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Chief Clerk, MC-105
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Via Electronic Filing

Re: Public Comments Regarding Luminant Generation Company LLC Draft Renewal of Title V Permit No. O64, RN102285921

Texas should implement the Clean Air Act's Title V permit program to improve compliance and the enforcement of federal air quality requirements. Correctly implemented, the Title V permit program enables industry, "[s]tates, [the U.S. Environmental Protection Agency ("EPA")], and the public to understand better the requirements to which the source is subject and whether the source is meeting those requirements." Operating Permit Program, 57 Fed. Reg. 32,250, 32251 (July 21, 1992). The State of Texas has failed to implement such a program.

These comments are submitted on behalf of the Environmental Integrity Project ("EIP"), the Sierra Club, and the Caddo Lake Institute ("CLI"). EIP is a nonpartisan, nonprofit organization dedicated to the effective enforcement of environmental laws and to the prevention of political interference with those laws. EIP has offices and programs in Texas. The Sierra Club is the nation's oldest and largest grassroots environmental group with more than 21,000 members in Texas. Sierra Club members and their families live, work, attend school, travel and recreate in areas adversely affected by emissions from the Monticello Steam Electric Station ("Monticello Plant"). They include members of sensitive populations such as asthmatics, the elderly, and children who are at elevated risk for the deleterious health effects posed by emissions from coal-fired boilers. CLI is a scientific and educational organization with the mission of assisting the communities of Caddo Lake in protecting this natural wonder and to develop models for community-based protection of significant natural resources. CLI has helped coordinate efforts of several universities, public health organizations, bass clubs and religious organizations to monitor for mercury and to reduce the risks it poses to public health and the health of Caddo Lake and its watershed. Emissions from the Monticello Plant negatively impact Caddo Lake, located just over 60 miles from the plant.

EIP, Sierra Club, and CLI appreciate the opportunity to provide comments on Luminant Generation Company LLC's ("Luminant") Monticello Steam Electric Station Draft Federal Operating Permit No. O64 ("Draft Permit"). We recognize and appreciate the Texas Commission for Environmental Quality's ("TCEQ") efforts to implement some suggestions from our previous comments on other draft Title V permits. However, as explained below, the Draft Permit still falls short of compliance with EPA's Title V requirements.

A. The Draft Permit Fails to Include Compliance Schedules to Address Violations of the Texas State Implementation Plan

Under 40 C.F.R. § 70.1(b), “all sources subject to Title V must have a permit to operate that assures compliance by the source with applicable requirements.” Applicable requirements are defined to include: “(1) any standard or other requirement provide for in the applicable [state implementation plan (“SIP”)] approved or promulgated by EPA through rulemaking under Title I of the [Clean Air] Act” and “(2) any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D, of the Act. . .” 40 C.F.R. § 70.2. As part of the Title V permitting process (including permit renewal), TCEQ must develop a “schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance.” 40 C.F.R. § 70.5(c)(8)(iii)(C). Emissions from the Monticello Plant have violated and continue to violate requirements of the EPA approved Texas SIP, including opacity limits and the prohibition on discharging emissions injurious to human health and welfare. Before it may renew Luminant’s Title V permit, TCEQ must develop a compliance schedule for the Monticello Plant, so that emissions from the plant do not continue to harm the health of the public.

1. Emissions from the Monticello Plant have violated and continue to violate applicable opacity limits

The main boilers (Units 1, 2, and 3) at the Monticello Plant must comply with SIP-approved opacity limits, incorporated into Monticello’s Title V Permit, at all times. Visible emissions from Units 1 and 2 “shall not exceed an opacity of 30% averaged over a six minute period.” 30 TEX. ADMIN. CODE § 111.111(a)(1)(A); 61 Fed. Reg. 20,732 (May 8, 1996) (approving 30 TEX. ADMIN. CODE § 111.111(a) into the Texas SIP). Visible emissions from Unit 3 must comply with a 20% opacity limit, also averaged over a six minute period. 30 TEX. ADMIN. CODE § 111.111(a)(1)(B); 61 Fed. Reg. 20,732. According to Luminant’s Title V deviation reports, emissions from the Monticello Plant’s Units 1, 2, and 3 have repeatedly violated and continue to violate these opacity limits. Between July of 2006 and January of 2011, emissions from Monticello’s main boilers violated the opacity limits on more than 13,500 occasions. *See* Exhibit A. Accordingly, TCEQ may not renew the Draft Permit until it develops a compliance plan to ensure that emissions from the Monticello Plant do not continue to violate these opacity limits. *See* 40 C.F.R. § 70.5(c)(8)(iii)(C).

2. Emissions from the Monticello Plant cause exceedances of the federal health-based standard for sulfur dioxide in violation of the Texas SIP

On June 2, 2010, EPA published a final rule, strengthening the primary sulfur dioxide (“SO₂”) National Ambient Air Quality Standard (“NAAQS”) to protect the public health. 75 Fed. Reg. 35,520. EPA established a one-hour standard at a level of 75 parts per billion (“ppb”) (or 196 ug/m³) based on the three-year average of the 99th percentile of the daily maximum one-hour concentrations. The one-hour SO₂ standard is designed to protect public health by reducing people’s exposure to high short-term concentrations of SO₂. EPA, Fact Sheet, Revisions to the Primary National Ambient Air Quality Standard, Monitoring Network, and Data Reporting Requirements for Sulfur Dioxide, available at <http://www.epa.gov/air/sulfurdioxide/pdfs/20100602fs.pdf>.

Modeling based on the Monticello Plant's actual emissions shows that emissions from the plant cause ambient air pollution to greatly exceed the one-hour SO₂ NAAQS. AERMOD Modeling of SO₂ Impacts of the Luminant Monticello Coal Plant, Khanh T. Tran (June 2011) (Exhibit B). Specifically, using 2003 actual emissions, five years of meteorological data and the latest EPA modeling guidance, the AERMOD model demonstrated that emissions from the Monticello Plant cause large exceedances of the one-hour SO₂ NAAQS. Excluding other sources and background concentrations, emissions from the Monticello Plant cause exceedances of the NAAQS in an area around the plant with a radius of approximately 6 miles. The town of Rocky Mound, located nearly 5 miles south of the plant, lies within the impact area.

The Monticello Plant's discharge of SO₂ emissions far exceeding the one-hour SO₂ NAAQS—the standards deemed protective of the public health—indicates that Monticello's air emissions are injurious to and adversely affect human health or welfare, in violation of the Texas SIP. 30 TEX. ADMIN. CODE § 101.4 prohibits Monticello from emitting “one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.” 38 Fed. Reg. 16,568 (June 22, 1973) (approving 30 TEX. ADMIN. CODE § 101.4 into the Texas SIP); *see also* Draft Permit at 77.¹ Current scientific evidence links adverse health effects with short-term exposure to SO₂ ranging from 5-minutes to 24-hours. Adverse respiratory effects include narrowing of the airways, which can cause difficulty breathing and increased asthma symptoms. These effects are particularly important for asthmatics during periods of faster or deeper breathing, such as while exercising or playing. Studies also show an association between short-term SO₂ exposure and increased visits to emergency rooms and hospital admissions for respiratory illnesses, particularly in at-risk populations. EPA selected the level of 75 ppb for the one-hour SO₂ NAAQS, because it found that higher levels of SO₂ could result in adverse health effects in sensitive populations. *See* 75 Fed. Reg. at 35,546.

