

(Attachment 1)

Summary of Reported Flare Emissions and Permit Limits

VOC Emissions from ExxonMobil Flares, 2012 and 2015

Facility	Flare	VOC Emissions (tpy)		Permit Limit (tpy)	Citation
		2012	2015		
Baton Rouge Chemical Plant	Flare 7	0.14	0.23	187.76	Part 70, Operating Permit 2390 V-4 (June 30, 2017), Table 3, p. 25; "Emission Rates for Criteria Pollutants and CO2e, p. 2.
	Flare 10	18.47	2.59		
	Flare 16	22.49	34.76		
	Flare 25	19.18	23.24		
	Flare 26	1.29	9.92		
	Total	61.56	70.73		
Baton Rouge Plastics Plant	Flares	86.42	69.52	86.42	69.52
	Total	86.42	69.52		
Baton Rouge Polyolefins Plant	S-1301	13.63	6.94	38.99	Part 70, Operating Permit Renewal and Modification No. 0840-00003-V6 (March 16, 2015), "Specific Requirements", p. 19-20
	S-4001	23.36	36.32		
	Total	36.99	43.26		
Baytown Chemical Plant	FS-12	31.46	23.49	280.36	Permit 4600 (May 23, 2017) page 2 of "Maximum Allowable Emission Rates" table
	FS-9	0.00	84.61		
	FS-23	152.71	5.35		
	FS-24	13.06	1.22		
	Total	197.24	114.68		
Baytown Olefins Plant	Primary Flare	177.58	132.97	150.4	Application for Renewal of Plant-wide Applicability Limit, Baytown Olefins Plant, (Feb. 4, Permit 102982 (November 9, 2016) "MAERT", p. 2
	Secondary Flare	1.73	0.60		
	BOP-X Flare (EXX1)	32.09	15.38	104.59	
	BOP-X Flare (EXX2)				
	Total	211.41	148.96		
Beaumont Chemical Plant	LP East	20.79	59.70	172.15	Permits 83702, PSDTX843M1, PSDTX860M1, and PAL15 (May 26, 2017), "MAERT", p. 27
	HP West	71.42	90.93		
	UDEX	5.34	14.90		
	Paraxylene	11.48	25.60		
	Total	109.02	191.13		
Beaumont Polyethylene Plant	LP	140.43	159.00	52.34	Permits 6860 and PSD TX1464 (April 20, 2016), "MAERT", p. 6
	HP	14.73	32.87		
	Total	155.69	192.02		
Mont Belvieu Plastics Plant	LDPE	83.14	85.30	43.53	Permit No. 19016 (September 18, 2017), Permit No. 19016 (September 18, 2017), "MAERT", p. 20, (see also footnote 14).
	HDPE	30.70	23.77		
	Total	113.84	109.07		
Grand Total		972.17	939.37		

VOC emissions include routine, unauthorized, and SMSS emissions.

(Attachment 2)

Summary of Covered Flare Destruction Efficiency Requirements

ExxonMobil Flare Destruction Efficiency

Facility	Flare	Destruction/Removal Rate	Citation
Baton Rouge Chemical Plant	Flare 7	95%	
	Flare 10		
	Flare 16		
	Flare 25		
	Flare 26		
Baton Rouge Plastics Plant	Flares		
Baton Rouge Polyolefins Plant	S-1301		
	S-4001		
Baytown Chemical Plant	FS-12	98%	Permit 4600 (May 23, 2017), page 4 of "Permit Amendment and Source Analysis and Technical Review"
	FS-9		
	FS-23		
	FS-24		
Baytown Olefins Plant	Primary Flare	99% for propylene, ethylene, and propane, 98% for other	Permits 3452, PAL6, and PSDTX302M2 (July 7, 2014), Special Condition 11C (refers to
	Secondary Flare		
	BOP-X Flare (EXX1)		
	BOP-X Flare (EXX2)	98%	Alternative Method of Control (November 18, 2015), p. 1, "Preliminary Technical Analysis"
Beaumont Chemical Plant	LP East	99% C3, 98% C4+	Sage Environmental Consulting, L.P., "Additional Natural Gas to Flares Permit Application" (May 2015), Table A-2a through A-5b, p. A2-A10.
	HP West		
	UDEX		
	Paraxylene		
Beaumont Polyethylene Plant	LP	98%	Permits 6860 and PSD TX1464 (April 20, 2016), Construction Permit, Source Analysis & Technical Review, p. 5
	HP		
Mont Belvieu Plastics Plant		99% C3, 98% C4+	Permit 19016 (September 18, 2017), "Permit Amendment Source Analysis & Technical Review", p. 6
	LDPE		
	HDPE	99%	Permit 19016 (September 18, 2017), Special Condition 3

(Attachment 3)

Standard Permit Registration No. 13869

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

June 5, 2015

MR BENJAMIN HURST
ENVIRONMENTAL SECTION SUPERVISOR
EXXON MOBIL CORPORATION
2800 DECKER DR
BAYTOWN TX 77520-2020

Re: Pollution Control Projects Air Quality Standard Permit Revision
(Effective 2/9/2011)
Standard Permit Registration Number: 131869
Standard Permit Expiration Date: May 11, 2025
Exxon Mobil Corporation
Baytown Olefins Plant
Baytown, Harris County
Regulated Entity Number: RN102212925
Customer Reference Number: CN600123939
Account Number: HG-0228-H

Dear Mr. Hurst:

This is in response to your Form PI-1S (Air Quality Standard Permit for Pollution Control Projects) regarding the proposed construction to be located at 3525 Decker Dr, Baytown, Harris County. We understand that this registration is for process changes associated with re-routing the waste gas streams from the plant's process flares FLARE1, FLARE2, FLAREX, FLAREXX1, or FLAREXX2 to Steam Boiler D or C (EPN: E-7-1). Short-term emissions caps and plant-wide annual emission limits are not affected.

After evaluation of the information you submitted, the Texas Commission on Environmental Quality (TCEQ) has determined that your proposed emissions are authorized by this standard permit pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602) if constructed and operated as represented in your registration. This standard permit was issued under the Texas Clean Air Act (TCAA) § 382.011, which authorizes the commission to control the quality of the state's air; TCAA § 381.023, which authorizes the commission to issue orders necessary to carry out the policy and purposes of the TCAA; and § 382.05195, which authorizes the commission to issue standard permits. Authorized emissions are listed on the attached table.

You must begin construction or modification of these facilities in accordance with this standard permit no later than 18 months after the date of this letter. After completion of construction or modification, the appropriate TCEQ Regional Office must be notified prior to commencing operation and the facility shall be operated in compliance with all applicable conditions of the claimed standard permit.

Mr. Benjamin Hurst

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June 5, 2015

Re: Standard Permit Registration Number 131869

You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit be administratively incorporated into the affected facilities' permit(s) at the next amendment or renewal.

You are also reminded that these facilities must be in compliance with all rules and regulations of the TCEQ and of the U.S. Environmental Protection Agency at all times.

If you need further information or have any questions, please contact Mr. Joe Janecka at (512) 239-1353 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Kate Brown, Manager
Combustion / Coatings New Source Review Permits Section
Air Permits Division
Texas Commission on Environmental Quality

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 235470

Standard Permit Registration Alteration Source Analysis & Technical Review

Company	Exxon Mobil Corporation	Registration Number	131869
City	Baytown	Project Number	235470
County	Harris	Account Number	HG-0228-H
Project Type	Revision	Regulated Entity Number	RN102212925
Project Reviewer	Joe Janecka	Customer Reference Number	CN600123939
Site Name	Baytown Olefins Plant		

Project Overview

Based on the original registration application, Exxon Mobil Corporation (Exxon) intended for all waste streams at their plant to be routed to Boiler D or C (to a combined EPN E-7-1) as a control device. However, the original standard permit registration issuance letter includes only two plant flares. Three flares need to be added include FLAREX of NSR Permit No. 3452 and FLAREXX1 and FLAREXX2 of NSR Permit No. 102982.

Request for Comments

Received From	Program/Area Name	Reviewed By/Date	Comments
Region:	12	N/A	
City:	Baytown	N/A	
County:	Harris	N/A	
ADMT:	N/A		
EB&T:	N/A		
Toxicology:	N/A		
Compliance:	N/A		
Legal:	N/A		
Comment resolution and/or unresolved issues:	No unresolved issues. Because of the minor nature of the alteration, comments were not requested.		

Review Summary

Although there was no mention of permit 102982 in the original application, Exxon states that the waste streams that are being diverted to the Boilers represented in the original application are typical of the flares in both permits. Also, FLAREX should have been in the original registration since it is in permit no. 3452.

There are no other changes required to permit no. 3452. NSR permit No. 102982 will not require any changes. Although emissions from the flares in that permit will be diverted to the Boiler D or C to the extent possible, these flares may be required to control the waste streams when they are unable to be fed to the boilers' combustion box.

Impacts Evaluation - 30 TAC 116.111(a)(2)(J)

Was modeling conducted?	No	Type of Modeling:	N/A
Will GLC of any air contaminant cause violation of NAAQS?			N/A
Is this a sensitive location with respect to nuisance?			No
[\$116.111(a)(2)(A)(ii)] Is the site within 3000 feet of any school?			No
Additional site/land use information: No additional information			

Permit Concurrence and Related Authorization Actions

Is the applicant in agreement with special conditions?	Yes
Company representative(s):	
Contacted Via:	
Date of contact:	
Other permit(s) or permits by rule affected by this action:	3452
List permit and/or PBR number(s) and actions required or taken:	No action at this time.

Permit Alteration
Source Analysis & Technical Review

Permit No. 131869
Page 2

Regulated Entity No. RN102212925

Project Reviewer

Date

Team Leader/Section Manager/Backup

Date

(Attachment 4)

Excerpt, Permit No. 2367-V2 (October 13, 2011)

INVENTORIES

AI ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2387-V2

Air - Title V Regular Permit Renewal

Subject Item Inventory:

ID	Description	Tank Volume	Max. Operating Rate	Normal Operating Rate	Contents	Operating Time
COPRODUCTS						
EQT 0234	C-02 - GFLA-3 COOLING TOWER		56250 gallons/min			8760 hr/yr
EQT 0238	M-01A - PRODUCT LOADING-TANK TRUCKS/RAILCARS (CPLA UNIT)					8760 hr/yr
EQT 0239	M-01B - PRODUCT LOADING-TANK TRUCKS/RAILCARS (BELA-5 UNIT)					8760 hr/yr
EQT 0240	M-01C - PRODUCT LOADING-TANK TRUCKS/RAILCARS (BPLA UNIT)					8760 hr/yr
EQT 0241	M-01F - PRODUCT LOADING-TANK TRUCKS/RAILCARS (DILA UNIT)					8760 hr/yr
EQT 0242	M-68-A - SECONDARY WASTEWATER EMISSIONS (BPLA WASTEWATERS TO WILA)					8760 hr/yr
EQT 0243	M-68-B - SECONDARY WASTEWATER EMISSIONS (BPLA WASTEWATERS TO AWT)					8760 hr/yr
EQT 0244	M-69-A - SECONDARY WASTEWATER EMISSIONS (CPLA WASTEWATERS TO WILA)					8760 hr/yr
EQT 0245	M-69-B - SECONDARY WASTEWATER EMISSIONS (CPLA WASTEWATERS TO AWT)					8760 hr/yr
EQT 0246	M-77-A - SECONDARY WASTEWATER EMISSIONS (BELA-5 WASTEWATERS TO AWT)					8760 hr/yr
EQT 0247	M-77-B - SECONDARY WASTEWATER EMISSIONS (BELA-5 WASTEWATERS TO WILA)					8760 hr/yr
EQT 0248	M-78-A - SECONDARY WASTEWATER EMISSIONS (DARLA WASTEWATERS INCLUDING DILA ACN TO AWT)					8760 hr/yr
EQT 0249	M-78-B - SECONDARY WASTEWATER EMISSIONS (DARLA WASTEWATERS INCLUDING DILA ACN TO WILA)					8760 hr/yr
EQT 0250	S-76 - CPLA HOT OIL FURNACE (YF-01)		18 MM BTU/hr			8760 hr/yr
EQT 0251	T-1658 - CYCLICS PRODUCT STORAGE TANK	128900 gallons				8760 hr/yr
EQT 0252	T-1661 - BUTADIENE PRODUCT STORAGE SPHERE	105700 gallons				8760 hr/yr
EQT 0253	T-1662 - BUTADIENE PRODUCT STORAGE SPHERE	105700 gallons				8760 hr/yr
EQT 0254	T-1665 - CYCLICS PRODUCT STORAGE TANK	300800 gallons		4.4 MM gallons/yr		8760 hr/yr
EQT 0255	T-1667 - CYCLICS PRODUCT RUNDOWN STORAGE TANK	31700 gallons				8760 hr/yr
EQT 0256	T-1668 - CYCLICS PRODUCT RUNDOWN STORAGE TANK	31700 gallons		2.33 MM gallons/yr		8760 hr/yr
EQT 0257	T-1669 - CYCLICS PRODUCT STORAGE TANK	211500 gallons				8760 hr/yr
EQT 0258	T-1747 - AMYLENE, BUTADIENE, & BUTENES STORAGE SPHERE	66000 gallons				8760 hr/yr
EQT 0259	T-1749 - CRUDE BUTADIENE & BUTENES STORAGE SPHERE	519500 gallons				8760 hr/yr
EQT 0260	T-1774 - ISOBUTYLENE STORAGE SPHERE	651600 gallons				8760 hr/yr
EQT 0262	T-1915 - METHANOL, ISOPRENE STORAGE SPHERE	61200 gallons				8760 hr/yr
EQT 0263	T-1917 - BUTYLENE STORAGE SPHERE	519500 gallons				8760 hr/yr

INVENTORIES

AI ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2367-V2

Air - Title V Regular Permit Renewal

Subject Item Inventory:

ID	Description	Tank Volume	Max. Operating Rate	Normal Operating Rate	Contents	Operating Time
COPRODUCTS						
EQT 0254	T-1919 - BUTENES, AMYLENES, & ISOPRENE SPHERE	250700 gallons				8760 hr/yr
EQT 0255	T-1921 - METHANOL, ISOPRENE STORAGE SPHERE	105700 gallons				8760 hr/yr
EQT 0256	T-1951 - CYCLICS STORAGE TANK	52200 gallons				8760 hr/yr
EQT 0257	T-1952 - CYCLICS STORAGE TANK	54300 gallons				8760 hr/yr
EQT 0259	T-3054 - DARLA ENB STORAGE VESSEL	29300 gallons				8760 hr/yr
EQT 0271	T-3192 - DARLA TOLUENE STORAGE DRUM (BZD-810)	8800 gallons				8760 hr/yr
EQT 0278	T-3199 - CPLA HEAT TRANSFER FLUID DRUM (BXD-30)	7600 gallons				8760 hr/yr
EQT 0281	T-3202 - BELA-5 1,2 BUTADIENE STORAGE DRUM (BTD-101)	39400 gallons				8760 hr/yr
EQT 0283	T-3204 - BELA-5 COMPRESSOR LUBE OIL RESERVOIR (BAD-23)	740 gallons				8760 hr/yr
EQT 0284	T-3205 - BPLA BST-01 WATER DISENGAGING DRUM (BSD-102)	1600 gallons				8760 hr/yr
EQT 0285	T-3206 - DARLA FEED DRUM (BRD-100)	1200 gallons				8760 hr/yr
EQT 0286	T-3207 - DARLA OFFTEST DRUM (BCD-802)	8700 gallons				8760 hr/yr
EQT 0287	T-3208 - DARLA STEAM CRACKING RECYCLE DRUM (BZD-803)	12100 gallons				8760 hr/yr
EQT 0288	T-3209 - BELA-5 PURIFIED SOLVENT ACCUMULATOR (BBD-54)	3300 gallons				8760 hr/yr
EQT 0289	T-3210 - BELA-5 SOLVENT DRUM (BBD-53A)	7500 gallons				8760 hr/yr
EQT 0290	T-3211 - BELA-5 SOLVENT DRUM (BBD-53B)	750 gallons				8760 hr/yr
EQT 0291	T-3217 - CPLA FEED DRUM (BXD-02)	31200 gallons				8760 hr/yr
EQT 0293	V-190 - BPLA METHANOL RECOVERY TOWER (BST-04)					8760 hr/yr
EQT 0294	V-210 - BPLA ISOBUTYLENE PURIFICATION TOWER (BPT-10)					8760 hr/yr
EQT 0295	V-211 - BPLA SYNTHESIS TOWER (BST-02)					8760 hr/yr
EQT 0296	V-228 - BPLA SCRUBBERS (BST-01, BST-03, BPT-08, BPT-11)					8760 hr/yr
EQT 0297	V-230 - BPLA GUARD AND DECOMPOSITION REACTORS					8760 hr/yr
EQT 0298	V-240 - DILA SCRUBBER TOWERS (BDT-05, BDT-06, BDT-12)					8760 hr/yr
EQT 0299	V-279 - CPLA CRACKER REACTOR/PRODUCT SEPARATORS (BXR-01, BXD-10, BXD-01)					8760 hr/yr
EQT 0300	V-280 - CPLA FRACTIONATOR (BXT-01)					8760 hr/yr
EQT 0301	V-298 - DARLA DIELS-ALDER REACTOR (BRR-101, BRD-101)					8760 hr/yr
EQT 0302	V-297 - DARLA FRACTIONATION TOWERS (BFT-01, BFT-02, & BFT-03)					8760 hr/yr
EQT 0303	V-35 - BELA-5 COMPRESSOR LUBE OIL STRIPPER (BAD-26)					8760 hr/yr
EQT 0304	V-359 - BELA-5 CONDENSATE DRUM (BBD-902)					8760 hr/yr
EQT 0305	V-361 - BELA-5 TAR VACUUM HEATERS					8760 hr/yr

INVENTORIES

AI ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2367-V2

Air - Title V Regular Permit Renewal

Subject Item Inventory:

ID	Description	Tank Volume	Max. Operating Rate	Normal Operating Rate	Contents	Operating Time
COPRODUCTS						
EQT 0308	V-374 - BELA-5 SPHEREFIELD FLARE DRUM (BTD-28)					8760 hr/yr
EQT 0307	V-385 - BELA-5 RECOVERY & TOPPING TOWERS (BAT-05, BAT-06)					8760 hr/yr
EQT 0308	V-386 - BELA-5 SOLVENT PURIFICATION TOWER (BBT-51)					8760 hr/yr
EQT 0309	V-482 - DARLA ISOMERIZATION REACTOR (BCR-201)					8760 hr/yr
EQT 0310	V-483 - CPLA ROPO STRIPPER TOWER (BXT-02)					8760 hr/yr
EQT 0311	V-484 - CPLA UNIT FLARE DRUM (BZD-34)					8760 hr/yr
EQT 0312	V-485 - BPLA HYDROGENATION REACTOR (BSR-301)					8760 hr/yr
EQT 0313	V-486 - BPLA DISTILLATION TOWERS (BPT-05, BPT-06, BPT-07)					8760 hr/yr
EQT 0314	V-487 - BPLA UNIT FLARE DRUM (BZD-37)					8760 hr/yr
EQT 0315	V-488 - DARLA SPENT CATALYST STRIPPER (BCD-301)					8760 hr/yr
EQT 0316	V-489 - DARLA UNIT FLARE DRUM (BZD-901)					8760 hr/yr
EQT 0317	V-490 - BELA-5 DISTILLATION TOWERS (BAT-01A/B, BAT-03, BAT-07A/B)					8760 hr/yr
EQT 0318	V-491 - BELA-5 DISTILLATION TOWERS (BAT-02, BAT-04)					8760 hr/yr
EQT 0319	V-492 - DILA DISTILLATION TOWERS (BDT-02, BDT-04, BDT-08X, BDT-09X)					8760 hr/yr
EQT 0320	V-493 - BELA-5 UNIT FLARE DRUM (BZD-104)					8760 hr/yr
EQT 0321	V-495 - DILA DISTILLATION TOWERS (BDT-03, BDT-07, BDT-11X)					8760 hr/yr
EQT 0322	V-497 - BELA-5 DMF BLOWDOWN DRUM (BZD-103)					8760 hr/yr
FUG 0016	U-112 - COPRODUCTS UNITS FUGITIVE EMISSIONS					8760 hr/yr
FUG 0017	U-117 - DILA UNIT ACN FUGITIVE EMISSIONS					8760 hr/yr
FUG 0018	U-13 - CPLA UNIT FUGITIVE EMISSIONS					8760 hr/yr
FUG 0019	U-46F - DILA LOADING RACK FUGITIVE EMISSIONS (BELA-5 AND BPLA UNITS)					8760 hr/yr
FUG 0020	U-47K - ACLA LOADING RACK FUGITIVE EMISSIONS (BELA-5, BPLA, CPLA UNITS)					8760 hr/yr
RLP 0063	V-162 - DARLA SPENT CATALYST TRANSFER BIN (BCD-302)					8760 hr/yr
RLP 0064	V-163 - DARLA CATALYST BIN PURGE VENT (BCD-21)					8760 hr/yr
RLP 0065	V-228D - ACLA RACK RECOVERY CHILLER VENT (CPLA EMISSIONS)					8760 hr/yr
RLP 0066	V-481 - COPRODUCTS CONDENSATE SYSTEMS					8760 hr/yr

Stack Information:

ID	Description	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
COPRODUCTS							

INVENTORIES

AI ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2367-V2

Air - Title V Regular Permit Renewal

Stack Information:

ID	Description	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
COPRODUCTS							
EQT 0234	C-02 - GFLA-3 COOLING TOWER	33	7144358	68		47	
EQT 0238	M-01A - PRODUCT LOADING TANK TRUCKS/RAILCARS (CPLA UNIT)	0	1.56	3.28		3.31	77
EQT 0250	S-78 - CPLA HOT OIL FURNACE (YF-01)	28	5780	2.3		95	625
EQT 0251	Y-1858 - CYCLICS PRODUCT STORAGE TANK			30		24	77
EQT 0252	T-1661 - BUTADIENE PRODUCT STORAGE SPHERE			30		34	
EQT 0253	T-1662 - BUTADIENE PRODUCT STORAGE SPHERE			30		34	
EQT 0254	Y-1865 - CYCLICS PRODUCT STORAGE TANK			40		32	
EQT 0255	T-1867 - CYCLICS PRODUCT RUNDOWN STORAGE TANK			15		24	
EQT 0256	T-1668 - CYCLICS PRODUCT RUNDOWN STORAGE TANK			15		24	
EQT 0257	T-1669 - CYCLICS PRODUCT STORAGE TANK			30		40	
EQT 0258	T-1747 - AMYLENE, BUTADIENE, & BUTENES STORAGE SPHERE			28		32	
EQT 0259	T-1749 - CRUDE BUTADIENE & BUTENES STORAGE SPHERE			51		55	
EQT 0260	T-1774 - ISOBUTYLENE STORAGE SPHERE			55		59	
EQT 0262	T-1915 - METHANOL, ISOPRENE STORAGE SPHERE			25		29	
EQT 0263	Y-1917 - BUTYLENE STORAGE SPHERE			51		55	
EQT 0284	T-1919 - BUTENES, AMYLENES, & ISOPRENE SPHERE			41		45	
EQT 0285	T-1921 - METHANOL, ISOPRENE STORAGE SPHERE			30		34	
EQT 0286	T-1951 - CYCLICS STORAGE TANK			19.25		24	
EQT 0267	T-1952 - CYCLICS STORAGE TANK			19.5		24.3	
EQT 0269	T-3054 - DARLA ENB STORAGE VESSEL			12		35	
EQT 0271	T-3182 - DARLA TOLUENE STORAGE DRUM (BZD-810)			9		34	
EQT 0278	T-3199 - CPLA HEAT TRANSFER FLUID DRUM (BXD-30)			6		55	
EQT 0281	T-3202 - BELA-5 1,2 BUTADIENE STORAGE DRUM (BTD-101)			10		67	
EQT 0283	T-3204 - BELA-5 COMPRESSOR LUBE OIL RESERVOIR (BAD-23)			4.75		5.5	
EQT 0284	T-3205 - BPLA BST-01 WATER DISENGAGING DRUM (BSD-102)			5		20	
EQT 0285	T-3206 - DARLA FEED DRUM (BRD-100)			4		32	
EQT 0286	T-3207 - DARLA OFFTEST DRUM (BCD-602)			9		26	
EQT 0287	T-3208 - DARLA STEAM CRACKING RECYCLE DRUM (BZD-803)			9		34	
EQT 0288	T-3208 - BELA-5 PURIFIED SOLVENT ACCUMULATOR (BBD-54)			6		9	
EQT 0289	T-3210 - BELA-5 SOLVENT DRUM (BBD-53A)			8		25	
EQT 0290	T-3211 - BELA-5 SOLVENT DRUM (BBD-53B)			4		0	
EQT 0291	T-3217 - CPLA FEED DRUM (BXD-02)			12		18	

INVENTORIES

AI ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2367-V2

Air - Title V Regular Permit Renewal

Stack Information:

ID	Description	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
COPRODUCTS							
FUG 0018	U-112 - COPRODUCTS UNITS FUGITIVE EMISSIONS	.01	5.07	3.28		3.31	77
FUG 0017	U-117 - DILA UNIT ACN FUGITIVE EMISSIONS	.01	5.07	3.28		3.31	77
FUG 0018	U-13 - CPLA UNIT FUGITIVE EMISSIONS	.01	5.07	3.28		3.31	77
FUG 0019	U-48F - DILA LOADING RACK FUGITIVE EMISSIONS (BELA-5 AND BPLA UNITS)	.01	5.07	3.28		3.31	77
FUG 0020	U-47K - ACLA LOADING RACK FUGITIVE EMISSIONS (BELA-5, BPLA, CPLA UNITS)	.01	5.07	3.28		3.31	77
RLP 0063	V-162 - DARLA SPENT CATALYST TRANSFER BIN (BCD-302)			.5		62	
RLP 0064	V-163 - DARLA CATALYST BIN PURGE VENT (BCD-21)	14	10	.13		100	72
RLP 0065	V-226D - ACLA RACK RECOVERY CHILLER VENT (CPLA EMISSIONS)						
RLP 0066	V-481 - COPRODUCTS CONDENSATE SYSTEMS	0	.03	3.28		3.28	77

Relationships:

Subject Item Groups:

ID	Group Type	Group Description
GRP 0063	Equipment Group	M-68 - SECONDARY WASTEWATER EMISSIONS (BPLA)
GRP 0064	Equipment Group	M-69 - SECONDARY WASTEWATER EMISSIONS (CPLA)
GRP 0085	Equipment Group	M-77 - SECONDARY WASTEWATER EMISSIONS (BELA-5)
GRP 0086	Equipment Group	M-78 - SECONDARY WASTEWATER EMISSIONS (DARLA INCLUDING DILA ACN)
GRP 0138	Equipment Group	- BRCP FLARE GAS RECOVERY SYSTEM
SCN 0001	Alternate Operating Scenario	SCN-001 - Methanol Storage Sphere (Normal Scenario)
SCN 0002	Alternate Operating Scenario	SCN-002 - Isoprene Storage Sphere (Alternative Scenario)
UNF 0010	Unit or Facility Wide	COPRODUCTS - COPRODUCTS

Group Membership:

ID	Description	Member of Groups
EQT 0239	M-01B - PRODUCT LOADING-TANK TRUCKS/RAILCARS (BELA-5 UNIT)	GRP0000000138
EQT 0240	M-01C - PRODUCT LOADING-TANK TRUCKS/RAILCARS (BPLA UNIT)	GRP0000000138
EQT 0241	M-01F - PRODUCT LOADING-TANK TRUCKS/RAILCARS (DILA UNIT)	GRP0000000138
EQT 0242	M-68-A - SECONDARY WASTEWATER EMISSIONS (BPLA WASTEWATERS TO WILA)	GRP0000000083
EQT 0243	M-68-B - SECONDARY WASTEWATER EMISSIONS (BPLA WASTEWATERS TO AWT)	GRP0000000083
EQT 0244	M-69-A - SECONDARY WASTEWATER EMISSIONS (CPLA WASTEWATERS TO WILA)	GRP0000000084
EQT 0245	M-69-B - SECONDARY WASTEWATER EMISSIONS (CPLA WASTEWATERS TO AWT)	GRP0000000084
EQT 0246	M-77-A - SECONDARY WASTEWATER EMISSIONS (BELA-5 WASTEWATERS TO AWT)	GRP0000000085
EQT 0247	M-77-B - SECONDARY WASTEWATER EMISSIONS (BELA-5 WASTEWATERS TO WILA)	GRP0000000085

INVENTORIES

AI ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2367-V2

Air - Title V Regular Permit Renewal

Group Membership:

ID	Description	Member of Groups
EQT 0248	M-78-A - SECONDARY WASTEWATER EMISSIONS (DARLA WASTEWATERS INCLUDING DILA ACN TO AWT)	GRP0000000088
EQT 0249	M-78-B - SECONDARY WASTEWATER EMISSIONS (DARLA WASTEWATERS INCLUDING DILA ACN TO WILA)	GRP0000000088
EQT 0252	T-1661 - BUTADIENE PRODUCT STORAGE SPHERE	GRP0000000138
EQT 0253	T-1662 - BUTADIENE PRODUCT STORAGE SPHERE	GRP0000000138
EQT 0258	T-1747 - AMYLENE, BUTADIENE, & BUTENES STORAGE SPHERE	GRP0000000138
EQT 0259	T-1749 - CRUDE BUTADIENE & BUTENES STORAGE SPHERE	GRP0000000138
EQT 0260	T-1774 - ISOBUTYLENE STORAGE SPHERE	GRP0000000138
EQT 0262	T-1915 - METHANOL, ISOPRENE STORAGE SPHERE	GRP0000000138, SCN0000000001, SCN0000000002
EQT 0263	T-1917 - BUTYLENE STORAGE SPHERE	GRP0000000138
EQT 0264	T-1919 - BUTENES, AMYLENES, & ISOPRENE SPHERE	GRP0000000138
EQT 0265	T-1921 - METHANOL, ISOPRENE STORAGE SPHERE	GRP0000000138, SCN0000000001, SCN0000000002
EQT 0269	T-3054 - DARLA ENB STORAGE VESSEL	GRP0000000138
EQT 0276	T-3199 - CPLA HEAT TRANSFER FLUID DRUM (BXD-30)	GRP0000000138
EQT 0281	T-3202 - BELA-5 1,2 BUTADIENE STORAGE DRUM (BTD-101)	GRP0000000138
EQT 0284	T-3205 - BPLA BST-01 WATER DISENGAGING DRUM (BSD-102)	GRP0000000138
EQT 0285	T-3206 - DARLA FEED DRUM (BRD-100)	GRP0000000138
EQT 0286	T-3207 - DARLA OFFTEST DRUM (BCD-602)	GRP0000000138
EQT 0287	T-3208 - DARLA STEAM CRACKING RECYCLE DRUM (BZD-803)	GRP0000000138
EQT 0288	T-3209 - BELA-5 PURIFIED SOLVENT ACCUMULATOR (BBD-54)	GRP0000000138
EQT 0289	T-3210 - BELA-5 SOLVENT DRUM (BBD-53A)	GRP0000000138
EQT 0290	T-3211 - BELA-5 SOLVENT DRUM (BBD-53B)	GRP0000000138
EQT 0291	T-3217 - CPLA FEED DRUM (BXD-02)	GRP0000000138
EQT 0283	V-190 - BPLA METHANOL RECOVERY TOWER (BST-04)	GRP0000000138
EQT 0294	V-210 - BPLA ISOBUTYLENE PURIFICATION TOWER (BPT-10)	GRP0000000138
EQT 0295	V-211 - BPLA SYNTHESIS TOWER (BST-02)	GRP0000000138
EQT 0299	V-279 - CPLA CRACKER REACTOR/PRODUCT SEPARATORS (BXR-01, BXD-10, BXD-01)	GRP0000000138
EQT 0300	V-280 - CPLA FRACTIONATOR (BXT-01)	GRP0000000138
EQT 0302	V-297 - DARLA FRACTIONATION TOWERS (BFT-01, BFT-02, & BFT-03)	GRP0000000138
EQT 0303	V-35 - BELA-5 COMPRESSOR LUBE OIL STRIPPER (BAD-26)	GRP0000000138
EQT 0304	V-359 - BELA-5 CONDENSATE DRUM (BBD-902)	GRP0000000138
EQT 0305	V-361 - BELA-5 TAR VACUUM HEATERS	GRP0000000138
EQT 0306	V-374 - BELA-5 SPHEREFIELD FLARE DRUM (BTD-28)	GRP0000000138
EQT 0307	V-385 - BELA-5 RECOVERY & TOPPING TOWERS (BAT-05, BAT-06)	GRP0000000138
EQT 0308	V-386 - BELA-5 SOLVENT PURIFICATION TOWER (BBT-51)	GRP0000000138
EQT 0309	V-482 - DARLA ISOMERIZATION REACTOR (BCR-201)	GRP0000000138
EQT 0310	V-483 - CPLA ROPO STRIPPER TOWER (BXT-02)	GRP0000000138
EQT 0311	V-484 - CPLA UNIT FLARE DRUM (BZD-34)	GRP0000000138
EQT 0312	V-485 - BPLA HYDROGENATION REACTOR (BSR-301)	GRP0000000138
EQT 0314	V-487 - BPLA UNIT FLARE DRUM (BZD-37)	GRP0000000138
EQT 0315	V-488 - DARLA SPENT CATALYST STRIPPER (BCD-301)	GRP0000000138

INVENTORIES

AJ ID: 286 - ExxonMobil Corp - Baton Rouge Chemical Plant

Activity Number: PER20100015

Permit Number: 2367-V2

Air - Title V Regular Permit Renewal

Group Membership:

ID	Description	Member of Groups
EQT 0316	V-489 - DARLA UNIT FLARE DRUM (BZD-801)	GRP000000138
EQT 0317	V-490 - BELA-5 DISTILLATION TOWERS (BAT-01A/B, BAT-03, BAT-07A/B)	GRP000000138
EQT 0319	V-492 - DILA DISTILLATION TOWERS (BDT-02, BDT-04, BDT-08X, BDT-09X)	GRP000000138
EQT 0320	V-493 - BELA-5 UNIT FLARE DRUM (BZD-104)	GRP000000138
EQT 0322	V-497 - BELA-5 DMF BLOWDOWN DRUM (BZD-103)	GRP000000138

NOTE: The UNF group relationship is not printed in this table. Every subject item is a member of the UNF group

Annual Maintenance Fee:

Fee Number	Air Contaminant Source	Multiplier	Units Of Measure
0830	0830 Organic Oxides, Alcohols, Glycols (Rated Capacity)	1	MM lbs/yr

SIC Codes:

2813	Industrial gases	UNF 010
2822	Synthetic rubber	UNF 010
2865	Cyclic organic crudes, intermediates, dyes and pigments	UNF 010
2869	Industrial organic chemicals, nec	UNF 010

(Attachment 5)

Agreed Order, TCEQ Docket No. 2011-2336-AIR-E

Executive Summary – Enforcement Matter – Case No. 43254
Exxon Mobil Corporation
RN102579307; RN102212925; RN102574803
Docket No. 2011-2336-AIR-E

Order Type:

Findings Agreed Order

Findings Order Justification:

People or environmental receptors have been exposed to pollutants which exceed levels that are protective.

