Registration for Permit By Rule

§106.261 and §106.262

UNITED

United Airlines, Inc

Houston George Bush Intercontinental Airport (IAH)
Harris County, Texas

CN600124846
RN103019295

September 2019

DiSorbo
Environmental Consulting Firm

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Table of Contents

Section 1 Project Information 1-1

1.1 Introduction 1-1

1.2 Project Description 1-1

1.3 Application Organization 1-2

Section 2 Administrative Forms 2-1

Section 3 Location Information 3-1

Section 4 Process Description 4-1

4.1 Overall Process Description 4-1

4.1.1 Aerosol Can Puncturing System 4-1

Section 5 Emission Calculations 5-3

5.1 Routine Emissions 5-3

5.1.1 Aerosol Can Puncturing System 5-3

Section 6 Federal New Source Review 6-1

6.1 NNSR Requirements 6-1

6.2 PSD Requirements 6-1

Section 7 PBR Applicability Analysis 7-1

7.1 Chapter 106 – Permits By Rule 7-1

7.1.1 Rule §106.4 – Requirements for Permitting By Rule 7-1

7.1.2 Rule §106.261 – Facilities (Emission Limitations) 7-1

7.1.3 Rule §106.262 – Facilities (Emission and Distance Limitations) 7-3

List of Tables

Table 1-1 Permit by Rule Emissions Summary 1-3

Table 1-2 Permit by Rule Applicability Summary – §106.261/§106.262 1-4

Table 1(a) Emission Point Summary 5-4

Table 6-1 NNSR/PSD Applicability Analysis Summary 6-2

List of Figures

Figure 3-1 Area Map 3-2

Figure 4-1 Process Flow Diagram – Aerosol Can Puncturing System 4-2

Table of Contents (Continued)

Appendices

Appendix A Routine Emission Calculations

Appendix B TCEQ Applicable Rule Text

Appendix C Material Safety Data Sheets (MSDS)

Section 1
Project Information

1.1 Introduction

United Airlines, Inc. (United) operates an aircraft and ground service equipment maintenance facility at Houston George Bush Intercontinental Airport (IAH) in Harris County, Texas. The facility is currently authorized under NSR permit No. 73204 and Permit by Rule (PBR) registration No. 141743. United is submitting this PBR registration application to authorize emissions from six aerosol can puncturing systems (EPNs: ACP01, ACP02, APC03, APC04, APC05 and APC06) via PBR Nos. §106.261 and §106.262.

1.2 Project Description

Each aerosol can puncturing system is equipped with a 55-gallon drum which receives the punctured cans. A charcoal filter adsorption system which achieves a guaranteed VOC removal efficiency of 99%, is utilized to control emissions that result from the puncturing operation. The operations of the existing aerosol can puncturing systems currently meet deminis thresholds and are limited to 40 cans per day. With this PBR registration, United proposes to increase the production rate of the six existing aerosol can puncturing systems from 40 cans per day to 1440 cans per day, or 60 cans per hour. No physical changes to the existing aerosol can puncturing equipment or pollution abatement equipment are requested as part of this application.

This PBR registration application provides all of the information necessary for the TCEQ to confirm that the proposed aerosol can puncturing operations meet the requirements for authorization under PBR §106.261 and §106.262. Table 1-1 includes an emission summary for all sources at the site claimed under §106.261 and §106.262 and associated PBR emission limits.

1.3 Application Organization

This application is organized into the following sections:

Section 1 presents the application objectives and organization.

Section 2 contains the TCEQ Form PI-7-CERT.

Section 3 contains an Area Map and a Plot Plan showing the location of the facilities included in this submittal.

Section 4 contains a process flow diagram for the proposed facilities in this application.

Section 5 contains a discussion of the estimated emissions from the facilities included in this application.

Section 6 addresses applicability of the Federal Nonattainment New Source Review (NNSR) and Prevention of Significant Deterioration (PSD) permitting requirements.

Section 7 contains a discussion of requirements met for each PBR claimed; as well as, a TCEQ Rule Checklist for applicable PBRs.

Appendix A contains the detailed routine emissions calculations.

Appendix B includes TCEQ applicable rule text.

Appendix C contains sample Safety Data Sheets and specifications.

Table 1-1
Emissions Summary
United Airlines, Inc.

EPN	FIN	Name	PBR	VOC	
				lb/hr	tpy
ACPCAP	ACPCAP	Aerosol Can Puncturing System	261/262	0.003	0.01
			Total Emissions:	0.003	0.01
			PBR 106.4 Limits:	-	25
			Meets PBR Limits:	-	**Yes**

Table 1-2
PBR Applicability Summary - 106.261/106.262
United Airlines, Inc.

106.262 K-Value: 130

Pollutant	Relevant PBR Section	Proposed Emissions		L Value (mg/m^3)	Emission Limits		Less than Limit
		lb/hr	tpy		lb/hr	tpy	
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	106.261(a)(3)	0.0003191	0.1397485	–	1.00	4.38	Yes
1,1,1,2-Tetrafluoroethane	106.261(a)(3)	0.0023229	1.0174375	–	1.00	4.38	Yes
1,2 Butylene Oxide	106.261(a)(3)	2.52E-05	0.0110357	–	1.00	4.38	Yes
1,2,4-Trimethylbenzene	106.261(a)(3)	0.0001368	0.059927	–	1.00	4.38	Yes
1-Methoxy-2-propanal	106.261(a)(3)	0.0003986	0.1746059	–	1.00	4.38	Yes
1-Methoxy-2-Propyl Acetate	106.261(a)(3)	0.0002078	0.0910012	–	1.00	4.38	Yes
2,2-Dimethylbutane	106.261(a)(3)	7.977E-05	0.0349371	–	1.00	4.38	Yes
2,3-Dimenthylbutane	106.261(a)(3)	0.0002659	0.1164571	–	1.00	4.38	Yes
2,6 Di-tert-butylphenol	106.261(a)(3)	9.946E-06	0.0043562	–	1.00	4.38	Yes
2,6-di-tert-butyl-p-cresol	106.262(a)(2)	0.0001032	0.0451994	10	0.077	0.3369	Yes
2-Ethylhexanoic acid	106.261(a)(3)	8.918E-05	0.0390589	–	1.00	4.38	Yes
2-Methylpentane	106.261(a)(3)	0.0004653	0.2037999	–	1.00	4.38	Yes
2-Methylpentane-2,4-Diol	106.261(a)(3)	0.0003986	0.1746059	–	1.00	4.38	Yes
2-Pentanone	106.262(a)(2)	7.668E-05	0.0335869	530	4.077	5	Yes
2-Propoxyethanol	106.261(a)(3)	0.00023	0.1007607	–	1.00	4.38	Yes
3-Methylpentane	106.261(a)(3)	0.0002659	0.1164571	–	1.00	4.38	Yes
4-Methyl-1,3-dioxolan-2-one	106.261(a)(3)	5.497E-05	0.0240754	–	1.00	4.38	Yes
Acetone	106.262(a)(2)	0.0017477	0.7654819	590	4.538	5	Yes
Acids, lanolin	106.261(a)(3)	0.0001004	0.0439753	–	1.00	4.38	Yes
Aluminum Powder	106.261(a)(3)	0.0774306	0.3391458	–	1.00	4.38	Yes
Amyl Acetate	106.262(a)(2)	9.946E-05	0.043562	2.7	0.021	0.0910	Yes
Barium Sulfate	106.262(a)(2)	0.0004574	0.2003476	10	0.077	0.3369	Yes
Basic Violet 1	106.261(a)(3)	1.397E-05	0.0061192	–	1.00	4.38	Yes
Butane	106.261(a)(2)	0.0015619	0.6841144	N/A	6	10	Yes
Butanol Normal	106.262(a)(2)	0.0001905	0.0834432	76	0.5846	5	Yes
Calcium Carbonate	106.261(a)(2)	0.0015727	0.6888285	N/A	6	10	Yes
Calcium Dinonylnaphthalene Sulfonate	106.261(a)(3)	2.672E-05	0.0117045	–	1.00	4.38	Yes
Calcium Sulfonate	106.261(a)(3)	1.531E-05	0.006705	–	1.00	4.38	Yes
Castor Oil	106.261(a)(3)	0.0004571	0.2001949		1.00	4.38	Yes
Cellulose Nitrate	106.261(a)(3)	5.08E-05	0.0222515		1.00	4.38	Yes
Ceramic materials and wares, chemicals	106.261(a)(3)	0.0001316	0.0576492		1.00	4.38	Yes
Chlorinated Esters	106.261(a)(3)	0.0005291	0.2317497		1.00	4.38	Yes
Coumarin	106.261(a)(3)	4.135E-05	0.0181105		1.00	4.38	Yes
Cumene	106.262(a)(2)	1.841E-05	0.0080621	50	0.385	1.6846	Yes
Cyclohexane	106.261(a)(2)	0.0003968	0.1738122		6	10	Yes
Cyclohexanone	106.262(a)(2)	3.307E-05	0.0144844	100	0.769	5	Yes
Cyclopentane	106.261(a)(2)	2.659E-05	0.0116457		6	10	Yes
Dibutyl Phthalate	106.262(a)(2)	0.0001082	0.0474033	5	0.038	0.1685	Yes
Diacetone Alcohol	106.261(a)(3)	5.08E-05	0.0222515		1.00	4.38	Yes
Diethylene Glycol Monomethyl Ether	106.261(a)(3)	0.0001263	0.0553039		1.00	4.38	Yes
Difluoroethane	106.261(a)(3)	0.0026455	1.1587483		1.00	4.38	Yes
Diisobutyl Ketone	106.262(a)(2)	0.0001764	0.0772499	63.9	0.492	2.1529	Yes
Dimethyl Carbonate	106.261(a)(3)	0.0001781	0.0779987		1.00	4.38	Yes
Dimethyl ether	106.261(a)(3)	0.001873	0.8203528		1.00	4.38	Yes
Dipropylene Glycol Methyl Ether	106.261(a)(3)	0.0007937	0.3476245		1.00	4.38	Yes
d-Limonene	106.261(a)(3)	0.0017118	0.7497783		1.00	4.38	Yes
d-Phenothrin	106.261(a)(3)	1.827E-06	0.0008002		1.00	4.38	Yes
Ethanol	106.261(a)(2)	0.002521	1.1042189		6	10	Yes
Ethyl 3-Ethoxypropionate	106.261(a)(3)	0.0001422	0.0622983		1.00	4.38	Yes
Ethyl acetate	106.261(a)(2)	0.0003571	0.156428		6	10	Yes
Ethylbenzene	106.261(a)(3)	0.0002769	0.1212772		1.00	4.38	Yes
Ethylene Glycol	106.262(a)(2)	0.0002044	0.0895396	26	0.200	0.876	Yes