Before the TCEQ may renew Luminant's permit, it must develop a compliance plan to reduce SO₂ emissions at the Monticello Plant, such that SO₂ emissions do not injure or adversely affect human health or welfare in the area surrounding the plant (i.e., such that they do not cause violations of the NAAQS). *See* 40 C.F.R. § 70.5(c)(8)(iii)(C). TCEQ may also not issue a Title V permit for the Monticello Plant without a compliance plan, because the Texas SIP requires that “the National Primary . . . Ambient Air Quality Standards . . . will be enforced throughout all parts of Texas.” 30 TEX. ADMIN. CODE § 101.21; 42 Fed. Reg. 27,894 (June 1, 1977). If TCEQ allows the Monticello Plant to continue operating as-is, the TCEQ is failing to enforce the one-hour SO₂ NAAQS. Furthermore, TCEQ should consider imposing more stringent SO₂ emission limitations on Monticello Units 1, 2, and 3. The Monticello Plant's pervasive and ongoing violations of the one-hour SO₂ NAAQS indicate that the plant's current SO₂ emission standards

¹ The Draft Permit incorporates Texas permit number 45432 as an applicable requirement “under 30 TAC Chapter 122 and enforceable under this operating permit.” In turn, Permit No. 45432 provides that emissions from the Monticello Plant “must not cause or contribute to a condition or ‘air pollution’ as defined in section 382.003(3) of the Texas Clean Air Act.” Air pollution means “the presence in the atmosphere of one or more air contaminants or combination of air contaminants in such concentration and of such duration that . . . are or may tend to be injurious to or adversely affect human health or welfare, animal life, vegetation, or property . . . or interfere with the normal use or enjoyment of animal life, vegetation, or property.” TEX. HEALTH & SAFETY CODE § 382.003(3).

and limitations are insufficient to protect the health and welfare of the public that resides and works in the vicinity of the plant.

B. The TCEQ Executive Director Failed to Provide Notice of the Draft Permit Renewal to Oklahoma and Arkansas

Pursuant to Texas Title V regulations, the TCEQ Executive Director (“ED”) must “provide notice of the [D]raft [P]ermit [renewal] to any affected states on or before the time notice is provided to the public through public announcement or public notice.” 30 TEX. ADMIN. CODE § 122.330(c). An “affected state” may include New Mexico, Oklahoma, Kansas, Colorado, Arkansas, or Louisiana, if the state is within 50 miles of the plant. *Id.* at § 122.330(b). Both Arkansas and Oklahoma lie within 50 miles of the Monticello Plant. *See* Exhibits C & D. Yet, the ED failed to provide timely notice to both states in accordance with the regulatory requirements.

Compliance with the affected state review requirements allows those states directly impacted by emissions from the Monticello Plant to comment on the Draft Permit. The Monticello Plant emits thousands of tons of air pollutants, including sulfur dioxide, nitrogen oxide, and particulate matter, which adversely impacts air quality and public health in Oklahoma and Arkansas. Furthermore, the plant’s emissions may cause or contribute to nonattainment of the NAAQS in both states, which could impact economic growth.² As such, it is critical that TCEQ comply with its own regulations and provide timely and proper notice of Monticello’s Title V permit renewal to both states. To correct this significant procedural error, the ED must provide notice to Oklahoma and Arkansas, and Luminant must re-notice the Draft Permit pursuant to 30 TEX. ADMIN. CODE § 122.320.

C. The Incorporation of Emission Limits by Reference is Impermissible

The Draft Permit incorporates numerous emission standards and limitations, including regulatory citations and New Source Review (“NSR”) authorizations, by reference. According to the plain language of the Clean Air Act (“CAA”) and EPA’s implementing regulations, a Title V permit should do more than reference the applicable requirements. The CAA states that “[e]ach permit issued . . . shall include enforceable emission limitations and standards.” 42 U.S.C. § 7661c(a). Likewise, EPA’s implementing regulations confirm that permits must include *both* the emission limit and the regulatory citation codifying the limit. 40 C.F.R. § 70.6(a)(1) (2010) (stating permits must include both “[e]missions limitations and standards” and a specific reference to the “origin and authority of each term or condition.”) Accordingly, courts have held that a Title V permit should serve as a “source specific bible for Clean Air Act compliance.” *Virginia v. Browner*, 80 F.3d 869, 873 (4th Cir. 1996). To achieve this goal, the permit should consolidate all the applicable requirements into a single document. *See N.Y. PIRG v. Whitman*, 321 F.3d 316, 320 (2d Cir. 2003); 42 U.S.C. § 7661c(a)-(c) (2010); 40 C.F.R. § 70.6(a)(1) (2010).

² Oklahoma has previously expressed concern with the TCEQ’s failure to provide timely notice regarding the permitting of coal-fired power plants, citing public health and economic impacts to the state. *See* Exhibit E.

Furthermore, EPA explicitly disapproved Texas's use of incorporation by reference of emission limitations and standards, other than minor NSR permits and permits by rule.³ As explained in the EPA Administrator's May 28, 2009 *Order Granting in Part and Denying in Part Petition for Objection to Permit*, response to Petition Number VI-2007-01 ("Citgo Order"):

Consistent with EPA's previous statements on the use of incorporation by reference, I agree that the applicable emissions limits (MAERT)⁴ should be explicitly identified in CITGO's title V permit. It is especially important here where the title V permit incorporates requirements from several permits (including two PSD permits, several federal regulations, and other requirements). Moreover, the title V permit cross references the PSD permits in their entirety. Thus, EPA grants the petition on this issue with regard to TCEQ's use of incorporation by reference for emissions limitations, with the exception of those emissions limitations from minor NSR permits and permits by rule. EPA directs TCEQ to reopen the permit and ensure that all such emissions limitations are included on the face of the title V permit.

Citgo Order at 11. EPA Region 6 has reaffirmed the Citgo Order provisions regarding Texas's use of incorporation by reference of emissions limitations in many recent Title V Objection letters. *See e.g.*, Objection to Title V Permit No. O2269, ExxonMobil Corporation, Baytown Chemical Plant, Texas City Refinery at 3-4 (Aug. 20, 2010). EPA objects to TCEQ's incorporation by reference of major NSR permits and the failure to include emission limitations and standards necessary to assure compliance with all applicable requirements.

