

**Notice of Receipt of Applications and  
Intent to Obtain Air Permit  
Amendment and Renewal**

**Lyondell Chemical Company**

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**Air Quality Permit No. 9395**

**Air Permit Amendment and Renewal**

**Regulated Entity No. RN102523107**

**Customer No. CN600344402**

**Bayport Choate Plant (BLO)**

**Pasadena, Harris County**

**October 2020**

**lyondellbasell**  
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## 1. INITIAL APPLICATION SEPT 2020

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September 21, 2020

Air Permits Initial Review Team (APIRT)  
Office of Permitting, Remediation, and Registration  
Texas Commission on Environmental Quality  
P.O. Box 13087 – MC 161  
Austin, TX 78711-3087

ELECTRONIC SUBMISSION VIA STEERS

Re: New Source Review (NSR) Permit Renewal and Amendment Application  
NSR Permit Number: 9395  
Lyondell Chemical Company  
Bayport Choate Plant – PO/TBA & Derivatives Unit  
Customer Number CN600344402  
Regulated Entity Number RN102523107

Attn: APIRT

Lyondell Chemical Company is submitting the enclosed concurrent permit renewal and amendment application for the above-referenced facility to include emissions authorized under New Source Review (NSR) Permit Number 9395 and referenced Permits by Rule (PBRs).

With this permit renewal and amendment application, Lyondell is requesting:

- Updates to existing sources:
  - Cooling Tower U1801
  - Emergency Flares
  - Fugitives
  - Heaters
  - Catalyst Hopper
  - Atmospheric Loading Operations
  - Atmospheric Storage Tanks
  - Surface Coating and Abrasive Blasting Operations
- Addition of new EPNs to address:
  - Incorporation by consolidation of three loading spots previously authorized via unregistered Permits by Rule
- Deletion of sources from permit with new source now authorized by permit by rule:
  - Cooling Towers U1802 and U1803
  - Caustic tank F1503B
  - Gasoline tank F1419
  - Diesel tank F1412 (removed and not replaced).





Furthermore, previously identified authorized sources and changes occurred under the PBR requirements of 30 TAC 106 and these PBRs will be incorporated by consolidation or incorporated by reference in this permit renewal and amendment process as detailed in the application.

Included in this submittal are all required components, documents, and analyses regarding this permit renewal and amendment. This includes **CONFIDENTIAL** information which is segregated and clearly labeled in the appendix of the application package. Please handle this information accordingly. If you have any questions or need additional information, please contact Derek Rodricks at (281) 291-1684 or by email at derek.rodricks@lyb.com.

Sincerely,

Gerald Crawford  
Manager, Environmental – Bayport Complex

Attachments

cc:

Harris County Pollution Control  
Services  
Dr. Latrice Babin, Director  
101 S. Richey, Suite H  
Pasadena, TX 77506

Air Section Manager  
TCEQ Region 12  
5425 Polk Street, Suite H  
Houston, TX 77023-1452



NEW SOURCE REVIEW  
AIR QUALITY PERMIT 9395 RENEWAL  
AND AMENDMENT APPLICATION

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**Lyondell Chemical Company**

Bayport Choate Plant

PO/TBA & Derivatives Unit

10801 Choate Rd.  
Pasadena, Texas

RN102523107  
CN600344402

September 2020

Prepared by:  
BGE, Inc.




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COPY OF THE CHECK (Submitted separately to TCEQ Financial Administrative Division Revenue Operations Section)

ORIGINAL CHECK HAS MULTIPLE SECURITY FEATURES. PRINTED ON CHEMICAL REACTIVE TONER FUSE PAPER-SEE BACK FOR DETAILS

 **LYONDELL** 1221 McKinney Street  
Houston, TX 77010

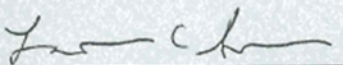
JPMorgan Chase Bank  
Syracuse, NY


50 - 937  
213

CHECK DATE 09/10/2020 CHECK NO. 525935 NET AMOUNT \$\*\*\*\*\*10,900.00  
VOID AFTER 180 DAYS

\$10,900 DOLLARS 00 CENTS

PAY TO THE ORDER OF:  
TX COMMISSION ON ENVIRONMENTAL  
QUALITY  
PO Box 13088  
Austin TX 78711-3088





⑈ 5 2 5 9 3 5 ⑈ ⑆ 0 2 1 3 0 9 3 7 9 ⑆ 9 6 4 2 5 6 7 6 2 ⑈

PLEASE DETACH BEFORE DEPOSITING

Lyondell Chemical Company  
VENDOR NO. 32007  
NAME: TX COMMISSION ON ENVIRONMENTAL

DATE: 09/10/2020  
Check No. 525935

Doc. No.	Invoice No.	Invoice Date	Gross Amount	Discount	Net Amount
9070013922	090320V32007	09/03/2020	10,900.00	0.00	10,900.00

XX JUANITA MILLER BLO

Total Amount: \$10,900.00  
No. of Invoices Paid: 001

## 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, which is part of the Bayport Complex.

The Bayport Choate Plant manufactures propylene oxide (PO), tertiary butyl alcohol (TBA), and associated derivatives, including tertiary butyl hydroperoxide (TBHP), acetone, propylene glycol ethers, propylene glycol, and isobutylene. The air emissions from the PO/TBA & Derivatives Units are authorized under TCEQ New Source Review (NSR) Permit No. 9395. The emissions from the TBHP unit are authorized under TCEQ NSR Permit No. 1409 and the new tertiary butyl ethers unit (which is not operational yet) is authorized under TCEQ NSR Permit No. 137789. Additionally, the plant operates a catalyst recovery unit (CRU) and a wastewater treatment plant with air emissions authorized under TCEQ NSR Permit Nos. 18327 and 20122, respectively. All operations at the Bayport Choate Plant are authorized by Title V Operating Permit No. O1421.

This document constitutes an application to the TCEQ for a concurrent permit renewal and amendment for NSR Permit No. 9395. In conjunction with this application package, the TCEQ's PI-1 General Application Workbook and the Electronic Modeling Evaluation Workbook (EMEW) have been submitted along with the associated fees paid via check.

With this permit renewal and amendment application, Lyondell is requesting the following:

- Updates to existing sources:
  - Cooling Tower U-1801: Revising the emissions calculations with more accurate circulation rate representations based on design data for the hourly emissions and using the existing (average) circulation rate for the annual emissions. Additionally, the information from the Riesman & Frisbie approach was used to more accurately speciate PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the cooling tower.
  - Emergency Flare Plant 1: Incorporating changes to the Emergency Flare Plant 1 emissions related to the recent Standard Permit Pollution Control Project (STEERS Application Reference No. 377765) associated with action of upgrading this flare to a steam-assist flare (during the BP1 Turnaround April 2021).
  - Emergency Flare Plants 1, 2, and 3: Updating the heat content from 1050 Btu/scf to 1020 Btu/scf to better reflect the heat content of the specific natural gas used as fuel for the flares.
  - Fugitives: Updating the fugitive counts based on the current information in the Plant's LeakDAS Leak Detection and Repair Database.
  - Hot Oil Heaters B801, B1751, and B2890: Changing the heat content from 950 Btu/scf to 1020 Btu/scf to more accurately reflect the heat content of the natural gas used as fuel for these heaters. Slight increases to the maximum and average firing

rates were also made for these heaters. These updates do not result in any increases in the permitted emission rate limits.

- Hopper No. F2351: Increasing the daily catalyst handling from 300 lb/day to 600 lb/day to better reflect the current operations.
- Atmospheric Loading: Increasing the hourly emission rates for several loading spots based on the potential day to day operations. The maximum hourly throughput and/or the maximum operating temperature were increased for several loading spots resulting in increases in the hourly emissions limit.

Loading Spot LR4C can load both tripropylene glycol (TPG) and dipropylene glycol (DPG), therefore, the molecular weight and vapor pressure data was changed to be for DPG to conservatively estimate emissions for the more volatile product for this loading spot.

Loading Spot T10 can load using both submerged-fill and top fill. Lyondell proposes to authorize a cap on the total throughput at the current rate of 11,560,000 gallons per year. The emissions associated with T10 have been calculated using the total throughput for both submerged-and top fill to allow operational flexibility for the plant. The emissions associated with top fill loading will continue to be authorized under a Permit by Rule (PBR) that is incorporated by reference into the permit. The submerged fill loading will be authorized by Permit No. 9395 and listed in the MAERT.

- Atmospheric Storage Tanks: Updating to reflect the AP-42 revisions published in November 2019. The annual emissions calculations were revised to reflect the *AP-42 Chapter 7 Liquid Storage Tanks* revisions that were published in November 2019 and further updated in June 2020. The hourly emissions calculations were revised to reflect the TCEQ guidance “*Estimating Short Term Emission Rates from Fixed Roof Tanks*”, APDG 6250v3 (February 2020). Below are additional updates to the tank calculations to better reflect current plant operations:
  - The maximum hourly fill rate, annual throughput, or the maximum operating temperature were increased for several storage tanks.
  - Three tanks have been identified as being insulated and therefore these emissions are now being calculated in accordance with the AP-42 guidance for insulated tanks.
  - An annual cap is being requested for the emissions from EPN E-F3342A and E-F3342B to allow for operational flexibility.
  - Tank F1418 has been moved to a new location on-site; therefore, the impacts from this tank in its new location has been included in the modeling/health effects review.

- Surface Coating/Abrasive Blasting: Increasing the annual blast media usage from 32 tpy to 40 tpy to allow for additional maintenance activities related to surface preparation and painting.
- The degreaser has been moved to a new location on-site; therefore, the impacts from this source in its new location have been included in the modeling/health effects review.
- Other Considerations: Clarifying the Particulate Matter (PM) representation. Emissions of PM<sub>2.5</sub> will be added to the MAERT upon issuance of the renewed permit. These PM<sub>2.5</sub> emissions were previously quantified and authorized as PM or PM<sub>10</sub> during the 2009-2011 renewal/amendment project but were not speciated in the MAERT that was issued following that project. During TCEQ’s review of the 2009-2011 project, the particulate matter emissions were speciated based on current guidance policy to demonstrate compliance with the standards at that time for PM, PM<sub>10</sub>, and PM<sub>2.5</sub>. As these PM<sub>2.5</sub> emissions underwent an impacts assessment as part of the technical review during 2009-2011 (see the excerpt from the TCEQ Technical Review associated with that project), Lyondell is requesting that these PM<sub>2.5</sub> emissions not be considered “new” emissions to the permit requiring additional assessment and review.

*Excerpt from TCEQ Source Analysis & Technical Review, Summary of Modeling Results, page 9, dated March 28, 2011:*

PM emissions were evaluated for increases by evaluating it all as PM<sub>2.5</sub>. The PM was noted to increase slightly from PBRs and calculation correction at the heaters, cumulatively 0.19 lb/hr and 0.21 tpy. Abrasive blasting calculation correction changed PM and PM<sub>10</sub> estimates slightly PM going up hourly by 0.23 lbs/hr, but going down annually and PM<sub>10</sub> going down hourly, but up 0.08 tpy annually; so the PM<sub>2.5</sub> would be expect to have an improved impact and was not included in the evaluation. New diesel engines and increase in operation of existing engines authorized by reference under PBR constitute a moderate increase of PM<sub>10</sub> of 0.39 lb/hr and 2.26 tpy, evaluated as a PM<sub>2.5</sub> increase. The more significant change is the inclusion of PM from the three existing cooling towers with a cumulative 2.33 lb/hr and 10.22 tpy PM addition, conservatively assuming half that rate for PM<sub>2.5</sub>. The new source/increase of PM from the PBR authorized engine increases screen modeled at 1.6 µg/m<sup>3</sup> on a 24 hour average basis. Using TCEQs design value recommendation for the Clinton Dr. site, background would be 29 µg/m<sup>3</sup> for 24 hour average, and worst case for the new sources added to that (the PBR diesel engines) would still have an acceptable NAAQS impact at less than 90% of the 35 µg/m<sup>3</sup> for 24 hour average PM<sub>2.5</sub> NAAQS. The 29 µg/m<sup>3</sup> for 24 hour average appears reasonable given the maximum daily average measured in the last three years at the closer CAM 45 site was 28 in 2008. Summing all the worst case modeled numbers from all source increases on the MAERT, including the cooling towers, equaled 23.3 µg/m<sup>3</sup> for a 24 hour average, and clearly, most of this would already be in the background monitored numbers. Given the intermittent frequency of the diesel engine operation at the site and the conservativeness of the estimates I felt the most stringent 24 hr PM<sub>2.5</sub> NAAQS was not in jeopardy from this site. The less stringent longer term and larger PM standards are thus also not in jeopardy.

- Incorporation by consolidation of sources previously authorized by unregistered PBR:
  - Two loading spots (T13, T14), historically (2015-2017) authorized by unregistered Permit by Rule 30 TAC 106.473, are being consolidated into the permit.
  - One loading spot (LR4D) which was in service and operational in 2020, authorized by unregistered Permit by Rule 30 TAC 106.472, is being consolidated into the permit.
- Deletion of sources:

- The EPN E-F1503B is being removed from the permit as the Tank F1503B has been replaced with caustic totes which are authorized by unregistered PBR 30 TAC 106.472.
- The EPN E-F1419 is being removed from the permit as the gasoline Tank F1419 has been moved and the new tank, which was in service and operational as of September 1, 2017, is authorized by unregistered PBR 30 TAC 106.412.
- The EPNs E-U1802 and E-U1803 are being removed from the permit as these cooling towers were replaced as they had reached their end of life and the new cooling towers, which were in service and operational as of 2012 for U-1803 and July 3, 2019 for U-1802, are authorized by unregistered PBR 30 TAC 106.371.
- The EPN E-F1412 is being removed from the permit as the Tank F1412 has been removed from the site.

Addition of PBRs Incorporated by Reference to MAERT: Several sources that have historically been authorized by PBRs that are Incorporated by Reference into Permit No. 9395 have been listed in the MAERT (EPNs E-AB1, E-AB2, E-CD4A, E-T10, and E-Engines). With this renewal, Lyondell requests to list the additional sources authorized by PBR that are being Incorporated by Reference (EPNs E-F1806, E-F1808, E-F1817, E-U1802, U-1803, E-F1419, E-E5, and MSS).

Furthermore, the PO/TBA & Derivatives Unit previously identified authorized sources and changes under the Permits by Rule (PBR) requirements of 30 TAC 106 as shown below<sup>1</sup>. These PBRs will be:

- incorporated by consolidation (and the applicable PBR will be voided),
- incorporated by reference into Permit No. 9395, or
- left as stand-alone sitewide PBRs as part of this permit renewal and amendment process.

### PERMITS BY RULE FOR PERMIT NO. 9395

Registration No.	PBR	Date Complete	Comments
<b>PBRs to be voided</b>			
SE 16448	Propylene Carbonate Pilot Unit	3/22/1985	The propylene carbonate unit is no longer functional.
28989	106.533: Affected Soil Treatment Vault	5/18/2000	This PBR was previously incorporated into the permit as EPN E-V3000; therefore, this PBR can be voided.
28989	106.262: Affected Soil Treatment Vault	1/29/2002	

<sup>1</sup> This list of active, registered PBRs (i.e., Permit Status is “Effective” and Project Status is “Complete”) was taken from TCEQ’s website: <https://www2.tceq.texas.gov/airperm/index.cfm?fuseaction=airpermits.start>



Registration No.	PBR	Date Complete	Comments
41261	106.533: Chlorinated Hydrocarbon Remediation Unit	6/3/1999	All of the chlorinated treatment units were taken out of service in the 2010 – 2011 timeframe; therefore, these PBRs can be voided.
41261	106.533: Chlorinated Hydrocarbon Remediation Unit	11/30/1999	
41261	106.533: Chlorinated Hydrocarbon Remediation Unit	6/1/2000	
41261	106.262: Chlorinated Hydrocarbon Remediation Unit	2/26/2002	
46855	106.533: Chlorinated Hydrocarbon Remediation Unit	3/6/2001-5	
<b>Previously incorporated by consolidation - PBR Registration needs to be voided</b>			
76118	106.261, 106.262: Authorizes HRVOC Analyzers	6/27/2005	See May 18, 2009 TCEQ Technical Review. EPN E- ANALYZER is already included in Permit No. 9395 MAERT.
78545	106.261: Annual Notification FY2005	4/27/2006	See May 18, 2009 TCEQ Technical Review. EPN E-1104C and N2 Sparge is already included in Permit No. 9395 MAERT.
78732	106.261, 106.262: Installation of Three Closed Loop Sampling Systems	5/12/2006	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG now includes these sampling system component counts.
80202	106.261, 106.262, 106.478: WFE Distillate Fuel Storage	11/17/2006	See May 18, 2009 TCEQ Technical Review. EPNs E-B1550 and E-BLOFUG are included in Permit No. 9395 MAERT.
81484	106.261: Increase in Fugitive Emissions	5/3/2007	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
82745	106.261, 106.262, 106.472: BP 1 D-602 Capacity Increase	9/14/2007	See March 28, 2011 Renewal Technical Review. PO Purification system upgrade and enhanced throughput was previously rolled in.
82942	106.261, 106.262: BP 1 Turnaround Projects	10/5/2007	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
84316	106.261, 106.262: Increase in Fugitive Emissions	4/7/2008	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.

Registration No.	PBR	Date Complete	Comments
84425	106.261: Annual Notification FY2007	4/28/2008	See March 28, 2011 Renewal Technical Review. FY2007 projects were previously rolled-in.
85865	106.261,106.262: BLO BP-2 PO Reprocessing Project	9/22/2008	See March 28, 2011 Renewal Technical Review. PO Reprocessing project was previously rolled-in.
86266	106.261, 106.262: Increase in Fugitive Emissions	10/8/2008	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
86267	106.261, 106.262: Increase in Fugitive Emissions	10/10/2008	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
87005	106.261, 106.262: LCC Bayport Choate Plant - Sampling Point	1/16/2009	See March 28, 2011 Renewal Technical Review. The sampling point project was previously rolled-in.
87354	106.262: Propylene Oxide Pump Instrumentation Additions	2/26/2009	See March 28, 2011 Renewal Technical Review. PO pump instrumentation project was previously rolled-in.
87692	106.262: Increase in Fugitive Emissions	3/24/2009	See May 18, 2009 TCEQ Technical Review. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
87833	106.261: Annual Notification FY2008	4/24/2009	See March 28, 2011 Renewal Technical Review. FY2008 projects were previously rolled-in. <b>This PBR cannot be voided at this time as it also affects Permit No. 18327 and has not been incorporated into that permit.</b>
87950	106.262: Propylene Oxide Level Instrumentation Additions Part 2	4/20/2009	See March 28, 2011 Renewal Technical Review. PO instrumentation project was previously rolled-in.
90872	106.261, 106.262: Instrumentation Modifications 3Q09	10/6/2009	See March 28, 2011 Renewal Technical Review. Instrumentation project was previously rolled-in.
91272	106.261, 106.262: Increase TBA Production Due to Various Piping & Equipment Modifications	11/23/2009	See March 28, 2011 Renewal Technical Review. Production increases and modifications were previously rolled-in.

Registration No.	PBR	Date Complete	Comments
91396	106.261, 106.262: Pump Seal Upgrades	12/16/2009	See March 28, 2011 Renewal Technical Review. The upgrades project was previously rolled in.
92260	106.261: Annual Notification FY2009	5/13/2010	See March 28, 2011 Renewal Technical Review. FY2009 projects were previously rolled in to Permit Nos. 1409, 9395, and 18327.
92281	106.261,106.262: G3610 A/B Pump Seal Upgrades	5/20/2010	See March 28, 2011 Renewal Technical Review. The upgrades project was previously rolled in.
92417	106.261,106.262: Piping Modifications Upgrade Seals	6/10/2010	See March 28, 2011 Renewal Technical Review. The upgrades project was previously rolled in.
93908	106.261, 106.262: Increase in Fugitive Emissions	12/8/2010	EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
94031	106.262: Increase in Fugitive Emissions	12/28/2010	EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
94056	106.261,106.262: PO Production Increase; actuals only	12/27/2010	This PBR authorized an increase in “actual emissions” only with no increases to the permit allowables.
<b>Request to Incorporate by Reference as part of this Renewal/Amendment</b>			
87890	106.263: MSS Emissions Non-Permitted Maintenance, Start-Up & Shutdown Activities	5/8/2009	Sitewide MSS activities affect other site permits as well.
78478	106.512: Diesel Engines	5/5/2006 and 5/29/2008	Emergency and Backup Engines
147097	106.512: Replace 4 Diesel Fired Air Compressors	7/21/2017	Emergency and Backup Engines
N/A	106.472: F1806, F1808, and F1817 Bleach Tanks	N/A	Bleach Tanks for cooling towers
N/A	106.472: Caustic Totes	N/A	Caustic for plant operations
N/A	106.412: F1419 Gasoline Tank	9/1/2017	Gasoline Tank for fueling vehicles and equipment

Registration No.	PBR	Date Complete	Comments
N/A	106.371: BPII U1802 Cooling Tower	7/3/2019	Replaced previously permitted Cooling Tower U1802 which had reached its useful life
N/A	106.371: BPIII U1803 Cooling Tower	2010-2012	Replaced previously permitted Cooling Tower U1803 which had reached its useful life
N/A	106.472: Loading Spots AB1, AB2, CD4A	pre-2010	Historical loading spots
N/A	106.472: Loading SpotE5	2015-2017	Loading spot
<b>Currently Incorporated by Reference in Permit No. 9395 - Request to Incorporate by Consolidation as part of this Renewal and void PBR</b>			
95547	106.261: E-BLOFUG fugitives	5/26/2011	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
97144	106.261, 106.262: E-BLOFUG fugitives	8/12/2011	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
99129	106.261,106.262,106.373: Isobutylene Production Increase and Loading Modifications	11/15/2011	Currently listed in Special Condition 29 of Permit No. 9395. This PBR authorized an increase in “actual emissions” only with no increases to the permit allowables.
100132	106.261, 106.262: E-BLOFUG fugitives	1/24/2012	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
106447	106.261,106.262: E-BLOFUG fugitives	2/19/2013	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
108955	106.261, 106.262: E-BLOFUG fugitives	5/7/2013	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project

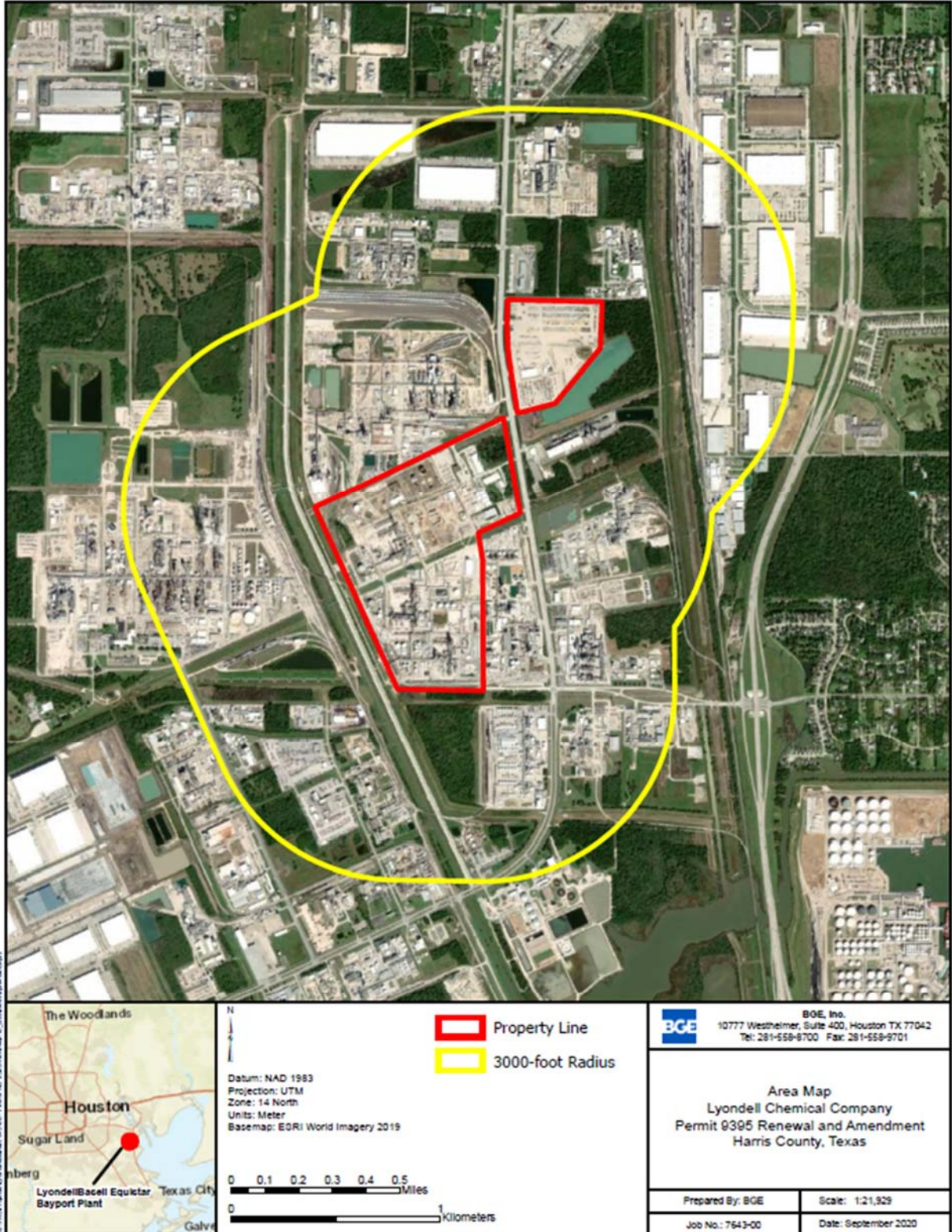
Registration No.	PBR	Date Complete	Comments
117871	106.261, 106.262, 106.476: Annual Notification FY2013	5/19/2014	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
120932	106.261, 106.262: E-BLOFUG fugitives	7/11/2014	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
123460	106.261, 106.262: E-BLOFUG fugitives	10/10/2014	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
126101	106.261, 106.262: E-BLOFUG fugitives	1/9/2015	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
131540	106.261, 106.262: E-BLOFUG fugitives	6/26/2015	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
144085	106.261, 106.262: E-BLOFUG fugitives	12/21/2016	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
152730	106.261, 106.262: E-BLOFUG fugitives	8/31/2018	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
154260	106.261, 106.262: E-BLOFUG fugitives	1/17/2019	Currently listed in Special Condition 29 of Permit No. 9395. EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project
<b>Request to Incorporate by Consolidation as part of this Renewal and void PBR</b>			
101751	106.261: Increase in Fugitive Emissions FY2011	05/04/2012	EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project. FY2011 projects were previously rolled in to Permit Nos. 1409 and 9395.

Registration No.	PBR	Date Complete	Comments
102753	106.261,106.262,106.476: Authorize Tank F-1730 and fugitive components	8/9/2012	Request to Incorporate by Consolidation. This PBR authorized an increase in “actual emissions” only with no increases to the permit allowables.
160779	106.261: Annual Notification FY2019	4/16/2020	EPN E-BLOFUG current component counts have been verified as part of this 2020 renewal project.
<b>De Minimis Source</b>			
N/A	De Minimis list	N/A	Caustic soap solution in 35 gallon containers

This application includes all required components, documents, and analyses for this permit renewal and amendment.

