action are provided for a malfunction;

3) the date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and

4) when no excess emissions have occurred or when the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be provided in the report.

Monitoring Frequency: CONTINUOUS
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 50: Excess emissions report.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(d), NSPS Subpart A

Item 50.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

Emission Unit: ~~1TANKS~~

Process: ~~ET1~~ Emission Source: ~~TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK32~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK39~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TK114~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 50.2:
A summary report form, for each pollutant monitored, shall be sent to the Administrator in the form prescribed in Figure 1 of 40 CFR Part 60.7(d).

Condition 51: Monitoring frequency waiver.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(e), NSPS Subpart A

Item 51.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 51.2: Notwithstanding the frequency of reporting requirements specified in paragraph (c) of this section, an owner or operator who is required by an applicable subpart to submit excess emissions and monitoring systems performance reports (and summary reports) on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the conditions in 40 CFR 60.7(e) are met.

Condition 52: Facility files for subject sources.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(f), NSPS Subpart A

Item 52.1:
This Condition applies to:

~~Emission Unit: 1RACK1~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~ ~~Emission Point: 00115~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~ Emission Point: ~~00115~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 52.2:
The following files shall be maintained at the facility for all affected sources: all measurements, including continuous monitoring systems, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations;all continuous monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part, recorded in permanent form suitable for inspections. The file shall be maintained for at least two years following the date of such

measurements, reports, and records.

Condition 53: Notification Similar to State or Local Agency
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.7(g), NSPS Subpart A

Item 53.1:
This Condition applies to:

~~Emission Unit: 1RACK1~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TNK39~~

Item 53.2:
If notification substantially similar to that in 40 CFR Part 60.7(a) is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of 40 CFR Part 60.7(a).

Condition 54: Performance testing timeline.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.8(a), NSPS Subpart A

Item 54.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TNK39~~

Item 54.2:
Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup of the facility, the owner or operator of the facility shall conduct performance testing and provide the results of such tests, in a written report, to the Administrator.

Condition 55: Performance test methods.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.8(b), NSPS Subpart A

Item 55.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 55.2:
Performance testing shall be conducted in accordance with the methods and procedures prescribed in 40 CFR 60 or by alternative methods and procedures approved by the Administrator.

Condition 56: Required performance test information.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.8(c), NSPS Subpart A

Item 56.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 56.2:
Performance tests shall be conducted under such conditions specified by the Administrator, based upon representative performance data supplied by the owner or operator of the facility.

Condition 57: Prior notice.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.8(d), NSPS Subpart A

Item 57.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ Emission Source: ~~TNK39~~

Item 57.2:
The owner or operator shall provide the Administrator with prior notice of any performance test at least 30 days in advance of testing.

Condition 58: Performance testing facilities.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.8(e), NSPS Subpart A

Item 58.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 58.2:
The following performance testing facilities shall be provided during all tests:

1) sampling ports adequate for tests methods applicable to such facility;

2) a safe sampling platform;

3) a safe access to the sampling platform; and

4) utilities for sampling and testing equipment.

Condition 59: Number of required tests.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.8(f), NSPS Subpart A

Item 59.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TNK39~~

Item 59.2:
Each performance test shall consist of three separate runs, at the specified duration required in the applicable test method. Compliance with all applicable standards shall be determined by using the arithmetic means of the results of the three runs.

Condition 60: Availability of information.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.9, NSPS Subpart A

Item 60.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK39~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 60.2:
The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by 40 CFR Part 2.

Condition 61: Opacity standard compliance testing.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.11, NSPS Subpart A

Item 61.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 61.2:
The following conditions shall be used to determine compliance with the opacity standards:

1) observations shall be conducted in accordance with Reference Method 9, in

Appendix A of 40 CFR Part 60(or an equivalent method approved by the Administrator including continuous opacity monitors);

2) the opacity standards apply at all times except during periods of start up, shutdown, and malfunction; and

3) all other applicable conditions cited in section 60.11 of this part.

Condition 62: Compliance with Standards and Maintenance Requirements
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.11(d), NSPS Subpart A

Item 62.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 62.2:
At all times, including periods of startup, shutdown, and malfunction, owners and operators of this facility shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Department and the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

Condition 63: Circumvention.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.12, NSPS Subpart A

Item 63.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TNK39~~

Item 63.2:
No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

Condition 64: Monitoring requirements.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.13, NSPS Subpart A

Item 64.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 64.2:
All continuous monitoring systems and devices shall be installed, calibrated, maintained, and operated in accordance with the requirements of section 60.13.

Condition 65: Modifications.
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.14, NSPS Subpart A

Item 65.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

Emission Unit: ~~1TANKS~~
Process: ~~ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK115~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 65.2:
Within 180 days of the completion of any physical or operational change (as defined in section 60.14), compliance with the applicable standards must be achieved.

Condition 66: Reconstruction
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.15, NSPS Subpart A

Item 66.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~

Emission Unit: 1~~TANKS~~
Process: ~~ET1~~ ~~Emission Source: TK031~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK114~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK32~~

~~Emission Unit: 1TANKS~~
~~Process: ET1~~ ~~Emission Source: TNK39~~

~~Emission Unit: 1TANKS~~
~~Process: GA1~~ ~~Emission Source: TK114~~

Emission Unit: ~~1TANKS~~
Process: ~~GA1~~ ~~Emission Source: TK115~~

~~Emission Unit: 1TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 66.2:
The following shall be submitted to the Administrator prior to reconstruction (as defined in section 60.15):

1) a notice of intent to reconstruct 60 days prior to the action;

2) name and address of the owner or operator;

3) the location of the existing facility;

4) a brief description of the existing facility and the components to be replaced;

5) a description of the existing air pollution control equipment and the proposed air pollution control equipment;

6) an estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility;

7) the estimated life of the facility after the replacements; and

8) a discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

Condition 67: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.113b(a), NSPS Subpart Kb

Item 67.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Kb applies to Tanks 31, 32, 39, 114 & 115 for processes RP1, BS1 and CR1. This applies to all Kb conditions.

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: TK114

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: TK115

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 67.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The facility operator shall conduct the following testing and maintenance procedures on the internal floating roof VOC control system for an applicable storage vessel when storing gasoline:

(1) Visually inspect the internal floating roof, the

primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) Visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Department in the inspection report required by this rule in Sec. 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with Volatile Organic Liquid (VOL). In no event shall inspections conducted in accordance with this requirement occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in item (2).

(4) Notify the regional office in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by items (1) and (3)

of this section to afford the Department the opportunity to have an observer present. If the inspection required by item (3) is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Department at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Department at least 7 days prior to the refilling.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 68: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.115b(a), NSPS Subpart Kb

Item 68.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: TK031

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: TK114

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: TK115

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK32~~

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK39~~

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: TK114

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: TK115

Emission Unit: ~~1-TANKS~~

Process: ~~GA1~~ Emission Source: ~~TNK39~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 68.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

The owner or operator shall keep a record of each inspection performed to monitor the condition of the internal floating roof. Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

After each inspection that finds holes or tears in the seal or seal fabric, defects in the internal floating roof, or other control equipment defects, a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel, the nature of the defects, and the type and date of each repair made.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 69: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.116b, NSPS Subpart Kb

Item 69.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: TK031

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: TK114

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: TK115

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK32~~

Emission Unit: ~~1-TANKS~~
Process: ~~ET1~~ Emission Source: ~~TNK39~~

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: TK114

Emission Unit:~~1-TANKS~~
Process: ~~GA1~~ Emission Source: TK115

Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ Emission Source: ~~TNK39~~

Item 69.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

The facility shall maintain the following readily accessible records, for applicable storage vessels:
- records showing the dimension of the storage vessel
- an analysis showing the capacity of the storage vessel.

- a record of the Volatile Organic Liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below:

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:
(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar- month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference--see Sec. 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:
(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference--see Sec. 60.17); or
(iii) Measured by an appropriate method approved by the Administrator; or
(iv) Calculated by an appropriate method approved by the Administrator.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 70: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.502(b), NSPS Subpart XX

Item 70.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT

Item 70.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
Emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 35 milligrams of total organic compounds per liter loaded. An initial performance test is required to demonstrate compliance with the emission limit for the vapor processing system.

Parameter Monitored: VOC
Upper Permit Limit: 35.0 milligrams per liter
Reference Test Method: 25a or 25b
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST

METHOD INDICATED
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 71: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.502(e), NSPS Subpart XX

Item 71.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT

Item 71.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Loadings of liquid product into gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the following procedures:

1. The owner or operator shall obtain the vapor tightness documentation described in paragraph 60.505(b) of 40 CFR 60.500 Subpart XX for each gasoline tank truck which is to be loaded at the facility.

2. The owner or operator shall require the tank identification number to be recorded as each gasoline tank truck is loaded at the facility.

3. The owner or operator shall cross-check each tank identification number recorded per item 2 above with the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded.

4. The terminal owner or operator shall notify the owner or operator of each nonvapor-tight gasoline tank truck loaded at the facility within 1 week after the documentation cross-check (Item #3).

5. The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline tank truck will not be reloaded at the facility until vapor tightness documentation for that tank is obtained.

In addition, the terminal owner or operator shall keep documentation of all notifications required under item 4 above on file at the terminal for at least 5 years.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 72: Truck loading compatibility
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.502(f), NSPS Subpart XX

Item 72.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT

Item 72.2:
Gasoline loading limited to trucks with vapor collection equipment which is compatible with the terminal vapor collection system.

Condition 73: Vapor collection connection required
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.502(g), NSPS Subpart XX

Item 73.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT

Item 73.2:
The terminal and tank truck vapor collection systems must be connected during gasoline loading.

Condition 74: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 60.502(i), NSPS Subpart XX

Item 74.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT

Item 74.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
No pressure-vacuum vent in the terminal vapor collection system shall begin to open at a pressure less than 4,500 pascals.

Parameter Monitored: PRESSURE
Lower Permit Limit: 4,500 Pascals
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 75: Definition of an affected source
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11081(a), Subpart BBBBBB

Item 75.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~GA1~~ RP1

Item 75.2:
The affected source to which subpart BBBBBB applies is each area source bulk gasoline terminal, pipeline breakout station, pipeline pumping station, and bulk gasoline plant as identified below:

1) A bulk gasoline terminal that is not subject to the control requirements of 40CFR63, Subpart R or 40CFR63, Subpart CC.

2) A pipeline breakout station that is not subject to the control requirements of 40CFR63, subpart R.

3) A pipeline pumping station.

4) A bulk gasoline plant.

Condition 76: Compliance date for an existing source
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11083(b), Subpart BBBBBB

Item 76.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~GA1~~ RP1

Item 76.2:
An existing affected source must comply with the standards of this subpart no later than January 10, 2011.

Condition 77: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11087, Subpart BBBBBB

Item 77.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

1-TANK1
Emission Unit: ~~1-TANKS~~
Process: ~~GA1~~ RP1

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 77.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

A facility which owns or operates a gasoline storage tank subject to this subpart and having a capacity equal to or exceeding 75 cubic meters shall equip each internal floating roof gasoline storage tank according to the requirements in §60.112b(a)(1), except for the secondary seal requirements under §60.112b(a)(1)(ii)(B) and the requirements in §60.112b(a)(1)(iv)-(ix). The facility shall comply with the requirements of subpart BBBBBB by the applicable dates specified in §63.11083, except that if a storage vessel with a floating roof is not meeting the requirements of §63.11087(a) it must be in compliance at the first degassing and cleaning activity after January 10, 2011 or by January 10, 2018, whichever is first. The facility must comply with the testing and monitoring requirements specified in §63.11092(e)(1). Finally, the facility shall submit the following information as required in 40 CFR Part 60.115b(a):

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

These records are to be maintained for a minimum of 5 years.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 78: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11088, Subpart BBBBBB

Item 78.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 78.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The owner and/or operator of a gasoline loading rack having a throughput of greater than or equal to 250,000 gallons/day, shall be subject to the following requirements:

a) Equip the loading rack(s) with a vapor collection system designed to collect the TOC vapors displaced from cargo tanks during product loading; and
b) Reduce emissions of TOC to less than or equal to 80 mg/l of gasoline loaded into gasoline cargo tanks at the loading rack; and
c) Design and operate the vapor collection system to prevent any TOC vapors collected at one loading rack from passing to another loading rack; and
d) Limit the loading of gasoline into gasoline cargo tanks that are vapor tight using the procedures specified in §60.502(e)-(j). For the purposes of this condition, the term "tank truck' as used in §60.502(e)-(j) means "cargo tank" as defined in subpart BBBBBB in §63.11100.

The facility shall comply with the requirements of subpart BBBBBB by the applicable dates specified in §63.11083.

The facility must comply with the testing and monitoring requirements specified in §63.11092(a).

The facility must keep records and submit reports as specified in §63.11094 and 11095.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 79: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11089, Subpart BBBBBB

Item 79.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Item 79.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Each owner/operator of a bulk gasoline terminal, bulk plant, pipeline breakout station, or pipeline pumping station subject to the provisions of subpart BBBBBB shall perform a monthly leak inspection of all equipment in gasoline service, as defined in §63.11100. For this inspection, detection methods incorporating sight, sound, and smell are acceptable.

A log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.

Each detection of a liquid or vapor leak shall be recorded in the log book. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak, except as provided in §63.11089(d).

Delay of repair of leaking equipment will be allowed if the repair is not feasible within 15 days. The owner or operator shall provide in the semiannual report specified in §63.11095(b), the reason(s) why the repair was not feasible and the date each repair was completed.

The facility must comply with the requirements of subpart BBBBBB by the applicable dates in §63.11083.

The facility must submit the applicable notifications as required under §63.11093.

The facility must keep records and submit reports as specified in §63.11094 and 63.11095.

Monitoring Frequency: MONTHLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 80: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(a), Subpart BBBBBB

Item 80.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 80.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
The owner and/or operator of a facility subject to the

emission standard in §63.11088 for gasoline loading racks must conduct a performance test on the vapor processing and collection systems according to either of the following methods;

- test methods and procedures in §60.503, except a reading of 500ppm shall be used to determine the level of leaks to be repaired under §60.503(b), or;

- alternative test methods and procedures in accordance with the alternative test method requirements in §63.7(f).

Upper Permit Limit: 80 milligrams per liter
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 81: Waiver of new performance test requirement by complying with state rule
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(a)(2), Subpart BBBBBB

Item 81.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Item 81.2:
If the facility is operating a gasoline loading rack in compliance with 6 NYCRR Part 229.3(d)(1) which requires the loading rack to meet an emission limit of 80mg/L of gasoline loaded, then the facility may submit a statement by a responsible official of the facility certifying the compliance status of the loading rack in lieu of the test required in §63.11092(a)(1).

Condition 82: Waiver of new testing requirement due to previous test conducted within 5 prior year period
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(a)(3), Subpart BBBBBB

Item 82.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Item 82.2:
If the facility has conducted a performance test on the vapor processing and collection systems within 5 years prior to January 10, 2008, and the test is for the affected facility and is representative of current or anticipated operating processes and conditions, the facility may submit the results of such testing in lieu of the test required under §63.11092(a)(1), provided the testing was conducted using the test methods and procedures in §60.503.

Should USEPA deem the prior test data unacceptable, the facility is still required to meet the requirement to conduct an initial performance test within 180 days of the applicable compliance date in §63.11083.

Condition 83: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(b)(1)(i)('B')('1'), NESHAP Subpart BBBBBB

Item 83.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP

Item 83.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
For each performance test required under §63.11092(a)(1), the owner/operator shall determine a monitored operating parameter value for the vapor processing system. When the owner/operator chooses to use carbon adsorption as the vapor processing system, the owner/operator shall install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous monitoring system (CMS) while gasoline vapors are displaced to the

Add condition for VRUTK continuous monitoring condition, 40 CFR 63.11092(b). See Form.

The Terminal will use a VRU with a Continuous Emissions Monitoring System (CEMS) capable of measuring organic compound concentration per 40 CFR 63.11092(b)(1)(i)(A). The average hydrocarbon outlet percent will be monitored to ensure it does not exceed a six hour average limit of 0.2 vol% propane (2000 ppm), which corresponds to the permitted limit of 2 mg/L. The averaging time is a six hour rolling average. In the event of CEMS downtime, alternative monitoring parameters will be observed in accordance with 40 CFR 63.11092(b)(1)(i)(B).
Each calendar month the vapor collection system and vapor processing system shall be inspected during loading events for total organic compounds liquid or vapor leaks. For purposes of this paragraph, sight, sound or smell are acceptable inspection/detection methods. Each detection of a leak shall be recorded and the source of the leak repaired. This condition applies to VRUTK.

carbon adsorption system.

As an alternative to installing a continuous emissions monitoring system (CEMS) as required in §63.11092(b)(1)(i)(A), the owner/operator must monitor the carbon adsorption devices as specified in §63.11092(b)(1)(i)(B).

One of the requirements in §63.11092(b)(1)(i)(B) requires the owner/operator to conduct annual testing of the carbon activity for the carbon in each carbon bed. Carbon activity shall be tested in accordance with the butane working capacity test of the American Society for Testing and Materials (ASTM) Method D 5228-92 (incorporated by reference, see §63.14), or by another suitable procedure as recommended by the manufacturer.

Monitoring Frequency: ANNUALLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 84: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(b)(1)(i)('B')('1'), NESHAP Subpart BBBBBB

Item 84.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP

Item 84.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
For each performance test required under §63.11092(a)(1), the owner/operator shall determine a monitored operating parameter value for the vapor processing system. When the owner/operator chooses to use carbon adsorption as the vapor processing system, the owner/operator shall install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous monitoring system (CMS) while gasoline vapors are displaced to the

carbon adsorption system.

As an alternative to installing a continuous emissions monitoring system (CEMS) as required in §63.11092(b)(1)(i)(A), the owner/operator must monitor the carbon adsorption devices as specified in §63.11092(b)(1)(i)(B).

One of the requirements in §63.11092(b)(1)(i)(B) requires the owner/operator to conduct monthly measurements of the carbon bed outlet volatile organic compounds (VOC) concentration over the last 5 minutes of an adsorption cycle for each carbon bed, documenting the highest measured VOC concentration. Measurements shall be made using a portable analyzer, in accordance with 40CFR Part 60, Appendix A-7, EPA Method 21 for open-ended lines.

Reference Test Method: Method 21
Monitoring Frequency: MONTHLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 85: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(b)(1)(i)('B')('1'), NESHAP Subpart BBBBBB

Item 85.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP

Item 85.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
For each performance test required under §63.11092(a)(1), the owner/operator shall determine a monitored operating parameter value for the vapor processing system. When the owner/operator chooses to use carbon adsorption as the vapor processing system, the owner/operator shall install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous monitoring

system (CMS) while gasoline vapors are displaced to the carbon adsorption system.

These conditions should all be revised for CEMS with alternative monitoring as back up when CEMS is down. See application forms.

As an alternative to installing a continuous emissions monitoring system (CEMS) as required in §63.11092(b)(1)(i)(A), the owner/operator must monitor the carbon adsorption devices as specified in §63.11092(b)(1)(i)(B).

One of the requirements in §63.11092(b)(1)(i)(B) requires the owner/operator to monitor the vacuum level using a pressure transmitter installed in the vacuum pump suction line, with the measurements displayed on a gauge that can be visually observed. Each carbon bed shall be observed during one complete regeneration cycle on each day of operation of the loading rack to determine the maximum vacuum level achieved.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 86: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(b)(1)(i)('B')('2'), NESHAP Subpart BBBBBB

Item 86.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP

Item 86.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
For each performance test required under §63.11092(a)(1), the owner/operator shall determine a monitored operating parameter value for the vapor processing system. When the owner/operator chooses to use carbon adsorption as the vapor processing system, the owner/operator shall install, calibrate, certify, operate, and maintain, according to

the manufacturer's specifications, a continuous monitoring system (CMS) while gasoline vapors are displaced to the carbon adsorption system.

As an alternative to installing a continuous emissions monitoring system (CEMS) as required in §63.11092(b)(1)(i)(A), the owner/operator must monitor the carbon adsorption devices as specified in §63.11092(b)(1)(i)(B).

One of the requirements in §63.11092(b)(1)(i)(B) requires the owner/operator to develop and submit to NYSDEC a monitoring and inspection plan that describes the owner/operator's approach for meeting the following requirements:

1) The lowest maximum required vacuum level and duration needed to assure regeneration of the carbon beds shall be determined by an engineering analysis or from the manufacturer's recommendation and shall be documented in the monitoring and inspection plan.

2) The owner/operator shall verify, during each day of operation of the loading rack, the proper valve sequencing, cycle time, gasoline flow, purge air flow, and operating temperatures. Verification shall be through visual observation or through an automated alarm or shutdown system that monitors and records system operation.

3) The owner/operator shall perform semi-annual preventive maintenance inspections of the carbon adsorption system according to the recommendation of the manufacturer of the system.

4) The monitoring plan developed above shall specify conditions that would be considered malfunctions of the carbon adsorption system during the inspections of automated monitoring performed under items 1-3 above, describe specific corrective actions that will be taken to correct any malfunction, and define what the owner/operator would consider to be a timely repair for each potential malfunction.

5) The owner/operator shall document the maximum vacuum level observed on each carbon bed from each daily inspection and the maximum VOC concentration observed from each carbon bed on each monthly inspection as well as any system malfunction, as defined in the monitoring and inspection plan, and any activation of the automated alarm or shutdown system with a written entry into a log book or other permanent form of record. Such record shall also

include a description of the corrective action taken and whether such corrective actions were taken in a timely manner, as defined in the monitoring and inspection plan, as well as an estimate of the amount of gasoline loaded during the period of the malfunction.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 87: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11092(b)(1)(iii), Subpart BBBBBB

Item 87.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR Emission Source: VCURR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Add condition for Continuous Parameter Monitoring System for VCURR temperature monitoring with alternative monitoring as back up. See forms 40 CFR 63.11092(b).

Item 87.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
For each performance test conducted under §63.11092(a)(1), the owner/operator must determine a monitored operating parameter value for any thermal oxidation system other than a flare using one of the following procedures:

(A) A continuous parameter monitoring system (CPMS) capable of measuring temperature shall be installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs.

(B) As an alternative, the facility may choose to meet the requirements listed below:

(1) The presence of a thermal oxidation system pilot flame shall be monitored using a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, installed in

proximity to the pilot light to indicate the presence of a flame.

(2) Develop and submit to NYSDEC a monitoring and inspection plan that describes the facility's approach for meeting the following requirements:

- The thermal oxidation system shall be equipped to automatically prevent gasoline loading operations from beginning at any time that the pilot flame is absent.
- The facility shall verify, during each day of operation of the loading rack, the proper operation of the assist-air blower, the vapor line valve, and the emergency shutdown system. Verification shall be through visual observation or through an automated alarm or shutdown system that monitors and records system operation.
- The facility shall perform semi-annual preventive maintenance inspections of the thermal oxidation system according to the recommendations of the manufacturer of the system.
- The monitoring plan developed above shall specify conditions that would be considered malfunctions of the thermal oxidation system during the inspections or automated monitoring performed as stated above, describe specific corrective actions that will be taken to correct any malfunction, and define what the facility would consider to be a timely repair for each potential malfunction.
- The facility shall document any system malfunction, as defined in the monitoring and inspection plan, and any activation of the automated alarm or shutdown system with a written entry into a log book or other permanent form or record. Such record shall also include a description of the corrective action taken and whether such corrective actions were taken in a timely manner, as defined in the monitoring and inspection plan, as well as an estimate of the amount of gasoline loaded during the period of the malfunction.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 88: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11094(b), Subpart BBBBBB

Item 88.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FT1~~ FGT

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 88.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The facility shall keep records of the test results for each gasoline cargo tank loading at the facility as specified below:

1) Annual certification testing performed under §63.11092(f)(1) and periodic railcar bubble leak testing performed under §63.11092(f)(2).

2) The documentation file shall be kept up-to-date for each gasoline cargo tank loading at the facility. The documentation for each test shall include, as a minimum, the following information:

- Name of Test: Annual Certification Test - Method 27 or Periodic Railcar Bubble Leak Test Procedure.
- Cargo tank owner's name and address
- Cargo tank identification number
- Test location and date
- Tester name and signature
- Witnessing inspector, if any: name, signature, affiliation
- Vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing
- Test results: Test pressure, pressure or vacuum change, mm of water; time period of test; number of leaks found with instrument; and leak definition

3) If the facility is complying with the alternative requirements in §63.11088(b), the facility must keep records documenting that the facility has verified the vapor tightness testing according to the requirements of EPA.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 89: Compliance Certification

Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11094(c), Subpart BBBBBB

Item 89.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FT1~~ FGT

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 89.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
As an alternative to keeping records at the terminal of each gasoline cargo tank test result as required in §63.11094(b), the facility may keep an electronic copy of each record which would be instantly available at the terminal. The copy of each record above must be an exact duplicate image of the original paper record with certifying signatures.

For facilities which use a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation must be made available (e.g., via facsimile) for inspection by EPA's or NYSDEC's delegated representatives during the course of a site visit, or within a mutually agreeable time frame.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 90: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11094(d), Subpart BBBBBB

Item 90.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 90.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
If the facility is subject to the equipment leak provisions of §63.11089, then the facility shall prepare and maintain a record describing the types, identification numbers, and locations of all equipment in gasoline service. For facilities electing to implement an instrument program under §63.11089, the record shall contain a full description of the program.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 91: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11094(e), Subpart BBBBBB

Item 91.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 91.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

If the facility is subject to the requirements for equipment leak inspections in §63.11089, then the facility shall record in the log book for each leak that is detected, the information below:

1) The equipment type and identification number.
2) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell).
3) The date the leak was detected and the date of each attempt to repair the leak.
4) Repair methods applied in each attempt to repair the leak.
5) "Repair delayed" and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak.
6) The expected date of successful repair of the leak if the leak is not repaired within 15 days.
7) The date of successful repair of the leak.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 92: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11094(f), Subpart BBBBBB

Item 92.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT Emission Source: VRUTK

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR Emission Source: VCURR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 92.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

The facility shall keep the following records:

1) Keep an up-to-date, readily accessible record of the continuous monitoring data required under §63.11092(b) or §63.11092(e). This record shall indicate the time intervals during which loadings of gasoline cargo tanks have occurred or, alternatively, shall record the operating parameter data only during such loadings. The date and time of day shall also be indicated at reasonable intervals on this record.