Media:

AIR

Small Business:

No

Location(s) Where Violation(s) Occurred:

Baytown Refinery (RN102579307) 2800 Decker Drive, Baytown, Harris County

Type of Operation:

petrochemical refinery

Other Significant Matters:

Additional Pending Enforcement Actions: 2011-1584-AIR-E

Past-Due Penalties: None

Past-Due Fees: None

Other: The violations alleged in this Order occurred at the Baytown Refinery (RN102579307). Further, this Order establishes a structure for stipulated penalties to resolve violations for future reportable emissions events, requires specified emissions reductions, and mandates environmental improvement projects at the Baytown Complex, which includes the Baytown Olefins Plant(RN102212925), the Baytown Chemical Plant (RN102574803), as well as the Baytown Refinery.

Interested Third-Parties: None

Texas Register Publication Date: January 6, 2012

Comments Received: None

Penalty Information

Total Penalty Assessed: \$98,000

Total Paid to General Revenue: \$49,000

Total Due to General Revenue: \$0

SEP Conditional Offset: \$49,000

Name of SEP: Houston Area Air Monitoring Project

Compliance History Classifications:

Person/CN – Average

Site/RN – Average

Major Source: Yes

Statutory Limit Adjustment: \$100,000 reduction

Applicable Penalty Policy: September 2011

Investigation Information

Complaint Date(s): N/A
Date(s) of Investigation: November 7 - 21, 2011; November 15 - 29, 2011
Date(s) of NOV(s): See Compliance History – 27 related NOVs
Date(s) of NOE(s): December 19, 2011

Violation Information

1. Failed to prevent unauthorized emissions. Specifically, 42,932.2 pounds (“lbs”) of carbon monoxide (“CO”), 5,568.16 lbs of sulfur dioxide (“SO₂”), 898.97 lbs of nitrogen oxides (“NO_x”), 2.25 lbs of hydrogen sulfide (“H₂S”), and 8.9 lbs of volatile organic compounds (“VOC”) were emitted from Flare Stack 25 and Flare Stack 26 during an emissions event (Incident No. 160475) that began on October 12, 2011, and lasted for 58 hours and 15 minutes. The event occurred as the result of a breakdown of the bottom pump-around circuit on the Flexicoker Fractionator, which caused the temperature in the fractionator to increase, resulting in a release of excess overhead gas from the fractionator to the flare system. The TCEQ has determined that insufficient information was provided by ExxonMobil regarding the cause of the emissions event [30 TEX. ADMIN. CODE §§ 101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4); TEX. HEALTH & SAFETY CODE § 382.085(b); Permit Nos. 18287 and PSDTX730M4; and Federal Operating Permit No. O1229].
2. Failed to prevent unauthorized emissions. Specifically, 47,710.11 lbs of CO, 93.59 lbs of NO_x, 2,594.21 lbs of SO₂, 629.76 lbs of VOC, 28.08 lbs of H₂S, 60.5 lbs of particulate matter, and 35.83 lbs of ammonia were emitted from Flares 3, 4, 5, and 6, and the Fluid Catalytic Cracking Unit 2 Wet Gas Scrubber during an emissions event (Incident No. 161050) that began on October 25, 2011, and lasted one hour and 25 minutes. The event occurred when an isolation switch at a substation failed to achieve a closed circuit, which caused an electrical arc to occur, resulting in the shutdown of the Wet Gas Compressor. The TCEQ has determined that insufficient information was provided by ExxonMobil regarding the cause of the switch failure [30 TEX. ADMIN. CODE §§ 101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4); TEX. HEALTH & SAFETY CODE § 382.085(b); Permit Nos. 18287 and PSDTX730M4; and Federal Operating Permit No. O1229].

Corrective Actions/Ordering Provisions

Corrective Actions Completed:

1. With regard to Incident No. 160475, by October 15, 2011, ExxonMobil pulled feed from the Flexicoker unit, and through operational troubleshooting, reestablished flow in the bottom circuit of the fractionator and put feed back into the unit.
2. With regard to Incident No. 161050, by October 30, 2011, ExxonMobil upgraded and replaced the isolation switch to prevent recurrence of a same or similar event.

Ordering Provisions:

1. Immediately upon the effective date of this Agreed Order until the date of termination of this Agreed Order, ExxonMobil shall be liable to the Commission for stipulated penalties, as set forth in Exhibit A (attached) for each emissions event and excess opacity event, as defined in

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Exxon Mobil Corporation
RN102579307; RN102212925; RN102574803
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30 TEX. ADMIN. CODE § 101.1 (including upset events and unscheduled MSS activities) at the Baytown Complex, during which the quantity of unauthorized emissions exceeds the applicable reportable quantity ("RQ"). Stipulated penalties do not apply to: emissions caused by an act of God, war, strike, riot, or other catastrophe as provided for in TEX. WATER CODE § 7.251; emissions events that qualify as "excessive emissions events" under 30 TEX. ADMIN. CODE § 101.222; or emissions events that have adversely impacted human health and the environment but which do not otherwise qualify as "excessive emission events" under 30 TEX. ADMIN. CODE § 101.222.

2. Within 60 days after the end of an event for which stipulated penalties are due, ExxonMobil shall submit to TCEQ the stipulated penalties due for that event.
3. Through advance coordination with the TCEQ SEP Program, fifty percent (50%) of the stipulated penalties may be directed to one or more SEPs listed on the Commission's approved SEP list for the Houston/Galveston/Brazoria (including Chambers County) area.
4. If the Executive Director identifies a violation for which a stipulated penalty has not been paid, within 45 days the Executive Director will notify ExxonMobil in writing of the violation and stipulated penalty due. ExxonMobil will submit the payment no later than 60 days after receipt of notification.
5. The Executive Director may exclude an emissions event from the stipulated penalty obligation provided the Executive Director gives written notice to ExxonMobil setting forth the basis for such exclusion no later than 90 days after receipt of the stipulated penalty amount for that emissions event. ExxonMobil will have 30 days from receipt of the written notice to respond to the notice and provide reasons why such exclusion should not be made. The Executive Director will make a final decision on the exclusion within 60 days of receipt of ExxonMobil's written response.
6. In the event that the Executive Director decides to exclude an emissions event and ExxonMobil has submitted the stipulated penalty payment for that event, the funds will be returned to ExxonMobil and no payment will be deemed to have been made.
7. For all events that the Executive Director excludes from the stipulated penalty provisions of this Agreed Order, the Executive Director may seek all administrative and/or civil enforcement remedies, including injunctive relief, with respect to claims arising under or related to that emissions event, and ExxonMobil retains and may assert all defenses applicable and available to it under law or regulation, including the right to legally challenge the Executive Director's decision to exclude the event from the stipulated penalty provisions of this Agreed Order.
8. Notwithstanding any other provisions of this Agreed Order, the TCEQ reserves the right to fully pursue ExxonMobil for any and all criminal liability, even if such liability is related to a matter otherwise covered by this Agreed Order.
9. In the event that the Executive Director elects to renegotiate the terms of this Agreed Order, the Executive Director shall provide ExxonMobil with written notice within 45 days of the date that a ground for renegotiation arises. If the Executive Director and ExxonMobil are unable to reach mutual agreement on modified terms of this Agreed Order within 90 days of that notice, the Executive Director shall have the right of Early Termination of this Agreed Order. If the Executive Director elects to exercise the right of Early Termination, the Executive Director shall provide ExxonMobil with a written 15-day notice of the termination.

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10. ExxonMobil estimates that the *Ordered Environmental Improvement Projects* will achieve corresponding reductions of the following pollutants: Highly Reactive Volatile Organic Compounds (HRVOC), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), and Nitrogen Oxides (NO_x). For each *Ordered Environmental Improvement Project*, ExxonMobil will track and report the corresponding reductions in HRVOC, CO, SO₂, and NO_x.
11. Identification of the Baytown Complex facilities that will be used to satisfy the emissions reduction requirement rests solely with ExxonMobil. For purposes of demonstrating compliance, ExxonMobil will calculate VOC emissions, as well as corresponding reductions from pollutants identified above, in a manner that is consistent with the annual emissions inventory required by 30 TEX. ADMIN. CODE § 101.10.
12. No later than 60 days prior to a project start date, or in cases where the project start predates the effective date of this Agreed Order, no later than 60 days after the effective date of this Agreed Order, ExxonMobil will submit to the TCEQ a project description that identifies the emission unit(s) and process area(s) involved in the project, describes the new equipment or work practices that will be implemented as part of the project, describes how the new equipment or work practices are designed to prevent and/or reduce emissions from the Baytown Complex, and establishes interim implementation dates for the project. Within 30 days of receiving ExxonMobil's project description, the Executive Director may provide comments and request modifications to the scope or implementation of a project, including project(s) commenced prior to the effective date of this Agreed Order. In the event ExxonMobil elects not to incorporate such requested modifications, the Executive Director may exercise the right to Renegotiation or Early Termination.
13. If ExxonMobil fails to achieve interim VOC emissions reduction thresholds, fails to implement one or more of the *Ordered Environmental Improvement Projects* in accordance with the project description, or elects not to incorporate the Executive Director's requested modifications to an *Ordered Environmental Improvement Project*, the Executive Director has the right of Renegotiation of the terms of this Agreed Order.
14. ExxonMobil will undertake emissions reduction projects at the Baytown Complex, including the *Ordered Environmental Improvement Projects* listed below, to reduce VOC emissions, including VOC emissions from emissions events and MSS activities, by 126 tons from a baseline emission rate determined using the affected facilities' average emissions (excluding force majeure events) reported in the 2006-2010 Emissions Inventory. The emissions reduction projects will be complete by the end of the fifth calendar year after the effective date of this Agreed Order. The emissions reductions required by this Agreed Order will occur on the following schedule:
 - a. On or before the end of the third calendar year after the effective date of this Agreed Order, VOC emissions will be reduced by 45 tons;
 - b. On or before the end of the fourth calendar year after the effective date of this Agreed Order, VOC emissions will be reduced by 71 tons; and
 - c. On or before the end of the fifth calendar year after the effective date of this Agreed Order, VOC emissions will be reduced by 126 tons.

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15. Within 5 years of the effective date of this Agreed Order, ExxonMobil will implement the following *Ordered Environmental Improvement Projects* to reduce emissions at the Baytown Complex, including emissions from emissions events and MSS activities:
- a. *Plant Automation Venture.* ExxonMobil will install computer applications to improve real-time monitoring, identification, diagnostics and online guidance/management of operations to provide early identification of potential events and/or instrumentation abnormalities, allowing proactive response. ExxonMobil shall implement the Plant Automation Venture at the Baytown Complex no later than June 30, 2012, and shall complete the Plant Automation Venture at each location as set forth below:
 - i. Baytown Refinery – No later than December 31, 2014;
 - ii. Baytown Chemical Plant – No later than December 31, 2013; and
 - iii. Baytown Olefins Plant – No later than June 30, 2016.
 - b. *Fuels North Flare System Monitoring/Minimization.* Exxon will install additional instrumentation and develop tools and procedures to more effectively monitor and troubleshoot the Baytown Refinery Fuels North Flare System (“FNFS”). Additional instrumentation, including monitoring probes and on-line analyzers, are intended to improve the identification and characterization of flaring events. The development of flare minimization practices, including practices for Equipment Clearing Scheduling and reducing flare gas generation and/or Flare Gas Recovery System Cushion Management, are intended to reduce loads on the flare system. ExxonMobil shall implement the Fuels North Flare System Monitoring/ Minimization project on or before the following dates:
 - i. Flare Minimization Practices - Implementation no later than March 1, 2012; Completion no later than September 30, 2012; and
 - ii. Monitoring Instrumentation – Implementation no later than September 30, 2013; Completion no later than December 31, 2014.
 - c. *BOP/BOPX Recovery Unit Simulators.* ExxonMobil will develop, implement and use high-fidelity process training simulators for the Recovery Unit Trains at the Baytown Olefins Plant (“BOP”) and Baytown Olefins Plant Expansion (“BOPX”). The recovery unit simulators enable realistic instruction and practice for specific scenarios such as start-ups, shutdowns and loss-of-feed, and are intended to improve operator training and competency, resulting in reduced frequency and severity of emissions events. ExxonMobil shall begin development of the simulators for the BOP/BOPX Recovery Unit Simulators project at the Baytown Olefins Plant no later than June 30, 2012, and shall complete and test the simulators for the BOP/BOPX Recovery Unit Simulators project at each location as set forth below:
 - i. BOPX Recovery Unit Simulator – No later than December 31, 2013; and
 - ii. BOP Recovery Unit Simulator – No later than December 31, 2014.
 - d. *Enhanced Fugitive Emissions Monitoring.* No later than 90 days after the effective date of this Agreed Order, ExxonMobil shall begin implementation of a program of enhanced fugitive component monitoring and repair at the Baytown Complex. The program will use infrared imaging technology to locate potential VOC and HRVOC leaks. Confirmed leaks will be subject to the repair requirements of applicable federal and state regulations. Surveys will generally be conducted in months when applicable federal and state

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monitoring is not required and during process unit startups, will be equally spaced between monitoring events required by applicable federal and state regulations to the extent practicable, and will be performed by personnel who are certified in infrared imager operation. Imagers will receive maintenance according to the manufacturer's recommendations or equivalent. The Enhanced Fugitive Emissions Monitoring Project shall be complete and in use no later than 12 months after the effective date of this Agreed Order.

16. ExxonMobil has represented that it would not have committed to the Ordered Environmental Improvement Projects at the Baytown Complex at the time this Agreed Order is executed on the schedule required by this Agreed Order and with a focus on achieving the reductions of emissions absent the requirements of this Agreed Order.
17. ExxonMobil will submit Semi-Annual Reports to the Executive Director as follows:
 - a. Semi-Annual Reports regarding compliance status with this Agreed Order will be submitted according to the following schedule:
 - i. Semi-Annual Reports covering the period from January 1 - June 30 will be submitted no later than August 31; and
 - ii. Semi-Annual Reports covering the period from July 1 - December 31 will be submitted either by March 31 or by the date on which the Annual Emissions Inventory is due, whichever is later.
 - b. Semi-Annual Reports regarding the *Ordered Environmental Improvement Projects* for which work was performed in the prior semi-annual period will include the following:
 - i. The name of the project;
 - ii. The date on which ExxonMobil began implementation of the project; and
 - iii. Either the date on which ExxonMobil completed work on the project, or the estimated date of completion if work on the project was not complete by the end of the semi-annual reporting period.
 - c. Semi-Annual Reports regarding stipulated penalties will include the following:
 - i. The total amount of stipulated penalties paid during the prior semi-annual period; and
 - ii. For each emissions event for which stipulated penalties were paid:
 - A. The STEERS report number for the event;
 - B. The amount of the stipulated penalty paid; and
 - C. A copy of each payment.
18. Beginning in 2013, ExxonMobil will also begin submitting Annual Reports to the Executive Director as set forth below:
 - a. Annual Reports regarding compliance status with this Agreed Order will be submitted either by March 31 of each year or by the date on which the Annual Emissions Inventory is due, whichever is later;

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- b. Annual Reports regarding emissions reductions will include the following:
- i. VOC, HRVOC, CO, SO₂ and NO_x emissions reductions achieved over the prior calendar year;
 - ii. Cumulative to-date VOC, HRVOC, CO, SO₂ and NO_x emissions reductions;
 - iii. Actual emissions data for the prior calendar year based on Emission Inventories submitted in accordance with 30 TEX. ADMIN. CODE § 101.10, with an explanation of how the most recent emissions reductions contributed to overall emissions reduction trends at the Baytown Complex; and
 - iv. A summary of activities at the Baytown Complex related to the continuing efforts to improve environmental performance at the Baytown Complex.
19. VOC emissions reductions from the *Ordered Environmental Improvement Projects* will not be used to generate emission reduction credits or discrete emission reduction credits under any TCEQ emissions credit trading program, and do not qualify as voluntary pollution reductions or early compliance programs under 30 TEX. ADMIN. CODE ch. 60.
20. The reporting requirements of this Agreed Order do not relieve ExxonMobil of any reporting obligations to the TCEQ, including 30 TEX. ADMIN. CODE §§ 101.201 and 101.211. All emissions events subject to a stipulated penalty under this Agreed Order must be reported under 30 TEX. ADMIN. CODE § 122.145.
21. This Agreed Order shall terminate five years from its effective date, subject to the Executive Director's rights of Renegotiation and Early Termination.

Litigation Information

Date Petition(s) Filed: N/A
Date Answer(s) Filed: N/A
Settlement Date: December 28, 2011

Contact Information

TCEQ Attorneys: Stephanie Bergeron Perdue, Litigation Division, (512) 239-3400
Lena Roberts, Litigation Division, (512) 239-3400
TCEQ SEP Coordinator: Sharon Blue, Litigation Division, MC 175, (512) 239-2223
TCEQ Enforcement Coordinator: John Muennick, Air Enforcement Section, (713) 422- 8970
TCEQ Regional Contact: Jason Harris/Manuel Bautista, Houston Regional Office, (713) 767-3500
Respondent Contact: Steven R. Cope, Refinery Manager, Exxon Mobil Corporation,
P.O. Box 3950, Baytown, Texas 77522-3950

EXHIBIT A
Stipulated Penalties

Baytown Refinery, Baytown Olefins Plant and Baytown Chemical Plant
Reportable Emissions Events and Excess Opacity Events

Magnitude of Emissions (Per Event)¹	Stipulated Penalty (for first 40 emissions events in calendar year)	Stipulated Penalty (for the 41st emissions event or greater in calendar year)
Less than or equal to 500 lbs Or Excess Opacity Event	\$7,000 per event	\$8,250 per event
Greater than 500 lbs but less than 5000 lbs	\$13,500 per event	\$15,500 per event
Greater than or equal to 5000 lbs	\$25,000 per event	\$25,000 per event

¹The "event" subject to a stipulated penalty under this Order is the aggregate unauthorized emissions and the estimated duration set forth in the final record of reportable emissions events as required under 30 Texas Administrative Code Section 101.201(b).



Penalty Calculation Worksheet (PCW)

Policy Revision 3 (September 2011)

PCW Revision August 3, 2011

TCEQ

DATES	Assigned	3-Jan-2012	Screening	6-Jan-2012	EPA Due	
	PCW	3-Jan-2012				

RESPONDENT/FACILITY INFORMATION			
Respondent	Exxon Mobil Corporation		
Reg. Ent. Ref. No.	RN102579307		
Facility/Site Region	12-Houston	Major/Minor Source	Major

CASE INFORMATION			
Enf./Case ID No.	43254	No. of Violations	2
Docket No.	2011-2336-AIR-E	Order Type	Findings
Media Program(s)	Air	Government/Non-Profit	No
Multi-Media		Enf. Coordinator	John Muennink
		EC's Team	Enforcement Team 5
Admin. Penalty \$ Limit Minimum	\$0	Maximum	\$25,000

Penalty Calculation Section

TOTAL BASE PENALTY (Sum of violation base penalties)	Subtotal 1	\$100,000
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ADJUSTMENTS (+/-) TO SUBTOTAL 1

Subtotals 2-7 are obtained by multiplying the Total Base Penalty (Subtotal 1) by the indicated percentage.

Compliance History	100.0% Enhancement	Subtotals 2, 3, & 7	\$100,000
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Notes: Enhancement for 27 NOVs with same/similar violations, 13 NOVs with dissimilar violations, 10 orders with denial of liability, 20 orders without denial of liability, and one final court judgement with denial of liability.

Culpability	No	0.0% Enhancement	Subtotal 4	\$0
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Notes: The Respondent does not meet the culpability criteria.

Good Faith Effort to Comply Total Adjustments	Subtotal 5	\$0
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Economic Benefit	0.0% Enhancement*	Subtotal 6	\$0
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Total EB Amounts: \$5
 Approx. Cost of Compliance: \$10,000
 *Capped at the Total EB \$ Amount

SUM OF SUBTOTALS 1-7	Final Subtotal	\$200,000
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OTHER FACTORS AS JUSTICE MAY REQUIRE	0.0%	Adjustment	\$0
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Reduces or enhances the Final Subtotal by the indicated percentage.

Notes:

Final Penalty Amount	\$200,000
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STATUTORY LIMIT ADJUSTMENT	Final Assessed Penalty	\$100,000
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DEFERRAL	2.0% Reduction	Adjustment	-\$2,000
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Reduces the Final Assessed Penalty by the indicted percentage. (Enter number only: e.g. 20 for 20% reduction.)

Notes:

The final assessed penalty has been reduced 2% to reflect the terms of the settlement agreement with Respondent; no portion or percentage of the final assessed penalty has been deferred.

PAYABLE PENALTY	\$98,000
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Screening Date 6-Jan-2012

Docket No. 2011-2336-AIR-E

PCW

Respondent Exxon Mobil Corporation

Policy Revision 3 (September 2011)

Case ID No. 43254

PCW Revision August 3, 2011

Reg. Ent. Reference No. RN102579307

Media [Statute] Air

Enf. Coordinator John Muennink

Compliance History Worksheet

>> **Compliance History Site Enhancement (Subtotal 2)**

Component	Number of...	Enter Number Here	Adjust.
NOVs	Written notices of violation ("NOVs") with same or similar violations as those in the current enforcement action (<i>number of NOVs meeting criteria</i>)	27	135%
	Other written NOVs	13	26%
Orders	Any agreed final enforcement orders containing a denial of liability (<i>number of orders meeting criteria</i>)	10	200%
	Any adjudicated final enforcement orders, agreed final enforcement orders without a denial of liability, or default orders of this state or the federal government, or any final prohibitory emergency orders issued by the commission	20	500%
Judgments and Consent Decrees	Any non-adjudicated final court judgments or consent decrees containing a denial of liability of this state or the federal government (<i>number of judgements or consent decrees meeting criteria</i>)	1	30%
	Any adjudicated final court judgments and default judgments, or non-adjudicated final court judgments or consent decrees without a denial of liability, of this state or the federal government	0	0%
Convictions	Any criminal convictions of this state or the federal government (<i>number of counts</i>)	0	0%
Emissions	Chronic excessive emissions events (<i>number of events</i>)	0	0%
Audits	Letters notifying the executive director of an intended audit conducted under the Texas Environmental, Health, and Safety Audit Privilege Act, 74th Legislature, 1995 (<i>number of audits for which notices were submitted</i>)	0	0%
	Disclosures of violations under the Texas Environmental, Health, and Safety Audit Privilege Act, 74th Legislature, 1995 (<i>number of audits for which violations were disclosed</i>)	0	0%
<i>Please Enter Yes or No</i>			
Other	Environmental management systems in place for one year or more	No	0%
	Voluntary on-site compliance assessments conducted by the executive director under a special assistance program	No	0%
	Participation in a voluntary pollution reduction program	No	0%
	Early compliance with, or offer of a product that meets future state or federal government environmental requirements	No	0%

Adjustment Percentage (Subtotal 2) 891%

>> **Repeat Violator (Subtotal 3)**

No

Adjustment Percentage (Subtotal 3) 0%

>> **Compliance History Person Classification (Subtotal 7)**

Average Performer

Adjustment Percentage (Subtotal 7) 0%

>> **Compliance History Summary**

Compliance History Notes

Enhancement for 27 NOVs with same/similar violations, 13 NOVs with dissimilar violations, 10 orders with denial of liability, 20 orders without denial of liability, and one final court judgement with denial of liability.

Total Compliance History Adjustment Percentage (Subtotals 2, 3, & 7) 891%

>> **Final Compliance History Adjustment**

Final Adjustment Percentage *capped at 100% 100%

Screening Date 6-Jan-2012

Docket No. 2011-2336-AIR-E

PCW

Respondent Exxon Mobil Corporation

Policy Revision 3 (September 2011)

Case ID No. 43254

PCW Revision August 3, 2011

Reg. Ent. Reference No. RN102579307

Media [Statute] Air

Enf. Coordinator John Muennink

Violation Number 1

Rule Cite(s) 30 Tex. Admin. Code §§ 101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), Tex. Health and Safety Code § 382.085(b), Permit Nos. 18287 and PSDTX730M4, and Federal Operating Permit No. O1229

Violation Description Failed to prevent unauthorized emissions. Specifically, the Respondent released 42,932.2 pounds ("lbs") of carbon monoxide, 5,568.16 lbs of sulfur dioxide ("SO2"), 898.97 lbs of nitrogen oxides ("NOx"), 2.25 lbs of hydrogen sulfide ("H2S"), and 8.9 lbs of volatile organic compounds ("VOC") from Flare Stack 25 and Flare Stack 26 during an emissions event (Incident No. 160475) that began on October 12, 2011 and lasted 58 hours and 15 minutes. The event occurred as the result of a breakdown of the bottom pump-around circuit on the Flexicoker Fractionator, which caused the temperature in the fractionator to increase, resulting in a release of excess overhead gas from the fractionator to the flare system. Since insufficient information was provided regarding the cause of the emissions event, the Respondent is precluded from asserting the affirmative defense under 30 Tex. Admin. Code § 101.222.

Base Penalty \$25,000

>> Environmental, Property and Human Health Matrix

OR

Release	Harm			Percent
	Major	Moderate	Minor	
Actual	x			100.0%
Potential				

>> Programmatic Matrix

Falsification	Major	Moderate	Minor	Percent
				0.0%

Matrix Notes Human health and the environment has been exposed to significant amounts of pollutants which exceed protective levels as a result of this violation.

Adjustment \$0

\$25,000

Violation Events

Number of Violation Events 3 3 Number of violation days

daily	x
weekly	
monthly	
quarterly	
semiannual	
annual	
single event	

mark only one with an x

Violation Base Penalty \$75,000

Three daily events are recommended for the three day emissions event.

Good Faith Efforts to Comply

0.0% Reduction

\$0

	Before NOV	NOV to EDPRP/Settlement Offer
Extraordinary		
Ordinary		
N/A	x	(mark with x)

Notes The Respondent does not meet the good faith criteria for this violation.

Violation Subtotal \$75,000

Economic Benefit (EB) for this violation

Statutory Limit Test

Estimated EB Amount \$2

Violation Final Penalty Total \$150,000

This violation Final Assessed Penalty (adjusted for limits) \$75,000

Economic Benefit Worksheet

Respondent Exxon Mobil Corporation
Case ID No. 43254
Req. Ent. Reference No. RN102579307
Media Air
Violation No. 1

Percent Interest	Years of Depreciation
5.0	15

Item Description	Item Cost	Date Required	Final Date	Yrs	Interest Saved	Onetime Costs	EB Amount
No commas or \$							

Delayed Costs

Equipment				0.00	\$0	\$0	\$0
Buildings				0.00	\$0	\$0	\$0
Other (as needed)				0.00	\$0	\$0	\$0
Engineering/construction				0.00	\$0	\$0	\$0
Land				0.00	\$0	n/a	\$0
Record Keeping System				0.00	\$0	n/a	\$0
Training/Sampling				0.00	\$0	n/a	\$0
Remediation/Disposal				0.00	\$0	n/a	\$0
Permit Costs				0.00	\$0	n/a	\$0
Other (as needed)	\$5,000	12-Oct-2011	15-Oct-2011	0.01	\$2	n/a	\$2

Notes for DELAYED costs

Estimated expense to implement measures and/or procedures to prevent emissions events due to the same causes as that of Incident No. 160475. The Date Required is the date of the emissions event. The Final Date is the date that corrective measures were completed.

Avoided Costs

ANNUALIZE [1] avoided costs before entering item (except for one-time avoided costs)

Disposal				0.00	\$0	\$0	\$0
Personnel				0.00	\$0	\$0	\$0
Inspection/Reporting/Sampling				0.00	\$0	\$0	\$0
Supplies/equipment				0.00	\$0	\$0	\$0
Financial Assurance [2]				0.00	\$0	\$0	\$0
ONE-TIME avoided costs [3]				0.00	\$0	\$0	\$0
Other (as needed)				0.00	\$0	\$0	\$0

Notes for AVOIDED costs

Approx. Cost of Compliance

\$5,000

TOTAL

\$2

Screening Date 6-Jan-2012
Respondent Exxon Mobil Corporation
Case ID No. 43254
Reg. Ent. Reference No. RN102579307
Media [Statute] Air
Enf. Coordinator John Muennink

Docket No. 2011-2336-AIR-E

PCW

Policy Revision 3 (September 2011)
PCW Revision August 3, 2011

Violation Number 2
Rule Cite(s)

30 Tex. Admin. Code §§ 101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), Tex. Health and Safety Code § 382.085(b), Permit Nos. 18287 and PSDTX730M4, and Federal Operating Permit No. O1229

Violation Description

Failed to prevent unauthorized emissions. Specifically, the Respondent released 47,710.11 lbs of CO, 93.59 lbs of NOx, 2,594.21 lbs of SO2, 629.76 lbs of VOC, 28.08 lbs of H2S, 60.5 lbs of particulate matter, and 35.83 lbs of ammonia from Flares 3, 4, 5, and 6, and the Fluid Catalytic Cracking Unit 2 Wet Gas Scrubber during an emissions event (Incident No. 161050) that began on October 25, 2011, and lasted one hour and 25 minutes. The event occurred when an isolation switch at a substation failed to achieve a closed circuit, which caused an electrical arc to occur, resulting in the shutdown of the Wet Gas Compressor. Since insufficient information was provided regarding the cause of the emissions event, the Respondent is precluded from asserting the affirmative defense under 30 Tex. Admin. Code § 101.222.

Base Penalty \$25,000

>> Environmental, Property and Human Health Matrix

OR

Release	Harm		
	Major	Moderate	Minor
Actual	x		
Potential			

Percent 100.0%

>> Programmatic Matrix

Falsification	Major	Moderate	Minor

Percent 0.0%

Matrix Notes

Human health and the environment has been exposed to significant amounts of pollutants which exceed protective levels as a result of this violation.

Adjustment \$0

\$25,000

Violation Events

Number of Violation Events 1 1 Number of violation days

mark only one with an x

daily	x
weekly	
monthly	
quarterly	
semiannual	
annual	
single event	

Violation Base Penalty \$25,000

One daily event is recommended.

Good Faith Efforts to Comply

0.0% Reduction

\$0

	Before NOV	NOV to EDPRP/Settlement Offer
	Extraordinary	
Ordinary		
N/A	x	(mark with x)

Notes

The Respondent does not meet the good faith criteria for this violation.

Violation Subtotal \$25,000

Economic Benefit (EB) for this violation

Statutory Limit Test

Estimated EB Amount \$3

Violation Final Penalty Total \$50,000

This violation Final Assessed Penalty (adjusted for limits) \$25,000

Economic Benefit Worksheet

Respondent Exxon Mobil Corporation
Case ID No. 43254
Req. Ent. Reference No. RN102579307
Media Air
Violation No. 2

Percent Interest	Years of Depreciation
5.0	15

Item Description	Item Cost	Date Required	Final Date	Yrs	Interest Saved	Onetime Costs	EB Amount
No commas or \$							

Delayed Costs

Equipment				0.00	\$0	\$0	\$0
Buildings				0.00	\$0	\$0	\$0
Other (as needed)				0.00	\$0	\$0	\$0
Engineering/construction				0.00	\$0	\$0	\$0
Land				0.00	\$0	n/a	\$0
Record Keeping System				0.00	\$0	n/a	\$0
Training/Sampling				0.00	\$0	n/a	\$0
Remediation/Disposal				0.00	\$0	n/a	\$0
Permit Costs				0.00	\$0	n/a	\$0
Other (as needed)	\$5,000	25-Oct-2011	30-Oct-2011	0.01	\$3	n/a	\$3

Notes for DELAYED costs

Estimated expense to implement measures and/or procedures to prevent emissions events due to the same causes as that of Incident No. 161050. The Date Required is the date of the emissions event. The Final Date is the date that corrective measures were completed.

