

## Permit by Rule (PBR) Registration Technical Review

<b>Company:</b>	Trident Tank Wash, LLC	<b>Registration No.:</b>	173353
<b>Nearest City:</b>	La Porte	<b>Project No.:</b>	360337
<b>County:</b>	Harris	<b>Project Type:</b>	Initial
<b>Project Reviewer:</b>	John Ma	<b>Regulated Entity No.:</b>	RN111773065
<b>Unit Name:</b>	Trident Tank Wash La Porte Facility	<b>Customer Reference No.:</b>	CN606160893
<b>PBR No(s).:</b>	106.261, 106.262, 106.472, 106.492	<b>Project Received Date:</b>	July 14, 2023
<b>Physical Location:</b>	2235 N Highway 146 Suite B		

### Project Overview / Process Description

Trident Tank Wash has submitted a certified application to authorize their tank truck washing operation under 106.261, 106.262, 106.472, and 106.492.

The tank container cleaning operation will be conducted inside a covered wash rack composed of eight wash bays. The internal cleaning process will be batch in nature and involves the interior cleaning of tank containers (e.g., tank trailers and tank trucks) that have been emptied of their cargo with the exception of product residue and vapors. The wash bays will be equipped to collect and route emissions generated during the internal cleaning process to either the flare (EPN FLARE) or to the atmosphere (EPN WR) depending on the product last transported in the container to be cleaned. Up to eight tank containers may undergo internal cleaning in an hour and up to 15,000 tank containers may be cleaned in a year. The maximum capacity of the tank containers to be cleaned at the Total Tank Wash La Porte facility is 21,000 gallons.

Prior to cleaning, any liquid residue (heel) remaining in the container will be drained and stored in a closed drum or other closed Department of Transportation (DOT) approved shipping container (subsequently referred to as heel drumming) for return to the customer or for shipment to an off-site disposal facility. On average, an empty tank container will have less than five (5) gallons of standing residual product. Heel drumming will take place prior to cleaning while the container is positioned within the containment area of the wash bay. A small quantity of vapor will be emitted at the wash rack (EPN WR) during the heel removal.

To initiate the internal cleaning process, a high-pressure spinner assembly will be seated tightly in the container access opening and an initial water rinse will be performed. The vapors from the cleaning process may be routed directly to the atmosphere for those chemicals last transported that do not require control by the flare. For those chemicals last transported that require control, a vent line to the vapor collection system will be attached to the container and vapors will be routed to the flare. The vapor collection system will be constructed with a vacuum blower with a typical maximum capacity of 140 standard cubic feet per minute (scfm) that will continually draw a vacuum on the container to remove residual vapors during the cleaning process. During internal cleaning, cleaning solutions will be pumped into the container through the spinner system, spraying the inside walls and solubilizing any remaining product residue clinging to the interior surfaces. The cleaning solutions may include caustic, detergent, hot water or steam. The facility will receive steam from an industrial neighbor via pipeline.

Halogenated solvents that require control will be routed through a carbon adsorption system (CAS) consisting of two activated carbon canisters that are connected in series. The CAS will be sampled weekly (if in service during the week) at the outlet of the first canister to determine breakthrough of volatile organic compounds (VOC). Sampling will be conducted when emissions are being vented to the CAS. Breakthrough will be defined as the measured VOC concentration at or exceeding 100 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister.

The wastewater generated from the cleaning process will be stored in one 7,400-gallon fixed-roof storage tank (EPN TK-1) until discharged or trucked to the industrial wastewater treatment plant located adjacent to the site. The wastewater storage tank will be equipped with mechanical mixing for equalization to maintain a consistent wastewater stream. The wastewater generated from the cleaning process may be either discharged or trucked to the industrial wastewater treatment plant located adjacent to the site. The wastewater will be loaded into a tank truck (EPN LOAD) using submerged loading for shipment off site. A maximum of 7,400 gallons of wastewater will be loaded to tank trucks per hour. A maximum of 2,701,000 gallons of wastewater will be loaded to tank trucks annually.

