Appendix A – SIP Excerpts

Texas SIP Revisions

http://www.tceq.texas.gov/airquality/sip/sipplans.html

• Revision to the State Implementation Plan for Inhalable Particulate Matter (PM10):1991 PM10 SIP for Moderate Area- El Paso.

https://www.tceq.texas.gov/assets/public/implementation/air/sip/sipdocs/1991-11-ELP/nov91_elp.pdf

• Revision to the State Implementation Plan for the Control of Carbon Monoxide Air Pollution: El Paso Revised Maintenance Plan for Carbon Monoxide.

https://www.tceq.texas.gov/assets/public/implementation/air/sip/elp/El_Paso_MP_SIP_adoption_package.pdf

• Revisions to the State Implementation Plan for the Vehicle Inspection and Maintenance Program

http://www.tceq.texas.gov/airquality/mobilesource/im.html

• Revisions to the State Implementation Plan for Transportation Conformity

http://www.tceq.texas.gov/airquality/mobilesource/apr2003transconf.html

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

RECEIVED
AIR QUALITY PLANNING
'97 JAN 31 AM 11:14

JAN 28 1997

Mr. Peter A. Lombard, Director
Office of Planning and
Program Development
Federal Highway Administration
819 Taylor Street, Room 8A00
Fort Worth, TX 76102

RE: Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB)

Dear Mr. Lombard:

We have updated the MVEB table for all nonattainment and maintenance areas in Region 6. The enclosed table contains new MVEB which should be used for transportation conformity determinations. The MVEB values listed in the table have been compiled from the most recent State Implementation Plans and have been confirmed by each state air agency.

We hope you will find this table useful in making conformity determinations. If you have any question concerning the enclosed table, please feel free to contact me or Mr. J. Behnam at (214) 665-7247.

Sincerely yours,

Thomas H. Diggs
Chief
Air Planning Section (6PD-L)

Enclosure

cc: Ms. Teri Lanoue
Mr. Don Neisler
Mr. Walter R. Brooks

Mr. Coan Bueche
Ms. Alana Eager
Mr. Dennis R. Foltz
Ms. Cecilia Williams
Mr. Richard Montoya
Mr. Al Giles
Mr. Eddie Shafie
Mr. Alan C. Clark
Mr. Michael Morris
Mr. Ricardo Dominguez
Mr. Bob Dickinson
Mr. George Hadley
Ms. Peggy Crist
Ms. Amy Stephenson

REGION 6 MOTOR VEHICLE EMISSION LIMITS*
FOR CONFORMITY DETERMINATION

(CO, PM10, NOx, Ozone; Tons/Day)

* Please read the general notes and foot notes on the last page before using this Table.

EPA Contact: J. Behnam
Phone: (214) 665-7247
Fax: (214) 665-7263
Internet Address: behnam.jahanbakhsh@epamail.epa.gov

Nonattainment Areas with Full Conformity Requirements				
Year	**CO**	**PM10**	**NOx**	**VOC**
		Anthony		
1990 MVEI	--	0.102	--	--
		Baton Rouge		
1990 MVEI	--	--	71.64	55.41
1996 MVEB	--	--	63.00	36.90
1999 MVEB	--	--	58.03	33.93
		Beaumont		
1990 MVEI	--	--	42.33	29.35
1996 MVEB	--	--	See Note 8	21.66
1997 MVEB	--	--	See Note 9	See Note 9
		Dallas		
1990 MVEI	--	--	293.03	306.60
1996 MVEB	--	--	See Note 8	165.49
1996 MVEB	--	--	See Note 10	See Note 10
		El Paso		
1990 MVEI	327.10	12.8	36.90	38.27
1994 MVEB	--	12.10	--	--
1995 MVEB	See Note 10	--	--	--
1996 MVEB	--	--	See Note 8	21.63
~~1999 MVEB~~	~~--~~	--	See Note 10	See Note 10

MVEI = Motor Vehicle Emission Inventory
MVEB = Motor Vehicle Emission Budget
MVEP = Motor Vehicle Emission Projection

REGION 6 MOTOR VEHICLE EMISSION LIMITS FOR CONFORMITY DETERMINATION

(CO, PM10, NOx, Ozone; Tons/Day)
(continued)

