

APPENDIX F

**REASONABLY AVAILABLE CONTROL TECHNOLOGY
ANALYSIS**

2017-001-SIP-NR

Proposal
April 4, 2018

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- 1. INTRODUCTION (NO CHANGE)**
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- 3. RACT DETERMINATION AND DISCUSSION (UPDATED)**
 - 3.1. General Discussion (Updated)**

Under the current state rules, the DFW area is subject to some of the most stringent NO_x and VOC emission control requirements in the country and for many source categories the existing rules are more stringent than recommended RACT standards for those categories. The EPA previously approved the VOC RACT analysis as submitted in the May 2007 DFW Eight-Hour Ozone Attainment Demonstration SIP Revision (74 FR 1903, January 14, 2009). The analysis demonstrated all CTG emission source categories addressed by CTG documents issued prior to 2006 and all major VOC emission sources in the DFW area were subject to rules in 30 TAC Chapter 115, or other federally enforceable measures, that meet or exceed the applicable RACT requirements, or that further emission controls on the sources were either not technologically or economically feasible. In 2014, the EPA approved the 30 TAC Chapter 115 rules for offset lithographic printing and VOC storage tanks as meeting the FCAA RACT requirements (79 FR 45105 and 79 FR 53299). In 2015, the EPA approved the DFW VOC rules in 30 TAC Chapter 115 addressing the remaining CTGs issued between 2006 and 2008, in addition to approving the DFW RACT analysis as meeting the FCAA RACT requirements for all affected VOC and NO_x sources under the 1997 eight-hour ozone NAAQS (80 FR 16291).

On September 22, 2017, the EPA published its conditional approval of revisions to the Texas SIP for NO_x RACT for the TXI Operations, LP (TXI) cement manufacturing plant in Ellis County, and full approval of revisions addressing NO_x RACT for all other affected sources in the DFW 2008 eight-hour ozone nonattainment area (82 FR 44320). The conditional approval is based on a commitment to submit specific enforceable measures (i.e., an agreed order or rule) that incorporate certain permit conditions for the TXI cement manufacturing plant to limit NO_x emissions to 1.95 pounds (lb) of NO_x per ton of clinker. On December 21, 2017, the EPA published its final approval of VOC RACT and negative declarations for the DFW 2008 eight-hour ozone standard nonattainment area (82 FR 60546).

Table F-1: *State Rules Addressing NO_x RACT Requirements in ACT Reference Documents* provides the emission source categories, the ACT reference documents, and the state rules addressing the RACT requirements for sources in the NO_x ACT documents. This table is being updated to include a footnote regarding the RACT determinations for Ash Grove Cement Company and TXI.

Tables F-2 through F-3 and F-5 through F-7 are not being updated and therefore are not included as part of this RACT analysis update. The tables can be found in Appendix F of the DFW 2008 Eight-Hour Ozone NAAQS Attainment Demonstration SIP revision (2015-014-SIP-NR).

Table F-4: *State Rules Addressing NO_x RACT Requirements for Major Emission Sources in the Nine-County DFW Area* lists the major stationary emission sources with actual or potential NO_x emissions exceeding the PTE 50 tpy major source threshold in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties. This table is being updated to include the agreed order between the TCEQ and TXI concurrently proposed with this SIP revision.

The major source tables provide the emission source regulated entity number (RN), account number, company name, county, standard industrial classification (SIC) code, a brief description of the source, and the reported annual emissions (in tpy). The tables also include either the state rules satisfying the RACT requirements, the permit requirements that limit emissions, or the reasoned justification for why controlling the emissions is not considered RACT.

3.2. NO_x RACT Determination (Updated)

3.2.1. Chapter 117 NO_x Rules (Updated)

The Chapter 117 rules represent one of the most comprehensive NO_x control strategies in the nation. The NO_x controls and reductions implemented through Chapter 117 for the ten-county DFW ozone nonattainment area encompass both RACT and beyond-RACT levels of control for the 2008 eight-hour ozone standard. The current EPA-approved Chapter 117 rules continue to fulfill RACT requirements for ACT NO_x source categories that exist in the DFW nonattainment area under the 2008 eight-hour ozone NAAQS. As part of the DFW 2008 Eight-Hour Ozone NAAQS Attainment Demonstration SIP revision, the TCEQ conducted its RACT analysis for NO_x major sources. The Chapter 117 rules are not being affected by this proposed RACT analysis update and the Chapter 117 rules regarding cement kilns continue to apply to the TXI Portland cement manufacturing plant in Ellis County. However, RACT for the TXI Cement Kiln No. 5 is fulfilled by the concurrently proposed voluntary Agreed Order (Docket No. 2017-1648-SIP) rather than the Chapter 117 rules.