### Permit by Rule Requirements - 30 TAC Chapter 106 General Requirements

Registration Fee Reference No.:

Application fee: 652369 / 582EA000560204

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Is this registration certified?	<b>Yes</b>
Is planned MSS included in the registration?	<b>No</b>
Are there affected NSR or Title V authorizations for the project?	<b>No</b>
If there are affected Title V authorizations, is monitoring being submitted as part of this registration?	<b>No</b>
Are there any upstream or downstream affects associated with this registration?	<b>No</b>
Are associated upstream/downstream emissions either included in the registration OR within current permitted limits with no changes to underlying air authorizations for the applicable units regarding BACT, health and environmental impacts, or other representations.	<b>NA</b>
Are emissions for each PBR authorized facility less than the § 106.4(a)(1) limits?	<b>Yes</b>
Are total emissions from all sitewide PBR authorized facilities less than the § 106.4(a)(4) limits, OR has the site been subject to public notice requirements?	<b>Yes</b>
Are there permit limits on using PBRs at the site?	<b>No</b>
Is the facility subject to the NO <sub>x</sub> Mass Cap and Trade Program?	<b>Yes</b>
Is the facility in compliance with all other applicable rules and regulations?	<b>Yes</b>
Does the registration include an appropriate PBR workbook, and has the workbook been verified?	<b>Yes</b>
Notes:	

### Federal Applicability

Does this project trigger a PSD or Nonattainment review?	<b>No</b>
Does the Major NSR applicability analysis include all associated upstream and/or downstream emissions?	<b>NA</b>
Are there any applicable standards under NSPS, NESHAP, or NESHAP for source categories (MACT)?	<b>No</b>
Notes:	

### Permit by Rule Requirements - Compliance Demonstrations

#### PBR 106.261/262 Facilities (Emission Limitations / Emission and Distance Limitations)

- The emission point(s) associated with the facilities or changes to facilities are located at least **772ft** from the nearest off-site receptor.
- The total new or increase emissions will comply with the applicable hourly and annual emission limits as represented in the table below.
- Site will not handle chemicals under 106.262(a)(4)
- There are no changes to or addition of any pollution abatement equipment.
- Visible emissions to the atmosphere, from any point or fugitive source, do not exceed 5.0 percent opacity in any six-minute period.
- This registration does not authorize construction or changes to a facility authorized under another section of this chapter or under standard permit.

Notes:

#### PBR 106.472 Organic and Inorganic Liquid Loading and Unloading

Liquid loading or unloading equipment for railcars, tank trucks, or drums; storage containers, reservoirs, tanks; and change of service of material loaded, unloaded, or stored is permitted by rule, provided that no visible emissions result and the chemicals loaded, unloaded, or stored are limited to:

(2) water or wastewater;

Notes:

#### PBR 106.492 Flares

Smokeless gas flares which meet the following conditions of this section are permitted by rule:

(1) design requirements.

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(1)(A) The flare will be equipped with a flare tip designed to provide good mixing with air, flame stability, and a tip velocity less than 60 feet per second (ft/sec) for gases having a lower heating value less than 1,000 British thermal units per cubic foot (Btu/ft<sup>3</sup>) or a tip velocity less than 400 ft/sec for gases having a lower heating value greater than 1,000 Btu/ft<sup>3</sup>.

(1)(B) The flare shall be equipped with a **continuously burning pilot** and provides immediate notification of appropriate personnel when the ignition system ceases to function. A gas flare will not emit reduced sulfur compounds, excluding sulfur oxides.

(1)(C) Flare will not burn sour gas.

(1)(D) The heat release of a flare which emits sulfur dioxide (SO<sub>2</sub>) shall be greater than or equal to the following values:

For SO<sub>2</sub>  $Q = 0.53 \times 10^5 \times SO_2$

Where Q = heat release, British thermal units per hour, based  
on lower heating value

SO<sub>2</sub> = SO<sub>2</sub> emission rate, lb/hr

**Q = 2120Btu/hr, 2120Btu/hr > 0.04lb/hr**

(2) operational conditions.