Nonattainment Areas with Full Conformity Requirements				
Year	**CO**	**PM10**	**NOx**	**VOC**
		Houston		
1990 MVEI	--	--	337.03	251.72
1996 MVEB	--	--	See Note 8	152.12
1999 MVEB	--	--	See Note 8	126.96
2005 MVEB	--	--	See Note 9	See Note 9
2007 MVEB	--	--	See Note 9	See Note 9
		Sunland Park		
New Area	--	--	See Note 9	See Note 9
SIP due 97	--	--	See Note 9	See Note 9

REGION 6 MOTOR VEHICLE EMISSION LIMITS FOR CONFORMITY DETERMINATION

(CO, PM10, NOx, Ozone; Tons/Day)
(continued)

Full Maintenance Areas with Full Conformity Requirements				
Year	CO	PM10	NOx	VOC
Albuquerque				
1996 MVEB	235.50	--	--	--
1999 MVEB	207.95	--	--	--
2002 MVEB	197.13	--	--	--
2005 MVEB	199.12	--	--	--
2006 MVEB	202.95	--	--	--
Lake Charles				
1990 MVEI	--	--	19.90	12.20
1995 MVEB	--	--	17.72	8.77
2000 MVEB	--	--	16.31	7.96
2005 MVEB	--	--	15.66	7.78
2010 MVEB	--	--	16.53	8.21
New Orleans				
1990 MVEI	--	--	67.78	71.93
1995 MVEB	--	--	61.79	50.73
2000 MVEB	--	--	54.26	43.21
2005 MVEB	--	--	48.99	38.66
Pointe Coupee				
1993 MVEI	--	--	2.56	1.63
1999 MVEB	--	--	2.19	1.21
2006 MVEB	--	--	2.12	1.18
St. James Parish				
1990 MVEI	--	--	3.42	2.09
1995 MVEB	--	--	3.06	1.57
2000 MVEB	--	--	2.81	1.41
2005 MVEB	--	--	2.71	1.35

REGION 6 MOTOR VEHICLE EMISSION LIMITS FOR CONFORMITY DETERMINATION

(CO, PM10, NOx, Ozone; Tons/Day)
(continued)

Limited Maintenance Areas with Limited Conformity Requirements				
Year	**CO**	**PM10**	**NOx**	**VOC**
Beauregard Parish				
Budget	None	None	None	None
Grant Parish				
Budget	None	None	None	None
Lafayette				
Budget	None	None	None	None
Lafourche Parish				
Budget	None	None	None	None
St. Mary Parish				
Budget	None	None	None	None
Victoria				
Budget	None	None	None	None

GENERAL NOTES AND FOOT NOTES

General Notes

1. The emission values listed in the Table are compiled from the control strategy and maintenance SIPs.

2. If less-than-1990 test is necessary, the 1990 MVEI must be used, not the 1993 MVEI.

2. The 1996 MVEB test must be performed after 1996 even if new budgets have been established for future years; this should not cause any problem for most areas.

4. If a maintenance plan is submitted, the MVEB can not be used until the EPA approves the maintenance plan.

5. The MVEP provided in the SIPs must be used as MVEB where the SIPs do not explicitly establish MVEB.

6. The NOx waiver granted by the EPA to certain areas does not exempt these areas from the conformity NOx MVEB test.

7. The emissions data provided in this Table are subject to change upon a SIP revision, control strategy modifications, refinement of emission inventory or projections, inaccuracy/corrections, or any other unforeseeable events beyond EPA's control. It is recommended that the users of this Table be in touch with the States air quality agencies periodically.

Foot Notes

8. This area is required to perform either a NOx Build/no Build test or MVEB test under the current Federal conformity rule. However, the approved conformity SIP for this area reflects the Federal rule prior to November 14, 1995, and it does not contain explicit language for the NOx budget test. Also, this area has secured a NOx waiver under section 182(b) of the CAA, that waives the NOx Build/no Build test requirement.

9. The State has not submitted a control strategy SIP for attainment demonstration of the NAAQS.

10. The State has submitted an attainment demonstration SIP, however, the MVEB can not be established from the current SIPs. The EPA and TNRCC are working to establish the MVEB.

Revised 01/27/97

comments, this action will be effective October 3, 2008.

IV. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a ''significant regulatory action'' subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the state, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by October 3, 2008. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Dated: July 21, 2008.

Walter W. Kovalick, Jr.,

Acting Regional Administrator, Region 5.

