AIR QUALITY PERMIT BY RULE DOCUMENTATION
30 TAC 106.261 & 106.262
Alternate WFE Bottoms Processing

Lyondell Chemical Company

Bayport Choate Plant

CRU Unit
10801 Choate Road
Pasadena, Texas

RN102523107
CN600344402

July 2024

Prepared by:
BGE, Inc

Table of Contents

Section 1 Project Information

The Lyondell Chemical Company (Lyondell) owns and operates the Bayport Choate Plant at 10801 Choate Rd., in Pasadena, Harris County, Texas.

The Bayport Choate Plant currently produces an organic bottoms (wet film evaporator (WFE) bottoms) stream in another part of the facility. This stream is sent to the B1780 Catalyst Recovery Unit (CRU) to recover the catalyst. The air emissions from the B1780 CRU are authorized under the Texas Commission on Environmental Quality (TCEQ) New Source Review (NSR) Permit No. 18327. All operations at the Bayport Choate Plant are authorized by Title V Operating Permit No. O1421.

A similar WFE bottoms stream to the one produced at the Bayport Choate Plant is produced at Lyondell's Channelview POTBA (CKO) site. Typically, Channelview processes this stream in-house. Currently, the CKO WFE bottoms include some slightly higher molecular weight compounds that have accumulated in the POTBA process which are believed to accelerate fouling in the process unit. However, the Bayport Choate Plant does have the capability to process the CKO's WFE bottoms. In general, this CKO material is the same as what is treated in the Bayport Choate B1780 CRU; however, it may have some higher molecular weight compounds than the normal Bayport Choate material. Therefore, Lyondell is requesting to authorize a change in this alternate operating scenario for the Bayport Choate B1780 CRU to process the CKO material.

Bayport Choate Tank F-1780 will be emptied and used to store the CKO WFE bottoms during this alternate operating scenario. Tank F-1780 is a pressure tank that is controlled by the B-1550 continuous flare (EPN E-B1550).

There are no increases over currently permitted production rates/throughput being requested as part of this project. There are no impacts to the upstream and downstream process units and there are no newly constructed emission points associated with this PBR project.

This PBR registration package demonstrates that emissions increases associated with this project (at EPNs E-B1780 and E-B1550) will comply with the requirements of §§106.261 and 106.262. Additionally, this PBR project will comply with the PBR general requirements specified in §106.4, the recordkeeping requirements specified in §106.8, and all other rules related to PBRs.

Section 2 PBR Registration Fee

As required by §106.50, Lyondell is submitting the required PBR registration fee of $450 for this project via STEERS/ePermits at the time of the PBR submittal.

Section 3 Regulatory Review and TCEQ PBR Checklists

3.1 Compliance with PBR General Requirements §106.4 – Requirements for Permitting by Rule

(a) To qualify for a permit by rule, the following general requirements must be met.

(1) Total actual emissions authorized under permit by rule from the facility shall not exceed the following limits, as applicable:

(A) 250 tons per year (tpy) of carbon monoxide (CO) or nitrogen oxides (NO_x);

(B) 25 tpy of volatile organic compounds (VOC), sulfur dioxide (SO_2), or inhalable particulate matter (PM);

(C) 15 tpy of particulate matter with diameters of 10 microns or less (PM_{10});

(D) 10 tpy of particulate matter with diameters of 2.5 microns or less ($PM_{2.5}$); or

(E) 25 tpy of any other air contaminant except:

(i) water, nitrogen, ethane, hydrogen, and oxygen; and

(ii) notwithstanding any provision in any specific permit by rule to the contrary, greenhouse gases (GHGs) as defined in §101.1 of this title (relating to Definitions).

The emissions increase associated with the Alternate WFE Bottoms Processing Project will not exceed these limits.

(2) Any facility or group of facilities, which constitutes a new major stationary source, as defined in §116.12 of this title (relating to Nonattainment and Prevention of Significant Deterioration Review Definitions), or any modification which constitutes a major modification, as defined in §116.12 of this title, under the new source review requirements of the Federal Clean Air Act (FCAA), Part D (Nonattainment) as amended by the FCAA Amendments of 1990, and regulations promulgated thereunder, must meet the permitting requirements of Chapter 116, Subchapter B of this title (relating to New Source Review Permits) and cannot qualify for a permit by rule under this chapter. Persons claiming a permit by rule under this chapter should see the requirements of §116.150 of this title (relating to New Major Source or Major Modification in Ozone Nonattainment Areas) to ensure that any applicable netting requirements have been satisfied.

The emissions increase associated with the Alternate WFE Bottoms Processing Project will be below the major stationary source and major modification thresholds; therefore, this paragraph does not apply.