Avoided Costs

ANNUALIZE [1] avoided costs before entering item (except for one-time avoided costs)

Disposal				0.00	\$0	\$0	\$0
Personnel				0.00	\$0	\$0	\$0
Inspection/Reporting/Sampling				0.00	\$0	\$0	\$0
Supplies/equipment				0.00	\$0	\$0	\$0
Financial Assurance [2]				0.00	\$0	\$0	\$0
ONE-TIME avoided costs [3]				0.00	\$0	\$0	\$0
Other (as needed)				0.00	\$0	\$0	\$0

Notes for AVOIDED costs

Approx. Cost of Compliance

\$5,000

TOTAL

\$3

Compliance History

Customer/Respondent/Owner-Operator: CN600123939 Exxon Mobil Corporation Classification: AVERAGE Rating: 2.71
 Regulated Entity: RN102579307 EXXON MOBIL BAYTOWN FACILITY Classification: AVERAGE Site Rating: 10.90

ID Number(s):	INDUSTRIAL AND HAZARDOUS WASTE	PERMIT	50111
	INDUSTRIAL AND HAZARDOUS WASTE	SOLID WASTE REGISTRATION # (SWR)	30040
	INDUSTRIAL AND HAZARDOUS WASTE	EPA ID	TXD000782698
	POLLUTION PREVENTION PLANNING	ID NUMBER	P00234
	AIR NEW SOURCE PERMITS	REGISTRATION	92810
	AIR NEW SOURCE PERMITS	PERMIT	18287
	AIR NEW SOURCE PERMITS	REGISTRATION	22874
	AIR NEW SOURCE PERMITS	REGISTRATION	23378
	AIR NEW SOURCE PERMITS	REGISTRATION	24669
	AIR NEW SOURCE PERMITS	REGISTRATION	26486
	AIR NEW SOURCE PERMITS	REGISTRATION	26294
	AIR NEW SOURCE PERMITS	REGISTRATION	27403
	AIR NEW SOURCE PERMITS	REGISTRATION	26443
	AIR NEW SOURCE PERMITS	REGISTRATION	30186
	AIR NEW SOURCE PERMITS	REGISTRATION	31067
	AIR NEW SOURCE PERMITS	REGISTRATION	31008
	AIR NEW SOURCE PERMITS	REGISTRATION	31690
	AIR NEW SOURCE PERMITS	REGISTRATION	31852
	AIR NEW SOURCE PERMITS	REGISTRATION	31915
	AIR NEW SOURCE PERMITS	REGISTRATION	34295
	AIR NEW SOURCE PERMITS	REGISTRATION	33875
	AIR NEW SOURCE PERMITS	REGISTRATION	36536
	AIR NEW SOURCE PERMITS	PERMIT	36664
	AIR NEW SOURCE PERMITS	REGISTRATION	38532
	AIR NEW SOURCE PERMITS	REGISTRATION	39164
	AIR NEW SOURCE PERMITS	REGISTRATION	40421
	AIR NEW SOURCE PERMITS	REGISTRATION	38572
	AIR NEW SOURCE PERMITS	REGISTRATION	42509
	AIR NEW SOURCE PERMITS	REGISTRATION	43489
	AIR NEW SOURCE PERMITS	REGISTRATION	43582
	AIR NEW SOURCE PERMITS	REGISTRATION	44162
	AIR NEW SOURCE PERMITS	REGISTRATION	47145
	AIR NEW SOURCE PERMITS	REGISTRATION	49893
	AIR NEW SOURCE PERMITS	PERMIT	50203
	AIR NEW SOURCE PERMITS	ACCOUNT NUMBER	HG0232Q
	AIR NEW SOURCE PERMITS	REGISTRATION	11007
	AIR NEW SOURCE PERMITS	REGISTRATION	10461
	AIR NEW SOURCE PERMITS	PERMIT	10550
	AIR NEW SOURCE PERMITS	REGISTRATION	11053
	AIR NEW SOURCE PERMITS	REGISTRATION	11206
	AIR NEW SOURCE PERMITS	REGISTRATION	11250
	AIR NEW SOURCE PERMITS	REGISTRATION	11380
	AIR NEW SOURCE PERMITS	REGISTRATION	11464
	AIR NEW SOURCE PERMITS	REGISTRATION	11475
	AIR NEW SOURCE PERMITS	REGISTRATION	11483
	AIR NEW SOURCE PERMITS	PERMIT	11555
	AIR NEW SOURCE PERMITS	REGISTRATION	11624
	AIR NEW SOURCE PERMITS	REGISTRATION	11703
	AIR NEW SOURCE PERMITS	REGISTRATION	11939
	AIR NEW SOURCE PERMITS	REGISTRATION	12226
	AIR NEW SOURCE PERMITS	PERMIT	12380
	AIR NEW SOURCE PERMITS	REGISTRATION	12628
	AIR NEW SOURCE PERMITS	REGISTRATION	12968
	AIR NEW SOURCE PERMITS	REGISTRATION	12977
	AIR NEW SOURCE PERMITS	REGISTRATION	12994
	AIR NEW SOURCE PERMITS	REGISTRATION	51246
	AIR NEW SOURCE PERMITS	REGISTRATION	55381
	AIR NEW SOURCE PERMITS	AFS NUM	4820100027
	AIR NEW SOURCE PERMITS	REGISTRATION	71553
	AIR NEW SOURCE PERMITS	EPA ID	PSDTX975
	AIR NEW SOURCE PERMITS	REGISTRATION	71614
	AIR NEW SOURCE PERMITS	REGISTRATION	50429
	AIR NEW SOURCE PERMITS	REGISTRATION	53461
	AIR NEW SOURCE PERMITS	REGISTRATION	52474
	AIR NEW SOURCE PERMITS	REGISTRATION	55912
	AIR NEW SOURCE PERMITS	REGISTRATION	54582
	AIR NEW SOURCE PERMITS	REGISTRATION	54497
	AIR NEW SOURCE PERMITS	REGISTRATION	71394
	AIR NEW SOURCE PERMITS	REGISTRATION	50582
	AIR NEW SOURCE PERMITS	REGISTRATION	54848
	AIR NEW SOURCE PERMITS	REGISTRATION	53785
	AIR NEW SOURCE PERMITS	REGISTRATION	55511

AIR NEW SOURCE PERMITS	REGISTRATION	72657
AIR NEW SOURCE PERMITS	REGISTRATION	74578
AIR NEW SOURCE PERMITS	REGISTRATION	75186
AIR NEW SOURCE PERMITS	EPA ID	PSDTX730M3
AIR NEW SOURCE PERMITS	EPA ID	PSDTX975M2
AIR NEW SOURCE PERMITS	EPA ID	PSDTX730M2
AIR NEW SOURCE PERMITS	EPA ID	PAL7
AIR NEW SOURCE PERMITS	REGISTRATION	94307
AIR NEW SOURCE PERMITS	REGISTRATION	98076
AIR OPERATING PERMITS	ACCOUNT NUMBER	HG0232Q
AIR OPERATING PERMITS	ACCOUNT NUMBER	HG0232Q
AIR OPERATING PERMITS	PERMIT	1229
WASTEWATER	PERMIT	WQ0000592000
WASTEWATER	EPA ID	TX0006271
PETROLEUM STORAGE TANK	REGISTRATION	8309
IHW CORRECTIVE ACTION	SOLID WASTE REGISTRATION # (SWR)	30040
PUBLIC WATER SYSTEM/SUPPLY	REGISTRATION	1011562
AIR EMISSIONS INVENTORY	ACCOUNT NUMBER	HG0232Q

Location: 2800 DECKER DR, BAYTOWN, TX, 77520
TCEQ Region: REGION 12 - HOUSTON
Date Compliance History Prepared: December 12, 2011
Agency Decision Requiring Compliance History: Enforcement
Compliance Period: December 12, 2006 to December 12, 2011
TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History:
Name: John Muennink Phone: (512) 239 – 1000

Site Compliance History Components

1. Has the site been in existence and/or operation for the full five year compliance period? Yes
2. Has there been a (known) change in ownership/operator of the site during the compliance period? Yes
3. If Yes, who is the current owner/operator?

OWNOPR	Exxon Mobil Corporation
OWNOPR	Exxon Baytown Refinery
OWNOPR	Exxon Mobil Corporation
OWNOPR	ExxonMobil Oil Corporation
OWNOPR	Exxon Mobil Corporation
OWNOPR	EXXON MOBIL REFINING AND SUPPLY COMPANY
OWNOPR	Exxon Mobil Corporation
OWNOPR	TEJAS GAS PIPELINE CO
4. If Yes, who was/were the prior owner(s)/operator(s)? OWN EXXONMOBIL REFINING & SUPPLY COMPANY
5. When did the change(s) in owner or operator occur? 07/07/2010 OWNEXXONMOBIL REFINING & SUPPLY COMPANY
6. Rating Date: 9/1/2011 Repeat Violator: NO

Components (Multimedia) for the Site :

- A. Final Enforcement Orders, court judgments, and consent decrees of the State of Texas and the federal government.
- 1 **Effective Date: 01/26/2007 ADMINORDER 2006-0737-AIR-E**
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
Rqmt Prov: TCEQ Flexible Air Permit No. 18287, SC#1 PERMIT
Description: Failed to prevent an avoidable emissions event in the Catalytic Light Ends Unit 3 on September 3, 2004 that lasted eight minutes, releasing 14,399 pounds ("lbs") of the highly reactive volatile organic compound ("HRVOC") ethylene and 146 lbs of propane.
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)
Rqmt Prov: TCEQ Flexible Permit #18287, SC# 1 PERMIT
Description: Failed to prevent an avoidable emissions event in the Propane Dewaxing Unit on November 29, 2005 that lasted 12 hours and 30 minutes, releasing 11,409 pounds ("lbs") of propane, 62 lbs of hydrogen sulfide and 28 lbs of propylene.
Classification: Minor
Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(H)
5C THC Chapter 382, SubChapter D 382.085(b)
Description: Failed to identify the permit number on the final reports that were submitted for the September 3, 2004 and November 29, 2005 emissions events.
 - 2 **Effective Date: 03/01/2007 COURTOORDER**
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715
Rqmt Prov: General Condition 15 PERMIT
Special Condition 1 PERMIT
Description: Exxon Mobil violated 30 TAC § 116.715 which requires the holders of flexible permits to comply with all general and special conditions contain in the permit. Exxon Mobil could have avoided the process gas oil release by good design, operation and maintenance practices.
Classification: Moderate
Citation: 30 TAC Chapter 101, SubChapter A 101.4
Description: On January 22, 2006, process gas oil from a tank at the refinery spilled onto the ground. An oily mist from the material

engulfed the nearby Archia Courts public housing neighborhood, adhering to cars and homes. This created nuisance conditions for the neighborhood and violated 30 TAC § 101.4 because the oil was emitted into the atmosphere in such concentration and of such duration as to interfere with the normal use and enjoyment of property and to adversely affect human health.

Classification: Moderate

Citation: 30 TAC Chapter 327 327.3(e)

Description: Failed to notify the TCEQ as soon as possible after discovering that process gas oil had gone off-site and affected the nearby neighborhood.

Classification: Moderate

Citation: 5C THC Chapter 382, SubChapter A 382.085(a)

5C THC Chapter 382, SubChapter A 382.085(b)

Description: Exxon Mobil violated Tex Health and Safety Code § 382.085(a) and (b) which prohibits any person from emitting air contaminants or performing activities that cause or contribute to air pollution, except as authorized by a rule or order of the TCEQ.

3 **Effective Date: 05/25/2007** **ADMINORDER 2006-1398-AIR-E**

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

Rqmt Prov: TCEQ Flexible Air Permit #18287, SC#1 PERMIT

Description: Failed to prevent the unauthorized release of 49,720 lbs of sulfur dioxide, 960 lbs of hydrogen sulfide, 30 lbs of nitrogen oxides, 599 lbs of total sulfur and 124 lbs of hydrogen disulfide during an emissions event that began on Nov. 23, 2004 and lasted three hours and 12 minutes.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

Rqmt Prov: TCEQ Permit No. 18287 PERMIT

Description: Failed to prevent the unauthorized release of 510 lbs of carbon monoxide, 182 lbs of hydrogen sulfide, 16,743 lbs of sulfur dioxide, 42.9 lbs of ethylene, 128.6 lbs of butane, 285.8 lbs of VOC 335.8 lbs of propane and 100 lbs of nitrogen oxides during an emissions event that started on May 16, 2006 and lasted 43 mi

4 **Effective Date: 06/29/2007** **ADMINORDER 2006-1196-AIR-E**

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

Rqmt Prov: Special Condition Nos. 1 and 36A PERMIT

Description: Failed to keep hydrogen sulfide blend gas concentrations 3-hour average below 160 parts per million ("ppm") resulting in the unauthorized emissions of 12,051 pounds ("lbs") of sulfur dioxide, 1,080.6 lbs of nitrogen oxides and 512.5 lbs of carbon monoxide.

5 **Effective Date: 08/23/2007** **ADMINORDER 2006-2043-AIR-E**

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: TCEQ Flexible Air Permit #18287, SC1 PERMIT

Description: Failed to prevent unauthorized emissions. Specifically, 99,307 pounds ("lbs") of volatile organic compounds and 199 lbs of hydrogen sulfide was released from the Pipestill 8 Unit during an emissions event that began on November 16, 2004 and lasted 35 minutes.

Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(H)

5C THC Chapter 382, SubChapter D 382.085(b)

Description: Failed to identify the permit number on the final report for the November 16, 2004 emissions event.

6 **Effective Date: 09/21/2007** **ADMINORDER 2007-0077-AIR-E**

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

Rqmt Prov: TCEQ Flexible Permit #18287, SC# 1 PA

Description: Exxon Mobil failed to prevent the unauthorized release of air contaminants into the atmosphere

7 **Effective Date: 01/12/2008** **ADMINORDER 2007-0672-AIR-E**

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: 18287/PSD-TX-703 SC 1 PA

Description: Failed to prevent unauthorized emissions. Specifically, Exxon released 1,059 pounds ("lbs") of volatile organic compounds, 6,430 lbs of carbon monoxide ("CO"), 680 lbs of nitrogen oxide (NOx), 169 lbs of hydrogen sulfide and 15,552 lbs of sulfur dioxide ("SO2") during an avoidable emissions event.

Classification: Moderate

Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(1)(A)

30 TAC Chapter 116, SubChapter G 116.715(a)

5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions. Specifically, Exxon released 19,972 lbs of SO2 from the Fuels North Unit during an avoidable emissions event that began October 20, 2006 and lasted 201 hours. The event also resulted in 100% opacity for the duration of the event.

8 **Effective Date: 02/25/2008** **ADMINORDER 2006-0498-AIR-E**

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)

5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: TCEQ Flexible Air Permit #18287, SC #1 PERMIT

Description: Failed to prevent an avoidable emissions event in the Delayed Coker Unit ("DCU") on August 29, 2003 that lasted four hours and five minutes, releasing 40,798 pounds ("lbs") of sulfur dioxide, 2,097 lbs of volatile organic compounds ("VOCs"), 1,408 lbs of carbon monoxide, 233 lbs of nitric oxide and 438 lbs of hydrogen sulfide.

Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(c)

5C THC Chapter 382, SubChapter D 382.085(b)

Description: Failed to submit the final notification for the August 29, 2003 emissions event in a timely manner.

- 9 **Effective Date: 02/25/2008** **ADMINORDER 2007-1403-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter D 382.085(b)
 Rqmt Prov: TCEQ Air Permit #18287, SC#1 PA
Description: Failed to prevent the unauthorized release of 11,294 lbs of SO₂, 1.5 lbs of H₂S and .81 lbs of sulfur from the Low BTU Gas Fired Sources during an avoidable emissions event that began March 2, 2007 and lasted 16 hours and 27 minutes.
- 10 **Effective Date: 03/08/2008** **ADMINORDER 2007-1004-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter D 382.085(b)
 Rqmt Prov: TCEQ AIR FLEXIBLE PERMIT #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, Exxon released 6.83 lbs of H₂S, 37.45 lbs CO, 6.88 lbs of NO_x, 7.58 lbs of propylene, 4.94 lbs of volatile organic compounds and 1,494.97 lbs of SO₂ from the Delayed Coker Unit during an avoidable emissions event that began January 31, 2007 and lasted 15 minutes.
- 11 **Effective Date: 06/05/2008** **ADMINORDER 2007-1637-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter D 382.085(b)
 Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 3,160 pounds ("lbs") of volatile organic compounds, 182 lbs of hydrogen sulfide, 21 lbs of the Hazardous Air Pollutant ("HAP") benzene, 124 lbs of the HAP toluene, 54 lbs of the HAP xylene and 224 lbs of the HAP ethylbenzene from Tank 998 in Oil Movements Area 1 during an avoidable emissions event that began May 17, 2007 and lasted 126 hours.
- 12 **Effective Date: 09/22/2008** **ADMINORDER 2006-0875-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter A 382.085(b)
 Rqmt Prov: TCEQ Permit No. 18287 PERMIT
Description: Failed to prevent an avoidable emissions event in the Catalytic Light Ends Unit 3 on February 19, 2006 that lasted 5 minutes and released 9,090 lbs of ethylene.
- 13 **Effective Date: 10/06/2008** **ADMINORDER 2008-0160-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 1,932.7 pounds ("lbs") of volatile organic compounds and 1,556 lbs of sulfur dioxide from the West Loop Flare System during an emissions event that began August 26, 2007 and lasted 41 hours and three minutes.
- Classification: Moderate
 Citation: 30 TAC Chapter 101, SubChapter A 101.20(1)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.105(a)(3)(ii)
 5C THSC Chapter 382 382.085(b)
Description: Failed to comply with a maximum allowable emission rate of 20 parts per million ("ppm") at 0% oxygen ("O₂") for sulfur dioxide ("SO₂"). Specifically, during a reference method stack test conducted on March 27, 2007, it was determined that SO₂ emissions from Boiler 1 (EPN No. LXU2B1) were 96.83 ppm at 0% O₂.
- Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Air Flexible Permit No. 18287, SC#1 PA
Description: failed to prevent unauthorized emissions. Specifically, the Respondent released 237 pounds ("lbs") of carbon monoxide, 199.31 lbs of volatile organic compounds, 40.88 lbs of hydrogen sulfide, 43.5 lbs of nitrogen oxide and 3,759.34 lbs of sulfur dioxide from the Delayed Coker Unit during an avoidable emissions event (Incident No. 98207) that began October 2, 2007 and lasted one hour and 22 minutes.
- 14 **Effective Date: 11/06/2008** **ADMINORDER 2007-0463-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter A 382.085(b)
 Rqmt Prov: Permit No. 18287, Special Cond. No. 1 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, Exxon released 25,336 lbs of heptane, 308 lbs of toluene and 2 lbs of benzene from the Oil Movements Area 2 during an avoidable emissions event that began May 31, 2006 and lasted 15 hours and 50 minutes.
- Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter A 382.085(b)
 Rqmt Prov: TCEQ Permit No. 18287 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, Exxon released 8,005 lbs of carbon monoxide, 209 lbs nitrogen oxide and 68,157 lbs of sulfur dioxide from the Flexicoker and the Sulfur Conversion Unit during an avoidable emissions event that began May 23, 2006 and lasted three hours and 47 minutes.
- Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THC Chapter 382, SubChapter D 382.085(b)
 Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, Exxon released 28,213 pounds ("lbs") of carbon monoxide, 115 lbs of ammonia and 92 lbs of hydrogen cyanide during an avoidable emissions event that began June 16, 2005 and lasted three hours and 34 minutes.

- 15 **Effective Date: 12/04/2008** **ADMINORDER 2008-0641-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 1,035 pounds ("lbs") of volatile organic compounds ("VOC"), 733 lbs of sulfur dioxide ("SO2"), 736 lbs of carbon monoxide ("CO"), 135 lbs of nitrogen oxide ("NOx") and 8 lbs of hydrogen sulfide ("H2S") from Catalytic Light Ends Unit 1 ("CLEU") during an avoidable emissions event that began December 5, 2007 and lasted one hour and 22 minutes.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Air Permit No.18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 2,736 lbs of VOCs, 2,363 lbs of SO2, 6,473 lbs of CO, 198 lbs of NOx and 25 lbs of H2S from Fluid Catalytic Cracking Unit 2 during an avoidable emissions event that began December 17, 2007 and lasted eight hours and two minutes.
 Classification: Minor
 Citation: 30 TAC Chapter 101, SubChapter F 101.201(c)
 5C THSC Chapter 382 382.085(b)
Description: Failed to submit the final report for the emissions event that occurred December 17, 2007 within 14 days after the end of the event.
- 16 **Effective Date: 01/30/2009** **ADMINORDER 2008-0872-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 88,422 lbs of VOCs, 7,319 lbs of CO, 1,705 lbs of H2S, 300 lbs of NOx and 2,178 lbs of SO2 from Hydrocracking Unit 1 during an avoidable emissions event (Incident No. 93064) that began December 14, 2007 and lasted 65 hours and 41 minutes.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Air flexible permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 5,032 pounds ("lbs") of sulfur dioxide ("SO2"), 383 lbs of carbon monoxide ("CO"), 307 lbs of volatile organic compounds ("VOC"), 71 lbs of nitrogen oxide ("NOx") and 55 lbs of hydrogen sulfide ("H2S") from the Delayed Coker Unit during an avoidable emissions event (Incident No. 101349) that began December 14, 2007 and lasted 33 hours and 52 minutes.
- 17 **Effective Date: 02/08/2009** **ADMINORDER 2007-0214-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(a)
 Rqmt Prov: TCEQ Permit No. 18287 PERMIT
Description: Failed to prevent unauthorized emissions.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(a)
 Rqmt Prov: TCEQ Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(a)
 Rqmt Prov: TCEQ Flexible Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions.
- 18 **Effective Date: 07/09/2009** **ADMINORDER 2008-1163-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: TCEQ Flexible Air Permit #18287, SC#1 PA
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 19,492 pounds ("lbs") of sulfur dioxide, 1,764 lbs of carbon monoxide, 1,154 lbs of volatile organic compounds, 324 lbs of nitrogen oxide and 211 lbs of hydrogen sulfide from Booster Station 4 during an avoidable emissions event that began March 8, 2008 and lasted 67 hours and 54 minutes.
- 19 **Effective Date: 07/20/2009** **ADMINORDER 2009-0132-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 8,168 lbs of SO2, 1,529 lbs of VOCs, 394 lbs of CO, 182 lbs of H2S and 75 lbs of NOx from Hydrocracking Unit 1 during an avoidable emissions event that began August 11, 2008 and lasted nine hours and 37 minutes. The root cause of the event was the inadvertent activation of the compressor trip button, resulting in the shutdown of the C-701 relay system.
- 20 **Effective Date: 08/23/2009** **ADMINORDER 2007-1985-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 101, SubChapter A 101.20(1)
 30 TAC Chapter 101, SubChapter A 101.20(2)
 30 TAC Chapter 113, SubChapter C 113.340
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(2)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT CC 63.648(a)
 5C THSC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: 18287/PSD-TX-730M3 PERMIT

Description: Failed to properly seal the ends of four lines associated with Tag Nos.: G833, H415, H944, and H943 which were in VOC and HAP service.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(1)
30 TAC Chapter 101, SubChapter A 101.20(2)
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 113, SubChapter C 113.340
30 TAC Chapter 115, SubChapter D 115.352(4)
30 TAC Chapter 116, SubChapter G 116.715(a)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(1)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT CC 63.648(a)
5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: 18287/PSD-TX-730M3 PERMIT

Description: Failed to equip the end of an open-ended line or valve with a cap, blind flange, plug, or a second valve. Specifically, it was documented that on May 3, 2005, the open-ended valve with Tag Number F010 was not equipped with a plug as required.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: 18287 PERMIT

Description: Failed to prevent unauthorized emissions from pressure relief valve PV368 on July 27, 2004, at Catalytic Light Ends Unit 3 resulting from the failure of pressure Transmitter P368 closing and allowing the process pressure to reach the set limit of PV368.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ PERMIT #18287, SC #1 PERMIT

Description: Failed to prevent unauthorized emissions from the Fluid Catalytic Cracking Unit 3 ("FCCU3") of Plant No. 1 during an emissions event that began on October 14, 2006 and lasted 17 hours and 34 minutes, releasing 1,125 pounds ("lbs") of ammonia, 263,767 lbs of carbon monoxide ("CO"), 900 lbs of hydrogen cyanide, 1,271 lbs of particulate matter ("PM"), and 11,441 lbs of sulfur dioxide ("SO2"). This event was determined to be an excessive emissions event.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: TCEQ Permit No. 18287 PERMIT

Description: Failed to prevent unauthorized emissions from the Fluid Catalytic Cracking Unit 2 ("FCCU2") of Plant No. 1 during an emissions event (incident nos. 77470 and 78472) that began June 16, 2006 and lasted 116 hours, releasing 446,831 lbs of CO, 6,013 lbs of SO2, and 313 lbs of NOx. This event was determined to be an excessive emissions event.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter A 382.085(b)

Rqmt Prov: TCEQ Permit No. 18287 PERMIT

Description: Failed to prevent unauthorized emissions from the Girbotol Unit of Plant No. 1 during an emissions event that began June 24, 2006 and lasted 18 hours and one minute, releasing 159,599 lbs of SO2, 3,293 lbs of hydrogen sulfide ("H2S"), 34 lbs of the Hazardous Air Pollutant ("HAP") carbon disulfide, 275 lbs of the HAP carbonyl sulfide ("COS") and 331 lbs of nitrogen oxide ("NOx"). This event was determined to be an excessive emissions event.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: 18287 SC 1 PERMIT

Description: Failed to prevent unauthorized emissions from the Fluid Catalytic Cracking Unit ("FCCU3") of Plant No. 1 during an avoidable emissions event that began November 1, 2006 and lasted 25 hours and 36 minutes, releasing 40,681 lbs of CO, 123 lbs of ammonia, 99 lbs of hydrogen cyanide, 24 lbs of NOx, 44 lbs of PM, and 685 lbs of SO2.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287 PA

Description: Failed to prevent unauthorized emissions from the FCCU2 of Plant No. 1 during an emissions event that began June 12, 2006 and lasted 87 hours, releasing 98,121 lbs of CO.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Flexible Air Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions from Hydrocracking Unit of Plant No. 1 during an emissions event that began August 4, 2006 and lasted 43 hours, releasing 29,876 lbs of SO2, 1,121 lbs of VOCs, 1,118 lbs of CO, 423 lbs of propane, 325 lbs of H2S, 293 lbs of N-butane, 261 lbs of isobutane, 206 lbs of NOx, 33 lbs of propylene, 21 lbs of butene, 9 lbs ethylene and 1 lb of 1,3-butadiene.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit No. 18287 PERMIT

Description: Failed to prevent unauthorized emissions from FCCU3 of Plant No. 1 during an emissions event that began November 20, 2006 and lasted 48 hours and 24 minutes, releasing 197,548 lbs of CO, 226 lbs of ammonia and 285 lbs of hydrogen cyanide. This event was determined to be an excessive emissions event.

Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(a)(1)(B)
5C THC Chapter 382, SubChapter D 382.085(b)

Description: Failed to submit the initial notification for the August 4, 2006 emissions event in timely manner. Specifically, the report which was due on August 5, 2006, was not submitted until August 6, 2006.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions from Power Plant 4 and Substation 29 of Plant No. 1 during an avoidable emissions event that began on October 5, 2006 and lasted 8 hours and 48 minutes, releasing 6,686.3 lbs of CO, 28.21 lbs of H2S, 431.2 lbs of NOx, 2,592 lbs of SO2, 8 lbs of the HAP COS, and 3,201 lbs of volatile organic compounds ("VOC") including 7 lbs of the Highly Reactive VOC ("HRVOC") propylene.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions from Booster Station 4 of Plant No. 1 during an avoidable emissions event that began on January 17, 2007 and lasted 27 hours and 11 minutes, releasing 23,812 lbs of SO2, 4,509 lbs of CO, 258 lbs of H2S, 829 lbs of NOx, and 1,291 lbs of VOC.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ AIR FLEXIBLE PERMIT #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions from Booster Station 4 of Plant No. 1 during an avoidable emissions event that began February 21, 2007 and lasted 25 hours and 8 minutes, releasing 18,786 lbs of SO2, 2,757.1 lbs of CO, 706.88 lbs of VOC, 506.7 lbs of NOx and 203.76 lbs of H2S.

Classification: Moderate

Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(1)(B)
30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: No. 18287, Special Condition #1 PERMIT

Description: Failed to prevent unauthorized emissions from Booster Station 4, Pipestill 7, and the Flexicoker Unit of Plant No. 1 during an avoidable emissions event that began January 24, 2007 and lasted 25 hours, releasing 130.04 lbs of H2S, 12,042.08 lbs of SO2, 1,538 lbs of VOC, 3,320.03 lbs of CO, 216.01 lbs of NOx and 4 lbs sulfur, and resulting in 100% opacity averaged over a six minute period.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: No. 18287, Special Condition 1 PERMIT

Description: Failed to prevent unauthorized emissions from the Flexicoker Unit of Plant No. 1 during an avoidable emissions event that began February 24, 2007 and lasted 9 hours and 11 minutes, releasing 10.89 lbs of n-butane, 19.53 lbs of butene, 9.01 lbs of ethylene, 4.67 lbs of isobutane, 28.34 lbs of propane, 18.03 lbs of propylene, 161.76 lbs of VOCs, 22.25 lbs of H2S, 2,859.05 lbs of SO2, 7806.09 lbs of CO, 192.5 lbs of NOx, and 15.43 lbs of sulfur.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions from the Flexicoker Unit, the Catalytic Light End Unit 3, the West Loop Flare System and the Flues North Flare System of Plant No. 1 during an avoidable emissions event that began April 27, 2007 and lasted 5 hours and 30 minutes, releasing 2,491.4 lbs of SO2, 1,102 lbs of CO, 26.83 lbs of H2S, 0.79 lbs of sulfur, 106.2 lbs of NOx, 2,282.3 lbs of VOC, and 1,560 lbs, 7.2 lbs, and 2.3 lbs of the HRVOCs ethylene, propylene, and 1-butene + isobutylene.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: Special Condition 1 PERMIT

Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 3,328 pounds ("lbs") of volatile organic compounds, 89 lbs of ammonia and the following Hazardous Air Pollutants ("HAPs"): 442.1 lbs of benzene, 23 lbs of cumene, 71 lbs of ethylbenzene, 24 lbs of methyl ethyl ketone, 16 lbs of methyl isobutyl ketone, 192 lbs of naphthalene, 712 lbs of phenol, 796 lbs of toluene and 106 lbs of xylene from the Wastewater Treatment Plant during an avoidable emissions event

21 **Effective Date: 09/21/2009**

ADMINORDER 2009-0073-AIR-E

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions. Specifically, The Respondent released 129,997 lbs of CO, 17,270 lbs of SO2, 3,020 lbs of NOx, 150 lbs of hydrogen cyanide, 381 lbs of ammonia, 803 lbs of particulate matter and resulted in 50% opacity from Fluid Catalytic Cracking Unit 3 (FCUU3) during an avoidable emissions event that began April 22, 2008 and lasted 29 hrs and 19 min. The unauthorized emissions were the result of an operator inadvertently closing the fuel gas valve to C-Boiler on FCCU3.

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: TCEQ Air Flexible Permit #18287, SC#1 PA

Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 28,105.8 lbs of VOCs, 6,824 lbs of SO2, 2,720 lbs of CO, 351.8 lbs of NOx, 75.9 lbs of H2S and 3,653 lbs of the HRVOC ethylene from the Utilities Control Center during an avoidable emissions event that began April 29, 2008 and lasted four hours and four minutes. The unauthorized emissions were the result of a third party contractor inadvertently piercing a live underground power cable by driving a piece of steel rib.

22 **Effective Date: 10/18/2009**

ADMINORDER 2008-1727-AIR-E

- 23 **Effective Date: 03/08/2010** **ADMINORDER 2009-1080-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 4,481 pounds ("lbs") of volatile organic compounds, 1,834 lbs of sulfur dioxide, 1,091 lbs of carbon monoxide ("CO"), 146 lbs of nitrogen oxide ("NOx"), 45 lbs of hydrogen sulfide ("H2S"), 2 lbs of ammonia ("NH3") and 1 lb of hydrogen cyanide ("HCN") from Fluid Catalytic Cracking Unit 3 ("FCCU3") during an avoidable emissions event that began January 26, 2009 and lasted 37 hours and 37 minutes.
 Classification: Moderate
 Citation: 30 TAC Chapter 101, SubChapter A 101.4
 30 TAC Chapter 112, SubChapter B 112.31
 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions and nuisance conditions. Specifically, the Respondent released 15,504 lbs of VOC and 1,918 lbs of H2S from Hydrocracking Unit 1 ("HCU1") during an avoidable emissions event (Incident No. 120401) that began February 21, 2009 and lasted three hours and 28 minutes. The event was the result of a valve that began leaking during the planned start-up of HCU1. The emissions event also resulted in nuisance conditions that were confirmed during a subsequent investigation.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(a)
 Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 34,509 lbs of CO, 247 lbs of NOx, 186 lbs of SO2, 121 lbs of NH3, 92 lbs of particulate matter and 49 lbs of HCN from FCCU3 during an avoidable emissions event that began March 6, 2009 and lasted two hours and 43minutes. The event was the result of a technician inadvertently closing a block valve, realizing the error and quickly opening the valve back up.
- 24 **Effective Date: 04/11/2010** **ADMINORDER 2009-1221-IHW-E**
 Classification: Minor
 Citation: 30 TAC Chapter 335, SubChapter A 335.2(a)
Description: Failed to prevent the shipment of industrial hazardous waste to an unauthorized facility, as documented during an investigation conducted on March 20, 2009. Specifically, the Respondent shipped five 55-gallon containers of RCRA listed (K049) and characteristically hazardous waste (Benzene D018) to a nonhazardous waste landfill on December 17, 2008.
- 25 **Effective Date: 04/25/2010** **ADMINORDER 2009-1677-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Permit Nos. 18287 and PSD-TX-730M4/PAL ORDER
Description: Failed to prevent unauthorized emissions.
- 26 **Effective Date: 06/04/2010** **ADMINORDER 2009-1539-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 117, SubChapter B 117.310(c)(1)(A)
 5C THSC Chapter 382 382.085(b)
Description: Failed to limit carbon monoxide concentrations to 400 parts per million by volume at 3% oxygen (3.0 grains per horsepower hour) for unit id nos. LXU1B5, FCCU3F103, FXKWHB301, HF3F2, HF4F402, HF4F403 and SEP12ICE12 on seven occasions during the November 22, 2007 through November 21, 2008 reporting period.
 Classification: Moderate
 Citation: 30 TAC Chapter 115, SubChapter H 115.725(a)
 30 TAC Chapter 116, SubChapter G 116.715(a)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1A OP
 Special Condition 30 OP
 Special Condition 32 PA
Description: Failed to conduct stack testing. Specifically, Furnace FCCU3F103 was down during the initial stack testing period and was not tested. The furnace ran intermittently for a total of approximately 5,769 hours from February 1, 2006 through July 25, 2008.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 8,238 pounds ("lbs") of volatile organic compounds, 4,345 lbs of carbon monoxide, 3,978 lbs of sulfur dioxide, 824 lbs of hydrogen sulfide and 233 lbs of nitrogen oxide from the Hydrocracking and Flexicoker ("FXK") Units during an avoidable emissions event that began April 24, 2009 and lasted seven hours and nine minutes. The event was the result of a drop in reactor feed steam atomization pressure in the FXK Unit.
- 27 **Effective Date: 08/30/2010** **ADMINORDER 2010-0007-AIR-E**
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1 PERMIT
Description: Failure to prevent unauthorized emissions; specifically the failures of the cooling water circulation pumps could have been prevented by proper maintenance practices for the air filters for the pump motors.
 Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Rqmt Prov: Special Condition 1 PERMIT
Description: The RE failed to protect the DL-50 pipeline from overpressure due to thermal expansion.

- Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: SPECIAL CONDITION 1 OP
Description: ExxonMobil failed to properly maintain Compressor C-701 which resulted in unauthorized emissions.
- 28 **Effective Date: 10/25/2010 ADMINORDER 2010-0448-AIR-E**
Classification: Moderate
Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to comply with permitted emissions limits.
- 29 **Effective Date: 02/05/2011 ADMINORDER 2009-1848-IHW-E**
Classification: Moderate
Citation: 30 TAC Chapter 335, SubChapter A 335.2(a)
Rqmt Prov: Permit No. 50111, Provision, II.C.1. PERMIT
Permit No. 50111, Provision, II.C.2. PERMIT
V.D.1 PERMIT
V.D.3 PERMIT
Description: Failed to prevent hazardous from entering surface impoundments. Specifically, on four occasions, wastewater containing more than a 0.5 milligrams per liter of benzene was allowed to flow into the Wastewater Oxidation Unit, the Upper Outfall Canal and the Old Aeration Pond.
Classification: Moderate
Citation: 40 CFR Chapter 266, SubChapter I, PT 266, SubPT O 268.1(a)
40 CFR Chapter 268, SubChapter I, PT 268, SubPT D 268.40(a)
Rqmt Prov: II.B. PERMIT
Description: Land Disposal Restrictions
- 30 **Effective Date: 03/19/2011 ADMINORDER 2009-1944-AIR-E**
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 268,879 pounds ("lbs") of carbon monoxide ("CO"), 1,928 lbs of nitrogen oxide ("NOx"), 943 lbs of ammonia ("NH3"), 667 lbs of sulfur dioxide ("SO2") and 384 lbs of hydrogen cyanide ("HCN") from Fluid Catalytic Cracking Unit 3 ("FCCU3") during an avoidable emissions event (Incident No. 118545) that began January 7, 2009 and lasted 34 hours. Forced-Draft Fan 510 ("FD-510") and Boiler A were shut down for maintenance.
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: SPECIAL CONDITION 1 OP
Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 61,369 lbs of CO, 3,978 lbs of SO2, 503 lb of particulate matter, 216 lbs of NH3, 88 lbs of HCN and 15 lbs of NOx from Fluid Catalytic Cracking Unit 3 ("FCCU3") during an avoidable emissions event (Incident No. 123975) that began May 4, 2009 and lasted 32 hours and 24 minutes. FD-510 was shut down for maintenance. The air flow in FD-520 was increased so Boiler A would not shut down. due a broken mechanical linkage.
Classification: Moderate
Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions.
- 31 **Effective Date: 04/18/2011 ADMINORDER 2010-0656-AIR-E**
Classification: Moderate
Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: PSD-TX-730M4/PAL, Special Condition 1 PERMIT
Special Condition 1 PERMIT
Description: Failed to prevent unauthorized emissions during Incident No. 132322. Since the emissions event could have been avoided through better operational and/or maintenance practices, the demonstrations in 30 TEX. ADMIN. CODE § 101.222 necessary to present an affirmative defense were not met.
Classification: Moderate
Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: PSD-TX-730M4/PAL PERMIT
SPECIAL CONDITION 1 OP
Description: Failed to prevent unauthorized emissions during Incident No. 134509. Since the emissions event could have been avoided through better operational and/or maintenance practices, the demonstrations in 30 TEX. ADMIN. CODE § 101.222 necessary to present an affirmative defense were not met.