■ For the reasons stated in the preamble, part 52, chapter I, of title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart P—Indiana

■ 2. Section 52.770 is amended by adding paragraph (c)(188) to read as follows:

§ 52.770 Identification of plan.

* * * * *

(c) * * *

(188) The Indiana Department of Environmental Management submitted a revision to Indiana's State Implementation plan on May 22, 2008, to amend 326 IAC 1–1–3, ''References to the Code of Federal Regulations''. The revision to 326 IAC 1–1–3 updates the references to CFR from the 2006 edition to the 2007 edition.

(i) *Incorporation by reference.* Title 326 of the Indiana Administrative Code (IAC), section 1–1–3, ''References to the Code of Federal Regulations'' is incorporated by reference. The rule was filed with the Publisher of the Indiana Register on April 1, 2008, and became effective on May 1, 2008. Published in the Indiana Register, on April 30, 2008 (DIN: 20080430–IR–32607037FRA).

[FR Doc. E8–17703 Filed 8–1–08; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81

[EPA–R06–OAR–2006–0386; FRL–8699–9]

Approval and Promulgation of Implementation Plans; Texas; El Paso County Carbon Monoxide Redesignation to Attainment, and Approval of Maintenance Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: On February 13, 2008, the Texas Commission on Environmental Quality (TCEQ) submitted a State Implementation Plan (SIP) revision to request redesignation of the El Paso carbon monoxide (CO) nonattainment area to attainment for the CO National Ambient Air Quality Standard (NAAQS). This submittal also included a CO maintenance plan for the El Paso area and associated Motor Vehicle Emission Budgets (MVEBs). The maintenance plan was developed to ensure continued attainment of the CO NAAQS for a period of at least 10 years from the effective date of EPA approval of redesignation to attainment. In this action, EPA is approving the El Paso CO redesignation request and the maintenance plan with its associated MVEBs as satisfying the requirements of the Federal Clean Air Act (CAA) as amended in 1990.

DATES: This rule is effective October 3, 2008 without further notice, unless EPA receives relevant adverse comment by

September 3, 2008. If adverse comment is received, EPA will publish a timely withdrawal of this direct final rule in the **Federal Register** informing the public that the rule will not take effect.

ADDRESSES: Submit your comments, identified by Docket No. EPA–R06–OAR–2006–0386, by one of the following methods:

- *www.regulations.gov:* Follow the on-line instructions for submitting comments.
- *E-mail:* Mr. Guy Donaldson at *donaldson.guy@epa.gov.* Please also send a copy by e-mail to the person listed in the **FOR FURTHER INFORMATION CONTACT** section below.
- *Fax:* Mr. Guy Donaldson, Chief, Air Planning Section (6PD–L), at fax number 214–665–7263.
- *Mail:* Mr. Guy Donaldson, Chief, Air Planning Section (6PD–L), Environmental Protection Agency, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202–2733.
- *Hand Delivery:* Mr. Guy Donaldson, Chief, Air Planning Section (6PD–L), Environmental Protection Agency, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202–2733. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–R06–OAR–2006–0386. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *www.regulations.gov* or e-mail. The *www.regulations.gov* Web site is an ''anonymous access'' system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *www.regulations.gov* your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *www.regulations.gov* index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *www.regulations.gov* or in hard copy at the Air Planning Section (6PD–L), Environmental Protection Agency, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202–2733. The file will be made available by appointment for public inspection in the Region 6 FOIA Review Room between the hours of 8:30 a.m. and 4:30 p.m. weekdays except for legal holidays. Contact the person listed in the **FOR FURTHER INFORMATION CONTACT** paragraph below or Mr. Bill Deese at 214–665–7253 to make an appointment. If possible, please make the appointment at least two working days in advance of your visit. There will be a 15 cent per page fee for making photocopies of documents. On the day of the visit, please check in at the EPA Region 6 reception area at 1445 Ross Avenue, Suite 700, Dallas, Texas.

The State submittal is also available for public inspection at the State Air Agency listed below during official business hours by appointment:

Texas Commission on Environmental Quality, Office of Air Quality, 12124 Park 35 Circle, Austin, Texas 78753.