(3) Any facility or group of facilities, which constitutes a new major stationary source, as defined in 40 Code of Federal Regulations (CFR) §52.21, or any change which constitutes a major modification, as defined in 40 CFR §52.21, under the new source review requirements of the FCAA, Part C (Prevention of Significant Deterioration) as amended by the FCAA Amendments of 1990, and regulations promulgated thereunder, because of emissions of air contaminants other than GHGs, must meet the permitting requirements of

Chapter 116, Subchapter B of this title and cannot qualify for a permit by rule under this chapter. Notwithstanding any provision in any specific permit by rule to the contrary, a new major stationary source or major modification which is subject to Chapter 116, Subchapter B, Division 6 of this title due solely to emissions of greenhouse gases may use a permit by rule under this chapter for air contaminants that are not greenhouse gases. However, facilities or projects which require a prevention of significant deterioration permit due to emissions of GHGs may not commence construction or operation until the prevention of significant deterioration permit is issued.

The emissions increase associated with the Alternate WFE Bottoms Processing Project will not constitute a new major stationary source or a major modification; therefore, this paragraph does not apply.

(4) *Unless at least one facility at an account has been subject to public notification and comment as required in Chapter 116, Subchapter B or Subchapter D of this title (relating to New Source Review Permits or Permit Renewals), total actual emissions from all facilities permitted by rule at an account shall not exceed 250 tpy of CO or NO_x; or 25 tpy of VOC or SO_2 or PM; or 15 tpy of PM_{10}; or 10 tpy of $PM_{2.5}$; or 25 tpy of any other air contaminant except water, nitrogen, ethane, hydrogen, oxygen, and GHGs (as specified in §106.2 of this title (relating to Applicability)).*

The Choate Plant has been subject to public notice; therefore, these limits do not apply.

(5) *Construction or modification of a facility commenced on or after the effective date of a revision of this section or the effective date of a revision to a specific permit by rule in this chapter must meet the revised requirements to qualify for a permit by rule.*

This project will meet the most recent PBR requirements.

(6) *A facility shall comply with all applicable provisions of the FCAA, §111 (Federal New Source Performance Standards) and §112 (Hazardous Air Pollutants), and the new source review requirements of the FCAA, Part C and Part D and regulations promulgated thereunder.*

This project will comply with all applicable provisions.

(7) *There are no permits under the same commission account number that contain a condition or conditions precluding the use of a permit by rule under this chapter.*

There are no permits under the site's account number that contain a condition or conditions precluding the use of a PBR.

(8) *The proposed facility or group of facilities shall obtain allowances for NO_x if they are subject to Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).*

The Choate Plant will obtain additional allowances, as needed, in order to comply with Chapter 101, Subchapter H, Division 3.

(b) No person shall circumvent by artificial limitations the requirements of §116.110 of this title (relating to Applicability).

No artificial limitations are used to circumvent the requirements.

(c) The emissions from the facility shall comply with all rules and regulations of the commission and with the intent of the Texas Clean Air Act (TCAA), including protection of health and property of the public, and all emissions control equipment shall be maintained in good condition and operated properly during operation of the facility.

This project will comply with all the rules and regulations of the commission and with the intent of the TCAA, including protection of health and property of the public.

(d) Facilities permitted by rule under this chapter are not exempted from any permits or registrations required by local air pollution control agencies. Any such requirements must be in accordance with Texas Health and Safety Code, §382.113 and any other applicable law.

This project is not required to obtain any permits or registrations from any local air pollution control agencies. Therefore, this requirement does not apply.

3.2 Compliance with PBR §106.261 – Facilities (Emission Limitations)

(a) Except as specified under subsection (b) of this section, facilities, or physical or operational changes to a facility, are permitted by rule provided that all of the following conditions of this section are satisfied.

(1) The facilities or changes shall be located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located.

The facilities are located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located (see Figure 3-1).

(2) Total new or increased emissions, including fugitives, shall not exceed 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials: acetylene, argon, butane, crude oil, refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene, carbon monoxide, cyclohexane, cyclohexene, cyclopentane, ethyl acetate, ethanol, ethyl ether, ethylene, fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116, helium, isohexane, isopropyl alcohol, methyl acetylene, methyl chloroform, methyl cyclohexane, neon, nonane, oxides of nitrogen, propane, propyl alcohol, propylene, propyl ether, sulfur dioxide, alumina, calcium carbonate, calcium silicate, cellulose fiber, cement dust, emery dust, glycerin mist, gypsum, iron oxide dust, kaolin,

limestone, magnesite, marble, pentaerythritol, plaster of paris, silicon, silicon carbide, starch, sucrose, zinc stearate, or zinc oxide.

The emissions increases associated with the Alternate WFE Bottoms Processing Project will not exceed these limits.

(3) Total new or increased emissions, including fugitives, shall not exceed 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of §106.262 of this title (relating to Facilities (Emission and Distance Limitations)) or of any other chemical not listed or referenced in Table 262. Emissions of a chemical with a limit value of less than 200 mg/m^3 are not allowed under this section.

The emissions increase associated with the Alternate WFE Bottoms Processing Project will not exceed these limits.

(4) For physical changes or modifications to existing facilities, there shall be no changes to or additions of any air pollution abatement equipment.

No changes to existing or additions of new air abatement equipment is requested as part of this authorization.

(5) Visible emissions, except uncombined water, to the atmosphere from any point or fugitive source shall not exceed 5.0% opacity in any six-minute period.

Visible emissions will not exceed 5% opacity over any six-minute period.

(6) For emission increases of five tons per year or greater, notification must be provided using Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.