2) Record and report simultaneously with the Notification of Compliance Status required under §63.11093(b) all data and calculations, engineering assessments, and manufacturer's recommendations used in determining the operating parameter value under §63.11092(b) or §63.11092(e).

3) Keep an up-to-date, readily accessible copy of the monitoring and inspection plan required under §63.11092(b)(1)(i)(B)(2) or §63.11092(b)(1)(iii)(B)(2).

4) Keep an up-to-date, readily accessible copy of all system malfunctions, as specified in §63.11092(b)(1)(i)(B)(2)(v) or §63.11092(b)(1)(iii)(B)(2)(v).

5) If the facility requests approval to use a vapor processing system or monitor an operating parameter other than those specified in §63.11092(b), the facility shall submit a description of planned reporting and recordkeeping procedures.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 93: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11095(a), Subpart BBBBBB

Item 93.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: ~~GA1~~ RP1

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 93.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Each facility with a bulk terminal or pipeline breakout station that is subject to control requirements of subpart BBBBBB shall include in a semiannual compliance report the following information, as applicable:

1) For storage vessels, if the facility is complying with options 2(a), 2(b), or 2(c) in table 1 of subpart BBBBBB, the informations specified in §60.115b(a), §60.115b(b), or §60.115b(c), depending upon the control equipment installed, or, if the facility is complying with option 2(d) in table 1 of subpart BBBBBB, the information specified in §63.1066.

2) For loading racks, each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility.

3) For equipment leak inspections, the number of equipment leaks not repaired within 15 days after detection.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 94: Compliance Certification

Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11095(b), Subpart BBBBBB

Item 94.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Emission Unit: ~~1-RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Regulated Contaminant(s):
CAS No: 0NY100-00-0 HAP

Item 94.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
A facility that is subject to the control requirements in Subpart BBBBBB, shall submit an excess emissions report to NYSDEC at the time the semiannual compliance report is submitted. Excess emissions events under subpart BBBBBB, and the information to be included in the excess emissions report, are as follows:

1) Each instance of a non-vapor-tight gasoline cargo tank loading at the facility in which the facility failed to take steps to assure that such cargo tank would not be reloaded at the facility before vapor tightness documentation for that cargo tank was obtained.

2) Each reloading of a non-vapor-tight gasoline cargo tank at the facility before vapor tightness documentation for that cargo tan is obtained by the facility in accordance with §63.11094(b).

3) Each exceedance or failure to maintain, as appropriate, the monitored operating parameter value determined under §63.11092(b). The report shall include the monitoring data for the days on which exceedances or failures to maintain have occurred, and a description and timing of the steps taken to repair or perform maintenance on the

vapor collection and processing systems or the continuous monitoring system.

4) Each instance in which malfunctions discovered during the monitoring and inspections required under §63.11092(b)(1)(i)(B)(2) and (b)(1)(iii)(B)(2) were not resolved according to the necessary corrective actions described in the monitoring and inspection plan. The report shall include a description of the malfunction and the timing of the steps taken to correct the malfunction.

5) for each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection:
- the date on which the leak was detected;
- the date of each attempt to repair the leak;
- the reasons for the delay of repair; and
- the date of successful repair.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 95: Applicability of MACT General Provisions
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40CFR 63.11098, Subpart BBBBBB

Item 95.1:
This Condition applies to:

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~FG1~~ FGT

Emission Unit: ~~1RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~FE2~~ FGR

Emission Unit: ~~1RACK2~~ 2-RACKR
Process: ~~R2G~~ RPR

Emission Unit: ~~1TANKS~~ 1-TANK1
Process: ~~GA1~~ RP1

Item 95.2:

Table 3 of subpart BBBBBB lists which parts of the general provisions in subpart A apply to the facility.

Condition 4-11: Compliance Certification
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:40 CFR Part 64

Item 4-11.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Add process RPM

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ CDM Emission Source: VCUM2

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ CDM Emission Source: ~~VCUML~~ VCUM1

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 4-11.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Once each day, while the Vapor Combustion Unit (VCU) is operating, the permittee will inspect the VCU for proper operation. Proper operation is that the pilot is lit for loading operations and the Ultraviolet Flame detection equipment indicates the presence of a flame.

An excursion occurs if the product is being loaded without the pilot flame being lit.

The facility shall comply with 40 CFR 64.7 and 64.9.

Monitoring Frequency: PER DELIVERY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 6 calendar month(s).

Add condition for continuous temperature monitor/MOPV for VCUM1 and VCUM2 to this condition. See separate forms (40 CFR Part 64).

Add condition for continuous temperature monitor/MOPV for VCURR to this condition. See form (40 CFR Part 64).

Condition 4-12: Compliance Certification
Effective between the dates of 11/07/2012 and 03/02/2016

Applicable Federal Requirement:40 CFR Part 64

Item 4-12.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

3-RACKM
Emission Unit: ~~1-RACK3~~
Process: ~~R3C~~ CDM Emission Source: VCUM2

3-RACKM
Emission Unit: ~~1-RACK3~~
VCUM1
Process: ~~R3C~~ CDM Emission Source: ~~VCUML~~

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 4-12.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
A third party contractor specializing in Vapor Combustion Unit (VCU) maintenance shall inspect and perform any necessary maintenance on the unit once every six months. The facility shall comply with 40 CFR 64.7 and 40 CFR 64.9. Records documenting the semi-annual maintenance occured shall be maintained in accordance with 6 NYCRR 201-6.5(c)(1) and (c)(2).

Monitoring Frequency: SEMI-ANNUALLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2013.
Subsequent reports are due every 6 calendar month(s).

Condition 96: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40 CFR Part 64

Item 96.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

2-RACKR
Emission Unit: ~~1-RACK2~~ Emission Point: ~~00002~~ 0RRK1
Process: ~~R2E~~ RPR Emission Source: VCURR

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 96.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
A third party contractor specializing in Vapor Combustion Unit (VCU) maintenance shall inspect and perform any necessary maintenance on the unit once every six months. The facility shall comply with 40 CFR 64.7 and 40 CFR

64.9. Records documenting the semi-annual maintenance occured shall be maintained in accordance with 6 NYCRR 201-6.5(c)(1) and (c)(2).

Monitoring Frequency: SEMI-ANNUALLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 101: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40 CFR Part 64

Item 101.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1E~~ RPT Emission Source: VRUTK

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 101.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
A third party contractor, specializing in VRU maintenance, shall perform preventative maintenance once each ~~quarter~~ semi-annual period. The facility shall comply with 40 CFR 64.7 and 64.9. Records documenting that the ~~quarterly~~ semi-annual maintenance occurred shall be maintained in accordance with 201-6.5(c)(1) and (c)(2).

CAM does not require a specific time frame for PM. 6B Requires semi-annual.

Monitoring Frequency: ~~QUARTERLY~~ SEMI-ANNUAL
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 102: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

*Combine Conditions 102 & 103. See notes on following pages.

Applicable Federal Requirement:40 CFR Part 64

Item 102.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

1-RACKT
Emission Unit: ~~1-RACK1~~ Emission Point: ~~00001~~ 0TRK1
Process: ~~R1E~~ RPT Emission Source: VRUTK

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 102.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:

Indicator 1: Temperature -- The temperature of the carbon bed will be monitored and recorded daily ~~during truck loading~~ via a probe inserted in the carbon bed. If the temperature is between ~~150~~ 175 and 200 degree F, a second temperature reading will be obtained during the next loading cycle of that carbon bed.

~~An excursion:~~
~~1~~ If the the temperature exceeds 200 degree F during a loading cycle of either carbon bed, an excursion has occurred.
~~2~~ If the second temperature reading exceeds ~~150~~ 153 degree F,an excursion has occurred.

The facility shall comply with 40 CFR 64.7 and 64.9. Records shall be maintained in accordance with Part 201-6.5(c)(1) and (c)(2).

A CEMS is used as the continuous monitoring parameter for CAM. Daily drift checks are performed automatically by the system. Daily drift checks are used to evaluate the CEM needs to be calibrated.

The following parameters will be monitored when the CEMS is not operational:

Parameter Monitored: TEMPERATURE
Upper Permit Limit: 200 degrees Fahrenheit
Monitoring Frequency: DAILY
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 103: Compliance Certification
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:40 CFR Part 64

Item 103.1:
The Compliance Certification activity will be performed for the facility:
The Compliance Certification applies to:

1-RACKT
Emission Unit: ~~1-RACK1~~ Emission Point: ~~00001~~ 0TRK1
Process: ~~R1E~~ RPT Emission Source: VRUTK

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 103.2:
Compliance Certification shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Indicator 2: Vacuum -- The facility will monitor the operating vacuum of each carbon bed during a regeneration cycle once per day and manually record the vacuum.

The greatest vacuum during one regeneration cycle of each bed shall be manually recorded based on the gauge reading. The duration of the reading shall be one complete cycle. If the recorded value for either bed is less than the limit, a second reading shall be collected during the course of the next regeneration cycle of the bed, approximately 30 minute cycle.
An excursion~~:~~ occurs

If the operating vacuum of two consecutive regeneration cycles for a bed fails to attain at least ~~25~~ 26 in Hg during both regeneration cycles of the bed, ~~an excursion has occurred.~~

The facility shall comply with 40 CFR 64.7 and 64.9. Records shall be maintained in accordance with Part 201-6.5 (c)(1) and (c)(2).

Parameter Monitored: VACUUM
Lower Permit Limit: ~~25~~ 26 inches of mercury
Monitoring Frequency: DAILY
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

~~**Condition 105: Compliance Certification**~~
~~**Effective between the dates of 03/03/2011 and 03/02/2016**~~

~~**Applicable Federal Requirement:40 CFR Part 64**~~

~~**Item 105.1:**~~
~~The Compliance Certification activity will be performed for the facility:~~
~~The Compliance Certification applies to:~~

~~Emission Unit: 1-RACK2~~ ~~Emission Point: 00002~~

~~Process: R2E~~ ~~Emission Source: VCURR~~

~~Regulated Contaminant(s):~~
~~CAS No: 0NY998-00-0~~ ~~VOC~~

~~**Item 105.2:**~~
~~Compliance Certification shall include the following monitoring:~~ Duplicate

~~Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES~~
~~Monitoring Description:~~
~~A third party contractor specializing in Vapor Combustion Unit (VCU) maintenance shall inspect and perform any necessary maintenance on the unit once every six months. The facility shall comply with 40 CFR 64.7 and 40 CFR 64.9. Records documenting the semi-annual maintenance occured shall be maintained in accordance with 6 NYCRR 201-6.5(c)(1) and (c)(2).~~

~~Monitoring Frequency: SEMI-ANNUALLY~~
~~Reporting Requirements: SEMI-ANNUALLY (CALENDAR)~~
~~Reports due 30 days after the reporting period.~~
~~The initial report is due 7/30/2011.~~
~~Subsequent reports are due every 6 calendar month(s).~~

****** Emission Unit Level ******

Condition 106: Emission Point Definition By Emission Unit
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-6

Item 106.1(From Mod 4):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: ~~1-RACK3~~ 3-RACKM

Emission Point: ~~00003~~ 0MDR1 Emission Point: 0MDR3
Height (ft.): 36 Diameter (in.): 72
NYTMN (km.): 4720.724 NYTME (km.): 601.833

Emission Point: ~~00006~~ 0MDR2
Height (ft.): 36 Diameter (in.): 72
NYTMN (km.): 4720.645 NYTME (km.): 602.056

~~**Item 106.2(From Mod 4):**~~
~~The following emission points are included in this permit for the cited Emission Unit:~~

~~Emission Unit: 1-RACK4~~

~~Emission Point: 00005~~

~~Height (ft.): 36~~ ~~Diameter (in.): 72~~
~~NYTMN (km.): 4720.645~~ ~~NYTME (km.): 602.056~~

Item 106.3(From Mod 1):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: ~~1-RACK1~~ 1-RACKT

Emission Point: ~~00001~~ 0TRK1 Emission Point: 0TRK2
Height (ft.): 19 Diameter (in.): 12
NYTMN (km.): 4720.691 NYTME (km.): 602.067

Item 106.4(From Mod 1):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: ~~1-RACK2~~ 2-RACKR

Emission Point: ~~00002~~ 0RRK1 Emission Point: 0RRK2
Height (ft.): 37 Diameter (in.): 90
NYTMN (km.): 4720.358 NYTME (km.): 601.86

Item 106.5(From Mod 2):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: ~~1-TANKS~~ 1-TANK1

Emission Point: ~~00114~~ 0T114
Height (ft.): 48 Diameter (in.): ~~81~~ 1,440
NYTMN (km.): 4720.724 NYTME (km.): 601.833

Emission Point: ~~00115~~ 0T115
Height (ft.): 48 Diameter (in.): ~~81~~ 1,800
NYTMN (km.): 4720.724 NYTME (km.): 601.833

Emission Point: ~~00117~~ 0T117
Height (ft.): 48 Diameter (in.): ~~81~~ 1,320
NYTMN (km.): 4720.724 NYTME (km.): 601.833

Emission Point: ~~00118~~ 0T118
Height (ft.): 48 Diameter (in.): ~~63~~ 1,200
NYTMN (km.): 4720.675 NYTME (km.): 601.694

Emission Point: ~~00119~~ 0T119
Height (ft.): 48 Diameter (in.): ~~57~~ 960
NYTMN (km.): 4720.654 NYTME (km.): 601.762

Emission Point: ~~00120~~ 0T120
Height (ft.): 48 Diameter (in.): ~~57~~ 960
NYTMN (km.): 4720.601 NYTME (km.): 601.924

Emission Point: ~~00121~~ 0T121
Height (ft.): 48 Diameter (in.): ~~81~~ 1,800

NYTMN (km.): 4720.724 NYTME (km.): 601.833

Emission Point: ~~00130~~ 0T130
Height (ft.): 48 Diameter (in.): ~~81~~ 900
NYTMN (km.): 4720.551 NYTME (km.): 602.053

Emission Point: 00T31
Height (ft.): 45 Diameter (in.): ~~78~~ 1,500
NYTMN (km.): 4720.645 NYTME (km.): 602.056

Emission Point: 00T32
Height (ft.): 45 Diameter (in.): ~~78~~ 1,500
NYTMN (km.): 4720.645 NYTME (km.): 602.056

Emission Point: 00T39
Height (ft.): ~~48~~ 45 Diameter (in.): ~~78~~ 1,500
NYTMN (km.): 4720.645 NYTME (km.): 602.056

Condition 107: Process Definition By Emission Unit
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable Federal Requirement:6 NYCRR Subpart 201-6

~~**Item 107.1(From Mod 4):**~~
~~This permit authorizes the following regulated processes for the cited Emission Unit:~~

~~Emission Unit: 1-RACK1~~
~~Process: R1D~~ ~~Source Classification Code: 4-04-001-50~~
~~Process Description: Emissions from Rack 1 while loading distillate.~~

~~Emission Source/Control: RACK1 - Process~~
~~Design Capacity: 888,300,000 gallons per year~~

Item 107.2(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1E~~ FGT Source Classification Code: ~~4-06-002-98~~ 4-04-001-51
Process Description: ~~Emissions from ethanol loading at Rack 1.~~ Fugitive emissions from loading trucks at Truck Rack.

Emission Source/Control: ~~VRUTK - Control~~ VACTK - Control
Control Type: ~~VAPOR RECOVERY SYS(INCL. CONDENSERS,HOODING, OTHER ENCLOSURES)~~ Control Type: Vac Assist Vapor Reduction System

Emission Source/Control: ~~RACK1~~ RACKT - Process
Design Capacity: ~~888,300,000~~ gallons per year

Item 107.3(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK1~~ 1-RACKT
Process: ~~R1G~~ RPT Source Classification Code: 4-04-001-53

Process Description: from loading refined products into trucks at Truck Rack.
Emissions ~~associated with loading gasoline/ethanol at Rack 1.~~

Emission Source/Control: VRUTK - Control
Control Type: VAPOR RECOVERY SYS(INCL. CONDENSERS,HOODING, OTHER ENCLOSURES)

Emission Source/Control: RACKT ~~RACK1~~ - Process
Design Capacity: ~~888,300,000~~ gallons per year

Item 107.4(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 2-RACKR ~~1-RACK2~~
Process: ~~R2D~~ RPR Source Classification Code: ~~4-04-001-50~~ 4-04-001-53
Process Description:
Emissions associated with loading ~~distillate at Rack 2~~. refined product into rail cars at Rail Rack.

Emission Source/Control: RACKR ~~RACK2~~ - Process
Design Capacity: ~~840,000,000~~ gallons per year

Item 107.5(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK3~~ 2-RACKR
Process: ~~FG3~~ FGR Source Classification Code: 4-04-001-51
Process Description: Emissions associated with fugitive emissions from loading rail cars at Rail Rack.
~~Fugitive HAP/VOC emissions from Rack 3 and associated piping.~~

Emission Source/Control: RACKR ~~RACK3~~ - Process

Emission Source/Control: VACRR
Control Type: Vac Assist Vapor Reduction System

Item 107.6(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3C~~ RPM Source Classification Code: 4-06-002-98
Process Description:
Emissions ~~associated with loading crude oil at marine loading dock.~~ from loading refined products into marine vessels.

Emission Source/Control: VCUM2 - Control
Control Type: THERMAL OXIDATION

Emission Source/Control: VCUM1 ~~VCUML~~ - Control
Control Type: VAPOR COMBUSTION SYSTEM (INCL VAPOR COLLECTION AND COMBUSTION UNIT)

Emission Source/Control: RACKM ~~RACK3~~ - Process

Item 107.7(From Mod 4):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3D~~ FGM Source Classification Code: ~~4-04-001-50~~ 4-04-001-51
Process Description:
Emission associated with ~~loading marine vessels with distillate at Rack 3.~~ fugitive emissions from loading marine vessels at dock.

Emission Source/Control: ~~RACK3~~ RACKM - Process
Emission Source/Control: VACMD - Control
Control Type: Vac Assist Vapor Reduction System

Item 107.8(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3E~~ BSM Source Classification Code: 4-06-002-98
Process Description: ~~Marine loading of ethanol at Rack 3.~~ Emissions from loading blendstock into marine vessels.

Emission Source/Control: ~~VCUML~~ VCUM1 - Control
Control Type: VAPOR COMBUSTION SYSTEM (INCL VAPOR COLLECTION AND COMBUSTION UNIT)

Emission Source/Control: VCUM2 - Control
Control Type:

Emission Source/Control: ~~RACK3~~ RACKM - Process

Item 107.9(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK3~~ 3-RACKM
Process: ~~R3G~~ CDM Source Classification Code: 4-06-002-98
Process Description: ~~Marine loading of gasoline at Rack 3.~~ Emissions from loading crude oil into marine vessels.

Emission Source/Control: ~~VCUML~~ VCUM1 - Control
Control Type: VAPOR COMBUSTION SYSTEM (INCL VAPOR COLLECTION AND COMBUSTION UNIT)

Emission Source/Control: VCUM2 - Control
Control Type:

Emission Source/Control: ~~RACK3~~ RACKM - Process

Item 107.10(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK4~~ 1-FUGTV
Process: ~~FG4~~ FUG Source Classification Code: 4-04-001-51
Process Description:
~~Emissions associated with HAP/VOC from Rack 4 and associated components.~~ Facility-wide emissions from pumps, valves, flanges, and misc appurtenances.

Emission Source/Control: ~~RACK4~~ FUGTV - Process

~~**Item 107.11(From Mod 4):**~~
~~This permit authorizes the following regulated processes for the cited Emission Unit:~~

~~Emission Unit: 1-RACK4~~
~~Process: R4D~~ ~~Source Classification Code: 4-04-001-51~~

~~Process Description:~~
~~Emissions associated with distillate loading for additional rail spur.~~

~~Emission Source/Control: RACK4 - Process~~

Item 107.12(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

1-TANK1
Emission Unit: ~~1-TANKS~~
Process: CR1 Source Classification Code: 4-03-010-99
Process Description:
Crude Oil Storage Tanks used for storage and distribution at terminal.

Emission Source/Control: T039C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T114C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T115C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T117C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T118C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T119C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T120C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T121C - Control
Control Type: FLOATING ROOF

~~Emission Source/Control: T130C - Control~~
~~Control Type: FLOATING ROOF~~

Emission Source/Control: TK31C - Control
Control Type: FLOATING ROOF

Emission Source/Control: TK32C - Control
Control Type: FLOATING ROOF

Emission Source/Control: TK031 - Process
Design Capacity: ~~3,829,140~~ gallons
4,200,000

Emission Source/Control: TK114 - Process

Design Capacity: ~~3,715,740~~ 3,887,898 gallons

Emission Source/Control: TK115 - Process
Design Capacity: ~~5,812,800~~ 5,851,902 gallons

Emission Source/Control: TK117 - Process
Design Capacity: ~~2,717,148~~ 3,028,032 gallons

Emission Source/Control: TK118 - Process
Design Capacity: ~~1,963,290~~ 2,426,550 gallons

Emission Source/Control: TK119 - Process
Design Capacity: ~~1,292,886~~ 1,619,268 gallons

Emission Source/Control: TK120 - Process
Design Capacity: ~~1,364,748~~ 1,640,940 gallons

Emission Source/Control: TK121 - Process
Design Capacity: ~~4,603,536~~ 5,370,204 gallons

~~Emission Source/Control: TK130 - Process~~
~~Design Capacity: 1,421,868 gallons~~
1,512,714

Emission Source/Control: ~~TNK32~~ TK032 - Process
Design Capacity: ~~3,829,140~~ 4,200,000 gallons

Emission Source/Control: ~~TNK39~~ TK039 - Process
Design Capacity: ~~139,344,878~~ 4,200,00 gallons

Item 107.13(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: ~~ET1~~ RP1 Source Classification Code: 4-03-010-99
Process Description:
Refined product ~~Ethanol~~ storage tanks used for the storage and distribution at terminal.

Emission Source/Control: T039C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T114C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T115C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T117C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T118C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T119C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T120C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T121C - Control
Control Type: FLOATING ROOF

~~Emission Source/Control: T130C - Control~~
~~Control Type: FLOATING ROOF~~

Emission Source/Control: TK31C - Control
Control Type: FLOATING ROOF

Emission Source/Control: TK32C - Control
Control Type: FLOATING ROOF

Emission Source/Control: TK031 - Process
Design Capacity: ~~3,829,140~~ gallons

Emission Source/Control: TK114 - Process
Design Capacity: ~~3,715,740~~ gallons

Emission Source/Control: TK115 - Process
Design Capacity: ~~5,812,800~~ gallons

Emission Source/Control: TK117 - Process
Design Capacity: ~~2,717,148~~ gallons

Emission Source/Control: TK118 - Process
Design Capacity: ~~1,963,290~~ gallons

Emission Source/Control: TK119 - Process
Design Capacity: ~~1,292,886~~ gallons

Emission Source/Control: TK120 - Process
Design Capacity: ~~1,364,748~~ gallons

Emission Source/Control: TK121 - Process
Design Capacity: ~~4,603,536~~ gallons

~~Emission Source/Control: TK130 - Process~~
~~Design Capacity: 1,421,868 gallons~~

TK032
Emission Source/Control: ~~TNK32~~ - Process
Design Capacity: ~~3,829,140~~ gallons

TK039
Emission Source/Control: ~~TNK39~~ - Process
Design Capacity: ~~139,344,878~~ gallons

Item 107.14(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-TANKS~~ 1-TANK1
Process: ~~GA1~~ BS1 Source Classification Code: ~~4-04-001-60~~ 4-03-101-99
Process Description:
Blendstock ~~Gasoline~~ storage tanks used for storage and distribution at terminal.

Emission Source/Control: T039C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T114C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T115C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T117C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T118C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T119C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T120C - Control
Control Type: FLOATING ROOF

Emission Source/Control: T121C - Control
Control Type: FLOATING ROOF

~~Emission Source/Control: T130C - Control~~
~~Control Type: FLOATING ROOF~~

Emission Source/Control: TK114 - Process
Design Capacity: ~~3,715,740~~ gallons

Emission Source/Control: TK115 - Process
Design Capacity: ~~5,812,800~~ gallons

Emission Source/Control: TK117 - Process
Design Capacity: ~~2,717,148~~ gallons

Emission Source/Control: TK118 - Process
Design Capacity: ~~1,963,290~~ gallons

Emission Source/Control: TK119 - Process
Design Capacity: ~~1,292,886~~ gallons

Emission Source/Control: TK120 - Process

Design Capacity: ~~1,364,748~~ gallons

Emission Source/Control: TK121 - Process
Design Capacity: ~~4,603,536~~ gallons

Add CR1 per emission unit matrix. Same sources and controls as RP1.

~~Emission Source/Control: TK130 - Process~~
~~Design Capacity: 1,421,868 gallons~~

TK039
Emission Source/Control: ~~TNK39~~ - Process
Design Capacity: 1~~39,344,878~~ gallons

Item 107.15(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK1~~
Process: ~~FG1~~ FGT Source Classification Code: 4-04-001-51
Process Description:
Fugitive HAP/VOC emissions from Rack 1 and associated piping.

These need to be modified per the permit matrix. Add 1-FUGTV for facility wide fugitives, FGT, FGR and FGM are fugitives associated with loading only.

RACKT
Emission Source/Control: ~~RACK1~~ - Process
Design Capacity: ~~888,300,000 gallons per year~~

Item 107.16(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

1-RACKT
Emission Unit: ~~1-RACK1~~
Process: ~~FT1~~ FGT Source Classification Code: 4-04-001-54
Process Description: Fugitive truck emissions while loading products.

RACKT
Emission Source/Control: ~~TRUC1~~ - Process

Item 107.17(From Mod 3):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: ~~1-RACK2~~
Process: ~~FE2~~ FGR Source Classification Code: 4-04-001-51
Process Description:
Fugitive VOC/HAP emmisions from Rack 2 and associated piping.

RACKR
Emission Source/Control: ~~RACK2~~ - Process
Design Capacity: 840,000,000 gallons per year

Item 107.18(From Mod 3):
This permit authorizes the following regulated processes for the cited Emission Unit:

2-RACKR
Emission Unit: ~~1-RACK2~~
Process: ~~R2E~~ RPR Source Classification Code: 4-06-002-98
Process Description:
Emissions while loading ethanol in railcars (Rack 2).