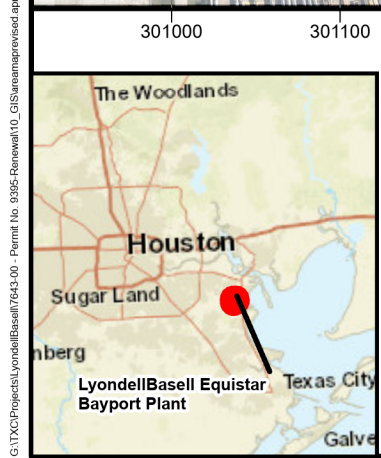
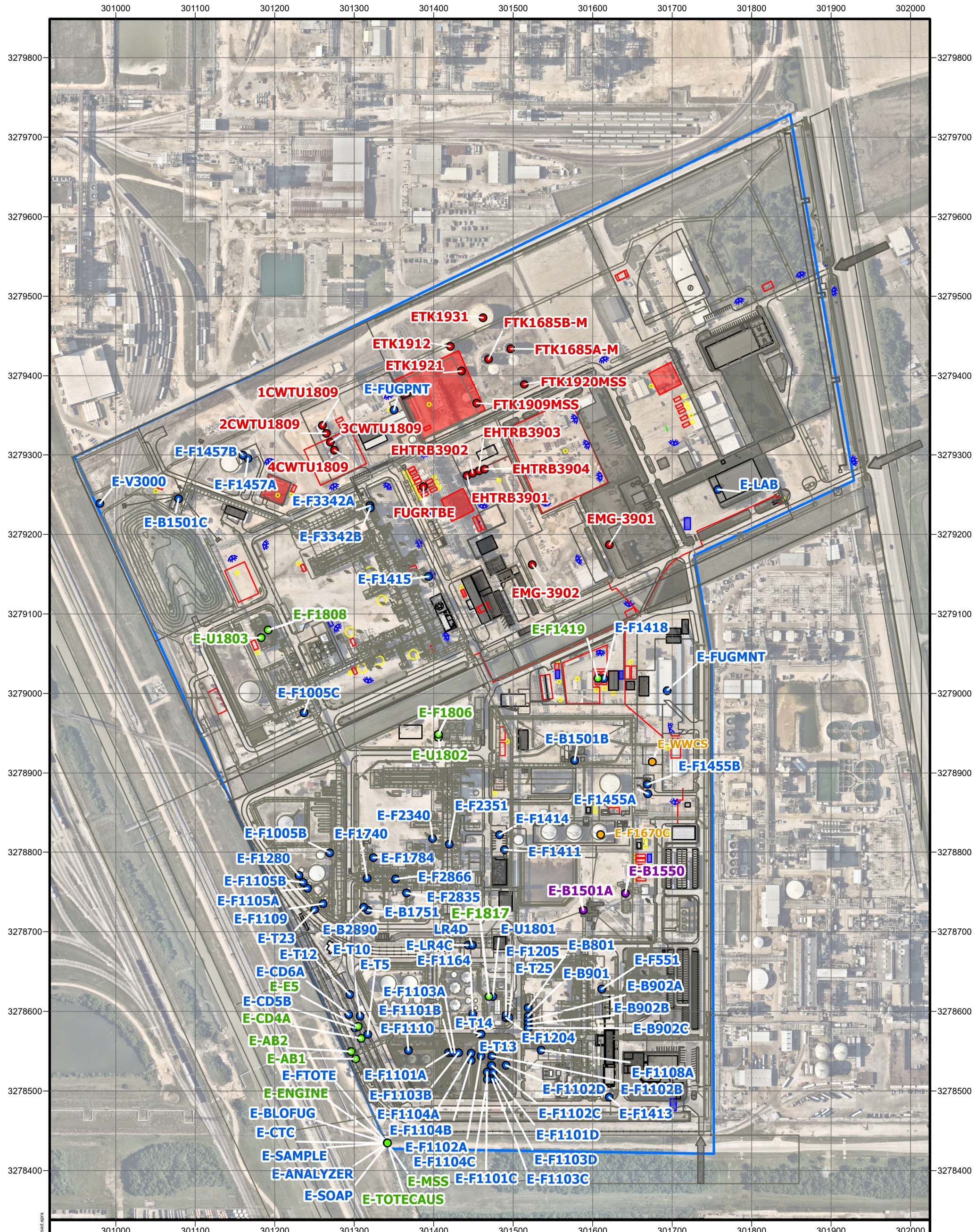


## Section 2 Area Map

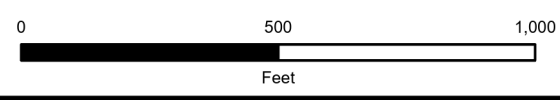


## Section 3 Plot Plan





Datum: NAD 1983  
 Projection: UTM  
 Zone: 15 North  
 Units: Meter  
 Basemap: Nearmap



- Legend
- Property Line
  - Permit by Rule EPNs
  - Permit No. 137789 EPNs
  - Permit No. 20122 EPNs
  - Permit No. 9395 EPNs
  - Permit Nos. 9395 and 137789 EPNs

**BGE, Inc.**  
 10777 Westheimer, Suite 400, Houston TX 77042  
 Tel: 281-558-8700 Fax: 281-558-9701

**Plot Plan**  
 Lyondell Chemical Company  
 Permit 9395 Renewal and Amendment  
 Harris County, Texas

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Prepared By: BGE

Scale: 1:4,484

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Job No.: 7643-00

Date: September 2020

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## Section 4 Process Description

The Bayport Choate Plant is a multipurpose plant producing propylene oxide (PO), tertiary butyl alcohol (TBA), propylene glycol, propylene glycol ethers and tertiary butyl hydroperoxide (TBHP).

This facility is separated into three "plants" (referred to as Plant 1, Plant 2, and Plant 3) and the Tank Farm. The operating units (Plants 1, 2, and 3) are further subdivided into the process "units" listed below:

- Crude Propylene Oxide (PO) / Tertiary Butyl Alcohol (TBA) production (all three plants), which includes Oxidation, Butane Distillation, Epoxidation, Propylene Distillation, and Crude Products Separation
- PO Purification (all three plants)
- TBA Refining (all three plants) and Crude Acetone Production (Plant 1)
- Catalyst Recycle (Plant 2)
- Catalyst Recovery Unit (Plant 3, permitted under TCEQ Permit No. 18327)
- Propylene Glycol Ethers (Plant 1)
- Propylene Glycols (Plant 2)
- Isobutylene Production (Plant 1)
- TBHP Production (Plant 1, permitted under TCEQ Permit No. 1409)
- Wastewater (all three plants with tankage and transfer operations from Plant 2; permitted under TCEQ Permit No. 20122)
- Utilities, which includes fuel gas recovery, liquid fuels, continuous flare, emergency flares, and cooling towers.

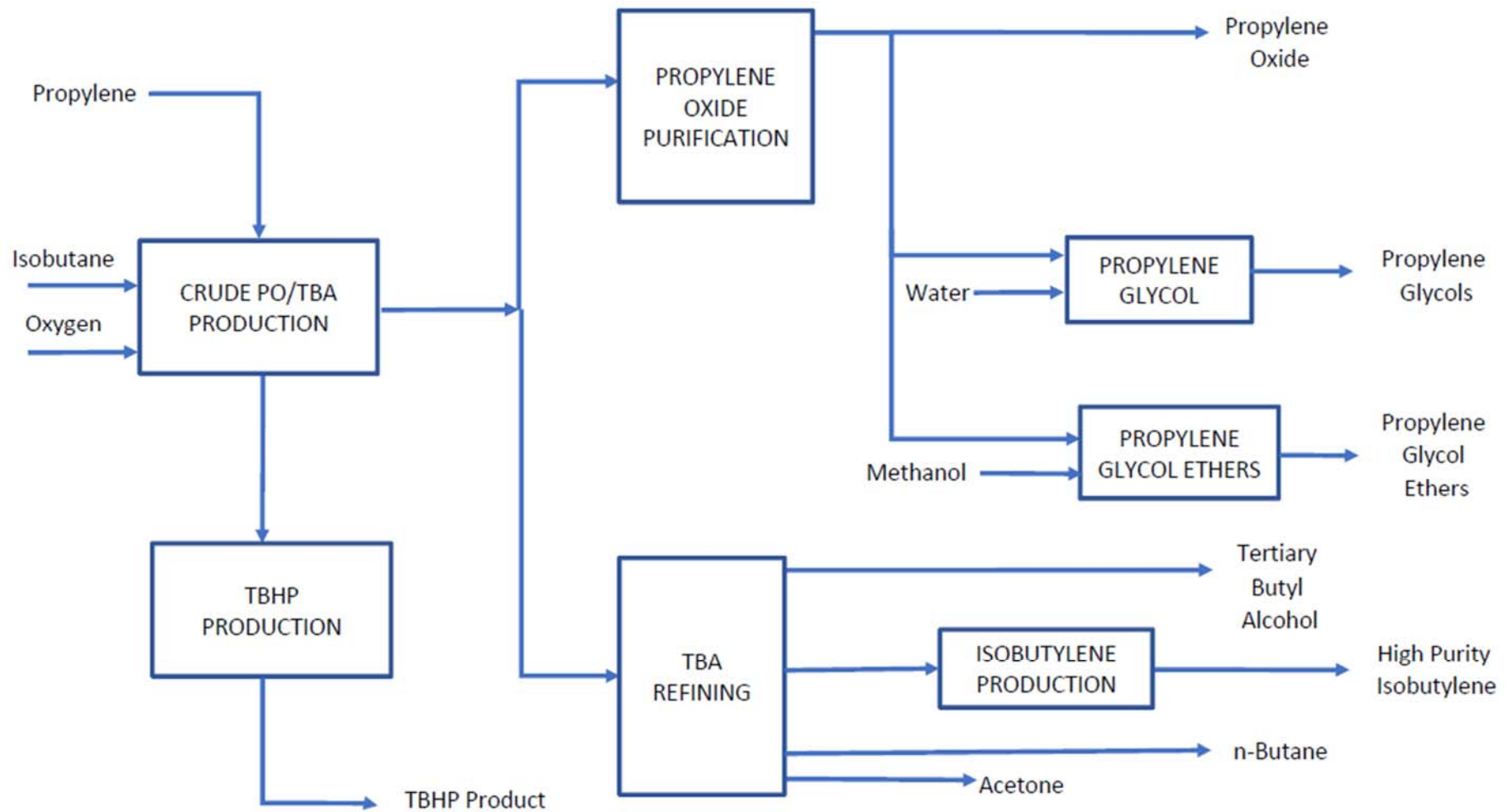
In general, the raw materials of isobutane, oxygen, propylene, and catalyst are fed to the crude PO/TBA production unit where crude propylene oxide (PO) and crude tertiary butyl alcohol (TBA) are produced. Subsequent processes refine the PO and TBA and produce other products and co-products. A small stream containing tertiary butyl hydroperoxide (TBHP), which is produced as an intermediate in the PO/TBA process, is routed to the TBHP production units. The TBHP production units are permitted under TCEQ Permit No. 1409 and the new tertiary butyl ethers unit (which is not operational yet) is authorized under TCEQ NSR Permit No. 137789.

A heavies stream containing the catalyst used in the PO/TBA process is routed to the catalyst recycle unit where wiped film evaporators (WFE) separate the heavies from a lights stream. The light stream is recovered as a coproduct and used as a fuel at other facilities. The heavies containing the catalyst are either returned to the process or sent to the Catalyst Recovery Unit (CRU). The CRU is permitted under TCEQ Permit No. 18327.

Crude PO is transferred to the PO Purification Units, where the PO is purified for sale or for use in the PO derivative units (propylene glycol or propylene glycol ethers). A portion of the crude TBA stream leaves the plant in a product stream. The remaining crude TBA is processed in the TBA Refining Units. The TBA from these refining units is used to produce isobutylene or leaves the plant as a product. The TBA refining unit also produces a crude acetone stream. The acetone stream is transferred to another facility for further processing.

Additional information on the production processes of the Bayport Choate Plant is provided in Appendix A which is found in the Confidential Section of this application.

## Section 5 Process Flow Diagram



## Section 6 Emission Calculations

This section presents a discussion of the basis for the air emission calculations associated with this concurrent renewal and amendment to NSR Permit No. 9395. The supporting emission calculations are provided in Appendix B which is found in the Confidential Section of this application. The summary of emissions [former Table 1(a)] has been submitted using the electronic PI-1 General Application Workbook. Below is a general synopsis of the calculation methodology for each source/unit type.

### 6.1 HEATERS

All heaters in Permit No. 9395 use either natural gas and/or fuel gas as fuel. NO<sub>x</sub> and CO emissions from the heaters are calculated using emission factors for a small boiler (<100 MMBtu/hr) from AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-1 (July 1998), the maximum (hourly emissions) and average (annual emissions) firing rates for each heater, and assumes 8,760 hours/year of operation. VOC, PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions are calculated similarly using emission factors from AP-42 Table 1.4-2. Annual emissions of SO<sub>2</sub> are calculated similarly using an emission factor from AP-42 Table 1.4-2, while the SO<sub>2</sub> hourly emissions are calculated using an emission factor based on TCEQ allowance of 5 grains of total sulfur per 100 dry standard cubic feet.

### 6.2 FLARES

Lyondell operates a continuous flare EPN E-B1550 and emergency flares EPNs E-B1501A, E-B1501B, and E-B1501C at the Bayport Choate Plant. The emission calculation basis for these sources is provided in the following sections.

#### 6.2.1 Continuous Flare

Continuous Flare (EPN E-B1550) emission calculations are based on mass composition and flowrate data. Per prior TCEQ approval, destruction efficiency of the continuous flare is at least 99% for propylene oxide, 98% for acetone, and 99.5% for all other VOCs. Emission factors for NO<sub>x</sub> and CO are as provided in the *TCEQ Technical Guidance Document, Flares and Vapor Oxidizers* (October 2000) for a steam-assist flare. SO<sub>2</sub> emissions are calculated by assuming that 100% of the sulfur in the fuel is converted to SO<sub>2</sub>. Annual emissions of SO<sub>2</sub> are calculated similarly using an emission factor from AP-42 Table 1.4-2, while the SO<sub>2</sub> hourly emissions are calculated using an emission factor based on TCEQ allowance of 5 grains of total sulfur per 100 dry standard cubic feet.

#### 6.2.2 Emergency Flares

The Emergency Flares typically operate with only the pilot emissions for the entire year, unless they are required to operate as a backup for the Continuous Flare (up to 240 hours/year). Emergency Flares-Pilot (EPNs E-B1501A, E-B1501B, E-B1501C) emission calculations are based on emission factors provided in *TCEQ Technical Supplement Flares* (January 2020). Steam-assist/low Btu emission factors for NO<sub>x</sub> and CO are used for estimating pilot emissions for EPN E-B1501A.

Unassist/high Btu emission factors for NO<sub>x</sub> and CO are used for estimating pilot emissions for EPNs E-B1501B and E-B1501C.

For Emergency Flares-Process (EPN E-B1501A), per TCEQ guidance, VOC emission rates are based on a destruction of 99% for compounds containing no more than 3 carbons and a destruction and removal efficiency (DRE) of 98% for other compounds reflective of the increased DRE due to the upgrade to a steam-assist flare. NO<sub>x</sub> and CO emission factors for steam-assist/low Btu have been used to estimate emissions when the emergency flare is used as back-up to the continuous flare and destructing process/waste gas.

For Emergency Flares-Process (EPNs E-B1501B, E-B1501C) VOC emission rates are based on a destruction of 98% for all compounds as these backup flares have not been modified. NO<sub>x</sub> and CO emission factors for unassist/low Btu have been used to estimate emissions when the emergency flare is used as back-up to the continuous flare and destructing process/waste gas.

SO<sub>2</sub> emissions for EPNs E-B1501A, E-B1501B, and E-B1501C, are calculated by assuming that 100% of the sulfur in the fuel is converted to SO<sub>2</sub>. Annual emissions of SO<sub>2</sub> are calculated similarly using an emission factor from *AP-42 Chapter 1.4 Natural Gas Combustion* (July 1998), while the SO<sub>2</sub> hourly emissions are calculated using an emission factor based on the TCEQ allowance of 5 grains of total sulfur per 100 dry standard cubic feet.

### **6.3 STORAGE TANKS**

*AP-42 Chapter 7 Liquid Storage Tanks* is used to estimate the annual emissions from working and breathing losses from liquid storage tanks (dated June 2020). Short-term maximum emissions are calculated using guidance from the TCEQ document “*Estimating Short Term Emission Rates from Fixed Roof Tanks*” APDG 6250v3 (February 2020).

Several tanks receive materials at an elevated temperature and, while not insulated, due to the rate at which the tank receives material there is not an opportunity for the material to cool to ambient. Therefore, Lyondell is using the maximum and average temperatures (based on tank-specific temperature monitoring data) to represent the emissions more accurately from these tanks.

### **6.4 CATALYST HOPPER AND STORAGE TANKS**

PM emission calculations from the catalyst hopper, EPN E-F2351, and catalyst storage tanks, EPNs E-F3342A/B, are based on Equation 1 found in *AP-42 Chapter 13.2.4 Aggregate Handling and Storage Piles* (November 2006).

### **6.5 ATMOSPHERIC LOADING**

Emissions from tank truck and railcar loading loss are based on Equation 1 found in *AP-42 Chapter 5 Petroleum Industry* (June 2008).

### **6.6 SOLVENT DEGREASING**

Solvent degreasing emission calculations are based on emission factors referenced in the *TCEQ Technical Guidance Package for Coating Sources: Solvent Degreasing* (May 2001).

## **6.7 SURFACE COATING**

Surface coating emission calculations are based on emission factors referenced in the *TCEQ Technical Guidance Package for Coating Sources: Surface Coating Operations* (April 2008).

## **6.8 ABRASIVE BLASTING**

Abrasive blasting emission calculations are based on emission factors referenced in the *TCEQ Technical Guidance Package for Coating Sources: Dry Abrasive Blast Cleaning* (May 2001).

## **6.9 SAMPLING AND ANALYSIS VENTS**

### ***6.9.1 Analyzer Vents***

VOC emissions are estimated using flow data, sample volumes, and engineering calculation methodologies.

### ***6.9.2 Sampling Vents***

VOC emissions from propylene metering stations are estimated using Bernoulli's equation and the Ideal Gas Law.

### ***6.9.3 Laboratory Vents***

Emissions from the laboratory vents are based on stack test data for one of the existing laboratory hood exhaust vents.

## **6.10 FUGITIVES**

Representations made for the Permit No. 9395 fugitive emissions are based on the component counts and speciation data identified in the unit's LeakDAS database (as of June 2020). Fugitive emissions are calculated using the methodology described in the *TCEQ Air Permit Technical Guidance for Chemical Sources – Fugitive Guidance*, APDG 6422 (June 2018). Fugitive emission factors for synthetic organic chemical manufacturing industry (SOCMI) without ethylene were selected. Control efficiencies have been applied based on the LDAR monitoring program employed for each component count, based on regulatory applicability. 28VHP is the minimum program in place for monitored components. Non-monitored components will follow the 28PI LDAR program.

## **6.11 COOLING TOWERS**

The cooling towers service hydrocarbon-containing process fluids. These cooling towers are monitored according to the requirements of 30 TAC 115, Subchapter H (HRVOC). VOC emissions are estimated using the calculation methodology as stated in the *TCEQ Sampling Procedures Manual: Appendix P Cooling Tower Monitoring*.

PM emissions are estimated based on the established correlation factor between total dissolved solids (TDS) and conductivity while using the calculation methodology as stated in *AP-42 Chapter 13.4 Wet Cooling Towers* and "*Calculating Realistic PM10 Emissions from Cooling Towers*" by Joel Reisman and Gordon Frisbie (2002) is used to speciate the PM<sub>10</sub> and PM<sub>2.5</sub> emissions.

## **6.12 SOIL STORAGE VAULT**

VOC emissions from the soil storage vault are calculated using the chemical concentration in the soil, the maximum amount of soil handled on an hourly and annual basis and an estimate of the volatilization rate of the chemical from the soil.



## Section 7 Federal New Source Review Applicability Analysis

The Bayport Choate Plant is located in Harris County, which has been designated as a serious nonattainment area for the 2008 eight-hour ozone standard and is in attainment with the National Ambient Air Quality Standards (NAAQS) for all other pollutants. Therefore, this project was evaluated for Prevention of Significant Deterioration (PSD) applicability as well as Nonattainment New Source Review (NNSR) for ozone.

Lyondell evaluated the total emission increases included as part of the permit amendment portion of this concurrent renewal and amendment application. The sources included in this evaluation include:

- PO/TBA & Derivative Fugitives, EPN E-BLOFUG, that is considered modified due to an increase in annual emissions due to revised component counts;
- Emergency Flare Plant 1 Pilot + Process, EPN E-B1501A, that is considered modified due to changing from non-assist to steam-assist which resulted in an increase in collateral annual emissions;
- Storage Tank F1108A, EPN E-F1108A, that is considered modified due to a change in representations that results in increased VOC annual emissions;
- Loading Spot No. LR4C, EPN E-LR4C, that is considered modified due to an increase in annual loading throughput that results in increased annual emissions;
- Surface Coating/Abrasive Blasting, EPN E-FUGPNT, that is considered modified due to an increase in abrasive grit used per year; and
- Hopper No. F2351, EPN E-F2351, that is considered modified due to an increase in the material handled.

Baseline actuals data were obtained from the Annual Emissions Inventory (AEI) for the site as follows:

- VOC baseline data from 2011-2012, except the full (existing) potential-to-emit (PTE) is used for EPN E-BLOFUG;
- NO<sub>x</sub> baseline data are from 2018-2019;
- The full (existing) PTE is used for EPN E-BLOFUG for CO; and
- PM, PM<sub>10</sub>, and PM<sub>2.5</sub> baseline data are from 2013-2014.

The project increase was determined as the difference between the proposed allowable for the modified sources and the baseline actuals data. There are no new, previously unauthorized sources included in this application.

The details of this project increase analysis are included in the following Table 1F and 2Fs and the summary of the analysis is presented in the Federal Applicability worksheet of the associated and submitted PI-1 General Application Workbook. As the project emissions increases are less than the NNSR and PSD significance thresholds, federal NSR review does not apply.



**TABLE 1F  
AIR QUALITY APPLICATION SUPPLEMENT**

<b>Permit No.:</b>	9395	<b>Application Submittal Date:</b>	September 2020					
<b>Company:</b>	Lyondell Chemical Company							
<b>RN:</b>	RN102523107	<b>Facility Location:</b>	10801 Choate Road					
<b>City:</b>	Pasadena	<b>County:</b>	Harris					
<b>Permit Unit I.D.:</b>		<b>Permit Name:</b>	Bayport Choate Plant PO/TBA & Derivatives Unit					
<b>Permit Activity:</b> New Source X Modification								
<b>Complete for all Pollutants with a Project Emission Increase.</b>	<b>POLLUTANTS</b>							
	<b>Ozone</b>							
	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>NO<sub>x</sub></b>	<b>SO<sub>2</sub></b>	<b>Other<sup>1</sup></b>
Nonattainment?	Yes	Yes						
PSD?			No	No	No	No	No	No
Existing site PTE (tpy)?	>100	>100	>100	<100	<100	>100	>100	<1
Proposed project emission increases (tpy from 2F <sup>2</sup> )?	2.09	0.91	0.23	0.01	0.0015	0.91	0	0
Is the existing site a major source?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If not, is the project a major source by itself?	No	No	No	No	No	No	No	No
If site is major source, is project increase significant?	No	No	No	No	No	No	No	No
If netting required, estimated start of construction:	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5 years prior to start of construction:	N/A					contemporaneous		
Estimated start of operation:	N/A					period		
Net contemporaneous change, including proposed project, from Table 3F. (tpy)	0	0	0	0	0	0	0	0
Major NSR Applicable?	No	No	No	No	No	No	No	No
<p align="center">_____</p> <p align="center"><i>Signature</i>    <i>Title</i>    <i>Date</i></p>								

<sup>1</sup> Other pollutants. [Pb, H<sub>2</sub>S, TRS, H<sub>2</sub>SO<sub>4</sub>, Fluoride excluding HF. etc.]

<sup>2</sup> Sum of proposed emissions minus baseline emissions, increases only.

The representations made above and on the accompanying tables are true and correct to the best of my knowledge.



**TABLE 2F  
PROJECT EMISSION INCREASE**

<b>Pollutant<sup>1</sup>:</b>	VOC	<b>Permit:</b>	9395
<b>Baseline Period:</b>	January 2011	to	December 2012

Affected or Modified Facilities <sup>2</sup>			Permit No.	Actual Emissions <sup>3</sup>	A	B	Difference (B-A) <sup>6</sup>	Correction <sup>7</sup>	Project Increase <sup>8</sup>
					Baseline Emissions <sup>4</sup>	Projected Actual Emissions			
	FIN	EPN							
1.	BLOFUG	E-BLOFUG	9395	194.54	194.54	196.46	1.92		1.92
2.	F1108A	E-F1108A	9395	0.0083	0.0083	0.17	0.16		0.16
3.	LR4C	E-LR4C	9395	0.0009	0.0009	0.01	0.01		0.01
4.					0		0.00		0.00
5.					0		0.00		0.00
6.							0.00		0.00
<b>Page Subtotal<sup>9</sup></b>								0	2.09
<b>Table Total</b>								0	2.09

<sup>1</sup> Individual Table 2F's should be used to summarize the project emission increase for each criteria pollutant.

<sup>2</sup> Emission Point Number as designated in NSR Permit or Emissions Inventory.

<sup>3</sup> All records and calculations for these values must be available upon request.

<sup>4</sup> Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement.

<sup>5</sup> If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement.

<sup>6</sup> Proposed Emissions (column B) minus Baseline Emissions (column A).

<sup>7</sup> Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement.

<sup>8</sup> Obtained by subtracting the correction from the difference. Must be a positive number.



**TABLE 2F  
PROJECT EMISSION INCREASE**

<b>Pollutant<sup>1</sup>:</b>	NOx	<b>Permit:</b>	9395
<b>Baseline Period:</b>	January 2018	to	December 2019

Affected or Modified Facilities <sup>2</sup>			Permit No.	Actual Emissions <sup>3</sup>	Baseline Emissions <sup>4</sup>	A		B	
						Projected Actual Emissions	Difference (B-A) <sup>6</sup>	Correction <sup>7</sup>	Project Increase <sup>8</sup>
	FIN	EPN							
1.	B1501A	E-B1501A	9395	0.16	0.16	1.07	0.91		0.91
2.							0		0
3.							0		0
4.							0		0
5.							0		0
6.							0		0
7.							0		0
8.							0		0
<b>Page Subtotal<sup>9</sup></b>								0	0.91
<b>Table Total</b>								0	0.91

<sup>1</sup> Individual Table 2F's should be used to summarize the project emission increase for each criteria pollutant

<sup>2</sup> Emission Point Number as designated in NSR Permit or Emissions Inventory

<sup>3</sup> All records and calculations for these values must be available upon request

<sup>4</sup> Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

<sup>5</sup> If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

<sup>6</sup> Proposed Emissions (column B) minus Baseline Emissions (column A)

<sup>7</sup> Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

<sup>8</sup> Obtained by subtracting the correction from the difference. Must be a positive number



**TABLE 2F  
PROJECT EMISSION INCREASE**

<b>Pollutant<sup>1</sup>:</b>	CO	<b>Permit:</b>	9395
<b>Baseline Period:</b>	N/A	<b>to</b>	N/A (using PTE to PTE for fugitives)

Affected or Modified Facilities <sup>2</sup>			Permit No.	Actual Emissions <sup>3</sup>	A		B		Difference (B-A) <sup>6</sup>	Correction <sup>7</sup>	Project Increase <sup>8</sup>
					Baseline Emissions <sup>4</sup>	Projected Actual Emissions					
1.	FIN	EPN									
1.	BLOFUG	E-BLOFUG	9395	1.42	1.42	1.65	0.23			0.23	
2.							0			0	
3.							0			0	
4.							0			0	
5.							0			0	
6.							0			0	
7.							0			0	
8.							0			0	
<b>Page Subtotal<sup>9</sup></b>									0	0.23	
<b>Table Total</b>									0	0.23	

<sup>1</sup> Individual Table 2F's should be used to summarize the project emission increase for each criteria pollutant

<sup>2</sup> Emission Point Number as designated in NSR Permit or Emissions Inventory

<sup>3</sup> All records and calculations for these values must be available upon request

<sup>4</sup> Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

<sup>5</sup> If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

<sup>6</sup> Proposed Emissions (column B) minus Baseline Emissions (column A)

<sup>7</sup> Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

<sup>8</sup> Obtained by subtracting the correction from the difference. Must be a positive number



**TABLE 2F  
PROJECT EMISSION INCREASE**

<b>Pollutant<sup>1</sup>:</b>	PM10	<b>Permit:</b>	9395
<b>Baseline Period:</b>	January 2013	to	December 2014

Affected or Modified Facilities <sup>2</sup>			A		B		Difference (B-A) <sup>6</sup>	Correction <sup>7</sup>	Project Increase <sup>8</sup>
			Permit No.	Actual Emissions <sup>3</sup>	Baseline Emissions <sup>4</sup>	Projected Actual Emissions			
	FIN	EPN							
1.	F2351	E-F2351	9395	0.00	0.00	0.01	0.01		0.01
2.							0		0
3.							0		0
4.							0		0
5.							0		0
6.							0		0
7.							0		0
8.							0		0
<b>Page Subtotal<sup>9</sup></b>								0	0.01
<b>Table Total</b>								0	0.01

<sup>1</sup> Individual Table 2F's should be used to summarize the project emission increase for each criteria pollutant

<sup>2</sup> Emission Point Number as designated in NSR Permit or Emissions Inventory

<sup>3</sup> All records and calculations for these values must be available upon request

<sup>4</sup> Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

<sup>5</sup> If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

<sup>6</sup> Proposed Emissions (column B) minus Baseline Emissions (column A)

<sup>7</sup> Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

<sup>8</sup> Obtained by subtracting the correction from the difference. Must be a positive number



**TABLE 2F  
PROJECT EMISSION INCREASE**

<b>Pollutant<sup>1</sup>:</b>	PM2.5	<b>Permit:</b>	9395
<b>Baseline Period:</b>	January 2013	to	December 2014

Affected or Modified Facilities <sup>2</sup>			A		B		Difference (B-A) <sup>6</sup>	Correction <sup>7</sup>	Project Increase <sup>8</sup>
			Permit No.	Actual Emissions <sup>3</sup>	Baseline Emissions <sup>4</sup>	Projected Actual Emissions			
	FIN	EPN							
1.	F2351	E-F2351	9395	0.0000	0.0000	0.0015	0.0015		0.0015
2.							0		0
3.							0		0
4.							0		0
5.							0		0
6.							0		0
7.							0		0
8.							0		0
<b>Page Subtotal<sup>9</sup></b>								0	0.0015
<b>Table Total</b>								0	0.0015

<sup>1</sup> Individual Table 2F's should be used to summarize the project emission increase for each criteria pollutant

<sup>2</sup> Emission Point Number as designated in NSR Permit or Emissions Inventory

<sup>3</sup> All records and calculations for these values must be available upon request

<sup>4</sup> Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

<sup>5</sup> If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

<sup>6</sup> Proposed Emissions (column B) minus Baseline Emissions (column A)

<sup>7</sup> Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

<sup>8</sup> Obtained by subtracting the correction from the difference. Must be a positive number



## Section 8 Best Available Control Technology (BACT)

TCEQ's NSR regulations [30 TAC 116.111(a)(2)(C)] require that Best Available Control Technology (BACT) be evaluated for new and physically modified facilities for pollutants that do not trigger PSD or NNSR review. Because this project is not triggering federal review for any pollutants, a federal BACT analysis is not required.