Table 1-2
PBR Applicability Summary - 106.261/106.262
United Airlines, Inc.

106.262 K-Value: 130

Pollutant	Relevant PBR Section	Proposed Emissions		L Value (mg/m^3)	Emission Limits		Less than Limit
		lb/hr	tpy		lb/hr	tpy	
Ethylene Glycol Mono-2-Ethylhexyl Ether	106.261(a)(3)	0.0002585	0.1132413		1.00	4.38	Yes
Ethylene Glycol Monobutyl Ether	106.262(a)(2)	0.000496	0.2172653	121	0.931	5	Yes
Ethyltriacetozysilane	106.261(a)(3)	0.0013228	0.5793741		1.00	4.38	Yes
Fragrance	106.261(a)(3)	1.202E-05	0.0052627		1.00	4.38	Yes
Heptane	106.262(a)(2)	0.0002646	0.1158748	350	2.692	5	Yes
Hexamethylene Diisocyanate (max)	106.261(a)(3)	0.0019842	0.8690612		1.00	4.38	Yes
Hexane	106.262(a)(2)	0.0016362	0.7166378	176	1.354	5	Yes
Hydroxyalkyl Methacrylate	106.262(a)(2)	0.002378	1.0415715	34	0.262	1.146	Yes
Isobutane	106.261(a)(3)	0.0025922	1.1353931		1.00	4.38	Yes
Isobutyl acetate	106.261(a)(3)	0.00023	0.1007607		1.00	4.38	Yes
Isobutyl Alcohol	106.262(a)(2)	0.0001411	0.0617999	152	1.169	5	Yes
Isobutyl Isobutyrate	106.261(a)(3)	0.0002575	0.1127985		1.00	4.38	Yes
Isopropanol	106.261(a)(2)	0.0019842	0.8690612		6	10	Yes
Lubricating Grease	106.261(a)(3)	0.0008918	0.3905893		1.00	4.38	Yes
Menthyl Acetate	106.261(a)(3)	0.0007858	0.3441827		1.00	4.38	Yes
Methyl Ethyl Ketone	106.261(a)(3)	0.0024852	1.0885211		1.00	4.38	Yes
Methacrylic Acid	106.262(a)(2)	8.918E-05	0.0390589	70	0.538	5	Yes
Methanol	106.261(a)(3)	0.0009016	0.3948996		1.00	4.38	Yes
Methyl ethyl ketoxime	106.261(a)(3)	1.749E-05	0.00766		1.00	4.38	Yes
Methyl Isobutyl Ketone	106.261(a)(3)	2.517E-06	0.0011025		1.00	4.38	Yes
Methylene Chloride	106.262(a)(2)	0.0018691	0.8186808	26	0.200	0.876	Yes
Methyltriacetozysilane	106.261(a)(3)	0.0013228	0.5793741		1.00	4.38	Yes
Molybdenum Disulfide	106.261(a)(3)	0.0003481	0.1524669		1.00	4.38	Yes
Morpholine	106.262(a)(2)	0.0003307	0.1448435	71	0.546	5	Yes
N,N-Diethyl-m-toluamide	106.261(a)(3)	0.000814	0.3565379		1.00	4.38	Yes
N,N-Dimethyl-p-toluidine	106.261(a)(3)	1.202E-05	0.0052627		1.00	4.38	Yes
Non-Volatile/Non-Hazardous Trade Secret Component	106.261(a)(3)	0.0014421	0.6316337		1.00	4.38	Yes
n-butyl acetate	106.261(a)(3)	0.0006614	0.2896871		1.00	4.38	Yes
Nonane	106.261(a)(3)	0.0001004	0.0439753		1	4.38	Yes
n-Propyl Bromide	106.261(a)(3)	0.0016377	0.7173204		1.00	4.38	Yes
Octamethylcyclotetrasiloxane	106.261(a)(3)	0.0001676	0.0734159		1.00	4.38	Yes
Pentane	106.262(a)(2)	0.000277	0.1213349	350	2.692	5	Yes
Pine Oil	106.261(a)(3)	5.265E-05	0.0230597		1.00	4.38	Yes
PM Acetate	106.261(a)(3)	0.0001087	0.0476246		1.00	4.38	Yes
Polybutyl titanate	106.261(a)(3)	9.425E-05	0.0412828		1.00	4.38	Yes
Poly-Tetrafluoroethylene	106.261(a)(3)	6.647E-05	0.0291143		1.00	4.38	Yes
Propane	106.261(a)(2)	0.0023516	1.0299985		6	10	Yes
Propyl Alcohol	106.261(a)(2)	7.559E-05	0.0331071		6	10	Yes
Propylene Glycol	106.261(a)(3)	4.337E-05	0.0189959		1.00	4.38	Yes
Propylene Glycol Monobutyl Ether	106.261(a)(3)	0.0001911	0.0836916		1.00	4.38	Yes
Refinery Petroleum Fractions	106.261(a)(2)	0.0026455	1.1587483		6	10	Yes
Sodium Lauryl Sulfate	106.261(a)(3)	0.0001653	0.0724218		1.00	4.38	Yes
Sorbitan Troileate	106.261(a)(3)	5.567E-05	0.0243819		1.00	4.38	Yes
Soya Lecithin	106.261(a)(3)	5.341E-05	0.0233935		1.00	4.38	Yes
Stryene-Butadiene Polymer	106.261(a)(3)	0.0001117	0.048944		1.00	4.38	Yes
Styrene-Hydrocarbon Copolymer	106.262(a)(2)	0.0001117	0.048944	21	0.162	0.7075	Yes
t-Butanol	106.261(a)(3)	2.52E-05	0.0110357		1.00	4.38	Yes
Terpentine	106.261(a)(3)	0.0001974	0.0864738		1.00	4.38	Yes
Tetrachloroethylene	106.262(a)(2)	0.0022174	0.9712015	33.5	0.258	5	Yes
Tetrafluotoethene Polymer	106.261(a)(3)	9.946E-05	0.043562		1.00	4.38	Yes
Tetramethrin	106.261(a)(3)	3.654E-06	0.0016005		1.00	4.38	Yes
Toluene	106.262(a)(2)	0.0009016	0.3948996	188	1.446	5	Yes
Trans-Dichloroethylene	106.261(a)(3)	0.0024234	1.0614488		1.00	4.38	Yes
Triethanolamine	106.262(a)(2)	0.0002939	0.1287498	5	0.038	0.1685	Yes
Triphenyl phosphate	106.262(a)(2)	0.0001032	0.0451994	3	0.023	0.1011	Yes
VM&P Naphtha	106.261(a)(3)	0.0002828	0.1238602		1.00	4.38	Yes
White Mineral oil (petroleum)	106.261(a)(3)	0.0002276	0.0996899		1.00	4.38	Yes
Xylene	106.261(a)(3)	0.0008995	0.3939744		1.00	4.38	Yes
Sodium Sulfonate	106.261(a)(3)	0.0001476	0.0646569		1.00	4.38	Yes
Molybdenum,bis[0,0-bis(2-ethylhexyl) phosphorodithioato-S,S]dioxodi- mu -thioxodi- (Mo-Mo)	106.261(a)(3)	1.964E-06	0.0008604		1.00	4.38	Yes

