Permit by Rule (PBR) Registration
Technical Review

Company:	Indorama Ventures Oxides LLC	**Registration No.:**	176486
Nearest City:	Port Neches	**Project No.:**	374523
County:	Jefferson	**Project Type:**	Initial
Project Reviewer:	Amanda Andrews	**Regulated Entity No.:**	RN100219252
Unit Name:	Port Neches Operations	**Customer Reference No.:**	CN605743038
PBR No(s).:	106.262	**Project Received Date:**	May 29, 2024
Physical Location:	2701 Spur 136		

Project Overview / Process Description
Indorama Ventures Oxides LLC (Indorama) owns and operates the Port Neches Operations (PNO) site located in Port Neches, Jefferson County, Texas. The site consists of various units producing chemical products and intermediates including ethylene, ethylene oxide (EO), propylene oxide (PO), methyl tertiary-butyl ether (MTBE), and surfactants. Steam is generated on-site and utilized for power generation and heat exchange at the production units. The emission points affected by the project described in this registration are in Indorama's E4, F4, and R&S areas. The E-4 Unit is authorized to operate under New Source Review (NSR) Permit No. 5807A and Title V Permit No. O-2287. The F-4 EO unit is authorized to operate under New Source Review (NSR) Permit No. 5972A and Title V Permit No. O-1320. The R&S Unit is authorized to operate under New Source Review (NSR) Permit No. 29516 and Title V Permit No. O-2288. This project will be incorporated into NSR Nos. 5972A, 5807A, and 29516 at the next amendment or renewal.

The purpose of this package is to authorize several improvement projects at Indorama's E4, F4, and R&S areas. These projects will be installed during the plant's scheduled Turnaround and Inspection (T&I) beginning in April 2024 and implemented upon startup. **These projects consist of capital projects being implemented for safety, environmental, replacement, and/or minor process improvement reasons.** The T&I project will include the following:

Project List

Project No.	Project Name	Distance to Nearest Receptor (feet):	Description
1	E-4 Unit Tie-Ins	2000	will be installing Tie-ins downstream of E4PV839A and the tie-in at the inlet of the Atmospheric Tower Condensers E-E4-9A/B/C/D. These tie-ins are to help with absorbing the ammonia into raw water to reduce the ammonia influent ppm concentrations by flowing the High-Pressure Absorber vent to the Atmospheric tower condenser. The stream is not getting re-routed. The stream will cycle back through the process.
2	E-4 Unit Replacement	2000	will be replacing (with like-kind) the low-pressure absorber bottom exchanger E-E4-7B and the associated piping. E-E4-7B will have an improved design with 2 additional inlet nozzles and a modified distributer bed. The reason for an improved design with 2 nozzles it's to help reduce erosion of the inlet nozzle and distributer bed.
3	F-4 Unit Adding EO Double Check Valves	2000	will be adding ethylene oxide (EO) double check valves to existing piping. The double check valves will help to prevent backflow of EO to the CO2 stripper purifying column.
4	R&S Unit Replacement Piping	2000	will be replacing piping due to age and condition of existing piping.
5	R&S Unit Nozzles on Suction Header Pipe Installation	2000	The nozzles on the suction header pipe will be installed to house (future) thermowells and redundant temperature elements at each pump P-O-260A/B.

Permit by Rule Requirements - 30 TAC Chapter 106

General Requirements

Registration Fee Reference No.:	**Application fee: 707313 / 582EA000612062**
Is this registration certified?	**Yes**
Is planned MSS included in the registration?	**No**

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Are there affected NSR or Title V authorizations for the project?	**Yes**
NSR and/or Title V authorizations:	**NSR Nos. 5807A, 5972A, and 29516; Title V Nos. O-2287, O-1320, and O-2288**
If there are affected Title V authorizations, is monitoring being submitted as part of this registration?	**Yes**
Are there any upstream or downstream affects associated with this registration?	**No**
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.	**NA**
Are emissions for each PBR authorized facility less than the § 106.4(a)(1) limits?	**Yes**
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?	**Yes**
Are there permit limits on using PBRs at the site?	**No**
Is the facility in compliance with all other applicable rules and regulations?	**Yes**
Does the registration include an appropriate PBR workbook, and has the workbook been verified?	**Yes**

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

Permit by Rule Requirements - Compliance Demonstrations

PBR 106.262 Facilities (Emission and Distance Limitations)

(a)(1) The facilities or changes will be located **2000 ft** from any off-site receptor.

(a)(2) Total new or increased emissions authorized by this section are below E lb/hr, as determined using the equation E = L/K, and 5 tpy.

(a)(3) Notification and all required documentation have been submitted.

(a)(4) Any facilities handling chemicals included in §106.262(a)(4) will be **> 1000 ft** from the nearest property line and 2**000 ft** from any off-site receptor and the cumulative amount of any of the listed chemicals resulting from one or more authorizations under this section will be < 500 pounds on the plant property and all listed chemicals shall be handled only in unheated containers operated in compliance with the United States Department of Transportation regulations (49 Code of Federal Regulations, Parts 171-178).

(a)(5) There will not be any changes or additions of any existing abatement equipment.

(a)(6) Visible emissions will not exceed the 5.0 % opacity limit.

(b) This registration is not for authorization for construction or to change a facility authorized under another section of this chapter or under standard permit.

Compliance History and Site Review

In accordance with 30 TAC Chapter 60, a compliance history report was reviewed on:			**June 3, 2024**
Site rating / classification:	**9.82 / Satisfactory**	Company rating / classification:	**8.43 / Satisfactory**
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**

106.262(a)(2) Distance

Distance to nearest off-plant receptor (feet):	2000
K value:	14

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

Project Name	Chemical	L Value (mg/m^3)	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?
E-4 Unit Tie-Ins	ammonia	17	14	1.21E+00	5.00E+00	4.58E-03	2.00E-02	Yes
E-4 Unit Replacement	ammonia	17	14	1.21E+00	5.00E+00	1.04E-03	4.57E-03	Yes
F-4 Unit Adding EO Double Check Valves	ethylene oxide	1.8	14	1.29E-01	5.63E-01	2.00E-02	9.00E-02	Yes
R&S Unit Replacement Piping	ethylene oxide	1.8	14	1.29E-01	5.63E-01	4.55E-03	2.00E-02	Yes
R&S Unit Nozzles on Suction Header Pipe Installation	ethylene oxide	1.8	14	1.29E-01	5.63E-01	3.52E-03	2.00E-02	Yes

Total 106.261/262 Combined Emissions

	Total Hourly Emissions (lb/hr)	Total Annual Emissions (tpy)
Total Ammonia Emissions:	0.0056	0.025
Total VOC Emissions:	0.028	0.13

***Additional compounds and specific emission rates are included in the registration file.**

Emission Summary

EPN / Emission Source	VOC		NOx		CO		PM_{10}		$PM_{2.5}$		SO_2		Ammonia	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
E4FUG1 / Process Fugitives	<0.01	0.04											<0.01	0.02
F4FUG / Process Fugitives	0.02	0.09												
TOTAL EMISSIONS (TPY):		**0.13**												**0.02**

MAXIMUM OPERATING SCHEDULE:	**Hours/Day**	24	**Days/Week**	7	**Weeks/Year**	52	**Hours/Year**	8,760

NOTE: The difference in totals is due to rounding.

Amanda Andrews — June 14, 2024

Ms. Amanda Andrews
Permit Reviewer
Rule Registration Section
Date

Michael Partee — June 14, 2024

Michael Partee, Manager
Rule Registrations Section
Air Permits Division
Section Manager
Date