FOR FURTHER INFORMATION CONTACT:
Jeffrey Riley, Air Planning Section, (6PD–L), Environmental Protection Agency, Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202–2733, telephone (214) 665–8542; fax number 214–665–7263; e-mail address *riley.jeffrey@epa.gov.*

SUPPLEMENTARY INFORMATION:
Throughout this document, whenever ''we'' ''us'' or ''our'' is used, we mean the EPA.

Table of Contents

I. Background

Under the 1990 Federal Clean Air Act (CAA) Amendments, El Paso was designated and classified as a moderate nonattainment area for CO because it did not meet the 8-hour CO NAAQS for this criteria pollutant (56 FR 56694). El Paso's classification as a moderate nonattainment area under sections 107(d)(4)(A) and 186(a) of the CAA imposed a schedule for attainment of the CO NAAQS by December 31, 1995.

The El Paso nonattainment area has unique considerations for CO attainment planning due to airshed contributions from Ciudad Juarez, Mexico. Section 179B of the 1990 CAA Amendments contains provisions for CO nonattainment areas affected by emissions emanating from outside the United States. Under CAA Section 179B, the EPA shall approve a SIP for the El Paso nonattainment area if the TCEQ establishes to the EPA's satisfaction that implementation of the plan would achieve timely attainment of the NAAQS but for emissions emanating from Ciudad Juarez. This provision prevents El Paso County from being reclassified to a higher level of nonattainment should monitors continue to record CO concentrations in excess of the NAAQS.

To meet the CAA attainment schedule of December 31, 1995, Texas submitted an initial revision to the SIP for the El Paso CO moderate nonattainment area in a letter dated September 27, 1995. This submittal, as well as a February 1998 supplemental submittal, included air quality modeling demonstrating that El Paso would attain the CO NAAQS by December 31, 1995, but for emissions emanating outside of the United States from Mexico. The EPA approved a revision to the Texas SIP submitted to show attainment of the 8-hour CO NAAQS in the El Paso CO nonattainment area under Section 179B provisions, as well as approving the El Paso area's CO emissions budget and a CO contingency measure requirement. The State submitted the revisions to satisfy Section 179B and Part D requirements of the CAA. This approval was published July 2, 2003 (68 FR 39457), and became effective September 2, 2003. TCEQ also submitted all the requirements for the moderate area classification and EPA approved them. See further discussion in Section II.B.2.

On January 20, 2006, the State of Texas submitted a revision to the SIP which consisted of a request for redesignation of the El Paso carbon monoxide (CO) nonattainment area to attainment for the CO NAAQS, as well as an 8-hour CO maintenance plan to ensure that El Paso County remains in attainment of the 8-hour CO NAAQS. EPA was unable to take action on this request for redesignation because the 8-hour CO maintenance plan did not provide for a maintenance period of at least 10 years after redesignation, as required by CAA Section 175A(a). On February 13, 2008, the State submitted a revision to the SIP containing an 8-hour CO maintenance plan to provide for El Paso County's continued attainment of the 8-hour CO NAAQS until 2020.

In this action, we are approving a change in the legal designation of the El Paso area from nonattainment for CO to attainment, in addition to approving the maintenance plan that is designed to keep the area in attainment for CO until 2020. Under the CAA, we can change designations if acceptable data are available and if certain other requirements are met. Section 107(d)(3)(E) of the CAA provides that the Administrator may not promulgate a redesignation of a nonattainment area to attainment unless:

(i) The Administrator determines that the area has attained the national ambient air quality standard;

(ii) The Administrator has fully approved the applicable implementation plan for the area under CAA section 110(k);

(iii) The Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan and applicable Federal air pollutant control regulations and other permanent and enforceable reductions;

(iv) The Administrator has fully approved a maintenance plan for the area as meeting the requirements of CAA section 175A; and,

(v) The State containing such area has met all requirements applicable to the area under section 110 and Part D of the CAA.

Before we can approve the redesignation request, we must decide that all applicable SIP elements have been fully approved. Approval of the applicable SIP elements may occur simultaneously with final approval of the redesignation request. The State of Texas has incorporated a CO maintenance plan into this submittal to satisfy the requirement of a fully approved maintenance plan for the area.

II. EPA's Evaluation of the El Paso Redesignation Request and Maintenance Plan

We have reviewed the El Paso CO redesignation request and maintenance plan and believe that approval of the request is warranted, consistent with the requirements of CAA section 107(d)(3)(E). The following are descriptions of how the section 107(d)(3)(E) requirements are being addressed.