Emission Source/Control: VCURR - Control
Control Type: VAPOR RECOVERY SYS(INCL. CONDENSERS,HOODING, OTHER ENCLOSURES)
RACKR
Emission Source/Control: ~~RACK2~~ - Process
Design Capacity: 840,000,000 gallons per year

Item 107.19(From Mod 3):
This permit authorizes the following regulated processes for the cited Emission Unit:
2-RACKR
Emission Unit: ~~1-RACK2~~
Process: ~~R2G~~ RPR Source Classification Code: 4-04-001-53
Process Description:
Emissions associated with loading gasoline/ethanol at Rack 2.

Emission Source/Control: VCURR - Control
Control Type: VAPOR RECOVERY SYS(INCL. CONDENSERS,HOODING, OTHER ENCLOSURES)
RACKR
Emission Source/Control: ~~RACK2~~ - Process
Design Capacity: 840,000,000 gallons per year

Item 107.20(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:
1-TANK1
Emission Unit: ~~1-TANKS~~
Process: ~~1FG~~ PCW Source Classification Code: 4-07-999-97
Process Description:
Emissions associated with wastewater tank contaminated with gasoline and distillates.

Tank 130 is now in this Emission Unit only.

Emission Source/Control: 1WATR - Process
Design Capacity: ~~1,307,796~~ gallons
1,512,714

STATE ONLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: **General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5**

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

STATE ONLY APPLICABLE REQUIREMENTS
The following conditions are state applicable requirements and are not subject to compliance certification requirements unless otherwise noted or required under 6 NYCRR Part 201.

Condition 108: Contaminant List
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable State Requirement:ECL 19-0301

Item 108.1:
Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 000064-17-5
Name: ETHYL ALCOHOL (ETHANOL)

CAS No: 001634-04-4
Name: METHYL TERTBUTYL ETHER

CAS No: 0NY100-00-0
Name: HAP

CAS No: 0NY998-00-0
Name: VOC

Condition 109: Compliance Demonstration
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable State Requirement:ECL 19-0301 (3) (b)

Item 109.1:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 001634-04-4 METHYL TERTBUTYL ETHER

Item 109.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Methyl-tertiary butyl ether (MTBE) shall not be used as a gasoline additive.

Monitoring Frequency: PER BATCH OF PRODUCT/RAW MATERIAL CHANGE
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2011.
Subsequent reports are due every 6 calendar month(s).

Condition 110: Unavoidable noncompliance and violations
Effective between the dates of 03/03/2011 and 03/02/2016

Applicable State Requirement:6 NYCRR 201-1.4

Item 110.1:
At the discretion of the commissioner a violation of any applicable emission standard for necessary scheduled equipment maintenance, start-up/shutdown conditions and malfunctions or upsets may be excused if such violations are unavoidable. The following actions and recordkeeping and reporting requirements must be adhered to in such circumstances.

(a) The facility owner and/or operator shall compile and maintain records of all equipment maintenance or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the commissioner's representative when requested to do so in writing or when so required by a condition of a permit issued for the corresponding air contamination source except where conditions elsewhere in this permit which contain more stringent reporting and notification provisions for an applicable requirement, in which case they supercede those stated here. Such reports shall describe why the violation was unavoidable and shall include the time, frequency and duration of the maintenance and/or start-up/shutdown activities and the identification of air contaminants, and the estimated emission rates. If a facility owner and/or operator is subject to continuous stack monitoring and quarterly reporting requirements, he need not submit reports for equipment maintenance or start-up/shutdown for the facility to the commissioner's representative.

(b) In the event that emissions of air contaminants in excess of any emission standard in 6 NYCRR Chapter III Subchapter A occur due to a malfunction, the facility owner and/or operator shall report such malfunction by telephone to the commissioner's representative as soon as possible during normal working hours, but in any event not later than two working days after becoming aware that the malfunction occurred. Within 30 days thereafter, when requested in writing by the commissioner's representative, the facility owner and/or operator shall submit a written report to the commissioner's representative describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates. These reporting requirements are superceded by conditions elsewhere in this permit which contain reporting and notification provisions for applicable requirements more stringent than those above.

(c) The Department may also require the owner and/or operator to include in reports described under (a) and (b) above an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions depending on the deviation of the malfunction and the air contaminants emitted.

(d) In the event of maintenance, start-up/shutdown or malfunction conditions which result in emissions exceeding any applicable emission standard, the facility owner and/or operator shall take appropriate action to prevent emissions which will result in contravention of any applicable ambient air quality standard. Reasonably available control technology, as determined by the commissioner, shall be applied during any maintenance, start-up/shutdown or malfunction condition subject to this paragraph.

(e) In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets.

Condition 1-9: Visible Emissions Limited
Effective between the dates of 08/10/2011 and 03/02/2016

Applicable State Requirement:6 NYCRR 211.2

Item 1-9.1:
Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

Total Project Emission Potential

Tank Scenario: 1.929 billion gallons of refined product is distributed amongst all IFR tanks as Conventional Gasoline. 380 million gallons of blendstock/component is distributed amongst the previously permitted blendstock IFR tanks and included in addition to gasoline working losses. Standing losses are included as distillate for all distillate tanks. Working losses are not considered for distillate tanks because it is more conservative to assume the entire 1.929 billion gallons of refined product is gasoline. 900 million gallons of crude oil is distributed amongst all IFR tanks and included in addition to gasoline working losses. Only working losses from crude oil storage are included because it is more conservative to assume IFR tank standing losses are from gasoline and/or blendstock storage.

Loading Scenario: 1.929 billion gallons total throughput, 380 million gallons Blendstock, 880 million gallons conventional gasoline or lower RVP product at Truck Loading w/ VAC and VRU @ 2 mg/L, 300 million gallons conventional gasoline or lower RVP product at Rail Loading w/ VAC and VCU @ 2 mg/L, remaining 369 million gallons conventional gasoline or lower RVP product at Marine Loading w/ VAC and VCU @ 2 mg/L. Up to the total 1.929 billion gallons of refined product throughput may be loaded at the marine rack, however the PEP scenario used maximizes throughput at the truck rack first to minimize the baseline emissions and therefore maximize the PEP.

EMISSION SOURCE	ACTUALS				BASELINE EMISSIONS*	PROJECTED EMISSIONS	PROJECT EMISSION POTENTIAL	PROJECTED THROUGHPUT FOR PEP (gallons)
	2015	2016	2017	2018				
Marine Loading of Blendstock Gasoline	**	**	**	**	**	3.17	3.17	380,000,000
Marine Loading of Gasoline / Ethanol / Distillate***	2.221	5.251	3.617	0.748	3.74	3.08	**NA**	369,000,000
Truck Loading of Conventional Gasoline / Ethanol / Distillate***	0.708	0.799	1.057	1.022	0.75	7.34	6.59	880,000,000
Rail Loading of Conventional Gasoline / Ethanol / Distillate***	2.604	2.815	2.883	3.127	2.71	2.50	**NA**	300,000,000
Marine Loading of Crude Oil	7.258	1.457	0.076	0.000	4.36	3.76	**NA**	450,000,000
28 (Distillate)***	0.528	0.528	0.695	0.989	0.53	0.43	**NA**	****
29 (Distillate)***	0.528	0.528	0.695	0.988	0.53	0.43	**NA**	****
30 (Distillate)***	0.528	0.528	0.695	0.988	0.53	0.43	**NA**	****
64 (Distillate)***	0.218	0.218	0.431	0.621	0.22	0.43	0.21	****
31 (Gas / Ethanol / Crude)***	3.960	3.195	2.776	2.764	3.58	5.73	2.15	325,509,000
32 (Gas / Ethanol / Crude)***	4.520	3.195	2.776	2.764	3.86	5.73	1.87	325,509,000
33 (Distillate)***	0.065	0.528	0.695	0.988	0.30	0.43	0.13	****
Boiler Emissions	**	**	**	**	**	1.23	1.23	-
Additional Fugitive Emissions Associated with Boilers	**	**	**	**	**	0.84	0.84	-
39 (Gas / Ethanol / Crude)***	3.036	2.545	2.208	4.496	2.79	4.33	1.54	263,140,000
114 (Gas / Ethanol / Crude)***	0.266	0.303	0.345	0.337	0.28	4.06	3.77	324,318,000
115 (Gas / Ethanol / Crude)***	0.369	0.413	0.472	0.462	0.39	5.77	5.38	483,109,000
117 (Gas / Ethanol / Crude)***	3.051	3.050	3.065	3.045	3.05	2.88	**NA**	234,873,000
118 (Gas / Ethanol / Crude)***	2.968	4.344	4.350	4.351	3.66	5.07	1.41	190,129,000
119 (Gas / Ethanol / Crude)***	3.109	3.306	3.317	3.302	3.21	3.66	0.45	122,792,000
120 (Gas / Ethanol / Crude)***	0.179	0.200	0.202	0.197	0.19	3.21	3.02	122,509,000
121 (Gas / Ethanol / Crude)***	7.215	7.674	7.694	7.666	7.44	9.51	2.06	437,111,000
TOTAL	43.331	40.877	38.046	38.855	42.10	74.00	33.83	
					Project Emission Potential		**33.83**	

All emissions in tons per year

Actuals do not include emissions from tank maintenance activities since no modifications to these activities are being requested.

*Baseline Emissions were calculated using 2015 & 2016.

**No past actual emissions as blendstock loading and the boilers are not currently permitted.

***Distillate storage emissions (projected and past actuals) are standing losses only. The entire facility throughput is assumed to be gasoline as this is the most conservative emissions estimate. Working losses from the 1.929 billion gallons of throughput are included in gasoline storage emissions. Total tank emissions for IFR tanks include working losses from both gasoline storage and crude storage, and standing losses from gasoline storage only as gasoline standing losses are greater than crude oil standing losses.

****No distillate throughput was modeled through distillate tanks, as all of the 1.929 billions gallons of throughput was modeled as gasoline through IFR Tanks. Distillate standing losses were included for all distillate tanks (see note

Notes:

1. N/A - Projected Emissions are lower than the Baseline Emissions (PEP is negative) and therefore PEP was N/A
2. Global Plans to paint the distillate storage tanks white which will result in a decrease in distillate storage emissions provided in this table. Tank emissions were calculated using current paint color.
3. The projected throughput for the IFR tanks includes both 1.929 billion gallons of gasoline distributed amongst the tanks to give them an equal number of turnovers, and 450 million gallons of crude distributed amongst the tanks to give them an equal number of turnovers. IFR emissions do not include landing and cleaning emissions. Baseline emissions also exclude landing and cleaning emissions.
4. Baseline distillate tank emissions only include standing losses.

GLOBAL COMPANIES

PRODUCT TERMINAL EMISSION REPORT
SIC CODE 5171

Albany

Report Purpose
2020 PTE

Version Date
3/19/2020

EMISSION UNIT OVERVIEW

	VOC			HAP			LARGEST SINGLE HAP; Hexane		
Source Description	**Tank Emissions tpy**	**Tank Landing Emissions tpy**	**Total Tank Emissions tpy**	**Tank Emissions tpy**	**Tank Landing Emissions tpy**	**Total Tank Emissions tpy**	**Tank Emissions tpy**	**Tank Landing Emissions tpy**	**Total Tank Emissions tpy**
IFR Storage Tanks:									
Tank 117	2.884	2.179	5.063	0.230	0.173	0.403	0.114	0.086	0.200
Tank 119	5.067	1.152	6.220	0.403	0.092	0.495	0.201	0.046	0.246
Tank 120	3.209	1.152	4.361	0.254	0.091	0.345	0.127	0.046	0.173
Tank 121	9.506	4.051	13.557	0.757	0.322	1.079	0.376	0.160	0.537
Tank 114	4.056	1.296	5.353	0.323	0.103	0.426	0.161	0.051	0.212
Tank 115	5.771	4.051	9.822	0.459	0.323	0.782	0.229	0.160	0.389
Tank 118	5.067	1.476	6.543	0.403	0.117	0.521	0.201	0.058	0.259
Tank 39	4.335	4.220	8.554	0.343	0.333	0.676	0.172	0.167	0.339
Tank 31	5.727	1.292	7.019	0.453	0.102	0.555	0.227	0.051	0.278
Tank 32	5.727	1.292	7.019	0.453	0.102	0.555	0.227	0.051	0.278
	Gasoline / Eth Loading Emissions tpy		**Gasoline / Eth Loading Emissions tpy**	**Gasoline / Eth Loading Emissions tpy**		**Gasoline / Eth Loading Emissions tpy**	**Gasoline / Eth Loading Emissions tpy**		**Gasoline / Eth Loading Emissions tpy**
Gasoline / Ethanol Loading:									
Truck Loading Fugitive	0.000		0.000	0.000		0.000	0.000		0.000
Truck Loading Stack	7.343		7.343	0.580		0.580	0.291		0.291
Rail Loading Fugitive	0.000		0.000	0.000		0.000	0.000		0.000
Rail Loading Stack	2.503		2.503	0.198		0.198	0.099		0.099
	Tank Emissions tpy	**Tank Landing Emissions tpy**	**Total Tank Emissions tpy**	**Tank Emissions tpy**	**Tank Landing Emissions tpy**	**Total Tank Emission tpy**	**Tank Emissions tpy**	**Tank Landing Emissions tpy**	**Total Tank Emission tpy**
Distillate Storage Tanks:									
Tank 28	0.427	NA	0.427	0.043	NA	0.043	0.000	NA	0.000
Tank 29	0.427	NA	0.427	0.043	NA	0.043	0.000	NA	0.000
Tank 64	0.427	NA	0.427	0.043	NA	0.043	0.000	NA	0.000
Tank 33	0.427	NA	0.427	0.043	NA	0.043	0.000	NA	NA
Tank 30	0.427	NA	0.427	0.043	NA	0.043	0.000	NA	0.000
	Distillate Loading Emissions tpy		**Distillate Loading Emissions tpy**	**Distillate Loading Emissions tpy**		**Distillate Loading Emissions tpy**	**Distillate Loading Emissions tpy**		**Distillate Loading Emissions tpy**
Distillate Loading:									
Truck Loading	0.000		0.000	0.000		0.000	0.000		0.000
Rail Loading	0.000		0.000	0.000		0.000	0.000		0.000
	Source Emissions tpy		**Source Emissions tpy**	**Source Emissions tpy**		**Source Emissions tpy**	**Source Emissions tpy**		**Source Emissions tpy**
Product / Water Mixture Tank	0.000		0.000	0.000		0.000	0.000		0.000
Equipment Fugitives	2.660		2.660	0.548		0.548	0.206		0.206
VOCs from Combustion Sources	7.566		7.566	0.505		0.505	0.300		0.300
VOCs from Engine Sources	0.029		0.029	0.002		0.002	0.001		0.001
Marine Loading	6.835		6.835	0.496		0.496	0.271		0.271
Additive Tank Emissions	0.072		0.072	0.072		0.072			
TOTAL OF SOURCES			102.65			8.45			4.08

Total VOCs	102.65	tons/yr
Total HAPs	8.45	tons/yr
Total Largest Single HAP	4.08	tons/yr
Total GHG**	43,751.79	tons/yr
Total PM***	3.50	tons/yr
Total SOx**	1.33	tons/yr
Total NOx**	41.16	tons/yr
Total CO**	29.52	tons/yr
Total CO2**	42,483.49	tons/yr
Total TRS/H2S****	0.09	tons/yr

NOTE: BLG refers to a gasoline blending scenario.
** From Page 19 & 20 - Combustion and Page 21 - Generators
*** From Page 19 & 20 - Combustion and Page 21 - Generators and Page 26 & 30 - Fugitive Dust
**** From Page 22 - H2S Calculations

EMISSION UNIT HAP SPECIATION

(HAP Emissions (lbs) = Total VOC Emissions (lbs) * HAP Vapor Fraction (%))

Source Description	HAP (lbs)								Total HAP this Page (lbs)	Total HAP from Landings (Next Page) (lbs)	Total HAP (lbs)
	Benzene	Ethylbenzene	Hexane	Isooctane	Toluene	Xylene (-m)	Naphthalene	Methanol*			
IFR Storage Tanks:											
Tank 117	27	8	228	36	50	39	3	68	459	347	806
Tank 119	47	14	401	64	88	68	5	120	807	183	990
Tank 120	26	9	254	40	56	43	3	76	507	182	690
Tank 121	87	26	753	119	165	128	10	224	1,513	645	2,157
Tank 114	37	11	321	51	70	55	4	96	646	206	852
Tank 115	53	16	457	73	100	78	6	136	919	645	1,564
Tank 118	47	14	401	64	88	68	5	120	807	235	1,042
Tank 39	35	12	343	54	75	58	4	102	685	667	1,352
Tank 31	46	16	454	72	100	77	6	135	905	204	1,109
Tank 32	46	16	454	72	100	77	6	135	905	204	1,109
Gasoline / Ethanol Loading:											
Truck Loading Fugitive	0	0	0	0	0	0	0	0	0	0	0
Truck Loading Stack	60	20	582	92	128	99	8	173	1,161	0	1,161
Rail Loading Fugitive	0	0	0	0	0	0	0	0	0	0	0
Rail Loading Stack	20	7	198	31	43	34	3	59	396	0	396
Distillate Storage Tanks:											
Tank 28	2	3	0	0	20	49	0	10	85	0	85
Tank 29	2	3	0	0	20	49	0	10	85	0	85
Tank 64	2	3	0	0	20	49	0	10	85	0	85
Tank 33	2	3	0	0	20	49	0	10	85	0	85
Tank 30	2	3	0	0	20	49	0	10	85	0	85
Distillate Loading:											
Truck Loading	0	0	0	0	0	0	0	0	0	0	0
Rail Loading	0	0	0	0	0	0	0	0	0	0	0
Product / Water Mixture Tank									0	0	0
Equipment Fugitives	59	61	412	127	219	218	1	0	1,096	0	1,096
VOCs from Combustion Sources	61	21	599	95	131	102	0	0	1,009	0	1,009
VOCs from Engine Sources	0	0	2	0	1	0	0	0	4	0	4
Marine Loading	59	19	541	86	119	92	3	73	991	0	991
Additive Tank Emissions	0	38	0	0	0	106	0	0	144	0	144
									13,378	3,519	16,897
Total Individual HAP (lbs/yr)	**916**	**381**	**8,156**	**1,354**	**2,020**	**1,888**	**69**	**1,567**			
Total Individual HAP (tpy)	**0.46**	**0.19**	**4.08**	**0.68**	**1.01**	**0.94**	**0.03**	**0.78**			

TOTAL HAPS (lbs/yr)	**16,897**
TOTAL HAPS (tpy)	**8.45**

* Biodiesel Only

TANK LANDING HAP SPECIATION
(HAP Emissions (lbs) = Total VOC Emissions (lbs) * HAP Vapor Fraction (%))

Source Description	Benzene	Ethylbenzene	Hexane	HAP (lbs) Isooctane	Toluene	Xylene (-m)	Naphthalene	Methanol*	Total HAP from Landings (lbs)
IFR Storage Tanks:									-
Tank 117	20	6	173	27	38	29	2	51	347
Tank 119	11	3	91	15	20	16	1	27	183
Tank 120	9	3	91	15	20	16	1	27	182
Tank 121	37	11	321	51	70	55	4	96	645
Tank 114	12	4	103	16	23	17	1	31	206
Tank 115	37	11	321	51	70	55	4	96	645
Tank 118	14	4	117	19	26	20	2	35	235
Tank 39	34	12	334	53	73	57	4	100	667
Tank 31	10	4	102	16	22	17	1	30	204
Tank 32	10	4	102	16	22	17	1	30	204
Total Individual HAP (lbs/yr)	195	61	1,755	278	385	298			3,519
Total Individual HAP (tpy)	0.10	0.03	0.88	0.14	0.19	0.15			1.76

* Biodiesel Only

2020 PTE

	Stored	Rack Loaded	Rail Loaded	Ship/Barge Loaded			
Gasoline	1,549,000,000	880,000,000	300,000,000	369,000,000		-	gal
Blendstock	380,000,000			380,000,000			
Crude	450,000,000			450,000,000		-	gal
Ethanol						-	gal
Distillate						-	gal
Facility Total	2,379,000,000	880,000,000	300,000,000	1,199,000,000		-	gal
Additive	528,000	528,000	gal		Product-water	0	gal

NOTE: All distilalte loading was assumed to be loaded at the truck rack as emissions from both truck and rail processes are the same (same emission factor is used for both calculations).

IFR Tanks:

Tank Emissions calculated using AP-42.

Tk. No.	Dia	Leg ht	no land	land avg days	Vol bbls	Volume gals		Turnovers	Thruputs	gal/day
117	110	4	2	2.0	65,315	2,743,229		58.4	160,152,189	438,773
119	80	4	2	2.0	34,147	1,434,161		58.4	83,727,616	229,391
120	80	4	2	2.0	34,068	1,430,858		58.4	83,534,784	228,862
121	150	4	2	2.0	121,554	5,105,286		58.4	298,051,213	816,579
114	120	4	1	2.0	90,188	3,787,905		58.4	221,141,319	605,867
115	150	4	2	2.0	134,346	5,642,527		58.4	329,415,828	902,509
118	100	4	2	2.0	52,872	2,220,637		58.4	129,642,796	355,186
39	125	4	3	2.0	73,176	3,073,373		58.4	179,426,294	491,579
31	125	4	2	2.0	90,520	3,801,825		58.4	221,953,981	608,093
32	125	4	2	2.0	90,520	3,801,825		58.4	221,953,981	608,093
						33,041,626	-		1,929,000,000	
								Average Turnovers	58.4	
								Total IFR Tank Throughput	1,929,000,000	

Note:

VOCs from Tanks (lb/yr)

Tk No	Standing	Working*	Total
117	5097	672	5,769
119	9521	613	10,135
120	5988	430	6,418
121	17955	1057	19,012
114	7,205	908	8,113
115	10,517	1,024	11,541
118	9,521	613	10,135
39	8,078	591	8,669
31	10,658	795	11,453
32	10,658	795	11,453
			102,697

* Working losses include working losses from gasoline, blendstock, and crude throughput.

Distillate Tanks: STANDING LOSSES ONLY

Tank Emissions calculated using AP-42.

Tk. No.	Dia	vol bbls	Volume gals	Actual Thruputs	Turnovers	Calculated Thruputs	gal/day
28	125	91,170	3,829,140		0.0	0	0
29	125	91,170	3,829,140		0.0	0	0
64	125	87,870	3,690,540		0.0	0	0
33	125	91,170	3,829,140		0.0	0	0
30	125	91,170	3,829,140		0.0	0	0
			19,007,100	-		-	
				Average Turnovers		-	

Tk No	VOCs from Tanks (lb/yr) Standing	Working	Total
28	854		854
29	854		854
64	854		854
33	854		854
30	854		854
			4,270.0

Additive Tanks

Tank Emissions calculated using EPA TANKS Emissions Estimation Software, Version 4.09D.

Tk. No.	Dia	vol bbls	Volume gals	Actual Thruputs	Turnovers	Calculated Thruputs	gal/day
A-1		257	10,800		13.3	143,510.76	393
A-4		172	7,221		13.3	95,952.89	263
A-5		21	900		13.3	11,959.23	33
A-6		11	450		13.3	5,979.61	16
A-Generic		172	7,221		13.3	95,952.89	263
A-Exxon		85	3,554		13.3	47,225.67	129
SA		175	7,366		13.3	97,879.65	268
A-Red Dye		6	248		13.3	3,295.43	9
A-Red Dye 2		11	450		13.3	5,979.61	16
WHFO		6	250		13.3	3,322.01	9
D-Fire Pump		6	250		13.3	3,322.01	9
R-Fire Pump		3	125		13.3	1,661.00	5
GAFO		21	900		13.3	11,959.23	33
			39,735	0	Total Additive	528,000	

Tk No	VOCs from Tanks (lb/yr) Standing	Working	Total
A-1	16	23	39
A-4	11	15	26
A-5	1	2	3
A-6	1	1	2
A-Generic	11	15	26
A-Exxon	6	8	13
SA	11	14	25
A-Red Dye	1	1	1
A-Red Dye 2	1	1	2
WHFO	1	1	1
D-Fire Pump	1	1	1
R-Fire Pump	0	0	1
GAFO	1	2	3
			144

Product Water/Mixture tanks

Tank Emissions calculated using EPA TANKS Emissions Estimation Software, Version 4.09D.

Tk. No.	Dia	vol bbls	Volume gals	Actual Thruputs	Turnovers	Calculated Thruputs	gal/day
65	92	39,072	1,641,015		-		
130	75	33,854	1,421,868		-		

Tk No	VOCs from Tanks (lb/yr) Standing	Working	Total
65			-
130			-

	117	119	120	121	114	115	118	39	31	32	-		Total Thruput		
Thruput	-	-	-	-	-	-	-	-	-	-	-		-	gal/yr	
Thruput	160,152,189	83,727,616	83,534,784	298,051,213	221,141,319	329,415,828	129,642,796	179,426,294	221,953,981	221,953,981	-		1,929,000,000	gal/yr	
Throughput (Bbl / Yr):	3,813,147	1,993,515	1,988,923	7,096,457	5,265,269	7,843,234	3,086,733	4,272,055	5,284,619	5,284,619	-		45,928,571	bbl/yr	
	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year			Lb / Year	Tons /Year
Total VOC***	5,769	10,135	6,418	19,012	8,113	11,541	10,135	8,669	11,453	11,453	-			102,697	51.35
Benzene	27	47	26	87	37	53	47	35	46	46	-			452	0.23
Ethylbenzene	8	14	9	26	11	16	14	12	16	16	-			141	0.07
Hexane	228	401	254	753	321	457	401	343	454	454	-			4,067	2.03
Isooctane	36	64	40	120	51	73	64	54	72	72	-			645	0.32
Toluene	50	88	56	165	70	100	88	75	100	100	-			892	0.45
Xylene (-m)	39	68	43	128	55	78	68	58	77	77	-			691	0.35
Naphthalene	3	5	3	10	4	6	5	4	6	6	-			53	0.03
Methanol	68	120	76	224	96	136	120	102	135	135	-			1,212	0.61
Total HAP Species	459	807	507	1,514	646	919	807	685	905	905	-			8,153	4.08
Non Hap VOC	5,309	9,328	5,911	17,498	7,467	10,622	9,328	7,984	10,548	10,548	-			94,543	47.27

Total VOC:	5,769	10,135	6,418	19,012	8,113	11,541	10,135	8,669	11,453	11,453	-			102,697	51.35
Total HAP	459	807	507	1,514	646	919	807	685	905	905	-			8,153	4.08
LARGEST SINGLE HAP: Hexane	228	401	254	753	321	457	401	343	454	454	-				

NOTE: Total working losses from tanks permited to store blendstock are conservatively speciated as if they are entirely blendstock, even though they contain working losses from gasoline, ethanol, and crude.