The modified sources, or sources previously authorized by PBR, included in the BACT evaluation for this concurrent renewal and amendment application include:

- PO/TBA & Derivative Fugitives, EPN E-BLOFUG, that is considered modified due to an increase in annual emissions due to revised component counts as well as the incorporation by consolidation of numerous permits by rule (see Section 1);
- Storage Tank F1108A, EPN E-F1108A, that is considered modified due to a change in representations that results in increased annual emissions;
- Loading Spot No. LR4C, EPN E-LR4C, that is considered modified due to an increase in annual loading throughput that results in increased annual emissions; and
- Hopper No. F2351, EPN E-F2351, that is considered modified due to an increase material handled;
- Surface Coating/Abrasive Blasting, EPN E-FUGPNT, that is considered modified due to an increase in abrasive grit used per year; and
- Loading Spot Nos. T10, T13, T14, and LR4D, EPNs E-T10, E-T13, E-T14, and E-LR4D, previously authorized by PBR that are being incorporated by consolidation into Permit No. 9395.

Additionally, the PI-1 General Application Workbook includes a review of existing, “renewal only” sources to ensure that these sources meet requirements that are “...economically reasonable and technically practicable give the age of the facility and the impacts of its emissions...”.

The results of this BACT evaluation are included in the BACT worksheet of the associated and submitted PI-1 General Application Workbook. There are storage and loading operations at the Choate Plant that are not being modified and are being renewed only but are not explicitly listed in the PI-1 Workbook. These storage and loading operations involving VOCs with a maximum vapor pressure greater than 0.5 psia, and storage operations with a vessel capacity greater than 25,000 gallons, continue to be routed to a control device that meets BACT.

## Section 9 Regulatory Applicability Review

### 8.1 TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30

As described in this section, the Bayport Choate Plant will comply with all air quality rules and regulations of the TCEQ and with the intent of the Texas Clean Air Act, including protection of the health and physical property of the public. The following Texas rules have been assessed for applicability to the emission sources regarding this renewal and amendment. The regulatory applicability review below is for the entire plant with consideration for the new units.

i. CHAPTER 39 - PUBLIC NOTICE

*Air quality permit applications or registrations that are declared administratively complete by the executive director on or after September 1, 1999 are subject to this subchapter. Therefore, this renewal and amendment application will comply with the notice requirements. Additionally, upon receipt of written notice from the TCEQ executive director, Lyondell will provide public notice of the application for permit renewal in accordance with this chapter.*

ii. CHAPTER 101 - GENERAL RULES

*The Bayport Choate Plant will be operated in accordance with the General Rules relating to circumvention, nuisance, traffic hazards, notification requirements for emissions events, notification requirements for scheduled maintenance/startup/shutdowns, sampling, sampling ports, emissions inventory requirements, sampling procedures and terminology, compliance with Environmental Protection Agency standards, the National Primary and Secondary Air Quality Standards, inspection fees, emissions fees, and all other applicable General Rules.*

iii. CHAPTER 106 – PERMITS BY RULE

*Lyondell previously identified authorized changes under the PBR requirements of 30 TAC 106. Those registered PBRs that will be incorporated in this permit renewal and amendment are listed in Section 1- Project Information.*

iv. CHAPTER 111 - CONTROL OF AIR POLLUTION FROM VISIBLE EMISSIONS AND PARTICULATE MATTER

*The operation of several material handling sources at the Bulk Plant unit may result in the occasional visible emissions, but they will not exceed the opacity limits specified in §111.111(a). PM emission rates from these sources will be less than the allowable limits outlined in §111.151.*

v. CHAPTER 112 - CONTROL OF AIR POLLUTION FROM SULPHUR COMPOUNDS

*The maximum ground level SO<sub>2</sub> concentration due to the SO<sub>2</sub> emissions at the site is expected to be below the limits specified in §112.3.*

vi. CHAPTER 113 - CONTROL OF AIR POLLUTION FROM TOXIC MATERIALS

*Chapter 113 regulates the emissions of radon from phosphogypsum stacks (40 CFR Part 61, Subpart R), hazardous air pollutants for source categories (40 CFR Part 63), designated facilities (municipal solid waste landfills and hospital/medical/infectious waste incinerators), and consolidated federal air rule SOCOMI sources (40 CFR Part 65). There are no sources in Permit No. 9395 that are subject to any of these standards.*

vii. CHAPTER 114 - CONTROL OF AIR POLLUTION FROM MOTOR VEHICLES

*The Bayport Choate Plant will comply with applicable provisions of this regulation for motor vehicles operated at the plant, including maintenance and operation of air pollution control systems or devices and inspection requirements.*

viii. CHAPTER 115 - CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS

*This regulation requires control of VOC emissions from general sources, transfer operations, petroleum refining sources, natural gas processes, petrochemical processes, solvent-using processes, miscellaneous industrial sources, and consumer-related sources. The Bayport Choate Plant is located in Harris County which is designated as serious ozone nonattainment and will comply with the applicable control, recordkeeping, reporting, and monitoring requirements.*

ix. CHAPTER 116 - CONTROL OF AIR POLLUTION BY PERMITS FOR NEW CONSTRUCTION OR MODIFICATION

*The Texas Administrative Code (TAC) Title 30, Chapter 116, Subchapter B requires permit applicants to submit information to demonstrate compliance with Federal Regulations and the Texas Clean Air Act (TCAA). 30 TAC 116, Subchapter D requires permit holders to submit information in support of the application to be granted a permit renewal. This section provides a summary demonstration that the emission units associated with this permit application will meet these requirements.*

**§116.111(a)(2)(A)(i) - Protection of Public Health and Welfare**

*The emissions from the Bayport Choate Plant will comply with all rules and regulations of the commission and with the intent of the Texas Clean Air Act (TCAA), including protection of the health and property of the public.*

**§116.111(a)(2)(A)(ii)**

*There are no schools located within 3,000 feet of the Bayport Choate Plant. Therefore, 116.111(a)(2)(A)(ii), which requires verification that the emissions from the facility will not result in any short-term or long-term side effects or nuisance odors upon any individual attending a school within 3,000 feet of the facility, does not apply.*

**§116.111(a)(2)(B) - Measurement of Emissions**

*The Bayport Choate Plant will have provisions for measuring the emission of significant air contaminants to comply with source stack testing requirements as determined by the TCEQ.*

**§116.111(a)(2)(C) - Best Available Control Technology**

*The Bayport Choate Plant will use the best available control technology with consideration given to the technical practicality and economic reasonableness of reducing or eliminating emissions from the new and modified sources, as well as sources that are being renewed only, as detailed in the TCEQ NSR PI-1 General Application Workbook.*

**§116.111(a)(2)(D) - New Source Performance Standards (NSPS)**

*The emissions from the Bayport Choate Plant will meet the requirements of any applicable NSPS as listed under Title 40 Code of Federal Regulations (CFR) Part 60, promulgated by the EPA under FCAA, §111, as amended. Specifically, NSPS Subpart A and Subpart Kb are applicable to Plant. Lyondell will comply with all applicable control, recordkeeping, reporting, and monitoring requirements contained in these regulations.*

**§116.111(a)(2)(E) - National Emission Standards for Hazardous Air Pollutants**

*There are no sources in Permit No.9395 subject to Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP), therefore these regulations do not apply.*

**§116.111(a)(2)(F) - NESHAP for Source Categories**

*The emissions from the Bayport Choate Plant will meet the requirements of any applicable maximum achievable control technology standard as listed under 40 CFR Part 63, promulgated by the EPA under FCAA, §112 or as listed under Chapter 113, Subchapter C of this title (relating to National Emissions Standards for Hazardous Air Pollutants for Source Categories (FCAA §112, 40 CFR 63)). MACT Subparts A, F, G, H, and DDDDD are applicable to the Plant. Lyondell will comply with all applicable control, recordkeeping, reporting, and monitoring requirements.*

**§116.111(a)(2)(G) - Performance Demonstration**

*The sources at the Bayport Choate Plant will achieve the performance specified in the permit application. The applicant may be required to submit additional engineering data after a permit has been issued in order to demonstrate further that the proposed facility will achieve the performance specified in the permit application. In addition, dispersion modeling, monitoring, or stack testing may be required. The sources presented in this application will perform as represented. Source emissions will not exceed the rates represented in the “Unit Types – Emission Rates” tab in the PI-1 General Application Workbook.*

#### **§116.111(a)(2)(H) - Nonattainment Review**

*The Bayport Choate Plant is located in Harris County, which is classified as nonattainment for the 2008 eight-hour ozone standard and is in attainment with the National Ambient Air Quality Standards (NAAQS) for all other pollutants. As shown in Section 7 and in the Federal Applicability worksheet of the TCEQ NSR PI-1 Permitting General Application Workbook, the total project increases for NO<sub>x</sub> and VOC associated with this project are below the significance level for a serious nonattainment area; therefore, NNSR review is not triggered for these pollutants.*

#### **§116.111(a)(2)(I) - Prevention of Significant Deterioration (PSD) Review**

*The Bayport Choate Plant is located in Harris County, which is classified as nonattainment for the 2008 eight-hour ozone standard and is in attainment with the National Ambient Air Quality Standards (NAAQS) for all other pollutants. As shown in Section 7 and in the Federal Applicability worksheet of the TCEQ NSR PI-1 Permitting General Application Workbook, the total project increases for CO, NO<sub>x</sub>, PM, PM<sub>10</sub> and PM<sub>2.5</sub> associated with this project are below the significance level for these pollutants; therefore, PSD review is not triggered for these pollutants. There are no other pollutants with increases to the proposed allowable emission rate limits.*

#### **§116.111(a)(2)(J) - Air Dispersion Modeling**

*Computerized air dispersion modeling may be required by the executive director to determine air quality impacts from a proposed new facility or source modification. In determining whether to issue, or in conducting a review of, a permit application for a shipbuilding or ship repair operation, the commission will not require and may not consider air dispersion modeling results predicting ambient concentrations of non-criteria air contaminants over coastal waters of the state. The commission shall determine compliance with non-criteria ambient air contaminant standards and guidelines at land-based off-property locations.*

*The Bayport Choate Plant has provided air dispersion modeling, described in Section 10, to satisfy this requirement.*

#### **§116.111(a)(2)(K) - Hazardous Air Pollutants**

*Affected sources (as defined in §116.15(1) of this title (relating to Section 112(g) Definitions)) for hazardous air pollutants shall comply with all applicable requirements under Subchapter E of this chapter (relating to Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources (FCAA, §112(g), 40 CFR Part 63)). Please note that the sources included in this application do not meet the definition of an affected source as defined in §116.15(1) and §116.400(a); therefore, this section does not apply.*

#### **§116.111(a)(2)(L) - Mass Cap and Trade Allowances**

*The Bayport Choate Plant is subject to Chapter 101, Subchapter H, Division 3, of this title (relating to Mass Emissions Cap and Trade Program) and has obtained the*

*necessary allowances to operate. No additional allowances are expected to be required for this renewal and amendment.*

**§116.311(a) and (b) – Permit Renewal Application Information**

*This application package meets the requirements of the information in support of a renewal to be granted. The Bayport Choate Plant is being operated in accordance with all requirements and conditions of the existing permit, including representations in the application for a permit to construct and subsequent amendments, and any previously granted renewal, unless otherwise authorized for a qualified facility. The facility meets the requirements of any applicable NSPS, HAPS, MACT regulations and standards, as stated previously.*

*If the commission determines it necessary to add additional requirements to avoid a condition of air pollution or to ensure compliance with otherwise applicable federal or state air quality control requirements, Lyondell will comply with these requirements as needed.*

**§116.313 (b) – Renewal Application Fees**

*The renewal application fees were paid at the time the application was filed as demonstrated in the attached copy of the check. Additionally, an amendment fee of \$900 was also paid to authorize the proposed modifications to Permit No. 9395.*

**§116.315 (a) – Permit Renewal Submittal**

*This application for renewal is being submitted at least six months, but no earlier than 18 months, before the expiration of NSR Permit No. 9395.*

x. CHAPTER 117 - CONTROL OF AIR POLLUTION FROM NITROGEN COMPOUNDS

*The Bayport Choate Plant, located in Harris County, is currently classified as a single site with the adjacent Bayport Polymers Plant and therefore meets the classification of a major source. Lyondell will comply with the applicable requirements and no additional requirements are anticipated as part of this concurrent renewal and amendment application.*

xi. CHAPTER 118 - CONTROL OF AIR POLLUTION EPISODES

*The Bayport Choate Plant is operated and will continue to be operated in compliance with rules relating to generalized and localized air pollution episodes.*

xii. CHAPTER 122 - FEDERAL OPERATING PERMITS

*The Bayport Choate Plant will comply with all applicable portions of 30 TAC 122. The site operates under Site Operating Permit (SOP) No. O1421. The revision process will be used to address any changing requirements proposed as part of this concurrent renewal and amendment project.*

## Section 10 Modeling Analysis

Lyondell has provided air dispersion modeling to demonstrate compliance with the minor NSR NAAQS, TCEQ state property line standards, the TCEQ’s Modeling and Effects Review Applicability (MERA) guidance, and the TCEQ’s Air Quality Modeling Guidelines. The modeling inputs and outputs are summarized in the TCEQ’s Electronic Modeling Evaluation Workbook (EMEW). The EMEW and modeling files are provided electronically for review by TCEQ’s Air Dispersion Modeling Team.

MERA Step 2 was used to demonstrate that proposed increases of the compounds in the table below are de minimis. The table shows that the criteria for MERA Step 2 are satisfied for each of these pollutants; additional details can be found in the Confidential section of this application.

Pollutant	CAS#	Short-Term Increase (lb/hr)	Short-Term ESL ( $\mu\text{g}/\text{m}^3$ )	Long-Term Increase (tpy)	Long-Term ESL ( $\mu\text{g}/\text{m}^3$ )
Sodium Hydroxide	1310-73-2	0.0033	20	0	2
Acetone	67-64-1	0.0272	7800	0	4800
Molybdenum	7439-98-7	0	30	0.0001	3
Isobutane	75-28-5	0.2334	23000	0.4412	7100
n-Butane	106-97-8	0.0131	66000	0.0182	7100
1-Butene	106-98-9	0.0089	19000	0.0007	1600
Cis-2-Butene	590-18-1	0.0086	10000	0	480
Trans-2-Butene	624-64-6	0.0074	10000	0	480
Pentane	92046-46-3	0.1076	59000	0.0004	7100
Hexane	92112-69-1	0.0002	5600	0.0005	200
Heptane	426260-76-6	0.0004	10000	0.0007	2700
Octane	26635-64-3	0.0212	5600	0.0419	540
Nonane	111-84-2	0.0012	4800	0.0024	450
Isobutylene	115-11-7	0.0150	180000	0.0321	32000
Methanol	67-56-1	0.0137	3900	0.0271	2100
Isobutanol	78-83-1	0.0002	1500	0.0003	150
Isobutylene Oxide	558-30-5	0.0029	60	0.0056	6
Isobutyric Acid	79-31-2	0.0002	230	0.0005	90
N-Butyl Ether	142-96-1	0.0004	21000	0.0008	2100
Formic Acid	64-18-6	0.0029	90	0.0057	9
Acetic Acid	64-19-7	0.0061	250	0.0118	25
Acetaldehyde	75-07-0	0.0002	120	0.0003	45
Isobutyraldehyde	78-84-2	0.0003	410	0.0006	290
Methyl Ethyl Ketone	78-93-3	0.0011	18000	0.0023	2600

Pollutant	CAS#	Short-Term Increase (lb/hr)	Short-Term ESL ( $\mu\text{g}/\text{m}^3$ )	Long-Term Increase (tpy)	Long-Term ESL ( $\mu\text{g}/\text{m}^3$ )
Propionic Acid	79-09-4	0.0001	85	0.0001	30
Di-Tert-Butyl Peroxide	110-05-4	0.0020	100	0.0038	10
Ethyl Formate	109-94-4	0.0005	3000	0.0011	300
Tert-Butyl Formate	762-75-4	0.0084	3000	0.0163	300
Methyl Formate	107-31-3	0.0004	1200	0.0008	120
Tert-Butyl Acetate	540-88-5	0.0129	9500	0.0252	950
Propylene Glycol Monomethyl Ether	107-98-2	0.0201	3700	0.0402	370
TBXP	78-51-3	0.0002	125	0.0004	12.5
Allyl-T Butyl-Peroxide	39972-78-6	0.0006	100	0.0011	10
Propionaldehyde	123-38-6	0.0002	92	0.0005	40
Polypropylene Glycol	29434-03-5	0.0002	600	0.0003	60
Isopropyl Alcohol	67-63-0	0.0004	4920	0.0008	492
Tripropylene Glycol Monomethyl Ether	25498-49-1	0.0004	1000	0.0008	100
Tetrapropylene Glycol	24800-25-7	0.0084	1560	0.0113	156
Mineral Spirits	64475-85-0	0.04	3500	0.12	350



## 2. FORM PI-1 GENERAL APPLICATION

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**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**General**

Date: September 2, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

I. Applicant Information	
<p style="color: red; margin: 0;"><b>I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.</b></p>	I agree
<b>A. Company Information</b>	
Company or Legal Name:	Lyondell Chemical Company
Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:	
<a href="https://www.sos.state.tx.us">https://www.sos.state.tx.us</a>	
Texas Secretary of State Charter/Registration Number (if given):	
<b>B. Company Official Contact Information:</b> must not be a consultant	
Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Annette
Last Name:	Harrison
Title:	Lead Operations Manager, Operations BP-III/Tank Farm
Mailing Address:	10801 Choate Road
Address Line 2:	
City:	Pasadena
State:	TX
ZIP Code:	77507
Telephone Number:	281-291-1220
Fax Number:	
Email Address:	<a href="mailto:annette.harrison@lyb.com">annette.harrison@lyb.com</a>
<b>C. Technical Contact Information:</b> This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. <b>Additional technical contact(s) can be provided in a cover letter.</b>	
Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Derek
Last Name:	Rodricks
Title:	Principal Environmental Engineer
Company or Legal Name:	Lyondell Chemical Company
Mailing Address:	10801 Choate Road
Address Line 2:	
City:	Pasadena
State:	TX
ZIP Code:	77507
Telephone Number:	281-291-1684
Fax Number:	
Email Address:	<a href="mailto:derek.rodricks@lyb.com">derek.rodricks@lyb.com</a>
<b>D. Assigned Numbers</b>	
The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.	
Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN600344402

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Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	RN102523107
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II. Delinquent Fees and Penalties	
Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at:  <a href="https://www.tceq.texas.gov/agency/financial/fees/delin">https://www.tceq.texas.gov/agency/financial/fees/delin</a>	No

III. Permit Information
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<b>A. Permit and Action Type (multiple may be selected, leave no blanks)</b>
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Additional information regarding the different NSR authorizations can be found at:  
<https://www.tceq.texas.gov/permitting/air/guidance/authorize.html>

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): <i>Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction</i>	Renewal/Amendment	9395
Special Permit: <i>Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction</i>	Not applicable	
De Minimis: <i>Not applicable, Initial</i>	Not applicable	
Flexible: <i>Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction</i>	Not applicable	
PSD: <i>Not applicable, Initial, Major Modification</i>	Not applicable	
Nonattainment: <i>Not applicable, Initial, Major Modification</i>	Not applicable	
HAP Major Source [FCAA § 112(g)]: <i>Not applicable, Initial, Major Modification</i>	Not applicable	
PAL: <i>Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration</i>	Not applicable	
GHG PSD: <i>Not applicable, Initial, Major Modification, Voluntary Update</i>	Not applicable	

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**General**

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**B. MSS Activities**

How are/will MSS activities for sources associated with this project be authorized?	Combination (list below)
List the permit number, registration number, and/or PBR number.	This Permit (No. 9395) has some MSS activities address and PBR Registration No. 87890 captures the remainder.

**C. Consolidating NSR Permits**

Will this permit be consolidated into another NSR permit with this action?	No

Will NSR permits be consolidated into this permit with this action?	No
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**D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)**

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference. At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo:

[https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr\\_spc06.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf)

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	Yes
If yes, list any PBR, standard exemptions, or standard permits that need to be referenced:	PBR Registration No. 78478 PBR Registration No. 147097 30 TAC 106.412 30 TAC 106.472 30 TAC 106.371

If yes, list any PBR, standard exemptions, or standard permits that need to be consolidated:	PBR Registration No. 95547 PBR Registration No. 97144 PBR Registration No. 99129 PBR Registration No. 100132 PBR Registration No. 106447 PBR Registration No. 108955 PBR Registration No. 117871 PBR Registration No. 120932 PBR Registration No. 123460 PBR Registration No. 126101 PBR Registration No. 131540 PBR Registration No. 144085 PBR Registration No. 152730 PBR Registration No. 154260 PBR Registration No. 101751 PBR Registration No. 102753 PBR Registration No. 160779 PBR Registration No. 28989  Previously consolidated PBRs: PBR Registration Nos. 76118, 78545, 78732, 80202, 81484, 82745, 82942, 84316, 84424, 84425, 85865, 86266, 86267, 87005, 87354, 87692, 87833, 87950, 90872, 91272, 91396, 92260, 92281, 92417, 93908, 94031, 94056
If yes, are emission calculations, BACT analysis, and an impacts analysis included for each authorization to be consolidated? <b>If any required information is not provided, the authorization will be incorporated by reference.</b>	Yes

<b>E. Associated Federal Operating Permits</b>	
Is this facility located at a site required to obtain a <b>site operating permit (SOP)</b> or <b>general operating permit (GOP)</b> ?	Yes
Is a <b>SOP</b> or <b>GOP</b> review pending for this source, area, or site?	Yes
If required to obtain a <b>SOP</b> or <b>GOP</b> , list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1421

**IV. Facility Location and General Information**

<b>A. Location</b>	
County: Enter the county where the facility is physically located.	Harris
TCEQ Region	Region 12
County attainment status as of Sept. 23, 2019	Serious Ozone nonattainment
Street Address:	10801 Choate Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Pasadena
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	77507

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**General**

Date: September 2, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	See address above
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	29 deg 37' 56"
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	-95 deg 3' 1"
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No

**B. General Information**

Site Name:	Bayport Choate Plant
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	PO/TBA & Derivatives Unit
Are there any schools located within 3,000 feet of the site boundary?	No

**C. Portable Facility**

Permanent or portable facility?	Permanent
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**D. Industry Type**

Principal Company Product/Business:	Manufacture of Propylene Oxide (PO), Tertiary Butyl Alcohol (TBA) and derivatives
A list of SIC codes can be found at: <a href="https://www.naics.com/sic-codes-industry-drilldown/">https://www.naics.com/sic-codes-industry-drilldown/</a>	
Principal SIC code:	2869
NAICS codes and conversions between NAICS and SIC Codes are available at: <a href="https://www.census.gov/eos/www/naics/">https://www.census.gov/eos/www/naics/</a>	
Principal NAICS code:	325110

**E. State Senator and Representative for this site**

This information can be found at (note, the website is not compatible to Internet Explorer): <a href="https://wrm.capitol.texas.gov/">https://wrm.capitol.texas.gov/</a>	
State Senator:	Larry Taylor
District:	11
State Representative:	Dennis Paul
District:	129



V. Project Information	
<b>A. Description</b>	
Provide a brief description of the project that is requested. (Limited to 500 characters).	This project is a renewal and amendment of the New Source Review Permit No. 9395.
<b>B. Project Timing</b>	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	Not applicable
Projected Start of Operation:	Not applicable
<b>C. Enforcement Projects</b>	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
<b>D. Operating Schedule</b>	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
<b>A. Confidential Application Materials</b>	
Is confidential information submitted with this application?	Yes
<i>If yes, is each confidential page marked "CONFIDENTIAL" in large red letters?</i>	Yes
<p>THSC §382.041 requires us not to disclose any information related to manufacturing processes that is marked Confidential. Mark any information related to secret or proprietary processes or methods of manufacture Confidential if you do not want this information in the public file. All confidential information should be separated from the application and submitted as a separate file. Additional information regarding confidential information can be found at: <a href="https://www.tceq.texas.gov/permitting/air/confidential.html">https://www.tceq.texas.gov/permitting/air/confidential.html</a></p>	
<b>B. Is the Core Data Form (Form 10400) attached?</b>	No
<a href="https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx">https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx</a>	
<b>C. Is a current area map attached?</b>	Yes
Is the area map a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
<b>D. Is a plot plan attached?</b>	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes

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**Form PI-1 General Application**  
**General**

Date: September 2, 2020  
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 Company: Lyondell Chemical Company

Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	N/A
<b>E. Is a process flow diagram attached?</b>	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
<b>F. Is a process description attached?</b>	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
<b>G. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. You do not need to submit calculations for sources which are not changing emission rates with this project. Please note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review. It can be emailed with the submittal of this application workbook.</b>	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
<b>H. Is a material balance (Table 2, Form 10155) attached?</b>	Yes
Table 2 (Form 10155), entitled Material Balance: A material balance representation may be required for all applications to confirm technical emissions information. Typically this is required for refining and chemical manufacturing processes involving reactions, separations, and blending. It may also be requested by the permit reviewer for other applications. Table 2 should represent the total material balance; that is, all streams into the system and all streams out. Additional sheets may be attached if necessary. Complex material balances may be presented on spreadsheets or indicated using process flow diagrams. All materials in the process should be addressed whether or not they directly result in the emission of an air contaminant. All production rates must be based on maximum operating conditions.	
<b>I. Is a list of MSS activities attached?</b>	N/A
<b>J. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?</b>	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
<b>K. Are all other required tables, calculations, and descriptions attached?</b>	Yes


**VII. Signature**

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

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General

Date: September 2, 2020  
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The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Annette L. Harrison
Signature:	
<i>Original signature is required.</i>	
Date:	September 21, 2020

**I. Type of Permit Renewal and Associated Actions**

<b>A. Current Operations</b>	
Do all dockside vessel emissions associated with the facility comply with all rules and regulations of the commission and with the intent of the TCAA, including protection of the health and property of the public and minimization of emissions to the extent possible, consistent with good air pollution practices? (30 TAC § 116.311(a)(1))	N/A
Is the facility being operated in accordance with all requirements and conditions of the existing permit, including representations in the application for permit to construct and subsequent amendments, and any previously granted renewal, unless otherwise authorized for a qualified facility?	Yes
Are there any permit actions pending before the TCEQ?	No
Have any qualified facility changes under 30 TAC § 116.116(e) occurred since originally issued or last renewed?	No
Have emission factors changed since the last permitting action?	Yes

<b>B. Changes Made Since Last Amendment or Renewal</b>	
Have any of the following changes been made to or proposed for the facilities covered by this permit since it was last amended or renewed and are not currently authorized by a PBR, standard permit, or other authorization? <i>Select "Yes" or "No" to answer each question.</i>	
Construction of a new emission source?	No
The emission of new chemical species or a change in character of emissions?	No
An increase in emission rates on a short term or annual basis? (This includes increases of a criteria pollutant as well as increases of a chemical species.)	Yes
A change in the method of emission control if the emission control is a source itself, such as a thermal oxidizer or flare?	No
Are new pollutants being added in the renewal process, not currently listed in the permit?	Yes
<b>If "yes" to any question in Section B above is selected, a concurrent permit amendment is required before the permit can be renewed.</b>	

**II. Federal Regulatory Questions**

Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.	
<b>A. Title 40 CFR Part 60</b>	
Do NSPS subpart(s) apply to a facility in this application?	Yes
If applicable, list applicable subparts you will demonstrate compliance with (e.g. Subpart M)	NSPS Subpart A and Kb

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Renewals

Date: September 21, 2020

Permit #:9395

Company: Lyondell Chemical Company

<b>B. Title 40 CFR Part 61</b>	
Do NESHAP subpart(s) apply to a facility in this application?	No
<b>C. Title 40 CFR Part 63</b>	
Do MACT subpart(s) apply to a facility in this application?	Yes
If applicable, list applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	MACT Subparts A, F, G, H, DDDDD









Texas Commission on Environmental Quality  
Form PI-1 General Application  
Technical

Date: September 21, 2020  
Permit #:9395  
Company: Lyondell Chemical Company



**Texas Commission on Environmental Quality  
Form PI-1 General Application  
Technical**

Date: September 21, 2020  
Permit #:9395  
Company: Lyondell Chemical Company





<b>IX. Emissions Review</b>
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**A. Impacts Analysis**  
 Any change that results in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet of this workbook.