Instead of explicitly listing the emission limits and the monitoring and recordkeeping requirements, the Draft Permit merely contains regulatory citations and references to other permits that establish applicable requirements, making it extremely difficult to discern the emissions, monitoring, and recordkeeping requirements applicable to the Monticello Plant. Thus, instead of creating a "source specific bible," the Draft Permit is more like a directory. Specifically, the Draft Permit impermissibly incorporates by reference the following:

- New Source Review Authorizations: The Draft Permit does not identify the emission limitations associated with numerous NSR permits that are incorporated by reference into the renewal draft. These permits are authorization numbers: 45432, 53238, 54408, 54808, 56384, 56387, 74213, 85294, and 95215. *See* New Source Review Authorization References, Draft Permit at 77. The Applicable Requirements Summary, in turn, relies extensively on incorporation by reference, thus basing the entire permit's emission limitations on incorporation by reference. At a bare minimum, TCEQ should include

³ More recently, EPA has also expressed "significant concerns" with TCEQ's use of IBR for minor source NSR and permits by rule ("PBRs"). *See, e.g.*, Letter from Al Armendariz, Regional Administrator, EPA Region 6 to Mark Vickery, Executive Director, TCEQ at 3 (June 10, 2010). Some of EPA's concerns include "PBRs that purport to modify Major NSR emission limits . . . , failure of the TCEQ to make the currently applicable Minor NSR permits and PBRs readily available to the public, and the practical inability of EPA and the public to determine the applicable emissions limitations and standards for each particular emission unit." *Id.*

⁴ Commenters wish to point out that emission limitations in Texas NSR permits are not found exclusively in the Maximum Allowable Emission Rate Table (MAERT). All applicable emission limitations, including those in MAERTs, must be included in the Draft Permit.

copies of Monticello's NSR permits appended to the Draft Permit, as done in other recent Title V permit renewals. If the permits are not included, commenters and members of the public are unable to obtain and review these incorporated permits from the TCEQ in the short time period provided for public comment.

- **Regulatory Citations:** The Draft Permit also fails to identify the emission limitations associated with a number of regulatory citations that are incorporated by reference into the permit. For example, the Applicable Requirements Summary specifies that emissions of NO₂ from the Unit 3 boiler must comply with 30 TAC Chapter 117, Subchapter E, Division 1, listing a number of specific citations. The textual description simply provides that “the annual average emission cap shall be calculated using the equation in § 117.3020(c).” Without consulting the regulations and access to heat input data certified by the TCEQ Executive Director, it is impossible to determine the NO₂ annual average emission cap for Unit 3, and therefore, impossible for the public to determine whether NO₂ emissions from Monticello comply with the cap.

This extensive incorporation by reference of permits and emission limits does not “assure compliance.” To the contrary it poses a significant barrier. EPA has consistently confirmed that that emission limits must be listed in the permit. *See* EPA, Office of Air Quality and Planning and Standards, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program, Sec. II. E. (Mar. 5, 1996).

In order to remedy these deficiencies and issue a Title V permit that complies with the Clean Air Act, and EPA regulations and guidance, TCEQ must amend the Draft Permit to include the actual emission limits and standards applicable to the Monticello Plant in the body of the permit itself.⁵ TCEQ should correct this fundamental flaw in the Draft Permit and require Luminant to re-publish the Draft Permit for public comment.

D. The Draft Permit Impermissibly Incorporates Permits by Rule

The Draft Permit impermissibly incorporates numerous Permit by Rule (“PBR”) authorizations, the texts of which do not appear in either the permit itself or Statement of Basis. *See* New Source Review Authorization References Table, Draft Permit at 77-78. Specific problems with the incorporation of PBRs into the permit include the following:

- **Interference with attainment or maintenance of the NAAQS:** In order to assure protection of the NAAQS, Texas's PBR program must include a mechanism for denying PBR authorizations for cause. 42 U.S.C. § 110(a)(2)(c); 40 C.F.R. § 51.160. There must be preauthorization review of applications for coverage under individual PBRs to assure the emissions authorized by PBRs will not contribute to violations of control strategies or interfere with attainment or maintenance. *See* 71 Fed. Reg. 14439, 14441 (March 22,

⁵ The Revised Draft Renewal Title V Operating Permit O15 for the Harrington Station Power Plant represents a step in the right direction to meeting this fundamental requirement. Though the Harrington Station Power Plant draft permit still relied on incorporation by reference, the permit included a chart titled “Federally Enforceable Unit Specific Emission Limitations for Individual Emission Units,” which listed the specific emission limits for individual units at the power plant. Furthermore, the draft permit included the relevant PSD permits. At a bare minimum, TCEQ should take these same steps with Luminant's Draft Permit.

2006) (“EPA proposes a conditional approval because this rule, as adopted by the Missouri Air Conservation Commission on June 26, 2003, does not expressly include a mechanism for pre-construction review of [PBR] applications ...”) Texas rules include no provision for pre-construction review of PBR applicability claims.

- Lack of adequate public participation: Because PBRs do not contain detailed provisions relating to emission limits and compliance (these are often found in the registrations, which are submitted after the close of public comment), the public is not given an adequate opportunity to comment when PBR rules are issued. Further, Texas rules expressly require PBRs to be “incorporated” into a facility’s permit when the permit is amended or renewed. 30 TEX. ADMIN. CODE § 116.116(d). Texas “incorporation” procedures do not provide adequate public participation or meet other requirements for permit amendments.
- Incorporation of non-source specific PBRs: Among other PBRs, the Draft Permit incorporates PBRs 106.261 and 106.262. These particular PBRs do not include specific emission limits and fail to include adequate monitoring and reporting requirements and compliance timeframes in violation of EPA guidance and prior SIP approvals.

All PBRs should be included in the permit rather than incorporated by reference. Furthermore, to the extent the PBRs in the draft permit are used at a major facility or are not source category specific, they violate the Texas SIP, EPA policy, and prior SIP decisions. To assure compliance with the CAA, Luminant must obtain valid authorizations, such as permit amendments, for any emissions currently authorized through illegal PBRs. Until it does so, Luminant is in ongoing noncompliance with the CAA.

E. Title V Permits Must Include Monitoring Sufficient to Assure Compliance

Title V permits must include monitoring requirements sufficient to assure compliance with applicable emission limits and standards. In *Sierra Club, et al. v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008), the U.S Court of Appeals for the D.C. Circuit emphasized the statutory duty to include monitoring in Title V permits:

Title V is a complex statute with a clear objective: it enlists EPA and state and local environmental authorities in a common effort to create a permit program for most stationary sources of air pollution. Fundamental to this scheme is the mandate that “[e]ach permit . . . shall set forth . . . monitoring . . . requirements to assure compliance with the permit terms and conditions.” 42 U.S.C. § 7661c(c). By its terms, this mandate means that a monitoring requirement insufficient “to assure compliance” with emission limits has no place in a permit unless it is supplemented by more rigorous standards.”

In addition, the Court acknowledged that the mere existence of periodic requirements may not be sufficient. *Id.* at 676-677.

TCEQ should review and implement the Title V monitoring provisions to ensure that each provision is in compliance with the CAA, as well as the D.C. Circuit’s recent opinion.

Wherever possible, the Monticello Plant's permit should require continuous emission monitoring that clearly measures compliance based on the averaging period in the underlying standard. The Draft Permit fails to both properly justify the monitoring requirements selected and to include sufficient monitoring provisions to assure compliance.