Note:

1) The facility with the closest proximity to an offsite receptor is utilized, for purposes of compliance with the 106.262 distance limitations.

Section 2
Administrative Forms

This section contains the following forms and information:

- Form PI-7-CERT

Texas Commission on Environmental Quality
Certification and Registration for Permits by Rule
Form PI-7-CERT
(Page 1)

I. Registrant Information		
A. Company or Other Legal Customer Name: United Airlines, Inc		
B. Company Official Contact Information (☒ Mr. ☐ Mrs. ☐ Ms. ☐ Other _____)		
Name: Benny King		
Title: Managing Director Maintenance Aircraft O&R		
Mailing Address: 4795 Wright Road		
City: Houston	State: TX	ZIP Code: 77032
Phone: 281-553-9710	Fax:	
E-mail Address: benny.king@united.com		
All PBR registration responses will be sent via e-mail unless a hard copy is specifically requested. The company official must initial here if hard copy is requested. _____ *(please initial)*		
C. Technical Contact Information (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other _____)		
Name: Rohini Sengupta		
Title: Manager, Air Quality and Emissions Program		
Company Name: United Airlines		
Mailing Address: 233 S. Wacker Drive, WHQEN 11th Floor		
City: Chicago	State: IL	ZIP Code: 60606
Phone: 872-825-9866	Fax:	
E-mail: rohini.sengupta@united.com		
II. Facility and Site Information		
A. Name and Type of Facility		
Facility Name: George Bush Intercontinental Maintenance Facility		
Type of Facility: ☒ Permanent	☐ Temporary	
For portable units, please provide the serial number of the equipment being authorized below.		
Serial No:	Serial No:	
B. Facility Location Information		
Street Address: 4661 Wright Road		
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).		
City: Houston	County: Harris	ZIP Code: 77032-5217

II. Facility and Site Information *(continued)*	
C. TCEQ Core Data Form	
Is the Core Data Form (TCEQ Form Number 10400) attached?	☐ YES ☒ NO
If "NO," provide customer reference number (CN) and regulated entity number (RN) below.	
Customer Reference Number (CN): 600124846	
Regulated Entity Number (RN): 103019295	
D. TCEQ Account Identification Number (if known): HG4880Q	
E. PBR number(s) claimed under 30 TAC Chapter 106	
(List all the individual rule number(s) that are being claimed.)	
106. 261	106. 262
106.	106.
106.	106.
F. Historical Standard Exemption or PBR	
Are you claiming a historical standard exemption or PBR?	☐ YES ☐ NO
If "YES," enter rule number(s) and associated effective date in the spaces provided below.	
Rule Number(s)	Effective Date
G. Previous Standard Exemption or PBR Registration Number	
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR?	☐ YES ☒ NO
If "YES," enter previous standard exemption number(s) and PBR registration number(s), and associated effective dates in the spaces provided below.	
Standard Exemption and PBR Registration Number(s)	Effective Date
H. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit	
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit?	☒ YES ☐ NO
If "YES," enter standard exemption number(s), PBR registration number(s), and Standard Permit registration number(s), and associated effective date in the spaces provided below.	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s)	Effective Date
See section 1 of the application for a list of claimed PBRs.	

II. Facility and Site Information *(continued)*	
I. Other Air Preconstruction Permits	
Are there any other air preconstruction permits at this site?	☒ YES ☐ NO
If "YES," enter permit number(s) in the spaces provided below.	
73204	
J. Affected Air Preconstruction Permits	
Does the PBR being claimed directly affect any permitted facility?	☐ YES ☒ NO
If "YES," enter the permit number(s) in the spaces provided below.	
K. Federal Operating Permit (FOP) Requirements (30 TAC Chapter 122 Applicability)	
1. Is this facility located at a site that is required to obtain an FOP pursuant to 30 TAC Chapter 122?	☐ YES ☐ NO ☒ To Be Determined
If the site currently has an existing FOP, enter the permit number:	
Check the requirements of 30 TAC Chapter 122 that will be triggered if this certification is accepted. *(check all that apply)* ☐ Initial Application for an FOP ☐ Significant Revision for an SOP ☐ Minor Revision for an SOP ☐ Operational Flexibility/Off Permit Notification for an SOP ☐ Revision for a GOP ☒ To be Determined ☐ None	
2. Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. *(check all that apply)* ☐ SOP ☐ GOP ☐ GOP application/revision (submitted or under APD review) ☒ N/A ☐ SOP application/revision (submitted or under APD review)	
III. Fee Information (*See Section VII. for address to send fee or go to www.tceq.texas.gov/epay to pay online.)*	
A. Fee Requirements	
Is a fee required per Title 30 TAC § 106.50?	☒ YES ☐ NO
If "NO," specify the exception (*check all that apply*)	
1. Registration is solely to establish a federally enforceable emission limit.	☐ YES ☒ NO
2. Registration is within six months of an initial PBR review, and it is addressing deficiencies, administrative changes, or other allowed changes.	☐ YES ☒ NO
3. Registration is for a remediation project (30 TAC § 106.533).	☐ YES ☒ NO

III. Fee Information (*See Section VII. for address to send fee or go to www.tceq.texas.gov/epay to pay online.) (continued)*	
B. Fee Amount	
1. A $100 fee is required if *any* of the answers in III.B.1 are "YES."	
This business has less than 100 employees.	☐ YES ☒ NO
This business has less than 6 million dollars in annual gross receipts.	☐ YES ☒ NO
This registration is submitted by a governmental entity with a population of less than 10,000.	☐ YES ☒ NO
This registration is submitted by a non-profit organization.	☐ YES ☒ NO
2. A $450 fee is required for all other registrations.	
C. Payment Information	
Check/money order/transaction or voucher number:	
Individual or company name on check: United Airlines	
Fee Amount: $ 450.00	
Was fee paid online?	☒ YES ☐ NO
IV. Technical Information Including State And Federal Regulatory Requirements **Place a check next to the appropriate box to indicate what is included in your submittal.** **NOTE:** *Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.*	
A. PBR requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)	
Did you demonstrate that the general requirements in 30 TAC § 106.4 are met?	☒ YES ☐ NO
Did you demonstrate that the individual requirements of the specific PBR are met?	☒ YES ☐ NO
B. Confidential Information (All pages properly marked "CONFIDENTIAL")	☐ YES ☒ NO
C. Process Flow Diagram	☒ YES ☐ NO
D. Process Description	☒ YES ☐ NO
E. Maximum Emissions Data and Calculations	☒ YES ☐ NO
Note: *If the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under* ***30 TAC Chapter 101, Subchapter H, Division 3,*** *the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x, emissions from these facilities.*	

IV. Technical Information Including State And Federal Regulatory Requirements *(continued)*

Place a check next to the appropriate box to indicate what is included in your submittal.

Note: Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.