(a) Redesignation Criterion: The Area Must Have Attained the Carbon Monoxide (CO) NAAQS

Section 107(d)(3)(E)(i) of the CAA states that for an area to be redesignated to attainment, the Administrator must determine that the area has attained the applicable NAAQS. The area is designated attainment for the 1-hour CO NAAQS and designated nonattainment for the 8-hour CO NAAQS. As described in 40 CFR 50.8, the 8-hour CO NAAQS for carbon monoxide is 9 parts per million (ppm), (10 milligrams per cubic meter) for an 8-hour average concentration not to be exceeded more than once per year. 40 CFR 50.8 continues by stating that the levels of CO in the ambient air shall be measured by a reference method based on 40 CFR Part 50, Appendix C and designated in accordance with 40 CFR part 53 or an equivalent method designated in accordance with 40 CFR part 53. Attainment of the 8-hour CO standard is not a momentary phenomenon based on short-term data. Instead, we consider an area to be in attainment if each of the 8-hour CO ambient air quality monitors in the area doesn't have more than one exceedance of the 8-hour CO standard over a one-year period. If any monitor in the area's CO monitoring network records more than one exceedance of the 8-hour CO standard during a one-year calendar period, then the area is in violation of the 8-hour CO NAAQS. In addition, our interpretation of the CAA and EPA national policy [1] has been that an area seeking redesignation to attainment must show attainment of the CO NAAQS for at least a continuous two-year calendar period. In addition, the area must also continue to show attainment through the date that we promulgate the redesignation in the **Federal Register**.

The State of Texas' CO redesignation request for the El Paso area is based on an analysis of quality assured ambient air quality monitoring data that are relevant to the redesignation request. As presented in Chapter 3, Table 3–1 of the State's maintenance plan, ambient air quality monitoring data for consecutive calendar years 1999 through 2005 show a measured exceedance rate of the CO NAAQS of 1.0 or less per year, per monitor, in the El Paso nonattainment area. We have evaluated the ambient air quality data and have determined that the El Paso area has not violated the 8-hour CO standard and continues to demonstrate attainment. The El Paso nonattainment area has quality-assured data showing no violations of the 8-hour CO NAAQS for the most recent consecutive two-calendar-year period (2006 and 2007). Therefore, we believe the El Paso area has met the first component for redesignation: Demonstration of attainment of the CO NAAQS. We note too that the State of Texas has also committed, in the maintenance plan, to continue the necessary operation of the CO monitoring network in compliance with 40 CFR Part 58.

[1] Refer to EPA's September 4, 1992, John Calcagni policy memorandum entitled ''Procedures for Processing requests to Redesignate areas to Attainment''.

(b) Redesignation Criterion: The Area Must Have Met All Applicable Requirements Under Section 110 and Part D of the CAA

To be redesignated to attainment, section 107(d)(3)(E)(v) requires that an area must meet all applicable requirements under section 110 and Part D of the CAA. We interpret section 107(d)(3)(E)(v) to mean that for a redesignation to be approved by us, the State must meet all requirements that applied to the subject area prior to or at the time of the submission of a complete redesignation request. In our evaluation of a redesignation request, we don't need to consider other requirements of the CAA that became due after the date of the submission of a complete redesignation request.

1. CAA Section 110 Requirements

Section 110(a)(2) of Title I of the CAA delineates the general requirements for a SIP, which include enforceable emissions limitations and other control measures, means, or techniques, provisions for the establishment and operation of appropriate devices necessary to collect data on ambient air quality, and programs to enforce the limitations. On July 2, 2003, we approved the El Paso CO element revisions to Texas's SIP as meeting the requirements of section 110(a)(2) of the CAA (*see* 68 FR 39457).