Does this project require an impacts analysis?	Yes
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**B. Disaster Review**  
 If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at:

<https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf>

Does this application involve any air contaminants for which a disaster review is required?	No
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**C. Air Pollutant Watch List**  
 Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at:

<https://www.tceq.texas.gov/toxicology/apwl/apwl.html>

Is the proposed facility located in a watch list area?	No
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**D. Mass Emissions Cap and Trade**

Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	Yes
Is Mass Emissions Cap and Trade applicable to the new or modified facilities?	Yes
If MECT is applicable, does the application contain documentation demonstrating that the proposed facility, group of facilities, or account has obtained allowances to operate?	Yes

**Texas Commission on Environmental Quality  
Form PI-1 General Application  
Unit Types - Emission Rates**

Date: September 21, 2020  
Permit #:9395  
Company: Lyondell Chemical Company

Permit primary industry (must be selected for workbook to function) Chemical / Energy

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Renew only	Yes	ANALYZER	E-ANALYZER	Process Analyzers	VOC	0.79	1.73			0.79	1.73	0	0	Other	Analyzer vent
					NOx	0.01	0.01			0.01	0.01	0	0		
					CO	0.01	0.02			0.01	0.02	0	0		
					Acetone	0.1	0.33			0.1	0.33	0	0		
Renew only	Yes	B801N&S	E-B801N&S	Hot Oil Heater B801	VOC	0.68	2.38			0.64	2.22	-0.04	-0.16	Heater	
					NOx	12.38	43.22			11.65	40.36	-0.73	-2.86		
					CO	10.4	36.31			9.78	33.91	-0.62	-2.4		
					PM					0.89	3.07	0.89	3.07		
					PM10	0.94	3.29			0.89	3.07	-0.0499	-0.22		
					PM2.5					0.89	3.07	0.89	3.07		
					SO2	1.86	0.26			1.75	0.24	-0.11	-0.02		
Renew only	Yes	B901	E-B901	Process Heater B-901	VOC	0.1	0.34			0.1	0.34	0	0	Heater	
					NOx	1.82	6.12			1.82	6.12	0	0		
					CO	1.53	5.14			1.53	5.14	0	0		
					PM					0.14	0.47	0.14	0.47		
					PM10	0.14	0.47			0.14	0.47	0	0		
					PM2.5					0.14	0.47	0.14	0.47		
					SO2	0.27	0.04			0.27	0.037	0	-0.003		
Renew only	Yes	B902A	E-B902A	Process Heater B902A	VOC	0.09	0.32			0.09	0.32	0	0	Heater	
					NOx	1.71	5.84			1.71	5.84	0	0		
					CO	1.43	4.91			1.43	4.91	0	0		
					PM					0.13	0.44	0.13	0.44		
					PM10	0.13	0.44			0.13	0.44	0	0		
					PM2.5					0.13	0.44	0.13	0.44		
					SO2	0.26	0.04			0.26	0.04	0	0		
Renew only	Yes	B902B	E-B902B	Process Heater B902B	VOC	0.08	0.28			0.08	0.28	0	0	Heater	
					NOx	1.49	5.15			1.49	5.15	0	0		
					CO	1.25	4.33			1.25	4.33	0	0		
					PM					0.11	0.39	0.11	0.39		
					PM10	0.11	0.39			0.11	0.39	0	0		
					PM2.5					0.11	0.39	0.11	0.39		
					SO2	0.22	0.03			0.22	0.03	0	0		
Renew only	Yes	B902C	E-B902C	Process Heater B902C	VOC	0.07	0.23			0.07	0.23	0	0	Heater	
					NOx	1.24	4.21			1.24	4.21	0	0		
					CO	1.04	3.53			1.04	3.53	0	0		
					PM					0.09	0.32	0.09	0.32		
					PM10	0.09	0.32			0.09	0.32	0	0		
					PM2.5					0.09	0.32	0.09	0.32		
					SO2	0.19	0.03			0.19	0.03	0	0		
Renew only	Yes	B1550	E-B1550	Flare	VOC	342.74	74.09			342.74	74.09	0	0	Control: Flare	
					NOx	68.71	27.15			68.71	27.15	0	0		
					CO	357.28	141.19			357.28	141.19	0	0		
					SO2	6.14	0.22			6.14	0.22	0	0		
					Acetone	30	15.39			30	15.39	0	0		
New/Modified	Yes	B1501A	E-B1501A	Emergency Flare Plant 1 Pilot	NOx	0.04	0.16			0.01	0.061	-0.03	-0.099	Control: Flare	
					CO	0.07	0.32			0.07	0.31	0	-0.01		
					SO2	<0.01	0.02			<0.01	<0.01	0	-0.01		
New/Modified	Yes			Process Flare Backup	VOC	60.79	7.29			53.96	6.47	-6.83	-0.82	Control: Flare	
					NOx	7.95	0.95			8.43	1.01	0.48	0.06		
					CO	68.14	8.18			42.96	5.16	-25.18	-3.02		
					SO2	6.14	0.03			6.14	0.03	0	0		
					Acetone	3.51	0.42			1.76	0.21	-1.75	-0.21		
Renew only	Yes	B1501B	E-B1501B	Emergency Flare Plant 2 Pilot	NOx	0.03	0.13			0.03	0.12	0	-0.01	Control: Flare	
					CO	0.06	0.25			0.06	0.25	0	0		
					SO2	<0.01	0.01			<0.01	<0.01	0	0		
Renew only	Yes			Process Flare Backup	VOC	60.79	7.29			60.79	7.29	0	0	Control: Flare	
					NOx	7.95	0.95			7.95	0.95	0	0		
					CO	68.14	8.18			68.14	8.18	0	0		
					SO2	6.14	0.03			6.14	0.03	0	0		

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Unit Types - Emission Rates**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					Acetone	3.51	0.42			3.51	0.42	0	0		
Renew only	Yes	B1501C	E-B1501C	Emergency Flare Plant 3 Pilot	NOx	0.03	0.13			0.03	0.12	0	-0.01	Control: Flare	
					CO	0.06	0.25			0.06	0.25	0	0		
					SO2	<0.01	0.01			<0.01	<0.01	0	0		
Renew only	Yes			Process Flare Backup	VOC	60.79	7.29			60.79	7.29	0	0	Control: Flare	
					NOx	7.95	0.95			7.95	0.95	0	0		
					CO	68.14	8.18			68.14	8.18	0	0		
					SO2	6.14	0.03			6.14	0.03	0	0		
Renew only	Yes	B1751	E-B1751	Hot Oil Heater B1751	Acetone	3.51	0.42			3.51	0.42	0	0	Heater	
					VOC	0.08	0.29			0.08	0.29	0	0		
					NOx	1.44	5.26			1.44	5.26	0	0		
					CO	1.21	4.42			1.21	4.42	0	0		
					PM	0.11	0.4			0.11	0.4	0.11	0.4		
					PM10	0.11	0.4			0.11	0.4	0	0		
					PM2.5	0.11	0.4			0.11	0.4	0.11	0.4		
					SO2	0.22	0.03			0.22	0.03	0	0		
Renew only	Yes	B2890	E-B2890	Hot Oil Heater B2890	VOC	0.45	1.57			0.45	1.57	0	0	Heater	
					NOx	8.21	28.54			8.21	28.53	0	-0.0099		
					CO	6.9	23.97			6.9	23.97	0	0		
					PM	0.62	2.17			0.62	2.17	0.62	2.17		
					PM10	0.62	2.17			0.62	2.17	0	0		
					PM2.5	0.62	2.17			0.62	2.17	0.62	2.17		
					SO2	1.23	0.17			1.23	0.17	0	0		
New/Modified	Yes	BLOFUG	E-BLOFUG	PO/TBA & Derivative Fugitive Emissions	VOC	52.57	194.54			53.57	196.46	1	1.9201	Fugitives: Piping and Equipment Leak	
					CO	0.39	1.42			0.46	1.65	0.07	0.23		
					Acetone	1.86	6.95			1.82	6.84	-0.04	-0.11		
New/Modified	Yes	CD5B	E-CD5B	Loading Spot No. CD5B	VOC	0.54	0.16			0.58	0.16	0.04	0	Loading: Railcar	
New/Modified	Yes	CD6A	E-CD6A	Loading Spot No. CD6A	VOC	0.54	0.16			0.58	0.16	0.04	0	Loading: Railcar	
Renew only	Yes	CTC	E-CTC	Cooling Tower Chemical Additives	Additives	3.27	0.02			3.11	0.01	-0.16	-0.01	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1005B	E-F1005B	Tank No. F1005B	VOC	0.27	0.01			0.28	<0.01	0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1005C	E-F1005C	Tank No. F1005C	VOC	0.27	0.01			0.28	<0.01	0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1101A	E-F1101A	Tank No. F1101A	VOC	0.34	0.06			0.28	0.05	-0.06	-0.0099	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1101B	E-F1101B	Tank No. F1101B	VOC	0.34	0.06			0.28	0.05	-0.06	-0.0099	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1101C	E-F1101C	Tank No. F1101C	VOC	4.92	1.74			2.35	0.92	-2.57	-0.82	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1101D	E-F1101D	Tank No. F1101D	VOC	4.92	1.74			2.35	0.92	-2.57	-0.82	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1102A	E-F1102A	Tank No. F1102A	VOC	4.17	0.18			3.64	0.17	-0.53	-0.0099	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1102B	E-F1102B	Tank No. F1102B	VOC	4.17	0.18			3.64	0.17	-0.53	-0.0099	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1102C	E-F1102C	Tank No. F1102C	VOC	4.17	0.18			3.64	0.12	-0.53	-0.06	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1102D	E-F1102D	Tank No. F1102D	VOC	3.44	0.1			3.02	0.02	-0.42	-0.08	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1103A	E-F1103A	Tank No. F1103A	VOC	0.47	0.05			0.7	0.01	0.23	-0.04	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1103B	E-F1103B	Tank No. F1103B	VOC	0.47	0.05			0.7	0.01	0.23	-0.04	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1103C	E-F1103C	Tank No. F1103C	VOC	0.26	0.01			0.19	<0.01	-0.07	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1103D	E-F1103D	Tank No. F1103D	VOC	0.26	0.01			0.19	<0.01	-0.07	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1104A	E-F1104A	Tank No. F1104A	VOC	4.04	0.01			3.47	<0.01	-0.57	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1104B	E-F1104B	Tank No. F1104B	VOC	4.04	0.01			3.47	<0.01	-0.57	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1104C	E-F1104C	Tank No. F1104C	VOC	0.9	0.55			0.98	0.55	0.08	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	



**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Unit Types - Emission Rates**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Renew only	Yes	F1105A	E-F1105A	Tank No. F1105A	VOC	5.29	0.74			4.88	0.74	-0.41	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1105B	E-F1105B	Tank No. F1105B	VOC	5.29	0.74			4.88	0.74	-0.41	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1108A	E-F1108A	Tank No. F1108A	VOC	0.17	0.07			2.13	0.17	1.96	0.1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1109	E-F1109	Tank No. F1109	VOC	0.38	0.02			0.6	0.02	0.22	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F1110	E-F1110	Tank No. F1110	VOC	0.35	0.07			2.6	<0.01	2.25	-0.06	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1164	E-F1164	Tank No. F1164	VOC	9.13	0.14			7.96	0.03	-1.17	-0.11	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1204	E-F1204	Tank No. F1204	Caustic	0.1	<0.01			0.03	<0.01	-0.07	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1205	E-F1205	Tank No. F1205	Caustic	0.02	<0.01			0.02	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1280	E-F1280	Tank No. F1280	VOC	0.02	0.004			0.02	0.0004	0	-0.0036	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1411	E-F1411	Tank No. F1411	VOC	0.04	<0.01			0.03	<0.01	-0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1413	E-F1413	Tank No. F1413	VOC	0.08	<0.01			0.07	<0.01	-0.0099	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1414	E-F1414	Tank No. F1414	VOC	0.08	<0.01			0.07	<0.01	-0.0099	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1415	E-F1415	Tank No. F1415	VOC	0.08	<0.01			0.07	<0.01	-0.0099	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1418	E-F1418	Tank No. F1418	VOC	0.42	<0.01			0.36	<0.01	-0.06	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1455A	E-F1455A	Tank No. F1455A	VOC	0.04	<0.01			0.03	<0.01	-0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1455B	E-F1455B	Tank No. F1455B	VOC	0.04	<0.01			0.03	<0.01	-0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1457A	E-F1457A	Tank No. F1457A	VOC	0.04	<0.01			0.03	<0.01	-0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1457B	E-F1457B	Tank No. F1457B	VOC	0.04	<0.01			0.03	<0.01	-0.01	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1740	E-F1740	Tank No. F1740	VOC	17.58	1.25			15.09	1.14	-2.49	-0.11	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F1784	E-F1784	Tank No. F1784	VOC	0.1	<0.01			0.08	<0.01	-0.02	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F2340	E-F2340	Tank No. F2340	VOC	14.68	2.05			13.25	1.95	-1.43	-0.0999	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F2351	E-F2351	Hopper No. F2351	PM	0.7	0.01			1.39	0.02	0.69	0.01	Other	Hopper
					PM10					0.66	0.01	0.66	0.01		
					PM2.5					0.1	0.002	0.1	0.002		
New/Modified	Yes	F2835	E-F2835	Tank No. F2835	VOC	5.88	1.28			9.16	1.25	3.28	-0.03	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	F2866	E-F2866	Tank No. F2866	VOC	0.16	0.03			0.48	0.03	0.32	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	Yes	F3342A	E-F3342A	Tank No. F3342A	VOC	0.1	0.0004			0.09	-	-0.01	-0.0004	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
					PM	0.7	0.02			0.7	-	0	-0.02		
					PM10					0.33	-	0.33	0		
					PM2.5					0.05	-	0.05	0		
Renew only	Yes	F3342B	E-F3342B	Tank No. F3342B	VOC	0.1	0.0004			0.09	-	-0.01	-0.0004	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
					PM	0.7	0.02			0.7	-	0	-0.02		
					PM10					0.33	-	0.33	0		
					PM2.5					0.05	-	0.05	0		
Renew only	Yes	F3342A&B	E-F3342A&B	Tank Nos. F3342A and F3342B Cap	VOC	-	-			-	0.0005	0	0.0005	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
					PM	-	-			-	0.04	0	0.04		
					PM10	-	-			-	0.02	0	0.02		
					PM2.5	-	-			-	0.003	0	0.003		
Renew only	Yes	FTOTE	E-FTOTE	Chemical Totes	VOC	0.14	<0.01			<0.01	<0.01	-0.13	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
					H2SO4	0.005	<0.01			0.005	<0.01	0	0		
Renew only	Yes	FUGMNT	E-FUGMNT	Solvent Degreasing	VOC	0.04	0.12			0.04	0.12	0	0	MSS Activities	

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Unit Types - Emission Rates**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
New/Modified	Yes	FUGPNT	E-FUGPNT	Surface Coating/Abrasive Blasting	VOC	4.05	1.39			4.05	1.39	0	0	MSS Activities	
					PM	3.49	0.29			3.48	0.3	-0.01	0.01		
					PM10	0.91	0.19			0.9	0.18	-0.01	-0.01		
					PM2.5					0.9	0.18	0.9	0.18		
Renew only	Yes	LAB	E-LAB	Lab Exhaust Vent	VOC	5.2	1.15			5.2	1.15	0	0	Other	Laboratory Vent
New/Modified	Yes	LR4C	E-LR4C	Loading Spot No. LR4C	VOC	0.05	0.002			0.17	0.008	0.12	0.006	Loading: Railcar	
Renew only	Yes	SAMPLE	E-SAMPLE	Various Sample Points	VOC	3.28	3.01			3.28	3.01	0	0	Other	
New/Modified	Yes	SOAP	E-SOAP	Detergent Drums	VOC	4.77	0.06			4.62	0.035	-0.1499	-0.025	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	T5	E-T5	Loading Spot No. T5	VOC	0.31	0.08			0.43	0.08	0.12	0	Loading: Truck	
New/Modified	Yes	T12	E-T12	Loading Spot No. T12	VOC	0.54	0.08			0.58	0.08	0.04	0	Loading: Truck	
Renew only	Yes	T23	E-T23	Loading Spot No. T23	VOC	1.15	0.04			1.15	0.04	0	0	Loading: Truck	
Renew only	Yes	T25	E-T25	Loading Spot No. T25	Caustic	0.01	<0.01			<0.01	<0.01	0	0	Loading: Truck	
					VOC	0.03	<0.01			0.03	<0.01	0	0		
					Acetone	0.01	<0.01			0.02	<0.01	0.01	0		
New/Modified	Yes	U1801	E-U1801	BPI Cooling Tower	VOC	0.78	3.42			0.99	3.42	0.21	0	Cooling Tower	
					Acetone	0.08	0.34			0.1	0.34	0.02	0		
					PM					0.48	1.64	0.48	1.64		
					PM10	0.37	1.64			0.24	0.84	-0.13	-0.8		
					PM2.5					0.001	0.003	0.001	0.003		
										0	0	0	0		
										0	0	0	0		
										0	0	0	0		
Renew only	Yes	V3000	E-V3000	Affected Soil Storage Vault	VOC	2.92	1.36			2.92	1.36	0	0	Other	
Consolidate	Yes	T13	E-T13	Loading Spot No. T13	VOC			0.66	0.0048	0.66	0.0048	0	0	Loading: Truck	
Consolidate	Yes	T14	E-T14	Loading Spot No. T14	VOC			0.66	0.0048	0.66	0.0048	0	0	Loading: Truck	
Consolidate	Yes	LR4C	E-LR4D	Loading Spot No. LR4D	VOC			0.13	0.037	0.13	0.037	0	0	Loading: Railcar	
Consolidate	Yes	T10	E-T10	Loading Spot No. T10	VOC			0.58	0.08	0.58	0.08	0	0	Loading: Railcar	
										0	0	0	0		
Renew only	Yes	F551	E-F551	Tank No. F551	VOC	<0.01	<0.01			0	0	-0.01	-0.01	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Remove	Yes	F1412	E-F1412	Tank No. F1412	VOC	0.04	<0.01			0	0	-0.04	-0.01	Loading: Truck	
Remove	Yes	F1503B	E-F1503B	Tank No. F1503B	Caustic	0.01	<0.01			0	0	-0.01	-0.01	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
										0	0	0	0		
										0	0	0	0		
										0	0	0	0		
										0	0	0	0		
										0	0	0	0		
Renew only	No	F1419	E-F1419	Gasoline Tank	VOC	69.79	0.42			69.79	0.42	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	No	F1806	E-F1806	Bleach Tank	Bleach	2.06	0.02			2.06	0.02	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	No	F1808	E-1808	Bleach Tank	Bleach	2.06	0.02			2.06	0.02	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	No	F1817	E-F1812	Bleach Tank	Bleach	2.06	0.02			2.06	0.02	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	No	E5	E-E5	Loading Spot No. E5	VOC	0.66	<0.01			0.66	<0.01	0	0	Loading: Railcar	
Renew only	No	ENGINE	E-Engines	Diesel Engines	VOC	10.77	3.09			10.77	3.09	0	0	Other	Engines various
					NOx	120.12	36.83			120.12	36.83	0	0		
					CO	28.67	8.21			28.67	8.21	0	0		
					PM	9.44	2.71			9.44	2.71	0	0		
					PM10	9.44	2.71			9.44	2.71	0	0		
					PM2.5	9.44	2.71			9.44	2.71	0	0		
					SO2	8.8	2.52			8.8	2.52	0	0		

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Unit Types - Emission Rates**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Renew only	No	AB1	E-AB1	Loading Spot No. AB1	VOC	1.4	0.39			1.4	0.39	0	0	Loading: Railcar	
Renew only	No	AB2	E-AB2	Loading Spot No. AB2	VOC	1.4	0.39			1.4	0.39	0	0	Loading: Railcar	
Renew only	No	U1802	E-U1802	BPII Cooling Tower	VOC	1.56	6.05			1.56	6.05	0	0	Cooling Tower	
					Acetone	0.16	0.6			0.16	0.6	0	0		
					PM	0.75	2.9			0.75	2.9	0	0		
					PM10	0.38	1.49			0.38	1.49	0	0		
					PM2.5	0.0015	0.0059			0.0015	0.0059	0	0		
Renew only	No	T10PBR	E-T10	Loading Spot No. T10	VOC	1.4	0.2			1.4	0.2	0	0	Loading: Truck	
Renew only	No	CD4A	E-CD4A	Loading Spot No. CD4A	VOC	1.04	0.19			1.04	0.19	0	0	Loading: Railcar	
Renew only	No	MSS	MSS	Routine MSS	VOC	5.22	20.88			5.22	20.88	0	0	MSS Activities	
Renew only	No	TOTCAUS	E-TOTCAUS	Caustic Totes	Caustic	0.14	<0.01			0.14	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Renew only	No	U1803	E-U1803	BP III Cooling Tower	VOC	1.41	4.73			1.41	4.73	0	0	Cooling Tower	
					Acetone	0.14	0.47			0.14	0.47	0	0		
					PM	0.68	2.27			0.68	2.27	0	0		
					PM10	0.35	1.17			0.35	1.17	0	0		
					PM2.5	0.0014	0.0046			0.0014	0.0046	0	0		
												0	0		
												0	0		
												0	0		

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Stack Parameters**

Date: September 21, 2020

Permit #:9395

Company: Lyondell Chemical Company

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
E-ANALYZER	No	15	301342	3278435					77			
E-B801N&S	No	15	301519	3278605		60.8	9	6.77	800			
E-B901	No	15	301519	3278594		51.7	2.5	14.65	850			
E-B902A	No	15	301519	3278589		53	2.5	12.4	825			
E-B902B	No	15	301519	3278584		51.7	2.5	11.65	775			
E-B902C	No	15	301519	3278579		50.3	2.5	10.26	750			
E-B1550	No	15	301641	3278748		100	1.41	1600	370			
E-B1501A	Yes											
Process Flare Backup	No	15	301588	3278727		433	4	174.5	370			
E-B1501B	No	15	301577	3278916		482	5.5	196.4	370			
E-B1501C	No	15	301079	3279245		480	5.5	196.4	370			
E-B1751	No	15	301317	3278727		98	3	8.47	650			
E-B2890	No	15	301312	3278731		97	5.5	13.67	800			
E-BLOFUG	Yes											
E-CD5B	Yes											
E-CD6A	Yes											
E-CTC	No	15	301342	3278435					ambient			
E-F1005B	Yes											
E-F1005C	Yes											
E-F1101A	No	15	301419	3278548		12	0.33	8.1	150			
E-F1101B	No	15	301423	3278548		12	0.33	8.1	150			
E-F1101C	No	15	301467	3278524		12	0.167	9.61	90			
E-F1101D	No	15	301475	3278523		12	0.167	9.61	90			
E-F1102A	No	15	301460	3278544		32	0.167	349.7	120			
E-F1102B	No	15	301473	3278544		32	0.167	349.7	120			
E-F1102C	No	15	301473	3278532		32	0.167	349.7	120			
E-F1102D	No	15	301491	3278532		30	0.167	349.7	120			
E-F1103A	Yes											
E-F1103B	Yes											
E-F1103C	No	15	301474	3278515		8	0.167	4.14	150			
E-F1103D	No	15	301478	3278515		8	0.167	4.14	150			
E-F1104A	No	15	301447	3278539		16	0.167	16.36	90			
E-F1104B	No	15	301447	3278548		16	0.167	16.36	90			
E-F1104C	Yes											
E-F1105A	No	15	301236	3278762		24	0.25	39.9	160			
E-F1105B	No	15	301231	3278771		24	0.25	39.9	160			
E-F1108A	Yes											
E-F1109	Yes											
E-F1110	Yes											
E-F1164	No	15	301449	3278597		18	0.167	113	8.35			
E-F1204	No	15	301491	3278592		20	0.167	10.96	7.78			
E-F1205	No	15	301491	3278596		14	0.167	25.46	12.77			

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Stack Parameters**

Date: September 21, 2020

Permit #:9395

Company: Lyondell Chemical Company

EPN	Included in EMEW?	UTM Coordinates		Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
		Zone	East (Meters)								
E-F1280	No	15	301241	3278755	23	0.167	26.74	12.77			
E-F1411	No	15	301489	3278803	6.2	0.167	1.89	80			
E-F1413	No	15	301621	3278492	8.3	0.167	3.78	80			
E-F1414	No	15	301483	3278822	8.3	0.167	3.78	80			
E-F1415	No	15	301393	3279147	8.3	0.167	3.78	80			
E-F1418	Yes										
E-F1455A	No	15	301669	3278874	12	0.167	1.89	80			
E-F1455B	No	15	301669	3278886	12	0.167	1.89	80			
E-F1457A	No	15	301166	3279296	12	0.167	1.89	80			
E-F1457B	No	15	301160	3279300	12	0.167	1.89	80			
E-F1740	No	15	301316	3278767	6	0.167	6.43	115			
E-F1784	No	15	301324	3278793	23	0.042	98.04	130			
E-F2340	No	15	301399	3278817	20	0.167	12.09	105			
E-F2351	No	15	301399	3278817	20	0.167	12.09	105			
E-F2835	Yes										
E-F2866	Yes										
E-F3342A	Yes										
E-F3342B	Yes										
E-F3342A&B	Yes										
E-FTOTE	No	15	301342	3278435	3	0.167	31.75	ambient			
E-FUGMNT	No	15	301444	3279145					1413	1032	87.24
E-FUGPNT	No	15	301350	3279356					125	54	87.24
E-LAB	No	15	301758	3279257	24	5	54.7	75	119	104	87.24
E-LR4C	Yes										
E-SAMPLE	No	15	301342	3278435					260	130	62.46
E-SOAP	No	15	301342	3278435				ambient			
E-T5	Yes										
E-T12	Yes										
E-T23	No	15	301250	3278728				180			
E-T25	No	15	301495	3278592				100			
E-U1801	No	15	301474	3278619							
E-V3000	No	15	301183	3279070							
E-T13	No	15	300980	3279239							
E-T14	Yes										
E-LR4D	Yes										
E-T10	Yes										
E-F551	Yes										
E-F1412	No	15	301404	3279187	12	0.167	11.9	80			
E-F1503B	No	15	301611	3278628	11	0.167	2.54	120			
E-F1419	No	15	301493	3278476	6.1	0.167	1.89	80			
E-F1806	No	15	301561	3278910	10	0.167	7.65	100			
E-1808	No	15	301406	3278945							
E-F1812	No	15	301406	3278945					1413	1032	87.24

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Stack Parameters**

Date: September 21, 2020

Permit #:9395

Company: Lyondell Chemical Company

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
E-E5												
E-Engines												
E-AB1												
E-AB2												
E-U1802												
E-CD4A												
MSS												
E-TOTECAUS												
E-U1803												

**Texas Commission on Environmental Quality  
Form PI-1 General Application  
Public Notice**

Date: September 21, 2020  
Permit #:9395  
Company: Lyondell Chemical Company

**I. Public Notice Applicability**

**A. Application Type**

Is this an application for a renewal?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (a new criteria pollutant or a new VOC or PM species)?	Yes
Is there a new air contaminant in this application?	No

**B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)**

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

- Notes:**
- Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10, and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.
  - All renewals require public notice.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
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Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No
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**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Public Notice**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	320.16	0.13	318.97	-1.31	5	No
PM	0.34	0.00	9.26	8.92	5	Yes*
PM <sub>10</sub>	9.31	0.00	8.31	-1.00	5	Yes*
PM <sub>2.5</sub>	0.00	0.00	7.45	7.45	5	Yes*
NO <sub>x</sub>	128.77	0.00	125.84	-2.93	5	No
CO	250.60	0.00	245.40	-5.20	50	No
SO <sub>2</sub>	0.95	0.00	0.92	-0.03	10	No
Pb	0.00	0.00	0.00	0.00	0.6	No
Acetone	24.28	0	23.96	-0.32	5	No
Additives	0.02	0	0.01	-0.01	5	No
Caustic	0.04	0	0.03	-0.01	5	No
H2SO4	0.01	0	0.01	0	5	No
Bleach	0	0	0	0	5	No

\* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

\*\* Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

<b>C. Is public notice required for this project as represented in this workbook?</b> If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
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<b>D. Are any HAPs to be authorized/re-authorized with this project?</b> The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No
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**II. Public Notice Information**

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

**A. Contact Information**

Enter the contact information for the **person responsible for publishing**. This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Derek
Last Name:	Rodricks
Title:	Principal Environmental Engineer
Company Name:	Lyondell Chemical Company

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Public Notice**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Mailing Address:	10801 Choate Road
Address Line 2:	
City:	Pasadena
State:	TX
ZIP Code:	77507
Telephone Number:	281-291-1684
Fax Number:	
Email Address:	<a href="mailto:derek.rodricks@lyb.com">derek.rodricks@lyb.com</a>

Enter the contact information for the **Technical Contact**. This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Derek
Last Name:	Rodricks
Title:	Principal Environmental Engineer
Company Name:	Lyondell Chemical Company
Mailing Address:	10801 Choate Road
Address Line 2:	
City:	Pasadena
State:	TX
ZIP Code:	77507
Telephone Number:	281-291-1684
Fax Number:	
Email Address:	<a href="mailto:derek.rodricks@lyb.com">derek.rodricks@lyb.com</a>

**B. Public place**

Place a copy of the full application (including all of this workbook and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	La Porte Public Library
Physical Address:	600 S. Broadway St.
Address Line 2:	
City:	La Porte
ZIP Code:	77521
County:	Harris

Has the public place granted authorization to place the application for public viewing and copying?	Yes
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**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Public Notice**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

**III. Small Business Classification**

Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.

Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than \$6 million in annual gross receipts?	No
Small business classification:	No

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Federal Applicability**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Harris
This project will be located in an area that is in serious nonattainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
<b>Determination:</b>	<b>This project will be located in a county with a Serious Ozone nonattainment classification. Complete the nonattainment section below and provide an analysis with the application.</b>

II. PSD and GHG PSD Applicability Summary			
Is netting required for the PSD analysis for this project?			No
Pollutant	Project Increase	Threshold	PSD Review Required?
CO	0.23	100	No
NO <sub>x</sub>	0	25	No
PM	0.28	40	No
PM <sub>10</sub>	0.01	15	No
PM <sub>2.5</sub>	0.0015	10	No
SO <sub>2</sub>	0	40	No
Pb	0	0.6	No
H <sub>2</sub> S	0	10	No
TRS	0	10	No
Reduced sulfur compounds (including H <sub>2</sub> S)	0	10	No
H <sub>2</sub> SO <sub>4</sub>	0	7	No
Fluoride (excluding HF)	0	3	No
CO <sub>2</sub> e	0	75,000	No

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Federal Applicability**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

**III. Nonattainment Applicability Summary**

<b>III. Nonattainment Applicability Summary</b>			
Is netting required for the nonattainment analysis for this project?			<b>No</b>
Pollutant	Project Increase	Threshold	NA Review Required?
Ozone (as VOC)	2.09	25	No
Ozone (as NO <sub>x</sub> )	0.91	25	No

**Texas Commission on Environmental Quality  
Form PI-1 General Application  
Fees**

Date: September 21, 2020

Permit #:9395

Company: Lyondell Chemical Company

<b>I. General Information - Non-Renewal</b>	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of \$75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option. Then skip sections II and III.	No
<b>Select Application Type</b>	Minor Application

<b>II. Direct Costs - Non-Renewal</b>	
<b>Type of Cost</b>	<b>Amount</b>
Process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	
Freight charges.	
Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	
Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	
Ambient air monitoring network.	
<b>Sub-Total:</b>	\$0.00

<b>III. Indirect Costs - Non-Renewal</b>	
<b>Type of Cost</b>	<b>Amount</b>
Final engineering design and supervision, and administrative overhead.	
Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	
Contractor's fee and overhead.	
<b>Sub-Total:</b>	\$0.00

<b>IV. Calculations - Non-Renewal</b>
For GHG permits: A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application. Identify these other fees in the GHG PSD permit application.
<b>In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.</b>



**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Fees**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Estimated Capital Cost	Minor Application Fee
Less than \$300,000	\$900 (minimum fee)
\$300,000 - \$7,500,000	N/A
\$300,000 - \$25,000,000	0.30% of capital cost
Greater than \$7,500,000	N/A
Greater than \$25,000,000	\$75,000 (maximum fee)

<b>Your estimated capital cost:</b>	<b>\$0.00</b>	Minimum fee applies.
<b>Permit Application Fee:</b>	<b>\$900.00</b>	

V. Renewal Fee	
The fee for renewal is based on the total annual allowable emissions from the permitted facility to be renewed. If this project includes an amendment, the amendment permit fee will be calculated separately.	
Enter the total allowable emissions (tons per year). The total emissions must include those represented in any PBR or standard permits to be incorporated by consolidation into this permit.	740
<b>Permit fee due</b>	<b>\$ 10,000.00</b>

VI. Total Fees	
<b>Note: fees can be paid together with one payment or as two separate payments.</b>	
Non-Renewal Fee	\$900.00
Renewal Fee	\$ 10,000.00
<b>Total</b>	<b>\$10,900.00</b>

VII. Payment Information	
<b>A. Payment One (required)</b>	
Was the fee paid online?	No
Enter the fee amount:	\$ 10,900.00
Enter the check, money order, ePay Voucher, or other transaction number:	525935
Enter the Company name as it appears on the check:	Lyondell Chemical Company
<b>B. Payment Two (if paying renewal and non-renewal fees separately)</b>	
Was the fee paid online?	
Enter the fee amount:	
Enter the check, money order, ePay Voucher, or other transaction number:	
Enter the Company name as it appears on the check:	
<b>C. Total Paid</b>	<b>\$10,900.00</b>

VIII. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above \$2 million?	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	No

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Impacts**

Date: September 21, 2020  
 Permit #:9395

Company: Lyondell Chemical Company

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
NOx	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
CO	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
Acetone	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
PM	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
PM10	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**Impacts**

Date: September 21, 2020

Permit #:9395

Company: Lyondell Chemical Company

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
PM2.5	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
SO2	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Additives	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Caustic	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H2SO4	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Bleach	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	

Texas Commission on Environmental Quality  
Form PI-1 General Application  
BACT

Date: September 21, 2020  
Permit #:9395  
Company: Lyondell Chemical Company

FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
ANALYZER	Analyzer vent	VOC	See additional notes:		Emissions are low; no control is proposed.
		NOx	See additional notes:		Emissions are low; no control is proposed.
		CO	See additional notes:		Emissions are low; no control is proposed.
		Acetone	See additional notes:		Emissions are low; no control is proposed.
		<b>MSS</b>	See additional notes:		Same as normal operation BACT requirements.
B801N&S	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater does not fire fuel gas.
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Heater firing rate <100 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.
		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B901	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater does not fire fuel gas.

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**BACT**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Very small heater with a firing rate <20 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.
		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B902A	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater does not fire fuel gas.
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Very small heater with a firing rate <20 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.
		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.

**Texas Commission on Environmental Quality**  
**Form PI-1 General Application**  
**BACT**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B902B	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater does not fire fuel gas.
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Very small heater with a firing rate <20 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.
		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B902C	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater does not fire fuel gas.
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Very small heater with a firing rate <20 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.
		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	Same as normal operation BACT requirements.	Yes	
B1550	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.		The flare is designed and operated in accordance with 40 CFR 60.18. The TCEQ considers flares operated in accordance with 40 CFR 60.18 to be BACT for flare operations. Based on TCEQ approved (March 31, 2011 Permit 9395 renewal/amendment) VOC destruction/removal efficiency of continuous flare is at least 99% for propylene oxide, 98% for acetone and 99.5% for all other VOCs. There is no flaring of halogenated compounds. Flow rate is monitored continuously. HRVOC analyzer is used to monitor the composition of the vent to flare. The flare is not a new/modified source, and therefore BACT is not triggered.
		NOx	Provide emission factor used and reference.		Based on TCEQ approved (March 31, 2011 Permit 9395 renewal/amendment) a NOx emission factor of 0.05 lb/MMBtu is being used, for a steam assist flare with a DRE of 99.5% as provided in TCEQ Technical Guidance Document, Flare and Vapor Oxidizers, October 2000. The flare is not a new/modified source, and therefore BACT is not triggered.
		CO	Provide emission factor used and reference.		Based on TCEQ approved (March 31, 2011 Permit 9395 renewal/amendment) a CO emission factor of 0.26 lb/MMBtu is being used, for a steam assist flare with a DRE of 99.5% as provided in TCEQ Technical Guidance Document, Flare and Vapor Oxidizers, October 2000. The flare is not a new/modified source, and therefore BACT is not triggered.
		SO2	Provide emission factor used and reference.		Hourly - 15 lb/MMscf - TCEQ basis of 5 grains/100 scf; Annual - 0.6 lb/MMscf - AP-42 Table 1.4-2
		Acetone	See additional notes:		Based on TCEQ approved (March 31, 2011 Permit 9395 renewal/amendment) a NOx emission factor of 0.05 lb/MMBtu is being used, for a steam assist flare with a DRE of 99.5% as provided in TCEQ Technical Guidance Document, Flare and Vapor Oxidizers, October 2000. The flare is not a new/modified source, and therefore BACT is not triggered.
		MSS	Same as normal operation BACT requirements.	Yes	



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B1501A	Control: Flare	NOx	Provide emission factor used and reference.		NOx emission factors for the Plant I E Flare pilot is steam assist, low Btu factors from TCEQ's guidance document "Flares and Vapor Oxidizers," dated October 2000.
		CO	Provide emission factor used and reference.		CO emission factors for the Plant I E Flare pilot is steam assist, low Btu factors from TCEQ's guidance document "Flares and Vapor Oxidizers," dated October 2000.
		SO2	Provide emission factor used and reference.		Hourly - 15 lb/MMscf - TCEQ basis of 5 grains/100 scf; Annual - 0.6 lb/MMscf - AP-42 Table 1.4-2
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
Process Flare Backup	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.		The flare is designed and operated in accordance with 40 CFR 60.18, when it serves as a backup to Continuous Flare. The TCEQ considers flares operated in accordance with 40 CFR 60.18 to be BACT for flare operations. VOC process vent emissions are estimated using Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise as directed by the TCEQ for flares meeting the requirements of 40 CFR 60.18. When it serves as a backup to Continuous Flare, the flow rate will be monitored continuously and a HRVOC analyzer will used to monitor the composition of the vent to flare.
		NOx	Provide emission factor used and reference.		NOx emission factors for the Plant 1 E Flare (when serving as a backup to the continuous flare) are steam assist, low Btu factors from TCEQ's guidance document "Flares and Vapor Oxidizers," dated October 2000.
		CO	Provide emission factor used and reference.		CO emission factors for the Plant 1 E Flare (when serving as a backup to the continuous flare) are steam assist, low Btu factors from TCEQ's guidance document "Flares and Vapor Oxidizers," dated October 2000.
		SO2	Provide emission factor used and reference.		Hourly - 15 lb/MMscf - TCEQ basis of 5 grains/100 scf; Annual - 0.6 lb/MMscf - AP-42 Table 1.4-2
		Acetone	See additional notes:		See VOC discussion.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B1501B	Control: Flare	NOx	Provide emission factor used and reference.		Pilot: TCEQ Technical Supplement Flares: Air/unassisted, High Btu flare pilot: 0.138 lb/MMBtu Process: TCEQ Technical Supplement Flares: Air/unassisted, Low Btu flare: 0.0641 lb/MMBtu

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		CO	Provide emission factor used and reference.		Pilot: TCEQ Technical Supplement Flares: Air/unassisted, High Btu flare pilot: 0.2755 lb/MMBtu Process: TCEQ Technical Supplement Flares: Air/unassisted, Low Btu flare: 0.5496 lb/MMBtu
		SO2	Provide emission factor used and reference.		Hourly - 15 lb/MMscf - TCEQ basis of 5 grains/100 scf; Annual - 0.6 lb/MMscf - AP-42 Table 1.4-2
		VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.		Operation of Emergency Flare EPN E-B1501B during non emergency condition will meet the velocity and heating value requirements of 40 CFR 60.18. A destruction efficiency of atleast 98% has been used for VOCs and Acetone. Monitoring will occur per the requirements of 30 TAC 115.725(k). Near smokeless performance has been achieved during non-emergency flaring conditions. The flare flares are equipped with non-assisted flare tips that are not designed to operate smokeless during emergency operations. The flare is not a new/modified source, and therefore BACT is not triggered.
		Acetone	See additional notes:		See VOC discussion.
		MSS	Same as normal operation BACT requirements.	Yes	
B1501C	Control: Flare	NOx	Provide emission factor used and reference.		Pilot: TCEQ Technical Supplement Flares: Air/unassisted, High Btu flare pilot: 0.138 lb/MMBtu Process: TCEQ Technical Supplement Flares: Air/unassisted, Low Btu flare: 0.0641 lb/MMBtu
		CO	Provide emission factor used and reference.		Pilot: TCEQ Technical Supplement Flares: Air/unassisted, High Btu flare pilot: 0.2755 lb/MMBtu Process: TCEQ Technical Supplement Flares: Air/unassisted, Low Btu flare: 0.5496 lb/MMBtu
		SO2	Provide emission factor used and reference.		Hourly - 15 lb/MMscf - TCEQ basis of 5 grains/100 scf; Annual - 0.6 lb/MMscf - AP-42 Table 1.4-2
		VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.		Operation of Emergency Flare EPN E-B1501B during non emergency condition will meet the velocity and heating value requirements of 40 CFR 60.18. A destruction efficiency of atleast 98% has been used for VOCs and Acetone. Monitoring will occur per the requirements of 30 TAC 115.725(k). Near smokeless performance has been achieved during non-emergency flaring conditions. The flare flares are equipped with non-assisted flare tips that are not designed to operate smokeless during emergency operations. The flare is not a new/modified source, and therefore BACT is not triggered.
		Acetone	See additional notes:		See VOC discussion.

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		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B1751	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.		VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater may also fire fuel gas. The heater is not a new/modified source, and therefore BACT is not triggered.
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Very small heater, with a firing rate <20 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.
		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
B2890	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.		VOC emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater may also fire fuel gas. The heater is not a new/modified source, and therefore BACT is not triggered.
		NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu.  Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu.  CEMS required for 100 MMBtu/hr or greater.		NOx emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. The heater is included in the Mass emission cap and trade program (MECT). Very small heater, with a firing rate <20 MMBtu/hr so no SCR or CEMS is required. This is not a new/modified source, and therefore BACT is not triggered.
		CO	50 ppmv corrected to 3% O2		CO emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. CO emission rate is < 100 ppmvd at 3 percent O2. This is not a new/modified source, and therefore BACT is not triggered.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	PM emissions will be minimized by firing pipeline quality natural gas and using good combustion practices. PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%. This is not a new/modified source, and therefore BACT is not triggered.

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		SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	SO2 emissions will be minimized by firing pipeline quality sweet natural gas, with <=5 grains/100 scf will be used.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
BLOFUG	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none  2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M.  3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors.  4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected.  For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.		Reduction credits based on 28VHP LDAR Program in Table V: Control Efficiencies for LDAR from the TCEQ Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance (APDG 6422v2), dated 06/18. For connectors subject to MACT requirements, Lyondell performs annual monitoring with an approved gas analyzer for connectors in gas/vapor and light liquid service. Therefore a 75% reduction credit is taken per 28CNTA monitoring. For connectors subject to HRVOC requirements, Lyondell performs quarterly monitoring with an approved gas analyzer for connectors in gas/vapor and light liquid service. Therefore a 97% reduction credit taken per 28CNTQ monitoring.
		CO	See Additional Notes:		See VOC discussion.
		Acetone	See additional notes:		See VOC discussion.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
CD5B	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		Option 1: VOC vp <0.5 psia: submerged or bottom loading. No splash loading.

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		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
CD6A	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading. 2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		Option 1: VOC vp <0.5 psia: submerged or bottom loading. No splash loading.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
CTC	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	Additives	See additional notes:		The cooling tower chemical additives storage (EPN E-CTC) are fixed roof and the uninsulated exterior surfaces exposed to the sun are white. They store chemicals with a vapor pressure less than 0.5 psia.

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		<b>MSS</b>	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1005B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
F1005C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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		<b>MSS</b>	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1101A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		<b>MSS</b>	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1101B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	



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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1101C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1101D	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	



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		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1102A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1102B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:  VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.  Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1102C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:  VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.  Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1102D	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1103A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1103B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1103C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1103D	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1104A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1104B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:  VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.  Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1104C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:  VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.  Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1105A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1105B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
F1108A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1109	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1110	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	



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		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:                      VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.                      Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1164	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	
F1204	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	Caustic	See additional notes:		Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun is white in color.

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1205	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	Caustic	See additional notes:		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less than 3,000 gallons with very low emissions.
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1280	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1411	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less than 500 gallons with very low emissions.
F1413	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less than 500 gallons with very low emissions.





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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1455B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less that 500 gallons with very low emissions.
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F1457A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less that 500 gallons with very low emissions.



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			Same as normal operation BACT requirements except as listed below.		
		<b>MSS</b>	Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1784	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is aluminum. Tank with material with max TVP less than 0.5 psia and total volume less than 500 gallons with very low emissions.
			Same as normal operation BACT requirements except as listed below.		
		<b>MSS</b>	Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F2340	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank with submerged fill. Uninsulated exterior surfaces exposed to the sun is aluminum. Tank with material with max TVP less than 0.5 psia and total volume less than 25,000 gallons and the tanks is not a new emission/modified source and BACT is not applicable.



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		<b>MSS</b>	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F2351	Hopper	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See additional notes:		Emissions are low, no control is proposed.
		<b>MSS</b>	See additional notes:		Emissions are low, no control is proposed.
F2835	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	

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		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F2866	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less that 1000 gallons with very low emissions.
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F3342A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less that 1000 gallons with very low emissions.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Emissions are low, no control is proposed.

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		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F3342B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less that 1000 gallons with very low emissions.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Emissions are low, no control is proposed.
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>	Yes	
F3342A&B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank. Uninsulated exterior surfaces exposed to the sun is white in color. Tank with material with max TVP less than 0.5 psia and total volume less that 1000 gallons with very low emissions.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Emissions are low, no control is proposed.



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		<b>MSS</b>	Not required since this is a MSS unit type.		
FUGPNT	MSS Activities	VOC	See Additional Notes:		Good housekeeping and best management practices to reduce VOC emissions from painting activities.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Outdoor surface coating facility (area has a roof but is open on all sides) for maintenance activities, a high volume low pressure (HVLP) air-assisted spray equipment, which reduces PM and VOC emissions from painting and reduces coating consumption due to the high transfer efficiency involved
		<b>MSS</b>	Not required since this is a MSS unit type.		
LAB	Laboratory Vent	VOC	See additional notes:		Emissions are low, no control is proposed.
		<b>MSS</b>	See additional notes:		Same as VOC
LR4C	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.

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		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
SAMPLE	Other	VOC	See additional notes:		Emissions are low, no control is proposed.
		<b>MSS</b>	See additional notes:		Same as VOC
SOAP	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		Fixed roof tank with a total volume < 1,000 gallon storing material with a maximum vapor pressure of < 0.5 psia. Uninsulated exterior surfaces exposed to the sun is white.
		<b>MSS</b>	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

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T5	Loading: Truck	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading. 2. VOC vp ≥ 0.5 psia: route to VOC control device and meet the specific control device requirements. 98.7% collection efficiency for annual NSPS XX leak check.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
T12	Loading: Truck	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading. 2. VOC vp ≥ 0.5 psia: route to VOC control device and meet the specific control device requirements. 98.7% collection efficiency for annual NSPS XX leak check.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
T23	Loading: Truck	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading. 2. VOC vp ≥ 0.5 psia: route to VOC control device and meet the specific control device requirements. 98.7% collection efficiency for annual NSPS XX leak check.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.

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		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
T25	Loading: Truck	Caustic	See additional notes:		Same as VOC
		VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading. 2. VOC vp ≥ 0.5 psia: route to VOC control device and meet the specific control device requirements. 98.7% collection efficiency for annual NSPS XX leak check.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.
		Acetone	See additional notes:		Same as VOC
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
U1801	Cooling Tower	VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.		Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.06 ppmw cooling water VOC concentration.
		Acetone	See additional notes:		Same as VOC; Acetone is assumed to be 10% of VOC so controlling VOC will control Acetone.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
V3000	Other	VOC	See additional notes:		Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.06 ppmw cooling water VOC concentration.



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		<b>MSS</b>	See additional notes:	Yes	Same as VOC.
T13	Loading: Truck	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.		Good housekeeping and best management practices for handling soil samples to reduce emissions.
		<b>MSS</b>	Same as normal operation BACT requirements.		Same as VOC
T14	Loading: Truck	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC vp ≥ 0.5 psia: route to VOC control device and meet the specific control device requirements. 98.7% collection efficiency for annual NSPS XX leak check.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.
		<b>MSS</b>	Same as normal operation BACT requirements.	Yes	
T10	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.

FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	Same as normal operation BACT requirements.	Yes	
F551	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		VOC vp <0.5 psia: submerged or bottom loading. No splash loading.
		MSS	Same as normal operation BACT requirements except as listed below.  Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
F1419	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.		This tank is authorized by Permit by Rule and is therefore not subject to BACT.

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>		N/A
F1806	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	Bleach	See additional notes:		This tank is authorized by Permit by Rule and is therefore not subject to BACT.
		MSS	<p>Same as normal operation BACT requirements except as listed below.</p> <p>Fixed roof tank draining:            VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT.            Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.</p>		N/A
F1808	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	Bleach	See additional notes:		This tank is authorized by Permit by Rule and is therefore not subject to BACT.



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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		<b>MSS</b>	Same as normal operation BACT requirements.		
ENGINE	Engines various	VOC	See additional notes:		The diesel engines are authorized by Permit by Rule and are therefore not subject to BACT. The emergency use engines are limited to 100 hrs./yr. of non-emergency operation. As required, the diesel engines fire low sulfur diesel fuel, have a non-resettable runtime meter.
		NOx	See additional notes:		The diesel engines are authorized by Permit by Rule and are therefore not subject to BACT. The emergency use engines are limited to 100 hrs./yr. of non-emergency operation. As required, the diesel engines fire low sulfur diesel fuel, have a non-resettable runtime meter. The non-emergency use diesel engines are subject to the Mass Emissions Cap and Trade Program under 30 TAC Chapter 101, Subchapter H, Division 3, and are included in the annual Level of Activity and NOx allocation.
		CO	See additional notes:		The diesel engines are authorized by Permit by Rule and are therefore not subject to BACT. The emergency use engines are limited to 100 hrs./yr. of non-emergency operation. As required, the diesel engines fire low sulfur diesel fuel, have a non-resettable runtime meter.
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See additional notes:		The diesel engines are authorized by Permit by Rule and are therefore not subject to BACT. The emergency use engines are limited to 100 hrs./yr. of non-emergency operation. As required, the diesel engines fire low sulfur diesel fuel, have a non-resettable runtime meter.
		SO2	See additional notes:		The diesel engines are authorized by Permit by Rule and are therefore not subject to BACT. The emergency use engines are limited to 100 hrs./yr. of non-emergency operation. As required, the diesel engines fire low sulfur diesel fuel, have a non-resettable runtime meter.
		<b>MSS</b>	See additional notes:		N/A
AB1	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading. 2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		This loading spot is authorized by Permit by Rule and is therefore not subject to BACT.

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		<b>MSS</b>	Same as normal operation BACT requirements.		N/A
AB2	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		This cooling tower is authorized by Permit by Rule and is therefore not subject to BACT.
		<b>MSS</b>	Same as normal operation BACT requirements.		N/A
U1802	Cooling Tower	VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.		This loading spot is authorized by Permit by Rule and is therefore not subject to BACT.
		Acetone	See additional notes:		Same as VOC
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators		Same as VOC
		<b>MSS</b>	Same as normal operation BACT requirements.		N/A
T10PBR	Loading: Truck	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC vp ≥ 0.5 psia: route to VOC control device and meet the specific control device requirements. 98.7% collection efficiency for annual NSPS XX leak check.		This loading spot is authorized by Permit by Rule and is therefore not subject to BACT.

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		<b>MSS</b>	Same as normal operation BACT requirements.		N/A
CD4A	Loading: Railcar	VOC	Specify option: 1. VOC vp < 0.5 psia: submerged or bottom loading. No splash loading.  2. VOC ≥ 0.5 psia: Route to VOC control device and meet the specific control device requirements. 100% collection efficiency of pressure-rated cars ensured by Department of Transportation Testing. Hard piped or bolted connections, dry lock design. Hard piping loading arms and/or pressure-rated chemical transfer hoses.		This loading spot is authorized by Permit by Rule and is therefore not subject to BACT.
		<b>MSS</b>	Same as normal operation BACT requirements.		N/A
MSS	MSS Activities	VOC	See Additional Notes:		These MSS activities are authorized by Permit by Rule and are therefore not subject to BACT.
		<b>MSS</b>	Not required since this is a MSS unit type.		
TOTCAUS	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	Caustic	See additional notes:		These totes are authorized by Permit by Rule and are therefore not subject to BACT.

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FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
		<b>MSS</b>	Same as normal operation BACT requirements except as listed below.		N/A
U1803	Cooling Tower	VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.		This cooling tower is authorized by Permit by Rule and is therefore not subject to BACT.
		Acetone	See additional notes:		Same as VOC
		PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators		Same as VOC
		<b>MSS</b>	Same as normal operation BACT requirements.		N/A



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**Monitoring**

This sheet provides the minimum acceptable requirements to demonstrate compliance through monitoring for each pollutant proposed to be emitted from each FIN. This sheet also includes measuring techniques for sources of significant emissions in the project.

**Instructions:**

1. The unit types listed under Unit Type (column B) include all new, modified, consolidated, and/or renewed sources as indicated on the "Unit Types - Emission Rates" sheet. Each new, modified, consolidated, and/or renewed source must address how compliance will be demonstrated.
2. The pollutants listed in Pollutant (column C) include the pollutants indicated on the "Unit Types - Emission Rates" sheet.

**Monitoring (30 TAC § 116.111(a)(2)(G))**

3. The minimum acceptable monitoring is automatically populated for each unit type and pollutant.
  - Additional monitoring may be required, particularly for Title V sources, and will be included in the NSR and/or Title V permits.
4. Fully expand the Minimum Monitoring Requirements (column D) by increasing the row heights so all text is visible. (Place the cursor on the bottom of the number line to the far left of the screen, click and drag downward until all text is visible.)
5. Review the monitoring and confirm that you will meet all representations listed on the sheet and any additional attachments by entering or selecting "Yes" in Confirm (column E).
6. Add additional notes as necessary in Additional Notes for Monitoring (column F), limited to 500 characters or fewer. Examples include the following:
  - Proposed monitoring for pollutants or units that list "See additional notes:";
  - Details requested in the populated data;
  - Alternative monitoring you are proposing; and
  - Any additional information relevant to the minimization of emissions.
7. Cap EPNs do not need monitoring (leave those rows blank).

**Measurement of Emissions (30 TAC § 116.111(a)(2)(B))**

Note: this section will be greyed out if this project does not require PSD or nonattainment review, as represented on the General sheet.

7. For each pollutant with a project increase **greater** than the PSD significant emission rate, select the proposed measurement technique using the dropdown (column G).
8. For each pollutant with a project increase **less** than the PSD significant emission rate: leave blank.
9. If selecting "other", provide details in Additional Notes for Measuring (column H).
10. You may also use the Additional Notes for Measuring (column H) to provide more details on a selection.

[Click here to return to Cover Sheet.](#)

**Important Note:** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours. All required records must be maintained in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application. The site must make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner. The applicant must comply with any additional recordkeeping requirements specified in special conditions in the permit. All records must be retained in the file for at least two years following the date that the information or data is obtained. Some permits are required to maintain records for five years. [30 TAC § 116.115(b)(2)(E)]

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring
ANALYZER	Analyzer vent	VOC	See additional notes:		Requirement dependent on application representation basis
		NOx	See additional notes:		Requirement dependent on application representation basis
		CO	See additional notes:		Requirement dependent on application representation basis
		Acetone	See additional notes:		Requirement dependent on application representation basis

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B801N&S	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.  Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	
B901	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	

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		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.  Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	
B902A	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.	Yes	

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		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	
B902B	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.  Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	

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B902C	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.  Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	

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B1550	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	
		Acetone	See additional notes:		See VOC discussion
B1501A	Control: Flare	NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.

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Process Flare Back	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		Acetone	See additional notes:		See VOC discussion
B1501B	Control: Flare	NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.