Not applicable. Emission increases are less than five tons per year.

(7) For emission increases of less than five tons per year, notification must be provided using either:

(A) Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any; or

(B) Form PI-7 by March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year. This annual notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.

Notification is being provided within ten days of the change associated with the Alternate WFE Bottoms Processing Project. The project has not yet been implemented.

(b) The following are not authorized under this section:
(1) construction of a facility authorized in another section of this chapter or for which a standard permit is in effect; and
(2) any change to any facility authorized under another section of this chapter or authorized under a standard permit.

There is no other section of this chapter that is applicable to this project. No standard permits will be affected by this project.

3.3 Compliance with PBR §106.262 – Facilities (Emission Limitations)

(a) Facilities, or physical or operational changes to a facility, are permitted by rule provided that all of the following conditions of this section are satisfied.

(1) Emission points associated with the facilities or changes shall be located at least 100 feet from any off-plant receptor. Off-plant receptor means any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located.

The facilities are located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located (see Figure 3-1).

(2) New or increased emissions, including fugitives, of chemicals shall not be emitted in a quantity greater than five tons per year nor in a quantity greater than E as determined using the equation E = L/K and the following table.

The new or increased emissions associated with the Alternate WFE Bottoms Processing Project will not exceed these limits.

(3) Notification must be provided using Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, and data identifying specific chemical names, L values, D values, and a description of pollution control equipment, if any.

Notification is being provided within ten days following the modification of the facilities for the Alternate WFE Bottoms Processing Project.

(4) The facilities in which the following chemicals will be handled shall be located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor and the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) shall not exceed 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): acrolein, allyl chloride, ammonia (anhydrous), arsine, boron trifluoride, bromine, carbon disulfide, chlorine, chlorine dioxide, chlorine trifluoride, chloroacetaldehyde, chloropicrin, chloroprene, diazomethane, diborane, diglycidyl ether, dimethylhydrazine, ethyleneimine, ethyl mercaptan, fluorine, formaldehyde (anhydrous), hydrogen bromide, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, hydrogen selenide, hydrogen sulfide, ketene, methylamine, methyl bromide, methyl hydrazine, methyl isocyanate, methyl mercaptan, nickel carbonyl, nitric acid, nitric oxide, nitrogen dioxide, oxygen difluoride, ozone, pentaborane, perchloromethyl mercaptan, perchloryl fluoride, phosgene, phosphine, phosphorus trichloride, selenium hexafluoride, stibine, liquified sulfur dioxide, sulfur pentafluoride, and tellurium hexafluoride. Containers of these chemicals may not be vented or opened directly to the atmosphere at any time.

None of the chemicals listed in this paragraph will be used in the Alternate WFE Bottoms Processing Project.

(5) For physical changes or modifications to existing facilities, there shall be no changes to or additions of any air pollution abatement equipment.

No changes to existing or additions of new air abatement equipment are requested as part of this authorization.

(6) Visible emissions, except uncombined water, to the atmosphere from any point or fugitive source shall not exceed 5.0% opacity in any six-minute period.

Visible emissions will not exceed 5% opacity over any six-minute period.

(b) The following are not authorized under this section:

(1) construction of a facility authorized in another section of this chapter or for which a standard permit is in effect; and

(2) any change to any facility authorized under another section of this chapter or authorized under a standard permit.

There is no other section of this chapter that is applicable to this project. No standard permits will be affected by this project.

(c) If a facility has been authorized under another section of this chapter or under a standard permit, subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.

There is no other section of this chapter that is applicable to this project. No standard permits will be affected by this project.

Figure 3-1. Distance to Nearest Receptor

Texas Commission on Environmental Quality
Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106.4

The following checklist was developed by the Texas Commission on Environmental Quality (TCEQ), **Air Permits Division**, to assist applicants in determining whether or not a facility meets all of the applicable requirements. Before claiming a specific Permit by Rule (PBR), a facility must first meet all of the requirements of **Title 30 Texas Administrative Code § 106.4** (30 TAC § 106.4), "Requirements for Permitting by Rule." Only then can the applicant proceed with addressing requirements of the specific Permit by Rule being claimed.

The use of this checklist is not mandatory; however, it is the responsibility of each applicant to show how a facility being claimed under a PBR meets the general requirements of 30 TAC § 106.4 and also the specific requirements of the PBR being claimed. If all PBR requirements cannot be met, a facility will not be allowed to operate under the PBR and an application for a construction permit may be required under 30 TAC § 116.110(a).

Registration of a facility under a PBR can be performed by completing **Form PI-7** (Registration for Permits by Rule) or **Form PI-7-CERT** (Certification and Registration for Permits by Rule). The appropriate checklist should accompany the registration form. Check the most appropriate answer and include any additional information in the spaces provided. If additional space is needed, please include an extra page and reference the question number. The PBR forms, tables, checklists, and guidance documents are available from the TCEQ, Air Permits Division website at: www.tceq.texas.gov/permitting/air/nav/air_pbr.html.