F. Is this certification being submitted to certify the emissions for the entire site?	☐ YES ☒ NO
If "NO," include a summary of the specific facilities and emissions being certified.	
G. Table 1(a) (Form 10153) Emission Point Summary	☒ YES ☐ NO
H. Distances from Property Line and Nearest Off-Property Structure	
Distance from this facility's emission release point to the nearest property line: >100 feet	
Distance from this facility's emission release point to the nearest off-property structure: >324 feet	
I. Project Status	
Has the company implemented the project or waiting on a response from TCEQ? ☐ Implemented ☒ Waiting	
J. Projected Start of Construction and Projected Start of Operation Dates	
Projected Start of Construction (provide date): 09/15/2019	
Projected Start of Operation (provide date): 09/15/2019	

V. Delinquent Fees

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 is 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: www.tceq.texas.gov/agency/delin/index.html.

VI. Signature For Registration And Certification

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 this 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 (printed): Benny King

Signature (original signature required):

Date:

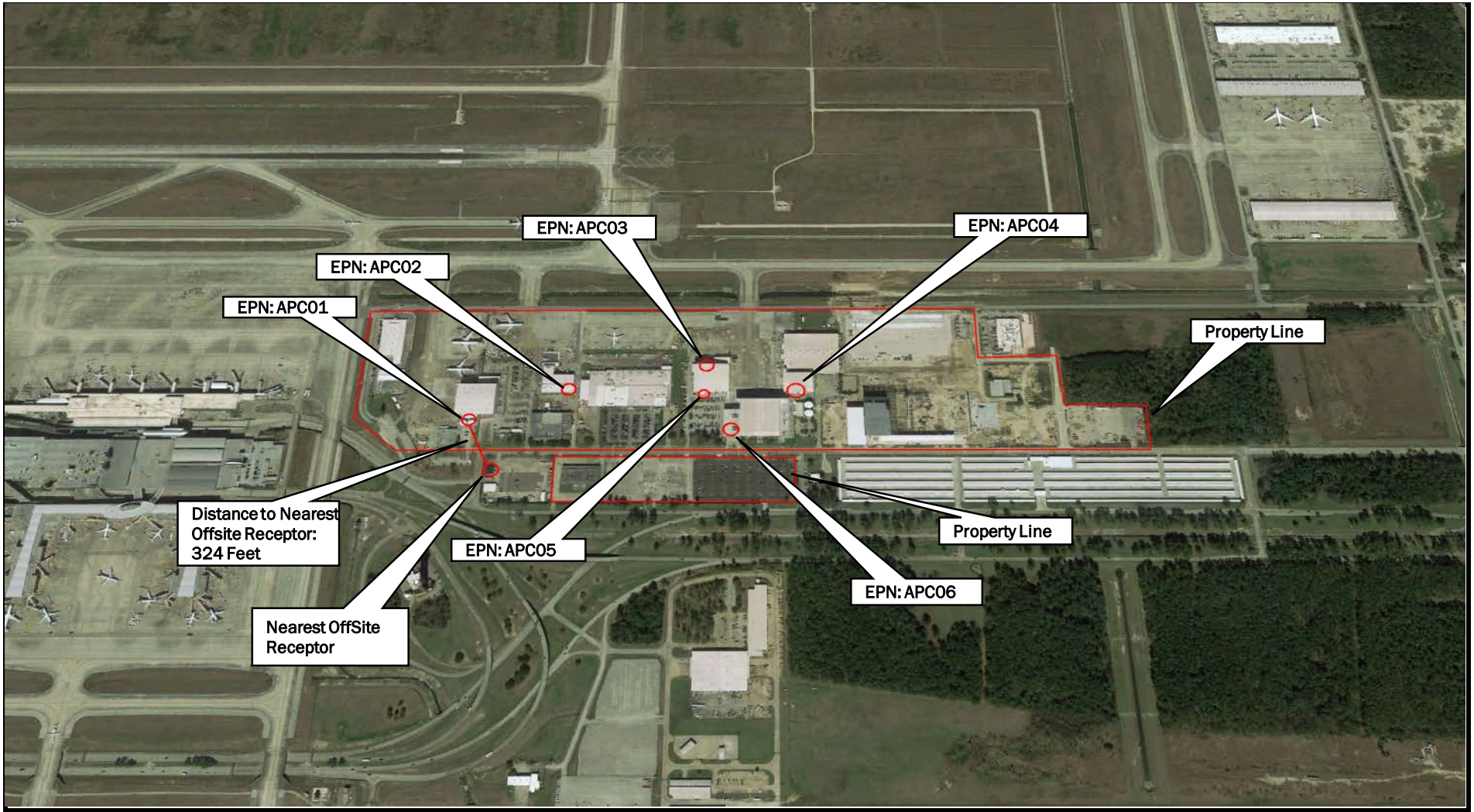
Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VII. Submitting Copies of the Certification and Registration		
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC 161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753	Originals Form PI-7-CERT, Core Data Form, and all attachments. Not required if using ePermits[1]
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check, Copy of Form PI-7-CERT, and Core Data Form. Not required if fee was paid using ePay[2].
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.texas.gov/publications/gi/gi-002.html, or call (512) 239-1250.	Copy of Form PI-7-CERT, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.texas.gov/permitting/air/local_programs.html, or call (512) 239-1250	Copy of Form PI-7-CERT, Core Data Form, and all attachments.

[1] ePermits located at www3.tceq.texas.gov/steers/
[2] ePay located at www.tceq.texas.gov/epay

Section 3
Location Information

The IAH maintenance facility is located in Houston, Harris County, Texas. A site location map is included as Figure 3-1. United leases property from the airport authority. The property line shown on Figure 3-1 is the lease line.



UNITED

United Airlines
IAH Maintenance Facilty
Houston, Texas

Figure 3-1
Area Map

DiSorbo
Environmental Consulting Firm

Section 4
Process Description

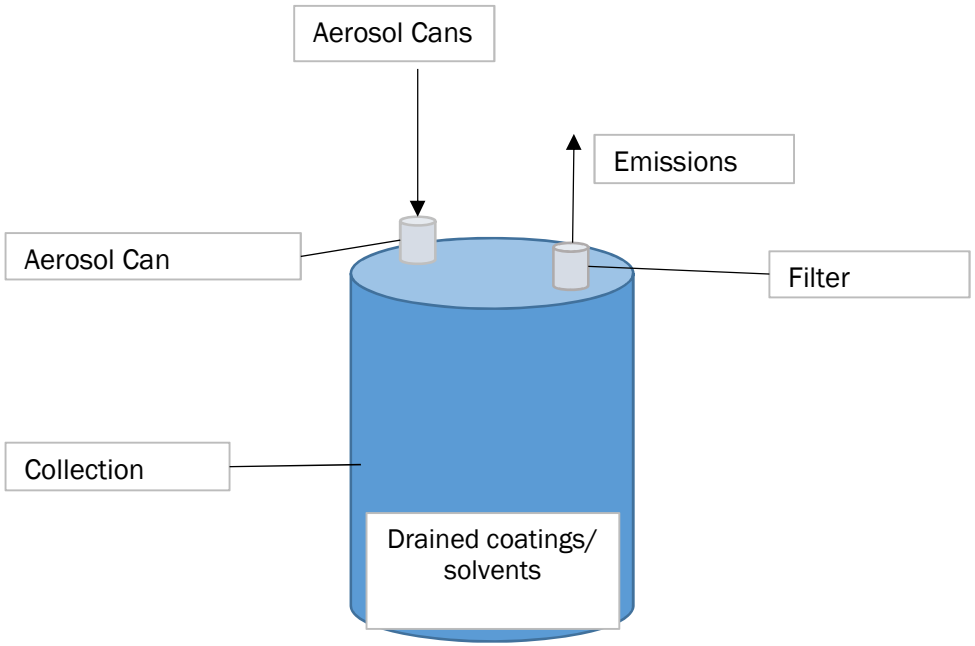
4.1 Overall Process Description

United Airlines, Inc. (United) operates an aircraft maintenance facility at Houston George Bush Intercontinental Airport (IAH). The aircraft maintenance operations include but are not limited to aerosol can puncturing process whereby paint, solvent and lubricant aerosol cans are punctured, with their contents having been used for maintenance purposes.