3.2.1.1. Wise County Major Sources (No Change)

3.2.1.2. Wood-Fired Boilers (No Change)

3.2.1.3. Ellis County Cement Kilns (Updated)

The cement kilns located in Ellis County are subject to the requirements of Chapter 117, Subchapter E, Division 2, and in 2009, the EPA approved these rules as meeting the FCAA RACT requirements for these sources (74 FR 1927). Three companies currently operate four kilns in Ellis County: Ash Grove Cement Company (Ash Grove), Holcim U.S., Inc (Holcim), and TXI.

Ash Grove operated three kilns in Ellis County. However, a 2013 consent decree¹ with the EPA required by September 10, 2014 shutdown of two kilns and reconstruction of Kiln No. 3 with selective noncatalytic reduction (SNCR) with an emission limit of 1.5 lb of NO_x per ton of clinker and a 12-month rolling tonnage limit for NO_x of 975 tpy. The reconstructed kiln is a dry kiln with year-round SNCR operation and is subject to the 1.5 lb of NO_x per ton of clinker emission standards in the New Source Performance Standards (NSPS) for Portland Cement Plants. The TCEQ has the delegated authority to enforce this standard through the agency's general NSPS delegation and the NSPS

¹ <http://www2.epa.gov/sites/production/files/documents/ashgrove-cd.pdf>

satisfies RACT for Ash Grove. Holcim U.S., Inc. currently has two dry PH/PC kilns equipped with SNCR. The current §117.3123 source cap of 5.3 tpd NO_x for Holcim satisfies RACT, as previously approved by the EPA. The EPA approved the RACT determinations for Ash Grove Cement Company (Ash Grove) and Holcim published on September 22, 2017 (82 FR 44320), effective October 23, 2017.

TXI currently operates one dry preheater/precalciner (PH/PC) kiln (TXI No. 5). The permitted capacity of this kiln is 2,800,000 tons of clinker per year, and it has a permitted emissions limit of 1.95 lb of NO_x per ton of clinker. Based on these permit limits, this kiln is therefore limited to a maximum of 7.48 tpd NO_x, compared to the current §117.3123 source cap of 7.9 tpd NO_x. The EPA published its final conditional approval of the NO_x RACT determination for the TXI Portland cement kiln facility of 1.95 lb of NO_x per ton of clinker on September 22, 2017 (82 FR 44320). The conditional approval is predicated on the incorporation into the Texas SIP of a voluntary agreed order between TXI and the TCEQ. RACT for TXI Kiln No. 5 is fulfilled by the voluntary agreed order being proposed concurrently with this SIP Revision. This voluntary agreed order makes the 1.95 lb of NO_x per ton of clinker permitted emissions factor federally enforceable and not eligible for revision without a federally approved revision to this RACT analysis.

3.3. VOC RACT Determination (No Change)

3.3.1. Chapter 115 VOC RACT Rules (No Change)

3.3.1.1. Wise County CTG and non-CTG Major Source RACT (No Change)

Table F-1: State Rules Addressing NO_x RACT Requirements in ACT Reference Documents (Updated)

Emission Source Category	ACT Reference Document	State Regulations Fulfilling RACT Requirements
Cement Manufacturing	NO _x Emissions from Cement Manufacturing (EPA-453/R-94-004, March 1994) and NO _x Control Technologies for the Cement Industry: Final Report (EPA-457/R-00-002, September 2000)	§117.3100 – §117.3145*
Glass Manufacturing	NO _x Emissions from Glass Manufacturing (EPA-453/R-94-037, June 1994)	§117.400 – §117.456
Industrial, Commercial, and Institutional Boilers	NO _x Emissions from Industrial, Commercial and Institutional Boilers (EPA-453/R-94-022, March 1994)	§117.400 – §117.456 Rule Project No. 2013-049-117-AI
Iron and Steel Mills	NO _x Emissions from Iron and Steel Mills (EPA-453/R-94-065, September 1994)	§117.400 – §117.456
Nitric and Adipic Acid Manufacturing	NO _x Emissions from Nitric and Adipic Acid Manufacturing Plants (EPA-453/3-91-026, December 1991)	No existing nitric or adipic acid manufacturing plants in DFW area.
Process Heaters	NO _x Emissions from Process Heaters (EPA-453/R-93-034, September 1993)	§117.400 – §117.456 Rule Project No. 2013-049-117-AI
Stationary Internal Combustion Engines	NO _x Emissions from Stationary Internal Combustion Engines (EPA-453/R-93-032, July 1993, Updated September 2000)	§117.400 – §117.456 Rule Project No. 2013-049-117-AI
Stationary Turbines	NO _x Emissions from Stationary Combustion Turbines (EPA-453/R-93-007, January 1993)	§117.400 – §117.456 Rule Project No. 2013-049-117-AI
Utility Boilers	NO _x Emissions from Utility Boilers (EPA-453/R-94-023, March 1994)	§117.1300 – §117.1356