1. 30 TAC § 106.4(a)(1) and (4): Emission Limits	
List emissions in tpy for **each** facility (add additional pages or table if needed): **see Section 4**	
Are the SO_2, PM_{10}, VOC, or other air contaminant emissions claimed for **each** facility in this PBR submittal less than 25 tpy?	☒ YES ☐ NO
Are the NO_x and CO emissions claimed for each facility in this PBR submittal less than 250 tpy?	☒ YES ☐ NO
*If the answer to both is "Yes," continue to the question below. If the answer to either question is "No," a **PBR cannot be claimed**.*	
Has any facility at the property had public notice and opportunity for comment under 30 TAC Section 116 for a regular permit or permit renewal? (This does not include public notice for voluntary emission reduction permits, grandfathered existing facility permits, or federal operating permits.)	☒ YES ☐ NO
If "Yes," skip to Section 2. If "No," continue to the questions below.	
If the site has had no public notice, please answer the following:	
Are the SO_2, PM_{10}, VOC, or other emissions claimed for **all** facilities in this PBR submittal less than 25 tpy?	☐ YES ☐ NO
Are the NO_x and CO emissions claimed for **all** facilities in this PBR submittal less than 250 tpy?	☐ YES ☐ NO
If the answer to both questions is "Yes," continue to Section 2.	
*If the answer to either question is "No," **a PBR cannot be claimed**. A permit will be required under Chapter 116.*	

Texas Commission on Environmental Quality
Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106.4

2. 30 TAC § 106.4(a)(2): Nonattainment Check	
Are the facilities to be claimed under this PBR located in a designated ozone nonattainment county?	☒ YES ☐ NO
If "Yes," please indicate which county by checking the appropriate box to the right.	
(Moderate) - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties:	☒ HGB
(Moderate) - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise counties:	☐ DFW
If "Yes," to any of the above, continue to the next question. If "No," continue to Section 3.	
Does this project trigger a nonattainment review?	☐ YES ☒ NO
Is the project's potential to emit (PTE) for emissions of VOC or NO_x increasing by 100 tpy or more?	☐ YES ☒ NO
PTE is the maximum capacity of a stationary source to emit any air pollutant under its worst-case physical and operational design unless limited by a permit, rules, or made federally enforceable by a certification.	
Is the site an existing major nonattainment site and are the emissions of VOC or NO_x increasing by 40 tpy or more?	☐ YES ☒ NO
If needed, attach contemporaneous netting calculations per nonattainment guidance.	
Additional information can be found at: www.tceq.texas.gov/permitting/air/forms/newsourcereview/tables/nsr_table8.html and www.tceq.texas.gov/permitting/air/nav/air_docs_newsource.html	
*If "Yes," to any of the above, the project is a major source or a major modification and **a PBR may not be used**. A Nonattainment Permit review must be completed to authorize this project. If "No," continue to Section 3.*	
3. *30 TAC § 106.4(a)(3): Prevention of Significant Deterioration (PSD) Check*	
Does this project trigger a review under PSD rules?	
To determine the answer, review the information below:	
Are emissions of any regulated criteria pollutant increasing by 100 tpy of any criteria pollutant at a named source?	☐ YES ☒ NO
Are emissions of any criteria pollutant increasing by 250 tpy of any criteria pollutant at an unnamed source?	☐ YES ☒ NO
Are emissions increasing above significance levels at an existing major site?	☐ YES ☒ NO
PSD information can be found at: www.tceq.texas.gov/assets/public/permitting/air/Forms/NewSourceReview/Tables/10173tbl.pdf and www.tceq.texas.gov/permitting/air/nav/air_docs_newsource.html	
*If "Yes," to any of the above, **a PBR may not be used**. A PSD Permit review must be completed to authorize the project.*	
If "No," continue to Section 4.	

Texas Commission on Environmental Quality
Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106.4

4. 30 TAC § 106.4(a)(6): Federal Requirements	
Will all facilities under this PBR meet applicable requirements of Title 40 Code of Federal Regulations (40 CFR) Part 60, New Source Performance Standards (NSPS)?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?	
Will all facilities under this PBR meet applicable requirements of 40 CFR Part 63, Hazardous Air Pollutants Maximum Achievable Control Technology (MACT) standards?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?	
Will all facilities under this PBR meet applicable requirements of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAPs)?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?	
If "Yes" to any of the above, please attach a discussion of how the facilities will meet any applicable standards.	

5. 30 TAC § 106.4(a)(7): PBR Prohibition Check	
Are there any air permits at the site containing conditions which prohibit or restrict the use of PBRs?	☐ YES ☒ NO
If "Yes," PBRs may not be used or their use must meet the restrictions of the permit. A new permit or permit amendment may be required.	
List permit number(s):	

6. 30 TAC § 106.4(a)(8): NO_x Cap and Trade	
Is the facility located in Harris, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?	☒ YES ☐ NO
If "Yes," answer the question below. If "No," continue to Section 7.	
Will the proposed facility or group of facilities obtain required allowances for NO_x if they are subject to 30 TAC Chapter 101, Subchapter H, Division 3 (relating to the Mass Emissions Cap and Trade Program)?	☒ YES ☐ NO

Texas Commission on Environmental Quality
Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106.4