*** Tank Emissions calculated using AP-42.

	28	29	64	33	30						Total Thruput		
Thruput	-	-	-	-	-	-	-	-	-	-	-	gal/yr	
Thruput	-	-	-	-	-	-	-	-	-	-	-	gal/yr	
Throughput (Bbl / Yr):	-	-	-	-	-	-	-	-	-	-	-	bbl/yr	
	Lb / Year	Lb / Year	Lb / Year	Lb / Year	Lb / Year							Lb / Year	Tons /Year
Total VOC*	854	854	854	854	854	-	-	-	-	-		4,270	2.14
Benzene	1.8	1.8	1.8	1.8	1.8	-	-	-	-	-		9	0.00
Ethylbenzene	2.7	2.7	2.7	2.7	2.7	-	-	-	-	-		13	0.01
Hexane	0.4	0.4	0.4	0.4	0.4							2	0.00
Isooctane	-	-	-	-	-							-	-
Toluene	20.4	20.4	20.4	20.4	20.4	-	-	-	-	-		102	0.05
Xylene (-m)	49.3	49.3	49.3	49.3	49.3	-	-	-	-	-		247	0.12
Naphthalene	0.4	0.4	0.4	0.4	0.4	-	-	-	-	-		2	0.00
Methanol	10.1	10.1	10.1	10.1	10.1	-	-	-	-	-		50	0.03
Total HAP Species	85	85	85	85	85	-	-	-	-	-		426	0.21
Non Hap VOC	769	769	769	769	769	-	-	-	-	-		3,844	1.92

Total VOC:	854	854	854	854	854	-						4,270	2.14
Total HAP:	85	85	85	85	85	-	-	-	-	-		426	0.21
LARGEST SINGLE HAP: Xylene (-m)	49.33	49.33	49.33	49.33	49.33	-	-	-	-	-		247	0.12

* Tank Emissions calculated using AP-42.

	A-1	A-4	A-5	A-6	A-Generic	A-Exxon	SA	A-Red Dye	A-Red Dye 2	WHFO	D-Fire Pump	R-Fire Pump	GAFO	Total		
Thruput	-	-	-	-	-	-	-	-	-	-	-	-	-	-	gal/yr	
Thruput	143,511	95,953	11,959	5,980	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	1,120,978	gal/yr	
Throughput (Bbl / Yr):	3,417	2,285	285	142	2,285	2,285	2,285	2,285	2,285	2,285	2,285	2,285	2,285	26,690	bbl/yr	
	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year	lb/year		lb/year	tons/year
Total VOC*	39	26	3	2	26	13	25	1	2	1	1	1	3		144.16	0.07
Benzene	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A		-	-
Ethylbenzene	10.4	6.9	0.9	0.4	6.9	3.6	6.5	0.3	0.4	0.4	0.3	0.2	0.9		38.16	0.02
Hexane	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A		-	-
Isooctane	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A		-	-
Toluene	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A		-	-
Xylene (-m)	28.8	19.3	2.4	1.2	19.3	9.9	18.2	0.9	1.2	1.1	0.9	0.5	2.4		106.00	0.05
Naphthalene	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A		-	-
Methanol	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A		-	-
Total HAP Species	39	26	3	2	26	13	25	1	2	1	1	1	3		144	0.07
Non Hap VOC	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-

* Tank Emissions calculated using EPA TANKS Emissions Estimation Software, Version 4.09D.

Loading Summary

	Truck Loading			Rail Loading			Marine Loading			Total	
	Gasoline	Distillate	Total	Gas / Eth	Distillate*	Total	Crude Oil	Gas / Eth	Total	lb/yr	Tons/yr
Total VOC lb/yr	14,686	0	14,686	5,007	0	5,007	7,511	6,159	13,670	33,363	16.68
Benzene	60	0	60	20	0	20	30	28	59	139	0.07
Ethylbenzene	20	0	20	7	0	7	10	8	19	46	0.02
Hexane (-n)	582	-	582	198	-	198	297	244	541	1,321	0.66
Iso-octane	92	-	92	31	-	31	47	39	86	209	0.10
Toluene	128	0	128	43	0	43	65	54	119	290	0.14
Xylene (-m)	99	0	99	34	0	34	51	41	92	225	0.11
Naphthalene	8	0	8	3	0	3	-	3	3	13	0.01
Methanol**	173	-	173	59	0	59	-	73	73	305	0.15
Total HAP Species	1,161	0	1,161	396	0	396	501	490	991	2,548	1.27
Non Hap VOC	13,526	0	13,526	4,611	0	4,611	7,010	5,669	12,678	30,815	15.41

* Distillate Rail Loading Emissions are captured in Distillate Truck Loading.

** Biodiesel Only

Truck Loading - Gasoline

Gasoline Throughput at the Rack (MM gal) **880.0**

VRU Emission Rating (mg/liter) **2**

(VRU Emission Rating is guaranteed by the manufacturer of the VRU and verified with a Performance Stack Test every 5 years.)

Tank-Truck Loss Factor (mg/liter) **0***

Controlled gasoline Loading Losses (lb/yr) **14,686**

	Vapor Fraction	Loading Losses 2mg/l		Tank-truck loss 0 mg/l*		Total	
		Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.
Total VOC	100.00%	14,686	7.343	-	-	14,686	7.343
Benzene	0.41%	60	0.030	0	-	60	0.030
Ethylbenzene	0.14%	20	0.010	0	-	20	0.010
Hexane (-n)	3.96%	582	0.291	0	-	582	0.291
Iso-octane	0.63%	92	0.046	0	-	92	0.046
Toluene	0.87%	128	0.064	0	-	128	0.064
Xylene (-m)	0.67%	99	0.049	0	-	99	0.049
Naphthalene	0.05%	8	0.004	0	-	8	0.004
Methanol	1.18%	173	0.087	0	-	173	0.087
Total HAP Species*	7.90%	1,161	0.580	-	-	1,161	0.580
Non Hap VOC	92.10%	13,526	6.763	-	-	13,526	6.763
Total VOC		14,686	7.343	-	-	14,686	7.343
Total HAP		1,161	0.580	-	-	1,161	0.580
Largest Single HAP							
Hexane (-n)		582	0.291	-	-	582	0.291

* Tank-truck Loss Factor is 0 mg/L as a result of a Vacuum Assist System installed at the Truck Loading Rack.

<u>Sample Calculation:</u>

Volume Of Gasoline Loaded (gallons)*3.785 litres/gallon*Overall Emission Rate (mg/liter)*2.2046 lbs/Kg*1 Kg / 1,000,000 mg = Emissions (lbs)

650,000,000 gal * 3.785 L/gal * 2 mg/L * 2.2046 lbs/Kg * 1 Kg / 1,000,000 mg = Emissions (lbs)

10,848 lbs = Emissions (lbs)

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

TRUCK LOADING OF GASOLINE - ALTERNATIVE OPERATING SCENARIO

Gasoline Throughput at the Rack (MM gal)	**176.0**
VRU Emission Rating (mg/liter)	**10**
(VRU Emission Rating is guaranteed by the manufacturer of the VRU and verified with a Performance Stack Test every 5 years.)	2 plus 8
Tank-Truck Loss Factor (mg/liter)	**8***
Controlled gasoline Loading Losses (lb/yr)	**14,686**

	Vapor Fraction	Loading Losses 2mg/l		Tank-truck loss 8 mg/l*		Total	
		Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.
Total VOC	100.00%	14,686	7.343	-	-	14,686	7.343
Benzene	0.41%	60	0.030	0	-	60	0.030
Ethylbenzene	0.14%	20	0.010	0	-	20	0.010
Hexane (-n)	3.96%	582	0.291	0	-	582	0.291
Iso-octane	0.63%	92	0.046	0	-	92	0.046
Toluene	0.87%	128	0.064	0	-	128	0.064
Xylene (-m)	0.67%	99	0.049	0	-	99	0.049
Naphthalene	0.05%	8	0.004	0	-	8	0.004
Methanol	1.18%	173	0.087	0	-	173	0.087
Total HAP Species*	7.90%	1,161	0.580	-	-	1,161	0.580
Non Hap VOC	92.10%	13,526	6.763	-	-	13,526	6.763
Total VOC		14,686	7.343	-	-	14,686	7.343
Total HAP		1,161	0.580	-	-	1,161	0.580
Largest Single HAP							
Hexane (-n)		582	0.291	-	-	582	0.291

* Tank-truck Loss Factor is 0 mg/L as a result of a Vacuum Assist System installed at the Truck Loading Rack.

<u>Sample Calculation:</u>

Volume Of Gasoline Loaded (gallons)*3.785 litres/gallon*Overall Emission Rate (mg/liter)*2.2046 lbs/Kg*1 Kg / 1,000,000 mg = Emissions (lbs)
650,000,000 gal * 3.785 L/gal * 2 mg/L * 2.2046 lbs/Kg * 1 Kg / 1,000,000 mg = Emissions (lbs)
10,848 lbs = Emissions (lbs)

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

Truck Loading - Distillate

Distillate Throughput at the Rack (MM gal) -

Uncontrolled Bottom Loading Emission Factor (mg/l) 1.7
(AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Table 5.2-5.)

Distillate Loading Rack Loss (lb/year) -

	Vapor Fraction	Loading Losses Lbs/Year	Loading Losses Tons/Yr.	Fugitive Emissions* Lbs/Year	Fugitive Emissions* Tons/Yr.
Total VOC	100.00%	0.0	-	0.0	-
Benzene	0.22%	0.0	-	0.0	-
Ethylbenzene	0.31%	0.0	-	0.0	-
Hexane (-n)	0.00%	0.0	-	0.0	-
Iso-octane	0.00%	0.0	-	0.0	-
Toluene	2.39%	0.0	-	0.0	-
Xylene (-m)	5.78%	0.0	-	0.0	-
Naphthalene	0.05%	0.0	-	0.0	-
Methanol	1.18%	0.0	-	0.0	-
Total HAP Species*	9.92%	0.0	-	0.0	-
Non Hap VOC	90.08%	0.0	-	0.0	-
Total VOC		0.0	0.0	0.0	0.0
Total HAP		0.0	0.0	0.0	0.0
Largest Single HAP					
Xylene (-m)		-		-	-

* Fugitives are included in the Uncontrolled Bottom Loading Emission Factor and are calculated with the loading emissions.

Sample Calculations

Volume of distillate bottom loaded (gallons) * 3.785 litres/gallon * 1.7 mg/liter of distillate loaded * 2.2046 lbs/kg * 1 kg / 1,000,000 = Emissions (lbs)
229,300,000 gallons * 3.785 L/gal * 1.7 mg/L * 2.2046 * 1kg / 1,000,000 = Emissions (lbs)
3,253 lbs = Emissions (lbs)

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

Gasoline Throughput at the Rail (MM gal) **300.0**

VCU Emission Rating (mg/liter) **2**

(VCU Emission Rating is guaranteed by the manufacturer of the VCU and verified with a Performance Stack Test every 5 years.)

Tank-Truck Loss Factor (mg/liter) **0***

(EPA Approved Factor. Submerged Loading emission factor of 980 mg/L (AP-42, Compilation of Air Pollutant Emission Factors, 5th Ed., Vol. I, Table 5.2-5), multiplied by the leakage rate of 0.8% (AP-42, Compilation of Air Pollutant Emission Factors, 5th Ed., Vol. I))

Controlled gasoline Loading Losses (lb/yr) **5,007**

		Loading Losses 2mg/l		Tank-truck loss 8 mg/l		Total	
	Vapor Fraction	Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.
Total VOC	100.00%	5,007	2.503	-	-	5,007	2.503
Benzene	0.41%	20	0.010	0	-	20	0.010
Ethylbenzene	0.14%	7	0.003	0	-	7	0.003
Hexane (-n)	3.96%	198	0.099	0	-	198	0.099
Iso-octane	0.63%	31	0.016	0	-	31	0.016
Toluene	0.87%	43	0.022	0	-	43	0.022
Xylene (-m)	0.67%	34	0.017	0	-	34	0.017
Naphthalene	0.05%	3	0.001	0	-	3	0.001
Methanol	1.18%	59	0.030	0	-	59	0.030
Total HAP Species*	7.90%	396	0.198	-	-	396	0.198
Non Hap VOC	92.10%	4,611	2.306	-	-	4,611	2.306
Total VOC		5,007	2.503	-	-	5,007	2.503
Total HAP		396	0.198	-	-	396	0.198
Largest Single HAP							
Hexane (-n)		198	0.099	-	-	198	0.099

* Tank-truck Loss Factor is 0 mg/L as a result of a Vacuum Assist System installed at the Truck Loading Rack.

<u>Sample Calculations</u>

Volume Of Gasoline Loaded (gallons)*3.785 litres/gallon*Overall Emission Rate (mg/liter)*2.2046 lbs/Kg*1 Kg / 1,000,000 mg = Emissions (lbs)
150,000,000 gal * 3.785 L/gal * (10 mg/L + 8 mg/L) * 2.2046 lbs/Kg * 1 Kg / 1,000,000 mg = Emissions (lbs)
22,530 lbs = Emissions (lbs)

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

Gasoline Throughput at the Rail (MM gal) **60.0**

VCU Emission Rating (mg/liter) **10**

(VCU Emission Rating is guaranteed by the manufacturer of the VCU and verified with a Performance Stack Test every 5 years.) (2 plus 8)

Tank-Truck Loss Factor (mg/liter) **8***

(EPA Approved Factor. Submerged Loading emission factor of 980 mg/L (AP-42, Compilation of Air Pollutant Emission Factors, 5th Ed., Vol. I, Table 5.2-5), multiplied by the leakage rate of 0.8% (AP-42, Compilation of Air Pollutant Emission Factors, 5th Ed., Vol. I))

Controlled gasoline Loading Losses (lb/yr) **5,007**

		Loading Losses 2mg/l		Tank-truck loss 8 mg/l		Total	
	Vapor Fraction	Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.	Lbs/Year	Tons/Yr.
Total VOC	100.00%	5,007	2.503	-	-	5,007	2.503
Benzene	0.41%	20	0.010	0	-	20	0.010
Ethylbenzene	0.14%	7	0.003	0	-	7	0.003
Hexane (-n)	3.96%	198	0.099	0	-	198	0.099
Iso-octane	0.63%	31	0.016	0	-	31	0.016
Toluene	0.87%	43	0.022	0	-	43	0.022
Xylene (-m)	0.67%	34	0.017	0	-	34	0.017
Naphthalene	0.05%	3	0.001	0	-	3	0.001
Methanol	1.18%	59	0.030	0	-	59	0.030
Total HAP Species*	7.90%	396	0.198	-	-	396	0.198
Non Hap VOC	92.10%	4,611	2.306	-	-	4,611	2.306
Total VOC		5,007	2.503	-	-	5,007	2.503
Total HAP		396	0.198	-	-	396	0.198
Largest Single HAP							
Hexane (-n)		198	0.099	-	-	198	0.099

* Tank-truck Loss Factor is 0 mg/L as a result of a Vacuum Assist System installed at the Truck Loading Rack.

Sample Calculations

Volume Of Gasoline Loaded (gallons)*3.785 litres/gallon*Overall Emission Rate (mg/liter)*2.2046 lbs/Kg*1 Kg / 1,000,000 mg = Emissions (lbs)

150,000,000 gal * 3.785 L/gal * (10 mg/L + 8 mg/L) * 2.2046 lbs/Kg * 1 Kg / 1,000,000 mg = Emissions (lbs)

22,530 lbs = Emissions (lbs)

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

Rail Loading - Distillate

Distillate Throughput at the Rail (MM gal) -

Distillate Rail Loading Emissions are included with the Distillate Truck Loading emissions.

Uncontrolled Bottom Loading Emission Factor (mg/l) **1.70**

(AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Table 5.2-5.)

Distillate Loading Rack Loss (lb/year) **-**

	Vapor Fraction	Loading Losses Lbs/Year	Loading Losses Tons/Yr.	Fugitive Emissions Lbs/Year	Fugitive Emissions Tons/Yr.
Total VOC	100.00%	0.0	-	0.0	-
Benzene	0.22%	0.0	-	0.0	-
Ethylbenzene	0.31%	0.0	-	0.0	-
Hexane (-n)	0.00%	0.0	-	0.0	-
Iso-octane	0.00%	0.0	-	0.0	-
Toluene	2.39%	0.0	-	0.0	-
Xylene (-m)	5.78%	0.0	-	0.0	-
Naphthalene	0.05%	0.0	-	0.0	-
Methanol	1.18%	0.0	-	0.0	-
Total HAP Species*	9.92%	0.0	-	0.0	-
Non Hap VOC	90.08%	0.0	-	0.0	-
Total VOC		0.0	0.0	0.0	0.0
Total HAP		0.0	0.0	0.0	0.0
Largest Single HAP					
NA		-		-	-

Sample Calculations

Volume of distillate bottom loaded (gallons) * 3.785 litres/gallon * 1.7 mg/liter of distillate loaded * 2.2046 lbs/kg * 1 kg / 1,000,000 = Emissions (lbs)
0 gallons * 3.785 L/gal * 1.7 mg/L * 2.2046 * 1kg / 1,000,000 = Emissions (lbs)
0 lbs = Emissions (lbs)

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

EMISSIONS FROM MARINE LOADING OF GAS/ETH:

Throughput: 369 Mmgal

Control Device Emission Rate: 2 mg/L equal to: 0.0167 lbs/1000 gallons

Loading into an Uncleaned Barge:

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/yr)	0% Remaining after 100% goes to VDU	100% to VDU	2 mg/L from VDU	Total Emissions (lbs)	Total Emissions (tons)
3.9000	369	1,439,100	0	1,439,100	6,159	6,159	3.08

* Emission Factor from Table 5.2-2 in AP-42 for an Uncleaned Barge previously loaded with a Volatile Liquid

Max Emissions Per Hour:

25,000 barrels / hr
1,050,000 gal / hr

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/hr)	0% Remaining after 100% goes to VDU	100% to VDU	2 mg/L from VDU	Total Emissions (lbs/hr)	Total Emissions (tons/hr)
3.9000	1.05	4095	0	4095	82	82	0.04

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

EMISSIONS FROM MARINE LOADING OF GAS/ETH: ALTERNATIVE OPERATING SCENARIC

Throughput: 299 Mmgal

Control Device Emission Rate: 2 mg/L equal to: 0.0167 lbs/1000 gallons

Loading into an Uncleaned Barge:

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/yr)	0.1% Fugitive Emission after 99.9% goes to VCU	99.9% to VCU	2 mg/L from VCU	Total Emissions (lbs)	Total Emissions (tons)
3.9000	299	1,165,671	1,166	1,164,505	4,989	6,154	3.08

* Emission Factor from Table 5.2-2 in AP-42 for an Uncleaned Barge previously loaded with a Volatile Liquid

Max Emissions Per Hour:

25,000 barrels / hr
1,050,000 gal / hr

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/hr)	0.1% Fugitive Emission after 99.9% goes to VCU	99.9% to VCU	2 mg/L from VCU	Total Emissions (lbs/hr)	Total Emissions (tons/hr)
3.9000	1.05	4095	4	4095	18	22	0.01

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

EMISSIONS FROM MARINE LOADING OF GAS/ETH:

Throughput: 74 Mmgal

Control Device Emission Rate: 10 mg/L equal to: 0.0835 lbs/1000 gallons

Loading into an Uncleaned Barge:

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/yr)	0% Remaining after 100% goes to VDU	100% to VDU	2 mg/L from VDU	Total Emissions (lbs)	Total Emissions (tons)
3.9000	74	287,820	0	287,820	6,159	6,159	3.08

* Emission Factor from Table 5.2-2 in AP-42 for an Uncleaned Barge previously loaded with a Volatile Liquid

Max Emissions Per Hour:

4,000 barrels / hr
168,000 gal / hr

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/hr)	0% Remaining after 100% goes to VDU	100% to VDU	2 mg/L from VDU	Total Emissions (lbs/hr)	Total Emissions (tons/hr)
3.9000	0.17	655	0	655	14	14	0.01

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

EMISSIONS FROM MARINE LOADING OF CRUDE OIL:

Throughput: 450 Mmgal

Control Device Emission Rate: 2 mg/L equal to: 0.0167 lbs/1000 gallons

Loading into an Uncleaned Barge:

Emission Factor* (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/yr)	0% Remaining after 100% goes to VDU	100% to VDU	2 mg/L from VDU	Total Emissions (lbs)	Total Emissions (tons)
1.7996	450	809,804	0	809,804	7,511	7,511	3.76

* Emission Factor calculated below, per AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Section 5.2, Equation 2.

Max Emissions Per Hour:

25,000 barrels / hr
1,050,000 gal / hr

Emission Factor (lb/1000 gal)	Throughput (Mmgal)	Loading Rack Emissions (lb/hr)	0% Remaining after 100% goes to VDU	100% to VDU	2 mg/L from VDU	Total Emissions (lbs/hr)	Total Emissions (tons/hr)
1.7996	1.05	1890	0	1890	18	18	0.01

Emission Factor Calculation from AP-42:

CL	=	Ca	+	Cg
1.80		0.86		0.94

Cg Formula Inputs:

Vapor Pressure	12.5	(from EPA Tanks 4.09d)
Molecular Weight	50	(from EPA Tanks 4.09d)
Vapor Growth Factor	1.02	(from AP-42)
Temperature *R	507.37	(from EPA Tanks 4.09d)

where:

CL = Total loading loss, lb/1,000 gal of crude oil loaded.
Ca = Arrival emission factor (from Table 5.2-3), contributed by vapors in the empty tank compartment before loading, lb/1,000 gal of crude oil loaded.
Cg = Calculated emission factor (from Equation 3), contributed by evaporation during loading, lb/1,000 gal loaded.

NOTE: Loading emission calculations were performed in accordance with guidance in AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I.

Facility Fugitives

Fugitive VOC Emissions

Existing Count*				Light	Heavy	Gas				
Light	Heavy	Gas		Factor (lbs/hr)	Factor (lbs/hr)	Factor (lbs/hr)	Lbs/Hr	Lbs/Year	lb/day	tpy
1,297	243	238	Valves	9.48E-05	9.48E-05	2.87E-05	0.15	1.3E+03	3.67	0.67
10	3	2	Pumps	1.19E-03	1.19E-03	1.43E-04	0.02	1.4E+02	0.38	0.07
123	28	58	Other	2.87E-04	2.87E-04	2.65E-04	0.06	5.1E+02	1.41	0.26
5,809	1,274	879	Flanges	1.76E-05	1.76E-05	9.26E-05	0.21	1.8E+03	4.95	0.90
							0.43	3797.49	10.40	1.90

*Includes Gas Blending Project, Butane Minor Mod, 2012 Crude Project, and Truck Rack Minor Mod

Project Count**				Light	Heavy	Gas				
Light	Heavy	Gas		Factor (lbs/hr)	Factor (lbs/hr)	Factor (lbs/hr)	Lbs/Hr	Lbs/Year	lb/day	tpy
200	28	150	Valves	9.48E-05	9.48E-05	2.87E-05	0.03	2.3E+02	0.62	0.11
27	28	4	Pumps	1.19E-03	1.19E-03	1.43E-04	0.07	5.8E+02	1.59	0.29
10	28	58	Other	2.87E-04	2.87E-04	2.65E-04	0.03	2.3E+02	0.63	0.11
500	28	500	Flanges	1.76E-05	1.76E-05	9.26E-05	0.06	4.9E+02	1.33	0.24
							0.17	1522.54	4.17	0.76

**Includes Current Project ONLY

Total Count				Light	Heavy	Gas				
Light	Heavy	Gas		Factor (lbs/hr)	Factor (lbs/hr)	Factor (lbs/hr)	Lbs/Hr	Lbs/Year	lb/day	tpy
1,497	271	388	Valves	9.48E-05	9.48E-05	2.87E-05	0.18	1.6E+03	4.29	0.78
37	31	6	Pumps	1.19E-03	1.19E-03	1.43E-04	0.08	7.2E+02	1.96	0.36
133	56	116	Other	2.87E-04	2.87E-04	2.65E-04	0.08	7.4E+02	2.04	0.37
6,309	1,302	1,379	Flanges	1.76E-05	1.76E-05	9.26E-05	0.26	2.3E+03	6.29	1.15
							0.61	5320.04	14.58	2.66

	Light Liquid Fraction	Light Liquid Lbs/Year	Heavy Liquid Fraction	Heavy Liquid Lbs/Year	Gas Fraction	Gas Lbs/Year	Total Lbs/Year	Total tpy
Total VOC	100.00%	2937.65	100.00%	890.08	100.00%	1492.30	5320.04	2.66
Benzene	1.80%	52.88	0.001%	0.01	0.41%	6.05	58.94	0.03
Ethylbenzene	2.00%	58.75	0.01%	0.12	0.14%	2.05	60.92	0.03
Hexane	12.00%	352.52	N/A	N/A	3.96%	59.10	411.61	0.21
Isooctane	4.00%	117.51	N/A	N/A	0.63%	9.34	126.84	0.06
Toluene	7.00%	205.64	0.03%	0.28	0.87%	12.97	218.89	0.11
Xylene (-m)	7.00%	205.64	0.29%	2.58	0.67%	10.05	218.26	0.11
Naphthalene	N/A	N/A	0.10%	0.89	N/A	N/A	0.89	0.00
Methanol*	N/A	N/A	0.00%	0.00	N/A	N/A	0.00	0.00
Total HAPS	33.80%	992.93	0.44%	3.88	6.67%	99.55	1096.35	0.55
Non Hap VOC	66.20%	1944.73	99.56%	886.21	93.33%	1392.75	4223.68	2.11

NOTE: Based on facility-specific equipment component counts. Emissions calculated per EPA guidance "Protocol for Equipment Leak Emission Estimates" (USEPA, November 1995).