*The Chapter 117 cement manufacturing rules continue to fulfill RACT for Holcim Texas LP. These rules continue to apply to the TXI Operations LP and Ash Grove Cement Company cement manufacturing plants in Ellis County. However, RACT for TXI Kiln No. 5 is fulfilled by the concurrently proposed Voluntary Agreed Order (2017-1648-SIP) and RACT for Ash Grove Kiln No. 3 is fulfilled by the NSPS for Portland Cement Plants.

Table F-2: State Rules Addressing VOC RACT Requirements in CTG Reference Documents (No Change)

Table F-3: State Rules Addressing VOC RACT Requirements in ACT Reference Documents (No Change)

Table F-4: State Rules Addressing NO_x RACT Requirements for Major Emission Sources in the Nine-County DFW Area (Updated)

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN100218643	CP0029G	Exide Technologies	Collin	3341	Secondary Nonferrous Metals	52.8	§117.400 – §117.456	
RN100219203	CP0026M	City of Garland Power and Light	Collin	4911	Electric Services	32.2	§117.1300 – §117.1356	
RN100218080	DB1073N	Dal Tile Corporation	Dallas	3253	Ceramic Wall and Floor Tile	71.4	§117.400 – §117.456	
RN100219963	DB1494I	Solar Turbines Inc	Dallas	3511	Turbines and Turbine Generator	73.4	NA	Engine testing, turbine. Additional control of NO _x emissions not technologically feasible.
RN100225291	DB0632E	Owens Corning Roofing and Asphalt LLC	Dallas	2952	Asphalt Felts and Coatings	34.5	§117.400 – §117.456	
RN100654581	DB0087J	Baylor University Medical Center	Dallas	8062	General Medical and Surgical Hospitals	17.2	§117.400 – §117.456	
RN100658467	DB1974M	U.S. Department of Veterans Affairs	Dallas	4961	Steam and Air Conditioning Supply	9.0	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN100673490	DB0249H	Luminant Generation Co LLC	Dallas	4911	Electric Services	85.3	§117.1300 – §117.1356	
RN101434587	DB0914O	Triumph Aerostructures LLC	Dallas	3721	Aircraft	13.2	§117.400 – §117.456	
RN101559235	DB0252S	ExTex LaPorte LP	Dallas	4911	Electric Services	169.0	§117.1300 – §117.1356	
RN102505195	DB0820B	Texas Instruments Incorporated	Dallas	3674	Semiconductors and Related Devices	57.6	§117.400 – §117.456	
RN100216225	DF0558Q	Texas Aero Engine Service LLC	Denton	4581	Airports, Flying Fields, Service	89.3	NA	Engine testing, aircraft. Additional control of NO _x emissions not technologically feasible. FCAA prohibition regarding jet engine test cells.
RN100542257	DF0223E	Waste Management of North Texas	Denton	4953	Refuse Systems	76.8	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN102934692	DFA170N	Devon Gas Services LP	Denton	1311	Crude Petroleum and Natural Gas	45.2	§117.400 – §117.456	
RN105071435	DFA178V	Crosstex North Texas Pipeline LP	Denton	1311	Crude Petroleum and Natural Gas	45.7	§117.400 – §117.456	
RN106160260	DFA235A	Devon Gas Services LP	Denton	1311	Crude Petroleum and Natural Gas	27.3	§117.400 – §117.456	
RN100212430	ED0347N	Ennis Power Company LLC	Ellis	4911	Electric Services	164.6	§117.1300 – §117.1356	
RN100213479	ED0018M	Elk Corporation of Texas	Ellis	2952	Asphalt Felts and Coatings	69.6	§117.400 – §117.456	
RN100213537	ED0168P	Dartco of Texas LP	Ellis	3089	Plastics Products, NEC	15.1	§117.400 – §117.456	