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		VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		Acetone	See additional notes:		See VOC discussion
B1501C	Control: Flare	NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.		Pilot flame presence monitored continuously. When the emergency flare is used as a back-up to the continuous flare utilize a calorimeter or analyzer to monitor the heating value of stream. Process knowledge and engineering estimates will be used to estimate the flow to the emergency flare.
		Acetone	See additional notes:		See VOC discussion



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B1751	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.  Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	
B2890	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	

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		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed.  Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	
BLOFUG	Requires: Piping and Equipment Leak	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitators and valve seals on piping components in light	Yes	
		CO	See Additional Notes:		See VOC discussion
		Acetone	See additional notes:		See VOC discussion

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CD5B	Loading: Railcar	VOC	Temperature and Hourly volume loaded for each product. Observation for connection leaks. Where vapor routed to control copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading.	Yes	
CD6A	Loading: Railcar	VOC	Temperature and Hourly volume loaded for each product. Observation for connection leaks. Where vapor routed to control copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading.	Yes	
CTC	Storage tank (1). Fixed roof with capacity < 25,000 gal or	Additives	See additional notes:		Stored material and throughput
F1005B	Storage tank (1). Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1005C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1101A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1101B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1101C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1101D	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1102A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1102B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1102C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1102D	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1103A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1103B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1103C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1103D	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1104A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1104B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1104C	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1105A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1105B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1108A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1109	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1110	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	



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F1164	Storage Tank (1); Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1204	Storage Tank (1); Fixed roof with capacity < 25,000 gal or	Caustic	See additional notes:		Stored material and throughput
F1205	Storage Tank (1); Fixed roof with capacity < 25,000 gal or	Caustic	See additional notes:		Stored material and throughput
F1280	Storage Tank (1); Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1411	Storage Tank (1), Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1413	Storage Tank (1), Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1414	Storage Tank (1), Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1415	Storage Tank (1), Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1418	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1455A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1455B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1457A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F1457B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1740	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1784	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F2340	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	

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F2351	Hopper	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See additional notes:		Amount of catalyst handled.
F2835	Storage Tank (1): Fixed roof with capacity < 25,000 gal or less	VOC	Stored material and throughput	Yes	
F2866	Storage Tank (1): Fixed roof with capacity < 25,000 gal or less	VOC	Stored material and throughput	Yes	
F3342A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or less	VOC	Stored material and throughput	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Amount of catalyst handled.

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F3342B	Storage Tank (1): Fixed roof with capacity of 25,000 gal or	VOC	Stored material and throughput	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Amount of catalyst handled.
F3342A&B	Storage Tank (1): Fixed roof with capacity of 25,000 gal or	VOC	Stored material and throughput	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:		Amount of catalyst handled.
FTOTE	Storage Tank (1): Fixed roof with capacity of 25,000 gal or	VOC	Stored material and throughput	Yes	
		H2SO4	See Additional Notes:		Stored material and throughput

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FUGMNT	MSS Activities	VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.		Solvent makeup, and waste disposal
FUGPNT	MSS Activities	VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.		Tracking of amount of paint/ solvent used, hours of painting operations, VOC content from MSDS etc.
LAB	Laboratory Vent	VOC	See additional notes:		Requirement dependent on application representation basis

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LR4C	Loading: Railcar	VOC	Temperature and Hourly volume loaded for each product. Observation for connection leaks. Where vapor routed to control copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading.	Yes	
SAMPLE	Other	VOC	See additional notes:		Requirement dependent on application representation basis
SOAP	Storage Tank (1): Fixed roof with capacity < 25,000 gal	VOC	Stored material and throughput	Yes	



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T5	Loading: Truck	VOC	<p>Observation for connection leaks.  Where vapor routed to control: copy of annual vapor tightness certification.  Vacuum monitoring for 100% capture, not required for pressure vessel loading.  Where specific liquids loaded and the maximum physical pumping rate of the system and maximum throughput for each liquid is specified: throughput of each liquid loaded.  Where loading rate is operator controlled and/or specific liquid throughputs are variable: Timing and throughput, record of properties (temperature, vapor pressure and molecular weight) of each liquid loaded. Temperature of liquid loaded not required where liquids loaded from unheated tanks which receive liquids at or below ambient temperatures.  Note: Records updated monthly, including 12 month rolling data.</p>	Yes	
T12	Loading: Truck	VOC	<p>Observation for connection leaks.  Where vapor routed to control: copy of annual vapor tightness certification.  Vacuum monitoring for 100% capture, not required for pressure vessel loading.  Where specific liquids loaded and the maximum physical pumping rate of the system and maximum throughput for each liquid is specified: throughput of each liquid loaded.  Where loading rate is operator controlled and/or specific liquid throughputs are variable: Timing and throughput, record of properties (temperature, vapor pressure and molecular weight) of each liquid loaded. Temperature of liquid loaded not required where liquids loaded from unheated tanks which receive liquids at or below ambient temperatures.  Note: Records updated monthly, including 12 month rolling data.</p>	Yes	

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T23	Loading: Truck	VOC	<p>Observation for connection leaks. Where vapor routed to control: copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading. Where specific liquids loaded and the maximum physical pumping rate of the system and maximum throughput for each liquid is specified: throughput of each liquid loaded. Where loading rate is operator controlled and/or specific liquid throughputs are variable: Timing and throughput, record of properties (temperature, vapor pressure and molecular weight) of each liquid loaded. Temperature of liquid loaded not required where liquids loaded from unheated tanks which receive liquids at or below ambient temperatures. Note: Records updated monthly, including 12 month rolling data.</p>	Yes	
T25	Loading: Truck	Caustic	See additional notes:		Observation for connection leaks.
		VOC	Observation for connection leaks.	Yes	
		Acetone	Where vapor routed to control: copy of annual vapor tightness certification. See additional notes:		Observation for connection leaks.
U1801	Cooling Tower	VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.		VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate is obtained using pump curves with the measured discharge pressure from each pump.
		Acetone	See additional notes:		See VOC discussions.

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		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.		The emission monitoring techniques for PM10 and PM2.5 will follow the technr
			Large (> 50,000 gpm circulation rate); Total Dissolved Solids (TDS) in		
V3000	Other	VOC	See additional notes:		Requirement dependent on application representation basis
T13	Loading: Truck	VOC	<p>Observation for connection leaks.</p> <p>Where vapor routed to control: copy of annual vapor tightness certification.</p> <p>Vacuum monitoring for 100% capture, not required for pressure vessel loading.</p> <p>Where specific liquids loaded and the maximum physical pumping rate of the system and maximum throughput for each liquid is specified: throughput of each liquid loaded.</p> <p>Where loading rate is operator controlled and/or specific liquid throughputs are variable: Timing and throughput, record of properties (temperature, vapor pressure and molecular weight) of each liquid loaded. Temperature of liquid loaded not required where liquids loaded from unheated tanks which receive liquids at or below ambient temperatures.</p> <p>Note: Records updated monthly, including 12 month rolling data.</p>	Yes	

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T14	Loading: Truck	VOC	<p>Observation for connection leaks.            Where vapor routed to control: copy of annual vapor tightness certification.            Vacuum monitoring for 100% capture, not required for pressure vessel loading.            Where specific liquids loaded and the maximum physical pumping rate of the system and maximum throughput for each liquid is specified: throughput of each liquid loaded.            Where loading rate is operator controlled and/or specific liquid throughputs are variable: Timing and throughput, record of properties (temperature, vapor pressure and molecular weight) of each liquid loaded. Temperature of liquid loaded not required where liquids loaded from unheated tanks which receive liquids at or below ambient temperatures.            Note: Records updated monthly, including 12 month rolling data.</p>	Yes	
T10	Loading: Railcar	VOC	<p>Temperature and Hourly volume loaded for each product.            Observation for connection leaks.            Where vapor routed to control copy of annual vapor tightness certification.            Vacuum monitoring for 100% capture, not required for pressure vessel loading.</p>	Yes	
F551	Storage Tank (1), Fixed roof with capacity of 25,000 gal	VOC	Stored material and throughput	Yes	

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F1419	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	VOC	Stored material and throughput	Yes	
F1806	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	Bleach	See additional notes:		Stored material and throughput
F1808	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	Bleach	See additional notes:		Stored material and throughput
F1817	Storage Tank (1): Fixed roof with capacity < 25,000 gal or	Bleach	See additional notes:		Stored material and throughput

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E5	Loading: Railcar	VOC	Temperature and Hourly volume loaded for each product. Observation for connection leaks. Where vapor routed to control copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading.	Yes	
ENGINE	Engines various	VOC	See additional notes:		Hours of operation
		NOx	See additional notes:		Hours of operation
		CO	See additional notes:		Hours of operation
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See additional notes:		Hours of operation
		SO2	See additional notes:		Hours of operation
AB1	Loading: Railcar	VOC	Temperature and Hourly volume loaded for each product. Observation for connection leaks.	Yes	

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AB2	Loading: Railcar	VOC	Temperature and Hourly Volume loaded for each product. <del>Observation for connection leaks</del>	Yes	
U1802	Cooling Tower	VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.		VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate is obtained using pump curves with the measured discharge pressure from each pump.
		Acetone	See additional notes:		See VOC discussions.
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.  Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated.  Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.		The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Daily conductivity measurement and using Conductivity and TDS co-relation factor. Cooling water circulation rate is obtained using pump curves with the measured discharge pressure from each pump.

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T10PBR	Loading: Truck	VOC	<p>Observation for connection leaks. Where vapor routed to control: copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading. Where specific liquids loaded and the maximum physical pumping rate of the system and maximum throughput for each liquid is specified: throughput of each liquid loaded. Where loading rate is operator controlled and/or specific liquid throughputs are variable: Timing and throughput, record of properties (temperature, vapor pressure and molecular weight) of each liquid loaded. Temperature of liquid loaded not required where liquids loaded from unheated tanks which receive liquids at or below ambient temperatures. Note: Records updated monthly, including 12 month rolling data.</p>	Yes	
CD4A	Loading: Railcar	VOC	<p>Temperature and Hourly volume loaded for each product. Observation for connection leaks. Where vapor routed to control copy of annual vapor tightness certification. Vacuum monitoring for 100% capture, not required for pressure vessel loading.</p>	Yes	



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MSS	MSS Activities	VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes	
TOTEAUS	Storage Tank (1): Fixed roof with capacity of 25,000 gal or less	Caustic	See additional notes:		Stored material and throughput
U1803	Cooling Tower	VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.		VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate is obtained using pump curves with the measured discharge pressure from each pump.
		Acetone	See additional notes:		Same as VOC
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.  Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated.  Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.		The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Daily conductivity measurement and using Conductivity and TDS co-relation factor. Cooling water circulation rate is obtained using pump curves with the measured discharge pressure from each pump.

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**Form PI-1 General Application**  
**Materials**

Date: September 21, 2020  
 Permit #:9395  
 Company: Lyondell Chemical Company

Item	How submitted	Date submitted
<b>A. Administrative Information</b>		
Form PI-1 General Application	STEERS	09/21/2020
Hard copy of the General sheet with original (ink) signature	Mail	09/21/2020
Professional Engineer Seal	Not applicable	
<b>B. General Information</b>		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form		
Area map	STEERS	09/21/2020
Plot plan	STEERS	09/21/2020
Process description	STEERS	09/21/2020
Process flow diagram	STEERS	09/21/2020
List of MSS activities		
State regulatory requirements discussion	STEERS	09/21/2020
<b>C. Federal Applicability</b>		
Summary and project emission increase determination - Tables 1F and 2F	STEERS	09/21/2020
Netting analysis (if required) - Tables 3F and 4F as needed		
<b>D. Technical Information</b>		
BACT discussion, if additional details are attached	STEERS	09/21/2020
Monitoring information, if additional details are attached	STEERS	09/21/2020
Material Balance (if applicable)	STEERS	09/21/2020
Calculations	STEERS	09/21/2020
<b>E. Impacts Analysis</b>		
Qualitative impacts analysis	STEERS	09/21/2020
MERA analysis	STEERS	09/21/2020
Electronic Modeling Evaluation Workbook: SCREEN3	Not applicable	
Electronic Modeling Evaluation Workbook: NonSCREEN3	STEERS	09/21/2020
PSD modeling protocol	Not applicable	
<b>F. Additional Attachments</b>		

### 3. ELECTRONIC MODELING EVALUATION WORKBOOK

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**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**General**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**EMEW Version No.:** Version 2.3

**Purpose Statement:**

This workbook is completed by the applicant and submitted to the Texas Commission on Environmental Quality (TCEQ), specifically, the Air Dispersion Modeling Team (ADMT) for review. This workbook is a tool available for all projects using AERSCREEN, AERMOD, or ISC/ISCPrime for an impacts review and its use is required starting June 1, 2019. Provide the workbook with the permit application submittal for any Minor New Source Review project requiring a modeling impacts demonstration.

This workbook follows the guidance outlined in the Air Quality Modeling Guidelines (APDG 6232) which can be found here:

<https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf>

**Workbook Instructions:**

1. Save a copy of the workbook to your computer or desktop prior to entering data.
2. Complete all required sections leaving no blanks. You may use the "tab" button or the arrow keys to move to the next available cell. Use "enter" to move down a line. Note: drop-downs are case-sensitive.
3. Fill in the workbook in order, do not skip around as this will cause errors. Use caution if changing a previously entered entry.
4. Not applicable sections of this workbook will be hidden as data is entered. For example, answering "No" to "Is downwash applicable?" will hide these sections of the workbook required only for downwash entry.
5. Email the workbook electronic file (EMEW) and any attachments to the Air Permits Initial Review Team. The subject line should read "Company Name - Permit Number (if known) - NSR Permit Application". Email address:  
[apirt@tceq.texas.gov](mailto:apirt@tceq.texas.gov)
6. If printing the EMEW, follow the directions below to create a workbook header.
7. Printing the EMEW is not required for submitting to the Air Permits Division (APD); however, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required. To print the workbook, follow the instructions below. Please be aware, several sheets contain large amounts of data and caution should be taken if printing, such as the Speciated Emissions sheet.
8. Updates may be necessary throughout the review process. Updated workbooks must be submitted in electronic format to APD. For submittal to regional offices, local programs, or public places you only have to print sheets that had updates. Be sure to change the headers accordingly.

**Note:** Since this will be part of the permit application, follow the instructions in the Form PI-1 General Application on where to send copies of your EMEW and permit application. The Form PI-1 General Application can be found here:

<https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html>

**Create Headers Before Printing:**

1. Right-click one of the workbook's sheet tabs and "Select All Sheets."
2. Enter the "Page Layout View" by using the navigation ribbon's View > Workbook Views > Page Layout, or by clicking the page layout icon in the lower-right corner of Excel.
3. Add the date, company name, and permit number (if known) to the upper-right header. Note that this may take up to a minute to update your spreadsheet. Select any tab to continue working on the spreadsheet.

**Printing Tips:**

While APD does not need a hard copy of the full workbook, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required.

1. The default printing setup for each sheet in the workbook is set for the TCEQ preferred format. The print areas are set up to not include the instructions on each sheet.
2. You have access to change all printing settings to fit your needs and printed font size. Some common options include:
  - Change what area you are printing (whole active sheet or a selection);
  - Change the orientation (portrait or landscape);
  - Change the margin size; and
  - Change the scaling (all columns on one sheet, full size, your own custom selection, etc.).

**Final Modeling Submittal:**

Anytime final modeling files are being submitted the applicant should notify the following that modeling files are being sent: permit reviewer assigned, permit reviewer's supervisor, and the modeler assigned from the initial submittal.

The following options are available for an applicant to provide modeling (or any other files):

1. Applicant can mail or hand deliver the files on an external storage device.
2. Applicant can email files smaller than 25mb.
3. Applicant can transfer files through an FTP site:
  - a. Applicant may have their own FTP site and can share the files with TCEQ staff.
  - b. Applicants can use the TCEQ FTP site.

Instructions for setting up an account on the TCEQ FTP site are located at:

<https://ftps.tceq.texas.gov/help/>

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**General**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

<b>Acknowledgement:</b>	<b>Select from the drop down:</b>
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

Administrative Information:	
Data Type:	Facility Information:
Project Number (6 digits):	320585
Permit Number:	9395
Regulated Entity ID (9 digits):	102523107
Facility Name:	Lyondell Chemical Bayport Choate Plant
Facility Address:	10801 Choate Road
Facility County (select one):	Harris
Company Name:	Lyondell Chemical Company
Company Contact Name:	Derek Rodricks
Company Contact Number:	281-291-1684
Company Contact Email:	derek.rodricks@lyb.com
Modeling Company Name, as applicable:	BGE, Inc.
Modeling Contact Name:	Albert Kennedy, PE
Modeling Contact Number:	737-443-0453
Modeling Contact Email:	akennedy@bgeinc.com
New/Existing Site (select one):	Existing Site
Modeling Date (MM/DD/YYYY):	10/6/2020
Datum Used (select one):	NAD 83
UTM Zone (select one):	15

**Sheet Instructions:** Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD. If SCREEN3 is used, please use the separate Electronic Modeling Evaluation Workbook (EMEW) for SCREEN3 workbook.

Table of Contents:		
Section:	Sheet Title <i>(Click to jump to specific sheet):</i>	Select an X from the dropdown menu if included:
1	General	X
2	<a href="#">Model Options</a>	X
3	<a href="#">Building Downwash</a>	X
4	<a href="#">Flare Source Parameters</a>	X
5	<a href="#">Point Source Parameters</a>	
6	<a href="#">Area Source Parameters</a>	
7	<a href="#">Volume Source Calculations</a>	X
8	<a href="#">Volume Source Parameters</a>	X
9	<a href="#">Point and Flare Source Emissions</a>	X
10	<a href="#">Area Source Emissions</a>	
11	<a href="#">Volume Source Emissions</a>	X
12	<a href="#">Speciated Emissions</a>	X
13	<a href="#">Intermittent Sources</a>	
14	<a href="#">Modeling Scenarios</a>	X
15	<a href="#">Monitor Calculations</a>	
16	<a href="#">Background Justification</a>	
17	<a href="#">Secondary Formation of PM2.5</a>	X
18	<a href="#">NAAQS/State Property Line (SPL) Modeling Results</a>	X
19	<a href="#">Unit Impact Multipliers</a>	
20	<a href="#">Health Effects Modeling Results</a>	X
21	<a href="#">Modeling File Names</a>	X
22	<a href="#">Speciated Chemicals</a>	X

<b>Included Attachments</b>	
Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	Select an X from the dropdown menu if included:
<b>Plot Plan:</b>	
Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
<b>Area Map:</b>	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	X
All property lines are included.	X
Non-industrial receptors are identified.	Choose an item
<b>Additional Attachments (as applicable):</b>	
<i>Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.</i>	Select an X from the dropdown menu if included:
<b>Processed Met Data Information</b>	
Excel spreadsheet of processed meteorology data.	Choose an item
Meteorological Files (all input and outputs).	Choose an item
<b>Source Group Descriptions</b>	
Description of modeling source groups (could be in a tabulated format).	Choose an item
<b>Modeling Techniques and Scenarios</b>	
<i>Provide all justification and discussion on modeling scenarios used for the modeling analyses. The following boxes are examples of approaches that should be provided but is not all inclusive.</i>	
Discussion on modeling techniques not discussed in workbook.	Choose an item
Justification for exceedance refinements, as applicable.	Choose an item
Discussion and images for worst-case determination, as applicable.	Choose an item
<b>Single Property Line Designation, as applicable</b>	
Include Agreement, Order, and map defining each petitioner.	Choose an item
<b>Post Processing using Unit Impact Multipliers (UIMs)</b>	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	Choose an item
<b>Tier 3 NO<sub>2</sub> analysis</b>	
<i>If OLM or PVMRM are used, provide all justification and documentation on using this approach.</i>	
Description of model setup.	Choose an item
Description and justification of model options selected (i.e., NO <sub>2</sub> to NO <sub>x</sub> in-stack ratios).	Choose an item
<b>Other Attachments</b>	
<i>Provide a list in the box below of additional attachments being provided that are not listed above:</i>	
	Choose an item

**I. Project Information**

**A. Project Overview:** In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*

Renewal and Amendment application to:

- 1) Revise the emissions calculations for cooling towers U-1801 and U-1803 with more accurate circulation rate representations based on design data.
- 2) Incorporate changes to the Emergency Flare Plant 1 emissions related to a recent Standard Pollution Control Project.
- 3) Update the heat content of Emergency Flare Plants 1, 2, and 3 to 1050 BTU/scf to 1020 BTU/scf to better reflect the heat content of the specific natural gas used as fuel for the flares.
- 4) Update the fugitive counts based on the current information in the plant's Leak Detection and Repair Database.
- 5) Change the heat content of hot oil heaters B801, B1751, and B2890 from 950 BTU/scf to 1020 BTU/scf to more accurately reflect the heat content of the natural gas used as fuel for the heaters.
- 6) Increase the daily catalyst handling from 300 lb/day to 600 lb/day to better reflect current operations.
- 7) Increase atmospheric loading hourly emission rates for several loading spots based on the potential day to day operations.
- 8) Update atmospheric storage tank calculations to reflect AP-42 revisions recently published.

**II. Air Dispersion Modeling Preliminary Information**

**Instructions:** Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around.

For larger text boxes, double click to type or insert text.

**A. Type of Model Used: Select "X" in all that apply**

<input type="checkbox"/>	AERSCREEN	<input checked="" type="checkbox"/>	AERMOD
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19191 Enter in all applicable Model Version(s).

**B. Building Downwash**

Yes  Is downwash applicable? (Select "Yes" or "No")

4274 Enter BPIP version (AERMOD and ISCPrime only).

**C. Type of Analyses: (Select "X" in all that apply)**

\*PSD projects should submit a protocol and not utilize this form.

<input checked="" type="checkbox"/>	Minor NSR NAAQS	<input type="checkbox"/>	State Property Line
<input checked="" type="checkbox"/>	Health Effects		



Model Options

<b>D. Constituents Evaluating:</b> (Select "X" in all that apply)	
<b>NAAQS:</b> List all pollutants that require a modeling review. (Select "X" in all that apply)	
<input type="checkbox"/> SO <sub>2</sub>	<input type="checkbox"/> PM <sub>10</sub>
X <input checked="" type="checkbox"/> CO	<input type="checkbox"/> PM <sub>2.5</sub>
<input type="checkbox"/> Pb	X <input checked="" type="checkbox"/> NO <sub>2</sub>
Both	Identify which averaging periods are being evaluated for NO <sub>2</sub> .
Tier 1: Full Conversion	Identify the 1-hr NO <sub>2</sub> tier used for the AERMOD or AERSCREEN analyses.
Tier 1: Full Conversion	Identify the annual NO <sub>2</sub> tier used for the AERMOD or AERSCREEN analyses.
<b>Health Effects:</b> Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.	

Model Options

E. Dispersion Options: If "Urban" has been selected and this project is using AERMOD or AERSCREEN, include the population used. Select "X" in the box to select an option.

<input type="checkbox"/>	Urban
<input checked="" type="checkbox"/>	Rural

Provide any additional justification on the dispersion option selected above:

Default Rural option used.

F. Determination of Surface Roughness: If AERSCREEN or AERMOD is used, fill out the section below.

Select basis for surface roughness:  AERSURFACE

Select "X" in one of the three surface roughness categories:

<input type="checkbox"/>	Low	<input checked="" type="checkbox"/>	Medium
		<input type="checkbox"/>	High

If you are using AERSURFACE, please complete the following section:

20060	AERSURFACE Version Number	
301450	Center UTM Easting (meters)	3278780 Center UTM Northing (meters)
1	Study Radius (km)	
No	Airport? (Select Yes or No)	
No	Continuous Snow Cover (Select Yes or No)	
Average	Surface Moisture (Select Wet, Dry, or Average)	
No	Arid Region? (Select Yes or No)	
	Default	Month/Season Assignment

Model Options

<b>G. Meteorological Data:</b>			
If AERMOD and/or ISC/ISCPrime are selected, please complete the following section:			
12918		Surface Station	
3937		Upper Air Station	
14.3	Meters (m)	Profile Base Elevation (AERMOD only)	
19191		AERMET Version Number	
Yes	Was TCEQ pre-processed data used?	1 Year	Years used
Please enter the year(s) selected for this meteorological data:			
2016 1 Year			
Provide any other justification for Meteorological Data, as applicable.			

Model Options

**H. Receptor Grid:**

For AERMOD or ISC/ISCPrime, fill in the following information on your modeled receptor grid. Note: Receptor grid resolution (tight, fine, medium, coarse) are based on recommended receptor grid spacing per the AQMG, if something outside of this is used, fully describe it below.

25	Meters (m)	Tight Receptor Spacing
300	Meters (m)	Tight Receptor Distance
100	Meters (m)	Fine Receptor Spacing
1000	Meters (m)	Fine Receptor Distance
500	Meters (m)	Medium Receptor Spacing
5000	Meters (m)	Medium Receptor Distance
	Meters (m)	Coarse Receptor Spacing
	Meters (m)	Coarse Receptor Distance

Describe any other receptor grid designs (over water, GLC<sub>ni</sub>, SPLD etc.):

**I. Terrain:**

X  Elevated

18081  AERMAP Version.

For additional justification on terrain selection, fill in the box below:

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Building Downwash**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Facility:**

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)
Building	B6		1	12.192	12.192				
Building	B2		1	5.4864	5.4864				
Building	B1		1	3.9624	3.9624				
Building	I2030		1	3.048	3.048				
Building	B7		1	13.1064	13.1064				
Building	I2026		1	6.096	6.096				
Tank	TK15	7.9248	1	10.3632	10.3632				
Tank	TK16	16.4592	1	17.3736	17.3736				
Tank	TK17	16.4592	1	17.3736	17.3736				
Tank	TK42	16.4592	1	17.3736	17.3736				
Tank	TK14	10.668	1	9.7536	9.7536				
Tank	TK48	7.62	1	9.144	9.144				
Tank	TK49	6.096	1	7.3152	7.3152				
Tank	TK50	5.4864	1	6.096	6.096				
Tank	TK46	29.2608	1	12.8016	12.8016				
Tank	TK38	10.3632	1	10.3632	10.3632				
Tank	TK37	10.3632	1	10.3632	10.3632				
Other: Downwash structure for volume source calculations only.	E_F1005B	1.2192	1	6.096	6.096				
Other: Downwash structure for volume source calculations only.	E_F1005C	1.2192	1	6.096	6.096				
Other: Downwash structure for volume source calculations only.	E_F1103A	2.1336	1	3.048	3.048				
Other: Downwash structure for volume source calculations only.	E_F1103B	2.1336	1	3.048	3.048				
Other: Downwash structure for volume source calculations only.	E_F1104C	7.0104	1	9.144	9.144				
Other: Downwash structure for volume source calculations only.	E_F1108A	2.8956	1	4.2672	4.2672				
Other: Downwash structure for volume source calculations only.	E_F1109	3.6576	1	6.096	6.096				
Other: Downwash structure for volume source calculations only.	E_F1110	4.8768	1	5.4864	5.4864				

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Building Downwash**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)	Tier 4 Height (m)	Tier 5 Height (m)
Other: Downwash structure for volume source calculations only.	E_F1418	1.61544	1	3.6576	3.6576				
Other: Downwash structure for volume source calculations only.	E_F2835	4.8768	1	5.4864	5.4864				
Other: Downwash structure for volume source calculations only.	E_F2866	1.524	1	1.55448	1.55448				
Other: Downwash structure for volume source calculations only.	E_F3342A	1.3716	1	1.8288	1.8288				
Other: Downwash structure for volume source calculations only.	E_F3342B	1.3716	1	1.8288	1.8288				

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Flare Source Parameters**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Heat Release (MMBtu/hr)	Molecular Weight	Gross Heat Release or q (cal/s)	Net Heat Release or q <sub>n</sub> (cal/s)	Effective Diameter or D (meters)	Description
E-B1501A	E B1501A	ALL	301591.99	3278733.34	3.86	131.98	1273.00	20.00	123.99	31.55	8679300	6339247.403	2.52	Emergency Flare Plant 1
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
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							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	

# Texas Commission on Environmental Quality

## Electronic Modeling Evaluation Workbook (EMEW)

### Volume Source Calculations

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Facility:

EPN	Model ID	Footprint of Source Length (m)	Footprint of Source Width (m)	Length of Side (making it a square) SQRT(L * W)	Type of Volume Source (sigma y)  <i>Pick from drop-down</i>	Sigma Y (m)	Vertical Span		Vertical Dimension (m)	Type of Volume Source (sigma z)  <i>Pick from drop-down</i>	Release Height (middle point of vertical span) (m)	Building Name (if on/adjacent to a building)  <i>Pick from drop-down</i>	Adjacent Building Height, if applicable (m)	Sigma Z (m)
							Min Release (m)	Max Release (m)						
E-BLOFUG	E_BLOFUG	430.68	314.55	368.07	Single Volume Source	85.60	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-CD5B	E_CD5B	6.10	6.10	6.10	Single Volume Source	1.42	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
E-CD6A	E_CD6A	6.10	6.10	6.10	Single Volume Source	1.42	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
E-F1005B	E_F1005B	0.50	0.50	0.50	Single Volume Source	0.12	0.00	6.10	6.10	Elevated Source: On or adjacent to Building	3.05	E_F1005B	6.10	2.84
E-F1005C	E_F1005C	0.50	0.50	0.50	Single Volume Source	0.12	0.00	6.10	6.10	Elevated Source: On or adjacent to Building	3.05	E_F1005C	6.10	2.84
E-F1103A	E_F1103A	0.50	0.50	0.50	Single Volume Source	0.12	0.00	3.05	3.05	Elevated Source: On or adjacent to Building	1.52	E_F1103A	3.05	1.42
E-F1103B	E_F1103B	0.50	0.50	0.50	Single Volume Source	0.12	0.00	3.05	3.05	Elevated Source: On or adjacent to Building	1.52	E_F1103B	3.05	1.42
E-F1104C	E_F1104C	0.50	0.50	0.50	Single Volume Source	0.12	0.00	9.14	9.14	Elevated Source: On or adjacent to Building	4.57	E_F1104C	9.14	4.25
E-F1108A	E_F1108A	0.50	0.50	0.50	Single Volume Source	0.12	0.00	4.27	4.27	Elevated Source: On or adjacent to Building	2.13	E_F1108A	4.27	1.88
E-F1109	E_F1109	0.50	0.50	0.50	Single Volume Source	0.12	0.00	6.10	6.10	Elevated Source: On or adjacent to Building	3.05	E_F1109	6.10	2.84
E-F1110	E_F1110	0.50	0.50	0.50	Single Volume Source	0.12	0.00	5.49	5.49	Elevated Source: On or adjacent to Building	2.74	E_F1110	5.49	2.55
E-F1418	E_F1418	0.50	0.50	0.50	Single Volume Source	0.12	0.00	3.66	3.66	Elevated Source: On or adjacent to Building	1.83	E_F1418	3.66	1.70
E-F2835	E_F2835	0.50	0.50	0.50	Single Volume Source	0.12	0.00	5.49	5.49	Elevated Source: On or adjacent to Building	2.74	E_F2835	5.49	2.55
E-F2866	E_F2866	0.50	0.50	0.50	Single Volume Source	0.12	0.00	1.55	1.55	Elevated Source: On or adjacent to Building	0.78	E_F2866	1.55	0.72
E-F3342A	E_F3342A	0.50	0.50	0.50	Single Volume Source	0.12	0.00	1.83	1.83	Elevated Source: On or adjacent to Building	0.91	E_F3342A	1.83	0.85
E-F3342B	E_F3342B	0.50	0.50	0.50	Single Volume Source	0.12	0.00	1.83	1.83	Elevated Source: On or adjacent to Building	0.91	E_F3342B	1.83	0.85
E-LR4C	E_LR4C	6.10	3.05	4.31	Single Volume Source	1.00	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-T5	E_T5	6.10	3.05	4.31	Single Volume Source	1.00	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-T10	E_T10	6.10	3.05	4.31	Single Volume Source	1.00	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-T12	E_T12	6.10	3.05	4.31	Single Volume Source	1.00	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-T13	E_T13	6.10	3.05	4.31	Single Volume Source	1.00	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-T14	E_T14	6.10	3.05	4.31	Single Volume Source	1.00	0.00	3.05	3.05	Surface-Based Source	1.52			1.42
E-LR4D	E_LR4D	6.10	6.10	6.10	Single Volume Source	1.42	0.00	6.10	6.10	Surface-Based Source	3.05			2.84
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete



**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Volume Source Parameters**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Facility:**

EPN	Model ID	Modeled Release Height [m]	Modeled Length X [m]	Lateral Dimension SigmaY [m]	Vertical Dimension SigmaZ [m]	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Source Description	Volume Source Size Justification
E-BLOFUG	E_BLOFUG	1.52	368.07	85.60	1.42	ALL	301529.38	3278716.48	4.05	PO/TBA & Derivative Fugitive Emissions	Representative of fugitive emissions that could occur throughout facility in a one-hour timeframe
E-CD5B	E_CD5B	3.05	6.10	1.42	2.84	ALL	301300.93	3278579.14	4.78	Loading Spot No. CD5B	Representative of dimensions of typical railcar during loading
E-CD6A	E_CD6A	3.05	6.10	1.42	2.84	ALL	301293.15	3278595.91	4.81	Loading Spot No. CD6A	Representative of dimensions of typical railcar during loading
E-F1005B	E_F1005B	3.05	0.50	0.12	2.84	ALL	301258.88	3278796.04	4.82	Tank No. F1005B	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1005C	E_F1005C	3.05	0.50	0.12	2.84	ALL	301236.91	3278975.72	4.72	Tank No. F1005C	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1103A	E_F1103A	1.52	0.50	0.12	1.42	ALL	301422.62	3278554.80	3.85	Tank No. F1103A	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1103B	E_F1103B	1.52	0.50	0.12	1.42	ALL	301426.93	3278554.79	3.86	Tank No. F1103B	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1104C	E_F1104C	4.57	0.50	0.12	4.25	ALL	301471.72	3278520.96	3.97	Tank No. F1104C	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1108A	E_F1108A	2.13	0.50	0.12	1.98	ALL	301538.59	3278558.02	3.43	Tank No. F1108A	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1109	E_F1109	3.05	0.50	0.12	2.84	ALL	301263.82	3278741.71	4.85	Tank No. F1109	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1110	E_F1110	2.74	0.50	0.12	2.55	ALL	301372.92	3278557.36	4.21	Tank No. F1110	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F1418	E_F1418	1.83	0.50	0.12	1.70	ALL	301614.12	3279018.65	4.10	Tank No. F1418	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).

# Texas Commission on Environmental Quality

## Electronic Modeling Evaluation Workbook (EMEW)

### Volume Source Parameters

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

EPN	Model ID	Modeled Release Height [m]	Modeled Length X [m]	Lateral Dimension SigmaY [m]	Vertical Dimension SigmaZ [m]	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Source Description	Volume Source Size Justification
E-F2835	E_F2835	2.74	0.50	0.12	2.55	ALL	301369.00	3278755.32	4.48	Tank No. F2835	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F2866	E_F2866	0.78	0.50	0.12	0.72	ALL	301351.98	3278766.29	4.42	Tank No. 2866	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F3342A	E_F3342A	0.91	0.50	0.12	0.85	ALL	301319.83	3279236.00	4.82	Tank No. F3342A	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-F3342B	E_F3342B	0.91	0.50	0.12	0.85	ALL	301320.26	3279233.20	4.81	Tank No. F3342B	Lateral area is 0.5 m x 0.5 m to be representative of tank vents at top of tank. Vertical span and release height are tank height since elevated source on or adjacent to building (tank).
E-LR4C	E_LR4C	1.52	4.31	1.00	1.42	ALL	301443.33	3278683.13	4.17	Loading Spot No. LR4C	Representative of dimensions of typical truck during loading.
E-T5	E_T5	1.52	4.31	1.00	1.42	ALL	301316.95	3278571.14	4.61	Loading Spot No. T5	Representative of dimensions of typical truck during loading.
E-T10	E_T10	1.52	4.31	1.00	1.42	ALL	301307.34	3278593.95	4.58	Loading Spot No. T10	Representative of dimensions of typical truck during loading.
E-T12	E_T12	1.52	4.31	1.00	1.42	ALL	301294.54	3278621.16	4.68	Loading Spot No. T12	Representative of dimensions of typical truck during loading.
E-T13	E_T13	1.52	4.31	1.00	1.42	ALL	301459.61	3278571.49	4.02	Loading Spot No. 13	Representative of dimensions of typical truck during loading.
E-T14	E_T14	1.52	4.31	1.00	1.42	ALL	301458.29	3278571.48	4.01	Loading Spot No. T14	Representative of dimensions of typical truck during loading.
E-LR4D	E_LR4D	3.05	6.10	1.42	2.84	ALL	301448.56	3278683.04	4.16	Loading Spot No. LR4D	Representative of dimensions of typical railcar during loading.

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Point + Flare Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use
E-B1501A	E_B1501A	ALL	NOx	1-hr	NAAQS	SIL analysis	No	0.480	Project Increase	No	
E-B1501A	E_B1501A	ALL	NOx	Annual	NAAQS	SIL analysis	No	0.0137	Project Increase	No	

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Volume Source Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use
E-BLOFUG	E BLOFUG	ALL	CO	1-hr	NAAQS	SIL analysis	No	0.0700	Project Increase	No	
E-BLOFUG	E BLOFUG	ALL	CO	8-hr	NAAQS	SIL analysis	No	0.0700	Project Increase	No	
E-BLOFUG	E BLOFUG	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-BLOFUG	E BLOFUG	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-CD5B	E CD5B	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-CD6A	E CD6A	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1005B	E F1005B	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1005C	E F1005C	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1103A	E F1103A	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1103B	E F1103B	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1104C	E F1104C	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1108A	E F1108A	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1108A	E F1108A	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-F1109	E F1109	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1110	E F1110	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1418	E F1418	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F1418	E F1418	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-F2835	E F2835	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F2866	E F2866	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-F3342A	E F3342A	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-F3342B	E F3342B	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-LR4C	E LR4C	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-LR4C	E LR4C	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-T5	E T5	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-T10	E T10	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-T10	E T10	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-T12	E T12	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-T13	E T13	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-T13	E T13	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-T14	E T14	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-T14	E T14	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	
E-LR4D	E LR4D	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No		Project Increase	No	
E-LR4D	E LR4D	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No		Project Increase	No	

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Speciated Emissions by Model ID

CAS #	Chemical Species	Other Species	Short-Term ESL ( $\mu\text{g}/\text{m}^3$ )	Long-Term ESL ( $\mu\text{g}/\text{m}^3$ )	Modeled Project Wide Emission Rate [lb/hr] E_BLOFUG	Modeled Site Wide Emission Rate [lb/hr] E_BLOFUG	Modeled Project Wide Emission Rate [tpy] E_BLOFUG	Modeled Site Wide Emission Rate [tpy] E_BLOFUG
57-55-6	propylene glycol		1800	18	0.0265		0.0411	
25265-71-8	dipropylene glycol		1200	120	0.0371		0.0503	
34590-94-8	dipropylene glycol monomethyl ether		3100	310	0.00860		0.0173	
24800-44-0 (vapor)	tripropylene glycol		400	40	0.0156		0.0241	
75-56-9	propylene oxide		70	7	0.158		0.308	
75-65-0	tert-butyl alcohol		620	62	0.233		0.459	
75-91-2	tert-butyl hydroperoxide		100	10	0.0416		0.0813	
68334-30-5	diesel fuel		1000	100				

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Speciated Emissions b**

CAS #	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]
	E_CD5B	E_CD5B	E_CD5B	E_CD5B	E_CD6A	E_CD6A	E_CD6A	E_CD6A	E_F1005B	E_F1005B	E_F1005B	E_F1005B	E_F1005C	E_F1005C	E_F1005C
57-55-6	0.0382				0.0382				0.00750				0.00750		
25265-71-8															
34590-94-8															
24800-44-0 (vapor)															
75-56-9															
75-65-0															
75-91-2															
68334-30-5															

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Speciated Emissions b**

CAS #	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]
	E_F1005C	E_F1103A	E_F1103A	E_F1103A	E_F1103A	E_F1103B	E_F1103B	E_F1103B	E_F1103B	E_F1104C	E_F1104C	E_F1104C	E_F1104C	E_F1108A	E_F1108A
57-55-6															
25265-71-8										0.0775					
34590-94-8		0.228				0.228								1.96	
24800-44-0 (vapor)															
75-56-9															
75-65-0															
75-91-2															
68334-30-5															

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Speciated Emissions b**

CAS #	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]		
E_F1108A	E_F1108A	E_F1109	E_F1109	E_F1109	E_F1109	E_F1109	E_F1110	E_F1110	E_F1110	E_F1110	E_F1110	E_F1110	E_F1418	E_F1418	E_F1418	E_F1418	E_F2835
57-55-6																	3.28
25265-71-8							2.25										
34590-94-8	0.0961																
24800-44-0 (vapor)			0.225														
75-56-9																	
75-65-0																	
75-91-2																	
68334-30-5											0.360		0.00113				



**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Speciated Emissions b

CAS #	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]
	E_F2835	E_F2835	E_F2835	E_F2866	E_F2866	E_F2866	E_F2866	E_F3342A	E_F3342A	E_F3342A	E_F3342A	E_F3342B	E_F3342B	E_F3342B	E_F3342B
57-55-6				0.316						5.00E-04					5.00E-04
25265-71-8															
34590-94-8															
24800-44-0 (vapor)															
75-56-9															
75-65-0															
75-91-2															
68334-30-5															

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Speciated Emissions b

CAS #	Modeled Project Wide Emission Rate [lb/hr] E_LR4C	Modeled Site Wide Emission Rate [lb/hr] E_LR4C	Modeled Project Wide Emission Rate [tpy] E_LR4C	Modeled Site Wide Emission Rate [tpy] E_LR4C	Modeled Project Wide Emission Rate [lb/hr] E_T5	Modeled Site Wide Emission Rate [lb/hr] E_T5	Modeled Project Wide Emission Rate [tpy] E_T5	Modeled Site Wide Emission Rate [tpy] E_T5	Modeled Project Wide Emission Rate [lb/hr] E_T10	Modeled Site Wide Emission Rate [lb/hr] E_T10	Modeled Project Wide Emission Rate [tpy] E_T10	Modeled Site Wide Emission Rate [tpy] E_T10	Modeled Project Wide Emission Rate [lb/hr] E_T12	Modeled Site Wide Emission Rate [lb/hr] E_T12	Modeled Project Wide Emission Rate [tpy] E_T12
57-55-6									0.578		0.0847		0.0382		
25265-71-8	0.171		0.00810		0.122										
34590-94-8															
24800-44-0 (vapor)															
75-56-9															
75-65-0															
75-91-2															
68334-30-5															

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Speciated Emissions**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Speciated Emissions b**

CAS #	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]	Modeled Project Wide Emission Rate [lb/hr]	Modeled Site Wide Emission Rate [lb/hr]	Modeled Project Wide Emission Rate [tpy]	Modeled Site Wide Emission Rate [tpy]		
	E_T12	E_T13	E_T13	E_T13	E_T13	E_T14	E_T14	E_T14	E_T14	E_LR4D	E_LR4D	E_LR4D	E_LR4D		
57-55-6		0.655		0.00480		0.655		0.00480							
25265-71-8										0.129		0.0372			
34590-94-8															
24800-44-0 (vapor)															
75-56-9															
75-65-0															
75-91-2															
68334-30-5															

# Texas Commission on Environmental Quality

Date: October 6, 2020

## Electronic Modeling Evaluation Workbook (EMEW)

Permit #: 9395

### Combined Emissions

Company Name: Lyondell Chemical Company

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]
E-B1501A	E B1501A	ALL	NOx	1-hr	NAAQS	SIL analysis	No	Flare	0.48
E-B1501A	E B1501A	ALL	NOx	Annual	NAAQS	SIL analysis	No	Flare	0.01
E-BLOFUG	E BLOFUG	ALL	CO	1-hr	NAAQS	SIL analysis	No	Volume	0.07
E-BLOFUG	E BLOFUG	ALL	CO	8-hr	NAAQS	SIL analysis	No	Volume	0.07
E-BLOFUG	E BLOFUG	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-BLOFUG	E BLOFUG	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-CD5B	E CD5B	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-CD6A	E CD6A	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1005B	E F1005B	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1005C	E F1005C	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1103A	E F1103A	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1103B	E F1103B	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1104C	E F1104C	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1108A	E F1108A	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1108A	E F1108A	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-F1109	E F1109	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1110	E F1110	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1418	E F1418	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F1418	E F1418	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-F2835	E F2835	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F2866	E F2866	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-F3342A	E F3342A	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-F3342B	E F3342B	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-LR4C	E LR4C	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-LR4C	E LR4C	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-T5	E T5	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-T10	E T10	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-T10	E T10	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-T12	E T12	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-T13	E T13	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-T13	E T13	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-T14	E T14	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-T14	E T14	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--
E-LR4D	E LR4D	ALL	Health Effects Pollutant	1-hr	Health Effects	Project Wide	No	Volume	--
E-LR4D	E LR4D	ALL	Health Effects Pollutant	Annual	Health Effects	Project Wide	No	Volume	--

**Modeling Scenarios**

Modeling Scenario	Scenario Description:
ALL	All sources operating simultaneously.

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Secondary Formation of PM2.5**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

Facility:

Modeled Emission Rates for Precursors (MERPs) Demonstration Tool for Calculating Secondary PM <sub>2.5</sub> Impacts								
Precursor	Project Increases (tpy)	Source Selection	Selection of Variables		MERP Value		Total Secondary Value (µg/m <sup>3</sup> )	
			Emission Rate (tpy)	Height (m)	24-hr	Annual	24-hr PM <sub>2.5</sub>	Annual PM <sub>2.5</sub>
Nitrogen Oxide (NO <sub>x</sub> )	0.06	worst-case			2649	10397	0.00003	0.00000
Sulfur Dioxide (SO <sub>2</sub> )								

**MERPs Demonstration Justification** **Applicar**

**A.** Provide justification for selection of worst-case MERP and/or site-specific source here. *Please limit your response to 2000 characters.* **All internal comments**

Worst-case selected for use.

**B.** If a site-specific source is selected, provide justification for the selected emission rate variable(s) here. *Please limit your response to 2000 characters.*

**C.** If a site specific MERP value is selected, provide justification for the selected height variable(s) here. *Please limit your response to 2000 characters.*

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**NAAQS-SPL Modeling Results**

Date: October 6, 2020  
 Permit #: 9395  
 Company Name: Lyondell Chemical Company


**Table 3. Modeling Results for Minor NSR De Minimis**

Pollutant	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
SO <sub>2</sub>	1-hr		7.8*
SO <sub>2</sub>	3-hr		25
SO <sub>2</sub>	24-hr		5
SO <sub>2</sub>	Annual		1
PM <sub>10</sub>	24-hr		5
NO <sub>2</sub>	1-hr	0.0338	7.5**
NO <sub>2</sub>	Annual	3.00E-05	1
CO	1-hr	0.475	2000
CO	8-hr	0.346	500

Additional information for the De Minimis values listed above can be found at:  
 \* <https://www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf>  
 \*\* [https://www.tceq.texas.gov/assets/public/permitting/air/memos/guidance\\_1hr\\_no2naaqs.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf)

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**NAAQS-SPL Modeling Results**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Table 4. PM<sub>2.5</sub> Modeling Results for Minor NSR De Minimis**

Pollutant	Averaging Time	GLCmax (µg/m <sup>3</sup> )	Secondary PM <sub>2.5</sub> Contribution (µg/m <sup>3</sup> )	Total Conc. = Secondary PM <sub>2.5</sub> + GLCmax (µg/m <sup>3</sup> )	De Minimis (µg/m <sup>3</sup> )
PM <sub>2.5</sub>	24-hr		2.71801E-05	0.00003	1.2*
PM <sub>2.5</sub>	Annual		1.15418E-06	0.00000	0.2*

Additional information for the De Minimis values listed above can be found at:  
[\\* https://www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html](https://www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html)



**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**NAAQS-SPL Modeling Results**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Table 5. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)**

Pollutant	Averaging Time	GLCmax ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total Conc. = [Background + GLCmax] ( $\mu\text{g}/\text{m}^3$ )	Standard ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	1-hr		0	0	196
SO <sub>2</sub>	3-hr		0	0	1300
SO <sub>2</sub>	24-hr		0	0	365
SO <sub>2</sub>	Annual		0	0	80
PM <sub>10</sub>	24-hr		0	0	150
Pb	3-mo		0	0	0.15
NO <sub>2</sub>	1-hr		0	0	188
NO <sub>2</sub>	Annual		0	0	100
CO	1-hr		0	0	40000
CO	8-hr		0	0	10000

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**NAAQS-SPL Modeling Results**

Date: October 6, 2020

Permit #: 9395

Company Name: Lyondell Chemical Company

**Table 6. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)**

Pollutant	Averaging Time	GLCmax ( $\mu\text{g}/\text{m}^3$ )	Secondary $\text{PM}_{2.5}$ Contribution ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total Conc. = [Background + Secondary + GLCmax] ( $\mu\text{g}/\text{m}^3$ )	Standard ( $\mu\text{g}/\text{m}^3$ )
PM <sub>2.5</sub>	24-hr		2.71801E-05	0	2.72E-05	35
PM <sub>2.5</sub>	Annual		1.15418E-06	0	1.15E-06	12

**Texas Commission on Environmental Quality**  
**Electronic Modeling Evaluation Workbook (EMEW)**  
**Health Effect Modeling Results**

Date: October 6, 2020  
 Permit #: 9395  
 Company Name: Lyondell Chemical Company

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [ $\mu\text{g}/\text{m}^3$ ]	10% ESL Step 3 Modeled GLCmax [ $\mu\text{g}/\text{m}^3$ ]
propylene glycol	57-55-6	1-hr	1800	150.05
propylene glycol	57-55-6	Annual	18	0.69
dipropylene glycol	25265-71-8	1-hr	1200	95.01
dipropylene glycol	25265-71-8	Annual	120	0.04
dipropylene glycol monomethyl ether	34590-94-8	1-hr	3100	66.25
dipropylene glycol monomethyl ether	34590-94-8	Annual	310	0.10
tripropylene glycol	4800-44-0 (vapo	1-hr	400	12.59
tripropylene glycol	4800-44-0 (vapo	Annual	40	0.01
propylene oxide	75-56-9	1-hr	70	1.07
propylene oxide	75-56-9	Annual	7	0.11
tert-butyl alcohol	75-65-0	1-hr	620	1.58
tert-butyl alcohol	75-65-0	Annual	62	0.17
tert-butyl hydroperoxide	75-91-2	1-hr	100	0.28
tert-butyl hydroperoxide	75-91-2	Annual	10	0.03
diesel fuel	68334-30-5	1-hr	1000	8.46
diesel fuel	68334-30-5	Annual	100	0.00



## 4. DECLARATION OF ADMINISTRATIVE COMPLETENESS

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Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

September 30, 2020

MS ANNETTE HARRISON  
LEAD OPERATIONS MGR OPERATIONS BP-III TANK FARM  
LYONDELL CHEMICAL COMPANY  
10801 CHOATE RD  
PASADENA TX 77507-1503

Re: Declaration of Administrative Completeness  
Permit Amendment and Renewal Applications  
Air Quality Permit Number 9395  
Lyondell Chemical Bayport Plant  
Pasadena, Harris County  
Customer Reference Number: CN600344402  
Regulated Entity Number: RN102523107

Dear Ms. Harrison:

The Texas Commission on Environmental Quality (TCEQ) has declared the above-referenced applications, received on September 24, 2020, administratively complete on September 30, 2020.

You are now required to publish notice of your proposed activity. To help you meet the regulatory requirements associated with this notice, we have included the following items:

- Notices for Newspaper Publication (Examples A and B)
- Sign Posting Example (Example C)
- Public Notice Checklist
- Instructions for Public Notice
- Affidavit of Publication for Air Permitting (Form TCEQ-20533) and Alternative Language Affidavit of Publication for Air Permitting (Form TCEQ-20534)
- Web link to download Public Notice Verification Form (refer to Public Notice Instructions)
- Notification List

**Please note that it is very important that you follow all directions in the enclosed instructions.** If you do not, you may be required to republish the notice. Some common errors are the unauthorized changing of notice wording or font, omission of air contaminants, and inaccurate plant site location information represented in the application. Additional information can be found at [www.tceq.texas.gov/permitting/air/bilingual/how1\\_2\\_pn.html](http://www.tceq.texas.gov/permitting/air/bilingual/how1_2_pn.html) or **if you have any questions, please contact us before you proceed with publication.**

A "Public Notice Checklist" is enclosed which notes the time limitations for each step of the public notice process. **The processing of your application may be delayed if these time limitations are not met (i.e.; submitting proof of publication of the notice within 10 business days after publication, affidavits of publication within 30 calendar days after the date of publication, and public notice verification form within 10 business days after the end of the designated comment period).** This checklist should be used as a tool in conjunction with the enclosed, detailed instructions.

Ms. Annette Harrison  
Page 3  
September 30, 2020

Re: Permit: 9395

If you do not comply with all requirements described in the instructions, the TCEQ cannot continue processing the applications and may take other actions. Please note that as your application undergoes the technical review, we may request additional information.

If you have any questions regarding publication requirements, please contact the Office of the Chief Clerk at (512) 239-3300. If you have any other questions, please contact Ms. Virginia Le at (512) 239-1728.

Sincerely,

A handwritten signature in black ink, appearing to read "Johnny D. Bowers", with a long horizontal flourish extending to the right.

Johnny D. Bowers, Team Leader  
Air Permits Initial Review Team  
Air Permits Division  
Texas Commission on Environmental Quality

Enclosure

cc: Chief Health Inspector, Health Department, City of Pasadena, Pasadena  
Director, Harris County, Pollution Control Services, Pasadena  
Air Section Manager, Region 12 - Houston  
Air Permits Section Chief, New Source Review Section (6MM-AP), U.S. Environmental Protection  
Agency, Region 6, Dallas

Project Number: 320585

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## EXAMPLE A

### NOTICE OF RECEIPT OF APPLICATIONS AND INTENT TO OBTAIN AIR PERMIT AMENDMENT AND RENEWAL

AIR QUALITY PERMIT NUMBER 9395

**APPLICATION** Lyondell Chemical Company, has applied to the Texas Commission on Environmental Quality (TCEQ) for an amendment to and renewal of Air Quality Permit Number 9395, which would authorize modifications to and continued operation of Lyondell Chemical Bayport Choate Plant located at 10801 Choate Road, Pasadena, Harris County, Texas 77507. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application.

<http://www.tceq.texas.gov/assets/public/hb610/index.html?lat=29.632222&lng=-95.050277&zoom=13&type=r>. The existing facility and/or related facilities will emit the following air contaminants: acetone, additives, caustic, sulfuric acid, carbon monoxide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less and sulfur dioxide.

The applications were submitted to the TCEQ on September 24, 2020. The permit renewal will be issued in conjunction with the amendment. This permitting action also includes the incorporation of permits by rule, and changes in emission factors related to this permit. The reasons for any changes or incorporations, to the extent they are included in the renewed permit, may include the enhancement of operational control at the plant or enforceability of the permit. The applications will be available for viewing and copying at the TCEQ central office, the TCEQ Houston regional office, the La Porte Public Library, 600 South Broadway Street, La Porte, Harris County, Texas, on the internet at [www.lyondellbasell.com/bayportchoate](http://www.lyondellbasell.com/bayportchoate) and by contacting Mr. Derek Rodricks, Principal Environmental Engineer, at (281) 291- 1684 beginning the first day of publication of this notice. The facility's compliance file, if any exists, is available for public review in the Houston regional office of the TCEQ.

The executive director has determined the applications are administratively complete and will conduct a technical review of the applications.

**PUBLIC COMMENT/PUBLIC MEETING** You may submit public comments, a request for a public meeting, or request a contested case hearing to the Office of the Chief Clerk at the address below. The TCEQ will consider all public comments in developing a final decision on the applications. **The deadline to submit public comments is 30 days after newspaper notice is published.**

The purpose of a public meeting is to provide the opportunity to submit comments or ask questions about the applications. A public meeting about the applications will be held if the executive director determines that there is a significant degree of public interest in the applications or if requested by a local legislator. A public meeting is not a contested case hearing.

If only comments are received on the applications, the response to comments, along with notice of the executive director's action on the applications, will be mailed to everyone who submitted comments or is on the mailing list for these applications.

The executive director will complete the technical review, issue a preliminary decision on the applications, and a Notice of Application and Preliminary Decision will be published and mailed to those who are on the mailing list for these applications. That notice will contain the final deadline for submitting public comments. If a hearing request is timely filed in Response to this Notice of Receipt of Application and Intent to Obtain Air Permit, the time period for requesting a contested case hearing will be extended to thirty days after the mailing of the executive director's response to comments.

**After the final deadline for public comments following the Notice of Application and Preliminary Decision, the executive director will consider the comments and prepare a response to all relevant and material, or significant**



**public comments. If comments are received, the response to comments, along with the executive director's decision on the applications, will then be mailed to everyone who submitted public comments or is on a mailing list for these applications.**

**OPPORTUNITY FOR A CONTESTED CASE HEARING** You may request a contested case hearing. A contested case hearing is a legal proceeding similar to a civil trial in state district court. A contested case hearing will only be granted based on disputed issues of fact that are relevant and material to the Commission's decisions on the applications. Further, the Commission will only grant a hearing on issues submitted by you or others during the public comment period and not withdrawn.

**A person who may be affected by emissions of air contaminants from the facility is entitled to request a hearing. If requesting a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number; (2) applicant's name and permit number; (3) the statement "[I/we] request a contested case hearing"; (4) a specific description of how you would be adversely affected by the application and air emissions from the facility in a way not common to the general public; (5) the location and distance of your property relative to the facility; (6) a description of how you use the property which may be impacted by the facility; and (7) a list of all disputed issues of fact that you submit during the comment period. If the request is made by a group or an association, one or more members who have standing to request a hearing must be identified by name and physical address. The interests which the group or association seeks to protect must also be identified. You may also submit your proposed adjustments to the application/permit which would satisfy your concerns.**

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for contested case hearing to the Commissioners for their consideration at a scheduled Commission meeting. The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material air quality concerns submitted during the comment period.** Issues such as property values, noise, traffic safety, and zoning are outside of the Commission's jurisdiction to address in this proceeding.