- B. Any criminal convictions of the state of Texas and the federal government.
N/A
- C. Chronic excessive emissions events.
N/A

D. The approval dates of investigations. (CCEDS Inv. Track. No.)

1	12/21/2006	(393692)	77	05/16/2007	(558902)	153	12/04/2007	(599936)
2	06/16/2008	(398344)	78	06/27/2007	(559236)	154	01/02/2008	(600208)
3	06/15/2008	(433577)	79	06/27/2007	(559573)	155	01/07/2008	(600287)
4	05/13/2008	(439155)	80	06/27/2007	(559574)	156	01/07/2008	(600300)
5	02/09/2007	(440421)	81	06/15/2007	(560235)	157	01/08/2008	(600322)
6	02/09/2007	(449579)	82	05/30/2007	(560387)	158	01/07/2008	(600335)
7	03/08/2007	(449583)	83	08/10/2007	(560522)	159	01/08/2008	(600360)
8	01/29/2007	(449587)	84	07/16/2007	(561456)	160	01/08/2008	(600399)
9	05/09/2007	(457383)	85	06/15/2007	(561789)	161	01/10/2008	(600962)
10	02/15/2007	(457902)	86	05/31/2007	(561882)	162	08/14/2007	(607564)
11	02/05/2007	(457903)	87	07/06/2007	(562588)	163	09/07/2007	(607565)
12	02/02/2007	(462413)	88	06/05/2007	(562903)	164	10/12/2007	(607566)
13	01/12/2007	(481287)	89	07/30/2007	(563075)	165	11/20/2007	(608861)
14	02/28/2007	(481875)	90	08/10/2007	(563117)	166	01/18/2008	(609246)
15	02/09/2007	(484815)	91	06/27/2007	(563272)	167	03/09/2008	(609542)
16	03/23/2007	(489664)	92	08/13/2007	(563757)	168	01/04/2008	(610570)
17	05/08/2007	(489678)	93	10/02/2007	(563996)	169	02/08/2008	(611547)
18	03/23/2007	(490037)	94	10/02/2007	(564053)	170	03/05/2008	(611632)
19	05/17/2007	(490200)	95	10/02/2007	(564057)	171	12/17/2007	(611653)
20	04/04/2007	(511045)	96	08/03/2007	(564720)	172	02/15/2008	(612403)
21	02/27/2007	(515654)	97	10/02/2007	(564825)	173	12/27/2007	(612579)
22	01/31/2007	(517160)	98	09/28/2007	(564900)	174	02/15/2008	(612684)
23	12/23/2010	(518329)	99	07/05/2007	(564964)	175	01/18/2008	(612843)
24	12/13/2006	(519183)	100	09/28/2007	(565019)	176	04/04/2008	(613406)
25	03/18/2009	(519302)	101	09/28/2007	(565214)	177	01/07/2008	(613467)
26	07/22/2008	(531928)	102	10/04/2007	(565775)	178	04/25/2008	(613756)
27	01/29/2007	(532949)	103	10/02/2007	(566406)	179	02/13/2008	(613846)
28	01/08/2007	(533556)	104	10/11/2007	(566557)	180	05/08/2008	(613978)
29	03/27/2007	(534342)	105	10/10/2007	(566719)	181	02/07/2008	(614032)
30	01/11/2007	(534949)	106	10/10/2007	(567038)	182	01/18/2008	(614380)
31	05/09/2007	(535078)	107	07/10/2007	(567169)	183	01/18/2008	(615193)
32	05/08/2007	(535299)	108	07/23/2007	(568005)	184	01/28/2008	(616174)
33	05/08/2007	(535352)	109	08/22/2007	(568350)	185	01/30/2008	(616222)
34	05/04/2007	(535563)	110	11/27/2007	(568601)	186	03/07/2008	(616312)
35	05/09/2007	(535565)	111	11/19/2007	(569267)	187	02/27/2008	(617012)
36	02/15/2007	(535801)	112	09/19/2007	(570275)	188	02/28/2008	(617220)
37	03/30/2007	(535817)	113	09/20/2007	(570276)	189	11/24/2008	(617767)
38	04/12/2007	(535873)	114	09/19/2007	(570278)	190	11/24/2008	(617773)
39	01/09/2007	(535937)	115	08/06/2007	(570695)	191	10/17/2008	(617775)
40	04/05/2007	(536574)	116	08/24/2007	(570712)	192	11/09/2007	(619552)
41	01/23/2007	(536577)	117	08/09/2007	(571423)	193	12/18/2007	(619553)
42	05/11/2007	(536591)	118	10/25/2007	(571458)	194	01/11/2008	(619554)
43	04/20/2007	(536593)	119	10/12/2007	(572311)	195	04/02/2008	(637836)
44	04/24/2007	(536941)	120	09/19/2007	(572771)	196	04/04/2008	(638369)
45	04/19/2007	(537203)	121	08/29/2007	(572924)	197	03/14/2008	(639154)
46	04/24/2007	(537438)	122	10/25/2007	(572951)	198	03/21/2008	(639445)
47	04/19/2007	(538065)	123	10/25/2007	(573665)	199	03/24/2008	(639458)
48	01/31/2007	(538653)	124	11/02/2007	(573789)	200	04/17/2008	(646246)
49	05/31/2007	(538802)	125	10/03/2007	(574482)	201	05/07/2008	(646555)
50	02/06/2007	(539165)	126	03/14/2007	(575447)	202	04/24/2008	(653934)
51	02/08/2007	(539319)	127	04/05/2007	(575448)	203	04/30/2008	(654258)
52	04/20/2007	(539663)	128	05/16/2007	(575449)	204	04/30/2008	(654677)
53	05/16/2007	(539675)	129	06/11/2007	(575450)	205	05/04/2009	(657157)
54	05/01/2007	(539681)	130	07/20/2007	(575451)	206	05/22/2008	(670825)
55	05/31/2007	(540430)	131	09/07/2007	(593545)	207	05/19/2008	(670962)
56	03/26/2007	(541019)	132	09/26/2007	(593611)	208	06/27/2008	(671720)
57	05/08/2007	(541040)	133	12/07/2007	(593717)	209	02/08/2008	(672076)
58	03/26/2007	(541089)	134	12/12/2007	(593931)	210	03/10/2008	(672077)
59	03/26/2007	(541133)	135	11/19/2007	(593935)	211	04/09/2008	(672078)
60	03/30/2007	(541407)	136	12/07/2007	(594582)	212	05/27/2008	(679941)
61	07/11/2007	(541738)	137	10/01/2007	(595471)	213	06/19/2008	(683121)
62	04/30/2007	(542577)	138	05/01/2008	(595539)	214	06/17/2008	(683333)
63	04/05/2007	(543125)	139	10/19/2007	(596209)	215	06/26/2008	(683668)
64	08/29/2007	(543365)	140	11/08/2007	(597351)	216	07/28/2008	(684325)
65	07/11/2007	(543749)	141	10/16/2007	(597893)	217	08/07/2008	(684566)
66	02/07/2007	(544604)	142	11/02/2007	(598325)	218	10/30/2008	(685194)
67	01/11/2007	(544607)	143	11/02/2007	(598327)	219	07/22/2008	(685958)
68	05/03/2007	(554208)	144	05/09/2008	(598614)	220	07/18/2008	(686470)
69	08/09/2007	(554535)	145	01/02/2008	(598999)	221	11/03/2008	(686921)
70	06/08/2007	(554582)	146	12/20/2007	(599324)	222	10/29/2008	(687171)
71	02/04/2008	(554662)	147	12/20/2007	(599344)	223	10/16/2008	(687747)
72	03/28/2007	(555118)	148	12/21/2007	(599347)	224	05/22/2008	(690005)
73	07/03/2007	(555858)	149	12/20/2007	(599350)	225	06/16/2008	(690006)
74	04/27/2007	(556005)	150	12/21/2007	(599624)	226	06/16/2008	(690007)
75	04/20/2007	(556917)	151	12/20/2007	(599754)	227	09/24/2008	(701775)
76	05/08/2007	(558748)	152	01/02/2008	(599796)	228	10/31/2008	(703451)

229	11/21/2008	(706342)	309	09/23/2009	(776026)	389	10/08/2010	(844235)
230	10/27/2008	(706457)	310	09/28/2009	(777658)	390	09/16/2010	(844348)
231	11/21/2008	(706700)	311	11/20/2009	(778957)	391	05/20/2010	(845062)
232	11/10/2008	(706764)	312	11/30/2009	(778969)	392	06/21/2010	(846282)
233	01/09/2009	(709484)	313	11/23/2009	(779134)	393	12/09/2010	(864848)
234	12/22/2008	(709485)	314	01/12/2010	(779500)	394	10/01/2010	(865017)
235	07/15/2008	(710781)	315	10/26/2009	(779952)	395	10/12/2010	(865018)
236	08/18/2008	(710782)	316	01/08/2010	(780134)	396	09/22/2010	(865058)
237	09/23/2008	(710783)	317	11/03/2009	(780703)	397	09/30/2010	(865475)
238	08/20/2009	(721130)	318	11/24/2009	(780766)	398	11/05/2010	(865725)
239	01/15/2009	(721346)	319	01/07/2010	(781548)	399	11/09/2010	(866449)
240	02/02/2009	(723307)	320	01/28/2010	(781960)	400	07/26/2010	(866844)
241	01/26/2009	(724624)	321	11/12/2009	(782073)	401	08/18/2010	(866845)
242	05/13/2009	(725716)	322	12/02/2009	(783517)	402	10/26/2010	(871954)
243	08/21/2009	(726876)	323	02/25/2010	(785566)	403	12/01/2010	(872052)
244	02/12/2009	(726982)	324	04/15/2010	(786630)	404	11/05/2010	(872366)
245	10/20/2008	(727520)	325	04/15/2010	(789325)	405	09/20/2010	(873915)
246	12/15/2008	(727521)	326	03/19/2010	(789337)	406	02/02/2011	(877369)
247	04/22/2009	(735601)	327	06/18/2010	(789340)	407	02/03/2011	(877372)
248	04/29/2009	(737394)	328	04/29/2010	(789472)	408	01/04/2011	(877576)
249	07/15/2009	(738281)	329	02/24/2010	(790315)	409	01/27/2011	(878096)
250	04/30/2009	(739819)	330	03/01/2010	(792396)	410	02/28/2011	(878104)
251	04/14/2009	(740493)	331	07/09/2010	(792915)	411	02/28/2011	(878106)
252	04/09/2009	(740917)	332	03/16/2010	(792951)	412	12/07/2010	(879081)
253	08/06/2009	(741015)	333	03/04/2010	(793709)	413	12/17/2010	(880706)
254	05/04/2009	(741500)	334	08/30/2010	(794033)	414	02/01/2011	(881333)
255	04/17/2009	(741980)	335	04/08/2010	(794329)	415	12/01/2010	(881516)
256	08/06/2009	(741982)	336	04/08/2010	(794397)	416	02/25/2011	(881959)
257	07/01/2009	(742028)	337	04/08/2010	(794410)	417	12/14/2010	(884388)
258	05/05/2009	(743062)	338	04/15/2010	(794475)	418	01/10/2011	(885142)
259	05/05/2009	(743063)	339	05/11/2010	(794560)	419	02/16/2011	(885163)
260	04/21/2009	(743215)	340	04/19/2010	(794953)	420	02/25/2011	(885846)
261	06/04/2009	(743832)	341	05/07/2010	(795545)	421	01/03/2011	(886787)
262	07/24/2009	(743966)	342	04/15/2010	(795834)	422	02/14/2011	(887849)
263	05/14/2009	(744009)	343	03/22/2010	(795883)	423	12/28/2010	(888043)
264	06/23/2009	(744062)	344	03/24/2010	(796134)	424	01/28/2011	(891106)
265	06/23/2009	(744174)	345	04/26/2010	(796939)	425	01/28/2011	(891236)
266	06/23/2009	(744178)	346	04/12/2010	(797291)	426	01/28/2011	(891261)
267	06/23/2009	(744302)	347	03/31/2010	(797498)	427	02/14/2011	(891351)
268	06/23/2009	(744317)	348	06/25/2010	(797576)	428	02/14/2011	(891352)
269	06/23/2009	(744320)	349	04/27/2010	(798192)	429	02/14/2011	(891354)
270	06/23/2009	(744323)	350	05/03/2010	(798417)	430	02/14/2011	(891355)
271	06/23/2009	(744406)	351	06/23/2010	(799407)	431	02/14/2011	(891356)
272	07/17/2009	(745541)	352	06/25/2010	(799411)	432	02/01/2011	(891416)
273	07/01/2009	(746149)	353	05/07/2010	(801526)	433	01/31/2011	(891464)
274	09/02/2009	(746806)	354	05/10/2010	(801638)	434	01/31/2011	(891471)
275	07/27/2009	(747598)	355	07/08/2010	(801848)	435	01/28/2011	(891482)
276	07/17/2009	(749850)	356	05/12/2010	(802094)	436	01/31/2011	(891488)
277	02/17/2009	(750309)	357	05/26/2010	(802425)	437	01/28/2011	(891500)
278	03/19/2009	(750310)	358	05/26/2010	(802523)	438	01/24/2011	(891540)
279	01/26/2009	(750311)	359	05/28/2010	(803297)	439	01/24/2011	(891741)
280	05/12/2010	(759117)	360	05/28/2010	(803299)	440	01/24/2011	(891844)
281	10/05/2009	(759724)	361	06/29/2010	(803791)	441	01/27/2011	(891875)
282	08/10/2009	(759843)	362	02/12/2010	(804766)	442	02/07/2011	(893263)
283	09/28/2009	(760729)	363	05/19/2009	(804767)	443	02/07/2011	(893293)
284	09/28/2009	(760745)	364	06/12/2009	(804768)	444	02/07/2011	(893326)
285	09/28/2009	(760771)	365	07/20/2009	(804769)	445	12/20/2010	(896256)
286	08/05/2009	(760783)	366	08/14/2009	(804770)	446	02/22/2011	(899461)
287	09/28/2009	(761072)	367	09/14/2009	(804771)	447	03/25/2011	(900050)
288	09/29/2009	(761132)	368	10/19/2009	(804772)	448	04/12/2011	(900174)
289	11/18/2009	(761133)	369	11/16/2009	(804773)	449	03/01/2011	(900860)
290	07/30/2009	(763678)	370	12/15/2009	(804774)	450	01/18/2011	(902319)
291	08/10/2009	(763817)	371	01/15/2009	(804775)	451	03/25/2011	(905142)
292	08/11/2009	(763878)	372	06/22/2010	(825040)	452	04/06/2011	(906078)
293	08/03/2009	(764251)	373	06/18/2010	(825258)	453	03/17/2011	(906115)
294	08/10/2009	(764911)	374	06/16/2010	(825587)	454	04/05/2011	(907025)
295	10/30/2009	(764922)	375	06/16/2010	(826290)	455	04/12/2011	(908848)
296	08/20/2009	(766551)	376	06/28/2010	(826639)	456	02/11/2011	(909099)
297	09/15/2009	(766566)	377	07/28/2010	(827049)	457	05/13/2011	(912465)
298	10/30/2009	(766755)	378	09/01/2010	(827143)	458	04/19/2011	(913522)
299	01/08/2010	(766984)	379	07/23/2010	(828896)	459	06/08/2011	(914765)
300	02/18/2010	(766985)	380	09/20/2010	(828897)	460	05/13/2011	(915118)
301	12/18/2009	(766987)	381	07/09/2010	(829466)	461	05/06/2011	(915517)
302	09/02/2009	(767216)	382	07/09/2010	(829474)	462	03/16/2011	(916356)
303	09/02/2009	(767239)	383	03/18/2010	(830924)	463	05/17/2011	(919698)
304	11/17/2009	(767497)	384	04/16/2010	(830925)	464	05/17/2011	(920778)
305	11/13/2009	(767499)	385	10/15/2010	(842022)	465	06/10/2011	(921135)
306	09/15/2009	(767619)	386	09/15/2010	(842776)	466	06/24/2011	(921136)
307	04/20/2009	(768398)	387	09/01/2010	(843545)	467	06/22/2011	(921491)
308	12/08/2009	(775293)	388	10/15/2010	(844127)	468	08/01/2011	(922514)

469	07/12/2011	(923929)	479	08/19/2011	(943776)	489	07/15/2011	(952637)
470	07/12/2011	(923975)	480	10/10/2011	(944373)	490	11/18/2011	(955544)
471	07/15/2011	(924334)	481	06/17/2011	(945409)	491	10/12/2011	(956410)
472	04/21/2011	(924829)	482	09/19/2011	(949097)	492	11/15/2011	(956539)
473	07/25/2011	(932932)	483	10/07/2011	(949101)	493	11/18/2011	(957228)
474	07/18/2011	(936107)	484	09/21/2011	(949815)	494	11/15/2011	(957278)
475	08/05/2011	(937789)	485	11/21/2011	(950913)	495	08/19/2011	(959319)
476	04/13/2011	(938041)	486	11/09/2011	(950935)	496	10/11/2011	(962097)
477	07/25/2011	(940997)	487	10/19/2011	(952007)	497	09/14/2011	(965352)
478	07/25/2011	(941001)	488	10/12/2011	(952323)	498	10/17/2011	(971392)

E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)

1. Date: 12/13/2006(519183)
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 101, SubChapter F 101.223(a)(1)
5C THC Chapter 382, SubChapter D 382.085(b)
Description: Exxon failed to submit a CAP in a timely manner.
2. Date: 01/08/2007(533556)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)
TCEQ Flexible Air Permit #18287, SC#1 PA
Description: failure to prevent a power source interruption of all three power suppliers due to bad transfer switches.
3. Date: 01/29/2007(532949)CN600123939
Self Report? NO Classification: Minor
Citation: 00592-000 PERMIT
30 TAC Chapter 305, SubChapter F 305.125(1)
Description: Failure to comply with Other Requirements No. 3 of TPDES Permit No. 00592-000.
Self Report? NO Classification: Moderate
Citation: 00592-000 PERMIT
30 TAC Chapter 305, SubChapter F 305.125(5)
Description: Failure to properly operate and maintain the tricking filter.
Self Report? NO Classification: Minor
Citation: 00592-000 PERMIT
30 TAC Chapter 319, SubChapter A 319.11(b)
Description: Failure to document the time of pH analyses for Outfalls 102 and 002, therefore, the pH holding time could not be determined.
Self Report? NO Classification: Moderate
Citation: 00592-000 PERMIT
30 TAC Chapter 305, SubChapter F 305.125(1)
Description: Failure to properly collect the 24-hour acute marine bioassay for Outfall 002.
Self Report? NO Classification: Minor
Citation: 00592-000 PERMIT
30 TAC Chapter 319, SubChapter A 319.7(a)
Description: Failure to properly record the time of sample collection, as required.
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 319, SubChapter A 319.7(c)
Description: Failure to properly complete the 10/06 discharge monitoring report (DMR).
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 319, SubChapter A 319.11(a)
30 TAC Chapter 319, SubChapter A 319.11(b)
Description: Failure to properly collect the oil & grease, phenolic compounds, and polynuclear aromatic hydrocarbon grab samples.
Self Report? NO Classification: Moderate
Citation: 00592-000 PERMIT
30 TAC Chapter 305, SubChapter F 305.125(4)
30 TAC Chapter 305, SubChapter F 305.125(5)
TWC Chapter 26 26.121
TWC Chapter 26 26.121(a)
TWC Chapter 26 26.121(a)(1)
TWC Chapter 26 26.121(a)(2)
TWC Chapter 26 26.121(a)(3)
TWC Chapter 26 26.121(b)
TWC Chapter 26 26.121(c)
TWC Chapter 26 26.121(d)
TWC Chapter 26 26.121(e)
Description: Failure to prevent the unauthorized discharge of domestic sewage.
4. Date: 02/13/2007(539319)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THC Chapter 382, SubChapter D 382.085(b)
TCEQ AIR FLEXIBLE PERMIT #18287, SC#1 PA
Description: ExxonMobil failed to accurately set the operating envelope set point for safety valve H0889.
5. Date: 04/04/2007(511045)
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
No. 18287/Special Condition No. 45E. PERMIT
Description: The report was received in the Region 12 Office on May 9, 2006, which is 119 days after the January 10th test. Permit No. 18287, Special Condition No. 45E requires the stack test report be submitted within 90 days of the test. This report will be documented as a Notice of Violation issued and resolved.

6. Date: 05/01/2007(539681)
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(2)
 5C THC Chapter 382, SubChapter A 382.085(b)
 No.18287/PSD-TX-703 SC 1 PA
 No.18287/PSD-TX-703 SC14B PA
Description: Failed to maintain the pilot flame on all flares.
7. Date: 05/01/2008(595539)
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.104(a)(1)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 14 OP
 FOP O-01229, ST&C 1A OP
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 36A PERMIT
Description: Failure to comply with the 160 ppm H2S in fuel gas limit.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.104(a)(2)(i)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
 Permit 18287, Special Condition 24 PERMIT
Description: Failure to comply with 20 PPM SO2 limit on the SCU F-529 furnace.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 115, SubChapter D 115.352(4)
 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(1)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.648(a)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.167(a)(1)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 34E PERMIT
Description: Failure to cap or plug 148 open-ended valves/lines.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT GGG 60.592(a)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-7(a)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.648(a)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 34F PERMIT
Description: Failure to include 47 valves in the LDAR Program.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.487(c)(3)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
Description: Submittal of an incomplete Semi-Annual Equipment Leaks Report.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 11C PERMIT
Description: Operating a Safety Valve without a Rupture Disc.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 11A PERMIT
Description: Failure to prevent VOC emissions from Safety Valves.
- Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT UUU 63.1565(a)(1)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
 FOP O-01229, ST&C 1F OP
Description: Failure to comply with the 500 PPM CO limit of 40 CFR 60, Subpart UUU.
- Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 117, SubChapter B 117.206(e)(1)(A)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 11A OP
 FOP O-01229, ST&C 1A OP
Description: Failure to comply with the 400 PPM CO limit of 30 TAC 117.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 3 PERMIT
Description: Failure to comply with NOx limits.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter H 101.359(a)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
Description: Failure to include NOX Sources in the NOX-MECT program.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 106, SubChapter K 106.262(a)(3)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 30 OP
Description: Failure to register trace H2S emissions.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 117, SubChapter B 117.219(b)(1)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
Description: Failure to submit a stack test notification 15 days prior to testing.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2)(A)
 30 TAC Chapter 116, SubChapter B 116.115(b)(2)(B)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
Description: Failure to submit a Construction Progress Report and Start-Up Notification Report within the required timeframes.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.4(a)
 40 CFR Part 60, Subpart QQQ 60.698(b)(1)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 16 OP
 FOP O-01229, ST&C 1A OP
Description: Failure to submit a copy of the NSPS QQQ Semi-Annual Report to EPA Region 6.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 18D PERMIT
Description: Failure to submit the Tank 0347 Seal Inspection Report within the required timeframe.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT G 63.152(c)(2)(ii)(C)(1)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
Description: Failure to include all SSM events in the Periodic Report dated February 28, 2006.
 Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.132(e)(2)(A)
 30 TAC Chapter 122, SubChapter B 122.132(e)(3)
 40 CFR Chapter 61, SubChapter C, PT 61, SubPT FF 61.340(a)
 5C THSC Chapter 382 382.085(b)
Description: Failure to assign Title V & 40 CFR 61, Subpart FF applicability to equipment in wastewater service.
 Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)
 5C THSC Chapter 382 382.085(b)
 FOP O-01229, ST&C 1A OP
 FOP O-01229, ST&C 30 OP
 Permit 18287, Special Condition 11A PERMIT
Description: Failure to operate flares with a net heating value of 300Btu/scf.
 Self Report? NO Classification: Minor

- Citation: 30 TAC Chapter 106, SubChapter K 106.261(a)(7)(B)
30 TAC Chapter 106, SubChapter K 106.262(a)(3)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
FOP O-01229, ST&C 30 OP
- Description: Failure to submit two PI-7 forms.
- Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(2)
5C THSC Chapter 382 382.085(b)
FOP O-01229, ST&C 1A OP
FOP O-01229, ST&C 30 OP
Permit 18287, Special Condition 11B PERMIT
- Description: Failure to operate flares with a lit pilot light.
- Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 115, SubChapter H 115.725(d)(1)(C)
30 TAC Chapter 115, SubChapter H 115.764(a)(1)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
FOP O-01229, ST&C 10A OP
FOP O-01229, ST&C 1A OP
- Description: Failure to perform annual HRVOC Flow Meter Calibrations.
- Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 115, SubChapter H 115.725(d)(4)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
FOP O-01229, ST&C 10A OP
FOP O-01229, ST&C 1A OP
- Description: Failure to perform HRVOC Manual Sampling.
- Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
FOP O-01229, ST&C 30 OP
Permit 18287, Special Condition 51A PERMIT
- Description: Failure to perform daily Ammonium Polysulfide visual inspections.
- Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.6(e)(3)(C)(viii)
5C THSC Chapter 382 382.085(b)
FOP O-01229, ST&C 1A OP
FOP O-01229, ST&C 21C OP
- Description: Failure to update the Refinery SSMP within 45 days of the date an unforeseen SSM event occurs.
- Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.145(2)(C)
5C THSC Chapter 382 382.085(b)
FOP O-01229 General Terms & Conditions OP
- Description: Failure to submit the deviation report, dated June 21, 2007, within 30 days of the end of the reporting period.
8. Date: 05/22/2008(670825)
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
TCEQ Flexible Air Permit #18287, SC#1 PA
- Description: failed to prevent a Waste Heat Boiler (E-701) feed water leak due to previous startups and shutdowns resulting in the shutdown of two Tail Gas Clean Up Units (TGCU-A & TGCU-C).
9. Date: 10/31/2008(703451)CN600123939
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
TCEQ Flexible Air Permit #18287, SC#1 PA
- Description: Failure to prevent solid sulfur pluggage in the condenser seal leg causing carryover of sulfur into the tail gas unit resulting in the unauthorized release of 1,457.3 pounds of carbonyl sulfide, 55.2 pounds of carbon disulfide, and 21.6 pounds of hydrogen sulfide. The duration of this emissions event was 63 hours.
10. Date: 11/21/2008(706342)
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
TCEQ Air Flexible Permit No. 18287, SC#1 PA
- Description: The respondent failed to prevent the shutdown of the Refinery Gas Recovery (RGR) compressor PC-01 due to a current imbalance across the motor phases resulting in the unauthorized release of 666 pounds of sulfur dioxide, 219 pounds of carbon monoxide, 156.30 pounds of volatile organic compounds (VOCs), 43 pounds of NOx, and 8 pounds of hydrogen sulfide. The duration of this emissions event was 24 minutes.
11. Date: 01/09/2009(709484)CN600123939
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(8)(A)
5C THSC Chapter 382 382.085(b)

12. Description: Failure to present an affirmative defense in regard to the avoidability of Excess Opacity Event No. 113088.
Date: 02/02/2009(723307)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
5C THSC Chapter 382 382.085(b)
Permit 18287, Special Condition 23(B)(1) PERMIT
13. Description: Hydroformer 3 Furnace 3 failed a NOx RATA.
Date: 04/22/2009(735601)CN600123939
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Special Condition 1 PERMIT
14. Description: Failure to prevent unauthorized emissions, specifically the RE failed to prevent a level indicator malfunction.
Date: 04/30/2009(804767)CN600123939
Self Report? YES Classification: Moderate
Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)
15. Description: Failure to meet the limit for one or more permit parameter
Date: 08/10/2009(763878)CN600123939
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
Other Requirements, No. 13, p. 15 PERMIT
- Description: Failure to provide notification for the application and discharge of Aquashade.
Self Report? NO Classification: Moderate
Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
2D TWC Chapter 26, SubChapter A 26.121(a)(1)
2D TWC Chapter 26, SubChapter A 26.121(a)(3)
2D TWC Chapter 26, SubChapter A 26.121(b)
2D TWC Chapter 26, SubChapter A 26.121(c)
2D TWC Chapter 26, SubChapter A 26.121(d)
2D TWC Chapter 26, SubChapter A 26.121(e)
30 TAC Chapter 305, SubChapter F 305.125(4)
30 TAC Chapter 305, SubChapter F 305.125(5)
TWC Chapter 26 26.121
TWC Chapter 26 26.121(a)(2)
16. Description: Failure to prevent unauthorized discharges from the collection system.
Date: 08/20/2009(721130)
Self Report? NO Classification: Minor
Citation: 18287 and PSD-TX-730M4/PAL, SC 34E PA
30 TAC Chapter 115, SubChapter D 115.352(4)
30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(1)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.648(a)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.167(a)(1)
5C THSC Chapter 382 382.085(b)
O-01229, Special Condition 30 OP
- Description: Failure to cap open- ended lines containing volatile organic compounds (VOC), and hazardous air pollutants (HAPs).
CATEGORY C 10.
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-5(a)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.166(b)
5C THSC Chapter 382 382.085(b)
- Description: Failure to meet closed purge requirements
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter D 115.354(2)
30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-7(a)(2)(i)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.168(b)(1)
5C THSC Chapter 382 382.085(b)
Special Condition 30 OP
Special Condition 34F PA
- Description: Failure to monitor ten valves in volatile organic compound (VOC), and hazardous air pollutants (HAP's) service.
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT Kb 60.113b(b)(4)
5C THSC Chapter 382 382.085(b)
Special Condition 14D PA
Special Condition 30 OP
- Description: Failure to meet tank repair deadline. (Category B18)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT Kb 60.112b(a)(2)(ii)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.640(n)(1)
5C THSC Chapter 382 382.085(b)

Special Condition 14D PA
 Special Condition 30 OP
Description: Missing Pole Float, Wiper Assembly, Vacuum Breaker Gaskets, ID#TK0347,TK0743, TK1093, TK1096,TK0849, TK0855, TK0858, TK1032, TK1033, TK0859, TK1089 (Category B18)
 Self Report? NO Classification: Minor
 Citation: 40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.654(g)
 5C THSC Chapter 382 382.085(b)

Description: Failure to include startup/shutdown (SS) information in MACT report.
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 30 TAC Chapter 122, SubChapter B 122.143(3)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT Kb 60.115b(a)(4)
 5C THSC Chapter 382 382.085(b)
 Special Condition 14D PA
 Special Condition 30 OP

Description: Failure to notify Administrator of Tank inspection.
 Self Report? NO Classification: Moderate
 Citation: 40 CFR Chapter 63, SubChapter C, PT 63, SubPT G 63.143(d)
 5C THSC Chapter 382 382.085(b)
 Special Condition 1A OP

Description: Failure to Monitor Steam Strippers, ID#PRORTTT071G, PRORTTT081G.
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 117, SubChapter B 117.340(a)(2)(C)
 5C THSC Chapter 382 382.085(b)

Description: Failure to maintain fuel usage record.
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 115, SubChapter E 115.412(1)(C)
 5C THSC Chapter 382 382.085(b)

Description: Failure to make degreasers operating requirements visible
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 115, SubChapter E 115.412(1)(A)
 5C THSC Chapter 382 382.085(b)

Description: Failure to operating degreaser with covers.
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT F 63.104(c)
 5C THSC Chapter 382 382.085(b)
 Special Condition 13 PA
 Special Condition 30 OP
 Special Condition1A OP

Description: Failure to monitor cooling tower with an Approved Method. (Category B1)
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(3)
 40 CFR Chapter 61, SubChapter C, PT 61, SubPT BB 61.305(f)
 5C THSC Chapter 382 382.085(b)
 Special Condition 1A OP

Description: Failure to submit quarterly report.
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)
 5C THSC Chapter 382 382.085(b)

Description: Failure to meet final calculation and recordkeeping deadlines.
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 Special Condition 30 OP
 Special Condition 8 PA

Description: Failure to prevent non-fugitive emissions from a safety valve. (Category B18)
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)
 40 CFR Chapter 61, SubChapter C, PT 61, SubPT FF 61.349(a)(2)(iii)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)
 5C THSC Chapter 382 382.085(b)
 Special Condition 11A PA
 Special Condition 30 OP

Description: Failure to maintain flare net heating value. (Category B18)
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 117, SubChapter G 117.8100(a)(1)(C)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 Special Condition 23B(2) PA
 Special Condition 30 OP

Description: Failure to Conduct Quarterly Cylinder Gas Audits.
 Self Report? NO Classification: Moderate

- Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.644(e)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to operate incinerator with the minimum operating parameter.
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 115, SubChapter B 115.121(a)(1)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.643(a)(2)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to reduce emissions of organic HAP's.
Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 115, SubChapter H 115.764(a)(6)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to sample HRVOC Analyzer
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 117, SubChapter B 117.310(c)(2)
5C THSC Chapter 382 382.085(b)
- Description: Failure to limit ammonia emissions.
Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 117, SubChapter B 117.340(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to maintain fuel flow meter.
Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 117, SubChapter B 117.345(f)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to maintain quarterly engine tests report.
Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 117, SubChapter G 117.8140(b)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to conduct quarterly engine tests. (Category B1)
Self Report? NO Classification: Minor
- Citation: 40 CFR Chapter 63, SubChapter C, PT 63, SubPT UUU 63.1567(c)(1)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to demonstrate continuous compliance with emissions limitation.
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.103(a)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT UUU 63.1565(a)(1)
5C THSC Chapter 382 382.085(b)
Special Condition 1A OP
- Description: Failure to limit carbon monoxide (CO) discharge into the atmosphere.
Self Report? NO Classification: Moderate
- Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.105(a)(3)(ii)
Special Condition 1A OP
- Description: Exceedence of sulfur dioxide limit. (Category B14)
Self Report? NO Classification: Minor
- Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.104(a)(1)
5C THSC Chapter 382 382.085(b)
- Description: Failure to limit hydrogen sulfide (H2S) content in fuel gas.
17. Date: 09/15/2009(767619)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(8)(A)
5C THSC Chapter 382 382.085(a)
- Description: During an avoidable excess opacity event (Incident No. 126110) that began June 28, 2009 and lasted 12 minutes Exxon Mobil failed to prevent opacity from exceeding 30% averaged over a 6 minute period. The unauthorized release was a result of poor maintenance and operation of Furnace 802 and Furnace 801.
18. Date: 09/17/2009(763625)CN600123939
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter F 115.541(a)(1)(B)
5C THSC Chapter 382 382.085(b)
- Description: The RE failed to demonstrate that the VOC control device (an internal combustion engine) they used in storage tank degassing achieved the required 90% control efficiency.
19. Date: 01/07/2010(780134)
Self Report? NO Classification: Moderate

- Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Special Condition 1 PERMIT
- Description: The RE failed to prevent the shutdown of a Boiler Feedwater Pump, resulting in the shutdown of the Flexicoker Unit due to the loss of steam supply.
20. Date: 03/15/2010(792951)CN600123939
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
SPECIAL CONDITION 1 PERMIT
- Description: ExxonMobil failed to prevent the formation of solid hydrates within a pipe in cold weather which resulted in unauthorized emissions including 582.46 pounds of sulfur dioxide.
21. Date: 03/23/2010(789337)CN600123939
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(1)(B)
5C THSC Chapter 382 382.085(b)
- Description: The RE failed to prevent a fire in the sulfur export tank, TK-667, resulting in 50% opacity from a tank vent for a duration of 15 minutes.
22. Date: 05/03/2010(798417)CN600123939
Self Report? NO Classification: Major
Citation: 10.A./Appendix A1.1 ORDER
2A TWC Chapter 7, SubChapter A 7.101
- Description: Monitoring well maintenance
23. Date: 08/30/2010(794033)
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter H 115.722(d)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(i)(B)(ii)
40 CFR Chapter 61, SubChapter C, PT 61, SubPT FF 61.349(a)(2)(iii)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(i)(B)
5C THSC Chapter 382 382.085(b)
SC 11A PERMIT
ST&C 1A OP
ST&C 30 OP
- Description: Failure to maintain the flare with a minimum net heating value above 300 BTU/scf. (CATEGORY C4)
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(2)
5C THSC Chapter 382 382.085(b)
SC 11B PERMIT
ST&C 1A OP
ST&C 30 OP
- Description: Failure to maintain pilot lights. (CATEGORY C4)
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(f)(2)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(5)
5C THSC Chapter 382 382.085(b)
SC 11B PERMIT
ST&C 1A OP
ST&C 30 OP
- Description: Failure to monitor pilot lights. (CATEGORY C3)
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(4)(A)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(1)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(4)
5C THSC Chapter 382 382.085(b)
SC 11C PERMIT
ST&C 1A OP
ST&C 30 OP
- Description: Failure to maintain the flares resulting in visible emissions. (CATEGORY C4)
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter B 115.121(a)(1)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
ST&C 1A OP
- Description: Failure to maintain VOC emissions below 100lbs/24 hr period from vents not vented to a control device. (CATEGORY B14)
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 117, SubChapter B 117.310(c)(1)
5C THSC Chapter 382 382.085(b)
- Description: Failure to maintain engines on a pump resulting in CO emission exceedences. [Category B14]
- Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
SC 1 PERMIT
ST&C 30 OP

Description: Failure to limit CS2 and COS emissions. [Category B14]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
ST&C 2F OP

Description: Failure to meet the deadline for the final recordkeeping requirements under 30 TAC 101.201(b) for recordable/reportable emission events. (CATEGORY C3)
Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 117, SubChapter B 117.345(f)(10)
30 TAC Chapter 117, SubChapter B 117.345(f)(6)(B)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
ST&C 11D OP
ST&C 11E OP

Description: Failure to maintain the start and end times of the operation during testing and maintenance of engines. (CATEGORY B3)
Self Report? NO Classification: Minor

Citation: 40 CFR Chapter 63, SubChapter C, PT 63, SubPT UUU 63.1567(c)(1)
5C THSC Chapter 382 382.085(b)

Description: Failure to maintain the draeger sample results taken during reactor regeneration. [Category C3]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter C 115.245(2)
5C THSC Chapter 382 382.085(b)

Description: Failure to perform the Stage II vapor recovery system test within 12 months of the previous test. [CATEGORY C3]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter H 115.725(d)(3)
5C THSC Chapter 382 382.085(b)

Description: Failure to maintain the HRVOC monitoring system resulting in the system not meeting the 95% annual service factor due to a faulty flow meter. [CATEGORY B18]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(8)(A)
5C THSC Chapter 382 382.085(b)

Description: Failure to perform the Method 9 reading for at least 6 minutes. [Category C1]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.13(d)(1)
5C THSC Chapter 382 382.085(b)
ST&C 12F OP

Description: Failure to maintain the CEMS resulting in failed daily calibrations. [Category C3]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.13(e)(2)
5C THSC Chapter 382 382.085(b)
SC 23.B.4 PERMIT
ST&C 30 OP

Description: Failure to maintain the CEMS resulting in the CEMS not providing data. [Category C3]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter H 115.725(d)(4)
5C THSC Chapter 382 382.085(b)

Description: Failure to take HRVOC samples within 10 hours of analyzer malfunction. [Category B1]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter D 115.352(4)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(1)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.648(a)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.167(a)(1)
5C THSC Chapter 382 382.085(b)
SC 34E PERMIT
ST&C 1A OP
ST&C 30 OP

Description: Failure to prevent open ended lines (OELs) in regular VOC and/or HAP service. (Category C10)
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter E 115.412(1)(A)
5C THSC Chapter 382 382.085(b)

Description: Failure to maintain the degreaser lid in a closed position. [Category C4]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter B 115.121(a)(1)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.644(e)
5C THSC Chapter 382 382.085(b)
ST&C 1A OP

- Description: Failure to maintain the firebox temperature on the incinerator above 1350 degrees Fahrenheit. [Category C4]
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 115, SubChapter B 115.112(d)(2)(H)
 30 TAC Chapter 116, SubChapter B 116.115(b)(2)(G)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
- Description: Failure to maintain the floating roof on EPN TK1000. [Category B18]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(1)(B)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
 ST&C 3.B.ii OP
- Description: Failure to maintain proper operations resulting in visible emissions. [Category C4]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 117, SubChapter B 117.310(c)(1)(A)
 5C THSC Chapter 382 382.085(b)
- Description: Failure to limit carbon monoxide (CO) rolling 24 hour average emissions. [Category B14]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.105(a)(3)(ii)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
- Description: Failure to limit sulfur dioxide (SO2) rolling 3 hour average emissions. [Category B14]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.104(a)(1)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
- Description: Failure to limit hydrogen sulfide (H2S) rolling 3 hour average emissions. [Category B14]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.103(a)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT UUU 63.1565(a)(1)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
- Description: Failure to limit carbon monoxide (CO) rolling 1 hour average emissions. [Category B14]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.104(a)(2)(ii)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
- Description: Failure to limit hydrogen sulfide (H2S) rolling 12 hour average emissions. [Category B14]
 Self Report? NO Classification: Minor
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT G 63.152(c)(1)
 5C THSC Chapter 382 382.085(b)
 ST&C 1A OP
24. Description: Failure to submit the HON report within the required deadline. [Category C3]
 Date: 09/16/2010(844348)CN600123939
 Self Report? NO Classification: Major
 Citation: 10.A./Appendix A1.1 ORDER
 2A TWC Chapter 7, SubChapter A 7.101
25. Description: Monitoring well maintenance
 Date: 09/30/2010(865475)CN600123939
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 305, SubChapter F 305.125(4)
 30 TAC Chapter 305, SubChapter F 305.125(5)
 TWC Chapter 26 26.121
26. Description: Failure to prevent the unauthorized discharge (UD) of wastewater from the collection system.
 Date: 10/15/2010(844127)CN600123939
 Self Report? NO Classification: Moderate
 Citation: 18287 SC 1 PERMIT
 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
27. Description: Failed to prevent unauthorized emissions when the C-20 refinery gas compressor safety relief valve opened.
 Date: 12/09/2010(864848)CN600123939
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
 5C THSC Chapter 382 382.085(b)
 Special Condition 1 PERMIT
- Description: Failure to prevent unauthorized emissions. Specifically, Exxon failed to ensure that the natural gas line for the flare pilots remained free of debris in order to maintain proper operation of the natural gas regulator and ultimately the flare pilots.
 Self Report? NO Classification: Moderate

- Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(2)
5C THSC Chapter 382 382.085(b)
Special Condition 11(B) PERMIT
- Description: Failure to operate Flare Stack 4 with a flame present while vent gases were being routed to the flare.
28. Date: 12/17/2010(880706)CN600123939
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Special Condition 1 PERMIT
- Description: Failure to prevent unauthorized emissions during an emissions event. Exxon Refinery failed to prevent the malfunction of the temperature indicator at reactor R3 in the Hydrocracking Unit 1.
29. Date: 02/04/2011(877372)
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(G)
5C THSC Chapter 382 382.085(b)
- Description: EM failed to include the compound descriptive type on the final report for Incident No. 147380.
30. Date: 04/12/2011(900174)CN600123939
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PERMIT
- Description: Failure to prevent unauthorized emissions. ExxonMobil failed to prevent a leak on a thermowell on Exchanger 702D.
31. Date: 05/13/2011(912465)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PERMIT
Special Terms and Conditions 33A OP
- Description: Failure to prevent unauthorized emissions. ExxonMobil failed to prevent the shutdown of Compressor C-302 when installing new mounting rails.
32. Date: 06/10/2011(921135)
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PERMIT
Special Terms and Conditions No. 33 OP
- Description: Failure to prevent unauthorized emissions. ExxonMobil failed to prevent the malfunction of the Temperature Indicator on the bed of Reactor R3.
33. Date: 06/24/2011(921136)CN600123939
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PA
Special Terms and Conditions No. 33 OP
- Description: Failure to prevent unauthorized emissions. ExxonMobil failed to prevent the overfilling of a frac tank, which resulted in a spill of slop oil to the ground.
34. Date: 07/31/2011(959319)CN600123939
Self Report? YES Classification: Moderate
Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)
- Description: Failure to meet the limit for one or more permit parameter
35. Date: 08/01/2011(922514)
Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
SC 1 PERMIT
ST&C 30 OP
- Description: Failure to control CS2 emissions below MAERT limits. [Category B14 Violation]
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 117, SubChapter B 117.310(c)(1)(A)
5C THSC Chapter 382 382.085(b)
- Description: Failure to control carbon monoxide emissions below permitted limits. [Category B14 Violation]
- Self Report? NO Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter B 115.112(d)(2)(H)
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(G)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
ST&C 1A OP
- Description: Failure to maintain floating roof on storage tank TK0858. [Category B18 Violation]
- Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 SC 30 PERMIT
 ST&C 30 OP

Description: Failure to monitor correct emission parameter. [Category C4 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 115, SubChapter D 115.352(4)
 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(1)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT AA 63.648(a)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.167(a)(1)
 5C THSC Chapter 382 382.085(b)
 SC 34E PERMIT
 ST&C 1A OP
 ST&C 30 OP

Description: Failure to prevent open ended lines in VOC and/or HAP service. [Category C10 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 115, SubChapter H 115.722(d)
 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(i)(B)(ii)
 40 CFR Chapter 61, SubChapter C, PT 61, SubPT FF 61.349(a)(2)(iii)
 40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)
 5C THSC Chapter 382 382.085(b)
 SC 11A PERMIT
 ST&C 1A OP
 ST&C 30 OP

Description: Failure to maintain flare with minimum net heating value above 300 Btu/scf. [Category C4 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(2)
 5C THSC Chapter 382 382.085(b)
 SC 11B PERMIT
 ST&C 1A OP
 ST&C 30 OP

Description: Failure to maintain pilot lights on flare. [Category C4 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 115, SubChapter H 115.764(a)(6)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 ST&C 10D OP

Description: Failure to collect cooling tower water sample within 24 hours of analyzer failure. [Category B1 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 ST&C 2F OP

Description: Failure to meet final recordkeeping requirement deadline per 101.201 (b). [Category C3 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.7(a)(3)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT J 60.108(a)
 5C THSC Chapter 382 382.085(b)
 ST&C 12A OP

Description: Failure to submit Subpart J startup notification within 15 days after startup. [Category C3 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 117, SubChapter B 117.310(f)
 5C THSC Chapter 382 382.085(b)

Description: Failure to test emergency equipment at proper times. [Category C4 Violation]
Self Report? NO **Classification:** Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.13(f)
 5C THSC Chapter 382 382.085(b)
 ST&C 12F OP

Description: Failure to install CEMS properly resulting in a lack of valid data. [Category C1 Violation]
Self Report? NO **Classification:** Moderate

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(H)
 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 ST&C 2F OP

Description: Failure to include all emissions in STEERS final report. [Category B19g(1) Violation]
Self Report? NO **Classification:** Moderate

Citation: 30 TAC Chapter 115, SubChapter D 115.354(2)(C)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-2(a)(1)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-7(a)(1)
5C THSC Chapter 382 382.085(b)
SC 34F PERMIT
ST&C 1A OP
ST&C 30 OP

Description: Failure to monitor fugitive components. [Category B14 Violation]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter H 115.782(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
ST&C 10E OP

Description: Failure to maintain delay of repair tag on leaking component. [Category C4 Violation]
Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
SC 18 PERMIT
ST&C 30 OP

Description: Failure to sample storage tank at proper intervals. [Category C1 Violation]

36. Date: 08/31/2011(965352)CN600123939

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

37. Date: 10/07/2011(949101)CN600123939

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PERMIT
Special Terms and Conditions No. 33A OP

Description: Failure to prevent unauthorized emissions. Failure to prevent the blending of water into the FCCU feed blending system.

38. Date: 10/13/2011(956410)CN600123939

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PERMIT
Special Terms and Conditions No. 33 OP

Description: Failure to prevent unauthorized emissions. Failed to prevent the overfilling of the lube oil reservoir for Compressor C-302.

39. Date: 10/14/2011(952323)CN600123939

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(G)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Terms and Conditions No. 2F OP

Description: ExxonMobil failed to provide the speciation for the compounds reported as "crude oil" in the final emissions event report.

40. Date: 11/15/2011(956539)CN600123939

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter G 116.715(a)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition No. 1 PERMIT
Special Terms and Conditions No. 33 OP

Description: This event was caused by operator error. ExxonMobil failed to prevent the activation of the feed diversion system, which was an avoidable incident.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter F 101.201(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Terms and Conditions No. 2 OP

Description: ExxonMobil failed to submit the final report for a reportable emissions event within 14 days of the end of the event.

F. Environmental audits.

N/A

G. Type of environmental management systems (EMSs).

N/A

H. Voluntary on-site compliance assessment dates.

N/A

I. Participation in a voluntary pollution reduction program.

N/A

J. Early compliance.

N/A

Sites Outside of Texas

N/A

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



**IN THE MATTER OF AN
ENFORCEMENT ACTION
CONCERNING
EXXON MOBIL
CORPORATION;
RN102579307; RN102212925;
RN102574803**

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**BEFORE THE
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY**

AGREED ORDER

DOCKET NO. 2011-2336-AIR-E

At its _____ agenda meeting, the Texas Commission on Environmental Quality ("Commission" or "TCEQ") considered this agreement of the parties (the "Agreed Order") regarding Exxon Mobil Corporation ("Respondent" or ExxonMobil") under the authority of TEX. WATER CODE ch. 7 and TEX. HEALTH & SAFETY CODE ch. 382. The Executive Director of the TCEQ and Respondent presented this Agreed Order to the Commission.

Respondent understands that it has certain procedural rights at certain points in the enforcement process, including, but not limited to, the right to formal notice of violations, notice of an evidentiary hearing, the right to an evidentiary hearing, and a right to appeal. By entering into this Agreed Order, Respondent agrees to waive all notice and procedural rights.

It is further understood and agreed that this Agreed Order represents the complete and fully-integrated agreement of the parties. The duties and responsibilities imposed by this Agreed Order are binding upon Respondent.

The Commission makes the following Findings of Fact and Conclusions of Law:

I. FINDINGS OF FACT

1. Respondent owns and operates the Baytown Refinery (RN102579307) at 2800 Decker Drive in Baytown, Harris County, Texas; the Baytown Olefins Plant (RN102212925) at 3525 Decker Drive in Baytown, Harris County, Texas; and the Baytown Chemical Plant (RN102574803) at 5000 Bayway Drive in Baytown, Harris County (collectively referred to as the "Baytown Complex"). The Complex consists of one or more sources as defined in TEX. HEALTH & SAFETY CODE § 382.003(12). Respondent must authorize the construction or modification of facilities at the Baytown Complex and comply with New Source Review Permits issued under 30 TEX. ADMIN. CODE Chapters 106 and 116 and the Texas Clean Air Act. Respondent must operate in compliance with Federal Operating Permits issued by the Executive Director under 30 TEX. ADMIN. CODE Chapter 122.
2. In accordance with the federally enforceable State Implementation Plan (Texas SIP), the TCEQ regulates the unauthorized emissions that result from emissions events and maintenance, startup and shutdown ("MSS") activities by requiring maintenance of records and reporting of emissions events and MSS activities pursuant to the Texas

Clean Air Act. Emissions events and MSS activities, other than planned MSS activities, are not subject to permitting under 30 TEX. ADMIN. CODE Chapters 106 or 116, and are regulated under 30 TEX. ADMIN. CODE Chapter 101 and TEX. HEALTH & SAFETY CODE §§ 382.0215, 382.0216 and 382.085.

3. ExxonMobil submitted applications to authorize the emissions from planned MSS activities at the Baytown Refinery and Baytown Chemical Plant in 2007 and to authorize the emissions from planned MSS activities at the Baytown Olefins Plant in 2008. The TCEQ issued and/or amended NSR Permit(s) 18287/PAL7, 20211/PAL16 and 3452 authorizing the emissions from planned MSS activities at the Baytown Complex under 30 TEX. ADMIN. CODE Chapter 116 on June 3, 2010, June 16, 2011, and May 16, 2011, respectively.
4. As soon as practicable, but not later than 24 hours after the discovery of an emissions event, the owner or operator of a regulated entity must determine if the event is a reportable emissions event and, if the event is reportable, notify the TCEQ. 30 TEX. ADMIN. CODE § 101.201(a). The owner or operator must also create a record of all reportable and non-reportable emissions events as soon as practicable, but no later than two weeks after the end of an emissions event. 30 TEX. ADMIN. CODE § 101.201(b). The reports and records shall include sufficient information to inform the TCEQ's response, including the event cause and the actions taken to correct the event and minimize the emissions. 30 TEX. ADMIN. CODE § 101.201(b)(1), (2).
5. The owner or operator of a regulated entity conducting a scheduled MSS activity must notify the TCEQ at least 10 days prior to any scheduled MSS activity that is expected to cause an unauthorized emission that equals or exceeds a reportable quantity in any 24-hour period. 30 TEX. ADMIN. CODE § 101.211(a). The owner or operator must also create a record of all scheduled MSS activities with unauthorized emissions as soon as practicable, but no later than two weeks after the end of an emissions event. 30 TEX. ADMIN. CODE § 101.211(b). The reports and records shall include sufficient information, including the actions taken to correct the event and minimize the emissions. 30 TEX. ADMIN. CODE § 101.211(b)(1), (2).
6. In accordance with TEX. HEALTH & SAFETY CODE § 382.0216(b) and 30 TEX. ADMIN. CODE § 101.222(a), the TCEQ has established criteria for determining when emissions events are excessive. Excessive emissions events are subject to the requirements of 30 TEX. ADMIN. CODE § 101.223, *Actions to Reduce Excessive Emissions*. If an event is determined to be excessive, the TCEQ requires an owner or operator to take action to reduce emissions and either file a corrective action plan (CAP) or, if the emissions are sufficiently frequent, quantifiable, and predictable, in which case the owner or operator may file a letter of intent to obtain authorization from the commission for emissions from such events, in lieu of a CAP. 30 TEX. ADMIN. CODE § 101.223. An enforcement action is brought and penalties are assessed to resolve the event.
7. If an event is determined not to be an excessive emissions event, the TCEQ evaluates the owner or operator under established criteria for determining if an emissions event or unplanned MSS activity qualifies for an affirmative defense to TCEQ enforcement. 30 TEX. ADMIN. CODE § 101.222(b) and (c).
8. ExxonMobil has emitted air contaminants resulting from emissions events and MSS activities in the course of its operations. The TCEQ has investigated and taken

appropriate enforcement to resolve violations in accordance with the Texas SIP and agency policy for Baytown Complex emissions events and MSS activities.

9. The Baytown Complex sources are governed by federal operating permits issued by the Executive Director under 30 TEX. ADMIN. CODE Chapter 122. Under the federal operating permit program, ExxonMobil is required to report "all instances of deviations" in accordance with 30 TEX. ADMIN. CODE § 122.145. For those deviations reported under FOP Nos. O-1229, O-1553, O-2269, O-2270 and O-1278 and reviewed by the TCEQ, the TCEQ has taken appropriate enforcement to resolve violations in accordance with agency policy.
10. During a record review conducted from November 7 through November 21, 2011, TCEQ staff documented the release of 42,932.2 pounds ("lbs") of carbon monoxide ("CO"), 5,568.16 lbs of sulfur dioxide ("SO₂"), 898.97 lbs of nitrogen oxides ("NO_x"), 2.25 lbs of hydrogen sulfide ("H₂S"), and 8.9 lbs of volatile organic compounds ("VOC") from Flare Stack 25 and Flare Stack 26 during an emissions event (Incident No. 160475) that began on October 12, 2011, and lasted for 58 hours and 15 minutes. The event occurred as the result of a breakdown of the bottom pump-around circuit on the Flexicoker Fractionator, which caused the temperature in the fractionator to increase, resulting in a release of excess overhead gas from the fractionator to the flare system. The TCEQ has determined that insufficient information was provided by ExxonMobil regarding the cause of the emissions event. The Executive Director (ED) recognizes that ExxonMobil pulled feed from the Flexicoker unit, and through operational troubleshooting, reestablished flow in the bottom circuit of the fractionator and put feed back into the unit by October 15, 2011.
11. During a record review conducted from November 15 through November 29, 2011, TCEQ staff documented the release of 47,710.11 lbs of CO, 93.59 lbs of NO_x, 2,594.21 lbs of SO₂, 629.76 lbs of VOC, 28.08 lbs of H₂S, 60.5 lbs of particulate matter, and 35.83 lbs of ammonia from Flares 3, 4, 5, and 6, and the Fluid Catalytic Cracking Unit 2 Wet Gas Scrubber during an emissions event (Incident No. 161050) that began on October 25, 2011, and lasted one hour and 25 minutes. The event occurred when an isolation switch at a substation failed to achieve a closed circuit, which caused an electrical arc to occur, resulting in the shutdown of the Wet Gas Compressor. The TCEQ has determined that insufficient information was provided by ExxonMobil regarding the cause of the switch failure. The ED recognizes that ExxonMobil upgraded and replaced the isolation switch to prevent recurrence of a same or similar event by October 30, 2011.
12. The annual emissions inventory reports that ExxonMobil has submitted for the Baytown Complex under 30 TEX. ADMIN. CODE § 101.10 reflect a positive trend of reductions in actual emissions, including unauthorized emissions associated with emissions events and scheduled MSS activities, from Baytown Complex. From 2000 to 2010, ExxonMobil has reported a 60 percent reduction in aggregate emissions of VOC, HRVOC, CO, SO₂ and NO_x from the Baytown Complex. Over that same time period, reported emissions of VOC from the Baytown Complex have dropped by 44 percent, reported emissions of CO have dropped by 76, and reported emissions of NO_x have dropped by 63 percent.
13. This Agreed Order resolves enforcement for unauthorized emissions from pending emissions events as set forth in Paragraphs 10 and 11; establishes a structure for

stipulated penalties to resolve violations for future reportable emissions events; requires specified emissions reductions; and mandates environmental improvement projects at the Baytown Complex to further reduce emissions, including emissions from emissions events and unplanned MSS activities.

14. The stipulated penalty structure set forth in this Agreed Order takes into account the factors to be considered in determining the penalty amount, including the nature, circumstances, extent, duration and gravity of the prohibited act, as required under TEX. WATER CODE § 7.053.
15. For purposes of this Agreed Order, Respondent is responsible for compliance with all terms of this Agreed Order, including payment of stipulated penalties to resolve violations for future reportable emission events occurring at any of the Baytown Complex sources including those owned and operated by any subsidiary of Respondent at the Baytown Complex.

II. CONCLUSIONS OF LAW

1. As evidenced by Finding of Fact No. 1, ExxonMobil is subject to the jurisdiction of the TCEQ pursuant to TEX. HEALTH & SAFETY CODE ch. 382 and TEX. WATER CODE ch. 7 and the rules of the Commission.
2. As evidenced by Finding of Fact No. 10, ExxonMobil failed to prevent unauthorized emissions, in violation of 30 TEX. ADMIN. CODE §§ 101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), TEX. HEALTH & SAFETY CODE § 382.085(b), Permit Nos. 18287 and PSDTX730M4, and Federal Operating Permit No. O1229. Since insufficient information was provided regarding the cause of the emissions event, ExxonMobil is precluded from asserting the affirmative defense under 30 TEX. ADMIN. CODE § 101.222.
3. As evidenced by Finding of Fact No. 11, ExxonMobil failed to prevent unauthorized emissions, in violation of 30 TEX. ADMIN. CODE §§ 101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), TEX. HEALTH & SAFETY CODE § 382.085(b), Permit Nos. 18287 and PSDTX730M4, and Federal Operating Permit No. O1229. Since insufficient information was provided regarding the cause of the emissions event, ExxonMobil is precluded from asserting the affirmative defense under 30 TEX. ADMIN. CODE § 101.222.
4. Pursuant to TEX. WATER CODE § 7.051, the Commission has the authority to assess an administrative penalty against ExxonMobil for violations of the Texas Water Code and the Texas Health and Safety Code within the Commission's jurisdiction; for violations of rules adopted under such statutes; or for violations of orders or permits issued under such statutes.
5. An administrative penalty in the amount of Ninety-Eight Thousand Dollars (\$98,000) is justified by facts recited in this Agreed Order, and considered in light of the factors set forth in TEX. WATER CODE § 7.053. The respondent has paid Forty-Nine Thousand Dollars (\$49,000) of the administrative penalty. Forty-Nine Thousand Dollars (\$49,000) shall be conditionally offset by the respondent's completion of a Supplemental Environmental Project (SEP).

III. ORDERING PROVISIONS

NOW, THEREFORE, THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ORDERS that:

1. ExxonMobil is assessed an administrative penalty in the amount of Ninety-Eight Thousand Dollars (\$98,000) as set forth in Conclusion of Law No. 5 above, for violations of TCEQ rules and state statutes. The payment of this administrative penalty and ExxonMobil's compliance with Section III, Paragraph 2 of this Agreed Order and all of the associated terms and conditions set forth in this Agreed Order resolve only the violations set forth by this Agreed Order in this action. However, the Commission shall not be constrained in any manner from requiring corrective action or penalties for violations that are not raised here. Administrative penalty payments shall be made payable to "TCEQ" and shall be sent with the notation "Re: ExxonMobil Corporation, Docket No. 2011-2336-AIR-E" to:

Financial Administration Division, Revenues Section
Attention: Cashier's Office, MC 214
Texas Commission on Environmental Quality
P.O. Box 13088
Austin, Texas 78711-3088

2. ExxonMobil shall implement and complete a Supplemental Environmental Project ("SEP") in accordance with TEX. WATER CODE § 7.067. As set forth in Conclusion of Law No. 5, Forty-Nine Thousand Dollars (\$49,000) of the assessed administrative penalty shall be offset with the condition that ExxonMobil implement the SEP defined in Exhibit B, incorporated herein by reference. ExxonMobil's obligation to pay the conditionally offset portion of the administrative penalty assessed shall be discharged upon final completion of all provisions of the SEP agreement.
3. From the effective date of this Agreed Order until the date of termination of this Agreed Order, ExxonMobil shall be liable to the Commission for stipulated penalties for each emissions event (as defined in 30 TEX. ADMIN. CODE § 101.1 to include upset events and unscheduled MSS activities) at the Baytown Complex during which the quantity of unauthorized emissions, as defined in 30 TEX. ADMIN. CODE § 101.1, exceeds the applicable reportable quantity ("RQ"), as defined in 30 TEX. ADMIN. CODE § 101.1, and for each excess opacity event, as defined in 30 TEX. ADMIN. CODE § 101.1, at the Baytown Complex. The amount of the stipulated penalty for each discrete event shall be as set forth in Exhibit A. This paragraph does not apply to:
 - a. emissions caused by an act of God, war, strike, riot, or other catastrophe as provided for in TEX. WATER CODE § 7.251;
 - b. emissions events that qualify as "excessive emissions events" under 30 TEX. ADMIN. CODE § 101.222; or
 - c. emissions events that have adversely impacted human health and the environment but which do not otherwise qualify as "excessive emission events" under 30 TEX. ADMIN. CODE § 101.222.

4. Paragraph 3 applies, notwithstanding any demonstration of an affirmative defense pursuant to 30 TEX. ADMIN. CODE § 101.222.
5. Emissions and reporting violations to which Paragraph 3 apply shall not
 - a. be the subject of a notice of violation; or
 - b. be treated as violations under 30 TEX. ADMIN. CODE Chapter 60.
6. Payment of stipulated penalties does not constitute an admission of liability by ExxonMobil.
7. Within 60 days after the end of an event for which stipulated penalties are due, ExxonMobil shall send to TCEQ the stipulated penalties due for that event. Through advance coordination with the TCEQ SEP Program, fifty percent (50%) of the stipulated penalties may be directed to one or more SEPs listed on the Commission's approved SEP list for the Houston/Galveston/Brazoria (including Chambers County) area. The stipulated penalties shall be made payable to "TCEQ" with the notation "Re: ExxonMobil Corporation, Docket No. 2011-2336-AIR-E" and shall be sent by certified mail, return receipt requested to:

Financial Administration Division, Revenues Section
Attention: Cashier's Office, MC 214
Texas Commission on Environmental Quality
P.O. Box 13088
Austin, Texas 78711-3088

8. The Executive Director has the right to renegotiate the stipulated penalty amounts set forth in Exhibit A if the Texas Legislature amends the laws of the State of Texas to increase the maximum penalty that the TCEQ may assess for violations of Chapter 382 of the Texas Health and Safety Code and that statutory increase becomes effective within five (5) years of the effective date of this Agreed Order. Any increase to the stipulated penalty amounts set forth in Exhibit A shall be no greater than the proportional increase in the statutory maximum penalty that the TCEQ may assess for a violation of Chapter 382 of the Texas Health and Safety Code. The Executive Director shall provide ExxonMobil with written notice of intent to renegotiate the stipulated penalty amounts set forth in Exhibit A of this Agreed Order.
9. The Executive Director may exclude an emissions event from the stipulated penalty obligation under Paragraph 3 provided the Executive Director gives written notice to ExxonMobil setting forth the basis for such exclusion under Paragraphs 3(b) or 3(c) no later than 90 days after receipt of the transmittal of funds under Paragraph 7 for that emissions event. ExxonMobil will have 30 days from receipt of the written notice to respond to the notice and provide reasons why such exclusion should not be made. The Executive Director will make a final decision on the exclusion within 60 days of receipt of ExxonMobil's written response. In the event that the Executive Director decides to exclude an emissions event under this paragraph and ExxonMobil has submitted funds intended as a stipulated penalty payment for that event, the funds will be returned and no payment will be deemed to have been made. For all events that the Executive Director has excluded from the stipulated penalty provisions of this Agreed Order, the

Executive Director may seek all administrative and/or civil enforcement remedies, including injunctive relief, available under the Texas Clean Air Act, Texas Health and Safety Code Chapter 382, and the Texas Water Code with respect to claims arising under or related to that emissions event, and ExxonMobil retains and may assert all defenses applicable and available to it under law or regulation, including retaining the right to legally challenge the Executive Director's decision to exclude the event from the stipulated penalty provisions of this Agreed Order.

10. ExxonMobil will undertake projects, including the Ordered Environmental Improvement Projects described in Paragraph 12, at the Baytown Complex that will reduce VOC emissions, including VOC emissions from emissions events and MSS activities, from Baytown Complex facilities by 126 tons from a baseline emission rate determined using the affected facilities' average emissions (excluding force majeure events) reported in the 2006-2010 Emissions Inventory by the end of the fifth calendar year after the effective date of this Agreed Order. The emissions reductions required by this Agreed Order will occur on the following schedule:
 - a. On or before the end of the third calendar year after the effective date of this Agreed Order, VOC emissions reductions of 45 tons.
 - b. On or before the end of the fourth calendar year after the effective date of this Agreed Order, VOC emissions reductions of 71 tons.
 - c. On or before the end of the fifth calendar year after the effective date of this Agreed Order, VOC emissions reductions of 126 tons.

ExxonMobil estimates that the Ordered Environmental Improvement Projects will achieve corresponding reductions of the following pollutants: Highly Reactive Volatile Organic Compounds (HRVOC), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), and Nitrogen Oxides (NO_x). As part of each project implemented under Paragraph 12, ExxonMobil will track and report on the corresponding reductions in HRVOC, CO, SO₂, and NO_x.

Identification of the Baytown Complex facilities that will be used to satisfy this emissions reduction requirement rests solely with ExxonMobil. For purposes of demonstrating compliance with this paragraph, ExxonMobil will calculate VOC emissions, as well as corresponding reductions from pollutants identified above, from the Baytown Complex facilities in a manner that is consistent with the annual emissions inventory required by 30 TEX. ADMIN. CODE § 101.10.

VOC emissions reductions from projects undertaken by ExxonMobil to satisfy this paragraph will not be used to generate emission reduction credits or discrete emission reduction credits under any TCEQ emissions credit trading program.

The emissions reduction projects undertaken pursuant to this Agreed Order do not qualify as a potential voluntary pollution reduction or early compliance program under 30 TEX. ADMIN. CODE Chapter 60.

11. Renegotiation and Early Termination. The Executive Director has the right to renegotiate the terms of this Agreed Order if (1) ExxonMobil (A) has not achieved the interim VOC emissions reduction thresholds established in Paragraph 10 or (B) is not implementing one or more of the Ordered Environmental Improvement Projects in accordance with the project description submitted in accordance with Paragraph 12 or

(2) ExxonMobil elects not to incorporate the Executive Director's requested modifications to ExxonMobil's project descriptions submitted under Paragraph 12. In the event that the Executive Director elects to renegotiate the terms of this Agreed Order, the Executive Director shall provide ExxonMobil with written notice within 45 days of the date that a ground arises under this paragraph. If the Executive Director and ExxonMobil are unable to reach mutual agreement on modified terms of this Agreed Order within 90 days of that notice, then the Executive Director shall have the right to Early Termination of this Agreed Order. If the Executive Director elects to exercise the right of Early Termination, the Executive Director shall then provide ExxonMobil with a written 15-day notice of the termination.