(2)(A) The flare shall burn a combustible mixture of gases containing only carbon, hydrogen, nitrogen, oxygen, sulfur, chlorine, or compounds derived from these elements. When the gas stream to be burned has a net or lower heating value of more than 200 Btu/ft<sup>3</sup> prior to the addition of air, it may be considered combustible.

(2)(B) Form PI-7 CERT submitted. Flare will not burn sour gas.

(2)(C) Flare will not burn liquids.

Notes:

## Compliance History and Site Review

In accordance with 30 TAC Chapter 60, a compliance history report was reviewed on:

**July 27, 2023**

Site rating / classification: **N/A**

Company rating / classification:

**N/A**

Has any action occurred on the basis of the compliance history or rating?

**No**

Did the Regional Office provide site approval and confirm distances?

**NA**

## Project List

Project No.	Project Name	Distance to Nearest Receptor (feet):	Description
1	Tank Wash	772	Tank container cleaning facility

## 106.261(a)(2) Emissions

Project Name	Chemical	Emi ssion Threshold (lb/hr)	Emi ssion Threshold (tpy)	Ho urly Emissions (lb/hr)	Annual Emissions (tpy)	Mee ts Threshold?
Tank Wash	Refinery Petroleum Fractions	6	10	6	10	Yes
Tank Wash	Oxides of Nitrogen	6	10	0.99	2.06	Yes
Tank Wash	Carbon Monoxide	6	10	3.94	8.20	Yes
Tank Wash	Sulfur Dioxide	6	10	0.04	0.08	Yes
Tank Wash	Isopropyl Alcohol	6	10	3.49	3.27	Yes

## 106.261(a)(3) Emissions

Project Name	Chemical	Emi ssion Threshold (lb/hr)	Emi ssion Threshold (tpy)	Ho urly Emissions (lb/hr)	Annual Emissions (tpy)	Mee ts Threshold?
Tank Wash	Methyl benzoate	1	4.38	9.41E-01	2.35E-01	Yes
Tank Wash	Isovaleric acid, Isobutyl formic acid	1	4.38	9.14E-01	3.43E+00	Yes
Tank Wash	Methyl cyanoacetate	1	4.38	9.07E-01	7.56E-02	Yes
Tank Wash	1,2-Ethanediamine, N1,N2-bis(2-aminoethyl)-	1	4.38	9.06E-01	8.50E-01	Yes
Tank Wash	2,4-Xylenol	1	4.38	8.91E-01	8.35E-01	Yes

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Tank Wash	Benzothiophene	1	4.38	8.84E-01	1.66E+00	Yes
Tank Wash	2,5-Xylenol	1	4.38	8.77E-01	8.22E-01	Yes
Tank Wash	1,2-Propanediol	1	4.38	7.86E-01	9.83E-01	Yes
Tank Wash	2,6-Xylenol	1	4.38	7.70E-01	1.44E+00	Yes
Tank Wash	DIETHYL SULFATE	1	4.38	7.36E-01	2.76E+00	Yes

**106.262(a)(2) Emissions – Table 262**

Project Name	Chemical	L Value (mg/m <sup>3</sup> )	K value (from distance)	E, maximum Hourly Emission Threshold (lb/hr)	Annual Emission Threshold (tpy)	Actual Hourly Increases (lb/hr)	Actual Annual Increase (tpy)	Meets Threshold?
Tank Wash	Benzene	3	48.24	6.22E-02	2.72E-01	2.71E-02	2.54E-02	Yes
Tank Wash	Styrene	21	48.24	4.35E-01	1.91E+00	2.97E-02	2.78E-02	Yes
Tank Wash	Ethylene glycol	26	48.24	5.39E-01	2.36E+00	3.26E-01	3.06E-01	Yes
Tank Wash	Methyl Methacrylate	34	48.24	7.05E-01	3.09E+00	4.83E-01	2.41E+00	Yes
Tank Wash	Naphtha	350	48.24	6.00E+00	5.00E+00	6.77E-01	6.35E-01	Yes
Tank Wash	Cumene	50	48.24	1.04E+00	4.54E+00	6.96E-01	6.53E-01	Yes
Tank Wash	Kerosene	100	48.24	2.07E+00	5.00E+00	1.28E+00	4.82E+00	Yes
Tank Wash	Acetone	590	48.24	6.00E+00	5.00E+00	3.14E+00	3.93E+00	Yes
Tank Wash	Pentane	350	48.24	6.00E+00	5.00E+00	4.06E+00	4.06E+00	Yes
Tank Wash	Heptane	350	48.24	6.00E+00	5.00E+00	4.60E+00	2.87E+00	Yes