HAP	VAPOR FRACTION Worst Case Refined Product	Blending	Distillate	Additive	LIQUID FRACTION (wt%) Worst Case Refined Product	Blending	Distillate	Additive
Benzene	0.41%	0.46%	0.2157%	-	1.80%	2.00%	0.0008%	-
Ethylbenzene	0.14%	0.14%	0.3114%	26.47%	2.00%	2.00%	0.0130%	23.00%
Hexane	3.96%	3.96%	0.0449%	-	12.00%	12.00%	0.0001%	-
Isooctane	0.63%	0.63%	-	-	4.00%	4.00%	-	-
Toluene	0.87%	0.87%	2.3887%	-	7.00%	7.00%	0.0320%	-
Xylene (-m)	0.67%	0.67%	5.7760%	73.53%	7.00%	7.00%	0.2900%	77.00%
Naphthalene	0.0516%	0.0516%	0.0516%	-	0.1000%	0.1000%	0.1000%	-
Methanol*	1.18%	0.00%	1.18%	-	2.00%	0.00%	2.00%	-

*Biofuels only

	Tank Numbers									
	117	119	120	121	114	115	118	39	31	32
Tank Diameter (ft)	110	80	80	150	120	150	100	125	125	125
Heel Height (ft)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume (ft3)	38,013	20,106	20,106	70,686	45,239	70,686	31,416	49,087	49,087	49,087
Volume (bbl)	6,771	3,581	3,581	12,590	8,058	12,590	5,596	8,743	8,743	8,743
Volume (gal)	284,377	150,414	150,414	528,800	338,432	528,800	235,022	367,222	367,222	367,222
Volume (liters)	1,076,367	569,318	569,318	2,001,509	1,280,966	2,001,509	889,560	1,389,937	1,389,937	1,389,937
Avg Temp (F) (T)	54.18	54.18	54.18	54.18	54.18	54.18	54.18	54.18	54.18	54.18
Avg Temp (K) (T)	285.47	285.47	285.47	285.47	285.47	285.47	285.47	285.47	285.47	285.47
temp corr	0.9568	0.9568	0.9568	0.9568	0.9568	0.9568	0.9568	0.9568	0.9568	0.9568
Moles	45,978	24,319	24,319	85,496	54,718	85,496	37,998	59,372	59,372	59,372
VP of VOC (psia)	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	3.72	3.72
VOC theo fraction	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.25	0.25
Saturation Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Moles VOC	12,424	6,571	6,571	23,102	14,785	23,102	10,267	16,043	9,024	9,024
Molecular weight (g/g-mole)	61.00	61.00	61.00	61.00	61.00	61.00	50.00	61.00	49.82	49.82
VOC (grams/landing)	757,841	400,841	400,841	1,409,208	901,893	1,409,208	513,373	978,617	449,541	449,541
VOC (lbs/landing)	1,670.73	884	884	3,107	1,988	3,107	1,132	2,157	991	991
Number of Landings per Yr	2	2	2	2	1	2	2	3	2	2
Average Days per Landing	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
VOC (lbs) Filling	3,341	1,767	1,767	6,213	1,988	6,213	2,264	6,472	1,982.10	1,982.10
VOC (lbs) Standing	1,016	537	537	1,889	604	1,889	688	1,968	602.56	602.56
Total VOC (lbs) (Lf + Ls)	4,357	2,305	2,305	8,102	2,593	8,102	2,952	8,440	2,585	2,585
Total VOC (tons)	2.18	1.15	1.15	4.05	1.30	4.05	1.48	4.22	1.29	1.29

*Modeled as Ethanol Only

**Modeled as Crude Oil Only

	Vapor Fraction	lbs/yr									
Total VOC	100.00%	4,357	2,305	2,305	8,102	2,593	8,102	2,952	8,440	2,585	2,585
Benzene	0.41%	20	11	9	37	12	37	14	34	10	10
Ethylbenzene	0.14%	6	3	3	11	4	11	4	12	4	4
Hexane (-n)	3.96%	173	91	91	321	103	321	117	334	102	102
Iso-octane	0.63%	27	15	15	51	16	51	19	53	16	16
Toluene	0.87%	38	20	20	70	23	70	26	73	22	22
Xylene (-m)	0.67%	29	16	16	55	17	55	20	57	17	17
Naphthalene	0.05%	2	1	1	4	1	4	2	4	1	1
Methanol	1.18%	51	27	27	96	31	96	35	100	30	30
Total HAP Species	7.90%	347	183	182	645	206	645	235	667	204	204
Non Hap VOC	92.10%	4,010	2,121	2,122	7,458	2,386	7,457	2,717	7,773	2,380	2,380

NOTE: Landing emissions calculated using methodology from API Technical Report 2567 - Evaporative Loss from Storage Tank Floating Roof Landings.

Fuel Combustion Emissions

Exempt Combustion Sources:

Unit ID	Product	Source	Gal/yr (Liquid)	SCF/yr (Gas)	Liters/year (Gas)	MMBTU/yr
NA	Distillate	Furnace	590			–
NA	Natural Gas	Boiler (water bldg)	–			54
NA	Natural Gas	Boiler (garage)	–			22
NA	Natural Gas	Boiler (office)	–			163
NA	Natural Gas	Boiler (line trace)	–			35,040
NA	Natural Gas	Boiler (tanks)	–			52,560
NA	Natural Gas	Furnace	–			120
NA	Natural Gas	Boiler (lube bldg)	–			86,724
NA	Natural Gas	Boiler (lube bldg)	–			86,724
NA	Natural Gas	Boiler (lube bldg)	–			86,724
NA	Natural Gas	Boiler (lube bldg)	–			86,724

Non-Exempt Combustion Sources:

VCUML/VCUM2/VCURR*	Natural Gas	VDU	–			200,000

*Includes natural gas used as assist gas for both marine VCUs (VCUML and VCUM2) and the rail VCU (VCURR)

Distillate Combustion Emissions:

	Combustion Emissions								
Pollutant	PM	SOx	NOx	VOC	CO	CH4	N2O	CO2	GHG**
Emission Factor - lb/1000 gal*	2.00	52.54	20.00	0.20	5.00	0.22	0.26	2.2E+04	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	1.18	31.00	11.80	0.12	2.95	0.13	0.15	13157.00	13,205.90
tons/yr	0.00	0.02	0.01	0.00	0.00	0.00	0.00	6.58	6.60

* Emission factors used to estimate emissions are from AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I. SOx, Nox, CO, and PM Emission Factors are from Table 1.3-1. VOC Emission Factor is from Table 1.3-3. CO2 Emission Factor is from Table 1.3-12.
** GHG Emission calculated by using the CO2 Equivalency Factor for CO2 (1) and CO (3.7).

Example calculation (using SOx):
= gal/yr / 1000 gal * Emission Factor
= 590 gal/yr / 1000 gal * 52.54 lb/1000 gal (SOx)
= 31.00 lb/yr

Natural Gas Combustion Emissions*:

	Combustion Emissions								
Pollutant	PM	SOx	NOx	VOC	CO	CH4	N2O	CO2	GHG***
Emission Factor - lb / MM BTU**	0.0075	0.00059	0.098	0.0054	0.082	0.002	0.002	117.647	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	4,730.29	373.44	62,240.69	3,423.24	52,282.18	1,431.54	1,369.30	74,688,823.53	75,132,661.86
tons/yr	2.37	0.19	31.12	1.71	26.14	0.72	0.68	37,344.41	37,566.33

*Total emissions from natural gas combustion include emissions from the combustion of natural gas in furnaces and boilers and emissions from the combustion of natural gas used as assist gas in the VCUs.
** Emission factors used to estimate emissions are from AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Tables 1.4-1, 1.4-2, and 1.4-3, except for GHG
*** GHG Emission calculated by using the CO2 Equivalency Factor for CO2 (1) and CO (3.7).

Example Calculation (using SOx):
= Total Natural Gas Used * Emission Factor
= Total Natural Gas Used (634,855) MMBTU/yr * 0.00059 lb / MM BTU
= 458 lb/yr

VCU Vapor Combustion Emissions
(Emissions from Combustion of Petroleum Product Loaded)

Petroleum Vapor Combusted (lbs):

3,716,777 Total
1,439,100 at VCUML (gasoline and ethanol loading) (See Marine Loading - Gas & Eth Calculations.)
809,804 at VCUM2 (crude loading) (See Marine Loading - Crude Oil Calculations.)
1,467,873 at VCURR (gasoline loading) (See Rail Loading - Gas & Eth Calculations.)

Conversion from Petroleum Vapor Combusted in lbs to MMSCF (as Natural Gas Equivalent):

MMSCF (as Natural Gas) = Petroleum Vapor Combusted (lbs) * (21,000 BTUs / lb gasoline (high avg. for C4-C8 gases)(/ (1000 BTU/SCF) / (1,000,000)
MMSCF (as Natural Gas) combusted at VCUML = 37
MMSCF (as Natural Gas) combusted at VCUM2 = 51
MMSCF (as Natural Gas) combusted at VCURR = 31

Marine VCU Emissions from Gasoline & Ethanol Loading (Emission Unit VCUML):

	Combustion Emissions								
Pollutant	PM	PM10	SOx	NOx	VOC*	CH4	CO	CO2	GHG
Emission Factor - lbs / MM SCF**	7.60	7.60	197.47	150.00	NA	2.30	84.00	120,000.00	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	229.68	229.68	5,967.82	4,533.17	NA	69.51	2,538.57	3,626,532.00	4,384,764.29
tons/yr	0.11	0.11	2.98	2.27	NA	0.03	1.27	1,813.27	2,192.38

Marine VCU Emissions from Crude Oil Loading (Emission Unit VCUM2):

	Combustion Emissions								
Pollutant	PM	PM10	SOx	NOx	VOC*	CH4	CO	CO2	GHG
Emission Factor - lbs / MM SCF**	7.60	7.60	197.47	150.00	NA	2.30	84.00	120,000.00	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	129.24	129.24	3,358.19	2,550.88	NA	39.11	1,428.49	2,040,706.95	2,467,376.25
tons/yr	0.06	0.06	1.68	1.28	NA	0.02	0.71	1,020.35	1,233.69

Rail VCU Emissions from Gasoline & Ethanol Loading (Emission Unit VCURR):

	Combustion Emissions								
Pollutant	PM	PM10	SOx	NOx	VOC*	CH4	CO	CO2	GHG
Emission Factor - lbs / MM SCF**	7.60	7.60	197.47	150.00	NA	2.30	84.00	120,000.00	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	234.27	234.27	6,087.14	4,623.80	NA	70.90	2,589.33	3,699,039.96	4,472,432.15
tons/yr	0.12	0.12	3.04	2.31	NA	0.04	1.29	1,849.52	2,236.22

* These emissions are from gasoline and crude oil vapor combustion and pilot light gas. Gasoline and crude oil VOCs are already accounted for in the VCU emissions (i.e. 2 mg/l loaded or 98% efficiency).

** PM Emission Factor is from AP-42 (Table 1.4-2), as it is higher than the Emission Factor from the VCU manufacturer of zero (0). SOx Emission Factor is calculated as described below. NOx Emission Factor is from VCU manufacturer, as it is higher than the AP-42 Emission factor of 140 lbs/MMSCF (Table 1.4-1). CO Emission Factors is identical from VCU manufacturer and AP-42 (Table 1.4-1). GHG Emission calculated by using the CO2 Equivalency Factor for CO2 (1) and CO (3.7).

Example calculation of SOx Emission Factor:

SOx Emission Factor = y_{H2S} * (1/C) * M_{SO2} * MW_{SO2} (Equation from EPA Emission Inventory Improvement Program (EIIP) Document Volume 3, Ch.10: Preferred & Alternative Methods for Estimating Air Emissions from Oil and Gas Field Production & Procesing Operations, Sept. 1999, Pg 10.2-16.)

$y_{H2S,\ crude\ oil}$ =	0.001	(mole fraction of H2S in inlet gas (lb mole H2S/ lb mole) based on 10 ppm H2S liquid concentration)
C =	379.00	(molar volume of ideal gas at 60F and 1atm (scf/lb-mole))
M =	0.99	(molar conversion ratio from H2S to SO2 (lb-mole SO2/lb-mole H2S) (From VCU Manufacturer))
MW =	64.066	(molecular weight of SO2 (lb SO2/lb-mole SO2))
$EF_{SOX,crude\ oil}$ =	197.47	lb/ MMSCF

Total of Combustion Sources

Pollutant	PM	PM10	SOx	NOx	VOC	CH4	CO	CO2	GHG
lb/yr	5,324.67	997.64	77,665.64	15,131.20	52,285.13	1,611.18	7,925.84	84,068,259.44	86,470,440.46
tons/yr	2.66	0.50	38.83	7.57	26.14	0.81	3.96	42,034.13	43,235.22

Emergency Generators (Exempt)

Emergency Generator Sources:

Fuel Type	Source	Gal/hr (Liquid)	SCF/hr (Gas)	Gal/hr (Gas)	MMBTU/hr*
Propane	QT100 Generator	13.9			1.26
Propane	QT100 Generator	13.9			1.26
Natural Gas	20kw NG Generator		1,020		1.02
Diesel	500kw	26.1			
Diesel	350kw	18.5			
Diesel	350kw	18.5			

*Generac Spec Sheet states, "For BTU content multiply gal/hr x 90950 (LP) or ft3/hr x 1000 (NG).'

Distillate Fired Engine Emissions:

	Pollutant								
Pollutant	PM	SOx	NOx	VOC	CO	CH4	N2O	CO2	GHG**
Factor - lb/1000 gal*	2.00	52.54	20.00	0.20	5.00	0.22	0.26	2.2E+04	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	63.10	1,657.64	631.00	6.31	157.75	6.81	8.20	703,565.00	706,179.86
tons/yr	0.03	0.83	0.32	0.00	0.08	0.00	0.00	351.78	353.09

* Emission factors used to estimate emissions are from AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I. SOx, Nox, CO, and PM Emission Factors are from Table 1.3-1. VOC Emission Factor is from Table 1.3-3. CO2 Emission Factor is from Table 1.3-12.

** GHG Emission calculated by using the CO2 Equivalency Factors for CH4 (25), N2O (298) and CO2 (1)

Example calculation:
= gal/yr / 1000 gal * emission factor

Natural Gas & Propane Fired Engine Emissions:

	lbs Pollutant / MM BTU								
Pollutant	PM	SOx	NOx	VOC	CO	CH4	N2O	CO2	GHG**
Factor*	0.0099	0.0006	2.270	0.0296	3.720	0.230	0.2	110.0	(CH4*25)+(N2O*298)+(CO2*1)
lb/yr	17.58	1.04	4,027.45	52.52	6,600.04	408.07	408.07	195,162.55	326,968.24
tons/yr	0.01	0.00	2.01	0.03	3.30	0.20	0.20	97.58	163.48

* Emission factors used to estimate emissions are from AP-42 Table 3.2-3.

** GHG Emission calculated by using the CO2 Equivalency Factors for CH4 (25), N2O (298) and CO2 (1)

Example Calculation of Natural Gas Useage

= Natural Gas Used 1,774 MMBTU/yr
= Natural Gas Used * Emission factor

Total of Generator Sources

Pollutant	PM	SOx	NOx	VOC	CO	CH4	N2O	CO2	GHG
lb/yr	80.68	1,658.68	4,658.45	58.83	6,757.79	414.88	416.27	898,727.55	1,033,148.10
tons/yr	0.04	0.83	2.33	0.03	3.38	0.21	0.21	449.36	516.57

H2S Calculations

H2S Liquid Conc. (ppm)	10	
H2S Vapor Fraction	0.00118	(from EPA TANKS 4.09d)
VCUM2 VOC Emissions	3.76	tpy (from Load-Marine tab of PTE)
Facility Fugitives (light liquid)	2937.65	lbs/yr (from Facility Fugitives tab of PTE)
IFR Tank Emissions (inc. landings)	147021.84	lbs/yr (from Emission Summary tab of PTE)

Point Sources

Emission Unit	Emission Rate (tpy) (VCUM2 Emissions x H2S Vapor Fraction)
VCUM2	0.004

Volume Sources (Tanks)

Emission Unit	Emission Rate (tpy) (IFR Tank Emissions x H2S Vapor Fraction)
TANKS	0.087

Area Sources (Fugitives)

Emission Unit	Emission Rate (tpy)
Facility Fugitives	0.002

Total H2S Emissions (tpy) **0.093**

Note: Hydrogen sulfide is the most prevalent of the total reduced sulfurs, and therefore all TRS is assumed to be H2S.

Estimate of Particulate Matter (PM-2.5) Emissions

Paved Roads - Emission Factor Derived from AP-42: 13.2.1 (01/11) (accounts for resuspended road material

$$\text{Eext} = [k\,(sL)^{0.91} \times (W)^{1.02}]\,(1 - P/4N)$$

Where:

	= Annual size specific emission factor extrapolated for natural mitigation (lb/VMT)		
k	= PM-2.5 multiplier (lb/VMT) =	**0.00054**	lb/VMT (Table 13.2-1.1)
sL*	= Road Surface Silt Loading (g/m^2) =	**1.1**	g/m^2 (Table 13.2.1-3)
W	= Mean Vechicle Weight (tons)		
P	= Number of precipitation days per year (>0.01 in precipitation) =	**138**	days (Albany, NY data)
N	= Number of days in the averaging period =	**365**	days (Annual Average)

*Given the industrial processes listed in Table 13.2.1-3, operations at a terminal were determined to be closest to those at a corn wet mill. Therefore, the silt

Paved Roads - Emission Factor Derived Using EPA MOVES Model (includes vehicle exhaust, brake wear, and tire wear

Assumptions Used in Model:	
Scale:	National (utilizes data from EPA databases)
Year Selected:	2013
Months Selected:	All Months
Hours Selected:	All Hours
Time Aggregation Level:	Hourly
Geographic Bounds:	Albany County
Vehicle Selected:	Combination long-haul truck
Fuel Selected:	Diesel Fuel
Road Type:	Urban, Restricted Access
Emissions Accounted for:	Running exhaust, crankcase running exhaust, brake wear, tire wear

Calculation of Number of Tanker Trucks at Facility Per Day

10,500.00	gallons	=storage capacity of each truck
373,192,668.00	gallons	=throughput of product at the truck rack in 2013
35,542.16	trucks per year	=trucks entering the facility in 2013 (product loaded at the truck rack/storage capacity of each truck
35,543	**trucks per year**	
97.38	trucks per day	=trucks entering the facility each day (trucks per year/365)
98	**trucks per day**	

Calculation of Average Tanker Truck Weight

80000	pounds	=loaded weight of smaller tanker trucks used (information obtained from terminal)
102000	pounds	=loaded weight of larger tanker trucks used (information obtained from terminal)
91000	pounds	=average weight of truck travelling through terminal (conservatively assume that half of the trucks are the larger trucks, conservatively assume that trucks are at their loaded weight when entering and exiting the facility)
45.5	tons	=average weight of truck traveling through terminal

Road Length - Paved Roads

18550	inches	=length of paved road traveled by trucks, determined using facility site plan
1545.83	feet	=length of paved road traveled by trucks
0.29	miles	=length of paved road traveled by trucks

Estimate of Particulate Matter (PM-2.5) Emissions

Paved Roads - Emission Factors Derived from AP-42: 13.2.1 (01/11) and EPA MOVES Model

Tanker Trucks (TT):

98	Tanker trucks per day	===>	Average weight =	45.5	tons
98				45.5	tons

Length of Paved Roads:

L(TT) =	0.29	miles	Length of paved road tanker trucks travel on one way.

Emission Factors:

E(TT) =	0.026	lb/VMT	Emission Factor derived from AP-42, Volume 1, Fifth Edition, Section 13.2.1 (January 2011)
E(EPA MOVES) =	4.09216E-06	lb/VMT	Average hourly emission factor resulting from MOVES run
Emission Factor (total) =	0.026	lb/VMT	Sum of AP-42 and EPA MOVES Emission Factors

Estimate of Particulate Matter (PM-2.5) Emissions:

Tanker Truck:	98	Trips/day	1	ways
E(TT) =	0.75	lb PM-2.5/day		
TOTAL =	**0.75**	**lb PM-2.5/day**		
	0.14	**tons PM-2.5/year**		

Unpaved Roads - Emission Factors Derived from AP-42: 13.2.2 (11/06)

Where:

	= Annual size specific emission factor extrapolated for natural mitigation (lb/VMT)			
s*	= Surface material silt content (%) =	**4.3**	(Table 13.2.2-1)	
W	= Mean Vehicle Weight (tons)			
k	=	**0.15**	lb/VMT (Table 13.2.2-2)	
a	=	**0.9**	(Table 13.2.2-2)	
b	=	**0.45**	(Table 13.2.2-2)	
P	= Number of precipitation days per year (>0.01 in percipitation) =	**138**	days (Albany, NY data)	

*The unpaved road at the terminal was determined to have a silt content most similar to a service road. The silt content given for a taconite

Estimated Number of Trucks at Facility Per Day

5 trucks per day — assume one maintenance crew on site each day with one truck entering and exiting the facility approximately five times each day

Average Truck Weight

5000 lbs — average weight of a light duty pickup truck (maintenance truck)
2.5 tons

Road Length - Unpaved Roads

1500 feet — estimated distance driven by each maintenance truck on each trip through the terminal
0.28 miles

Estimate of Particulate Matter (PM-2.5) Emissions

Unpaved Roads - Emission Factors Derived from AP-42: 13.2.1 (11/06)

Maintenance Trucks (MT):

5	Maintenance Trucks per day	===>	Average weight =	2.5	tons
5				2.5	tons

Length of Unpaved Roads:

L(MT) = 0.28 miles Length of unpaved road maintenance trucks travel on one way.

Emission Factors:

E(MT) = 0.034 lb/VMT

Estimate of Particulate Matter (PM-2.5) Emissions:

Maintenance Truck: 5 Trips/day 1 ways

E(MT) = 0.05 lb PM-2.5/day

TOTAL = 0.05 lb PM-2.5/day

0.01 tons PM-2.5/year

Estimate of Particulate Matter (PM-2.5) Emissions

Total PM-2.5 Emissions:

0.14	tons/year	total PM-2.5 emissions from tanker trucks traveling on paved roads
0.01	tons/year	total PM-2.5 emissions from maintenance vehicles traveling on unpaved roads
0.15	**tons/year**	**total fugitive PM-2.5 emissions from facility roads**

Estimate of Particulate Matter (PM-10) Emissions

Paved Roads - Emission Factor Derived from AP-42: 13.2.1 (01/11) (accounts for resuspended road material)

$$Eext = [k\,(sL)^{0.91} \times (W)^{1.02}]\,(1 - P/4N)$$

Where:

	= Annual size specific emission factor extrapolated for natural mitigation (lb/VMT)		
k	= PM-10 multiplier (lb/VMT) =	**0.0022**	lb/VMT (Table 13.2-1.1)
sL*	= Road Surface Silt Loading (g/m^2) =	**1.1**	g/m^2 (Table 13.2.1-3)
W	= Mean Vechicle Weight (tons)		
P	= Number of precipitation days per year (>0.01 in precipitation) =	**138**	days (Albany, NY data)
N	= Number of days in the averaging period =	**365**	days (Annual Average)

*Given the industrial processes listed in Table 13.2.1-3, operations at a terminal were determined to be closest to those at a corn wet mill. Therefore, the silt

Paved Roads - Emission Factor Derived Using EPA MOVES Model (includes vehicle exhaust, brake wear, and tire wear)

Assumptions Used in Model:

Scale:	National (utilizes data from EPA databases)
Year Selected:	2013
Months Selected:	All Months
Hours Selected:	All Hours
Time Aggregation Level:	Hourly
Geographic Bounds:	Albany County
Vehicle Selected:	Combination long-haul truck
Fuel Selected:	Diesel Fuel
Road Type:	Urban, Restricted Access
Emissions Accounted for:	Running exhaust, crankcase running exhaust, brake wear, tire wear

Calculation of Number of Tanker Trucks at Facility Per Day

10,500.00	gallons	=storage capacity of each truck
373,192,668.00	gallons	=throughput of product at the truck rack in 2013
35,542.16	trucks per year	=trucks entering the facility in 2013 (product loaded at the truck rack/storage capacity of each truck)
35,543	**trucks per year**	
97.38	trucks per day	=trucks entering the facility each day (trucks per year/365)
98	**trucks per day**	

Calculation of Average Tanker Truck Weight

80000	pounds	=loaded weight of smaller tanker trucks used (information obtained from terminal)
102000	pounds	=loaded weight of larger tanker trucks used (information obtained from terminal)
91000	pounds	=average weight of truck travelling through terminal (conservatively assume that half of the trucks are the larger trucks, conservatively assume that trucks are at their loaded weight when entering and exiting)
45.5	tons	=average weight of truck traveling through terminal

Road Length - Paved Roads

18550	inches	=length of paved road traveled by trucks, determined using facility site plan
1545.83	feet	=length of paved road traveled by trucks
0.29	miles	=length of paved road traveled by trucks

Estimate of Particulate Matter (PM-10) Emissions

Paved Roads - Emission Factors Derived from AP-42: 13.2.1 (01/11) and EPA MOVES Model

Tanker Trucks (TT):

98	Tanker trucks per day	===>	Average weight =	45.5	tons
98				45.5	tons

Length of Paved Roads:

L(TT) =	0.29	miles	Length of paved road tanker trucks travel on one way.

Emission Factors:

E(TT) =	0.107	lb/VMT	Emission Factor derived from AP-42
E(EPA MOVES) =	5.507E-06	lb/VMT	Average hourly emission factor resulting from MOVES run
Emission Factor (total) =	0.107	lb/VMT	Sum of AP-42 and EPA MOVES Emission Factors

Estimate of Particulate Matter (PM-10) Emissions:

Tanker Truck:	98	Trips/day	1	ways
E(TT) =	3.06	lb PM-10/day		
TOTAL =	**3.06**	**lb PM-10/day**		
	0.56	**tons PM-10/year**		

Unpaved Roads - Emission Factors Derived from AP-42: 13.2.2 (11/06)

Where:

	= Annual size specific emission factor extrapolated for natural mitigation (lb/VMT)				
s	= Surface material silt content for MSW Lanfills (%) =	**4.3**	(Table 13.2.2-1)		
W	= Mean Vehicle Weight				
k	=	**1.5**	lb/VMT (Table 13.2.2-2)		
a	=	**0.9**	(Table 13.2.2-2)		
b	=	**0.45**	(Table 13.2.2-2)		
P	= Number of precipitation days per year (>0.01 in percipitation) =			**138**	days (Albany, NY data)

*The unpaved road at the terminal was determined to have a silt content most similar to a service road. The silt content given for a taconite

Estimated Number of Trucks at Facility Per Day

5	trucks per day	assume one maintenance crew on site each day with one truck entering and exiting the facility approximately five times each day

Average Truck Weight

5000	lbs	average weight of a light duty pickup truck (maintenance truck)
2.5	tons	

Road Length - Unpaved Roads

1500	feet	estimated distance driven by each maintenance truck on each trip through the terminal
0.28	miles	

Estimate of Particulate Matter (PM-10) Emissions

Unpaved Roads - Emission Factors Derived from AP-42: 13.2.1 (11/06)

Maintenance Trucks (MT):

5	Maintenance Trucks per day	===>	Average weight =	2.5	tons
5				2.5	tons

Length of Unpaved Roads:

L(MT) = 0.28 miles Length of unpaved road maintenance trucks travel on one way.