4.1.1 Aerosol Can Puncturing System

The United operates six aerosol can puncturing systems (Aerosol Can-Emitor Model J-7 with J-19 Filter manufactured by American Gas Products). Each aerosol can puncturing system will be attached to a 55-gallon drum and will be equipped with a charcoal filter adsorption system that will achieve a guaranteed removal efficiency of 99%. The filters are equipped with an indicator that notifies the user when replacement is needed, and United will replace the filters as per manufacturer specifications. The systems will be used to puncture primarily paint, solvent and lubricant aerosol cans at a site wide limit of up to 60 cans per hour.

The unit punctures and drains the cans' contents within seconds into a closed system where vapors are routed to a carbon filter. It does not require an external power source. The puncturing system seals with a spring loaded locking device that automatically locks when in position to ensure emissions are contained during the puncturing process. After puncturing, the can is rendered harmless, non-explosive, and environmentally safe to recycle or discard. For emission calculation purposes, it will be conservatively assumed that 2 grams of product will remain in each can after puncturing; however, much less will remain after the puncturing process.



UNITED

United Airlines
IAH Maintenance Facility
Houston, Texas

DiSorbo
Environmental Consulting Firm

Figure 4-1
Process Flow

Section 5
Emission Calculations

5.1 Routine Emissions

Emission factors and calculation methods used are addressed in this section. Emission rates are summarized in Table 1(a) at the end of this section. Detailed emission calculations are provided in Appendix A. Emissions were quantified using material safety data sheets (MSDS) and maximum hourly puncture rates. MSDS for the paint cans used are provided in Appendix C.

The usage rates and example calculations for individual components as provided in Appendix A are for emission estimation purposes only, and should not be considered enforceable representations. United will manage aerosol can puncturing operations hourly, daily and annually to demonstrate compliance with the applicable emission limits in PBR §106.261 and §106.262.

5.1.1 Aerosol Can Puncturing System

Volatile organic compounds (VOCs) emissions were quantified for the paint cans and corresponding puncturing of the cans (FIN: ACP01, ACP02, ACP03, APC04, APC05 and APC06). Volatiles are generated from evaporation of solvents in the paint cans. Emissions calculations for the aerosol paint puncturing systems is included in Tables A-1.

The hourly VOC emissions for the puncturing systems are calculated by multiplying the residual product drained from each can (grams/can) by the respective VOC content (wt%) and multiplying by the total number of cans punctured per hour site wide (60 cans/hr). United will manage operations such that the usage rates do not cause an exceedance of the emission rates represented.

The annual VOC emissions for the puncturing systems are calculated conservatively calculated assuming the systems will be operated at the maximum hourly production rate 8760 hours a year. Maximum VOC constituent emissions are determined using assuming a worse case weight percentage for each constituent based on available MSDS of products contained in aerosol cans punctured.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

Date:	September 2019	**Permit No.:**	TBD	**Regulated Entity No.:**	RN103019295
Area Name:	United Airlines - IAH Maintenance Facility			**Customer Reference No.:**	CN600124846

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

AIR CONTAMINANT DATA					
1. Emission Point			**2. Component or Air Contaminant Name**	**3. Air Contaminant Emission Rate**	
(A) EPN	**(B) FIN**	**(C) NAME**		**(A) POUND**	**(B) TPY**
ACP01	ACP01	Aerosol Can Puncturing System	VOC	see cap	see cap
ACP02	ACP02	Aerosol Can Puncturing System	VOC	see cap	see cap
ACP03	ACP03	Aerosol Can Puncturing System	VOC	see cap	see cap
ACP04	ACP04	Aerosol Can Puncturing System	VOC	see cap	see cap
ACP05	ACP05	Aerosol Can Puncturing System	VOC	see cap	see cap
ACP06	ACP06	Aerosol Can Puncturing System	VOC	see cap	see cap
ACPCAP	ACPCAP	Aerosol Can Puncturing System Emissions Cap	VOC	<0.01	0.01

Section 6
Federal New Source Review

Non-attainment New Source Review (NNSR) permitting is required for sites in non-attainment areas that are new major emissions sources or for existing major sources in non-attainment areas with major modifications. Prevention of Significant Deterioration (PSD) permitting is required at new major sources for a regulated pollutant, or at an existing major source if the emissions increase equals or exceeds pollutant-specific significant emission rates. The IAH maintenance facility is located in Harris County, which is currently designated as moderate non-attainment for the 2008 eight-hour ozone standard. The Houston-Galveston-Brazoria ozone moderate non-attainment classification is scheduled to be re-designated to serious on September 23, 2019. The IAH facility will remain a minor source under the new standard.

6.1 NNSR Requirements

NNSR applicability is determined on a pollutant specific basis. However, because VOC and NO_X are both regulated as precursors to ozone formation, emission increases of both pollutants must be evaluated in determining NNSR applicability in ozone non-attainment areas. The NNSR major source threshold for VOC in Harris County is 50 tons per year.

As demonstrated in Table 6-1, project increase will not exceed the NNSR major source threshold of 50 tons per year; therefore, NNSR permit review does not apply.

6.2 PSD Requirements

As demonstrated in Table 6-1 emissions will not exceed the PSD major source thresholds outlined in §116.12(19); therefore, PSD permitting is not applicable.

Table 6-1

NNSR/PSD Applicability Analysis Summary

United Airlines, Inc.

EPN	Facility Description	VOC		
		Baseline	Proposed	Project Increase
		tpy	tpy	tpy
ACPCAP	Aerosol Can Puncturing System Emissions Cap	-	0.01	0.01
Project Increase (tpy)				*0.01*
Major Modification Threshold (tpy)				*50*
Major Source(Yes/No)				*No*
Netting Threshold (tons)				*5*
Netting Required (Yes/No)				*No*
Contemporaneous Period Change (tons)				*NA*
Significant Modification Threshold (tons)				*25*
Federal Review Required (Yes/No)				*No*

Note:

1. Federal applicablity analyis prepared in anticipation of the redisignation of the Houston-Galveston-Brazoria nonattaiment classification from Moderate to Serious.

Section 7
PBR Applicability Analysis

7.1 Chapter 106 – Permits By Rule

In order to register a PBR, the general Requirements for Permitting by Rule (§106.4) and the specific requirements of the PBR must be met. The following is a description of how the proposed source satisfies the requirements to be authorized under each applicable PBR.

7.1.1 Rule §106.4 – Requirements for Permitting By Rule

A completed 106.4 Checklist can be found at the end of this section. The total project emissions, shown on Table 1-1 are less than the limits listed in 106.4(a)(1) and (4).

7.1.2 Rule §106.261 – Facilities (Emission Limitations)

A completed 106.261 Checklist can be found at the end of this section to show compliance under this rule.

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

All facilities will be located at greater than 600 feet from the nearest recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located.

§106.261(a)(2):

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

sulfur dioxide, alumina, calcium carbonate, calcium silicate, cellulose fiber, cement dust, emery dust, glycerin mist, gypsum, iron oxide dust, kaolin, limestone, magnesite, marble, pentaerythritol, plaster of paris, silicon, silicon carbide, starch, sucrose, zinc stearate, or zinc oxide.

Total new or increased emissions will not exceed 6.0 pounds per hour (lb/hr) and ten tons per year for constituents listed under 261(a)(2).

§106.261(a)(3):

Total new or increased emissions, including fugitives, shall not exceed 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m3) as listed and referenced in Table 262 of §106.262 of this title (relating to Facilities (Emission and Distance Limitations)) or of any other chemical not listed or referenced in Table 262. Emissions of a chemical with a limit value of less than 200 mg/m3 are not allowed under this section.

Total new or increased emissions will not exceed 1.0 pound per hour (lb/hr) for the 261(a)(3) chemicals.

§106.261(a)(4):

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

As stated in section 1.1, no changes to or additions of any air pollution abatement equipment is requested in the application.

§106.261(a)(5):

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

No visible emissions will occur from facilities authorized under the proposed registration.

§106.261(a)(6):

For emission increases of five tons per year or greater, notification must be provided using Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include

a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.

Emissions will not exceed the 5 tons per year. Therefore, the Form PI-7 will be filed no more than ten days prior to the date of the proposed modification.

§106.261(a)(7)(A) and (B):

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

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

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

Emissions will not exceed 5 tons per year. Therefore, the requirements do not apply

§106.261(b):

The following are not authorized under this section:

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

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

The facilities included in this application are not authorized under standard permit or PBR.

7.1.3 Rule §106.262 – Facilities (Emission and Distance Limitations)

A completed 106.262 Checklist can be found at the end of this section to show compliance under this rule.