2. Part D Requirements

Before the El Paso ''moderate'' CO nonattainment area may be redesignated to attainment, the State must have fulfilled the applicable requirements of Part D. Under Part D, an area's classification indicates the requirements to which it will be subject. Subpart 1 of Part D sets forth the basic nonattainment requirements applicable to all nonattainment areas. Subpart 3 of Part D contains specific provisions for ''moderate'' CO nonattainment areas. The relevant subpart 1 requirements are contained in sections 172(c) and 176. Our General Preamble (*see* 57 FR 13529 to 13532, April 16, 1992) provides EPA's interpretations of the CAA requirements for ''moderate'' CO areas such as El Paso with CO design values that are less than or equal to 12.7 ppm. The General Preamble (*see* 57 FR 13530, *et seq.*) provides that the applicable requirements of CAA section 172 are: *172(c)(3) (emissions inventory), 172(c)(5) (new source review permitting program), 172(c)(7) (the section 110(a)(2) air quality monitoring requirements), and 172(c)(9) (contingency measures)*. Regarding the requirements of sections 172(c)(3) (inventory) and 172(c)(9) (contingency measures), please refer to our discussion below of sections 187(a)(1) and 187(a)(3), which are the more specific provisions of Subpart 3 of Part D of the CAA.

It is also worth noting that we interpreted the requirements of sections 172(c)(2) (reasonable further progress—RFP) and 172(c)(6) (other measures) as being irrelevant to a redesignation request because they only have meaning for an area that is not attaining the standard. *See* EPA's September 4, 1992, John Calcagni memorandum entitled ''Procedures for Processing Requests to Redesignate Areas to Attainment'', and the General Preamble, 57 FR at 13564, dated April 16, 1992. Finally, the State has not sought to exercise the options that would trigger sections 172(c)(4) (identification of certain emissions increases) and 172(c)(8) (equivalent techniques). Thus, these provisions are also not relevant to this redesignation request.

For the section 172(c)(5) New Source Review (NSR) requirements, the CAA requires all nonattainment areas to meet several requirements regarding NSR, including provisions to ensure that increased emissions will not result from any new or modified stationary major sources and a general offset rule. The State of Texas has an approved NSR program (*see* 60 FR 49781, September 27, 1995) that meets the requirements of CAA section 172(c)(5). For the CAA section 172(c)(7) provisions (compliance with the CAA section 110(a)(2) Air Quality Monitoring Requirements), our interpretations are presented in the General Preamble (57 FR 13535). CO nonattainment areas are to meet the ''applicable'' air quality monitoring requirements of section 110(a)(2) of the CAA. Information concerning CO monitoring in Texas is included in the Annual Monitoring Network Review (MNR) prepared by the State and submitted to EPA. Our personnel have concurred with Texas' annual network reviews and have agreed that the El Paso network remains adequate.

In Chapter 5, Section 5.5 of the maintenance plan, the State commits to the continued operation of the existing CO monitoring network according to applicable Federal regulations and guidelines (40 CFR part 58).

The relevant Subpart 3 provisions were created when the CAA was amended on November 15, 1990. The new CAA requirements for ''moderate'' CO areas, such as El Paso, required that the SIP be revised to include a 1990 base year emissions inventory (CAA section 187(a)(1)), contingency provisions (CAA section 187(a)(3)), corrections to existing motor vehicle inspection and maintenance (I/M) programs (CAA section 187(a)(4)), periodic emission inventories (CAA section 187(a)(5)), and the implementation of an oxygenated fuels program (CAA section 211(m)(1)). Sections 187(a)(2), (6), and (7) do not apply to the El Paso area because its design value was below 12.7 ppm at the time of classification. How the State met these requirements and our approvals, are described below:

A. 1990 base year emissions inventory (CAA section 187(a)(1)): EPA approved an emissions inventory on September 12, 1994 (*see* 59 FR 46766).

B. Contingency provisions (CAA section 187(a)(3)): EPA approved the use of 46 tons per day in incremental CO reduction credits from the Texas low-enhanced vehicle inspection and maintenance program, as fulfillment of the State's CO attainment contingency measure requirement for the El Paso nonattainment area under section 172(c)(9) on July 2, 2003 (*see* 68 FR 39457).

C. Corrections to the El Paso basic I/M program (CAA section 187(a)(4)): EPA approved the Texas Motorist Choice (TMC) I/M Program (which includes El Paso) on November 14, 2001 (*see* 66 FR 57261).

D. Periodic emissions inventories (CAA section 187(a)(5)): The State submitted an initial revision to the SIP for the El Paso CO moderate nonattainment area in a letter dated September 27, 1995. This submittal, as well as a February 1998 supplemental submittal contained a commitment to submit emission inventory updates. TCEQ continues to submit the Periodic Emissions Inventory (PEI) every three years.

E. Oxygenated fuels program implementation (CAA section 211(m)): EPA approved the El Paso oxygenated fuels program on September 12, 1994 (*see* 59 FR 46766).