Emission Factors:

E(MT) = 0.341 lb/VMT

Estimate of Particulate Matter (PM-10) Emissions:

Maintenance Truck:	5	Trips/day	1	ways
E(MT) =	0.48	lb PM-10/day		
TOTAL =	**0.48**	**lb PM-10/day**		
	0.09	**tons PM-10/year**		

Estimate of Particulate Matter (PM-10) Emissions

Total PM-10 Emissions:

0.56	tons/year	total PM-10 emissions from tanker trucks traveling on paved roads
0.09	tons/year	total PM-10 emissions from maintenance vehicles traveling on unpaved roads
0.65	**tons/year**	**total fugitive PM-10 emissions from facility roads**

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	**117**	**Tank type**	**Internal Floating Roof**	**Date**	03/19/20
Material stored	**Gasoline (Average RVP 13)**	**Company**	**Global**	**Performed by**	**Nicole Brower**
City	**Albany**	**State**	**NY**		
Description	**Aboveground Storage Tank**				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	**62**	Lb/lb-mole
Tank design data			
Shell height	Hs	**48.00**	
Diameter	D	**110.00**	ft
Tank volume		**2,743,229**	gallons
Turnovers	N	58.38	
Throughput	Q	**160,152,189**	gal/yr
Number of fixed roof support columns	Nc	**0.00**	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	**1.10**	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	**0.14**	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	**1.6**	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	**0.3**	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	**0.0**	mph
Seal-related wind speed exponent; see Table 7.1-8	n	**1.6**	NA
Vapor pressure function; see Figure 7.1-19	P*	**0.126**	NA
Shell clingage factor; see Table 7.1-10	Cs	**0.0015**	bbl/1,000 ft2
Average organic liquid density	WL	**5.60**	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	**0.20**	ft/ft2
Average Reid Vapor Pressure	RVP	**13.00**	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	**3.00**	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			

		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	**2**	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	**0**	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	**0**	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	**2**	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	**23**	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	**1**	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	**0**	8.3	Eq.2-7 & Table 7.1-12
Legs	**0**	7.9	Table 7.1-12
Ladder	**0**	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	**0**	60.0	Table 7.1-12
Total deck fitting loss factor:		61.00	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,375.78**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	110.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)])	**LW**	**274.59**	lb/yr
Annual throughput	Q	3,813,147	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	110.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**476.83**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	61.00	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**2,648.38**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	110.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**4,775.58**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	118	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	100.00	ft
Tank volume		2,220,637	gallons
Turnovers	N	58.38	
Throughput	Q	129,642,796	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	80	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	58	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		635.60	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,250.71**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	100.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**244.51**	lb/yr
Annual throughput	Q	3,086,733	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	100.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**4,968.44**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	635.60	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**2,188.74**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	100.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**8,652.40**	lb/yr

Notes:

1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	119	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	80.00	ft
Tank volume		1,434,161	gallons
Turnovers	N	58.38	
Throughput	Q	83,727,616	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	51	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	40	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		458.84	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,000.57**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	80.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**197.39**	lb/yr
Annual throughput	Q	1,993,515	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	80.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**3,586.72**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	458.84	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,400.79**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	80.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**6,185.47**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	120	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	80.00	ft
Tank volume		1,430,858	gallons
Turnovers	N	58.38	
Throughput	Q	83,534,784	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Eq. 2-4	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-7	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-7	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-4			
		Loss Factor	
Quanity of Each Fitting	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open	51	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper	0	8.3	Eq.2-7 & Table 7.1-12
Legs	40	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		458.84	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,000.57**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	80.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcF	**LW**	**196.93**	lb/yr
Annual throughput	Q	1,988,923	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	80.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**3,586.72**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	458.84	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,400.79**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	80.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**6,185.02**	lb/yr

Notes:

1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	121	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		Units
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	150.00	ft
Tank volume		5,105,286	gallons
Turnovers	N	58.38	
Throughput	Q	298,051,213	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	1	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	60	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	112	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		1,041.00	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	LR	**1,876.06**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	150.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**374.75**	lb/yr
Annual throughput	Q	7,096,457	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	150.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	LF	**8,137.43**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	1,041.00	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	LD	**4,924.67**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	150.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	LT	**15,312.91**	lb/yr

Notes:

1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	114	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	120.00	ft
Tank volume		3,787,905	gallons
Turnovers	N	58.38	
Throughput	Q	221,141,319	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,500.85**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	120.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/	**LW**	**347.56**	lb/yr
Annual throughput	Q	5,265,270	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	120.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**1,341.70**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	171.64	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**3,151.79**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	120.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**6,341.90**	lb/yr

Total deck fitting loss factor using Equation 2-14; see Eq. 2-6

		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	115	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		171.64	Eq. 2-6

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	115	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	150.00	ft
Tank volume		5,642,527	gallons
Turnovers	N	58.38	
Throughput	Q	329,415,828	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (°F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31)	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	180	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		249.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,876.06**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	150.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc	**LW**	**414.19**	lb/yr
Annual throughput	Q	7,843,234	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	150.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**1,949.54**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	249.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**4,924.67**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	150.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**9,164.46**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	31	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,801,825	gallons
Turnovers	N	58.38	
Throughput	Q	221,953,981	gal/yr
Number of fixed roof support columns	Nc	10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	10	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	125	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		513.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**3,224.48**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	125.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/	**LW**	**364.35**	lb/yr
Annual throughput	Q	5,284,619	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**4,013.21**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	513.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**3,419.91**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	125.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**11,021.96**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	32	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,801,825	gallons
Turnovers	N	58.38	
Throughput	Q	221,953,981	gal/yr
Number of fixed roof support columns	Nc	10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	10	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	125	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		513.40	Eq. 2-6

CALCULATIONS

	Symbol			Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**		**3,224.48**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa		3.3	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb		0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v		0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n		3.0	NA
Vapor pressure function; see Figure 7.1-19	P*		0.13	NA
Tank diameter	D		125.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv		62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc		1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/	**LW**		**364.35**	lb/yr
Annual throughput	Q		5,284,619	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs		0.0015	bbl/1,000 ft2
Average organic liquid density	WL		5.60	lb/gal
Tank diameter	D		125.00	ft
Constant		0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc		10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc		1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**		**4,013.21**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF		513.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*		0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv		62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc		1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**		**3,419.91**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD		0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD		0.20	ft/ft2
Tank diameter	D		125.00	ft
Vapor pressure function; see Figure 7.1-19	P*		0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv		62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc		1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**		**11,021.96**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	39	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Gasoline (Average RVP 13)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	62	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,073,373	gallons
Turnovers	N	58.38	
Throughput	Q	179,426,294	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.126	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	13.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	5.8026	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.644	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	5,043.6	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R

Total deck fitting loss factor using Equation 2-14; see Eq. 2-6

Quanity of Each Fitting:	Qty	Loss Factor Kf	Source
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	125	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		183.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**3,224.48**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Tank diameter	D	125.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/	**LW**	**270.72**	lb/yr
Annual throughput	Q	4,272,055	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**1,433.63**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	183.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**3,419.91**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	125.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.13	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	62.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**8,348.74**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	117	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Component (Average RVP 14.33)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	60.67	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	110.00	ft
Tank volume		2,743,229	gallons
Turnovers	N	15.38	
Throughput	Q	42,180,000	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.146	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	14.33	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	6.4846	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.614	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	4,971.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			

Quanity of Each Fitting:	**Qty**	**Loss Factor Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	23	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		61.00	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,557.95**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Tank diameter	D	110.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**72.32**	lb/yr
Annual throughput	Q	1,004,286	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	110.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**539.97**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	61.00	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**2,999.05**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	110.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**5,169.30**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	118	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Component (Average RVP 14.33)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	60.67	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	100.00	ft
Tank volume		2,220,637	gallons
Turnovers	N	18.99	
Throughput	Q	42,180,000	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.146	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	14.33	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (°F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	6.4846	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.614	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	4,971.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31)	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	80	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	58	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		635.60	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,416.32**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Tank diameter	D	100.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**79.55**	lb/yr
Annual throughput	Q	1,004,286	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	100.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**5,626.33**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	635.60	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**2,478.56**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	100.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**9,600.75**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	119	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Component (Average RVP 14.33)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	60.67	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	80.00	ft
Tank volume		1,434,161	gallons
Turnovers	N	29.41	
Throughput	Q	42,180,000	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.146	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	14.33	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	6.4846	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.614	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	4,971.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	51	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	40	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		458.84	Eq. 2-6

CALCULATIONS

	Symbol		**Units**
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,133.05**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Tank diameter	D	80.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**99.44**	lb/yr
Annual throughput	Q	1,004,286	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	80.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**4,061.65**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	458.84	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,586.28**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	80.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.15	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.67	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**6,880.42**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	121	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Blendstock (Average RVP 15)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	60	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	150.00	ft
Tank volume		5,105,286	gallons
Turnovers	N	37.22	
Throughput	Q	190,000,000	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.157	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	15.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	6.8317	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.600	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	4,937.9	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	1	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	60	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	112	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		1,041.00	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	LR	**2,254.95**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Tank diameter	D	150.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	LW	**238.89**	lb/yr
Annual throughput	Q	4,523,810	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	150.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	LF	**9,780.83**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	1,041.00	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	LD	**5,919.23**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	150.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	LT	**18,193.90**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	114	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Blendstock (Average RVP 15)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	60	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	120.00	ft
Tank volume		3,787,905	gallons
Turnovers	N	25.08	
Throughput	Q	95,000,000	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.157	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	15.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	6.8317	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.600	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	4,937.9	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	115	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		171.64	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,803.96**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Tank diameter	D	120.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**149.31**	lb/yr
Annual throughput	Q	2,261,905	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	120.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**1,612.66**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	171.64	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**3,788.31**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	120.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**7,354.24**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	115	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Blendstock (Average RVP 15)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	60	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	150.00	ft
Tank volume		5,642,527	gallons
Turnovers	N	16.84	
Throughput	Q	95,000,000	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.157	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	15.00	
Stock ASTM-D86 Distillation Slope at 10vol% evaporation (*F/vol%)	S	3.00	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	6.8317	
Eq from Fig 7.1-15: 15.64-1.854*S^0.5 - (0.8742-0.3280 * S^0.5) ln (RVP)	A	11.600	
Eq from Fig 7.1-15: 8742-1042*S^0.5 - (1049-179 * S^0.5) ln (RVP)	B	4,937.9	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	Qty	Kf	Source
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	180	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		249.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**2,254.95**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Tank diameter	D	150.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc	**LW**	**119.45**	lb/yr
Annual throughput	Q	2,261,905	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid density	WL	5.60	lb/gal
Tank diameter	D	150.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**2,343.26**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	249.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**5,919.23**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	150.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.16	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	60.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	1.00	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**10,636.89**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	117	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	110.00	ft
Tank volume		2,743,229	gallons
Turnovers	N	13.62	
Throughput	Q	37,360,542	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31)	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	23	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		61.00	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**787.28**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	110.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**324.86**	lb/yr
Annual throughput	Q	889,537	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	110.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**272.86**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	61.00	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,515.51**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	110.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**2,900.51**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	118	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	100.00	ft
Tank volume		2,220,637	gallons
Turnovers	N	13.62	
Throughput	Q	30,243,265	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31)	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	80	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	58	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		635.60	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**715.71**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	100.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**289.27**	lb/yr
Annual throughput	Q	720,078	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	100.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**2,843.15**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	635.60	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,252.49**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	100.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**5,100.62**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	119	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	80.00	ft
Tank volume		1,434,161	gallons
Turnovers	N	13.62	
Throughput	Q	19,532,103	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31)	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			

Quanity of Each Fitting:	**Qty**	**Loss Factor Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	51	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	40	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		458.84	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**572.57**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	80.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**233.52**	lb/yr
Annual throughput	Q	465,050	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	80.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**2,052.47**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	458.84	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**801.59**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	80.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**3,660.16**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	120	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weigh	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	80.00	ft
Tank volume		1,430,858	gallons
Turnovers	N	13.62	
Throughput	Q	19,487,119	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.(	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.1	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zer	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-	n	1.6	NA
Vapor pressure function; see Eq. 2-4	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Dec	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-3	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	*R
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	5.8042	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-3	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open	51	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wipe	0	8.3	Eq.2-7 & Table 7.1-12
Legs	40	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combinatio	1	60.0	Table 7.1-12
Total deck fitting loss factor:		458.84	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**572.57**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zer	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	80.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)	**LW**	**232.99**	lb/yr
Annual throughput	Q	463,979	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	80.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.(	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**2,052.47**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	458.84	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc	**LD**	**801.59**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.1	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Dec	SD	0.20	ft/ft2
Tank diameter	D	80.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**3,659.62**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-1
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRT
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-1
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissio

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	121	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	150.00	ft
Tank volume		5,105,286	gallons
Turnovers	N	13.62	
Throughput	Q	69,529,832	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	1	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	1	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	60	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	112	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	1	60.0	Table 7.1-12
Total deck fitting loss factor:		1,041.00	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,073.56**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	150.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**443.36**	lb/yr
Annual throughput	Q	1,655,472	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	150.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**4,656.58**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	1,041.00	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**2,818.10**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	150.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**8,991.60**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	114	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	120.00	ft
Tank volume		3,787,905	gallons
Turnovers	N	13.62	
Throughput	Q	51,588,177	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA))	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31)	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-6	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature:		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-2	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-2	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs I	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting:	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	115	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		171.64	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**858.85**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*y
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zerc	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	120.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/I	**LW**	**411.19**	lb/yr
Annual throughput	Q	1,228,290	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	120.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc)	**LF**	**767.78**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	171.64	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,803.59**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	120.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-21	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquids	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**3,841.40**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	115	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	48.00	
Diameter	D	150.00	ft
Tank volume		5,642,527	gallons
Turnovers	N	13.62	
Throughput	Q	76,846,616	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	510.21	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-7	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-7	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-			

Quanity of Each Fitting	**Qty**	**Loss Factor Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open	180	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		249.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,073.56**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	1.6	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.3	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	1.6	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	150.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcF	**LW**	**490.01**	lb/yr
Annual throughput	Q	1,829,681	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	150.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc	**LF**	**1,115.61**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	249.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**2,818.10**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	150.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**5,497.29**	lb/yr

Notes:

1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	31	**Tank type**	Internal Floating Roo	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5]	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,801,825	gallons
Turnovers	N	13.62	
Throughput	Q	51,777,756	gal/yr
Number of fixed roof support columns	Nc	10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-7	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-7	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover	10	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open	125	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		513.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,845.19**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	125.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcF	**LW**	**431.06**	lb/yr
Annual throughput	Q	1,232,804	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc	**LF**	**2,296.53**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	513.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,957.02**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	125.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**6,529.79**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	32	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,801,825	gallons
Turnovers	N	13.62	
Throughput	Q	51,777,756	gal/yr
Number of fixed roof support columns	Nc	10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	509.1	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	*F
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1-7	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1-7	TAN	499.30	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	*R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			

Quanity of Each Fitting	**Qty**	**Loss Factor Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover	10	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open	125	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		513.40	Eq. 2-6

CALCULATIONS

	Symbol			Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**		**1,845.19**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa		3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb		0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v		0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n		3.0	NA
Vapor pressure function; see Figure 7.1-19	P*		0.22	NA
Tank diameter	D		125.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv		50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc		0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcF	**LW**		**431.06**	lb/yr
Annual throughput	Q		1,232,804	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs		0.0060	bbl/1,000 ft2
Average organic liquid density	WL		7.10	lb/gal
Tank diameter	D		125.00	ft
Constant		0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc		10.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc		1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc	**LF**		**2,296.53**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF		513.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*		0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv		50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc		0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**		**1,957.02**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD		0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD		0.20	ft/ft2
Tank diameter	D		125.00	ft
Vapor pressure function; see Figure 7.1-19	P*		0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv		50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc		0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**		**6,529.79**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.)

Tank No.	39	**Tank type**	Internal Floating Roof	**Date**	03/19/20
Material stored	Crude (Average RVP 12.5)	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	NY		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Molecular Weight			
Molecular weight	Mv	50	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,073,373	gallons
Turnovers	N	13.62	
Throughput	Q	41,856,834	gal/yr
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.224	NA
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Average Reid Vapor Pressure	RVP	12.50	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	8.7173	
Eq from Fig 7.1-16: 12.82 - 0.9672 ln (RVP)	A	10.377	
Eq from Fig 7.1-16: 7261 - 1216 ln (RVP)	B	4,189.7	
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I (Eqn. 1-28)	TLA	**510.21**	°R
Average daily ambient temperature (Equation 1-30)	TAA	508.2	°R
Liquid bulk temperature (Equation 1-31)	TB	509.1	°R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.3	
Daily total solar insolation on a horizontal surface, Btu/(ft2 day)	I	1180.0	
Average Daily Liquid Surface Temperature		50.5	°F
TAA = ((TAX+TAN)/2)	TAA	508.20	°R
average daily maximum ambient temperature, Table 7.1-7	TAX	517.10	°R
average daily minimum ambient temperature, Table 7.1-7	TAN	499.30	°R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	509.09	°R
Total deck fitting loss factor using Equation 2-14; see Eq. 2-6			
		Loss Factor	
Quanity of Each Fitting	**Qty**	**Kf**	**Source**
Access Hatch (Bolted/Gasketed)	2	1.6	Table 7.1-12
Automatic Gauge Hatch (Bolted/Gasketed)	0	2.8	Table 7.1-12
Column Well (Built-Up; Gasketed Sliding Cover)	0	33.0	Table 7.1-12
Sample Pipe/Well (Slit Fabric Seal 10% Open)	2	12.0	Table 7.1-12
Stub Drain (Slit Fabric Seal 10% Open)	125	1.2	Table 7.1-12
Vacuum Breaker (Weighted Mech. Actu.; Gasketed)	1	6.2	Eq.2-7 & Table 7.1-12
Slotted Guide-Pole (Gasketed Sliding Cover w Sleeve/Wiper)	0	8.3	Eq.2-7 & Table 7.1-12
Legs	0	7.9	Table 7.1-12
Ladder	0	56.0	Table 7.1-12
Ladder / Guide-Pole Combination	0	60.0	Table 7.1-12
Total deck fitting loss factor:		183.40	Eq. 2-6

CALCULATIONS

	Symbol		Units
Rim Seal Losses (Eq.2-3: LR = (KRa + KRb v^n)DP* Mv Kc)	**LR**	**1,845.19**	lb-mole/ft*yr
Zero wind speed LR factor; see Table 7.1-8	KRa	3.3	lb-mole/(mph)nft*yr
Wind speed dependent LR factor; see Table 7.1-8	KRb	0.1	NA
Average ambient wind speed at tank site; if IFR use Zero	v	0.0	mph
Seal-related wind speed exponent; see Table 7.1-8	n	3.0	NA
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Tank diameter	D	125.00	ft
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Withdrawal losses (Eq.2-19: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**LW**	**320.28**	lb/yr
Annual throughput	Q	996,591	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0060	bbl/1,000 ft2
Average organic liquid density	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	0.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Deck Fitting Losses (Eq.2-13: LF = FF P*MvKc	**LF**	**820.38**	lb/yr
Total deck fitting loss factor; see Eq. 2-14	FF	183.40	lb-mole/yr
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Deck Seam Losses (Eq.2-18: LD = KDSDD2P*MvKc)	**LD**	**1,957.02**	lb/yr
Deck seam loss per unit seam length factor; 0.0 or 0.14	KD	0.14	lb-mole/ft-yr
Deck seam length factor; Length of Seam / Area of Deck	SD	0.20	ft/ft2
Tank diameter	D	125.00	ft
Vapor pressure function; see Figure 7.1-19	P*	0.22	NA
Average vapor molecular weight; see Note 1 to Equation 1-2	Mv	50.00	lb/lb-mole
Product factor; 0.4 for crude oils or 1 for other organic liquid	Kc	0.40	NA
Total Losses (Eq.2-1 & 2-2: LT = LR+LW+LF+LD)	**LT**	**4,942.86**	lb/yr

Notes:
1. Vapor Pressure Function can be calculated using Equation 2-4 (not shown) or read directly form Figure 7.1-19.
2. Equations 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, and 2-12 are used to calculate Average Daily Liquid Surface Temperature from IFRTs, DEFRTs, and EFRTs.
3. Equation 2-15 is simplified to Equation 2-16 for IFRTs and DEFRTs.
4. Equation 2-17 not used. This equation is for configurations not shown in Table 7.1-12.
5. Equation 2-20 is not shown. This equation is for tanks that are pumped into and out of at the same time to avoid overestimation of emissions.

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 28	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Distillate	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Product Information			
Vapor Molecular weigh	Mv	130	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,829,140	gallons
Turnovers	N	101.63	
Throughput	Q	389,172,536	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support columns	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**515.42**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		55.7	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**515.74**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		56.0	*F
A TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
S Wv = (Mv*PVA)/(R*Tv)	Wv	0.0001	
Vapor Molecular weigh	Mv	130	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0056	
Average Daily Liquid Surrace Temperatur	Tv	518.7138	
A Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**518.71**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**520.09**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**511.39**	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	511.39	*R
Average daily ambient temperature (Equation 1-30	TAA	508.20	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		51.69	*F

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks)	**Ls**	**854.11**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0001	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.061382	per day
Vented Vapor Saturation Facto	Ks	0.99	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**796.88**	lb/yr
Annual throughput	Q	9,266,013	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs)	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.99	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.06	per day
Average Daily Vapor Temperature Rang	ΔTv	33.70	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Average Daily Liquid Surface Temperature	TLA	**515.42**	*R
Atmospheric Pressure	P_A	**14.59**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**33.70**	
Average daily ambient temperature rang	ΔTA	**17.8**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I)	ΔTv	**326.16**	*R
Average daily ambient temperature rang	ΔTA	**508.20**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	0.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.00164	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.00586**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.00422**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**516.63**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**507.00**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**1,650.98**	lb/yr

A	12.101
B	8907

NOTE:

1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 29	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Distillate	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Product Information			
Vapor Molecular weigh	Mv	130	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,829,140	gallons
Turnovers	N	101.63	
Throughput	Q	389,172,536	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support columns	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**515.42**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		55.7	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**515.74**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		56.0	*F
A TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
S Wv = (Mv*PVA)/(R*Tv)	Wv	0.0001	
Vapor Molecular weigh	Mv	130	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0056	
Average Daily Liquid Surrace Temperatur	Tv	518.7138	
A Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**518.71**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**520.09**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**511.39**	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	511.39	*R
Average daily ambient temperature (Equation 1-30	TAA	508.20	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks)	**Ls**	**854.11**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0001	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.061382	per day
Vented Vapor Saturation Facto	Ks	0.99	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**796.88**	lb/yr
Annual throughput	Q	9,266,013	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.99	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.06	per day
Average Daily Vapor Temperature Rang	ΔTv	33.70	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Average Daily Liquid Surface Temperature	TLA	**515.42**	*R
Atmospheric Pressure	P_A	**14.59**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**33.70**	
Average daily ambient temperature rang	ΔTA	**17.8**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I	ΔTv	**326.16**	*R
Average daily ambient temperature rang	ΔTA	**508.20**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	0.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.00164	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.00586**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.00422**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**516.63**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**507.00**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**1,650.98**	lb/yr

A	12.101
B	8907

NOTE:

1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 64	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Distillate	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Product Information			
Vapor Molecular weigh	Mv	130	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,690,540	gallons
Turnovers	N	101.63	
Throughput	Q	375,086,001	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support columns	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**515.42**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		55.7	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**515.74**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		56.0	*F
Average Daily Ambient Temperature; see Equation 1-30			
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
Stock Vapor Density; see Equation 1-22			
Wv = (Mv*PVA)/(R*Tv)	Wv	0.0001	
Vapor Molecular weigh	Mv	130	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0056	
Average Daily Liquid Surrace Temperatur	Tv	518.7138	
Average Vapor Temperature			
Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**518.71**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**520.09**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**511.39**	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	511.39	*R
Average daily ambient temperature (Equation 1-30	TAA	508.20	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks)	**Ls**	**854**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0001	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.061382	per day
Vented Vapor Saturation Facto	Ks	0.99	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**768.03**	lb/yr
Annual throughput	Q	8,930,619	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs)	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.99	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.06	per day
Average Daily Vapor Temperature Rang	ΔTv	33.70	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Average Daily Liquid Surface Temperature	TLA	**515.42**	*R
Atmospheric Pressure	P_A	**14.59**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**33.70**	
Average daily ambient temperature rang	ΔTA	**17.8**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I)	ΔTv	**326.16**	*R
Average daily ambient temperature rang	ΔTA	**508.20**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	0.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.00164	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.00586**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.00422**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**516.63**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**507.00**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**1,622.14**	lb/yr

A	12.101
B	8907

NOTE:
1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 33	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Distillate	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

			Units
	Symbol		**Units**
Product Information			
Vapor Molecular weigh	Mv	130	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,801,825	gallons
Turnovers	N	101.63	
Throughput	Q	386,396,391	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support columns	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**515.42**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		55.7	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**515.74**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		56.0	*F
Average Daily Ambient Temperature; see Equation 1-30			
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
Stock Vapor Density; see Equation 1-22			
Wv = (Mv*PVA)/(R*Tv)	Wv	0.0001	
Vapor Molecular weigh	Mv	130	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0056	
Average Daily Liquid Surrace Temperatur	Tv	518.7138	
Average Vapor Temperature			
Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**518.71**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**520.09**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**511.39**	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	511.39	*R
Average daily ambient temperature (Equation 1-30	TAA	508.20	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks)	**Ls**	**854**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0001	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.061382	per day
Vented Vapor Saturation Facto	Ks	0.99	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**791.19**	lb/yr
Annual throughput	Q	9,199,914	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.99	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.06	per day
Average Daily Vapor Temperature Rang	ΔTv	33.70	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Average Daily Liquid Surface Temperature	TLA	**515.42**	*R
Atmospheric Pressure	P_A	**14.59**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**33.70**	
Average daily ambient temperature ranc	ΔTA	**17.8**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I	ΔTv	**326.16**	*R
Average daily ambient temperature ranc	ΔTA	**508.20**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	0.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.00164	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.00586**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.00422**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**516.63**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**507.00**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**1,645.30**	lb/yr