7. Highly Reactive Volatile Organic Compounds (HRVOC) Check		
Is the facility located in Harris County?		☒ YES ☐ NO
If "Yes," answer the next question. If "No," skip to the box below.		
Will the project be constructed after June 1, 2006?		☒ YES ☐ NO
If "Yes," answer the next question. If "No," skip to the box below.		
Will one or more of the following HRVOC be emitted as a part of this project?		☒ YES ☐ NO
If "Yes," complete the information below:		
Information	**lb/hr**	**Tpy**
► 1,3-butadiene		
► all isomers of butene (e.g., isobutene [2-methylpropene or isobutylene])	3.47E-03	1.88E-03
► alpha-butylene (ethylethylene)		
► beta-butylene (dimethylethylene, including both cis- and transisomers)		
► ethylene		
► propylene		
Is the facility located in Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?		☐ YES ☒ NO
If "Yes," answer the next question. If "No," the checklist is complete.		
Will the project be constructed after June 1, 2006?		☐ YES ☐ NO
If "Yes," answer the next question. If "No," the checklist is complete.		
Will one or more of the following HRVOC be emitted as a part of this project?		☐ YES ☐ NO
If "Yes," complete the information below:		
Information	**lb//hr**	**Tpy**
► ethylene		
► propylene		

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)
Texas Commission on Environmental Quality

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.261 (30 TAC § 106.261) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ) Air Permits Division website at, www.tceq.texas.gov/permitting/air/air_permits.html

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

Check the Most Appropriate Answer.

Check The Most Appropriate Answer		Answer
Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?		☒ YES ☐ NO ☐ NA
b1	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect?	☐ YES ☒ NO ☐ NA
If YES," this PBR cannot be used to authorize emissions from the project.		☐ YES ☒ NO ☐ NA
b2	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit?	☐ YES ☒ NO ☐ NA
If "YES," this PBR cannot be used to authorize emissions from the project		
a	Does this project represent a physical or operational change to an NSR permitted facility in which the result of the project is an increase in ***only*** annual emissions with no impact to the currently authorized hourly emission rate? [1]	☐ YES ☒ NO ☐ NA
a1	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	☒ YES ☐ NO ☐ NA
a2	Are total new or increased emissions, including fugitives, less than or equal to 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials [2]	☒ YES ☐ NO ☐ NA

[1] Project emission increases associated with a change to a facility that only result in an annual emissions increase can be authorized as part of the PBR claim if the following information is met: 1) the hourly emissions stay at or below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT or health and environmental impacts; and 3) this claim is certified via PI-7-CERT. The annual emission increases associated with the PBR claim may not circumvent major new source review requirements under 30 TAC Chapter 116.

[2] Any upstream and/or downstream actual emission increases that result from a project for which this PBR is claimed need to be authorized appropriately. Any associated upstream and/or downstream emissions authorized as part of the PBR claim will need to be included as part of the total new or increased emissions, unless: 1) these emissions stay at or below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT, health and environmental impacts, or other representations (i.e. construction plans, operating procedures, throughputs, maximum emission rates, etc.); and 3) this claim is certified via PI-7 CERT. Notwithstanding the exclusion of any upstream and/or downstream emissions under this PBR claim, the total of all emission increases, including upstream and/or downstream actual emission increases, are required to be part of the PBR registration to determine major new source review applicability under Title 30 TAC Chapter 116. The emission increases associated with the PBR claim and all upstream and/or downstream actual emission increases may not circumvent major new source review requirements under 30 TAC Chapter 116.

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)
Texas Commission on Environmental Quality

Check All That Apply			
☐ acetylene	☐ cyclopentane	☐ kaolin	☐ propane
☐ alumina	☐ emery dust	☐ limestone	☐ propyl alcohol
☐ argon	☐ ethanol	☐ magnesite	☐ propyl ether
☐ butane	☐ ethyl acetate	☐ marble	☐ propylene
☐ calcium carbonate	☐ ethyl ether	☐ methyl acetylene	☐ silicon
☐ calcium silicate	☐ ethylene	☐ methyl chloroform	☐ silicon carbide
☐ carbon monoxide	☐ glycerin mist	☐ methyl cyclohexane	☐ starch
☐ cellulose fiber	☐ gypsum	☐ neon	☐ sucrose
☐ cement dust	☐ helium	☐ nonane	☐ sulfur dioxide
☐ crude oil	☐ iron oxide dust	☐ oxides of nitrogen	☐ zinc oxide
☐ cyclohexane	☐ isohexane	☐ pentaerythritol	☐ zinc stearate
☐ cyclohexene	☐ isopropyl alcohol	☐ plaster of paris	
☐ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene			
☐ fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116			

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)
Texas Commission on Environmental Quality