RN100216472	ED0011D	Chaparral Steel Midlothian LP	Ellis	3312	Blast Furnaces and Steel Mills	296.2	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN100217199	ED0066B	TXI Operations LP	Ellis	3241	Cement, Hydraulic	1097.7	§117.3100 – §117.3145	The Chapter 117 rules continue to apply, however, RACT for Kiln No. 5 is fulfilled by the voluntary agreed order between TXI and TCEQ.
RN100219286	ED0099J	Holcim Texas LP	Ellis	3241	Cement, Hydraulic	756.1	§117.3100 – §117.3145	
RN100223585	ED0051O	Owens Corning Insulating Systems LLC	Ellis	3296	Mineral Wool	109.0	§117.400 – §117.456	
RN100225978	ED0034O	Ash Grove Cement Company	Ellis	3241	Cement, Hydraulic	1397.1	§117.3100 – §117.3145	The Chapter 117 rules continue to apply, however, RACT for reconstructed Kiln No. 3 is fulfilled by the NSPS for Portland Cement Plants.
RN100542232	ED0240J	Waste Management of North Texas	Ellis	4953	Refuse Systems	50.7	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN100542588	ED0238T	Atmos Energy Corp	Ellis	4922	Natural Gas Transmission	35.8	§117.400 – §117.456	
RN102596400	ED0332D	Midlothian Energy LLC	Ellis	4911	Electric Services	237.5	§117.1300 – §117.1356	
RN102903432	EDA001A	Energy Transfer Fuel LP	Ellis	4922	Natural Gas Transmission	65.7	§117.400 – §117.456	
RN100210889	JH0045I	Texas Lime Co	Johnson	3274	Lime	506.3	§117.400 – §117.456	
RN100213719	JH0025O	Johns Manville International Inc	Johnson	3296	Mineral Wool	75.0	§117.400 – §117.456	
RN100223312	JH0230L	Brazos Electric Power Cooperative Inc	Johnson	4911	Electric Services	115.0	§117.1300 – §117.1356	
RN104260096	JHA003C	Texas Midstream Gas Services LLC	Johnson	1311	Crude Petroleum and Natural Gas	44.6	§117.400 – §117.456	
RN104283635	JHA001A	Texas Midstream Gas Services LLC	Johnson	1311	Crude Petroleum and Natural Gas	60.2	§117.400 – §117.456	
RN104377692	JHA004D	Energy Transfer Fuel LP	Johnson	4922	Natural Gas Transmission	52.4	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN104795497	JHA093O	Devon Gas Services LP	Johnson	1311	Crude Petroleum and Natural Gas	50.6	§117.400 – §117.456	
RN104927876	JHA018R	Cowtown Gas Processing Partners LP	Johnson	1311	Crude Petroleum and Natural Gas	68.8	§117.400 – §117.456	
RN104928676	JHA012L	ETC Texas Pipeline LTD	Johnson	1321	Natural Gas Liquids	82.0	§117.400 – §117.456	
RN104962634	JHA028B	Barnett Gathering LP	Johnson	1311	Crude Petroleum and Natural Gas	42.0	§117.400 – §117.456	
RN105132609	JHA022V	Texas Midstream Gas Services LLC	Johnson	1311	Crude Petroleum and Natural Gas	36.6	§117.400 – §117.456	
RN105171029	JHA024X	Texas Midstream Gas Services LLC	Johnson	1311	Crude Petroleum and Natural Gas	45.8	§117.400 – §117.456	
RN105225700	JHA049W	Crosstex North Texas Gathering LP	Johnson	4922	Natural Gas Transmission	37.2	§117.400 – §117.456	
RN105372197	JHA047U	Crosstex North Texas Gathering LP	Johnson	1311	Crude Petroleum and Natural Gas	46.1	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN105378434	JHA048V	Crosstex North Texas Gathering LP	Johnson	1311	Crude Petroleum and Natural Gas	35.6	§117.400 – §117.456	
RN105580617	JHA052Z	Barnett Gathering LP	Johnson	1311	Crude Petroleum and Natural Gas	50.1	§117.400 – §117.456	
RN105633085	JHA042P	Devon Gas Services LP	Johnson	1311	Crude Petroleum and Natural Gas	57.0	§117.400 – §117.456	
RN105779441	JHA054B	Barnett Gathering LP	Johnson	1311	Crude Petroleum and Natural Gas	30.9	§117.400 – §117.456	