A	12.101
B	8907

NOTE:
1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 30	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Distillate	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Product Information			
Vapor Molecular weigh	Mv	130	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,829,140	gallons
Turnovers	N	101.63	
Throughput	Q	389,172,536	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support columns	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**515.42**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		55.7	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**515.74**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		56.0	*F
Average Daily Ambient Temperature; see Equation 1-30			
TAA = ((TAX+TAN)/2)	TAA	508.20	*R
average daily maximum ambient temperature, Table 7.1	TAX	517.10	*R
average daily minimum ambient temperature, Table 7.1	TAN	499.30	*R
Stock Vapor Density; see Equation 1-22			
Wv = (Mv*PVA)/(R*Tv)	Wv	0.0001	
Vapor Molecular weigh	Mv	130	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0056	
Average Daily Liquid Surrace Temperatur	Tv	518.7138	
Average Vapor Temperature			
Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**518.71**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**520.09**	*R
Average daily ambient temperature (Equation 1-30	TAA	508.2	*R
Liquid bulk temperature (Equation 1-31	TB	511.4	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**511.39**	*R
Liquid Bulk Temperature; Eq 1-31: TB = TAA + 0.003 αs	TB	511.39	*R
Average daily ambient temperature (Equation 1-30	TAA	508.20	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks)	**Ls**	**854**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0001	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.061382	per day
Vented Vapor Saturation Facto	Ks	0.99	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**796.88**	lb/yr
Annual throughput	Q	9,266,013	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs)	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.99	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.06	per day
Average Daily Vapor Temperature Rang	ΔTv	33.70	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0056	psia
Average Daily Liquid Surface Temperature	TLA	**515.42**	*R
Atmospheric Pressure	P_A	**14.59**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**33.70**	
Average daily ambient temperature ranc	ΔTA	**17.8**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I)	ΔTv	**326.16**	*R
Average daily ambient temperature ranc	ΔTA	**508.20**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	0.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.00164	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.00586**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.00422**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**516.63**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**507.00**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**1,650.98**	lb/yr

A	12.101
B	8907

NOTE:
1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

Table 1
TANK EMISSION CALCULATION
(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 33	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Biodiesel	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Product Information			
Vapor Molecular weigh	Mv	120	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,801,825	gallons
Turnovers	N	101.63	
Throughput	Q	386,396,391	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support column	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**587.01**	*R
Average daily ambient temperature (Equation 1-3	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		127.3	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**586.51**	*R
Average daily ambient temperature (Equation 1-3	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		126.8	*F
Average Daily Ambient Temperature; see Equation 1-30			
TAA = ((TAX+TAN)/2)	TAA	584.70	*R
average daily maximum ambient temperature, min tank temperatu	TAX	609.70	*R
average daily minimum ambient temperature, max tank temperatu	TAN	559.70	*R
Stock Vapor Density; see Equation 1-2			
Wv = (Mv*PVA)/(R*Tv)	Wv	0.0009	
Vapor Molecular weigh	Mv	120	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0463	
Average Daily Liquid Surrace Temperatur	Tv	579.7000	
Average Vapor Temperature			
Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**592.76**	*R
Average daily ambient temperature (Equation 1-3	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**593.32**	*R
Average daily ambient temperature (Equation 1-3	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**579.70**	*R
Liquid Bulk Temperature; Temperature of Heated Product	TB	579.70	*R
Average daily ambient temperature (Equation 1-3	TAA	584.70	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	

NOTE:
1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks) (Un-Heated	**Ls**	**7,392**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0009	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.082157	per day
Vented Vapor Saturation Facto	Ks	0.94	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Standing Losses (Eq.1-4: Ls = 365 KE (Pi/4 * D^2) * Hvo * Ks * Wv (HEATED	**Ls**	**0.2009**	lb/yr
Tank diameter	D	125.00	ft
Stock Vapor Density	Wv	0.0009	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.082157	per day
Vented Vapor Saturation Facto	Ks	0.06	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Vapor Space Outage; see Equation 1-1	Hvo	24	
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**791.19**	lb/yr
Annual throughput	Q	9,199,914	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support column	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.94	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0463	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.08	per day
Average Daily Vapor Temperature Rang	ΔTv	50.00	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0463	psia
Average Daily Liquid Surface Temperature	TLA	**579.70**	*R
Atmospheric Pressure	P_A	**14.70**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**56.24**	
Average daily ambient temperature rang	ΔTA	**50.0**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I	ΔTv	**372.06**	*R
Average daily ambient temperature rang	ΔTA	**584.70**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	50.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.03046	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.06237**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.03191**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**598.76**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**572.95**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**791.39**	lb/yr

A	12.101
B	8907

Table 1

TANK EMISSION CALCULATION

(Note - Cells in pink are input cells. All other cells are calculated cells.

Tank No.	Tank 30	**Tank type**	Fixed Roof Tank	**Date**	03/19/20
Material stored	Biodiesel	**Company**	Global	**Performed by**	Nicole Brower
City	Albany	**State**	New York		
Description	Aboveground Storage Tank				

INPUT DATA

	Symbol		Units
Product Information			
Vapor Molecular weigh	Mv	120	Lb/lb-mole
Tank design data			
Shell height	Hs	45.00	
Diameter	D	125.00	ft
Tank volume		3,829,140	gallons
Turnovers	N	101.63	
Throughput	Q	389,172,536	gal/yr
Roof Type: Cone or Dome		Cone	
If Cone:			
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
If Dome			
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Number of fixed roof support columns	Nc	8.00	NA
Tank Color (see Paint Tab		Blue	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	0.03	psi
	PBV	-0.03	psi
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Average Daily Liquid Surface Temperature			
Uninsulated FRT; see Equation 1-27 simplified to Equation 1-28			
TLA = 0.4*TAA + 0.6*TB + 0.005*α*I	TLA	**587.01**	*R
Average daily ambient temperature (Equation 1-30	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Average Daily Liquid Surface Temperature		127.3	*F
Partially Insulated FRT; see Equation 1-29			
TLA = 0.3*TAA + 0.7*TB + 0.005*αR*I	TLA	**586.51**	*R
Average daily ambient temperature (Equation 1-30	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Average Daily Liquid Surface Temperature		126.8	*F
Average Daily Ambient Temperature; see Equation 1-30			
TAA = ((TAX+TAN)/2)	TAA	584.70	*R
average daily maximum ambient temperature, min tank temperatu	TAX	609.70	*R
average daily minimum ambient temperature, max tank temperatu	TAN	559.70	*R
Stock Vapor Density; see Equation 1-22			
Wv = (Mv*PVA)/(R*Tv)	Wv	0.0009	
Vapor Molecular weigh	Mv	120	
Constant	R	10.7310	
Equation 1-25 PvA = exp(A-(B/TLA)	PvA	0.0463	
Average Daily Liquid Surrace Temperatur	Tv	579.7000	
Average Vapor Temperature			
Uninsulated FRT; see Equation 1-32 simplified to Equation 1-33			
Tv = 0.7*TAA + 0.3*TB + 0.009*α*I	Tv	**592.76**	*R
Average daily ambient temperature (Equation 1-30	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank paint solar absorptance, dimensionless, Table 7.1-	α	0.9	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1180.0	
Partially Insulated FRT; see Equation 1-34			
Tv = 0.6*TAA + 0.4*TB + 0.01*αR*I	Tv	**593.32**	*R
Average daily ambient temperature (Equation 1-30	TAA	584.7	*R
Liquid bulk temperature (Equation 1-31	TB	579.7	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	0.90	
Daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	
Fully Insulated			
Tv = TB	Tv	**579.70**	*R
Liquid Bulk Temperature; Temperature of Heated Product	TB	579.70	*R
Average daily ambient temperature (Equation 1-30	TAA	584.70	
tank shell solar absorptance, dimensionless, Table 7.1-	αs	0.90	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	1,180.00	

CALCULATIONS

	Symbol		Units
Standing Losses (Eq.1-2: Ls = 365 (Vv * Wv * KE * Ks) (Un-Heated	**Ls**	**7,392**	lb/yr
Vapor Space Volume; see Equation 1-	Vv	292095.5	ft3
Stock Vapor Density	Wv	0.0009	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.082157	per day
Vented Vapor Saturation Facto	Ks	0.94	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Standing Losses (Eq.1-4: Ls = 365 KE (Pi/4 * D^2) * Hvo * Ks * Wv (HEATED	**Ls**	**0.2009**	lb/yr
Tank diameter	D	125.00	ft
Stock Vapor Density	Wv	0.0009	lb/ft3
Vapor Space Expansion Factor (0 < KE <= 1); see Equation 1-	KE	0.082157	per day
Vented Vapor Saturation Facto	Ks	0.06	NA
Constant; Number of Daily Events in a Yea	365	365	days/year
Vapor Space Outage; see Equation 1-1	Hvo	24	
Working Losses (Eq.1-35: LWD=[((0.943)QCsWL)/D]*[1+(NcFc/D)]	**Lw**	**796.88**	lb/yr
Annual throughput	Q	9,266,013	bbl/yr
Shell clingage factor; see Table 7.1-10	Cs	0.0015	bbl/1,000 ft2
Average organic liquid densit	WL	7.10	lb/gal
Tank diameter	D	125.00	ft
Constant	0.943	0.94	1,000 ft3*gal/bbl2
Number of fixed roof support columns	Nc	8.00	NA
Effective column diameter; 1.1, 0.7, or 1.0	Fc	1.10	ft
Vapor Space Volume (Eq.1-3: Vv = ((Pi / 4) D^2)Hvo	**Vv**	**292,095.51**	ft3
Tank diameter	D	125.00	ft
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Outage (Eq. 1-16: Hvo=Hs-HL+HRO	**Hvo**	**23.80**	ft
Tank shell height	Hs	45.00	ft
Liquid Height (typically assumed to be at half-full leve	HL	22.50	ft
Roof Outage (for a Cone Roof vs Dome Roo	HRO	1.30	ft
Roof Outage - Cone Roof (Eq. 1-17 & 1-18: HRO=(1/3)SR*Rs	**HRO**	**1.30**	ft
Tank cone roof slope (If unknown, use 0.0625	SR	0.0625	ft/ft
Tank shell radius	Rs	62.50	ft
Roof Outage - Dome Roof (Eq. 1-19 & 1-20: HRO=(RR-(RR^2-Rs^2)^0.5)*(0.5+0.16667((RR-(RR^2-Rs^2)^0.5)/Rs	**HRO**	**8.57**	ft
Tank dome roof radius (If unknown, use tank diameter (D) or (2Rs	RR	125.00	ft
Tank shell radius	Rs	62.50	ft
Vented Vapor Saturation Factor (Eq. 1-21: Ks = 1/(1+0.053*PvA*Hvo)	Ks	0.94	
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0463	psia
Vapor Space Outage; see Equation 1-1	Hvo	23.80	ft
Vapor Space Expansion Factor (Eq. 1-5: (ΔTv/TLA)+[(ΔPv-ΔPB)/(PA-PvA)	KE	0.08	per day
Average Daily Vapor Temperature Rang	ΔTv	50.00	*R
Average Daily Vapor Pressure Rang	ΔPv	0.00	psi
Breather Vent Pressure Setting Range	ΔPB	0.06	psi
Vapor Pressure at Avg Daily Liq Surface Tem	PvA	0.0463	psia
Average Daily Liquid Surface Temperature	TLA	**579.70**	*R
Atmospheric Pressure	P_A	**14.70**	psia
Equation 1-6, simplified to Equation 1-7 for Uninsulated Tanks (ΔTV = 0.7 ΔTA + 0.02 α I	ΔTv	**56.24**	
Average daily ambient temperature ranc	ΔTA	**50.0**	*R
Average tank surface solar absorptance, dimensionless, Table 7.1	α	**0.90**	
daily total solar insolation on a horizontal surface, Btu/(ft2 da	I	**1180.00**	
Partially Insulated - Equation 1-8 (ΔTV = 0.6 ΔTA + 0.02 αR I	ΔTv	**372.06**	*R
Average daily ambient temperature ranc	ΔTA	**584.70**	*R
Tank roof surface solar absorptance, dimensionless, Table 7.1-	αR	**0.90**	
Average daily total solar insolation factor, Btu/(ft2 day); Table 7.1	I	**1180.00**	
Fully Insulated	ΔTv	50.00	*R
Average Daily Vapor Pressure Range for Uninsulated Tanks (Equation 1-9: ΔPV = PVX - PVN	ΔPv	0.03046	psia
Vapor pressure at the average daily max liquid surface temp, (Eq. 1-25 or 1-26 using TLX; Pvx = e	PVX	**0.06237**	psia
Vapor pressure at the average daily min liquid surface temp, (Eq. 1-25 or 1-26 using TLX; PvN = e	PVN	**0.03191**	psia
Average daily maximum liquid surface temperature, deg R (TLX = TLA + 0.25ΔTV from Figure 7.1-	TLX	**598.76**	*R
Average daily minimum liquid surface temperature, deg R (TLN = TLA - 0.25ΔTV from Figure 7.1-1	TLN	**572.95**	*R
Fully Insulated	ΔPv	0.00	psia
(Equation 1-10: ΔPB = PBP - PBV	ΔPB	0.06	
Breather Vent Setting Range (Default Assumption: +/- 0.03	PBP	**0.03**	psi
	PBV	**-0.03**	psi
Total Losses (Eq.1-1: LT = Ls+Lw)	**LT**	**797.08**	lb/yr

NOTE:
1. Equation 1-4 not used, as it's stricktly a combination of Equation 1-2 and 1-
2. Equation 1-14 and 1-15 are for Horizontal Tank
3. Equation 1-23 is not shown. Equation 1-23 is for calculating the molecular weight of mixture
4. Equations 1-24, 1-25, and 1-26 not shown. These equations are used for determining vapor pressu

A	12.101
B	8907

Table 4
API Document Table 7
Meteorological Data fo

Number	Location	Annual Average T_{ax} (°F)	T_{an} (°F)	I (Btu/ft^2 day)
1	Providence, RI	59.3	41.2	1112
2	Providence, RI	59.3	41.2	1112
3	Savannah, GA	76.7	55.1	1365
4	Indianapolis, IN	62	42.2	1165
5	Chicago, IL	58.7	39.7	1215
6	Chicago, IL	58.7	39.7	1215
7	Indianapolis, IN	62	42.2	1165
8	Providence, RI	59.3	41.2	1112
9	Providence, RI	59.3	41.2	1112
10	Detroit, MI	58.2	38.9	1120
11	Detroit, MI	58.2	38.9	1120
12	Detroit, MI	58.2	38.9	1120
13	Detroit, MI	58.2	38.9	1120
14	Albany, NY	57.4	39.6	1180
15	Newark, NJ	63.38	46.1	1235.58
16	Newark, NJ	62.5	45.9	1165
17	Buffalo, NY	55.8	39.3	1034
18	Buffalo, NY	55.8	39.3	1034
19	New York, NY	61	47.5	1171
20	New York, NY	61	47.5	1171
21	New York, NY	61	47.5	1171
22	Buffalo, NY	55.8	39.3	1034
23	Buffalo, NY	55.8	39.3	1034
24	Buffalo, NY	55.8	39.3	1034
25	Buffalo, NY	55.8	39.3	1034
26	Buffalo, NY	55.8	39.3	1034
27	Buffalo, NY	55.8	39.3	1034
28	Buffalo, NY	55.8	39.3	1034
29	Philadelphia, PA	63.4	45.1	1169
30	Philadelphia, PA	63.4	45.1	1169
31	Pittsburgh, PA	59.9	40.7	1069
32	Philadelphia, PA	63.4	45.1	1169
33	Philadelphia, PA	63.4	45.1	1169
34	Pittsburgh, PA	59.9	40.7	1069
35	Philadelphia, PA	63.4	45.1	1169
36	Allentown, PA	60.8	41.2	1138
37	Pittsburgh, PA	59.9	40.7	1069
38	Allentown, PA	60.8	41.2	1138
39	Cleveland, OH	58.5	40.7	1091
40	Columbus, OH	61.5	41.8	1123
41	Cleveland, OH	58.5	40.7	1091
42	Toledo, OH	58.8	38.3	1133
43	Roanoke, VA	66.5	45	1342
44	Louisville, KY	66.025	46.033	1305.037
45	Detroit, MI	58.2	38.9	1120

Table 3
Solar Absorptance (α) for Selected Paints
Determining Product Evaporation Losses from Tank Turnovers
API Document Table 7.1-6

			Paint Factors (α)		
Paint No.	**Paint Color**	**Paint Shade**	**Good/New**	**Average**	**Poor/Aged**
0	White	N/A	0.17	0.25	0.34
1	Aluminum	Specular	0.39	0.44	0.49
2	Aluminum	Diffuse	0.60	0.64	0.68
3	Beige / Crean	N/A	0.35	0.42	0.49
4	Black	N/A	0.97	0.97	0.97
5	Brown	N/A	0.58	0.62	0.67
6	Gray	Light	0.54	0.58	0.63
7	Gray	Medium	0.68	0.71	0.74
8	Green	Dark	0.89	0.90	0.91
9	Red	Primer	0.89	0.90	0.91
10	Rust	Red Iron Oxide	0.38	0.44	0.50
11	Tan	N/A	0.43	0.49	0.55
12	Aluminum	Mill Finish	0.10	0.12	0.15

PART 212 REVIEW
AIR DISPERSION MODEL PROTOCOL
ALBANY, NY

March 2020

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Envirospec Engineering Project E19-2196

1.0 Introduction:

Air dispersion modeling will be conducted for the Global Companies LLC (Global) Albany Terminal (Terminal) located in Albany, NY. This facility is classified as a gasoline and distillate loading terminal. It consists of ten (10) permitted gasoline storage tanks and five (5) distillate tanks. The facility has one (1) truck loading rack, one (1) rail loading rack, and a marine loading dock. The truck loading rack is controlled by a Vapor Recovery Unit (VRUTK), rail loading is controlled by a Vapor Combustion Unit (VCURR), and marine loading is controlled by two VCUs (VCUM1 and VCUM2).

This protocol is being submitted as part of a Title V air permit modification application for the facility. Air dispersion modeling is required to determine compliance with 6 NYCRR Part 212. 6 NYCRR Part 212 regulates air pollution from process operations, as defined in the regulation. Each contaminant is assigned an Environmental Rating, which is used to determine the degree of air pollution control required. Facilities with process operations subject to New Source Performance Standards (NSPS) (40 CFR Part 60) and National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR 63) are considered in compliance with Part 212 with the exception of compounds on the high toxicity air contaminant (HTAC) list. Facility Potential to Emit (PTE) calculations are completed to determine maximum potential emissions of Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs). Pollutants that are considered HTACs are then compared to the mass emission limits specified on 212-2.2 Table 2 – High Toxicity Air Contaminant List. HTACs that exceed the mass emission limit are modeled to demonstrate that fence-line concentrations are below Annual Guideline Concentrations (AGC) for annual emission rates and Short-Term Guideline Concentrations (SGC) for hourly emission rates for the applicable contaminant. HTACs that are below SGC/AGC limits are in compliance with Part 212. The only HTAC emitted from process operations at this facility with emissions exceeding the specified mass emission limit is benzene. Other HAPs are emitted from facility operations, but they are not considered HTACs per 212-2.2 Table 2. Air dispersion modeling will be conducted to assess whether or not facility benzene emissions exceed the SGC and AGC levels.

The air dispersion model will be completed using BREEZE AERMOD Software (version 8.1). Emissions information can be found below which provides information on variables and modeling assumptions which will be used when developing the model. This information is also presented in the attached modeling summary.

2.0 Facility Overview and Process Description:

Global's Albany Terminal is located at 50 Church Street in Albany, NY. The facility is permitted for petroleum product loading operations. The facility has an overall refined product (gasoline, ethanol, blendstock, distillate, and biodiesel) throughput limit of 1,929,000,000 gallons with subcaps at each rack. There is an additional 450,000,000 gallon throughput for crude oil at the marine dock.

3.0 Modeling Methodology:

The projection to be used for the model will be UTM WGS84, zone 18. An aerial image of the site as well as a facility site plan will be imported as base maps and will be used to determine source locations. The modeling methodology used for this analysis is described below. The following subsections describe the details of the modeling analysis.

3.1 Selection of Dispersion Model:

The latest version of the American Meteorological Society/Environmental Protection Agency Regulatory Model AERMOD will be used. All standard regulatory default options of AERMOD will be invoked.

To facilitate the implementation of AERMOD, the BREEZE AERMOD software will be used.

3.2 Site Characterization:

The Albany Terminal is located at 50 Church Street in Albany, NY on the western bank of the Hudson River. The base elevation for the terminal is approximately 18 ft. Based on a land use analysis of the area surrounding the terminal, the surrounding area will be considered urban in the air dispersion model with a population of 107,000 based on the total population of the cities of Albany and Rensselaer (2010 census).

3.3 Source Emissions:

Total benzene emissions from the facility's PTE calculations will be used for modeling. The PTE calculations will be performed using the latest AP-42 methodology (November 2019). Tank emissions (standing and working) were calculated using the 2019 AP-42 formulas (AP-42 [7.1 Organic Liquid Storage Tanks]). Tank landing and cleaning emissions were also calculated using the 2019 AP-42 calculation methods (AP-42 [7.1.3.3 Floating Roof Landing Losses]). Two (2) tanks will be heated for biodiesel storage. Emissions were calculated as heated tanks per AP-42 (7.1 Organic Liquid Storage Tanks).

Transfer emissions are calculated using the standard AP-42 method for calculating rack transfers using maximum facility throughput values and design efficiency of the control device. Transfer fugitives utilize a standard 99.2% capture efficiency factor when loading (AP-42 [5.2 Transportation and Marketing of Petroleum Liquids]).

Liquid weight concentrations for benzene were based on product data from Global and used to calculate the benzene vapor weight concentration for gasoline and distillate. Based on these calculations, gasoline has a benzene vapor weight concentration of 0.41% and distillate has a benzene vapor weight concentration of 0.22%. Gasoline has been used as a worst-case product for gas, ethanol and crude oil as it has the highest or equal benzene concentration. The distillate benzene vapor weight concentration of 0.22% is used for the emission calculations for the fixed roof tanks. The blendstock benzene vapor weight concentration of 0.46% are used for blendstocks.

3.3.1 Gasoline Storage Tanks:

The facility currently has ten (10) gasoline storage tanks. The tanks are equipped with internal floating roofs and have varying capacities. Each tank will be modeled as an area source with actual tank height as the release height and actual tank dimensions will be used to determine surface area.

To determine the landing scenario that causes the worst-case short-term (1-hour) impact, landing emissions will be evaluated for each tank separately in the short-term model. The tank with the worst-case estimate of emissions during landing will then be used to determine the maximum hourly emission rate of benzene. Runs will also be completed assuming that the worst two tank landings are occurring simultaneously. Cleanings will also be modeled with vapor purge loss having the highest hourly emissions.

3.3.2 Distillate Storage Tanks:

The facility currently has five (5) vertical fixed roof (VFR) distillate storage tanks with two (2) of those being heated. Each tank will be modeled as an area source with actual tank height as the release height and actual tank dimensions will be used to determine surface area.

3.3.3 Truck Loading Rack:

The facility has one (1) truck loading rack where gasoline, ethanol, and distillate are loaded. The truck rack has a refined product throughput subcap of 880,000,000 gallons per year. Loading operations are controlled with a VRU. The permitted emissions limit will be 2 mg/L. The PTE calculation for the loading rack assumed maximum annual throughput of 880,000,000 gallons, controlled by the VRU. Loading rack fugitive emissions will be controlled using a vac assist. Under an alternate operating scenario (AOS), loading can occur up to a lower throughput with fugitive emissions. Loading rack fugitive emissions will be modeled as a volume source and controlled rack loading emissions will be modeled as a point source. Manufacturer information will be used to develop source parameters such as stack height, stack diameter, stack temperature, and stack velocity. For the short term dispersion model, the truck loading rack will be assumed to load gasoline at the maximum loading rate as this is the worst case scenario product. Modeling will be conducted for the primary and alternate operating scenarios.

3.3.4 Rail Loading:

The facility has one (1) rail loading area where gasoline, ethanol, distillate, and biodiesel are loaded. The rail rack has a refined product throughput subcap of 300,000,000 gallons. Loading operations are controlled with a VCU. The permitted emissions limit will be 2 mg/L. The PTE calculation for the loading rack assumed maximum annual throughput for each product loaded, controlled by the VCU. The controlled loading emissions will be modeled as a point source. Rail loading fugitive emissions will be controlled using a vac assist. Under an AOS, loading can occur up to a lower throughput with fugitive emissions. Manufacturer information will be used to develop source parameters such as stack height, stack diameter, stack temperature, and stack velocity. For the short term dispersion model, the rail loading will be assumed to load gasoline at the maximum loading rate as this is the worst case scenario product. Modeling will be conducted for the primary and alternate operating scenarios.

3.3.5 Marine Loading:

The facility has one (1) marine loading rack where refined products (gasoline, ethanol, blendstock, distillate, and biodiesel) and crude oil are loaded. The marine dock has a refined product subcap throughput of 900,000,000 gallons and a crude throughput cap of 450,000,000 gallons. Loading operations are controlled by two VCUs. The PTE calculation for the loading rack assumed maximum annual throughput for each product loaded, controlled by two VCUs (VCUM1 at 10 mg/L and VCUM2 at 2 mg/L). Marine loading fugitive emissions will be controlled under an AOS only for inerted vessels. Loading can occur up to a lower throughput with fugitive emissions. Fugitive emissions will be modeled as an elevated area source and controlled rack landing emissions will be modeled as a point source. Manufacturer information will be used to develop source parameters such as stack height, stack diameter, stack temperature, and stack velocity. For the short term dispersion model, the marine loading will be assumed to load gasoline at the maximum loading rack as this is the worst case scenario product. Modeling will be conducted for the primary and alternate operating scenarios.

3.4 Building Downwash Analysis:

All of the storage tanks at the facility, as well as office buildings, will be utilized in the building downwash analysis. Direction-specific building dimensions will be generated using BPIP-PRIME.

3.5 Meteorological Data:

Meteorological data which has been pre-processed for AERMOD for the years 2014-2018 will be obtained from the New York State Department of Environmental Conservation. Surface Met Data and Upper Air Met Data is from the Station located at the Albany International Airport in Colonie, NY located approximately 8 miles northwest of the terminal. This station was chosen because of its close proximity to the terminal.