**MAILING LIST** In addition to submitting public comments, you may ask to be placed on a mailing list to receive future public notices for this specific applications mailed by the Office of the Chief Clerk by sending a written request to the Office of the Chief Clerk at the address below.

**AGENCY CONTACTS AND INFORMATION** Public comments and requests must be submitted either electronically at [www.tceq.texas.gov/agency/decisions/cc/comments.html](http://www.tceq.texas.gov/agency/decisions/cc/comments.html), or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the Public Education Program toll free at 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Lyondell Chemical Company, 10801 Choate Road, Pasadena, Texas 77507-1503 or by calling Mr. Derek Rodricks, Principal Environmental Engineer at (281) 291-1684.

Notice Issuance Date: September 30, 2020

## Example B

### Publication Elsewhere in the Newspaper:

TO ALL INTERESTED PERSONS AND PARTIES:

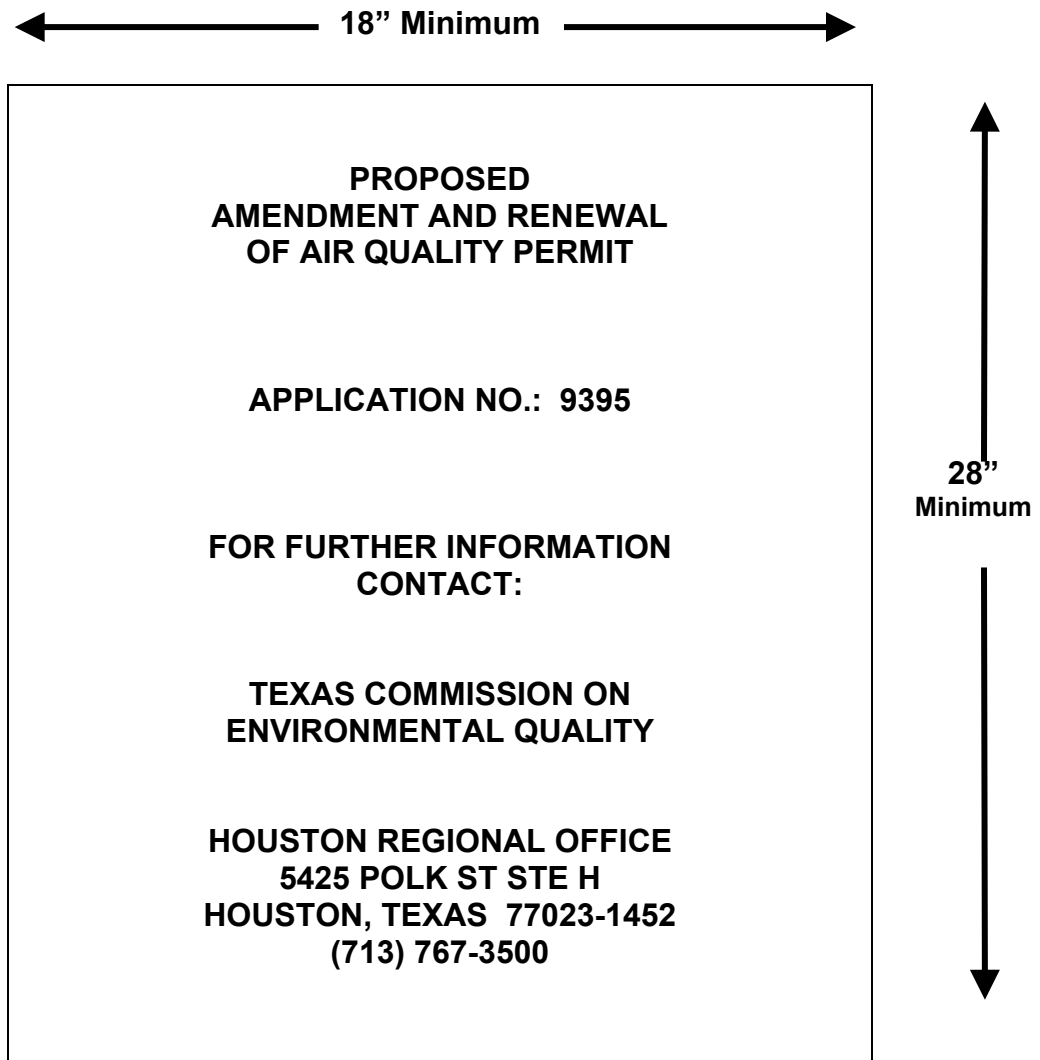
Lyondell Chemical Company, has applied to the Texas Commission on Environmental Quality (TCEQ) for an amendment to and renewal of Air Quality Permit No. 9395, which would authorize modification to and continued operation of Lyondell Chemical Bayport Choate Plant located at 10801 Choate Road, Pasadena, Harris County, Texas 77507. Additional information concerning these applications is contained in the public notice section of this newspaper.

↑  
3"  
minimum

← Minimum 2 column widths or 4 inches →

**Example C**  
**Sign Posting**

Sign(s) must be in place on day of publication of first newspaper notice **and must remain in place and the lettering must be legible during that designated comment period (30 days)**. It is recommended that the signs remain in place until 30 days after the last newspaper publication of the second notice (either English or alternate language notice, whichever is later). Note - The information shown is an example only. It is your responsibility to verify that the appropriate information pertaining to your application is accurate. Each sign placed at the site must be located within 10 feet of each (every) property line paralleling a public highway, street or road. Signs must be visible from the street and spaced at not more than 1,500-foot intervals. A minimum of one sign, but not more than three signs shall be required along any property line paralleling a public highway, street, or road.



Sign(s) must be placed at whatever height above the ground is necessary for sign(s) to be 100% visible from the street.

**WHITE BACKGROUND WITH BLACK LETTERS**

**All lettering must be no less than 1-1/2 inch block printed capitals.**

**Public Notice Checklist**  
**Notice of Receipt of Application and Intent to Obtain Permit**  
**(1st Notice)**

The following tasks must be completed for public notice. If publication in an alternative language is required, please complete the tasks for both the English and alternative language publications. Detailed instructions are included in the "Instructions for Public Notice" section of this package.

<b>Within 30 calendar days after date of administrative completeness letter</b>
<p>Publish <i>Notice of Receipt of Application and Intent to Obtain Permit</i></p> <ul style="list-style-type: none"><li>- Example A must be published in "public notice" section of newspaper. Review for accuracy prior to publishing.</li><li>- Example B must be published in prominent location (other than "public notice") in same issue of newspaper.</li></ul> <p>Provide copy of application at a public place for review and copying. Keep it there until end of the designated comment period.</p> <p>Prepare signs.</p>
<b>First day of newspaper publication</b>
<p>Review published newspaper notice for accuracy. If errors, contact Air Permits Division.</p> <p>Post signs and keep them up for duration of the designated comment period (see Example C).</p> <p>Ensure copy of application is at the public place.</p>
<b>Within 10 business days after date of publication</b>
<p>Mail proof of publication showing publication date and newspaper name to:</p> <p style="padding-left: 40px;">Texas Commission on Environmental Quality Office of the Chief Clerk, MC-105 Attn: Notice Team P.O. Box 13087 Austin, Texas 78711-3087</p> <p>Mail or email, as instructed, photocopies of newspaper clippings showing publication date and newspaper name to persons listed on <i>Notification List</i></p>
<b>Within 30 calendar days after date of publication</b>
<p>Mail original affidavit of publication for air permitting and alternative language affidavit of publication for air permitting (if applicable) to:</p> <p style="padding-left: 40px;">Texas Commission on Environmental Quality Office of the Chief Clerk, MC-105 Attn: Notice Team P.O. Box 13087 Austin, Texas 78711-3087</p> <p>Mail or email, as instructed, photocopies of affidavits to persons listed on <i>Notification List</i></p>
<b>Within 10 business days after end of the designated comment period</b>
<p>Mail Public Notice Verification Form to:</p> <p style="padding-left: 40px;">Texas Commission on Environmental Quality Office of the Chief Clerk, MC-105 Attn: Notice Team P.O. Box 13087 Austin, Texas 78711-3087</p> <p>Mail or email, as instructed, photocopies of Public Notice Verification Form to persons listed on <i>Notification List</i></p>

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## Instructions for Public Notice For New Source Review Air Permit

### Notice of Receipt of Application and Intent to Obtain Permit

Your application has been declared administratively complete and now you must comply with the following instructions:

#### Review Notice

Included in the notice is all of the information which the commission believes is necessary to effectuate compliance with applicable public notice requirements. Please read it carefully and notify the Texas Commission on Environmental Quality (TCEQ) immediately if it contains any errors or omissions. You are responsible for ensuring the accuracy of all information published. You may not change the text of the notice without prior approval from the TCEQ.

#### Newspaper Notice

- You must publish the enclosed *Notice of Receipt of Application and Intent to Obtain Permit* within **30 calendar days** after the date of administrative completeness. Refer to the cover letter for the date of administrative completeness.
- You must publish the enclosed *Notice of Receipt of Application and Intent to Obtain Permit* at your expense, in a newspaper that is of general circulation in the municipality where the facility is or will be located. If the facility is not located within a municipality, the newspaper should be of general circulation in the municipality nearest to the location or proposed location.
- You must publish this notice in one issue of any applicable newspaper.
- You will find two example notices enclosed in this package. *Example A* must be published in the "public notice" section of the newspaper. The phrase "Example A" is not required to be published. *Example B* must be published in the **same issue** of the newspaper as *Example A*; however, it must be published in a prominent location (other than the public notice section). *Example B* refers the public to the "public notice" section of the newspaper where *Example A* provides more information regarding the permit application.
- *Example B* must be a total of at least **6 column inches (standard advertising units)** with a height of at least **3 inches** and a horizontal dimension of **2 column widths**. If the newspaper chosen does not use standard advertising units for measurement, the notice must be at least **12 square inches** with the shortest side at least 3 inches.
- The bold text of the enclosed notice **must** be printed in the newspaper in a font style or size that distinguishes it from the rest of the notice (i.e., **bold**, *italics*). **Failure to do so may require re-notice.**

## Alternative Language Notice

- In certain circumstances, applicants for air permits must complete notice in alternative languages.
- Public notice rules require the applicant to determine whether a bilingual program is required at either the elementary or middle school nearest to the facility or proposed facility location. Bilingual education programs are determined on a district-wide basis. When students who are required to attend either school are eligible to be enrolled in a bilingual education program, some alternative language notice is required (signs, or signs and newspaper notice).
- Since the school district, and not the schools, must provide the bilingual education program, these programs do not have to be located at the elementary or middle school nearest to the facility or proposed facility to trigger the alternative language notice requirement. If there are students who would normally attend the nearest schools eligible to be taught in a bilingual education program at a different location, alternative language notice is required.
- If triggered, publication of alternative language notices must be made in a newspaper or publication primarily printed in each language taught in the bilingual education program. This notice is required if such a newspaper or publication exists in the municipality or the county where the facility is or will be located.
- The applicant must demonstrate a good faith effort to identify a newspaper or publication in the required language. If a newspaper or publication of general circulation published at least once a month in such language cannot be found, publishing in that language is not required, but signs must still be posted adjacent to each English language sign.
- Publication in an alternative language section or insertion within an English language newspaper does not satisfy these requirements.
- The applicant has the burden to demonstrate compliance with these requirements. You must fill out the **Public Notice Verification Form (Form TCEQ-20244)** indicating your compliance with the requirements regarding publication in an alternative language. **This form is available at [www.tceq.texas.gov/permitting/air/nav/air\\_publicnotice.html](http://www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html).**
- It is suggested the applicant work with the local school district to do the following:
  - (a) determine if a bilingual program is required in the district;
  - (b) determine which language is required by the bilingual program;
  - (c) locate the nearest elementary and middle schools; and
  - (d) determine if any students attending either school are eligible to be enrolled in a bilingual educational program.
- **If you determine that you must meet the alternative language notice requirements, you are responsible for ensuring that the publication in the alternative language is complete and accurate in that language. Spanish notice templates are available through the Air Permits Division Web site at [www.tceq.texas.gov/permitting/air/nav/air\\_publicnotice.html](http://www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html).** All italic notes should be replaced with the corresponding Spanish translations for the specific application and published in the alternative language publication.
- If you are required to publish notice in a language other than Spanish, you must translate the entire public notice at your own expense.

## Public Comment Period

- The public comment period should last at least **30 calendar days**.

- The comment period will be longer if the last day of the public comment period ends on a weekend or a holiday. In this case, the comment period will end on the next business day.
- The comment period for the permit may lengthen depending on whether a public meeting is held. If a public meeting is held, the comment period will be extended to the later of either the date of the public meeting or the end of the second notice period.

### Proof of Publication

- Check each publication to ensure that the articles were accurately published. If a notice was not published correctly you may be required to republish.
- For each newspaper in which you published, you must submit proof of publication that shows the notice, the date of publication, and the name of the newspaper to the Office of the Chief Clerk within **10 business days** after the date of publication. Acceptable proofs of publication are 1) copies of the published notice or 2) the original newspaper clippings of the published notice. If you choose to submit copies of the published notice to the Office of the Chief Clerk, copies must be on standard-size 8½" x 11" paper and must show the actual size of the published notice (do not reduce the image when making copies). Published notices longer than 11" must be copied onto multiple 8½" x 11" pages. Please note, submitting a copy of your published notice could result in faster processing of your application. It is recommended that you maintain original newspaper clippings or tear sheets of the notice for your records.
- You must submit an **original affidavit of publication for air permitting and alternate language affidavit of publication for air permitting (if applicable)** to the Office of the Chief Clerk within **30 calendar days** after the date of publication. **You must use the enclosed affidavits of publication.** The affidavits must clearly identify the applicant's name and permit number. You are encouraged to submit the affidavit with proof of publication described above.
- You must submit the **Public Notice Verification Form (Form TCEQ-20244)** to the Office of the Chief Clerk within **10 business days** of the end of this public comment period. You must use this form to certify that you have met bilingual notice requirements. **This form is available at [www.tceq.texas.gov/permitting/air/nav/air\\_publicnotice.html](http://www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html).**
- The **original affidavits of publication, Public Notice Verification Form, and acceptable proof of publication of the published notices** must be mailed to:

Texas Commission on Environmental Quality  
Office of the Chief Clerk, MC-105  
Attn: Notice Team  
P.O. Box 13087  
Austin, Texas 78711-3087

- Please ensure that the affidavit(s) you send to the Chief Clerk is/are originals and that all blanks on the affidavit are filled in correctly. Photocopies of affidavits will not be accepted.
- Photocopies of newspaper clippings, affidavits, and verifications must also be sent to those listed on the enclosed *Notification List* within the deadlines specified above.

### Failure to Publish and Submit Proof of Publication

You must meet all publication requirements. **If you fail to publish the notice or submit proof of publication on time, then** the TCEQ may suspend further processing on your application or take other actions.

## Sign Posting

Applicants for air quality permits must also post signs.

- You must post at least one sign in English and as applicable, in each alternative language.
- Signs must be in place on the first day of publication in a newspaper and must remain in place and be legible and be visible from the street for the entire duration of the publications' designated comment period (see Example C).
- The sign template enclosed (*Example C*) is an example only. Read the sign template carefully and notify the TCEQ if it has an error or omissions. It is your responsibility to verify that the appropriate information pertaining to your application is accurate. Any changes to the text prepared by the TCEQ must be approved by the agency.
- Signs placed at the site must be located within 10 feet of each (every) property line paralleling a public street, road, or highway. Signs must be spaced at not more than 1,500-foot intervals. A minimum of one sign, but not more than three signs are required along any property line paralleling a public street, road, or highway. Sign(s) must be placed at a sufficient height above the ground that is necessary for sign(s) to be 100 percent visible from the street.
- All lettering on the sign must be no less than 1½" in height with block printed capital lettering. The sign must be at least 18" wide and 28" tall, and consist of black lettering on a white background.
- Alternative language signs are required if alternative notice is required, even if no newspaper can be found.
- Inspect each posted sign daily to ensure it is present and visible throughout the entire comment period.
- You must submit verification of sign posting using the **Public Notice Verification Form (Form TCEQ-20244)** within **10 business days** after end of the publications' designated comment period. Do not submit the *Public Notice Verification Form* verifying sign posting until after the comment period is over. You cannot certify that the sign posting is in compliance until after the comment period is over. **This form is available at [www.tceq.texas.gov/permitting/air/nav/air\\_publicnotice.html](http://www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html).**

## Application in a Public Place

- You must provide a copy of the administratively complete application at a public place for review and copying by the public. This place must be in the county in which the facility is located or proposed to be located.
- A public place is one that is publicly owned or operated. For example, libraries, county courthouses, or city halls.
- The administratively complete application must be available beginning on the first day of newspaper publication and remain available during the entire public comment period.
- If the application is submitted to the TCEQ with information marked as confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: "Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the Texas Commission on Environmental Quality, Public Information Coordinator, MC-197, P.O. Box 13087, Austin, Texas 78711-3087."



- You must submit verification of file availability using the **Public Notice Verification Form (Form TCEQ-20244)** within **10 business days** after end of the publications' designated comment period. Do not submit the form verifying that the application was in a public place until after the comment period is complete. If a public meeting is held or second notice is required causing the public comment period to be extended, at a later date you will be required to verify that the application was in a public place during the entire public comment period. **This form is available at [www.tceq.texas.gov/permitting/air/nav/air\\_publicnotice.html](http://www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html).**

### **General Information**

When contacting the Commission regarding this application, please refer to the permit number at the top of the *Notice of Application and Intent to Obtain Permit*.

If you wish to obtain an electronic copy, please contact the initial reviewer who assisted in the preparation of this public notice package. The electronic version is available in Microsoft Word format only and can be requested once your application has been declared administratively complete. Please ensure that the electronic version is correct and consistent with the hard copies that were provided. Any revisions made may not be accepted. **You may download copies of the Public Notice Verification Form and Affidavits of publication by visiting our agency Web site at [www.tceq.texas.gov/permitting/air/nav/air\\_publicnotice.html](http://www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html).**

If you have questions or need assistance regarding publication requirements, please contact the Office of the Chief Clerk at (512) 239-3300 or the administrative reviewer listed in the cover letter.

TCEQ-Office of the Chief Clerk  
MC-105 Attn: Notice Team  
P.O. Box 13087  
Austin, Texas 78711-3087

Applicant Name: Lyondell Chemical Company  
Permit No.: 9395  
Application Received Date: September 24, 2020

### AFFIDAVIT OF PUBLICATION FOR AIR PERMITTING

STATE OF TEXAS §

COUNTY OF \_\_\_\_\_ §

**BEFORE ME**, the undersigned authority, on this day personally appeared

\_\_\_\_\_, who being by me duly sworn, deposes and says that (s)he is *(Name of Person Representing Newspaper)*

the \_\_\_\_\_ of the \_\_\_\_\_  
*(Title of Person Representing Newspaper)* *(Name of the Newspaper)*

that said newspaper is generally circulated in \_\_\_\_\_, Texas;  
*(The municipality or nearest municipality to the location of the facility or the proposed facility)*

that the enclosed notice was published in said newspaper on the following date(s):

\_\_\_\_\_  
*(Newspaper Representative's Signature)*

Subscribed and sworn to before me this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
to certify which witness my hand and seal of office.

[Affix Seal]

\_\_\_\_\_  
Notary Public in and for the State of Texas

\_\_\_\_\_  
Print or Type Name of Notary Public

\_\_\_\_\_  
My Commission Expires

TCEQ-Office of the Chief Clerk  
MC-105 Attn: Notice Team  
P.O. Box 13087  
Austin, Texas 78711-3087

Applicant Name: Lyondell Chemical Company  
Permit No.: 9395  
Application Received Date: September 24, 2020

**ALTERNATIVE LANGUAGE AFFIDAVIT OF PUBLICATION FOR AIR PERMITTING**

**STATE OF TEXAS §**

**COUNTY OF \_\_\_\_\_ §**

**BEFORE ME**, the undersigned authority, on this day personally appeared

\_\_\_\_\_, who being by me duly sworn, deposes and says that (s)he is (*Name of Person Representing Newspaper*)

the \_\_\_\_\_ of the \_\_\_\_\_;  
(*Title of Person Representing Newspaper*) (Name of the Newspaper)

that said newspaper is generally circulated in \_\_\_\_\_, Texas;  
(*The municipality or county in which the facility or proposed facility is located*)

that the enclosed notice was published in said newspaper on the following date(s):

\_\_\_\_\_  
(*Newspaper Representative's Signature*)

Subscribe and sworn to before me this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
to certify which witness my hand and seal of office.

\_\_\_\_\_  
Notary Public in and for the State of Texas

[Affix Seal]

\_\_\_\_\_  
Print or Type Name of Notary Public

\_\_\_\_\_  
My Commission Expires

## Notification List

It is the responsibility of the applicant to furnish the following offices with copies of the notices published, the *Affidavit of Publication for Air Permitting*, the *Alternative Language Affidavit of Publication for Air Permitting (if applicable)*, and a completed copy of the *Public Notice Verification Form (Form TCEQ-20244)*. Acceptable proof of publication and originals of any affidavits and Form TCEQ-20244 should be sent to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087.

**Electronic copies** should be submitted via email to the U.S. Environmental Protection Agency (EPA), **Region 6** at R6AirPermitsTX@EPA.gov. Please contact Ms. Aimee Wilson (wilson.aimee@epa.gov) at (214) 665-7596 if you have any questions pertaining to electronic submittals to the EPA.

**Hard copies** should be sent to the following:

Texas Commission on Environmental Quality  
Office of Air  
Air Permits Division, MC-163  
Mr. Connor McBride  
P.O. Box 13087  
Austin, Texas 78711-3087

Texas Commission on Environmental Quality  
Air Section Manager  
Houston Regional Office  
5425 Polk St Ste H  
Houston, Texas 77023-1452

Chief Health Inspector  
Health Department  
City of Pasadena  
PO Box 672  
Pasadena, Texas 77501-0672

Director  
Harris County  
Pollution Control Services  
101 South Richey Ste H  
Pasadena, Texas 77506-

**For TCEQ Use Only**

**Permit Application Routing and Summary Sheet  
Air Permits**

This sheet should accompany all notices to be processed by the office of the chief clerk on the left side of the file folder.

<b>Name of applicant:</b> .....Lyondell Chemical Company	
<b>Facility/ Site name:</b> .....Lyondell Chemical Bayport Plant	
<b>TCEQ permit number:</b> .....9395	
<b>Application received date:</b> ..... September 24, 2020	
<b>Customer reference number:</b> .....CN600344402	
<b>Regulated entity number:</b> .....RN102523107	
<b>County:</b> .....Harris	<b>Region:</b> ..... 12
<b>Local program 1:</b> Pasadena	<b>Local program 2:</b> Harris
<b>Permit type:</b> Permit Amendment Application	
<b>Internal program routing</b>	
<b>Tech. team leader:</b> Mr. Connor McBride	<b>Phone no.</b> (512) 239-0115
<b>APIRT team leader:</b> Johnny Bowers	<b>Date:</b> September 30, 2020
<b>Administratively reviewed by:</b> Virginia Le	<b>Phone no.</b> (512) 239-1728
<b>Administratively complete date:</b> September 30, 2020	
<b>Public viewing location must have internet access:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>Is 2nd public notice required:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
*709 applies	

For TCEQ Use Only

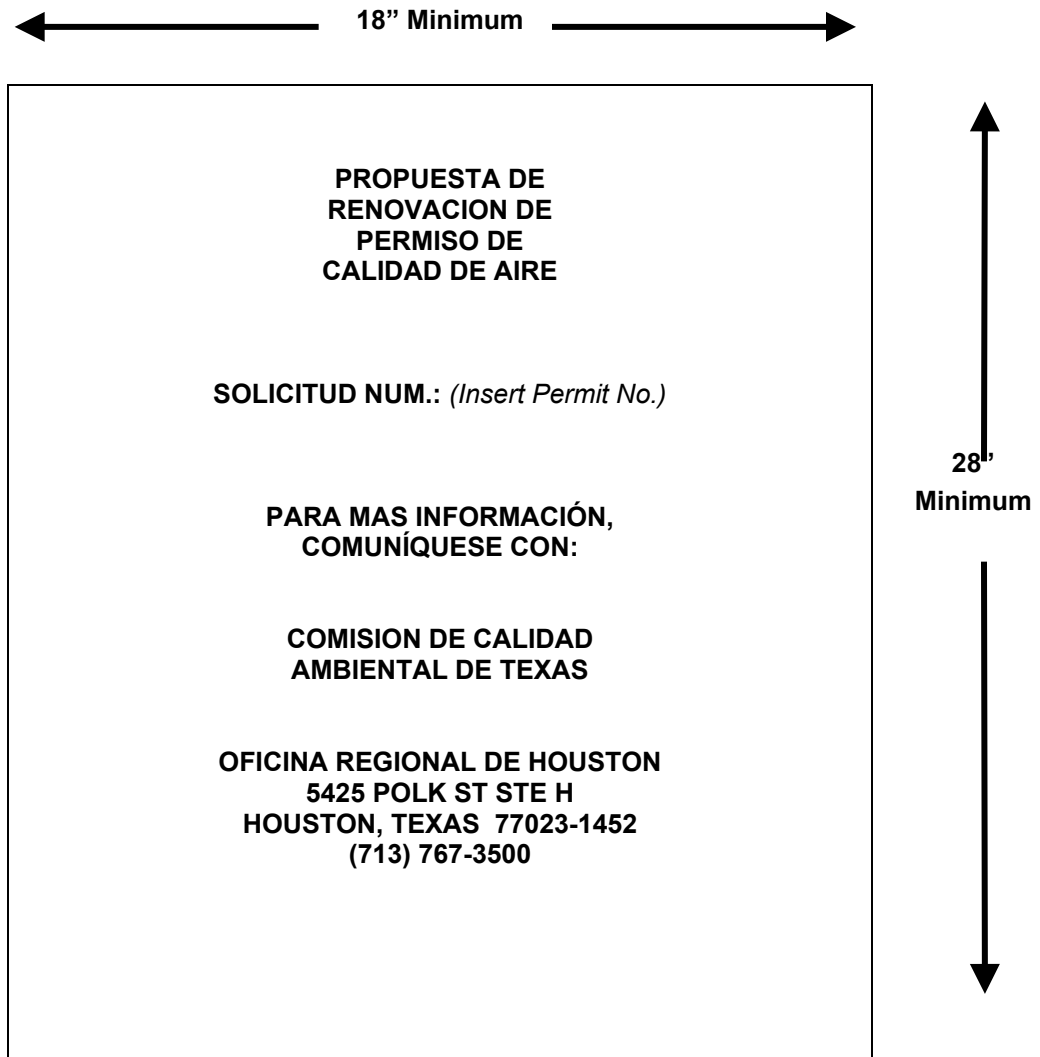
Applicant and Contact Information

This sheet should accompany all notices to be processed by the office of the chief clerk on the right side of the file folder.

<b>Applicant's main contact and address to be shown on permit:</b>	
<b>Name/Title:</b> Annette Harrison, Lead Operations Mgr Operations Bp-iii Tank Farm	
<b>Company:</b> Lyondell Chemical Company	
<b>Street/Road:</b> 10801 Choate Rd	
<b>City/State/Zip:</b> Pasadena, TX 77507-1503	
<b>Telephone:</b> (281) 291-1220	<b>Fax:</b>
<b>Applicant's technical representative/ consultant:</b>	
<b>Name/Title:</b> Derek Rodricks, Principal Environmental Engineer	
<b>Company:</b> Lyondell Chemical Company	
<b>Street/Road:</b> 10801 Choate Rd	
<b>City/State/Zip:</b> Pasadena, TX 77507-1503	
<b>Phone:</b> (281) 291-1684	<b>Fax:</b>
<b>Person responsible for publishing notice:</b>	
<b>Name/Title:</b> Derek Rodricks, Principal Environmental Engineer	
<b>Company:</b> Lyondell Chemical Company	
<b>Street/Road:</b> 10801 Choate Rd	
<b>City/State/Zip:</b> Pasadena, TX 77507-1503	
<b>Telephone:</b> (281) 291-1684	<b>Fax:</b>

**EXAMPLE F**  
**SIGN POSTING**

Sign(s) must be in place on day of publication of first newspaper notice and must remain in place and be legible for the 15-day public comment period (which begins on the last day of newspaper publication, either English or alternate language notice, whichever is later). Note - The information shown is an example only. It is your responsibility to verify that the appropriate information pertaining to your application is accurate. Each sign placed at the site must be located within 10 feet of each (every) property line paralleling a public highway, street or road. Signs must be visible from the street and spaced at not more than 1,500-foot intervals. A minimum of one sign, but not more than three signs shall be required along any property line paralleling a public highway, street, or road.



Sign(s) must be placed at whatever height above the ground is necessary for sign(s) to be 100% visible from the street.

**WHITE BACKGROUND WITH BLACK LETTERS**

All lettering must be no less than 1-1/2 inch block printed capitals.