Check The Most Appropriate Answer	Answer
a3 Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of 30 TAC § 106.262 of this title (relating to Facilities (Emission and Distance Limitations)? [3]	☐ YES ☐ NO ☐ NA
List chemical(s): see TCEQ 106.261 and 106.262 workbook	
L value(s):	
Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical not listed or referenced in Table 262? [4]	☒ YES ☐ NO ☐ NA
List chemical(s): see TCEQ 106.261 and 106.262 workbook	
Are total new or increased emissions, including fugitives, of a chemical with a limit value of less than 200 mg/m^3*?* [5]	☒ YES ☐ NO ☐ NA
If "YES" the authorization of the chemical is not allowed under this section. We suggest you use 30 TAC § 106.262 to authorize the emissions, if applicable.	
a4 Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES ☒ NO ☐ NA
a5 Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater than 5.0% opacity in any six-minute period?	☐ YES ☒ NO ☐ NA
a6 Are emission increases five tons per year or greater?	☐ YES ☒ NO ☐ NA
If "YES," this checklist must be attached to a Form PI-7 within ten days following the installation or modification of the facilities.	
[**Note:** *The notification shall include the 106.261 and 106.262 Workbook, a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment if any.*]	
a7 Are emission increases less than five tons per year?	☒ YES ☐ NO ☐ NA
If "YES," this checklist must be attached to a Form PI-7 and include the 106.261 and 106.262 Workbook, a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment if any. (pick one):	
Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment if any	☐
By March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year.	☐

Save Form Reset Form Print Form

[3] Same as [2]

[4] Same as [2]

[5] Same as [2]

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)
Texas Commission on Environmental Quality

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.262 (30 TAC § 106.262) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division website at, www.tceq.texas.gov/nav/permits/air_permits.html.

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

Check the Most Appropriate Answer		
Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?		☒ YES ☐ NO ☐ N/A
a	Does this project represent a physical or operational change to an NSR permitted facility in which the result of the project is an increase in *only* annual emissions with no impact to the current authorized hourly emission rate? [1]	☐ YES ☒ NO ☐ N/A
b1.	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES ☒ NO ☐ N/A
b2.	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES ☒ NO ☐ N/A
c.	Is the facility authorized under another section of this chapter or under a standard permit? *If "YES," subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.*	☐ YES ☒ NO ☐ N/A
a1.	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	☒ YES ☐ NO ☐ N/A
a2.	Are new or increased emissions, including fugitives, emitted in a quantity less than five tons per year or in a quantity less than E as determined by using the equation E=L/K?[2] See Table 262 Figures 1 and 2. *If "YES," the notification shall include the 106.261 and 106.262 Workbook, a description of the project, calculations for all emissions being claimed under this PBR:*	☒ YES ☐ NO ☐ N/A
Chemical: see TCEQ 106.261 and 106.262 workbook		
L value:		
D:		
K:		

[1] Project emission increases associated with a change to a facility that only result in an annual emissions increase can be authorized as part of the PBR claim if the following information is met: 1) the hourly emissions stay at or below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT or health and environmental impacts; and 3) this claim is certified via PI-7-CERT. The annual emission increases associated with the PBR claim may not circumvent major new source review requirements under 30 TAC Chapter 116.

[2] Any upstream and/or downstream actual emission increases that result from a project for which this PBR is claimed need to be authorized appropriately. Any associated upstream and/or downstream emissions authorized as part of the PBR claim will need to be included as part of the total new or increased emissions, unless: 1) these emissions stay at or below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT, health and environmental impacts, or other representations (i.e. construction plans, operating procedures, throughputs, maximum emission rates, etc.); and 3) this claim is certified via PI-7 CERT. Notwithstanding the exclusion of any upstream and/or downstream emissions under this PBR claim, the total of all emission increases, including upstream and/or downstream actual emission increases, are required to be part of the PBR registration to determine major new source review applicability under Title 30 TAC Chapter 116. The emission increases associated with the PBR claim and all upstream and/or downstream actual emission increases may not circumvent major new source review requirements under 30 TAC Chapter 116.

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)
Texas Commission on Environmental Quality

Check the Most Appropriate Answer			
a3. Is this checklist attached to a Form PI-7 within ten days following the installation or modification of the facilities? *If "YES," the notification shall include the 106.261 and 106.262 Workbook, a description of the project, calculations, and data identifying specific chemical names, L values, and a description of pollution control equipment, if any*.		☒ YES ☐ NO ☐ N/A	
a4. Are one or more of the following chemicals is handled for this registration?		☐ YES ☒ NO ☐ N/A	
(Check all that apply) *If "YES," answer the following four questions.*			
☐ acrolein	☐ diazomethane	☐ hydrogen sulfide	☐ ozone
☐ allyl chloride	☐ diborane	☐ ketene	☐ pentabornev
☐ ammonia (anhydrous)	☐ diglycidyl ether	☐ methylamine	☐ perchloromethyl mercaptan
☐ arsine	☐ dimethylhydrazine	☐ methyl bromide	☐ perchloryl fluoride
☐ boron trifluoride	☐ ethyleneimine	☐ methyl hydrazine	☐ phosgene
☐ bromine	☐ ethyl mercaptan	☐ methyl isocyanate	☐ phosphine
☐ carbon disulfide	☐ fluorine	☐ methyl mercaptan	☐ phosphorus trichloride
☐ chlorine	☐ formaldehyde (anhydrous)	☐ nickel carbonyl	☐ selenium
☐ chlorine dioxide	☐ hydrogen bromide	☐ nitric acid	☐ hexafluoride stibine
☐ chlorine trifluoride	☐ hydrogen chloride	☐ nitric oxide	☐ liquefied sulfur dioxide
☐ chloroacetaldehyde	☐ hydrogen cyanide	☐ nitrogen dioxide	☐ sulfur pentafluorid
☐ chloropicrin	☐ hydrogen fluoride	☐ oxygen difluoride	☐ tellurium hexafluoride
☐ chloroprene	☐ hydrogen selenide		