§106.262(a)(1):

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

All facilities authorized under this chapter will be located greater than 100 feet from the nearest recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located.

§106.262(a)(2):

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

New or increased emissions will not exceed 5.0 tpy for the 262 chemicals. Table A- I below provides all values of E, L, and K, as well as the associated maximum anticipated emission rates of each pollutant from the aerosol can puncturing systems.

§106.262(a)(3):

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

The Form PI-7 will be filed no more than ten days prior to the date of the proposed modification. The proposed application includes a description of pollution control equipment, calculations and data for compliance with 106.262.

§106.262(a)(4):

The facilities in which the following chemicals will be handled shall be located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor and the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) shall not exceed 500 pounds on the plant property and all listed

chemicals shall be handled only in unheated containers operated in compliance with the United States Department of Transportation regulations (49 Code of Federal Regulations, Parts 171-178): acrolein, allyl chloride, ammonia (anhydrous), arsine, boron trifluoride, bromine, carbon disulfide, chlorine, chlorine dioxide, chlorine trifluoride, chloroacetaldehyde, chloropicrin, chloroprene, diazomethane, diborane, diglycidyl ether, dimethylhydrazine, ethyleneimine, ethyl mercaptan, fluorine, formaldehyde (anhydrous), hydrogen bromide, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, hydrogen selenide, hydrogen sulfide, ketene, methylamine, methyl bromide, methyl hydrazine, methyl isocyanate, methyl mercaptan, nickel carbonyl, nitric acid, nitric oxide, nitrogen dioxide, oxygen difluoride, ozone, pentaborane, perchloromethyl mercaptan, perchloryl fluoride, phosgene, phosphine, phosphorus trichloride, selenium hexafluoride, stibine, liquified sulfur dioxide, sulfur pentafluoride, and tellurium hexafluoride. Containers of these chemicals may not be vented or opened directly to the atmosphere at any time.

Disaster review chemicals will not be handled in pure form at the facilities located at the site. Therefore, the distance limitation does not apply.

§106.262(a)(5):

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

As stated in section 1.1, no changes to or additions of any air pollution abatement equipment is requested in the application.

§106.262(a)(5):

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

No visible emissions will occur from facilities authorized under the proposed registration.

§106.262(b):

The following are not authorized under this section except as noted in subsection (c) of this section:

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

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

The facilities included in this application are not authorized under standard permit or PBR.

§106.262(c):

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

The facilities included in this application are not authorized under standard permit or PBR.

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

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

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

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

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

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

Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106

4. 30 TAC § 106.4(a(6): Federal Requirements	
$ Will all facilities under this PBR meet applicable requirements of Title 40 Code of Federal Regulations (40 CFR) Part 60, New Source Performance Standards (NSPS)?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?	
• Will all facilities under this PBR meet applicable requirements of 40 CFR Part 63, Hazardous Air Pollutants Maximum Achievable Control Technology (MACT) standards?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?	
• Will all facilities under this PBR meet applicable requirements of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAPs)?	☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?	
If "Yes" to any of the above, please attach a discussion of how the facilities will meet any applicable standards.	
5. 30 TAC § 106.4(a)(7): PBR prohibition check	
• Are there any air permits at the site containing conditions which prohibit or restrict the use of PBRs?	☐ YES ☒ NO
If "Yes," PBRs may not be used or their use must meet the restrictions of the permit. A new permit or permit amendment may be required.	
List permit number(s):	
6. 30 TAC § 106.4(a)(8): NO_x Cap and Trade	
• Is the facility located in Harris, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?	☒ YES ☐ NO
If "Yes," answer the question below. If "No," continue to Section 7.	
• Will the proposed facility or group of facilities obtain required allowances for NO_x if they are subject to 30 TAC Chapter 101, Subchapter H, Division 3 (relating to the Mass Emissions Cap and Trade Program)?	☒ YES ☐ NO

Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106

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

Save Form Reset Form Print Form

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

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

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

Check The Most Appropriate Answer		
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	☒ YES ☐ NO ☐ NA
b1	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES ☒ NO ☐ NA
b2	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES ☒ NO ☐ NA
a1	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	☒ YES ☐ NO ☐ NA

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Check The Most Appropriate Answer *(continued)*

a2 Are total new or increased emissions, including fugitives, less than or equal to 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials[1] ☐ YES ☒ NO ☐ NA

Check All That Apply

☐ acetylene	☒ cyclopentane	☐ kaolin	☒ propane
☐ alumina	☐ emery dust	☐ limestone	☒ propyl alcohol
☐ argon	☒ ethanol	☐ magnesite	☐ propyl ether
☐ butane	☒ ethyl acetate	☐ marble	☐ propylene
☒ calcium carbonate	☐ ethyl ether	☐ methyl acetylene	☐ silicon
☐ calcium silicate	☐ ethylene	☐ methyl chloroform	☐ silicon carbide
☐ carbon monoxide	☐ glycerin mist	☐ methyl cyclohexane	☐ starch
☐ cellulose fiber	☐ gypsum	☐ neon	☐ sucrose
☐ cement dust	☐ helium	☐ nonan	☐ sulfur dioxide
☐ crude oil	☐ iron oxide dust	☐ oxides of nitrogen	☐ zinc oxide
☒ cyclohexane	☐ isohexane	☐ pentaerythritol	☐ zinc stearate
☐ cyclohexene	☒ isopropyl alcohol	☐ plaster of paris	

☒ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene

☐ fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116

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

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

Check The Most Appropriate Answer		
a3	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of 30 TAC § 106.262 of this title (relating to Facilities (Emission and Distance Limitations)? [2]	☒ YES ☐ NO ☐ NA
List chemical(s): See Table A-1 in application	L value(s): See Table A-1 in application	
	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical not listed or referenced in Table 262? [1] List chemical(s): See Table A-1 in application	☒ YES ☐ NO ☐ NA
	Are total new or increased emissions, including fugitives, of a chemical with a limit value of less than 200 mg/m^3*?* [1] *If "YES" the authorization of the chemical is not allowed under this section. We suggest you use 30 TAC § 106.262 to authorize the emissions, if applicable.*	☐ YES ☒ NO ☐ NA
a4	Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES ☒ NO ☐ NA
a5	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater than 5.0% opacity in any six-minute period?	☐ YES ☒ NO ☐ NA
a6	Are emission increases five tons per year or greater? *If "YES," this checklist must be attached to a Form PI-7 within ten days following the installation or modification of the facilities.* [**Note:** *The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.*]	☐ YES ☒ NO ☐ NA
a7	Are emission increases less than five tons per year? *If "YES," this checklist must be attached to a Form PI-7 and include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any. (pick one):* ☐ Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any ☐ By March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year.	☒ YES ☐ NO ☐ NA

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

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

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

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

Check the Most Appropriate Answer				
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	☒ YES	☐ NO	☐ N/A
b1.	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES	☒ NO	☐ N/A
b2.	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard perm? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES	☒ NO	☐ N/A
c.	Is the facility authorized under another section of this chapter or under a standard permit? *If "YES," subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.*	☒ YES	☐ NO	☐ N/A
a1.	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	☒ YES	☐ NO	☐ N/A
a2.	Are new or increased emissions, including fugitives, emitted in a quantity less than five tons per year or in a quantity less than E as determined by using the equation E=L/K?[1] See Table 262 Figures 1 and 2. *If "YES," the notification shall include a description of the project, calculations for all emissions being claimed under this PBR:*	☒ YES	☐ NO	☐ N/A
Chemical: See Table 1-2	L value:	D:	K:	
a3.	Is this checklist attached to a Form PI-7 within ten days following the installation or modification of the facilities? *If "YES," the notification shall include a description of the project, calculations, and data identifying specific chemical names, L values, and a description of pollution control equipment, if any.*	☒ YES	☐ NO	☐ N/A