1. The Compliance Assurance Monitoring plan fails to adequately justify the monitoring requirements selected

The Compliance Assurance Monitoring ("CAM") rule requires Luminant to submit detailed monitoring plans for its pollutant specific emission units. Not only must Luminant submit the indicators to be monitored, the ranges or designated conditions for the indicators, and the performance criteria for the monitoring—in addition, Luminant must "submit a justification for the proposed elements of the monitoring." 40 C.F.R. §§ 64.4(a) & (b). Luminant's CAM plan falls short of this regulatory requirement, by failing to provide sufficient justification for these monitoring elements. Most notably, emissions from the Monticello Plant's main boilers must not exceed 0.3 pound of total suspended particulate per million British thermal units ("MMBtu") heat input, averaged over a two-hour period. *See* Draft Permit at 33 & 38 (referencing 30 TEX. ADMIN. CODE § 111.153(b)). In addition, Unit 3 may not emit particulate matter ("PM") in excess of 0.10 lb/MMBtu. *Id.* at 36 (citing 40 C.F.R. § 60.42(a)(1)). Yet, contrary to the CAM rule, the Draft Permit does not require monitoring to assure that the plant meets these limits. The Draft Permit allows monitoring of opacity in lieu of direct monitoring of PM emissions from the three main boilers, on the basis that opacity is an indicator of PM emissions. However, neither the Draft Permit nor the Statement of Basis provides adequate justification for the use of opacity as an indicator for PM.

Mere opacity monitoring, while salutary and an essential part of ensuring compliance with opacity limits, is inadequate for ensuring compliance with PM emission limits. Opacity monitoring fails to adequately capture condensable particulate matter emissions, i.e., the particulate matter that condenses from vapor after leaving the exhaust stack. Monitoring opacity alone does not, therefore, provide assurance that particulate matter emissions for the Monticello Plant are within the limits prescribed by the federal New Source Performance Standards (0.10 lb/MMBtu) and the Texas SIP (0.3 lb/MMBtu). In *Sierra Club v. Tennessee Valley Authority*, 592 F. Supp. 2d 1357 (N.D. Ala. 2009), the district court made a finding of fact that a continuous opacity monitoring system working inside the stack could not monitor PM because it could not detect NO_x, SO₂, or condensable PM. *Id.* at 1362. The same is true for the opacity monitoring required in the Draft Permit.

Even putting aside the lack of any direct monitoring of PM, the Draft Permit's PM monitoring provisions are inadequate because they fail to correlate opacity levels with particulate matter levels. Specifically, the Draft Permit defines the deviation limits for compliance with 40 C.F.R. § 60.42(a)(1)'s PM limit as 20 percent opacity and for compliance with 30 TEX. ADMIN. CODE § 111.153(b)'s PM limit as 20 percent opacity (except for one six-minute period per hour of not more than 27 percent opacity). Yet, the CAM rationale fails to provide any justification for utilizing a 20 percent opacity limit as the indicator range for PM emissions from the PM emission units. Luminant must include such specific justifications in order for the Draft Permit to satisfy the basic federal CAM requirements. Stated another way, if the permit considers opacity as a surrogate for PM (which again does not address the issue of condensable particulate

matter) then, at the very least, the final permit must include a specific provision describing the exact opacity level (expressed as percentage, e.g., 5% or 10% opacity) that corresponds to a PM exceedance. To employ opacity testing as a compliance measure for filterable PM, the permit must include provisions that tie specific opacity levels to PM levels so that violations of opacity standards can readily be translated to violations of the correlating particulate matter standards. If the permit is finalized currently written—without either a PM CEMS or a specific permit condition that pins the PM limit to a specific corresponding opacity level— TCEQ must treat any exceedance of the applicable opacity standards as conclusive evidence of an exceedance of the Plant’s applicable PM limit.

2. TCEQ should require CEMS to adequately monitor PM emissions

The Monticello Plant’s final permit should require continuous emissions monitoring systems (“CEMS”) for PM. Many power plants operate PM CEMS and have demonstrated that the systems are reliable and accurate. These include, for example, the Tampa Electric power plant (Florida), Eli Lilly Corporation (Indiana), and the U.S. Department of Energy (Tennessee). The EPA has also secured commitments from up to 30 existing coal-fired utility installations to install particulate matter CEMS within the next few years. For example, American Electric Power Company and SWEPCO have agreed to install particulate matter CEMS on existing coal-fired power plants.

Common types of particulate matter CEMS were described by the EPA a decade ago in “Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring,” EPA-454/R-00-039, September 2000, available at <http://www.epa.gov/ttn/emc/cem/pmcemsknowfinalrep.pdf>. That document describes at least two technologies that should be considered for continuous particulate matter monitoring at the Monticello Plant: Light Scattering (an emitted light beam passes through a defined sample volume); and Acoustic Energy (shock waves caused by the impact of particles with a probe inserted into the flow are used to measure the particulate concentration). The technology is available, and, because it is the only technology that “provides a reasonable assurance of ongoing compliance with emission limitations or standards,” it must be implemented. 40 C.F.R. § 64.3(a)(2). The plant should implement PM CEMs in accordance with EPA’s performance specification 11 (available at <http://www.epa.gov/ttnemc01/perfspec/ps-11.pdf>), and periodic, on-going quality assurance testing of the CEMS according to the QA procedures in Appendix F to 40 CFR part 60. As a bare minimum to assure that monitoring accounts for condensable PM, the final permit should include stack tests for condensable particulate matter conducted pursuant to the final test method published in 75 Fed. Reg. 801,118 (Dec. 21, 2010).

EIP, the Sierra Club, and CLI appreciate the opportunity to submit these comments. Please contact me at 512.637.9474 or efonken@environmentalintegrity.org if you have any questions.

Sincerely,



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EXHIBIT A

Violations of 30% Opacity Limit (Units 1 and 2) and 20% Opacity Limit (Unit 3)				
Year	Quarter	Unit 1	Unit 2	Unit 3
2010	4	78	6	153
	3	128	115	129
	2	583	437	811
	1	488	244	170
2009	4	563	329	78
	3	474	215	65
	2	755	153	734
	1	354	86	217
2008	4	184	20	345
	3	28	27	160
	2	212	278	647
	1	176	3	241
2007	4	28	118	164
	3	10	300	265
	2	201	280	473
	1	427	315	366
2006	4	1	5	528
	3	69	132	133
Subtotals:		4759	3063	5679
Total Deviations			13501	

EXHIBIT B

**AERMOD Modeling of SO2 Impacts of the
Luminant Monticello Coal Plant**

Final Report

June 2011

Prepared for

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I. INTRODUCTION

This document presents the methodologies and results of an application of the AERMOD model to predict the air quality impacts of sulfur dioxide (SO₂) emitted by the Monticello Steam Station. Monticello is a coal-fired power plant operated by Luminant in Titus County, Texas (Figure 1). It consists of three coal-fired boilers with a total electric generating capacity of 1,980 MW (gross). SO₂ impacts predicted by the AERMOD model will be compared against the 1-hour SO₂ ambient air quality standard (AAQS) of 75 ppb (or 196 ug/m³) which has been promulgated in June 2010 by the U.S. Environmental Protection Agency (EPA).