12. Ordered Environmental Improvement Projects. ExxonMobil will implement the following Ordered Environmental Improvement Projects at the Baytown Complex within 5 years of the effective date of this Agreed Order. The Ordered Environmental Improvement Projects will reduce emissions at the Baytown Complex, including emissions from emissions events and MSS activities. ExxonMobil has represented that it would not have committed to the Ordered Environmental Improvement Projects at the Baytown Complex at the time this Agreed Order is executed on the schedule required by this Agreed Order and with a focus on achieving the reductions of emissions absent the requirements of this Agreed Order.

ExxonMobil will, no later than 60 days prior to a project start date listed below, or in cases where the project start predates the effective date of this Agreed Order, no later than 60 days after the effective date of this Agreed Order, submit to the TCEQ a project description that identifies the emission unit(s) and process area(s) involved in the project, describes the new equipment or work practices that will be implemented as part of the project, describes how the new equipment or work practices are designed to prevent and/or reduce emissions from the Baytown Complex, and establishes interim implementation dates for the project. Within 30 days of receiving ExxonMobil's project description, the Executive Director may provide comments and request modifications to the scope or implementation of a project, including project(s) commenced prior to the effective date of this Agreed Order, based on its review of the project description submitted by ExxonMobil. In the event ExxonMobil elects not to incorporate such requested modifications, the Executive Director may exercise the rights identified in Paragraph 11.

- a. Plant Automation Venture. Install computer applications to improve real-time monitoring, identification, diagnostics and online guidance/management of operations. The project is intended to provide early identification of potential events and/or instrumentation abnormalities, allowing proactive response.

ExxonMobil shall implement the Plant Automation Venture on or before the following dates:

	Project Start (no later than)	Project Completion
Baytown Refinery	June 30, 2012	December 31, 2014
Baytown Chemical Plant	June 30, 2012	December 31, 2013
Baytown Olefins Plant	June 30, 2012	June 30, 2016

- b. Fuels North Flare System Monitoring/Minimization. Install additional instrumentation and develop tools and procedures to more effectively monitor and troubleshoot the Baytown Refinery Fuels North Flare System (“FNFS”). Additional instrumentation, including monitoring probes and on-line analyzers are intended to improve the identification and characterization of flaring events. The development of flare minimization practices, including practices for Equipment Clearing Scheduling and reducing flare gas generation and/or Flare Gas Recovery System Cushion Management, are intended to reduce loads on the flare system.

ExxonMobil shall implement the Fuels North Flare System Monitoring/Minimization project on or before the following dates:

	Project Start (no later than)	Project Completion
Monitoring Instrumentation	September 30, 2013	December 31, 2014
Flare Minimization Practices	March 1, 2012	September 30, 2012

- c. BOP/BOPX Recovery Unit Simulators. Develop, implement and use high-fidelity process training simulators for the Recovery Unit Trains at the Baytown Olefins Plant (“BOP”) and Baytown Olefins Plant Expansion (“BOPX”). The recovery unit simulators enable realistic instruction and practice for specific scenarios such as start-ups, shutdowns and loss-of-feed, and are intended to improve operator training and competency, resulting in reduced frequency and severity of emissions events.

ExxonMobil shall implement the BOP/BOPX Recovery Unit Simulators project on or before the following dates:

	Start Development of Simulator	Completion and Testing of Simulator
BOP Recovery Unit Simulator	June 30, 2012	December 31, 2014
BOPX Recovery Unit Simulator	June 30, 2012	December 31, 2013

- d. Enhanced Fugitive Emissions Monitoring. Establish a program of enhanced fugitive component monitoring and repair at the Baytown Refinery, Chemical Plant and Olefins Plant. The program will use infrared imaging technology to locate potential VOC and HRVOC leaks. Confirmed leaks will be subject to the repair requirements of applicable federal and state regulations. Surveys will

generally be conducted in months when applicable federal and state monitoring is not required and during process unit startups. Surveys will be equally spaced between monitoring events required by applicable federal and state regulations to the extent practicable. Surveys will be performed by personnel who are certified in infrared imager operation. Imagers will receive maintenance according to manufacturer's recommendations or equivalent.

ExxonMobil shall start the implementation of the Enhanced Fugitive Emissions Monitoring Project at the Baytown Complex no later than 90 days after the effective date of this Agreed Order. The Enhanced Fugitive Emissions Monitoring Project shall be complete and in use no later than 12 months after the effective date of this Agreed Order.

13. Semi-Annual Reports. By August 31 (for the report covering January 1 - June 30) and by March 31 of each year or by the date on which the Annual Emissions Inventory is due, whichever is later. (for the report covering July 1 - December 31), ExxonMobil will submit to the Executive Director Semi-Annual Reports for the Baytown Complex regarding compliance with this Agreed Order.
 - a. With regard to any of the Ordered Environmental Improvement Projects identified in Paragraph 12 of this Agreed Order for which work was performed in the prior semiannual period, each Semi-Annual Report will identify:
 - i. The name of the Ordered Environmental Improvement Project;
 - ii. The date on which ExxonMobil started work on the Ordered Environmental Improvement Project;
 - iii. The date on which ExxonMobil completed work on the Ordered Environmental Improvement Project, or the estimated date of completion, if work on the Ordered Environmental Improvement Project was not complete by the end of the semiannual period; and
 - b. With regard to the stipulated penalties established in Paragraph 3 of this Agreed Order, each Semi-Annual Report will:
 - i. Provide a copy of the payment;
 - ii. State the total amount of the stipulated penalties due for the prior semiannual period;
 - iii. Identify, for each emissions event for which stipulated penalties are due, the following:
 1. The STEERS report number for the event; and
 2. The amount of the stipulated penalty.
 - c. ExxonMobil may combine the Semi-Annual report for July - December with the Annual Report required under this Agreed Order.

14. Annual Reports. Starting in 2013, ExxonMobil will submit to the Executive Director Annual Reports for the Baytown Complex regarding compliance with this Agreed Order. The Annual Report shall be due by March 31 of each year or by the date on which the Annual Emissions Inventory is due, whichever is later.

a. With respect to the emissions reductions required by Paragraph 10 of this Agreed Order, the Annual Reports will:

- i. Identify the VOC, HRVOC, CO, SO₂ and NO_x emissions reductions achieved over the prior calendar year; and
- ii. Identify the cumulative VOC, HRVOC, CO, SO₂ and NO_x emissions reductions achieved under this Agreed Order.

d. The Annual Reports will:

- i. provide actual emissions data for the Baytown Complex for the prior calendar year based on Emission Inventories submitted in accordance with 30 TEX. ADMIN. CODE § 101.10, with an explanation of how recent air emissions performance continues the overall emissions reduction trends at the Baytown Complex; and
- ii. include a summary of activities at the Baytown Complex related to continuing efforts to improve environmental performance.

15. The reports required by Paragraphs 13 and 14 above shall be submitted to:

Order Compliance Team
Enforcement Division, MC 149A
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

with a copy to:

Air Section, Manager
Houston Regional Office
Texas Commission on Environmental Quality
5425 Polk Avenue, Suite H
Houston, Texas 77023-1486

16. The reporting requirements of this Agreed Order do not relieve ExxonMobil of any reporting obligations to the TCEQ, including 30 TEX. ADMIN. CODE §§ 101.201 and 101.211. All emissions events subject to a stipulated penalty under this Agreed Order must be reported under 30 TEX. ADMIN. CODE § 122.145.

17. If the Executive Director identifies a violation for which a stipulated penalty has not been paid upon review of a report submitted under this Agreed Order, the Executive Director

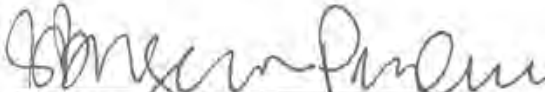
will notify ExxonMobil of the violation and stipulated penalty due in writing within 45 days of receipt of the report. ExxonMobil will submit payment in accordance with Paragraph 7 of this section no later than 60 days after receipt of notification from the Executive Director under this paragraph.

18. The provisions of this Agreed Order shall apply to and be binding upon ExxonMobil, its agents and assigns. ExxonMobil is ordered to give notice of this Agreed Order to personnel who maintain day-to-day control over the Baytown Complex operations referenced in this Agreed Order.
19. If ExxonMobil fails to comply with any of the Ordering Provisions in this Agreed Order within the prescribed schedules, and that failure is caused solely by an act of God, war, strike, riot, or other catastrophe, ExxonMobil's failure is not a violation of this Agreed Order. ExxonMobil shall have the burden of establishing to the Executive Director's satisfaction that such an event has occurred. ExxonMobil shall notify the Executive Director within 15 days after ExxonMobil becomes aware of a delaying event and shall take all reasonable measures to mitigate and minimize any delay.
20. The Executive Director may grant an extension of any deadline in this Agreed Order or in any report or other document submitted pursuant to this Agreed Order, upon a written and substantiated showing of good cause. All requests for extensions by ExxonMobil shall be made in writing to the Executive Director. Extensions are not effective until ExxonMobil receives written approval from the Executive Director. The determination of what constitutes good cause rests solely with the Executive Director.
21. Notwithstanding any other provisions of this Agreed Order, the TCEQ reserves the right to fully pursue Respondent for any and all criminal liability, even if such liability is related to a matter otherwise covered by this Agreed Order.
22. This agreement may be executed in multiple counterparts, which together shall constitute a single original instrument. Any executed signature page to this agreement may be transmitted by facsimile to the other parties, which shall constitute an original signature for all purposes.
23. This Agreed Order shall terminate five years from its effective date, subject to the Renegotiation and Early Termination provisions contained in Ordering Provision No. 11, above. Under 30 TEX. ADMIN. CODE § 70.10(b), the effective date is the date of hand-delivery of this Agreed Order to ExxonMobil, or three days after the date on which the Commission mails notice of this Agreed Order to ExxonMobil, whichever is earlier. The Chief Clerk shall provide a copy of this Agreed Order to each of the parties.

SIGNATURE PAGE

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

For the Commission



For the Executive Director

1/23/2012

Date

I, the undersigned, have read and understand the attached Agreed Order. I represent that I am authorized to agree to the attached Agreed Order on behalf of Exxon Mobil Corporation, and I do agree to the terms and conditions specified therein. I further acknowledge that the TCEQ, in accepting payment for the penalty amount, is materially relying on such representation.

I also understand that failure to comply with the Ordering Provisions in this order and/or failure to timely pay the penalty amount may result in:

- A negative impact on compliance history;
- Greater scrutiny of any permit applications;
- Referral of this case to the Attorney General's office for contempt, injunctive relief, additional penalties, and/or attorney fees, or to a collection agency;
- Increased penalties in any future enforcement actions;
- Automatic referral to the Attorney General's Office of any future enforcement actions; and
- TCEQ seeking other relief as authorized by law.

In addition, I understand that any falsification of any compliance documents may result in criminal prosecution.


Signature

DEC 28, 2011
Date

STEVEN R. COPE
Name (Printed or typed)

REFINERY MANAGER
Title

Authorized representative of Exxon Mobil Corporation

EXHIBIT A
Stipulated Penalties

Baytown Refinery, Baytown Olefins Plant and Baytown Chemical Plant
Reportable Emissions Events and Excess Opacity Events

Magnitude of Emissions (Per Event)¹	Stipulated Penalty (for first 40 emissions events in calendar year)	Stipulated Penalty (for the 41st emissions event or greater in calendar year)
Less than or equal to 500 lbs Or Excess Opacity Event	\$7,000 per event	\$8,250 per event
Greater than 500 lbs but less than 5000 lbs	\$13,500 per event	\$15,500 per event
Greater than or equal to 5000 lbs	\$25,000 per event	\$25,000 per event

¹The "event" subject to a stipulated penalty under this Order is the aggregate unauthorized emissions and the estimated duration set forth in the final record of reportable emissions events as required under 30 Texas Administrative Code Section 101.201(b).

EXHIBIT B

Docket Number: 2011-2336-AIR-E

SUPPLEMENTAL ENVIRONMENTAL PROJECT

Respondent:	Exxon Mobil Corporation
Penalty Amount:	Ninety-Eight Thousand Dollars (\$98,000)
SEP Offset Amount:	Forty-Nine Thousand Dollars (\$49,000)
Type of SEP:	Contribution to a Pre-approved SEP
Third-Party Recipient:	Houston Regional Monitoring Corporation
Project Name:	<i>Houston Area Air Monitoring Project</i>
Location of SEP:	Harris County

The Texas Commission on Environmental Quality ("TCEQ") agrees to offset a portion of the administrative Penalty Amount assessed in this Agreed Order for Respondent to contribute to a Supplemental Environmental Project ("SEP"). The SEP Offset Amount is set forth above and such offset is conditioned upon completion of the project in accordance with the terms of this Attachment A.

1. Project Description

A. Project

Respondent shall contribute the SEP Offset Amount to the Third-Party Recipient named above. The contribution will be to the **Houston Regional Monitoring Corporation** for the *Houston Area Air Monitoring Project*. The contribution will be used in accordance with the Supplemental Environmental Project between the Third-Party Recipient and the TCEQ (the "Project"). Specifically, the SEP Offset Amount will be used to operate a network of ambient air monitoring stations that continuously measure and record concentrations of ambient air pollutants. This network includes the HRM 617 Wallisville Road site, the HRM 615 Lynchburg Ferry site, and the HRM 3 Haden Road site, (the Sites). Third-Party Recipient shall use SEP Offset Amount to report data from these three existing sites in the Houston Regional Monitoring Corporation ambient air quality monitoring network in the Houston-Galveston Air Quality Control Region Number 216.

All dollars contributed will be used solely for the direct cost of the Project and no portion will be spent on administrative costs. The SEP will be performed in accordance with all federal, state, and local environmental laws and regulations.

Respondent's signature affixed to this Agreed Order certifies that it has no prior commitment to make this contribution and that it is being contributed solely in an effort to settle this enforcement action.

B. Environmental Benefit

This SEP will provide TCEQ with near real-time access to high quality, short time resolution VOC, NO_x, ozone, and meteorological data sets that can be used to evaluate and track air pollution emission events as they occur, conduct source attribution studies, and to assess potential ambient community exposure to a limited number of hazardous air pollutants. Data from the monitors can be used with data from other monitors to provide critical information that can be used to evaluate the effectiveness of current and proposed emission control strategies aimed at achieving compliance with the 8-hr ozone NAAQS. It also provides a key source of information that is essential to furthering our overall understanding of those emission sources that contribute to ambient community exposure to toxic air contaminants. Because the information is available in near real-time, it can be used to provide both agency staff and industry personnel with time critical information to investigate emission events in a timely fashion. Another key benefit is the ability to measure the change in the ambient air concentration of the individual target species and quantify control measure effectiveness. Data from these monitors will be publicly accessible through the TCEQ's website and will be used in evaluating air quality in the area, in ozone forecasts, and ozone warnings. Thus, the public will directly benefit by having access to the data and the forecasting and notification tools which can be used for public awareness.

C. Minimum Expenditure

Respondent shall contribute at least the SEP Offset Amount to the Third-Party Recipient and comply with all other provisions of this SEP.

2. Performance Schedule

Within 30 days after the effective date of this Agreed Order, Respondent shall contribute the SEP Offset Amount to the Third-Party Recipient. Respondent shall make the contribution payable to **Houston Regional Monitoring Corporation SEP** and shall mail the contribution, with a copy of the Agreed Order to:

Houston Regional Monitoring Corporation
c/o Christopher B. Amandes
Vinson & Elkins LLP
First City Tower
101 Fannin Street, Suite 2500
Houston, Texas 77002-6760

3. Records and Reporting

Concurrent with the payment of the SEP Offset Amount, Respondent shall provide the Litigation Division SEP Coordinator with a copy of the check and transmittal letter indicating full payment of the SEP Offset Amount due to the Third-Party Recipient. Respondent shall mail a copy of the check and transmittal letter to:

Texas Commission on Environmental Quality
Litigation Division
Attention: SEP Coordinator, MC 175
PO Box 13087
Austin, Texas 78711-3087

4. Failure to Fully Perform

If Respondent does not perform its obligations under this Attachment A in any way, including full expenditure of the SEP Offset Amount and submittal of the required reporting described in Sections 2 and 3 above, the Executive Director ("ED") may require immediate payment of all or part of the SEP Offset Amount.

In the event the ED determines that Respondent failed to complete the project, Respondent shall remit payment for all or a portion of the SEP Offset Amount, as determined by the ED, and shall include on the check the docket number of this Agreed Order and note that it is for reimbursement of a SEP. Respondent shall make the check payable to "Texas Commission on Environmental Quality" and shall mail it to:

Texas Commission on Environmental Quality
Litigation Division
Attention: SEP Coordinator, MC 175
PO Box 13087
Austin, Texas 78711-3087

5. Publicity

Any public statements concerning this SEP made by or on behalf of Respondent, must include a clear statement that **the Project was performed as part of the settlement of an enforcement action brought by the TCEQ**. Such statements include advertising, public relations, and press releases.

6. Clean Texas Program

Respondent shall not include this SEP in any application made to TCEQ under the "Clean Texas" (or any successor) program(s). Similarly, Respondent may not seek recognition for this contribution in any other state or federal regulatory program.

7. Other SEPs by TCEQ or Other Agencies

The SEP Offset Amount identified in this Agreed Order has not been, and shall not be, included as a SEP for Respondent under any other Agreed Order negotiated with the TCEQ or any other agency of the state or federal government.

(Attachment 6)

Comments on Draft Permit No. 102982



1303 San Antonio Street, Suite 200
Austin TX, 78701
p: 512-637-9477 f: 512-584-8019
www.environmentalintegrity.org

May 16, 2013

Ms. Bridget Bohac
Office of the Chief Clerk, MC-105
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building F
Austin, TX 78753

Via Hand-delivery

Re: Air Alliance Houston, Sierra Club, and Environmental Integrity Project's Comments and Request for Hearing for ExxonMobil Chemical Corporation's Draft Air Quality Permit No. 102982; TCEQ Docket No. 2013-0657-AIR

I. INTRODUCTION

Environmental Integrity Project, Air Alliance Houston, and the Sierra Club ("Commenters") appreciate this opportunity to submit comments on Draft Permit No. 102982 ("Draft Permit") for ExxonMobil's proposed Baytown ethylene plant. ExxonMobil proposes to construct its new ethylene plant at its existing Baytown Olefins Plant ("BOP") in Harris County, Texas. In our initial comments, we raised several concerns about the completeness of ExxonMobil's application, the choice of minor NSR as the permitting mechanism for this project, and the amount of application information that was withheld from the public.¹ In these supplementary comments, we address additional concerns about ExxonMobil's application, the Executive Director's review, and the Draft Permit.

ExxonMobil's application does not demonstrate that emissions from its ethylene plant will be adequately controlled or that emissions from the plant will not harm those who live and work near it. The Draft Permit is often vague or unenforceable, and the specific limits it contains are not sufficiently stringent. In light of these shortcomings, and others discussed below, Commenters respectfully submit that the Commission may not issue ExxonMobil's permit until ExxonMobil supplements its application and the Executive Director revises the Draft Permit to impose clear, stringent, and enforceable emission limits—limits that require tight control of emissions at all times and ensure that health-based air quality standards are maintained.

¹ (Attachment 1), Comments and Contested Case Hearing Request on ExxonMobil Chemical Company's Application for a Permit to Construct a New Ethylene Production Unit at its Baytown Olefins Plant in Harris County, Texas (July 3, 2012) at 3-5.

In particular, ExxonMobil's application, the Executive Director's review, and the Draft Permit are deficient for the following reasons:

- The ethylene plant has the potential to emit significant quantities of volatile organic compounds ("VOC"), nitrogen oxides ("NOx"), Particulate Matter ("PM"), PM with a diameter of ten microns or less ("PM10"), and PM with a diameter of 2.5 microns or less ("PM2.5"). ExxonMobil must either net out of major NSR for the project or obtain Prevention of Significant Deterioration ("PSD") and Non-attainment New Source Review ("NNSR") authorizations;
- ExxonMobil improperly relied on EPA's expired PM10 Surrogate Policy to avoid PM2.5 PSD review requirements;
- ExxonMobil failed to demonstrate compliance with the applicable 12 micrograms per cubic meter annual PM2.5 NAAQS;
- ExxonMobil's application is incomplete and improperly relies on merely hypothetical design assumptions;
- ExxonMobil's application and the Draft Permit do not ensure BACT;
- ExxonMobil failed to include emissions increases from modifications to and increased utilization of existing BOP units in its modeling analysis;
- The Draft Permit does not establish limits for modified BOP emissions units;
- ExxonMobil's application information regarding planned MSS activities and emissions is incomplete, impacts from these activities were improperly modeled, and the Draft Permit fails to require MSS emissions to be controlled;
- ExxonMobil improperly marked key application materials as "confidential." Because the public does not have access to these materials, the public was not able to fully evaluate ExxonMobil's application, as is its right.

Commenters are particularly concerned about this project, because air quality in Baytown is already poor. All of Harris County is a severe non-attainment area for ozone and preliminary PM2.5 monitoring shows that Harris County is not meeting the health-based annual fine particulate matter standard.² The adverse health effects of fine particulate matter ("PM2.5") are well documented and potentially severe:

Health studies have shown a significant association between exposure to fine particles and premature death from heart or lung disease. Fine particles can aggravate heart and lung diseases and have been linked to effects such as: cardiovascular symptoms; cardiac arrhythmias; heart attacks; respiratory symptoms; asthma attacks; and bronchitis. These effects can result in increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days. Individuals that may be particularly sensitive to fine

² (Attachment 2), Fine Particle Concentrations Based on Monitored Air Quality from 2009-2011.

particle exposure include people with heart or lung disease, older adults, and children.³

If the Draft Permit is issued, it will authorize hundreds of tons of ozone forming pollutants and PM2.5 to be released from the ethylene plant each year. In addition to these authorized emissions, the ethylene plant will also release large amounts of pollution during malfunctions and upset events. Even a single upset event at an ethylene plant can have a drastic impact on air quality over a large area. For example, a compressor failure at Chevron's Cedar Bayou olefins plant on October 7, 1999 resulted in the highest ozone levels measured since 1989 and tripped multiple ozone monitors throughout the Houston Ship Channel as the air pollution traveled west and northwest through Harris County. ExxonMobil's Baytown complex, which includes a chemical plant and petroleum refinery in addition to the olefins plant, has a history of frequent and serious upset events. Between 2009 and 2011, ExxonMobil reported 554 tons of ozone forming pollution and particulate matter, and six tons of toxic air pollution during 110 upset events at its Baytown refinery.⁴ While ExxonMobil did not report as many upset events at its Baytown Olefins Plant during this period, the amount of toxic air pollution released was much higher than at the refinery, at 36 tons.⁵ The TCEQ has issued several enforcement orders against ExxonMobil for avoidable upset events at the Baytown complex,⁶ but these orders have not put an end to the upset events.⁷

Given the amount of pollution the Draft Permit would authorize from the new ethylene plant, the poor quality of air in Baytown, and the potential for serious upset events at the new ethylene plant, the Commission must ensure that all emissions at the plant will be well-controlled, that the plant will be well-maintained and operated, and that emissions from the plant will not further degrade the region's air quality before it issues ExxonMobil's permit. ExxonMobil's application, the Executive Director's review, and the Draft Permit fall well short of this mark. Therefore the permit should not be issued.

II. COMMENTERS

Environmental Integrity Project is a non-profit, non-partisan organization that promotes strict effective enforcement and implementation of state and federal air quality laws.

³ Fine Particle Basic Information, available electronically at <http://www.epa.gov/pmdesignations/basicinfo.htm>.

⁴ (Attachment 3), Letter to Inspector General Arthur A Elkins, Jr. regarding Clean Air Act Enforcement of Excess Emissions and the Affirmative Defense (April 23, 2013).

⁵ *Id.*

⁶ *See, e.g.*, (Attachment 4), Agreed Order, Docket No. 2011-2336-AIR-E, imposing fines and requiring reductions in MSS emissions after multiple serious avoidable upset events at ExxonMobil's Baytown complex.

⁷ A list of upset events at the Baytown Olefins Plant is available online at: http://www12.tceq.state.tx.us/crpub/index.cfm?fuseaction=iwr.eeincdetail&addn_id=387592272009251 A list of upset events at the Baytown Refinery is available online at: http://www12.tceq.state.tx.us/crpub/index.cfm?fuseaction=iwr.eeincdetail&addn_id=628603742009251 A list of upset events at the Baytown Chemical Plant is available online at: http://www12.tceq.state.tx.us/crpub/index.cfm?fuseaction=iwr.eeincdetail&addn_id=850598042009251

Air Alliance Houston is a nonprofit organization whose mission is to reduce air pollution in the Houston region and to protect public health and environmental integrity through research, education, and advocacy. Air Alliance Houston participates in regulatory and legislative processes, testifies at hearings, and comments on proposals. Air Alliance Houston is heavily involved in community outreach and works to educate those living in neighborhoods directly impacted by air pollution about local air pollution issues, as well as state and federal policy issues.

Sierra Club, founded in 1892 by John Muir, is the oldest and largest grassroots environmental organization in the country, with over 600,000 members nationwide. Sierra Club is a nonprofit corporation with offices, programs and numerous members in Texas. Sierra Club has the specific goal of improving outdoor air quality. Sierra Club and its members have a significant interest in ensuring that any air permit issued to ExxonMobil authorizing construction of a new ethylene plant in Baytown, Texas complies with all applicable statutory and regulatory requirements.

III. CONTESTED CASE HEARING REQUESTS

Our initial comments requested a contested case on behalf of Matthew S. Tejada. **Mr. Tejada no longer resides in Texas and he withdraws his request for a contested case hearing.**

Sierra Club **requests a contested case hearing** on ExxonMobil's application and the Draft Permit. Multiple Sierra Club members clearly have standing to request a hearing individually and would be considered affected persons as described by 30 Tex. Admin. Code §55.203.⁸ Sierra Club members own property, reside, and recreate near the proposed project site. Accordingly, Sierra Club is an affected person as understood in common law and Article III standing and as defined by 30 TAC §55.205(a)(1). No individual Sierra Club member's participation is required for Sierra Club to assert any claims or seek any relief in the contested case hearing or any other associated proceedings to consider the application and Draft Permit for the proposed ethylene plant.⁹

IV. PUBLIC MEETING REQUEST

Air Alliance Houston, Environmental Integrity Project, and Sierra Club **request a public meeting** be held in the Baytown area concerning ExxonMobil's application and Draft Permit No. 102982. Because ExxonMobil's ethylene plant has the potential to further diminish the area's already poor air quality, it is important for members of the Baytown community to have an

⁸ Please direct communications regarding this request to Gabriel Clark-Leach at 1303 San Antonio St. #200, Austin, Texas 78701.

⁹ The Executive Director, the public interest counsel, or the applicant may request additional information regarding how EIP, AAH, and/or Sierra Club meets the requirements of 30 Tex. Admin. Code § 55.205 according to the procedure in 30 Tex. Admin. Code § 55.209.

opportunity to raise their concerns about the project and to have the questions about it answered by ExxonMobil's representatives.

V. ISSUES

A. Prevention of Significant Deterioration and Non-Attainment New Source Review

According to the Executive Director's Source Analysis and Technical Review document for this project ("TRV"),

ExxonMobil established Plant-wide Applicable Limits (PALs) for Volatile Organic Compounds (VOC), Nitrogen Oxides (NOx), Particulate Matter (PM), Sulfur Dioxide (SO₂), Carbon Monoxide (CO) and Sulfuric Acid (H₂SO₄) in an amendment to Permit No. 3452 issued on August 24, 2005. They continue to operate under PAL6. They are not requesting an[y] increases to any of the established PAL limits with this permit action; therefore, no federal applicability review for this project is required.

In our previous comments, we explained why—as a matter of law—ExxonMobil may not rely upon the Flex/PAL condition in Flexible Permit No. 3452 to avoid PSD and NNSR requirements for this project.¹⁰ In addition to this legal argument, we submit the following legal and factual issues related to ExxonMobil's Flex/PAL:

1. ExxonMobil has already exceeded its Flex/PAL emission limits

ExxonMobil may not rely on its Flex/PAL to avoid NNSR and PSD requirements for VOC and PM, because emissions from the BOP already exceed the Flex/PAL limits for those pollutants.¹¹

Permit No. 3452, establishes a Flex/PAL emission limit for PM of 365.62 tons per year ("TPY").¹² ExxonMobil's PM emissions from BOP, as reported to the TCEQ's Emissions Inventory ("EI") in 2011 and 2010, exceed this limit.¹³ ExxonMobil reported 379 tons of PM in its 2010 EI report and 445 tons in its 2011 EI report.¹⁴ Because ExxonMobil exceeded its Flex/PAL annual PM limit, it is in violation of its Flexible Permit and must undergo major NSR

¹⁰ (Attachment 1) at 3-5.

¹¹ See 30 Tex. Admin. Code § 116.12(24) ("Plant-wide applicability limit major modification—Any physical change in, or change in the method of operation of the plant-wide applicability limit source that causes it to emit the plant-wide applicability limit pollutant at a level equal to or greater than the plant-wide applicability limit.").

¹² (Attachment 5), Permit No. 3452 at Emission Points, Emission Caps, and Individual Emission Limitations Table.

¹³ (Attachment 6), ExxonMobil Baytown Olefins Plant EI Summary 2011; (Attachment 7), ExxonMobil Baytown Olefins Plant EI Summary 2010.

¹⁴ *Id.* Total PM emissions include all 1XXXXX contaminants reported to EI. (Attachment 8), RG-360/12, Emissions Inventory Guidelines, TCEQ Emissions Assessment Section (January 2013) at 68.

review.¹⁵ Because PM emissions from BOP already exceed the PM Flex/PAL PM limit, ExxonMobil may not rely on that limit to avoid PM PSD review for this project.

Permit No. 3452 establishes a Flex/PAL emission limit for VOC of 435.77 tons per year. In its 2007 BOP EI report, ExxonMobil reported 456 tons of VOC emissions.¹⁶ Because emissions from BOP already exceed the Flex/PAL VOC limit, ExxonMobil may not rely on that limit to avoid NNSR review for this project.

While ExxonMobil's BOP Flex/PAL compliance reports do not show emissions in excess of the Flex/PAL limits, these reports do not comply with the Commission's PAL rules.¹⁷ The Commission's PAL rules, which apply to "every" PAL permit make it clear that PAL limits establish major NSR thresholds that include emissions from *all emissions units* at a major stationary source and require semi-annual reporting of "total annual emissions" from the PAL major stationary source.¹⁸ Accordingly, ExxonMobil must count emissions from all emissions units at BOP to demonstrate compliance with Flex/PAL limits. However, ExxonMobil does not report cooling tower PM emissions in its Flex/PAL compliance demonstrations and, because the monitoring and recordkeeping methods ExxonMobil follows for its Flex/PAL demonstrations do not accurately reflect actual emissions from certain sources (e.g., flares), ExxonMobil underreports actual emissions in its Flex/PAL compliance reports.¹⁹ Based on the more accurate and complete monitoring and reporting procedures ExxonMobil uses for BOP EI reporting, ExxonMobil has violated its Flex/PAL limits and may not rely on its Flex/PAL to avoid major NSR permitting requirements in this case.

2. *ExxonMobil cannot demonstrate that emissions from its new ethylene plant can be maintained under existing Flex/PAL limits*

Even if ExxonMobil may rely on its Flex/PAL to avoid major NSR requirements for projects at its Baytown Olefins Plant, and even if ExxonMobil has not already exceeded its Flex/PAL limits, ExxonMobil must still demonstrate that emissions from the new ethylene plant can be accommodated under those limits.²⁰ Given the amount of BOP PM and VOC emissions ExxonMobil has reported to the Emissions Inventory, and the large potential VOC and PM

¹⁵ 30 Tex. Admin. Code § 116.192(a)(2) ("The owner or operator shall obtain a major new source review permit . . . for all facilities contributing to the increase in emissions so as to cause the major stationary source's emissions to equal or exceed its PAL, regardless of the magnitude of the emissions increase.").

¹⁶ (Attachment 9), ExxonMobil Baytown Olefins Plant EI Summary 2007.

¹⁷ (Attachments 10), ExxonMobil Flex/Pal Compliance Reports.

¹⁸ 30 Tex. Admin. Code §§ 116.186(b)(1) and (4)(C)(ii); Tex. Admin. Code § 116.186(a) ("The PAL must include all emissions, including fugitive emissions, to the extent quantifiable, from all facilities or emissions units at a major stationary source included in the PAL that emit or have the potential to emit the PAL pollutant."); 30 Tex. Admin. Code § 116.192(a)(2).

¹⁹ Compare emissions reported in ExxonMobil's Flex/PAL Compliance Reports (Attachment 10) with reported EI emissions (Attachments 6, 7, and 9).

²⁰ 30 Tex. Admin. Code § 116.111(a)(2)(G) (Before a permit may be issued, the applicant must demonstrate that "[t]he proposed facility will achieve the performance specified in the permit application.").

emissions from the ethylene plant, it is improbable that ExxonMobil can operate its new ethylene plant without violating its Flex/PAL PM and VOC limits.

The Executive Director recognized this issue in his first Notice of Deficiency Letter for this project and properly asked ExxonMobil to demonstrate how it will manage emissions from its new and existing units without exceeding Flex/PAL PM and VOC limits.²¹ ExxonMobil refused to make this demonstration, stating only that it will “operationally manage the plant, including various emissions reduction measures, as necessary, to ensure that none of the PALs will be exceeded after the proposed new emissions sources become operational.”²²

This evasive response is unacceptable. Even if the Flex/Pal affords ExxonMobil significant discretion to manage emissions at new and existing facilities, this discretion is not boundless. If it is technically impracticable or economically reasonable for ExxonMobil to maintain emissions within the Flex/PAL limits once the new ethylene plant is operational, the Executive Director may not turn a blind eye to that fact.²³ Indeed, 30 Tex. Admin. Code § 116.111(a)(2)(G) *requires* ExxonMobil to demonstrate that it can operate its new ethylene plant within existing Flex/PAL limits before its permit may be issued.

An applicant may not avoid major NSR requirements by implementing artificial and unreasonable restrictions on a source’s potential to emit or by promising to manage existing emissions under a significance threshold that is not technically practicable or economically feasible to meet. Instead, if an applicant wishes to avoid major NSR, she must explain how source’s emissions can be kept below the significance threshold on a long-term basis.²⁴ ExxonMobil has not made this demonstration. Its permit application is therefore incomplete.