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

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

Check the Most Appropriate Answer			
a4. Are one or more of the following chemicals is handled for this registration? (Check all that apply) *If "YES," answer the following four questions.*			☐ YES ☒ NO ☐ N/A
☐ acrolein	☐ diazomethane	☐ hydrogen sulfide	☐ ozone
☐ allyl chloride	☐ diborane	☐ ketene	☐ pentabornev
☐ ammonia (anhydrous)	☐ diglycidyl ether	☐ methylamine	☐ perchloromethyl mercaptan
☐ arsine	☐ dimethylhydrazine	☐ methyl bromide	☐ perchloryl fluoride
☐ boron trifluoride	☐ ethyleneimine	☐ methyl hydrazine	☐ phosgene
☐ bromine	☐ ethyl mercaptan	☐ methyl isocyanate	☐ phosphine
☐ carbon disulfide	☐ fluorine	☐ methyl mercaptan	☐ phosphorus trichloride
☐ chlorine	☐ formaldehyde (anhydrous)	☐ nickel carbonyl	☐ selenium
☐ chlorine dioxide	☐ hydrogen bromide	☐ nitric acid	☐ hexafluoride stibine
☐ chlorine trifluoride	☐ hydrogen chloride	☐ nitric oxide	☐ liquefied sulfur dioxide
☐ chloroacetaldehyde	☐ hydrogen cyanide	☐ nitrogen dioxide	☐ sulfur pentafluorid
☐ chloropicrin	☐ hydrogen fluoride	☐ oxygen difluoride	☐ tellurium hexafluoride
☐ chloroprene	☐ hydrogen selenide		
	Are all facilities are located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor?		☐ YES ☐ NO ☒ N/A
	Are the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) less than or equal to 500 pounds on the plant property?		☐ YES ☐ NO ☒ N/A
	Are all listed chemicals handled only in unheated containers operated in compliance with the United States Department of Transportation regulation (49 Code of Federal Regulation, Parts 171-178)?		☐ YES ☐ NO ☒ N/A
a5.	Are there any changes to or additions of any existing air pollution abatement equipment?		☐ YES ☒ NO ☐ N/A
a6.	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater that 5.0% opacity in any six-minute period?		☐ YES ☒ NO ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

Compound	Limit (L) Milligrams Per Cubic Meter
Stoddard Solvent	350.
Styrene	21.
Succiononitrile	20.
Tolidin	0.02
Trichloroethylene	135.
Trinethylamine	0.1
Valeric Acid	0.34
Vinyl Acetate	15.
Vinyl Chloride	2.
Note: The time weighted average (TWA) threshold Limit Value (TLV) published by the American Conference of Governmental Industrial Hygienists (AGGIH), in its TLVs and BEIs guide (1997 Edition) shall be used for compounds not included in the table. The Short Term Exposure Level (STEL) or Ceiling Limit (annotated with a "C") published by the ACGIH shall be used for compounds that do not have a published TWA TLV. This section cannot be used if the compound is not listed in the table or does not have a published TWA TLV, STEL, or Ceiling Limit in the ACGIH TLVs and BEIs guide.	

Appendix A

Routine Emission Calculations

Table A-1
Aerosol Can Puncturing Emissions
United Airlines, Inc.

Cans crushed per hour site wide	60
Residual Product Drained (lb/can)	0.0044
Maximum Operating time (hrs/year)	8760
Control Efficiency (%)	99%
Maximum lb/hr VOC:	0.0026
Maximum ton/yr VOC:	0.0116

Sample Calculations:

Maximum lb/hr VOC:

=Cans crushed per hour*Residual Product Drained*Control efficiency

=60*.0044*99%

Note:

Emission totals are for 5 aersol can puncturing systems

Maximum Constituent Emission Rates				
Pollutant Category	**Constituent**	**Worst Case Constituent Wt %**	**Maximum Hourly Emissions (lb/hr)**	**Annual Emissions (tpy)**
VOC	1,1,1,2,2,3,4,5,5,5-Decafluoropentane	12.06	0.0003	0.1397
VOC	1,1,1,2-Tetrafluoroethane	87.80	0.0023	1.0174
VOC	1,2 Butylene Oxide	0.95	0.0000	0.0110
VOC	1,2,4-Trimethylbenzene	5.17	0.0001	0.0599
VOC	1-Methoxy-2-propanal	15.07	0.0004	0.1746
VOC	1-Methoxy-2-Propyl Acetate	7.85	0.0002	0.0910
VOC	2,2-Dimethylbutane	3.02	0.0001	0.0349
VOC	2,3-Dimenthylbutane	10.05	0.0003	0.1165
VOC	2,6 Di-tert-butylphenol	0.38	9.95E-06	0.0044
VOC	2,6-di-tert-butyl-p-cresol	3.90	0.0001	0.0452
VOC	2-Ethylhexanoic acid	3.37	0.0001	0.0391
VOC	2-Methylpentane	17.59	0.0005	0.2038
VOC	2-Methylpentane-2,4-Diol	15.07	0.0004	0.1746
VOC	2-Pentanone	2.90	0.0001	0.0336
VOC	2-Propoxyethanol	8.70	0.0002	0.1008

Table A-1
Aerosol Can Puncturing Emissions
United Airlines, Inc.

VOC	3-Methylpentane	10.05	0.0003	0.1165
VOC	4-Methyl-1,3-dioxolan-2-one	2.08	0.0001	0.0241
VOC	Acetone	66.06	0.0017	0.7655
VOC	Acids, lanolin	3.80	0.0001	0.0440
VOC	Amyl Acetate	3.76	0.0001	0.0436
VOC	Barium Sulfate	17.29	0.0005	0.2003
VOC	Basic Violet 1	0.53	0.0000	0.0061
VOC	Butane	59.04	0.0016	0.6841
VOC	Butanol Normal	7.20	0.0002	0.0834
VOC	Calcium Carbonate	59.45	0.0016	0.6888
VOC	Calcium Dihydroxide	0.00	0.0000	0.0000
VOC	Calcium Dinonylnaphthalene Sulfonate	1.01	0.0000	0.0117
VOC	Calcium Sulfonate	0.58	0.0000	0.0067
VOC	Castor Oil	17.28	0.0005	0.2002
VOC	Cellulose Nitrate	1.92	0.0001	0.0223
VOC	Ceramic materials and wares, chemicals	4.98	0.0001	0.0576
VOC	Chlorinated Esters	20.00	0.0005	0.2317
VOC	Coumarin	1.56	0.0000	0.0181
VOC	Cumene	0.70	0.0000	0.0081
VOC	Cyclohexane	15.00	0.0004	0.1738
VOC	Cyclohexanone	1.25	3.31E-05	0.0145
VOC	Cyclopentane	1.01	2.66E-05	0.0116
VOC	Dibutyl Phthalate	4.09	0.0001	0.0474
VOC	Diacetone Alcohol	1.92	0.0001	0.0223
VOC	Diethylene Glycol Monomethyl Ether	4.77	0.0001	0.0553
VOC	Difluoroethane	100.00	0.0026	1.1587
VOC	Diisobutyl Ketone	6.67	0.0002	0.0772
VOC	Dimethyl Carbonate	6.73	0.0002	0.0780
VOC	Dimethyl ether	70.80	0.0019	0.8204
VOC	Dipropylene Glycol Methyl Ether	30.00	0.0008	0.3476
VOC	d-Limonene	64.71	0.0017	0.7498
VOC	d-Phenothrin	0.07	0.0000	0.0008
VOC	Ethanol	95.29	0.0025	1.1042
VOC	Ethyl 3-Ethoxypropionate	5.38	0.0001	0.0623

Table A-1
Aerosol Can Puncturing Emissions
United Airlines, Inc.