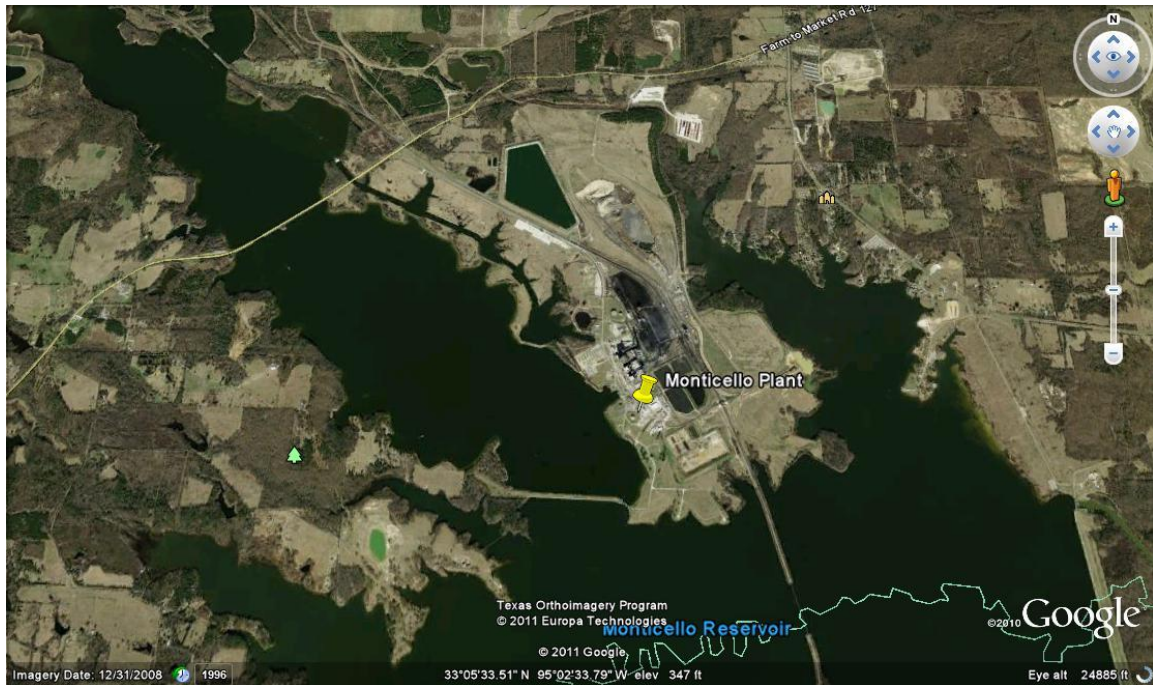


Figure 1. Luminant Monticello Coal Plant

II. MODELING METHODOLOGIES

This section documents the methodologies and assumptions used in the generation of modeling inputs such as source emissions, stack parameters, receptors and meteorological data.

A. Model Version

The version 11103 of the AERMOD model has been used in the modeling study. It is currently the latest version of the model that has been approved by the US Environmental Protection Agency (USEPA, 2011). It predicts the 1-hour SO₂ concentrations that can be compared against the 1-hour AAQS which is attained when the 3-year average of the 99th

percentile of the daily maximum 1-hour concentrations does not exceed 75 ppb (or 196 ug/m³) at each monitor within an area (USEPA, 2010a; 2010b).

B. Source Emissions

Coal-fired boilers at the plant are major sources of SO₂. The US EPA Clean Air Market database shows that, from 2003 to 2010, the year 2003 has the highest emission total of 82,440.6 tons per year (tpy).

<http://camddataandmaps.epa.gov/gdm/index.cfm?fuseaction=emissions.wizard>

Emissions by boiler are as follows: 30,515.4 tpy for Unit 1, 29,905.5 tpy for Unit 2 and 22,019.6 tpy for Unit 3. These emissions have been converted to grams per second (g/s) in Table 1 as required by the AERMOD model by assuming that the boilers operate continuously, i.e. 8760 hours per year. U.S. EPA's guidance on modeling 1-hour SO₂ impacts and the Modeling Guideline require using the maximum 1-hour emission rate. There are no 1-hour limits in the permit for the coal-fired boilers. Therefore, the maximum theoretical emissions during a 1-hour period should be used. The emission rates used for this model are lower than the 1-hour maximum theoretical emissions and, hence, the modeled impacts are underestimated. The purpose of this modeling is to show that even when using emission rates lower than the 1-hour maximum, the facility causes violations of the NAAQS. Using the 1-hour maximum, as required by U.S. EPA and the Modeling Guidelines, should result in even higher modeled concentrations.

C. Stack Parameters

Stack parameters (stack height, diameter, temperature and exit velocity) for the boilers are shown in Table 1. They have been obtained from CENRAP point source data used in a previous photochemical modeling study (AMI, 2010).

Table 1. Plant SO₂ Emissions & Stack Parameters

Stack	SO ₂ (g/s)	Height (m)	Diameter (m)	Temperature (K)	Velocity (m/s)
Stack 1	877.84027	121.9	6.55	453	32.5
Stack 2	860.29520	121.9	6.55	453	32.5
Stack 3	633.43479	140.2	7.77	354	26.5

D. Receptors

The AERMOD modeling uses a grid of discrete receptors that are located within a radius of 50 km around the plant. The receptor grid has varying resolutions: 50 m on the plant

boundaries, 100 m within the first 5 km, 250 m between 5 km and 10 km, 500 m between 10 km and 20 km, and 1000 m between 20 km and 50 km. Receptors located on-site have been removed from consideration and a total of 33,381 receptors have been used in the AERMOD modeling. The preprocessor AERMAP has been employed to obtain terrain elevations at these receptors using the NED data.

E. Meteorological Data

The AERMOD modeling uses a 5-year meteorological dataset that has been processed and recommended by TCEQ. It is comprised of surface observations at Shreveport (Station No. 13957) and upper-air data from the Longview site (Station No. 03951). Meteorological data processed by TCEQ for the years 1989 through 1993 have been used in the AERMOD modeling. The pre-processed data from TCEQ was used here to be consistent with TCEQ practices, even though the TCEQ practices are, themselves, inconsistent with best modeling practices.

F. Background Concentrations

For comparing against the SO2 1-hour NAAQS, background concentrations at a monitoring station are added to the concentrations predicted by the AERMOD model. Maximum 1-hour SO2 measurements in Dallas, Longview and Waco for 2006-2008 are shown in Table 2. The Longview measurements are the highest and exceed the NAAQS since Longview is the closest monitor to the Luminant plants and, hence, they are not suitable as background. The Waco measurements are much lower than those in Dallas; they are more representative as background since Waco is a much smaller city and less polluted than Dallas, and there is less chance for a “double counting” for an existing source such as the Luminant plant. Thus, a background of 21 ug/m3 is used in comparing modeled SO2 impacts against the NAAQS.