3. *Flex/PAL requirements are not clearly enforceable through the Draft Permit*

The Draft Permit does not incorporate ExxonMobil’s Flex/PAL or indicate that emissions from the new facility must be included in compliance demonstrations for the Flex/PAL. By its own terms, Permit No. 3452 only covers facilities listed in the table entitled “Emission Points, Emission Caps, and Individual Emission Limitations” attached to Permit No. 3452.²⁵ Thus, to authorize new facilities using the Flex/PAL condition in this permit, ExxonMobil must submit a permit alteration or amendment application.²⁶ ExxonMobil has not done this. Instead, it has

²¹ (Attachment 11), Response to July 13, 2012 Notice of Deficiency, Permit Application No. 102982 (August 28, 2012) at 1-3.

²² *Id.*

²³ See, e.g., EPA Draft New Source Review Workshop Manual (1990) at A-9 (Directing permit reviewers to scrutinize applications for synthetic minor source permits that require operation of a new source at levels that are not physically possible or economically sustainable). Available electronically at: <http://www.epa.gov/NSR/ttnnsr01/gen/wkshpman.pdf>

²⁴ *Id.*

²⁵ (Attachment 5) at Special Condition 1.

²⁶ *Id.* at Special Condition 6 (“The permit holder shall submit a new permit alteration, unless an amendment application has been made for state authorization, prior to operating any new facilities at the site that emit VOC, CO, NOx, SO2, H2SO4, or PM.”).

requested a new permit to authorize construction of its ethylene plant. Because the new ethylene plant is not authorized under Permit No. 3452 and the Draft Permit does not require ExxonMobil to include emissions from the new ethylene plant in its Flex/PAL compliance demonstrations, the Draft Permit fails to ensure compliance with the Flex/PAL limits.

Moreover, because the Draft Permit is not a PAL permit and because the new ethylene plant will not be authorized under Permit No. 3452, it is unclear whether and how the TCEQ's general and special conditions rule for PALs (30 Tex. Admin. Code § 116.186) will apply to the new plant. For example, 30 Tex. Admin. Code § 116.186(b)(9) provides that "[f]ailure to use a monitoring system that meets the requirements of this section renders the PAL permit invalid." If ExxonMobil fails to implement monitoring systems that meets the TCEQ's PAL monitoring requirements at the ethylene plant, will that render the Draft Permit invalid? Will it render the Flex/PAL invalid? If so, under what authority?

30 Tex. Admin. Code § 116.186(b)(10) states that "[a]ll data used to establish the PAL pollutant must be revalidated through performance testing or other scientifically valid means approved by the executive director. Such testing must occur at least once every five years after issuance of the PAL." How will this rule apply to the Draft Permit and what authority does the TCEQ have to require ExxonMobil to revalidate data used to establish its Flex/PAL in light of emissions from the new ethylene plant? How will other relevant 116.186 requirements apply to the ethylene plant? If an applicant may avoid PAL requirements for a new source at a site covered by a PAL by authorizing that source under a new permit while relying on the PAL to avoid PSD and/or NNSR requirements, many of the PAL requirements will not directly apply to the new permit, and will be rendered unenforceable.

If the Executive Director believes that ExxonMobil may avoid major NSR requirements for this project under the Flex/PAL condition in Permit No. 3452, he should direct ExxonMobil to authorize the project through an amendment to that permit as the Flex/PAL requires, and not under a separate permit.

4. *ExxonMobil may not rely on its Flex/PAL to avoid PSD requirements for PM2.5*

PM2.5 is a "criteria" pollutant subject to regulation under the Clean Air Act's PSD and NNSR programs. EPA has established National Ambient Air Quality Standards ("NAAQS") for PM2.5.²⁷ PM10, or particulate matter that is no larger than 10 micrometers in diameter, is also a regulated pollutant with its own NAAQS.²⁸ When EPA first promulgated PM2.5 NAAQS in 1997, it determined that significant technical difficulties associated with monitoring, modeling, and calculating PM2.5 emissions prevented applicants from making PM2.5-specific NSR demonstrations.²⁹ In light of these technical difficulties, EPA established an Interim PM10 Surrogate Policy.³⁰ Under this policy, an applicant's demonstration of compliance with applicable PM10 NSR requirements for a project would also show compliance with PM2.5 NSR

²⁷ 40 C.F.R. § 50.18.

²⁸ 40 C.F.R. § 50.6.

²⁹ (Attachment 12), John S. Seitz, Director, Office of Air Quality Planning and Standards, U.S. EPA, Memorandum Regarding Interim Implementation of New Source Review Requirements for PM2.5 (October 23, 1997).

³⁰ *Id.*

requirements.³¹ The technical difficulties associated with monitoring, modeling, and calculating PM2.5 emissions have been resolved and, as of May 16, 2011, the PM10 Surrogate Policy may not be relied on for *any* application.³²

Nonetheless, ExxonMobil argues that because its PM10 Flex/PAL limit was established (in 2005) while the PM10 Surrogate was still available, it may rely on its PM10 Flex/PAL limit and the PM10 Surrogate Policy to demonstrate that PM2.5 emissions increases from its ethylene plant are insignificant and do not trigger PSD requirements:

ExxonMobil believes that the PM/PM10 PAL in Permit No. 3452 does cover PM2.5, and is a PM2.5 PAL. When the PM/PM10 PAL was established, PM2.5 was being addressed in permitting as PM10 under the PM10 Surrogacy Policy. The PAL review included both filterable and condensable PM analysis. Therefore, this PM PAL sets federally applicable limits for both PM10 and PM2.5 through EPA's PM10 Surrogacy Policy.

EPA developed the PM10 Surrogacy Policy in 1997 to allow the interim use of PM10 as a surrogate for PM2.5 to meet New Source Review requirements, which now includes PALs, under the CAA. In 2002, EPA reaffirmed the PM10 surrogacy policy in part because "all new major sources and major modifications that would trigger PSD requirements for PM2.5 would also trigger PM10 requirements because PM2.5 is a subset of PM10." *See* 73 FR 28341 (May 16, 2008). Consistent with EPA['s] rationale supporting the Surrogacy Policy, the PM/PM10 PAL in Permit No. 3452 is a PAL for both PM10 and PM2.5.³³

As a matter of fact, ExxonMobil failed to demonstrate that EPA's PM10 Surrogate Policy was applied to issue its Flex/PAL or that the policy applies to PAL permits. ExxonMobil's Flex/PAL application makes no mention of the policy and Commenters have not identified any documentation indicating that the policy was applied to issue the Flex/PAL permit.³⁴ As a matter of law, ExxonMobil may not rely upon EPA's PM10 Surrogate Policy to demonstrate compliance with PM2.5 PSD requirements, even if the policy was used to issue its Flex/PAL. This is so, not only because the PM10 Surrogate Policy is dead, but also for the following reasons:

³¹ *Id.*

³² 76 Fed. Reg. 28,646, 28,648 (May 18, 2011) ("With the end of the 1997 PM10 Surrogate Policy in SIP-approved states on May 16, 2011, and the repeal of the grandfather provision in this final action, the 1997 PM10 Surrogate Policy may not be relied on for any pending or future application.")

³³ (Attachment 11) at 3.

³⁴ (Attachment 13), Permit No. 3452 application files 2004-2005.

a. The technical difficulties that made the PM10 Surrogate Policy necessary demonstrate that reliable data about PM2.5 emissions was unavailable when ExxonMobil's Flex/PAL amendment was issued

The PM10 Surrogate Policy was necessary, because, at the time the first PM2.5 NAAQS were promulgated, agencies and applicants had not yet developed reliable methods for calculating, monitoring, and modeling PM2.5 impacts and emissions.³⁵ The PM10 Surrogate Policy, by its own terms, was a stop-gap measure that only applied so long as reliable methods for directly demonstrating compliance with PM2.5 NSR requirements were unavailable.³⁶ PALs must be based on reliable information about actual emissions from a major stationary source during a two-year baseline period.³⁷ A PAL may not be based on any period for which there is inadequate information for determining annual emissions of the PAL pollutant, in tons per year, and for adjusting this amount downward to exclude noncompliant emissions.³⁸ Thus if, in 2005 when ExxonMobil obtained its Flex/PAL, the Executive Director did not have sufficient information about ExxonMobil's baseline actual PM2.5 emissions to establish a PM2.5 PAL, the PM10 actual emissions data used to establish the PM10 could not have been used to establish a PM2.5 PAL.³⁹ On the other hand, if reliable information about actual PM2.5 emissions at BOP was available when the Flex/PAL was issued, reliance on the interim PM10 Surrogate Policy to establish a PM10 limit that also covered PM2.5 would have been improper. Thus, ExxonMobil's PM10 Flex/PAL limit cannot be a PM2.5 PAL.

b. EPA's interim PM10 Surrogate Policy does not assure protection of PM2.5 NAAQS

As EPA explained in its 2011 rulemaking repealing the PM2.5 Grandfathering Provision, the PM10 Surrogate Policy may not ensure maintenance of the PM2.5 NAAQS:

We do not believe that the use of the 1997 PM10 Surrogate Policy affords the same degree of protection of the PM2.5 NAAQS from major new and modified sources as does the direct analysis of PM2.5 emissions. In addition to the fact that the original PM2.5 NAAQS promulgated in 1997 were generally more stringent than the corresponding PM10 NAAQS, the strengthening of the 24-hour primary PM2.5 NAAQS in 2005 created a greater disparity between the relative stringency of the PM2.5 and PM10 standards. Thus, now that the necessary technical tools are available, we believe that it is important to move as quickly as possible to implement fully the PSD program for PM2.5.⁴⁰

³⁵ (Attachment 12).

³⁶ *Id.*

³⁷ 30 Tex. Admin. Code § 116.12(3)(B); 40 CFR § 52.21(b)(21)(i).

³⁸ 30 Tex. Admin. Code § 116.12(3)(D); 40 CFR § 52.21(b)(48)(ii)(e).

³⁹ 30 Tex. Admin. Code § 116.12(3)(D); 40 CFR § 52.21(b)(48)(ii)(e). This assumes, for the sake of argument, that ExxonMobil's Flex/PAL PM10 limit is based on baseline actual emissions of PM10. We do not believe this is true.

⁴⁰ 76 Fed. Reg. 28,648.

Even if the PM10 Flex/PAL limit in Permit No. 3452 was sufficient to protect the PM2.5 NAAQS promulgated in 1997, the 1997 24-hour and annual PM2.5 standards have been strengthened, and the Executive Director may not presume that ExxonMobil's Flex/PAL limit is protective of the revised PM2.5 NAAQS.⁴¹ Indeed, though attainment designations for the 2012 PM2.5 annual NAAQS have yet to be made, monitoring data from Harris County shows PM2.5 concentrations that already exceed the standard.⁴² The annual PM10 standard of 50 micrograms per cubic meter in place at the time ExxonMobil's Flex/PAL was issued is much higher than the current PM2.5 annual standard of 12 micrograms per cubic meter. Thus, presuming that ExxonMobil made a demonstration that emissions of PM up to its Flex/PAL limit would not cause a violation of the 50 micrograms per cubic meter PM10 standard, this demonstration does not suffice to show that the Flex/PAL PM limit is protective of the far more stringent 12 micrograms per cubic meter PM2.5 standard.

If the Executive Director decides that ExxonMobil may rely on EPA's PM10 Surrogate Policy to avoid PSD requirements in this case, please explain the basis for that decision and identify any authority (including agency guidance) that supports it. In particular please explain and identify authority indicating:

- That EPA's PM10 Surrogate Policy applies/applied to PAL permits;
- That SIP-approved states, like Texas, may still rely on the PM10 Surrogate Policy to issue permits;
- How EPA's PM10 Surrogate Policy should apply to PSD applicability determinations for PM2.5;
- That EPA's PM10 Surrogate Policy was applied to establish ExxonMobil's PM10 Flex/PAL limit;
- That monitoring requirements in ExxonMobil's Flex/PAL are sufficient to ensure compliance with Flex/PAL PM limits.

5. *ExxonMobil's Flex/PAL limits are inconsistent with federal and Texas PAL requirements*

Texas's SIP-approved PAL rules require PAL limits to be based on baseline actual emissions.⁴³ Baseline actual emissions are the rate of emissions, in tons per year, of a federally regulated NSR pollutant at which a facility actually emitted the pollutant during a consecutive 24-month period within the ten-year period immediately preceding the date a complete permit application was filed.⁴⁴ This rate must be adjusted downward to exclude any emissions that

⁴¹ *Id.*

⁴² (Attachment 2).

⁴³ 30 Tex. Admin. Code § 116.188 ("The plant-wide applicability limit (PAL) is the sum of the baseline actual emissions of the PAL pollutant for each existing facility at the source to be covered.").

⁴⁴ 30 Tex. Admin. Code § 116.12(3)(B).

would have exceeded an emission limitation with which the source is required comply at the time the PAL is issued.⁴⁵

ExxonMobil's Flex/PAL limits for NO_x, SO₂, and H₂SO₄ were not based on baseline actual emissions. Instead, they were calculated by adding together emissions from each BOP emissions source operating at maximum rate capacity utilizing controls determined to be BACT when the Flexible Permit was issued.⁴⁶ While ExxonMobil's Flex/PAL application states that actual baseline emissions were not used to calculate Flex/PAL limits for these pollutants, because they were higher than calculated PTE emissions, this can't be true.⁴⁷ Baseline actual emissions must "be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply . . . had such major stationary source been required to comply with such limitations during the consecutive 24-month period."⁴⁸ Actual baseline emissions could only exceed a plant's PTE, which, for each pollutant was equal to the existing Flexible Permit cap, if emissions during the baseline period exceeded those limits. Thus, it is clear that the baseline actual emissions numbers for these pollutants were not adjusted downward to exclude emissions in excess of limits that applied at the time the Flex/PAL amendment was issued, as Texas's PAL rules require.⁴⁹

B. Best Available Control Technology

Best Available Control Technology ("BACT") is a key component of both minor and major NSR permitting programs. BACT requires the application of the best technically practicable and economically reasonable controls to reduce emissions. In order to ensure that BACT requirements are satisfied, an applicant must include a detailed BACT analysis and the Executive Director must scrutinize this application to ensure the greatest level of pollution reduction is required by the permit. The TCEQ's air permitting guidance provides that "[i]f an applicant has not identified an emission reduction option and/or has not included a detailed description of the equipment/method used for emissions reduction, the BACT analysis is incomplete and the application is considered deficient."⁵⁰ For each source of emissions, including planned MSS emissions, an applicant must provide an evaluation of proposed BACT controls that includes the following performance elements: Capture Efficiency, Emission Reduction Efficiency, Reliability, On-Stream Time, and Enforceability.⁵¹ If an applicant fails to

⁴⁵ *Id.*; See also, Letter to Nisha Sizemore, Chief, Air Permits Branch, Indiana Department of Environmental Management, from Pamela Blakley, Chief, Air Permits Section, EPA Region 5, Regarding Essroc Plant-wide Applicability Limitation Permit (No. 019-21450-00008) (March 26, 2007), available electronically at: <http://www.epa.gov/Region7/air/nsr/nsrmemos/esrocpal.pdf>

⁴⁶ (Attachment I3).

⁴⁷ *Id.*

⁴⁸ 30 Tex. Admin. Code § 116.12(3)(B).

⁴⁹ We expect that the same is true for the "actuals"-based Flex/PAL limits in Permit No. 3452.

⁵⁰ APDG 6110, Air Permit Reviewer Reference Guide, How to Conduct a Pollution Control Evaluation, Air Permits Division, TCEQ ("APDG 6110") at 14. Available electronically at: http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/airpoll_guidance.pdf

⁵¹ *Id.* at 14-16.

“include[] a discussion of the proposed level of performance for the emission reduction option(s) chosen, as well as the necessary supporting documentation for the represented performance elements, the application is considered deficient.”⁵² By this standard, ExxonMobil’s BACT demonstration is deficient. While Commenters address specific deficiencies in ExxonMobil’s demonstration for certain emissions units and activities below, these comments are illustrative and not exhaustive.

C. New Units, Modified Units, and Increased Emissions from Existing Units

ExxonMobil plans to build various new emissions units, modify one of its existing cogeneration units, and increase utilization of its existing depropanizer and wastewater treatments units as part of this project. ExxonMobil’s application does not provide adequate detail about the design of the new and modified emissions units and operational changes to and increased utilization of affected existing units to demonstrate compliance with all applicable requirements.

1. *New Steam Cracking Furnaces*

ExxonMobil proposes to build eight new steam cracking furnaces to crack ethane at the new ethylene plant. These furnaces will fire natural gas or tail gas and, collectively, are the largest source of emissions associated with the project. ExxonMobil’s application fails to provide key information about the design and operation of the furnaces necessary to demonstrate compliance with applicable requirements, and, based on the incomplete information included in the application, the Draft Permit does not require adequate control of furnace emissions.

a. ExxonMobil’s application is incomplete

A permit application must contain detailed information about the design and operation of proposed emissions units sufficient to demonstrate that emissions from the units will be well controlled, and that emissions from the units will not cause or contribute to the violation of applicable air quality standards.⁵³ Once an applicant provides a complete application that demonstrates that BACT will be used to control emissions from all new and modified emissions units and other applicable requirements are satisfied, the permit writer must draft a permit with enforceable limits and conditions that ensure compliance with these requirements. In particular, “[t]he agreed-upon performance demonstration method(s), as well as representations relied upon and assumptions made for all emission limits, should be included in a permit condition(s) to ensure that BACT performance levels will be achieved on an ongoing basis.”⁵⁴

⁵² *Id.* at 16.

⁵³ APDG 6110 at 11 and 16; *see also* 30 Tex. Admin. Code § 116.111(a)(2).

⁵⁴ APDG 6110 at 15.

While ExxonMobil's steam cracking furnaces are the largest sources of emissions at the new ethylene plant, the application includes very little specific information about their design and operation or the effectiveness of the controls proposed to reduce their emissions. For example, Commenters have been unable to locate the following basic information about the furnaces:

- The maximum design capacity for each furnace;
- Whether all furnaces will have the same design;
- How temperature, air flow rate, excess air, and other operating variables will be controlled;
- An assembly drawing, dimensioned and to scale, in plane, elevation, and as many sections as needed to show clearly the operation of the combustion unit;
- Interior dimensions and features of the equipment necessary to calculate performance;
- The control efficiency of the SCR used to control NOx emissions;
- Information regarding how ExxonMobil's "proprietary" burner design differs from other burners and how these differences will affect their performance;
- Emission factors and other inputs used to calculate emission limits;
- Comparison of the proposed controls to the performance achieved at other similar facilities or the performance proposed in recent applications for similar facilities;
- Information demonstrating that the 44.56 lb/hour NOx limit used to improve ExxonMobil's modeling results is achievable.⁵⁵

b. Operating and design assumptions used to calculate furnace emission limits are merely hypothetical

In order to obtain a permit, an applicant must submit detailed information demonstrating compliance with all 30 Tex. Admin. Code § 116.111 requirements.⁵⁶ This makes good sense, because application demonstrations are only meaningful to the extent that emissions units are constructed and operated as described in the application. To ensure that plants are built and operated as described in permit applications, the Commission's rules make application representations regarding the design and operation of emissions units enforceable permit conditions.⁵⁷ Because ExxonMobil's application contains so little information about the design

⁵⁵ (Attachment 14), Response to October 19, 2012 Notice of Deficiency, Permit No. 102982 (November 16, 2012) at 5 ("ExxonMobil is establishing a federally enforceable Furnace Section NOx hourly MAERT limit at 44.56 lb/hr in order to improve modeling results.").

⁵⁶ Tex. Health & Safety Code § 382.0515; 30 Tex. Admin. Code §§ 116.111(a)(1) and (2); APDG 6110 at 1 ("The applicant must fully document the basis for air pollution control determinations as it is the applicant's responsibility to adequately demonstrate that the permit should be issued.").

⁵⁷ 30 Tex. Admin. Code § 116.116(a)(1).

and operation of its furnaces, the application representations do not ensure that the furnaces will be designed and operated consistent with the assumptions used to calculate applicable emission limits for those units. Thus, ExxonMobil's application does not meaningfully demonstrate and the Draft Permit fails to ensure compliance with applicable requirements.

In a recent case, 345th District Court of Travis County reversed the Commission's order authorizing construction of the Las Brisas Energy Center, because Las Brisas's modeling demonstration relied on hypothetical and non-binding representations regarding material handling operations for the power plant. The Court explained:

The TCEQ erred as a matter of law by failing to require that Las Brisas demonstrate compliance with the 24-hour PSD increment for PM10 because demonstrations based on hypothetical, non-binding scenarios for the required material handling cannot supply the "demonstration of compliance required by CAA § 165 (42 U.S.C. § 7475), 40 CFR § 52.21(k), 30 TAC § 116.111, 30 TAC § 116.160 (incorporating by reference 40 CFR § 52.21(k)) and the Texas State Implementation Plan ("SIP").⁵⁸

While ExxonMobil has not directly argued that it may make any of its 30 Tex. Admin. Code § 116.111(a)(2) demonstrations using hypothetical scenarios, that is, effectively, what it has done: the dearth of binding application representations regarding the design and operation of ExxonMobil's furnaces renders the presumptions used to calculate Draft Permit emission limits and estimate air quality impacts merely hypothetical. The application is therefore deficient.

If the Executive Director concludes that ExxonMobil's application does contain sufficiently specific and enforceable representations regarding the design and operation of its furnaces, please identify all such representations. To the extent that such representations are not directly included as Draft Permit special conditions, please explain why they should not be included on the face of the permit to ensure that they are practicably enforceable.

c. ExxonMobil's furnace controls are less effective than those accepted as BACT in recent applications for similar facilities

Dow Chemical filed an application to construct an ethylene production unit in Freeport, Texas.⁵⁹ Dow's ethylene plant will include eight pyrolysis furnaces with an average annual heat duty of 537 MMBtu/hr.⁶⁰ While ExxonMobil's publicly available application materials do not specify the design heat duty of its furnaces, commenters assume, based on the annual furnace vent cap NOx limit of 155.58 TPY and the annual NOx performance standard of 0.010 lb/MMBtu, that ExxonMobil's furnaces will have an average heat duty of approximately 444

⁵⁸ (Attachment 15), Final Judgment, *Environmental Defense Fund, et al v. TCEQ and Las Brisas Energy Center*, Cause No. D-1-GN-11-001364, District Court of Travis County, 261st Judicial District (July 24, 2012).

⁵⁹ (Attachment 16), Application file for Dow Chemical Company, Light Hydrocarbon 9 Facility, Freeport, Texas.

⁶⁰ *Id.*

MMBtu/hr.⁶¹ Thus, ExxonMobil's furnaces will likely be slightly smaller than Dow's. Nonetheless, the Draft Permit MAERT furnace vent cap establishes annual limits for CO, SO₂, PM, PM_{10/2.5}, and VOC that are higher than the limits Dow has requested for its furnace block.⁶² Indeed, Dow's requested limits for VOC and CO are *much* lower than the furnace cap limits in the Draft Permit. What accounts for the difference between the Draft Permit limits for ExxonMobil's furnaces and the limits Dow has requested? What information has ExxonMobil submitted indicating that these lower limits are not technically practicable or economically reasonable?

In particular, please explain:

- Whether ExxonMobil has calculated its furnace emissions using different assumptions and emission rates than Dow;
- Which assumptions and emission rates ExxonMobil used to calculate its furnace emissions;
- What information ExxonMobil provided to justify assumptions and emission rates used in its emission calculations for the furnaces;
- Whether ExxonMobil provided any information demonstrating that the furnace limits Dow proposed for its facility are technically impracticable or economically unreasonable for ExxonMobil to meet.

2. *New Steam Cracking Furnaces: decoking emissions*

As ethane is cracked in ExxonMobil's steam cracking furnaces, coke will accumulate inside the furnace tubes. Coke buildup impedes heat transfer. Therefore, the furnaces will need to be taken offline periodically so that coke can be removed. This activity is called "decoking." The Draft Permit opacity limit for decoking events is less stringent than the Texas SIP requires and the PM and CO limits in the Draft Permit are less stringent than limits proposed in recent permit applications for similar facilities.

a. The Draft Permit decoking opacity limit is less stringent than the Texas SIP requires

Draft Permit, Special Condition 8 states that "there shall be no visible emissions exceeding 30 percent in any six-minute period" during decoking events. This limit is less stringent than the applicable opacity limit in the Texas SIP.⁶³ The Commission may not issue a

⁶¹ The maximum capacity of ExxonMobil's furnaces should be an enforceable permit condition.

⁶² *Id.* at NOD Response and Permit Application Update for Permit Nos. 107153/PSDTX1328 at A-3.

⁶³ See 30 TAC §§ 111(a)(1)(B) and/or (C).

permit that has a less stringent emission limit than contained in the Texas SIP.⁶⁴ Relaxation of a SIP limit may only be accomplished through the SIP revision process.⁶⁵ Thus, the Executive Director must revise the Draft Permit to require compliance with the applicable Texas SIP opacity limit.⁶⁶ Moreover, ExxonMobil must demonstrate that it is capable of complying with the SIP opacity limits during decoking events.⁶⁷

b. ExxonMobil's decoking controls are less effective than those accepted as BACT in recent applications for similar facilities

Dow's application for its Freeport ethylene expansion project proposes to eliminate decoking emissions altogether by routing the decoke vent back to the furnace firebox.⁶⁸ Because ExxonMobil's application does not demonstrate that this level of control is technically impracticable, economically unreasonable, or would result in unacceptable collateral environmental impacts, it should be required as BACT.

Even if ExxonMobil demonstrates that it cannot eliminate decoking emissions altogether as Dow proposes, the level of PM control during decoking events required by the Draft Permit is not BACT. Draft Permit, Special Condition 8 requires cyclonic scrubbers to achieve a PM removal efficiency of at least 95% during decoking events. However, a well-designed cyclonic scrubber will achieve higher control efficiency. For example, Formosa Plastics will use a 99.7% efficient cyclone control to reduce PM emissions during decoking events at its new ethylene unit.⁶⁹

⁶⁴ 42 U.S.C. § 7410(i); 75 Fed. Reg. 68,989, 68,995 (November 10, 2010) (“[T]he State cannot issue any NSR SIP permit that has a less stringent emission limit than already is contained in the approved SIP.”).

⁶⁵ 75 Fed. Reg. 68,995 (“If the State wishes to issue a NSR SIP permit that does not meet the applicable requirements of the Texas SIP, then any such alternative limits would need to be submitted to EPA for approval as a source-specific revision to the SIP, before they would modify the federally applicable emission limits in the approved SIP.”); *See, e.g., U.S. v. Ford Motor Co.*, 814 F.2d 1099, 1102 (6th Cir. 1987) (“Because the proposed Order reflects limits that are different than those in the currently approved Michigan SIP, the order must be submitted to EPA as a revision to the SIP.”); *Tenn. Valley Auth.*, 430 F.3d at 1346-47 (“The 2% *de minimis* rule [which provided a safe harbor from 20% opacity limit if excess emissions do not exceed 2% of source’s quarterly operating hours] effectively revises the opacity limitation contained in the SIP—a revision by any other name is still a revision—and an unapproved revision of any part of a SIP is invalid under § 110(i) of the Clean Air Act.”); *United States v. General Dynamics Corp.*, 755 F. Supp. 720, 722-24 (N.D. Tex. 1991) (“Because the effect of the agreed board order is to raise the emissions limitations set by the Texas SIP, the order requires approval by . . . [EPA] to be effective. Unless and until such approval is given, defendant must abide by the limitations of the Texas SIP.”).

⁶⁶ *See, e.g.,* Permit No. 3452, SC 2 (“Visible emissions resulting from the decoking of the cracking furnaces shall not exceed opacity of 10 percent averaged over a six-minute period[.]”).

⁶⁷ 30 Tex. Admin. Code § 116.111(a)(2)(G).

⁶⁸ (Attachment 16) at NOD Response and Permit Application Update for Permit Nos. 107153/PSD TX1328 at 2-3.

⁶⁹ (Attachment 17), Excerpt from Formosa Plastics, Point Comfort Texas 2012 Expansion Project Application.

c. The Draft Permit Special Conditions for Decoking Events do not Comply with BACT

Draft Permit, Special Condition 21(B) exempts ExxonMobil from Special Condition 7(C)(1)-(4) furnace emission limits during decoking events. The Draft Permit, so far as we can tell, does not establish meaningful alternative limits that apply during decoking events.⁷⁰ While the Draft Permit does include MAERT for decoking emissions of CO, PM, PM10, and PM2.5, these limits do not ensure compliance with BACT. This is so, because ExxonMobil failed to show that decoking events will be limited to the greatest practicable extent and that the emission factors and operating assumptions it used to calculate the MAERT limits are consistent with BACT. Moreover, the assumptions used to calculate the emissions limits are not clearly enforceable permit conditions.

If the MAERT limits are calculated based on the number of coking cycles each furnace will go through each year, the number of decoking cycles should be limited by the permit and ExxonMobil must demonstrate that this number is reasonable. If decoking emissions are calculated using estimated emission rates, those rates should be enforceable permit conditions and ExxonMobil must demonstrate that they reflect the greatest level of reduction that is technically practicable and economically reasonable.

If decoking events will result in NO_x and VOC emissions, as seems likely, MAERT decoking limits should be established for these pollutants and those emissions must be included in ExxonMobil's air quality modeling analysis. Neither ExxonMobil's publicly available application nor the Executive Director's Technical Review Document include a meaningful demonstration that all practicable steps have been taken to minimize decoking emissions or that the operational assumptions and emission rates ExxonMobil used to calculate decoking emissions reflect BACT.

If the Executive Director believes that ExxonMobil's decoking demonstrations are complete, well-supported, and that the Draft Permit decoking limits require BACT, please provide information supporting those conclusions. In particular, please:

- Explain how ExxonMobil's decoking limits were calculated, including the specific emission factors and values for the other variables used in those calculations;
- List all enforceable representations regarding decoking activities in ExxonMobil's application;

⁷⁰ While the Draft Permit does establish an opacity limit for decoking events, this limit is less stringent than the applicable SIP limit.

- Identify technical information (including permits, permit applications, and vendor data) about decoking emissions and operations considered as part of the technical review;
- Provide an account of how decoking emissions were modeled in ExxonMobil's impacts analysis.

d. ExxonMobil's application does not provide information about the speciation of PM emissions during decoking events

ExxonMobil's publicly available application materials fail to explain the basis for its speciation of PM emissions during decoking events. According to the application, "[a] speciation based on process knowledge of PM, PM10, and PM2.5 is applied to determine emissions, respectively."⁷¹ Please explain:

- How PM, PM10, and PM2.5 were speciated in the emission calculations;
- What numbers were used for the calculations;
- What information ExxonMobil provided to the Executive Director supporting the veracity of its "process knowledge" claims;
- What Information the Executive Director considered to determine whether ExxonMobil's speciation of PM, PM10, and PM2.5 was reasonable.

3. *Modification of Cogeneration Train 5*

ExxonMobil proposes to modify the Train 5 Cogeneration Unit ("Train 5") at BOP by adding duct burners to generate additional steam for the new ethylene plant.⁷² This modification is necessary to provide make-up steam when the steam generated from the new cracking furnaces is insufficient to meet the plant's steam demand.⁷³

While ExxonMobil's response to EPA's Incompleteness Determination indicates that the duct burners will result in increased emissions of GHG pollutants, includes a GHG BACT analysis for the duct burners, and proposes specific operational requirements to be included in ExxonMobil's GHG PSD permit, ExxonMobil's TCEQ permit application does not include any information about the size and design of the duct burners or their potential to emit non-GHG pollutants. ExxonMobil's TCEQ permit application does not propose controls for the duct burners and ExxonMobil's air quality modeling analysis does not include emissions from the

⁷¹ (Attachment 18), NSR Permit Application, Baytown Olefins Plant, Account HG-0229-F, Ethylene Expansion Unit (May 21, 2012) at 3-3.

⁷² (Attachment 14) at 5-6.

⁷³ (Attachment 19), Response to June 29, 2012 Completeness Determination Letter, Baytown Olefins Plant, Ethylene Expansion Unit (October 16, 2012) at 5.

duct burners. Thus, ExxonMobil failed to demonstrate that emissions from this modified unit will be adequately controlled and monitored, and that the modification will not cause or contribute to the violation of applicable air quality standards.⁷⁴

In its GHG application materials, ExxonMobil indicates that the average annual heat input to the duct burners will be 6,771,480 MMBtu, or approximately 773 MMBtu/hr.⁷⁵ It appears that the duct burners are single largest combustion source proposed as part of this project. The duct burners, which will fire natural gas or tail gas, will emit significant quantities of NO_x, VOC, CO, PM₁₀, and PM_{2.5}. Given that ExxonMobil's modeling analysis, which does not consider emissions from the duct burners, already predicts NO₂ impacts at 99.3% of the SIL for the one-hour NAAQS and PM_{2.5} emissions in excess of SIL for the 24-hour PM_{2.5} NAAQS, it is very likely that additional refined modeling and additional controls for these pollutants will be required to demonstrate that the standards will be protected.⁷⁶

Moreover, the additional heat generated by the duct burners may impair the performance of the SCR that currently controls NO_x emissions from Train 5 and shorten the catalyst life, leading to increased MSS and upset emissions from the unit. Because the installation of duct burners is a physical change to an existing unit that will result in increased emissions, ExxonMobil must demonstrate that emissions from the modified unit will be controlled with BACT, evaluate whether the modification triggers major NSR, and demonstrate that emissions from the modified unit will not cause or contribute to violations of applicable air quality standards. Because ExxonMobil has not made these demonstrations, its permit may not be issued.

If the Executive Director disagrees and believes that ExxonMobil has made all required permitting demonstrations for the Train 5 modification or believes that Train 5 will not be modified, please explain the basis for that conclusion and identify any authority (including agency guidance) that supports it. In particular please explain and identify application information or authority indicating that:

- installing the new duct burners will not result in an increase of actual emissions of any regulated pollutant from Train 5;
- installation of the new duct burners is not a "modification";
- installation of the new duct burners is not a "major modification";
- emissions from the new duct burners were considered in ExxonMobil's air quality modeling analysis for this project;

⁷⁴ 30 Tex. Admin. Code § 116.111(a)(2).

⁷⁵ (Attachment 19) at Emission Calculations for New Duct Burners (stating that Natural Gas Heat Input to Duct Burner is 6,771,480 MMBtu/yr. 6,771,480 divided by 8,760 (hours per year) equals 773 MMBtu/hr).

⁷⁶ (Attachment 20), Baytown Olefins Plant, Air Quality Modeling Analysis, Permit No. 102982, Ethylene Expansion Unit (November 19, 2012) at 2-2. Note also that ExxonMobil did not attempt to demonstrate compliance with the currently applicable annual PM_{2.5} NAAQS and that PM_{2.5} impacts modeled for the new ethylene plant without the duct burners are equal to the (vacated) SIL for the new standard. See Section 5E of these comments.

- that ExxonMobil was not required to include emissions from the new duct burners in its modeling analysis for this project.