**106.262(a)(2) Emissions – 1997 ACGIH Guide**

Project Name	Chemical	L Value (mg/m <sup>3</sup> )	K value (from distance)	E, maximum Hourly Emission Threshold (lb/hr)	Annual Emission Threshold (tpy)	Actual Hourly Increases (lb/hr)	Actual Annual Increase (tpy)	Meets Threshold?
Tank Wash	Phosphoric acid	1	48.24	2.07E-02	9.08E-02	1.97E-09	1.85E-09	Yes
Tank Wash	Tetraethyl lead	0.1	48.24	2.07E-03	9.08E-03	2.32E-05	2.17E-05	Yes
Tank Wash	Adipic acid	5	48.24	1.04E-01	4.54E-01	9.48E-05	8.89E-05	Yes
Tank Wash	Dibutyl phthalate	5	48.24	1.04E-01	4.54E-01	3.38E-04	3.17E-04	Yes
Tank Wash	Methylene bisphenyl isocyanate	0.051	48.24	1.06E-03	4.63E-03	6.01E-04	4.51E-03	Yes
Tank Wash	Picric acid	0.1	48.24	2.07E-03	9.08E-03	1.63E-03	3.06E-03	Yes
Tank Wash	Ammonium chloride fume	10	48.24	2.07E-01	9.08E-01	2.29E-03	2.14E-03	Yes
Tank Wash	Malathion	10	48.24	2.07E-01	9.08E-01	3.38E-03	3.16E-03	Yes
Tank Wash	Sulfuric acid	1	48.24	2.07E-02	9.08E-02	3.63E-03	3.41E-03	Yes
Tank Wash	Sodium bisulfite	5	48.24	1.04E-01	4.54E-01	4.45E-03	4.17E-03	Yes

**Total 106.261/262 Combined Emissions**

	Total Hourly Emissions (lb/hr)	Total Annual Emissions (tpy)
<b>Total Emissions:</b>	31.78	30.12

\*Additional compounds and specific emission rates are included in the registration file. Emissions represented are based on an absolute worst-case scenario. The rest of the authorized chemicals can be found in the file, sitewide 261/262 compliance was demonstrated for the chemicals.

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## Emission Summary

EPN / Emission Source		VOC		NOx		CO		PM <sub>10</sub> / PM <sub>2.5</sub>		SO <sub>2</sub>		Inorganics		Exempt Solvents	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
WR	Wash Rack	13.22	14.38									0.56	0.53		
	De-Heeling	0.01										<0.01	<0.01	0.03	0.08
FLARE	Flare	16.11												4.72	4.89
	Products of Combustion			0.99	2.06	3.94	8.20	0.05	0.11						
CAS / Carbon Adsorption System		0.97	2.12												
TK-1 / Wastewater Storage Tank		0.17	0.01									<0.01	<0.01	0.08	<0.01
LOAD / Wastewater Loading		1.30	0.24												
FUG-W / Wastewater Fugitives		<0.01	0.02									<0.01	0.02	<0.01	0.02
<b>TOTAL EMISSIONS (TPY):</b>			<b>16.75</b>		<b>2.06</b>		<b>8.20</b>		<b>0.11</b>				<b>0.55</b>		<b>4.99</b>
<b>MAXIMUM OPERATING SCHEDULE:</b>				<b>Hours/Day</b>		<b>Days/Week</b>		<b>Weeks/Year</b>		<b>Hours/Year</b>		<b>8,760</b>			



July 27, 2023

Date

Mr. John Ma  
Permit Reviewer  
Rule Registration Section



July 28, 2023

Date

Crystal Delacruz, Team Leader  
Rule Registrations Section  
Air Permits Division