Table 2. Maximum Ambient 1-Hour SO2 Concentrations in Dallas, Longview and Waco

Year	1-Hour SO2 in Dallas	1-Hour SO2 in Longview	1-Hour SO2 in Waco
2008	23 ppb (60 ug/m3)	96 ppb (251 ug/m3)	8 ppb (21 ug/m3)
2007	14 ppb (45 ug/m3)	168 ppb (440 ug/m3)	8 ppb (21 ug/m3)
2006	16 ppb (42 ug/m3)	111 ppb (291 ug/m3)	Not available

Source: US EPA AirData

<http://iaspub.epa.gov/airsdata/adaqs.monvals?geotype=st&geocode=TX&geoinfo=st~TX~Texas&pol=SO2&year=2008&fld=monid&fld=siteid&fld=address&fld=city&fld=county&fld=stabbr&fld=regnrpp=25>

III. MODELING RESULTS

In June 2010, US EPA has announced a new 1-hour AAQS which is attained when the 3-year average of the 99th percentile of the daily maximum 1-hour concentrations does not exceed 75 ppb (or 196 ug/m³) at each monitor within an area. Subsequently, US EPA has issued in August 2010 a modeling guidance for using the AERMOD model with 5-year of meteorological data (USEPA, 2010b). According to the US EPA, the 4th highest maximum daily 1-hour concentrations averaged over five years should be used in the NAAQS comparison.

Five runs of the AERMOD model have been performed. SO₂ modeling results are summarized in Appendix A and presented in Table 3. According to the US EPA recommendations, modeled impacts in Table 3 have been averaged over five years of modeled meteorological data. The AERMOD model has predicted a maximum 1-hour concentration of 413.4 ug/m³ and a 4th highest (99th percentile) concentration of 336.3 ug/m³ from the plant emissions alone. Both these concentrations largely exceed the NAAQS of 196 ug/m³: 110% by the maximum 1-hour concentration and 72% by the 4th highest concentration. With the background of 21 ug/m³, the maximum total 1-hour concentration is 434.4 ug/m³ which is 122% over the NAAQS, and the maximum total 4th highest concentration is 357.3 ug/m³ which is 82% above the 1-hour NAAQS of 196 ug/m³. A plot of the contour of 196 ug/m³ is shown in Figure 2. The area with concentrations exceeding 196 ug/m³, i.e. violating the 1-hr NAAQS, due to the plant emissions alone has a radius of about 6 miles around the plant. Located about 6 miles NE of the Monticello plant, the center of Mt Pleasant lies outside the impact area. The town Rocky Mound, located about 5 miles to the south, is within the impact area since it is inside the contour line of 180 ug/m³ (with a background of 21 ug/m³, the total concentration of this contour line is 201 ug/m³).

Table 3. Predicted 1-Hour SO₂ Impacts by the Luminant Monticello Plant (averaged over 5 years)

Pollutant	Project Conc. (ug/m³)	Background Conc. (ug/m³)	Total Conc. (ug/m³)	NAAQS (ug/m³)	NAAQS Exceed	Percent Over NAAQS
1-hour SO ₂ (max)	413.4	21	434.4	196	YES	122%
1-hour SO ₂ (4 th highest)	336.3	21	357.3	196	YES	82%

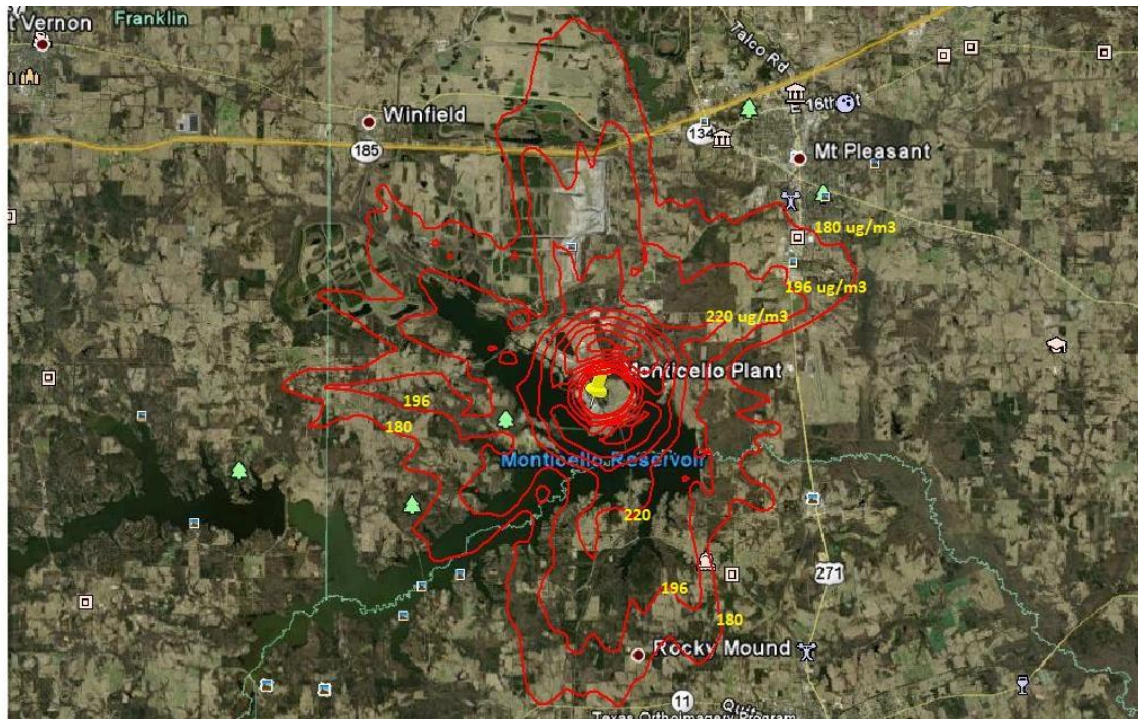


Figure 2. Area with 4th Highest 5-yr Averaged SO₂ Concentrations Exceeding the 1-Hour NAAQS of 196 ug/m³ by Plant Emissions Alone

IV. CONCLUSIONS

Air quality impacts of SO₂ emissions from the Luminant Monticello facility have been analyzed with the AERMOD model. Using 2003 actual emissions, five years of meteorological data and the latest US EPA modeling guidance, the AERMOD model has predicted large exceedances of the recent 1-hour NAAQS of 196 ug/m³. The plant alone has also been shown to cause a large area with a radius of about 6 miles where the concentrations exceed this NAAQS. Thus, SO₂ impacts from the Monticello coal plant are very adverse since its SO₂ emissions alone cause large exceedances of the 1-hour NAAQS and a large area of NAAQS violations. It should be noted that the predicted NAAQS exceedances are understated since annual-averaged emissions that are less than maximum hourly emissions have been used in the modeling.

V. REFERENCES

AMI, 2010. Photochemical Modeling of Ozone, PM_{2.5} and Visibility Impacts in Arkansas from Texas Existing and Planned Coal-Fired Power Plants. Report prepared for Sierra Club by AMI Environmental, September 2010.