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)
Texas Commission on Environmental Quality

Check the Most Appropriate Answer	
Are all facilities are located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor?	☐ YES ☐ NO ☒ N/A
Are the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) less than or equal to 500 pounds on the plant property?	☐ YES ☐ NO ☒ N/A
Are all listed chemicals handled only in unheated containers operated in compliance with the United States Department of Transportation regulation (49 Code of Federal Regulation, Parts 171-178)?	☐ YES ☐ NO ☒ N/A
a5. Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES ☒ NO ☐ N/A
a6. Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater that 5.0% opacity in any six-minute period?	☐ YES ☒ NO ☐ N/A

D (feet)	K	Value Description
100	326	E=maximum allowable hourly emission, and never to exceed 6 pounds per hour.
200	200	
300	139	
400	104	
600	65	
700	54	
800	46	K=value from the table on this page. (interpolate intermediate values)
900	39	
1,000	34	
2,000	14	D=distance to the nearest off-plant receptor
3,000 or more	8	

Table 262
Limit Values (L) for use with Exemptions from Permitting § 106.262

The values are not to be interpreted as acceptable health affects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Acetone	590.
Acetaldehyde	9.
Acetone	4.
Acetonitrile	34.
Acetylene	2662.
N-Amyl Acetate	2.7
Sec-Amyl Acetate	1.1
Benzene	3.
Beryllium and Compounds	0.0005
Boron Trifluride, as HF	0.5
Butyl Alcohol,	76.
Butyl Acrylate	19.
Butyl Chromate	0.01
Butyl Glycidyl Ether	30.
Butyl Mercaptain	0.3
Butyraldehyde	1.4
Butyric Acid	1.8
Butyronitrile	22.
Carbon Tetrachloride	12.
Chloroform	10.
Chlorophenol	0.2
Chloroprene	3.6
Chromic Acid	0.01
Chromium Metal, Chromium II and III Compounds	0.1
Chromium VI Compounds	0.01
Coal Tar Pitch Volatiles	0.1
Creosote	0.1
Cresol	0.5
Cumene	50.
Dicyclopentadiene	3.1
Diethylaminoethanol	5.5

Table 262
Limit Values (L) for use with Exemptions from Permitting § 106.262

The values are not to be interpreted as acceptable health affects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Diisobutyl Ketone	63.9
Dimethyl Aniline	6.4
Dioxane	3.6
Dipropylamine	8.4
Ethyl Acrylate	0.5
Ethylene Dibromide	0.38
Ethylene Glycol	26.
Ethylene Glycol Dinitrate	0.1
Ethylidene 2-norbornene, 5	7.
Ethyl Mercaptan	0.08
Ethyl Sulfide	1.6
Glycolonitrile	5.
Halothane	16.
Heptane	350.
Hexanediamine, 1, 6	0.32
Hydrogen Chloride	1.
Hydrogen Fluoride	0.5
Hydrogen Sulfide	1.1
Isoamyl Acetate	133.
Isoamyl Alcohol	15.
Isobutyronitrile	22.
Kepone	0.001
Kerosene	100.
Malononitrile	8.
Mesityl Oxide	40.
Methyl Acrylate	5.8
Methyl Amyl Ketone	9.4
Methyl-T-Butyl Ether	45.
Methyl Butyl Ketone	4.
Methyl Disulfide	2.2

Table 262
Limit Values (L) for use with Exemptions from Permitting § 106.262

The values are not to be interpreted as acceptable health affects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Methylenebis (2-chloroaniline) (MOCA)	0.003
Methylene Chloride	26.
Methyl Isoamyl Ketone	5.6
Methyl Mercaptan	0.2
Merthyl Methacrylate	34.
Methyl Propyl Ketone	530.
Methyl Sulfide	0.3
Mineral Spirits	350.
Naphtha	350.
Nickel, Inorganic Compounds	0.015
Nitroglycerine	0.1
Nitropropane	5.
Octane	350.
Parathion	0.05
Pentane	350.
Perchloroethylene	33.5
Petroleum Ether	350.
Phenyl Mercaptan	0.4
Propionitrile	14.
Propyl Acetate	62.6
Propylene Oxide	20.
Propyl Mercaptan	0.23
Silica-amorphous-precipitated, silica gel	4.
Silicon Carbide	4.