4. *New Elevated and Multi-Point Ground Flare*

ExxonMobil proposes to build both an elevated flare and a multi-point ground flare system at the ethylene plant. ExxonMobil's application dramatically underestimates the VOC emissions from these flares. While ExxonMobil asserts that the new flares will achieve 99% control efficiency for hydrocarbons containing three carbons or less and 98% control efficiency for hydrocarbons containing four carbons or more,⁷⁷ ExxonMobil has not provided any evidence or basis for how it will achieve this level of control. Several recent studies have shown that, in real-world operating scenarios, the control efficiency of flares can be significantly less, in some cases as low as 60%.⁷⁸ Therefore, the 90 tons of VOC emissions projected by ExxonMobil could be an order of magnitude higher than estimated. To address this issue, ExxonMobil should be required to install: 1) a flow meter, 2) a panametric gas chromatograph, 3) a continuously variable steam control, 4) a video camera that is pointed at the flare tip that is equipped, and a 5) meteorological station that measures local wind conditions. In addition to this equipment, the facility must be required to not operate the flare in a wake-dominated state, as defined in EPA's consent decree with BP Whiting and maintain an adequate steam to vent-gas ratio to assure maximum control efficiency of the flare.⁷⁹

5. *New Cooling Tower*

a. *Cooling Tower monitoring/underestimated Emissions*

ExxonMobil proposes to build a new induced-draft cooling tower as part of its proposed ethylene plant. Cooling towers are heat exchangers that are used to dissipate large heat loads to the atmosphere by running water over piping that is carrying heated process fluid.⁸⁰ Cooling towers release PM emissions and VOCs.⁸¹ The PM emissions are caused by dissolved solids in the water that become airborne as water droplets, containing dissolved solids, drift from the tower and evaporate.⁸² VOC emissions are emitted when there is a leak in the piping, allowing

⁷⁷ (Attachment 18) at 3-4.

⁷⁸ Parameters for Properly Designed and Operated Flares, Report for Flare Review Pane, U.S. EPA Office of Air Quality Permitting and Standards (April 2012), available online at <http://www.epa.gov/airtoxics/flare/2012flaretechreport.pdf>

⁷⁹ Consent Decree, *U.S. v. BP Products North America*, Civil No. 2:12 CV 207, United States District Court for the Northern District of Indiana, available electronically at: <http://www.epa.gov/compliance/resources/decrees/civil/caa/whiting-cd.pdf>

⁸⁰ AP-42 for cooling towers

⁸¹ AP-42 for cooling towers.

⁸² AP-42 for cooling towers.

some process fluid to escape into the cooling water and ultimately be released to the atmosphere.⁸³

ExxonMobil's application projects that new cooling tower will release 78.06 lbs of VOC/hr and 33.10 TPY.⁸⁴ This estimation, establishing a maximum VOC concentration of 0.8 ppmw based on the TCEQ NSR Boilerplate conditions for cooling towers, likely underestimates emissions. This is so because the boilerplate conditions allow for delay of repair in certain circumstances. For example, the default position in the NSR Boilerplate conditions would allow ExxonMobil to delay repair, even if the VOC concentration in the cooling tower were five times higher than the maximum allowable rate.⁸⁵ This means that annual VOC emissions from the cooling tower could also be up to five times higher than ExxonMobil is projecting. While the Clean Air Act New Source Review program does not require facilities to assume the worst case scenario, it does require facilities to make reasonable assumptions about malfunctions and other problems. ExxonMobil must revise its emission calculations to include a reasonable estimate of leaks or other malfunction emissions or alternatively include monitoring requirements that would assure leaks in the cooling tower are promptly addressed.

b. The Draft Permit emission limits are unenforceable

While the Draft Permit MAERT appears to establish mass emission limits for ExxonMobil's new cooling tower, a footnote indicates that the cooling tower "[e]mission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations." Draft Permit, Special Condition 13 states that "[t]he total dissolved solids (TDS) concentration and the recirculation rate shall be used to demonstrate compliance with the limits in the MAERT." The MAERT cooling towers must be enforceable and the footnote indicating that the limits are not directly enforceable is inconsistent with Draft Permit, Special Condition 13. The footnote should be removed.

c. ExxonMobil's estimation of droplet size distributions may be unreliable

ExxonMobil used the Reisman method to determine particle size distribution for its cooling tower PM emission estimations.⁸⁶ Studies indicate that modern drift eliminators can have droplet size distributions that do not show the larger droplet sizes associated with the Reisman/Frisbie method. Please provide the particle size distributions used in ExxonMobil's emission estimations and identify any information ExxonMobil provided supporting its use of the Reisman method for determining particle size distributions for its cooling tower emissions.

⁸³ AP-42 for cooling towers.

⁸⁴ (Attachment 18) at 3-3.

⁸⁵ TCEQ NSR Boilerplate for cooling towers.

⁸⁶ (Attachment 18) at 3-3.

We understand that ExxonMobil's application estimated PM emissions from the cooling tower based on use of a 0.001% drift eliminator and that the Draft Permit limits PM drift to 0.0005%. Did ExxonMobil submit revised modeling that reflects this change? Was this change required to demonstrate compliance with any applicable requirement?

6. *Missing emissions from affected upstream and downstream BOP emissions units*

ExxonMobil's permit application is incomplete because it does not assess the emissions impact the new ethylene plant will have on upstream and downstream units at the BOP. The application states that:

Bottoms product from the new deethanizer will serve as feed to the base plant depropanizer . . . Existing utilities including firewater, industrial water, domestic water, boiler feedwater, plant air, hydrogen, electricity, and marginal steam product may be utilized.⁸⁷

These activities will likely have an emissions impact on existing units at the plant, but the permit does not indicate that these emissions have been counted or explain why there will not be any emissions impact. Some basic questions that ExxonMobil needs to address are:

- Will this project increase the total amount of feed processed at the base plant depropanizer? If yes, will this increase fugitive emissions from that unit or combustion emissions from the heaters and boilers that serve it? If not, is ExxonMobil proposing a cap on the throughput at the base plant depropanizer?
- Will the bottoms from the deethanizer, which are routed to the existing plant depropanizer cause an increase in flaring during routine operations at the existing plant? What about during startup, shutdown, and malfunction events? How has ExxonMobil estimated these emissions?
- Has ExxonMobil calculated the marginal increase in combustion emissions at plants boilers, resulting from the marginal increase in steam product that may be utilized?

D. Maintenance, Startup, and Shutdown Activities and Emissions

Many emission units at ExxonMobil's ethylene plant will require regular, planned maintenance, including unit startups and shutdowns, to ensure safe and efficient operation. Emissions during planned MSS activities for new and modified units must be authorized by permit and are subject to the same 30 Tex. Admin. Code § 116.111 preconstruction requirements as other emissions associated with the project. ExxonMobil's application fails to demonstrate that planned MSS emissions from the project will comply with these requirements and the Draft

⁸⁷ *Id.* at 2-1.

Permit does not establish sufficiently stringent limits on these emissions to ensure that health-based air quality standards are maintained.

1. MSS Emissions may not be authorized and managed under Permit No. 3452 MSS emission caps

The Draft Permit states that emissions from MSS activities at the ExxonMobil's ethylene plant will be managed under Permit No. 3452 MSS emission limits.⁸⁸ This condition is unenforceable.⁸⁹ Regardless of what the Draft Permit says, emissions from the new ethylene plant are not authorized or limited by Permit No. 3452. Permit No. 3452, Special Condition 1 states that only emissions units listed in the permit are authorized by it and limits authorized MSS activities to those represented in ExxonMobil's January 5, 2008 permit application.⁹⁰ The MSS emissions from the ethylene plant are new emissions and must be specifically authorized by a new permit or through an amendment to an existing permit. This is so whether or not there is sufficient room under the existing Permit No. 3452 MSS emission caps to accommodate the new emissions.

If the Executive Director disagrees and believes that planned MSS emissions from the new ethylene plant may be managed under Permit No. 3452, please:

- identify any agency guidance or other legal authority indicating when and why it is appropriate to authorize MSS emissions from a new source under an existing permit without requiring an amendment to the existing permit;
- explain how Permit No. 3452 limits, as applied to the new ethylene plant, are enforceable.

2. ExxonMobil failed to demonstrate that proposed emission controls for planned MSS activities satisfy BACT

As outlined above and explained at length in the TCEQ's air permitting guidance, BACT analyses must be well-documented and applications must provide clear, complete accounts of the

⁸⁸ Draft Permit, Special Condition 20 ("Allowable emissions for planned MSS activities associated with the facilities authorized by this permit are contained in Permit No. 3452, unless specified otherwise in this permit."); *See also*, (Attachment 14) at 6.

⁸⁹ *See* Letter from Jeff Robinson, Chief, Air Permits Section, U.S. EPA Region 6, to Richard Hyde, Director, Air Permits Division, TCEQ, Re: Addressing MSS activities in NSR Permit for Major Sources (May 21, 2008) for a similar point regarding a model MSS Draft Permit ("Special Condition 1 states 'Startup and shutdown emissions due to the activities identified in Special Condition 2 are authorized from facilities and emission points in other construction permits at the site provided the facility and emissions are compliant with the respective MAERT and special conditions, or Special Condition 12 of this permit.' EPA is not clear how this condition can be practically enforceable. The MSS permit cannot alter or supersede terms and conditions in an existing permit without reopening and revising the existing permit."). Available electronically at: <http://www.epa.gov/region07/air/nsr/nsrmemos/tceqssm.pdf>

⁹⁰ (Attachment 5).

activities and emissions to be permitted. The planned MSS BACT demonstration in ExxonMobil's application, which is cited here in its entirety, is clearly deficient:

The proposed project will meet BACT for emissions from MSS activities by adopting similar requirements for equipment openings and vacuum trucks as currently applied to the existing plant as specified in Permit 3452. Vapors from equipment clearing and vacuum trucks with a vapor pressure greater than 0.5 psia will be depressured to a control device to a VOC concentration of less than 10,000 ppmv to meet BACT.

The proposed project will employ best management practices to minimize MSS activities and reduce emissions from these activities in accordance with BACT requirements, which may include utilization of various control devices such as engines, carbon canisters, flares, thermal oxidizers, or other control device.⁹¹

This BACT analysis is deficient because: it not only does fails to demonstrate that the proposed controls are the best available; it fails to even identify specific controls for all planned MSS activities. In fact, *the application fails to even specify the activities to be authorized under the permit.*

ExxonMobil cannot demonstrate BACT by promising to “adopt[] *similar* requirements” as specified in Permit No. 3452 or identifying controls that *may* be used to control emissions. ExxonMobil must actually identify the specific controls it *will* use to control planned MSS emissions *and* demonstrate that those controls are the best available. And before ExxonMobil can do that, it must specifically identify the MSS activities to be controlled.

The Commission may not issue a permit authorizing construction of the new ethylene plant, until ExxonMobil provides: a detailed discussion of the planned MSS activities and emissions the permit will authorize, a description of the controls that will be used to control MSS emissions from each authorized activity, an evaluation of the BACT performance elements for each such control, an evaluation of alternative controls, an account of the control performance required for similar planned MSS activities in permit applications for similar facilities, and documentation supporting the performance elements evaluation.

3. *The Draft Permit fails to adequately identify and limit authorized planned MSS emissions*

While the Draft Permit is clearly meant to authorize emissions from planned MSS activities at the new ethylene plant, it does not specify which activities are authorized. Nor does it define the terms “Maintenance, Startup, and Shutdown” or indicate how planned MSS emissions authorized under the permit are to be distinguished from unplanned MSS emissions

⁹¹ (Attachment 18) at 4-5.

and emissions events that are not authorized. The Executive Director must revise the Draft Permit to clearly indicate which MSS activities are authorized. The scope of this authorization may not extend beyond activities described in ExxonMobil's application.⁹² Additionally, for each planned MSS activity authorized, the Draft Permit must establish limitations and conditions sufficient to ensure that such emissions are effectively controlled and protect health-based ambient air quality standards.

4. Flaring

The Draft Permit MAERT establishes annual and hourly limits for flare emissions. These limits include both routine and "intermittent" emissions. Intermittent emissions include planned MSS emissions.⁹³ The annual flare limits ExxonMobil proposed were calculated based on historical BOP flare data.⁹⁴ The hourly flare limits were based on "the maximum possible flow rate, resulting in an estimation of the maximum emissions scenario of NO_x, CO, VOC, and SO₂."⁹⁵ While the Draft Permit contains specific conditions intended to ensure proper flare operation,⁹⁶ the Draft Permit does not establish conditions on the operation of emissions units venting to the flares that minimize the duration of planned MSS events and restrict the amount of gas vented during these events consistent with BACT.⁹⁷ ExxonMobil may not rely on historical BOP flare data without demonstrating that this data represents BACT for the new plant. Instead, ExxonMobil must identify emissions units that will vent to the flares during planned MSS activities and, for each unit and activity, show that all practicable steps will be taken to minimize gas vented to the flares.

If the Executive Director believes that ExxonMobil has demonstrated that emissions from its flares are consistent with BACT and that the Draft Permit requires BACT for MSS emissions routed to the flares, please provide the following information:

- How specifically, did the Executive Director calculate ExxonMobil's annual flare limits;
- What emission factors were used for each pollutant and what other variables were used to calculate each limit;
- What information did the Executive Director review to confirm that inputs used for these calculations are appropriate;

⁹² See, e.g., 30 Tex. Admin. Code § 116.111.

⁹³ (Attachment 14) at 4.

⁹⁴ (Attachment 11) at 10.

⁹⁵ *Id.*

⁹⁶ See, e.g., Draft Permit, Special Conditions 10 and 11.

⁹⁷ While the Draft Permit limits operation of the ground flare to 160 hours of operation during a rolling 12-month period (Special Condition 22), and ExxonMobil has indicated that the ground flare will be used for MSS events, the Draft Permit does not forbid use of the elevated flare to combust MSS streams. Thus, the Draft Permit does not effectively limit the amount of time that ExxonMobil's new flares may be used each year to combust MSS streams.

- What enforceable representations has ExxonMobil made in its application regarding flaring activities beyond those covered on the face of the Draft Permit?

E. Air Quality Modeling Analysis

Before the Commission may issue ExxonMobil's permit, ExxonMobil must demonstrate that emissions from its ethylene plant will not cause or contribute to a violation of any applicable air quality standard and that pollution from the plant will not endanger public health.⁹⁸ ExxonMobil used a two-step approach to demonstrate compliance with the NAAQS: (1) ExxonMobil modeled project-related emissions without including background air quality data to determine whether predicted off-property impacts from the project would exceed significant impact levels ("SILs") for any NAAQS pollutant; and (2) for any pollutant that exceeded a SIL, ExxonMobil conducted more refined modeling, which included background emissions, to determine whether project emissions together with background emissions, would violate any NAAQS.⁹⁹ ExxonMobil's modeling analysis did not predict impacts in excess of any SIL except the SIL for the 24-hour PM2.5 NAAQS.¹⁰⁰ Therefore, ExxonMobil's modeling demonstration does not include any refined modeling for any pollutant, over any averaging period other than the 24-hour PM2.5 NAAQS.¹⁰¹

ExxonMobil's demonstration is deficient for many reasons. First, and most obviously, ExxonMobil's did not model the proper PM2.5 annual standard. While the PM2.5 annual NAAQS was reduced from 15 micrograms per cubic meters to 12 micrograms per cubic meter in 2012, ExxonMobil's did not attempt to demonstrate compliance with the current standard. Moreover, the SIL ExxonMobil used to demonstrate compliance with the old standard has been expressly rejected by EPA and vacated by the D.C. Circuit Court of Appeals.¹⁰² ExxonMobil's reliance on the SIL and its failure to show compliance with the current standard renders its application deficient. This failure is particularly significant given that Harris County is not currently meeting the PM2.5 NAAQS and the severe health effects resulting from exposure to elevated levels of PM2.5.

ExxonMobil's modeling demonstration is also deficient, because it fails to properly account for all emissions increases resulting from the project, including the modification to Train 5, planned MSS emissions to be managed under Permit No. 3452 MSS caps, and increased utilization of the BOP wastewater treatment facilities and depropanizer. To the extent that

⁹⁸ 30 Tex. Admin. Code §§ 101.4, 101.20, and 116.111(a)(2)(A)(i) and (J).

⁹⁹ Attachment 20) at 2-1 – 2-3.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² See, Circuit Court Decision on PM2.5 Significant Impact Levels and Significant Monitoring Concentration, Questions and Answers, U.S. EPA Office of Air Quality Planning and Standard (March 4, 2013). Available electronically at: <http://www.epa.gov/nsr/documents/20130304qa.pdf>

ExxonMobil's modeling demonstration does include emissions from planned MSS activities, including flaring and decoking events, it's unclear to Commenters that these emissions were properly modeled. For example, MSS emissions from ExxonMobil's furnaces were modeled at their annualized rates for the 1-hour NO2 and SO2 NAAQS. This treatment of MSS emissions was not properly explained or justified. Moreover, ExxonMobil failed to demonstrate that its furnaces are capable of complying with the hourly lb/hour NOx limit established by the Draft Permit to improve its modeling results.¹⁰³ These NO2 modeling issues are of particular concern, because ExxonMobil's step-1 analysis for the 1-hour NO2 standard predicted impacts one tenth of one micrograms under the SIL.

The Executive Director must direct ExxonMobil to correct its modeling analysis to include all emissions from the project and demonstrate compliance with current standards using EPA-approved techniques.

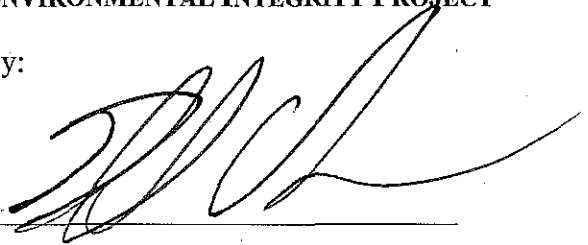
VI. CONCLUSION

In light of these issues and concerns as well as those raised in our initial comments, Commenters request a contested case hearing and a public meeting on Draft Permit No. 102982. We are hopeful that the Executive Director will require ExxonMobil to correct its application deficiencies and that he will revise the Draft Permit to include clear, enforceable limits sufficient to ensure that those who live near the plant are not exposed to dangerous air pollution. Please contact me if you have any questions regarding this filing.

Respectfully Submitted,

ENVIRONMENTAL INTEGRITY PROJECT

By:



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Austin, Texas 78701
Phone: 512-637-9477
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¹⁰³ (Attachment 14) at 5.

ATTACHMENT LIST

Attachment 1: Comments and Contested Case Hearing Request on ExxonMobil Chemical Company's Application for a Permit to Construct a New Ethylene Production Unit at its Baytown Olefins Plant in Harris County, Texas (July 3, 2012)

Attachment 2: Fine Particle Concentrations Based on Monitored Air Quality from 2009-2011

Attachment 3: Letter to Inspector General Arthur A Elkins, Jr. regarding Clean Air Act Enforcement of Excess Emissions and the Affirmative Defense (April 23, 2013)

Attachment 4: Agreed Order, Docket No. 2011-2336-AIR-E

Attachment 5: Permit No. 3452

Attachment 6: ExxonMobil Baytown Olefins Plant EI Summary 2011

Attachment 7: ExxonMobil Baytown Olefins Plant EI Summary 2010

Attachment 8: RG-360/12, Emissions Inventory Guidelines, TCEQ Emissions Assessment Section (January 2013)

Attachment 9: ExxonMobil Baytown Olefins Plant EI Summary 2007

Attachment 10: ExxonMobil Flex/PAL Compliance Reports

Attachment 11: Response to July 13, 2012 Notice of Deficiency, Permit Application No. 102982 (August 28, 2012)

Attachment 12: John S. Seitz, Director, Office of Air Quality Planning and Standards, U.S. EPA, Memorandum Regarding Interim Implementation of New Source Review Requirements for PM_{2.5} (October 23, 1997)

Attachment 13: Permit No. 3452 application files 2004-2005

Attachment 14: Response to October 19, 2012 Notice of Deficiency, Permit No. 102982 (November 16, 2012)

Attachment 15: Final Judgment, *Environmental Defense Fund, et al v. TCEQ and Las Brisas Energy Center*, Cause No. D-1-GN-11-001364, District Court of Travis County, 261st Judicial District (July 24, 2012)

Attachment 16: Application file for Dow Chemical Company, Light Hydrocarbon 9 Facility, Freeport, Texas

Attachment 17: Excerpt from Formosa Plastics, Point Comfort Texas 2012 Expansion Project

Attachment 18: NSR Permit Application, Baytown Olefins Plant, Account HG-0229-F, Ethylene Expansion Unit (May 21, 2012)

Attachment 19: Response to June 29, 2012 Completeness Determination Letter, Baytown Olefins Plant, Ethylene Expansion Unit (October 16, 2012)

Attachment 20: Baytown Olefins Plant, Air Quality Modeling Analysis, Permit No. 102982, Ethylene Expansion Unit (November 19, 2012)

(Attachment 7)

**Kunstman Memorandum Re: Combustion Efficiency vs.
Destruction and Removal Efficiency re: Exxon CD**

(November 30, 2017)

TO: Eric Schaeffer

FROM: Ben Kunstman

DATE: November 30, 2017

RE: Combustion Efficiency vs. Destruction and Removal Efficiency re: Exxon CD

Within the Exxon Mobil Consent Decree 4:17-cv-3302, Section 44 states that “Defendants must operate each Covered Flares with a minimum of a 98% Combustion Efficiency at all times when Waste Gas is vented to it.” To put this into further context, I reviewed Texas Commission on Environmental Quality’s New Source Review (NSR) Emission Calculations for Flares¹, and performed test calculations to compare Combustion Efficiency (CE) with Destruction and Removal Efficiency (DRE). My analysis focused on two scenarios: assuming DRE from TCEQ guidance to calculate corresponding CE, and second, assuming the CE from the Exxon Mobil CD and calculating the corresponding DRE. I ran these calculations assuming pure gas streams for a series of compounds: propane, ethylene (highest mole fraction in TCEQ guidance), and butane (high C, high NHV). On average, DRE was 0.28 higher than the corresponding CE for these three compounds, and gives a general estimate of the expected gap between these two parameters when following TCEQ guidance. Additionally, TCEQ guidance demonstrates that for compounds with an expected DRE of 99%, the corresponding CE% is well above the required 98% CE within the CD, indicating that this provision may be duplicative or less aggressive than currently set permit limits.

Summary

Scenario 1. Assumed DRE% from TCEQ Guidance

Flare Compound	DRE (%)	CE (%)
Propane (C ₃ H ₈)	99	98.73
Ethylene (C ₂ H ₄)	99	98.72
Butane (C ₄ H ₁₀)	98	97.72

Scenario 2. Assumed CE% from Exxon Mobil CD

Flare Compound	DRE (%)	CE (%)
Propane (C ₃ H ₈)	98.29	98
Ethylene (C ₂ H ₄)	98.28	98
Butane (C ₄ H ₁₀)	98.28	98

Flow Rate Comparison

$$98\% \text{ DRE Butane: } C_4H_{10_{out}} = 45.24 \frac{\text{lbs } C_4H_{10}}{\text{hr}}; 98\% \text{ CE: } C_4H_{10_{out}} = 38.91 \frac{\text{lbs } C_4H_{10}}{\text{hr}}$$

$$\% \text{ difference} = \frac{C_4H_{10}(98\% \text{ DRE}) - C_4H_{10}(98\% \text{ CE})}{C_4H_{10}(98\% \text{ CE})} \times 100 = 16.27\% \text{ higher}$$

¹ Texas Commission on Environmental Quality. (2006). “New Source Review (NSR) Emission Calculations.” Air Permits Division. https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf

Calculations

Propane: C_3H_8 , MW=44.09 lbs/mol, assume 250 scfm pure propane to flare

$$C_3H_8 \left(\frac{lbs}{hr} \right) = \frac{60 \text{ min}}{hr} \times \frac{44.09 \text{ lb}}{\text{mol}} \times 14.7 \text{ psia} \times 250 \text{ scfm} \div RT = 1716.0 \frac{lbs C_3H_8}{hr}$$
$$\text{or } 38.92 \frac{\text{mol } C_3H_8}{hr} \text{ or } 116.76 \frac{\text{mol } C}{hr}$$

Scenario 1: Assuming DRE% from TCEQ Guidance – DRE (C_3H_8) = 99%!

$$C_3H_{8out} = 0.01 * 1716.0 \frac{lbs C_3H_8}{hr} = 17.16 \frac{lbs C_3H_8}{hr} = 0.3892 \frac{\text{mol } C_3H_8}{hr} = 1.1676 \frac{\text{mol } C}{hr}$$

Assuming pure propane, $NHV_{\text{propane}}=2,272 \text{ Btu/scf}$

$$CO_{out} = \frac{0.2755 \text{ lbs } CO}{MMBtu} \times \frac{2272 \text{ Btu}}{\text{scf}} \times \frac{1 \text{ MMBtu}}{10^6 \text{ Btu}} \times \frac{250 \text{ scf}}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 9.389 \frac{lbs \text{ } CO}{hr}$$

$$MW_{CO}= 28.01 \text{ lbs/mol, thus } CO_{out} = 9.389 \frac{lbs \text{ } CO}{hr} \times \frac{1 \text{ mol}}{28.01 \text{ lbs}} = 0.335 \frac{\text{mol } CO}{hr} = 0.335 \frac{\text{mol } C}{hr}$$

Carbon Balance- $C_{in}=C_{out}$: $3 \times C_3H_{8in} = 3 \times C_3H_{8out} + CO_{out} + CO_{2out}$

$$116.76 \frac{\text{mol } C}{hr} = 1.1676 \frac{\text{mol } C}{hr} + 0.335 \frac{\text{mol } C}{hr} + CO_2 \frac{\text{mol}}{hr}$$

$$CO_{2out} = 115.2574 \frac{\text{mol}}{hr} \text{ thus } CE(\%) = \frac{115.2574}{116.76} \times 100\% = \mathbf{98.73\%}$$

Scenario 2: Assuming CE% of 98% from Exxon CD to calculate DRE

$$CO_{2out} = 0.98 \times 116.76 \frac{\text{mol } C}{hr} = 114.425 \frac{\text{mol } CO_2}{hr}$$

$$CO_{out} = 9.389 \frac{lbs \text{ } CO}{hr} \times \frac{1 \text{ mol}}{28.01 \text{ lbs}} = 0.335 \frac{\text{mol } CO}{hr} = 0.335 \frac{\text{mol } C}{hr}$$

Carbon Balance- $C_{in}=C_{out}$: $3 \times C_3H_{8in} = 3 \times C_3H_{8out} + CO_{out} + CO_{2out}$

$$116.76 \frac{\text{mol } C}{hr} = 3 \times C_3H_{8out} + 0.335 \frac{\text{mol } C}{hr} + 114.425 \frac{\text{mol } C}{hr}$$

$$C_3H_{8out} = 0.667 \frac{\text{mol}}{hr}, \text{ or } 29.4 \frac{lbs}{hr}$$

$$DRE(\%) = \left(1 - \frac{C_3H_{8out}}{C_3H_{8in}} \right) \times 100 = \mathbf{98.29\%}$$

Ethylene: C₂H₄, MW=28.05 lbs/mol, assume 250 scfm pure ethylene to flare

$$C_2H_4 \left(\frac{lbs}{hr} \right) = \frac{60 \text{ min}}{hr} \times \frac{28.05 \text{ lbs}}{mol} \times 14.7 \text{ psia} \times 250 \text{ scfm} \div RT = 1,091.71 \frac{lbs C_2H_4}{hr}$$

$$\text{or } 38.92 \frac{mol C_2H_4}{hr} \text{ or } 77.84 \frac{mol C}{hr}$$

Scenario 1: Assuming DRE% from TCEQ Guidance – DRE (C₂H₄) = 99%¹

$$C_2H_4_{out} = 0.01 * 1091.7 \frac{lbs C_2H_4}{hr} = 10.917 \frac{lbs C_2H_4}{hr} = 0.3892 \frac{mol C_2H_4}{hr} = 0.7784 \frac{mol C}{hr}$$

Assuming pure ethylene, NHV_{ethylene}=1471 Btu/scf

$$CO_{out} = \frac{0.2755 \text{ lbs CO}}{MMBtu} \times \frac{1471 \text{ Btu}}{scf} \times \frac{1 \text{ MMBtu}}{10^6 \text{ Btu}} \times \frac{250 \text{ scf}}{min} \times \frac{60 \text{ min}}{1 \text{ hr}} = 6.079 \frac{lbs CO}{hr}$$

$$MW_{CO} = 28.01 \text{ lbs/mol, thus } CO_{out} = 6.079 \frac{lbs CO}{hr} \times \frac{1 \text{ mol}}{28.01 \text{ lbs}} = 0.217 \frac{mol CO}{hr} = 0.217 \frac{mol C}{hr}$$

Carbon Balance- C_{in}=C_{out}: 2 × C₂H₄_{in} = 2 × C₂H₄_{out} + CO_{out} + CO₂_{out}

$$77.84 \frac{mol C}{hr} = 0.7784 \frac{mol C}{hr} + 0.217 \frac{mol C}{hr} + CO_2 \frac{mol}{hr}$$

$$CO_{2out} = 76.845 \frac{mol}{hr} \text{ thus } CE(\%) = \frac{76.845}{77.84} \times 100\% = \mathbf{98.72\%}$$

Scenario 2: Assuming CE% of 98% from Exxon CD to calculate DRE

$$CO_{2out} = 0.98 \times 77.84 \frac{mol C}{hr} = 76.283 \frac{mol CO_2}{hr}$$

$$CO_{out} = 6.079 \frac{lbs CO}{hr} \times \frac{1 \text{ mol}}{28.01 \text{ lbs}} = 0.217 \frac{mol CO}{hr} = 0.217 \frac{mol C}{hr}$$

Carbon Balance- C_{in}=C_{out}: 2 × C₂H₄_{in} = 2 × C₂H₄_{out} + CO_{out} + CO₂_{out}

$$77.84 \frac{mol C}{hr} = 2 \times C_2H_4_{out} + 0.217 \frac{mol C}{hr} + 76.283 \frac{mol}{hr}$$

$$C_2H_4_{out} = 0.670 \frac{mol C_2H_4}{hr}, \text{ or } 18.79 \frac{lbs C_2H_4}{hr}$$

$$DRE(\%) = \left(1 - \frac{C_2H_4_{out}}{C_2H_4_{in}} \right) \times 100 = \mathbf{98.28\%}$$

Butane: C₄H₁₀, MW=58.12 lbs/mol, assume 250 scfm pure butane to flare

$$C_4H_{10} \left(\frac{lbs}{hr} \right) = \frac{60 \text{ min}}{hr} \times \frac{58.12 \text{ lbs}}{mol} \times 14.7 \text{ psia} \times 250 \text{ scfm} \div RT = 2,262.04 \frac{lbs C_4H_{10}}{hr}$$

$$\text{or } 38.92 \frac{\text{mol } C_4H_{10}}{\text{hr}} \text{ or } 155.68 \frac{\text{mol } C}{\text{hr}}$$

Scenario 1: Assuming DRE% from TCEQ Guidance – DRE (C_4H_{10}) = 98%¹

$$C_4H_{10\text{out}} = 0.02 * 2262.04 \frac{\text{lbs } C_4H_{10}}{\text{hr}} = 45.24 \frac{\text{lbs } C_4H_{10}}{\text{hr}} = 0.7782 \frac{\text{mol } C_4H_{10}}{\text{hr}} = 3.113 \frac{\text{mol } C}{\text{hr}}$$

Assuming pure butane, $NHV_{\text{butane}}=2956 \text{ Btu/scf}$

$$CO_{\text{out}} = \frac{0.2755 \text{ lbs } CO}{\text{MMBtu}} \times \frac{2956 \text{ Btu}}{\text{scf}} \times \frac{1 \text{ MMBtu}}{10^6 \text{ Btu}} \times \frac{250 \text{ scf}}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 12.216 \frac{\text{lbs } CO}{\text{hr}}$$

$$MW_{CO}= 28.01 \text{ lbs/mol, thus } CO_{\text{out}} = 12.216 \frac{\text{lbs } CO}{\text{hr}} \times \frac{1 \text{ mol}}{28.01 \text{ lbs}} = 0.436 \frac{\text{mol } CO}{\text{hr}} = 0.436 \frac{\text{mol } C}{\text{hr}}$$

Carbon Balance- $C_{\text{in}}=C_{\text{out}} : 4 \times C_4H_{10\text{in}} = 4 \times C_4H_{10\text{out}} + CO_{\text{out}} + CO_{2\text{out}}$

$$155.68 \frac{\text{mol } C}{\text{hr}} = 3.113 \frac{\text{mol } C}{\text{hr}} + 0.436 \frac{\text{mol } C}{\text{hr}} + CO_2 \frac{\text{mol}}{\text{hr}}$$

$$CO_{2\text{out}} = 152.131 \frac{\text{mol}}{\text{hr}} \text{ thus } CE(\%) = \frac{152.131}{155.68} \times 100\% = \mathbf{97.72\%}$$

Scenario 2: Assuming CE% of 98% from Exxon CD to calculate DRE

$$CO_{2\text{out}} = 0.98 \times 155.68 \frac{\text{mol } C}{\text{hr}} = 152.566 \frac{\text{mol } CO_2}{\text{hr}}$$

$$CO_{\text{out}} = 12.216 \frac{\text{lbs } CO}{\text{hr}} \times \frac{1 \text{ mol}}{28.01 \text{ lbs}} = 0.436 \frac{\text{mol } CO}{\text{hr}} = 0.436 \frac{\text{mol } C}{\text{hr}}$$

Carbon Balance- $C_{\text{in}}=C_{\text{out}} : 4 \times C_4H_{10\text{in}} = 4 \times C_4H_{10\text{out}} + CO_{\text{out}} + CO_{2\text{out}}$

$$155.68 \frac{\text{mol } C}{\text{hr}} = 4 \times C_4H_{10\text{out}} + 0.436 \frac{\text{mol } C}{\text{hr}} + 152.566 \frac{\text{mol}}{\text{hr}}$$

$$C_4H_{10\text{out}} = 0.6695 \frac{\text{mol } C_4H_{10}}{\text{hr}}, \text{ or } 38.91 \frac{\text{lbs } C_4H_{10}}{\text{hr}}$$

$$DRE(\%) = \left(1 - \frac{C_4H_{10\text{out}}}{C_4H_{10\text{in}}} \right) \times 100 = \mathbf{98.28\%}$$

Butane Flow Rate Comparison – 98% DRE vs 98% CE

$$\text{Scenario 1: } 98\% \text{ DRE Butane, } C_4H_{10\text{out}} = 45.24 \frac{\text{lbs } C_4H_{10}}{\text{hr}}$$

$$\text{Scenario 2: } 98\% \text{ CE, } C_4H_{10\text{out}} = 38.91 \frac{\text{lbs } C_4H_{10}}{\text{hr}}$$

$$\% \text{ difference} = \frac{C_4H_{10}(DRE) - C_4H_{10}(CE)}{C_4H_{10}(CE)} \times 100 = \mathbf{16.27\% \text{ higher}}$$