U.S. EPA, 2011. Addendum to User's Guide of the AMS/EPA Regulatory Model AERMOD version 11103, March 2011. Available at:
http://www.epa.gov/ttn/scram/models/aermod/aermod_userguide.zip

U.S. EPA, 2010a. *Guidance Concerning the Implementation of the 1-hour SO₂ NAAQS for the Prevention of Significant Deterioration Program*. Memorandum issued on August 23, 2010 from Stephen D. Page, Director of OAQPS. Available at
<http://www.epa.gov/region07/air/nsr/nsrmemos/appwso2.pdf>

U.S. EPA, 2010b. *Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ NAAQS*. Memorandum issued on August 23, 2010 from Tyler Fox, Leader of Air Quality Modeling Group, OAQPS. Available at
<http://www.epa.gov/region07/air/nsr/nsrmemos/appwso2.pdf>

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Appendix A

Summary of AERMOD Modeling Results

EXHIBIT C

Search

Fly To Find Businesses Directions

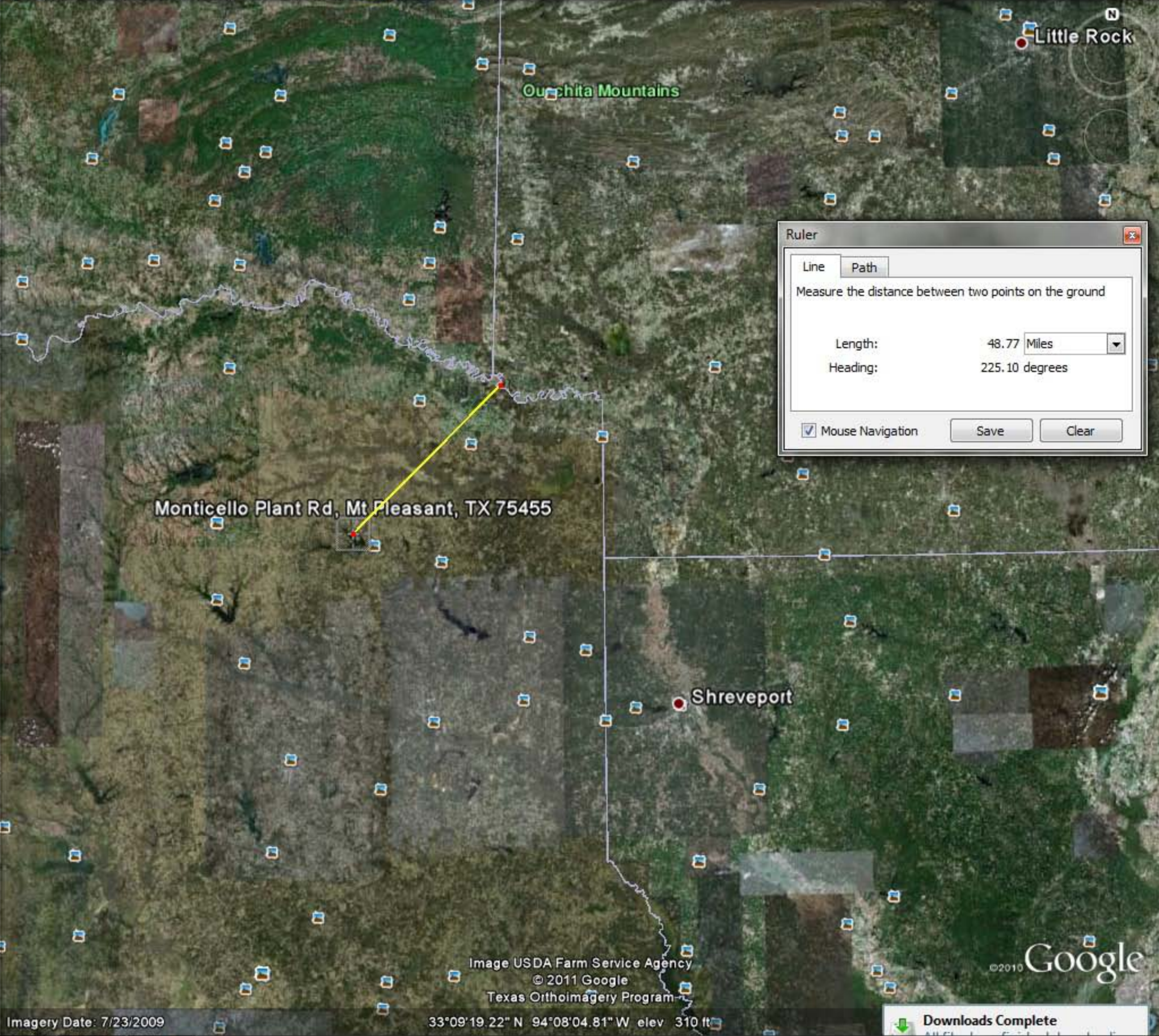
From e.g., New York, NY

To e.g., Niagara Falls, NY

- Monticello Plant Rd, Mt Pleasant...
- Monticello Plant Rd, Mt Pleasant
- 1574 Monticello Plant Road, Texa...
- 1574 Monticello Road, Texas 75456
- Monticello Rd, Mt Pleasant, Titu...