Table 262
Limit Values (L) for use with Exemptions from Permitting § 106.262

The values are not to be interpreted as acceptable health affects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Stoddard Solvent	350.
Styrene	21.
Succiononitrile	20.0
Tolidin	0.02
Trichloroethylene	135.
Trinethylamine	0.1
Valeric Acid	0.34
Vinyl Acetate	15.0
Vinyl Chloride	2.0

Note: The time weighted average (TWA) threshold Limit Value (TLV) published by the American Conference of Governmental Industrial Hygienists (AGGIH), in its TLVs and BEIs guide (1997 Edition) shall be used for compounds not included in the table. The Short-Term Exposure Level (STEL) or Ceiling Limit (annotated with a “C”) published by the ACGIH shall be used for compounds that do not have a published TWA TLV. This section cannot be used if the compound is not listed in the table or does not have a published TWA TLV, STEL, or Ceiling Limit in the ACGIH TLVs and BEIs guide.

Save Form Reset Form Print Form

The TCEQ 106.261 & 106.262 workbook has also been completed and is being submitted along with this application via STEERS.

Section 4 Process Description

Lyondell Chemical Company operates the Bayport Plant Ethers Unit located in Pasadena, Texas in Harris County. Lyondell Chemical Company – Bayport Choate Plant currently produces an organic bottoms stream in another part of the facility. This stream is sent to the Catalyst Recovery Unit (CRU) to recover catalyst.

As an alternate operating scenario, WFE bottoms from Lyondell's CKO site will be unloaded into the Bayport Choate CRU feed tank F-1780 which is a pressure tank that vents to a continuous flare (EPN E-B1550) for pressure control. Tank F-1780 will be emptied of its normal contents prior to this project. Per normal operations, from Tank F-1780, these CKO WFE bottoms will be pumped directly to the B-1780 CRU (EPN E-B1780). The CRU fires WFE bottoms and/or natural gas; the WFE bottoms are capable of self-sustained combustion. The primary burner is also designed to fire natural gas which is typically only fired during startup situations to bring the CRU to operating temperatures prior to the introduction of the bottoms stream. The exhaust gas is quenched then passes through a fabric filter to remove particulates from the exhaust gas stream.

Section 5 Emission Calculations

This section presents a discussion of the basis for the air emission calculations associated with this PBR to authorize emissions from the Alternate WFE Bottoms Processing Project. The supporting emission calculations are provided in Appendix A which is being submitted as confidential information. Actual emissions associated with this project are presented in Table 1(a) at the end of this section.

5.1 Emissions from F-1780 (EPN E-B1550)

The Alternate WFE Bottoms Processing Project will be a source of VOC emissions from Tank F-1780. Uncontrolled VOC emissions were calculated from this pressure tank using process data (operating temperature and pressure differential across the pressure relief valve) collected for this tank under normal operating conditions and using the process calculation software CONVAL®. The emissions from the tank will be routed to the flare (EPN E-B1550), as per normal operations for this tank. The total VOC emissions have been speciated based on the composition of the WFE bottoms material.

The flare is a steam-assisted flare with continuous natural gas pilots. Emissions from the flare are calculated in accordance with the *TCEQ New Source Review (NSR) Emission Calculations: Flares (APD-ID 6v1, revised 03/21)* and the *TCEQ Technical Supplement: Flares*.

VOC emissions are calculated using a 98% DRE per TCEQ guidance for the VOCs present in the tank vent.

CO and NO_x emissions from combustion are calculated based on the heating value from the tank vent to the flare and the applicable emission factors for high BTU steam-assisted flares.

The flare will operate as a smokeless flare. Additionally, there are no sulfur compounds associated with the WFE bottoms.

5.2 Emissions from B1780 CRU Furnace (EPN E-B1780)

The Alternate WFE Bottoms Processing Project will be a source of NO_x, CO, and VOC emissions from the B1780 CRU Furnace (EPN E-B1780). Emission factors for these pollutants are taken from the Permit No. 18327 permit basis which are supported by previous stack tests. The heating value of the bottoms material and the feedrate along with these emission factors are used to calculate hourly emissions. The annual emissions are based on the duration of the expected alternate operating scenario.

While there are particulate matter (PM), PM_{10}, and $PM_{2.5}$ emissions that occur in the B1780 CRU and which are authorized in Permit No. 18327, the emissions associated with these pollutants are not changing as part of this project. This authorization is only to address the potential of higher molecular weight VOCs in the CKO WFE bottoms. SO_2 emissions will not be different from the current operations as the only source sulfur is in the natural gas and no additional natural gas will be needed for this alternate operating scenario.

Texas Commission on Environmental Quality
Table 1(a) Emission Point Summary
Air Contaminant Data (Page 1)

Date:	**July 2024**
Permit No.:	**PBRs 30 TAC 106.261 and 106.262**
Regulated Entity No.:	**RN102523107**
Area Name:	**Catalyst Recovery unit**
Customer Reference No.:	**CN600344402**

Review of application and issuance of permits will be expedited by supplying all necessary information requested on the Table

EPN	FIN	Name	Component or Air Contaminant Name	Air Contaminant Emission Rate lb/hr	Air Contaminant Emission Rate TPY
E-B1550	F-1780	Continuous Flare	VOC NOx CO	0.10 <0.01 0.03	0.05 <0.01 0.02
E-B1780	B1780	Catalyst Recovery Unit Stack	VOC NOx CO	1.94 3.60 1.94	1.05 1.94 0.64

Appendix A - Supporting Emission Calculations

CONFIDENTIAL