VOC	Ethyl acetate	13.50	0.0004	0.1564
VOC	Ethylbenzene	10.47	0.0003	0.1213
VOC	Ethylene Glycol	7.73	0.0002	0.0895
VOC	Ethylene Glycol Mono-2-Ethylhexyl Ether	9.77	0.0003	0.1132
VOC	Ethylene Glycol Monobutyl Ether	18.75	0.0005	0.2173
VOC	Ethyltriacetozysilane	50.00	0.0013	0.5794
VOC	Fragrance	0.45	0.0000	0.0053
VOC	Heptane	10.00	0.0003	0.1159
VOC	Hexamethylene Diisocyanate (max)	75.00	0.0020	0.8691
VOC	Hexane	61.85	0.0016	0.7166
VOC	Hydroxyalkyl Methacrylate	89.89	0.0024	1.0416
VOC	Isobutane	97.98	0.0026	1.1354
VOC	Isobutyl acetate	8.70	0.0002	0.1008
VOC	Isobutyl Alcohol	5.33	0.0001	0.0618
VOC	Isobutyl Isobutyrate	9.73	0.0003	0.1128
VOC	Isopropanol	75.00	0.0020	0.8691
VOC	Lubricating Grease	33.71	0.0009	0.3906
VOC	Menthyl Acetate	29.70	0.0008	0.3442
VOC	Methyl Ethyl Ketone	93.94	0.0025	1.0885
VOC	Methacrylic Acid	3.37	0.0001	0.0391
VOC	Methanol	34.08	0.0009	0.3949
VOC	Methyl ethyl ketoxime	0.66	0.0000	0.0077
VOC	Methyl Isobutyl Ketone	0.10	0.0000	0.0011
VOC	Methylene Chloride	70.65	0.0019	0.8187
VOC	Methyltriacetozysilane	50.00	0.0013	0.5794
VOC	Molybdenum Disulfide	13.16	0.0003	0.1525
VOC	Morpholine	12.50	0.0003	0.1448
VOC	N,N-Diethyl-m-toluamide	30.77	0.0008	0.3565
VOC	N,N-Dimethyl-p-toluidine	0.45	0.0000	0.0053
VOC	on-Volatile/Non-Hazardous Trade Secret Compone	54.51	0.0014	0.6316
VOC	n-butyl acetate	25.00	0.0007	0.2897
VOC	Nonane	3.80	0.0001	0.0440
VOC	n-Propyl Bromide	61.90	0.0016	0.7173
VOC	Octamethylcyclotetrasiloxane	6.34	0.0002	0.0734

Table A-1
Aerosol Can Puncturing Emissions
United Airlines, Inc.

VOC	Pentane	10.47	0.0003	0.1213
VOC	Pine Oil	1.99	0.0001	0.0231
VOC	PM Acetate	4.11	0.0001	0.0476
VOC	Polybutyl titanate	3.56	0.0001	0.0413
VOC	Poly-Tetrafluoroethylene	2.51	0.0001	0.0291
VOC	Propane	88.89	0.0024	1.0300
VOC	Propyl Alcohol	2.86	0.0001	0.0331
VOC	Propylene Glycol	1.64	0.0000	0.0190
VOC	Propylene Glycol Monobutyl Ether	7.22	0.0002	0.0837
VOC	Refinery Petroleum Fractions	100.00	0.0026	1.1587
VOC	Sodium Lauryl Sulfate	6.25	0.0002	0.0724
VOC	Sorbitan Troileate	2.10	0.0001	0.0244
VOC	Soya Lecithin	2.02	0.0001	0.0234
VOC	Stryene-Butadiene Polymer	4.22	0.0001	0.0489
VOC	Styrene-Hydrocarbon Copolymer	4.22	0.0001	0.0489
VOC	t-Butanol	0.95	0.0000	0.0110
VOC	Terpentine	7.46	0.0002	0.0865
VOC	Tetrachloroethylene	83.81	0.0022	0.9712
VOC	Tetrafluotoethene Polymer	3.76	0.0001	0.0436
VOC	Tetramethrin	0.14	3.65E-06	0.0016
VOC	Toluene	34.08	0.0009	0.3949
VOC	Trans-Dichloroethylene	91.60	0.0024	1.0614
VOC	Triethanolamine	11.11	0.0003	0.1287
VOC	Triphenyl phosphate	3.90	0.0001	0.0452
VOC	VM&P Naphtha	10.69	0.0003	0.1239
VOC	White Mineral oil (petroleum)	8.60	0.0002	0.0997
VOC	Xylene	34.00	0.0009	0.3940
VOC	Sodium Sulfonate	5.58	0.0001	0.0647
VOC	bis(2-ethylhexyl) phosphorodithioato-S,S]dioxodi-.	0.07	1.96E-06	0.0009

Appendix B

TCEQ Applicable Rule Text

<<Prev Rule Next Rule>>

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 106	PERMITS BY RULE
SUBCHAPTER A	GENERAL REQUIREMENTS
RULE §106.4	Requirements for Permitting by Rule

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

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

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

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

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

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

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

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

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

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

(3) Any facility or group of facilities, which constitutes a new major stationary source, as defined in 40 Code of Federal Regulations (CFR) §52.21, or any change which constitutes a major modification, as defined in 40 CFR §52.21, under the new source review requirements of the FCAA, Part C (Prevention of Significant Deterioration) as amended by the FCAA Amendments of 1990, and regulations promulgated thereunder because of emissions of air contaminants other than greenhouse gases, must meet the permitting requirements of Chapter 116, Subchapter B of this title and cannot qualify for a permit by rule under this chapter. Notwithstanding any provision in any specific permit by rule to the contrary, a new major stationary source or major modification which is subject to Chapter 116, Subchapter B, Division 6 of this title due solely to emissions of greenhouse gases may use a permit by rule under this chapter for air contaminants that are not greenhouse gases. However, facilities or projects which require a prevention of significant deterioration permit due to emissions of greenhouse gases may not commence construction or operation until the prevention of significant deterioration permit is issued.

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

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

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

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

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

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

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

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

Source Note: The provisions of this §106.4 adopted to be effective November 15, 1996, 21 TexReg 10881; amended to be effective April 7, 1998, 23 TexReg 3502; amended to be effective September 4, 2000, 25 TexReg 8653; amended to be effective March 29, 2001, 26 TexReg 2396; amended to be effective May 15, 2011, 36 TexReg 2852; amended to be effective April 17, 2014, 39 TexReg 2891

List of Titles Back to List

HOME | TEXAS REGISTER | TEXAS ADMINISTRATIVE CODE | OPEN MEETINGS

<<Prev Rule Next Rule>>

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 106	PERMITS BY RULE
SUBCHAPTER K	GENERAL
RULE §106.261	Facilities (Emission Limitations)

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

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

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

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

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

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

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

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

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

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

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

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

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

Source Note: The provisions of this §106.261 adopted to be effective March 14, 1997, 22 TexReg 2439; amended to be effective December 24, 1998, 23 TexReg 12925; amended to be effective September 4, 2000, 25 TexReg 8653; amended to be effective November 1, 2003, 28 TexReg 9279

List of Titles Back to List

HOME | TEXAS REGISTER | TEXAS ADMINISTRATIVE CODE | OPEN MEETINGS

<<Prev Rule Next Rule>>

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 106	PERMITS BY RULE
SUBCHAPTER K	GENERAL
RULE §106.262	Facilities (Emission and Distance Limitations)

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

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

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

Attached Graphic

Attached Graphic

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

(4) The facilities in which the following chemicals will be handled shall be located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor and the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) shall not exceed 500 pounds on the plant property and all listed chemicals shall be handled only in unheated containers operated in compliance with the United States Department of Transportation regulations (49 Code of Federal Regulations, Parts 171-178): acrolein, allyl chloride, ammonia (anhydrous), arsine, boron trifluoride, bromine, carbon disulfide, chlorine, chlorine dioxide, chlorine trifluoride, chloroacetaldehyde, chloropicrin, chloroprene, diazomethane, diborane, diglycidyl ether, dimethylhydrazine, ethyleneimine, ethyl mercaptan, fluorine, formaldehyde (anhydrous), hydrogen bromide, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, hydrogen selenide, hydrogen sulfide, ketene, methylamine, methyl bromide, methyl hydrazine, methyl isocyanate, methyl mercaptan, nickel carbonyl, nitric acid, nitric oxide, nitrogen dioxide, oxygen difluoride, ozone, pentaborane, perchloromethyl mercaptan, perchloryl fluoride, phosgene, phosphine, phosphorus trichloride, selenium hexafluoride, stibine, liquified sulfur dioxide, sulfur pentafluoride, and tellurium hexafluoride. Containers of these chemicals may not be vented or opened directly to the atmosphere at any time.

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

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

(b) The following are not authorized under this section except as noted in subsection (c) of this section:

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

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

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

Source Note: The provisions of this §106.262 adopted to be effective March 14, 1997, 22 TexReg 2439; amended to be effective December 24, 1998, 23 TexReg 12925; amended to be effective September 4, 2000, 25 TexReg 8653; amended to be effective November 1, 2003, 28 TexReg 9279

List of Titles Back to List

HOME | TEXAS REGISTER | TEXAS ADMINISTRATIVE CODE | OPEN MEETINGS

Appendix C

Material Safety Data Sheets (MSDS)

Note: MSDS will be provided upon TCEQ request