Places

Layers Earth Gallery



Ruler

Line Path

Measure the distance between two points on the ground

Length: 48.77 Miles

Heading: 225.10 degrees

Mouse Navigation Save Clear

Monticello Plant Rd, Mt Pleasant, TX 75455

Shreveport

©2010 Google

Image USDA Farm Service Agency © 2011 Google Texas Orthoimagery Program

Imagery Date: 7/23/2009

33°09'19.22" N 94°08'04.81" W elev 310 ft

Downloads Complete

EXHIBIT D

Search

Fly To Find Businesses Directions

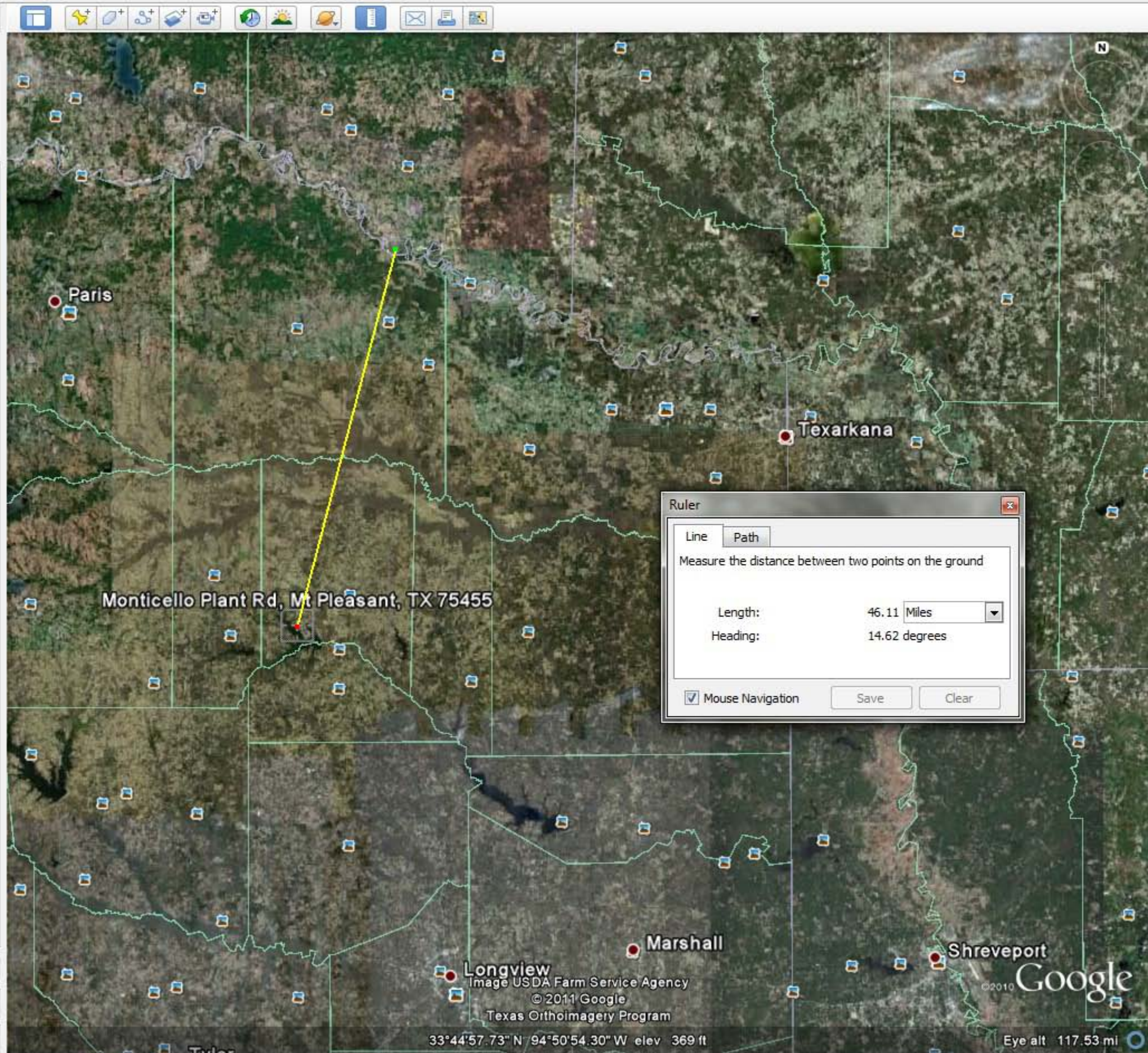
From e.g., New York, NY

To e.g., Niagara Falls, NY

Monticello Plant Rd, Mt Pleasant...
 Monticello Plant Rd, Mt Pleasant

Ads
Monticello Flower
www.proflowers.com
 Flowers from \$19 + Fast Shipping!
 "Best Value" - Wall Street Journal

1574 Monticello Plant Road, Texa...
 1574 Monticello Road, Texas 75456
 Monticello Rd, Mt Pleasant, Titu...
 Did you mean:
 Did you mean:
 Did you mean:
 Did you mean:
 Did you mean:



Ruler

Line Path

Measure the distance between two points on the ground

Length: 46.11 Miles

Heading: 14.62 degrees

Mouse Navigation Save Clear

EXHIBIT E



OFFICE OF ATTORNEY GENERAL
STATE OF OKLAHOMA

May 13, 2010

Dr. Alfredo Armendariz
Regional Administrator
U.S. Environmental Protection Agency, Region VI
1445 Ross Avenue
Dallas, TX 75202

Re: Construction and Permitting of New Coal-Fired Power Plants in Texas

Dear Dr. Armendariz:

It has come to my attention that there appears to be a concerted effort to rapidly permit and construct additional coal-fired power plants in the State of Texas. As of April 1, 2010, there were six permit applications for coal-fired plants pending before the Texas Commission on Environmental Quality (TCEQ) totaling over 4700 MW. In addition, it appears that TCEQ has already permitted seven additional coal-fired plants that are at various stages of construction totaling over 5000 MW.

There is reason for concern with the sheer number of proposed plants and process being employed for their approval. Although these new coal-fired plants have, at a minimum, the potential to adversely affect air quality in Oklahoma, the TCEQ did not provide Oklahoma with timely notice of the facilities' permit applications as required by 42 U.S.C. Section 7426(a)(1)(B) and the Title 30, Section 116.134 of the Texas Administrative Code. While Texas provided some after-the-fact information on these approved and pending applications in response to an inquiry from the Oklahoma Department of Environmental Quality, TCEQ has not adequately addressed the potential impacts on air quality in Oklahoma.

These new coal-fired plants are projected to emit millions of tons of carbon dioxide, thousands of tons of sulfur dioxide and nitrogen oxide, and thousands of pounds of mercury annually into the atmosphere. This is in addition to emissions from a large number of existing coal-fired plants already operating in Texas. I am greatly concerned that emissions from these new sources will adversely impact air quality, public health and economic growth in Oklahoma. Emissions from these sources may cause or

contribute to nonattainment of the National Ambient Air Quality Standards in Oklahoma. Oklahoma is currently very close to exceeding some NAAQS and current emissions from Texas are impacting that attainment status. The impacts of these emissions will likely be even more severe if the federal ozone NAAQS are lowered.

Additionally, sources in Texas are already having an impact on visibility impairment in the Wichita Mountains Wildlife Refuge Area, a Class I Area. In fact, modeling conducted by the Central Regional Air Planning Association and reported in Oklahoma's Regional Haze Implementation Plan (2-2-10 Revision) demonstrates that Texas sources contribute more to visibility impairment in this Class I Area than Oklahoma sources. According to page 9 of the Implementation Plan:

This modeling attributes visibility impairment at the Wichita Mountains mainly to anthropogenic emissions of sulfurous and nitrate pollutants. Sources in Oklahoma contribute less than one-seventh of visibility impairment at the Wichita Mountains; emissions from Texas alone account for almost twice the impairment as those from all of Oklahoma.

Oklahoma is committed to protecting and improving air quality. The permitting and construction of these additional coal-fired plants in Texas may have significant adverse effects on air quality in Oklahoma. Texas should be required to demonstrate that these new plants will not impact air quality and attainment status in Oklahoma in order to proceed with permitting and construction. As reductions from existing sources in Texas are already necessary to protect air quality in Oklahoma, it is highly unlikely that such a demonstration is possible.

At this stage, Oklahoma has not filed a petition under Section 126 of the Clean Air Act with your agency and is not involved in legal challenges to the permits. However, unless action is taken to address the impacts of existing and proposed coal-fired plants in Texas on air quality in Oklahoma, the State may be forced to pursue all available remedies to protect public health and welfare. Accordingly, I am hopeful that you review this issue at your earliest convenience and take action to resolve the issue for the benefit of all interested parties.

Sincerely,



W.A. Drew Edmondson
Attorney General

WAE:seh

cc: Governor Brad Henry
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Oklahoma City, Oklahoma 73105

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