RN100213420	KB0176S	FPLE Forney, LP	Kaufman	4911	Electric Services	1080.9	§117.1300 – §117.1356	
RN100754779	KB0156B	Smurfit Kappa Orange County LLC	Kaufman	2631	Paperboard Mills	60.6	§117.400 – §117.456 Rule Project No. 2013-049-117-AI	
RN100226414	PC0013U	Enbridge G&P North Texas LP	Parker	1321	Natural Gas Liquids	46.4	§117.400 – §117.456	
RN100242510	PC03000	Devon Gas Services LP	Parker	1311	Crude Petroleum and Natural Gas	21.7	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN104700711	PCA010J	Energy Transfer Fuel LP	Parker	1311	Crude Petroleum and Natural Gas	28.1	§117.400 – §117.456	
RN104783261	PCA013M	Energy Transfer Fuel LP	Parker	4922	Natural Gas Transmission	7.6	§117.400 – §117.456	
RN104891825	PCA006F	Crosstex CCNG Processing LTD	Parker	4922	Natural Gas Transmission	36.9	§117.400 – §117.456	
RN105010797	PCA008H	Barnett Gathering LP	Parker	1311	Crude Petroleum and Natural Gas	20.9	§117.400 – §117.456	
RN105072516	PCA020T	Crosstex North Texas Gathering LP	Parker	4922	Natural Gas Transmission	52.9	§117.400 – §117.456	
RN105093512	PCA007G	Enbridge G&P North Texas LP	Parker	1321	Natural Gas Liquids	39.3	§117.400 – §117.456	
RN105163232	PCA021U	Crosstex CCNG Processing LTD	Parker	1321	Natural Gas Liquids	46.0	§117.400 – §117.456	
RN105225734	PCA032F	Crosstex North Texas Gathering LP	Parker	4922	Natural Gas Transmission	44.4	§117.400 – §117.456	
RN100218007	TA0009B	Alcon Laboratories Inc	Tarrant	2834	Pharmaceutical Preparations	32.6	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN100942259	TA0512K	City of Fort Worth	Tarrant	4952	Sewerage Systems	45.4	§117.400 – §117.456	
RN101991925	TA3161T	Waste Management of North Texas	Tarrant	4953	Refuse Systems	22.7	§117.400 – §117.456	
RN102336906	TA0353G	ExTex LaPorte LP	Tarrant	4911	Electric Services	95.8	§117.1300 – §117.1356	
RN102505963	TA0157I	General Motors Corp	Tarrant	3711	Motor Vehicles and Car Bodies	50.7	§117.400 – §117.456	
RN102649399	TA0235N	Miller Coors LLC	Tarrant	2082	Malt Beverages	24.7	§117.400 – §117.456	
RN102939626	TAA008H	Crosstex North Texas Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	50.4	§117.400 – §117.456	
RN104475157	TAA013M	Barnett Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	27.2	§117.400 – §117.456	
RN104475165	TAA038L	Barnett Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	25.8	§117.400 – §117.456	
RN104787478	TAA014N	Barnett Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	42.4	§117.400 – §117.456	

RN	Account	Company	County	SIC	SIC Description	2012 Actual tpy	Rules Addressing RACT	Notes
RN105010714	TAA021U	Barnett Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	40.9	§117.400 – §117.456	
RN105233811	TAA059G	Texas Midstream Gas Services LLC	Tarrant	1311	Crude Petroleum and Natural Gas	38.7	§117.400 – §117.456	
RN105304521	TAA035I	Barnett Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	41.7	§117.400 – §117.456	
RN105522387	TAA042P	Barnett Gathering LP	Tarrant	1311	Crude Petroleum and Natural Gas	38.5	§117.400 – §117.456	

Table F-5: State Rules Addressing NO_x RACT Requirements for Major Emission Sources in Wise County (No Change)

Table F-6: State Rules Addressing VOC RACT Requirements for Major Emission Sources in the Nine-County DFW Area (No Change)

Table F-7: State Rules Addressing VOC RACT Requirements for Major Emission Sources in Wise County (No Change)