3.6 Modeled Receptors

Boundary receptors will be modeled at the property lines from the facility site plan. Receptors will be located every 25 meters along the facility boundaries. A Cartesian receptor grid will be used to monitor the area surrounding the facility, using the following spacing:

- 70 meter spacing from the facility boundary out to 1 km
- 100 meter spacing from 1 to 2 km
- 250 meter spacing from 2 to 5 km

Given the low emission release heights and the near ambient release temperatures it is not anticipated that significant emissions will be carried beyond these receptor points.

3.7 Terrain Considerations

The effects of terrain were considered in the modeling analysis. Elevations (above mean sea level) corresponding to the base elevation of the facility will be assigned to all sources and buildings at the facility, as well as the modeled receptors.

The terrain processor for AERMOD, AERMAP Version 19191 will be used to generate terrain maxima (also referred to as hill heights) for the sources, buildings, and receptors. To generate these terrain maxima, object locations and Digital Elevation Model (DEM) data in 1 degree format will be input to AERMAP.

4.0 Model Results

The results of this analysis will be clearly summarized in tables that will consist of the following information:

- Predicted concentrations, and
- Comparison to the appropriate standards.

In addition to the tabulated results, maps of concentration isopleths will be presented to further illustrate the results.

Hard copies of the model output files for the controlling year for 1-hour and annual benzene concentrations will be submitted. In addition, a .zip folder will be provided which will contain all pertinent input and output files, as well as the meteorological data files.

Global Albany Annual Model Assumptions

General Parameters		
Parameter		**Value**
Projection		**UTM**
Datum		WGS84
UTM Zone		18
Hemisphere		Northern
AERMET		2014-2018 MET Data
AERMAP		1-deg DEM Data from webgis.com
Sources	**Assumptions/ Notes**	**Value**
Truck Rack VRU (VRUTK) (Point Source)		
Emission Rate (lb/hr)	From PTE Calculations	6.87E-03
Emission Rate (lb/hr) Alternate Operating Scenario	From PTE Calculations	1.37E-03
Stack Height (ft)	Actual Stack Height	22.4
Stack Temperature	Release Temperature	Ambient
Stack Velocity (m/s)	Assumed	0.003
Stack Diameter (ft)	Actual Stack Diameter	1
Emissions Limit (mg/L)		2
Rail VCU (VCURR) (Point Source)		
Emission Rate (lb/hr)	From PTE Calculations	2.34E-03
Emission Rate (lb/hr) Alternate Operating Scenario	From PTE Calculations	4.69E-04
Stack Height (ft)	Actual Stack Height	35
Stack Temperature	Release Temperature	1350
Stack Velocity (ft/s)	Assumed	50
Stack Diameter (ft)	Actual Stack Diameter	8
Emissions Limit (mg/L)		2
Marine VCU (VCUM1) (Point Source)		
Emission Rate (lb/hr) (if all throughput to VCUM1)	From PTE Calculations	0.053
Emission Rate (lb/hr) (if all throughput to VCUM1) Alternate Operating Scenario	From PTE Calculations	0.055
Stack Height (ft)	Actual Stack Height	35
Stack Temperature	Release Temperature	1500
Stack Velocity (ft/s)	Assumed	50
Stack Diameter (ft)	Actual Stack Diameter	6
Emissions Limit (mg/L)		10
Marine VCU (VCUM2) (Point Source)		
Emission Rate (lb/hr) (if all throughput to VCUM2)	From PTE Calculations	0.0105
Emission Rate (lb/hr) (if all throughput to VCUM2) Alternate Operating Scenario	From PTE Calculations	0.0109
Stack Height (ft)	Actual Stack Height	60
Stack Temperature	Release Temperature	1500
Stack Velocity (ft/s)	Assumed	50
Stack Diameter (ft)	Actual Stack Diameter	10
Emissions Limit (mg/L)		2
Truck Fugitives (Volume Source) (Alternate Operating Scenario Only)		
Emission Rate (lb/hr)	From PTE Calculations	5.50E-03
Release Height (ft)	Center of Plume	10
Initial Horizontal Dimension (ft)	Length of Side divided by 4.3	31.4

Initial Vertical Dimension (ft)	Center of Plume height divided by 2.15	4.65
Barge Fugitives (Area Source) (Alternate Operating Scenario Only)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.88E-07
Release Height (ft)	Barge Height	20
Initial Vertical Dimension (ft)	Barge height divided by 2.15	9.3
Area (ft^2)	Barge Area	9178.8
Rail Fugitives (Volume Source) (Alternate Operating Scenario Only)		
Emission Rate (lb/hr)	From PTE Calculations	1.87E-03
Release Height (ft)	Release Height	17
Initial Horizontal Dimension (ft)	Length of Side divided by 4.3	54.88
Initial Vertical Dimension (ft)	Center of Plume height divided by 2.15	7.91
Tank 28 (Distillate) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 29 (Distillate) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 30 (Distillate) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 33 (Distillate) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 64 (Distillate) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 31 (Gasoline) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	4.28E-07
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 32 (Gasoline) (Area Source)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	4.28E-07
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93

Area (ft^2)	Tank Area	12271.85
Tank 39 (Gasoline) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	3.26E-07
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 120 (Gasoline) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	5.90E-07
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	40
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	5026.55
Tank 114 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	3.73E-07
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	60
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	11309.73
Tank 115 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	3.42E-07
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	75
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	17671.46
Tank 117 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	3.24E-07
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	55
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	9503.32
Tank 118 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	6.83E-07
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	50
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	7853.98
Tank 119 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	1.07E-06
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	40
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	5026.55
Tank 121 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	5.62E-07
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	75
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	17671.46

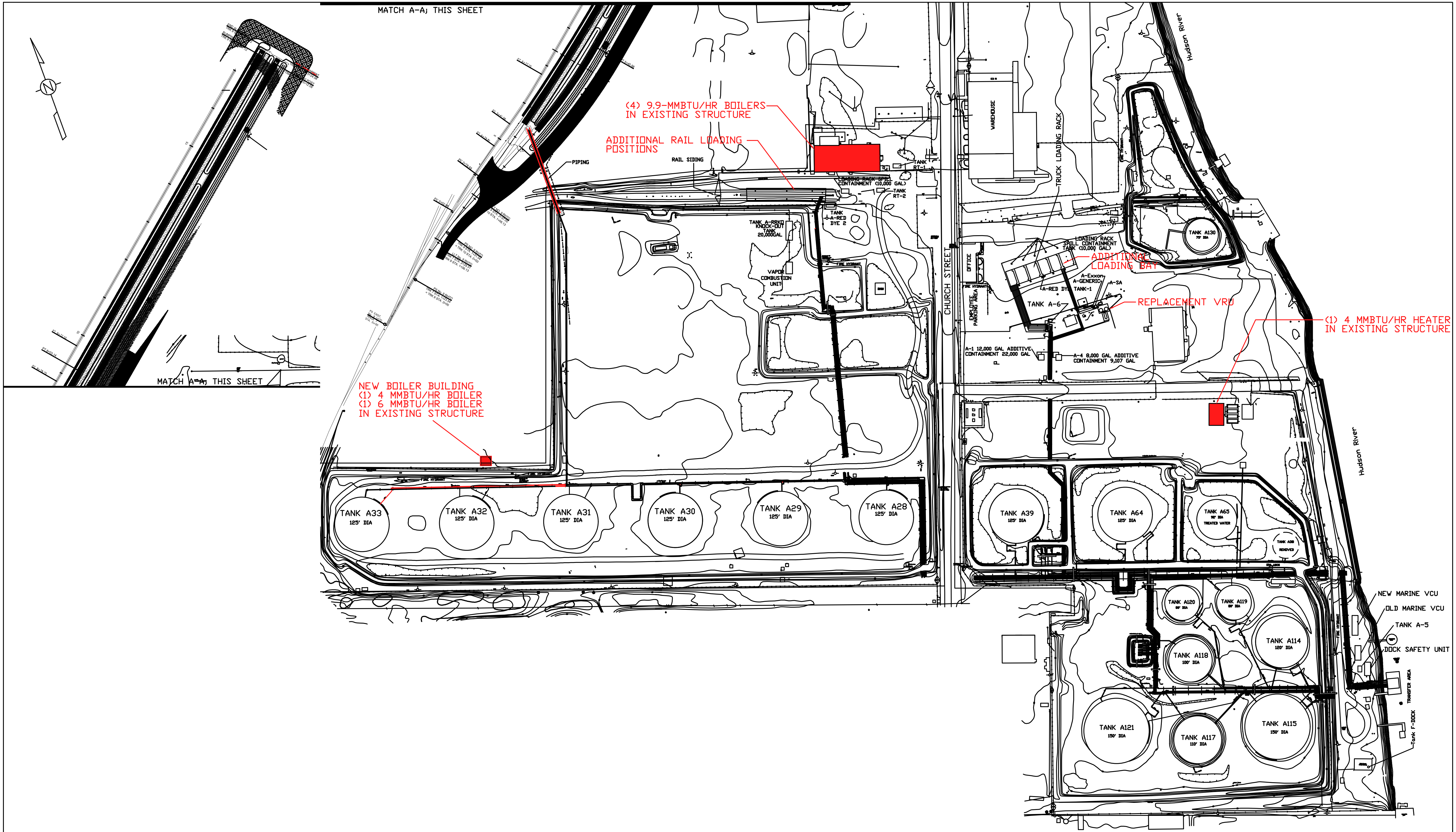
Global Albany Hourly Model Assumptions

General Parameters		
Parameter		**Value**
Projection		**UTM**
Datum		WGS84
UTM Zone		18
Hemisphere		Northern
AERMET		2014-2018 MET Data
AERMAP		1-deg DEM Data from webgis.com
Sources	**Assumptions/ Notes**	**Value**
Truck Rack VRU (VRUTK) (Point Source)		
Emission Rate (lb/hr)	From PTE Calculations	1.64E-02
Stack Height (ft)	Actual Stack Height	22.4
Stack Temperature	Release Temperature	Ambient
Stack Velocity (m/s)	Assumed	0.003
Stack Diameter (ft)	Actual Stack Diameter	1
Emissions Limit (mg/L)		2
Rail VCU (VCURR) (Point Source)		
Emission Rate (lb/hr)	From PTE Calculations	1.85E-02
Stack Height (ft)	Actual Stack Height	35
Stack Temperature	Release Temperature	1350
Stack Velocity (ft/s)	Assumed	50
Stack Diameter (ft)	Actual Stack Diameter	8
Emissions Limit (mg/L)		2
Marine VCU (VCUM1) (Point Source)		
Emission Rate (lb/hr) (if all throughput to VCUM1)	From PTE Calculations	0.057
Emission Rate (lb/hr) (if all throughput to VCUM1) Alternate Operating Scenario	From PTE Calculations	0.060
Stack Height (ft)	Actual Stack Height	35
Stack Temperature	Release Temperature	1500
Stack Velocity (ft/s)	Assumed	50
Stack Diameter (ft)	Actual Stack Diameter	6
Emissions Limit (mg/L)		10
Marine VCU (VCUM2) (Point Source)		
Emission Rate (lb/hr) (if all throughput to VCUM2)	From PTE Calculations	0.07
Emission Rate (lb/hr) (if all throughput to VCUM2) Alternate Operating Scenario	From PTE Calculations	0.08
Stack Height (ft)	Actual Stack Height	60
Stack Temperature	Release Temperature	1500
Stack Velocity (ft/s)	Assumed	50
Stack Diameter (ft)	Actual Stack Diameter	10
Emissions Limit (mg/L)		2
Truck Fugitives (Volume Source) (Alternate Operating Scenario Only)		
Emission Rate (lb/hr)	From PTE Calculations	6.57E-02
Release Height (ft)	Center of Plume	10
Initial Horizontal Dimension (ft)	Length of Side divided by 4.3	31.4
Initial Vertical Dimension (ft)	Center of Plume height divided by 2.15	4.65
Barge Fugitives (Area Source) (Alternate Operating Scenario Only)		
Emission Rate (lb/hr/ft^2)	From PTE Calculations	1.96E-06
Release Height (ft)	Barge Height	20

Initial Vertical Dimension (ft)	Barge height divided by 2.15	9.3
Area (ft^2)	Barge Area	9178.8
Rail Fugitives (Volume Source) (Alternate Operating Scenario Only)		
Emission Rate (lb/hr)	From PTE Calculations	7.39E-02
Release Height (ft)	Release Height	17
Initial Horizontal Dimension (ft)	Length of Side divided by 4.3	54.88
Initial Vertical Dimension (ft)	Center of Plume height divided by 2.15	7.91
Tank 28 (Distillate) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 29 (Distillate) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 30 (Distillate) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 33 (Distillate) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 64 (Distillate) (Area Source)		
Emission Rate ($lb/hr/ft^2$)	From PTE Calculations	1.67E-08
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 31 (Gasoline) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	4.28E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	6.62E-04
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 32 (Gasoline) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	4.28E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	6.62E-04
Release Height (ft)	Tank height. Approx. height of roof vents	45

Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 39 (Gasoline) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	3.26E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	2.16E-03
Release Height (ft)	Tank height. Approx. height of roof vents	45
Radius (ft)	Tank Radius	62.5
Initial Vertical Dimension (ft)	Tank height divided by 2.15	20.93
Area (ft^2)	Tank Area	12271.85
Tank 120 (Gasoline) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	5.90E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	1.44E-03
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	40
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	5026.55
Tank 114 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	3.73E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	8.09E-04
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	60
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	11309.73
Tank 115 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	3.42E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	1.62E-03
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	75
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	17671.46
Tank 117 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	3.24E-07
Emission Rate ($lb/hr/ft^2$) During Landing	From PTE Calculations	1.62E-03
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	55
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	9503.32
Tank 118 (Blendstock) (Area Source)		
Emission Rate ($lb/hr/ft^2$) Not During Landing	From PTE Calculations	6.83E-07

Emission Rate (lb/hr/ft^2) During Landing	From PTE Calculations	1.33E-03
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	50
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	7853.98
Tank 119 (Blendstock) (Area Source)		
Emission Rate (lb/hr/ft^2) Not During Landing	From PTE Calculations	1.07E-06
Emission Rate (lb/hr/ft^2) During Landing	From PTE Calculations	1.62E-03
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	40
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	5026.55
Tank 121 (Blendstock) (Area Source)		
Emission Rate (lb/hr/ft^2) Not During Landing	From PTE Calculations	5.62E-07
Emission Rate (lb/hr/ft^2) During Landing	From PTE Calculations	1.62E-03
Release Height (ft)	Tank height. Approx. height of roof vents	48
Radius (ft)	Tank Radius	75
Initial Vertical Dimension (ft)	Tank height divided by 2.15	22.33
Area (ft^2)	Tank Area	17671.46



LEGEND:

- CHAIN LINK FENCE
- FIRE HYDRANT
- LIGHT
- POSTS
- FIRE HOSE
- LIMITS OF DISTURBANCE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

1 / SP-1 ALBANY TERMINAL SITE PLAN
SCALE: AS SHOWN

envirospec ENGINEERING, PLLC
349 NORTHERN BLVD.
ALBANY, NY 12204
PHONE: 518.438.6809
FAX: 518.438.8527

REV	DATE		FIRM DRN	FIRM CKD.	FIRM APPD.
1	03/20	PROPOSED PROJECT REVISION	ENVIRO NB		

DIAGRAM #1
PORT OF ALBANY TERMINAL

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Global Albany - Title V Operational Flexibility Application		
Project Location (describe, and attach a general location map): Global Albany Terminal, 50 Church St, Albany, NY		
Brief Description of Proposed Action (include purpose or need): The proposed project at the Global Albany Terminal ("Terminal" or "Facility") calls for reducing, redistributing and redefining product throughput limits and making other changes at the Terminal as follows: reduce the allowable throughput of crude oil at the Terminal from 1,850 million gallons to 450 million gallons, while increasing the cap on loading refined products by 450 million gallons for a total reduction in Facility throughput of approximately 950 million gallons; increase operational flexibility at the Terminal by allowing the loading of refined product across the Facility subject to certain throughput limitations; install additional controls to more efficiently capture and reduce volatile organic compound (VOC) and benzene emissions and accept lower emission limits on certain existing control equipment; and install exempt heaters/boilers and make other changes to enable management of biodiesel (collectively, the "Project"). The Project would reduce the potential to emit VOCs from the Terminal by approximately 45 tons per year. See the accompanying EAF Supplement for a detailed description of the Project.		
Name of Applicant/Sponsor: Global Companies LLC	Telephone: - 781 894 8800 E-Mail: - See Contact Below	
Address: 800 South Street, Suite 500		
City/PO: Waltham	State: MA	Zip Code: 02454
Project Contact (if not same as sponsor; give name and title/role): Tom Keefe; VP - Environmental, Health and Safety	Telephone: 781-398-4132 E-Mail: tkeefe@globalp.com	
Address: 800 South Street, Suite 500		
City/PO: Waltham	State: MA	Zip Code: 02454
Property Owner (if not same as sponsor): -Same As Applicant	Telephone: - E-Mail: -	
Address: -		
City/PO: -	State: -	Zip Code: -

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity		If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees	☐Yes ☑No		
b. City, Town or Village Planning Board or Commission	☐Yes ☑No		
c. City, Town or Village Zoning Board of Appeals	☐Yes ☑No		
d. Other local agencies	☑Yes ☐No	City of Albany, Building Department	Building Permit may be required; to be discussed with City prior to construction.
e. County agencies	☐Yes ☑No		
f. Regional agencies	☐Yes ☑No		
g. State agencies	☑Yes ☐No	NYSDEC - Air Permit Modification	March 2020
h. Federal agencies	☑Yes ☐No	EPA - Review / Comment on Air Permit Modification	March 2020

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes ☐No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

Remediaton Sites:546031, NYS Heritage Areas:Mohawk Valley Heritage Corridor

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
I-2; General Industrial

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? ____________

C.4. Existing community services.

a. In what school district is the project site located? City of Albany

b. What police or other public protection forces serve the project site?
City of Albany

c. Which fire protection and emergency medical services serve the project site?
City of Albany

d. What parks serve the project site?
Pocket Park at Broadway & Church (~0.20 mi); Krank Park (~0.25 mi); Mt. Hope Playground (~0.5 mi)

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Industrial

b. a. Total acreage of the site of the proposed action? Approx 60 acres
b. Total acreage to be physically disturbed? 0.07 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? Approx 60 acres

c. Is the proposed action an expansion of an existing project or use? ☑ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % 0.1 Units: ____________

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? ________
iv. Minimum and maximum proposed lot sizes? Minimum ________ Maximum ________

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 18 months
ii. If Yes:
- Total number of phases anticipated -
- Anticipated commencement date of phase 1 (including demolition) - month - year
- Anticipated completion date of final phase - month - year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: ____________
-

f. Does the project include new residential uses? ☐Yes ☑No
If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	___	___	___	___
At completion of all phases	___	___	___	___

g. Does the proposed action include new non-residential construction (including expansions)? ☐Yes ☑No
If Yes,
i. Total number of structures ___________
ii. Dimensions (in feet) of largest proposed structure: ________height; ________width; and _______ length
iii. Approximate extent of building space to be heated or cooled: ______________________ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No
If Yes,
i. Purpose of the impoundment: ________________________________
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: ________________________________
iii. If other than water, identify the type of impounded/contained liquids and their source. ________________________________
iv. Approximate size of the proposed impoundment. Volume: ____________ million gallons; surface area: ____________ acres
v. Dimensions of the proposed dam or impounding structure: ________ height; _______ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): ________________________________

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)
If Yes:
i .What is the purpose of the excavation or dredging? ________________________________
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
- Volume (specify tons or cubic yards): ________________________________
- Over what duration of time? ________________________________

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. ________________________________
iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☑No
If yes, describe. ________________________________
v. What is the total area to be dredged or excavated? ______________________acres
vi. What is the maximum area to be worked at any one time? ______________________ acres
vii. What would be the maximum depth of excavation or dredging? ______________________ feet
viii. Will the excavation require blasting? ☐Yes ☑No
ix. Summarize site reclamation goals and plan: ________________________________

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No
If Yes:
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): ________________________________

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No
If Yes, describe:

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No
If Yes:
- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:
i. Total anticipated water usage/demand per day: 300 gallons/day
ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☑ No
If Yes:
- Name of district or service area:
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☐ No
If Yes:
- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No
If, Yes:
- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _______ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:
i. Total anticipated liquid waste generation per day: <5 gallons/day
ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Periodic boiler blowdown - see EAF Supplement

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☑ No
If Yes:
- Name of wastewater treatment plant to be used:
- Name of district:
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: ____________________

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes☑No

If Yes:
- Applicant/sponsor for new district: ____________________
- Date application submitted or anticipated: ____________________
- What is the receiving water for the wastewater discharge? ____________________

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: ____________________

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes☑No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. ____________________

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

____

- If to surface waters, identify receiving water bodies or wetlands: ____________________
- Will stormwater runoff flow to adjacent properties? ☐Yes☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Exempt boilers - see Air Permit Application and EAF Supplement

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☑Yes☐No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☑Yes☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- ___________Tons/year (short tons) of Carbon Dioxide (CO_2)
- ___________Tons/year (short tons) of Nitrous Oxide (N_2O)
- ___________Tons/year (short tons) of Perfluorocarbons (PFCs)
- ___________Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- ___________Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- ___________Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☑Yes ☐No

If Yes:

i. Estimate methane generation in tons/year (metric): 1.02

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): Methane emissions are highest during low-temperature combustion or incomplete combustion, such as the start-up or shut-down cycles for boilers. These period will be minimized in accordance with federal air regulations.

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of __________ to ________.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): ____________

iii. Parking spaces: Existing ____________ Proposed ___________ Net increase/decrease ____________

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action:

See EAF Supplement.

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:
- Monday - Friday: 24/7
- Saturday: 24/7
- Sunday: 24/7
- Holidays: 24/7

ii. During Operations:
- Monday - Friday: 24/7
- Saturday: 24/7
- Sunday: 24/7
- Holidays: 24/7

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

See EAF Supplement.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe:

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Potential minimal lighting for boilers. See EAF Supplement.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe:

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☑ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

Routine odors associated with petroleum terminal operations. No off site odor. See EAF Supplement.

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☑ Yes ☐ No

If Yes:

i. Product(s) to be stored Biodiesel

ii. Volume(s) ______ per unit time ___________ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:

Biodiesel storage - see EAF Supplement.

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: minor construction waste tons per ________________ (unit of time)
- Operation : ____________________ tons per ________________ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction:
- Operation:

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Solid waste generated during construction will be properly managed at a Part 360 permitted facility.
- Operation:

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): ______

ii. Anticipated rate of disposal/processing:

- ________ Tons/month, if transfer or other non-combustion/thermal treatment, or
- ________ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: ______ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: ______

Not anticipated. Boiler blowdown will need to be characterized for hazardous waste constituents

ii. Generally describe processes or activities involving hazardous wastes or constituents: ______

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: ______

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: ______

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

______

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): ______

ii. If mix of uses, generally describe:

The Terminal is located on Church Street in a heavily industrial and commercial area of the City of Albany, NY. There are no residences located immediately adjacent to the Terminal. However, the Ezra Prentice Homes are located along South Pearl Street and adjacent to the Kenwood Rail Yard

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	Approx 60	Approx 60	<0.1
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: ______			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: ______

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

Albany Community Charter School; School Number 17

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: ______ feet
- Dam length: ______ feet
- Surface area: ______ acres
- Volume impounded: ______ gallons OR acre-feet

ii. Dam's existing hazard classification: ______

iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: ______

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities: ______

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑ Yes ☐ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

The Terminal has been a generator of hazardous waste from regular maintenance and tank cleaning and has an EPA Site Identification Number.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): historical spills

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): 546031

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: ______

The adjacent site is the Hudson River.

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): 546031, 442004, 442022, V00521, V00464, 442027,...

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

Various phases of activity

v. Is the project site subject to an institutional control limiting property uses? ☑ Yes ☐ No

- If yes, DEC site ID number: ______
- Describe the type of institutional control (e.g., deed restriction or easement): Deed Restriction
- Describe any use limitations: Property cannot be used for Residential uses
- Describe any engineering controls: ______
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: ______

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? > 5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? ______%

c. Predominant soil type(s) present on project site: Fill 100 %
______ ______%
______ ______%

d. What is the average depth to the water table on the project site? Average: >5 feet

e. Drainage status of project site soils:
☐ Well Drained: ______% of site
☑ Moderately Well Drained: 100 % of site
☐ Poorly Drained ______% of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: ______% of site
☐ 15% or greater: ______% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: ______

h. Surface water features.
i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No
ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No
If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.
iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No
iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name ______ Classification ______
- Lakes or Ponds: Name ______ Classification ______
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters Approximate Size ______
- Wetland No. (if regulated by DEC) ______

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑ Yes ☐ No
If yes, name of impaired water body/bodies and basis for listing as impaired: ______
Name - Pollutants - Uses:Hudson River (Class C) – Priority Organics – Fish Consumption

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:
i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:

NONE

n. Does the project site contain a designated significant natural community? ☑ Yes ☐ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation):

Tidal River

ii. Source(s) of description or evaluation:

iii. Extent of community/habitat:

- Currently: 74248.64 acres
- Following completion of project as proposed: acres
- Gain or loss (indicate + or -): acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened):

Shortnose Sturgeon

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing:

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No

i. If Yes: acreage(s) on project site?

ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name:

ii. Basis for designation:

iii. Designating agency and date:

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☑ Historic Building or District

ii. Name: Cherry Hill, Mendelson, A., & Son Company Building

iii. Brief description of attributes on which listing is based:

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): ______

ii. Basis for identification: ______

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: ______

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): ______

iii. Distance between project and resource: ______ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: ______

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Tom Keefe Global Companies LLC Date 3/19/2020

Signature ______ Title Vice President, Environmental Health and Safety

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	Yes
B.i.ii [Local Waterfront Revitalization Area]	Yes
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:546031, NYS Heritage Areas:Mohawk Valley Heritage Corridor
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	546031
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	546031, 442004, 442022, V00521, V00464, 442027, C442035, B00005, B00055, 442009
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	Yes
E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Hudson River (Class C) – Priority Organics – Fish Consumption

E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	Yes
E.2.n.i [Natural Communities - Name]	Tidal River
E.2.n.i [Natural Communities - Acres]	74248.64
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Shortnose Sturgeon
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National Register of Historic Places]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National Register of Historic Places - Name]	Cherry Hill, Mendelson, A., & Son Company Building
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No