(c) Redesignation Criterion: The Area Must Have a Fully Approved SIP Under Section 110(k) of the CAA

Section 107(d)(3)(E)(ii) of the CAA states that for an area to be redesignated to attainment, it must be determined that the Administrator has fully approved the applicable implementation plan for the area under section 110(k). As noted above, EPA previously approved SIP revisions for the El Paso CO nonattainment area that were required by the 1990 amendments to the CAA. In this action, we are also approving the maintenance plan proposed by the State, and the State's commitment to maintain an adequate monitoring network (contained in the maintenance plan). Thus, with this final rule to approve the El Paso redesignation request and maintenance plan, we will have fully approved the El Paso CO element of the SIP under section 110(k) of the CAA.

(d) Redesignation Criterion: The Area Must Show That the Improvement in Air Quality Is Due to Permanent and Enforceable Emissions Reductions

Section 107(d)(3)(E)(iii) of the CAA provides that for an area to be redesignated to attainment, the Administrator must determine that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan, implementation of applicable Federal air pollutant control regulations, and other permanent and enforceable reductions. The CO emissions reductions for El Paso, that are further described in Sections 3.5 and 5.4.2 of the El Paso maintenance plan, were achieved primarily through the Federal Motor Vehicle Control Program (FMVCP), an oxygenated fuels program, and a motor vehicle inspection and maintenance (I/M) program.

In general, the FMVCP provisions require vehicle manufacturers to meet more stringent vehicle emission limitations for new vehicles in future years. These emission limitations are phased in (as a percentage of new vehicles manufactured) over a period of years. As new, lower emitting vehicles replace older, higher emitting vehicles (''fleet turnover''), emission reductions are realized for a particular area such as El Paso. For example, EPA promulgated lower hydrocarbon (HC) and CO exhaust emission standards in 1991, known as Tier I standards for new motor vehicles (light-duty vehicles and light-duty trucks) in response to the 1990 CAA amendments. These Tier I emissions standards were phased in with 40% of the 1994 model year fleet, 80% of the 1995 model year fleet, and 100% of the 1996 model year fleet.

As stated in Section 5.4.2 of the maintenance plan, significant additional emission reductions were realized from El Paso's basic I/M program. The program requires annual inspections of vehicles at independent inspection stations. We note that further improvements to the El Paso area's basic I/M program, to meet the requirements of EPA's November 5, 1992, (57 FR 52950) I/M rule, and upgrading the I/M program to meet the requirements for a low-enhanced program, were approved by us into the SIP on November 14, 2001 (68 FR 39457).

Oxygenated fuels are gasolines that are blended with additives that increase the level of oxygen in the fuel and, consequently, reduce CO tailpipe emissions. TAC Title 30, Chapter 114, Section 114.100, ''Oxygenated Fuels Program'', contains the oxygenated fuels provisions for the El Paso nonattainment area. This rule requires all El Paso area gas stations to sell fuels containing a 2.7% minimum oxygen content (by weight) during the wintertime CO high pollution season. The use of oxygenated fuels has significantly reduced CO emissions and contributed to the area's attainment of the CO NAAQS.

During the public comment process for State-level adoption of the maintenance plan, the Texas Oil and Gas Association (TXOGA) recommended removing the oxygenated fuels program as a control measure and establishing it as a contingency measure. Due to support for the oxygenated fuels program stated by the local governmental entities, the State chose to retain the program as a committed control measure as part of the redesignation request and maintenance plan. This rulemaking action involves EPA approval of the El Paso CO redesignation request and the associated maintenance plan submitted by the State. EPA only can act upon what a State has chosen to submit to EPA for approval as a SIP revision. EPA cannot usurp a state's primary role in establishing the SIP controls. Therefore, if EPA receives any comments about the removal of the oxygenated fuels program to the contingency measures plan, we shall not consider them as relevant comment to this rulemaking. Should the State consider removing the oxygenated fuels program to the contingency measures plan at a later date, another public hearing and comment period would be held as part of a separate rulemaking and SIP revision process.

We have evaluated the various State and Federal control measures, and believe that the improvement in air quality in the El Paso nonattainment area has resulted from emission reductions that are permanent and enforceable.

(e) Redesignation Criterion: The Area Must Have a Fully Approved Maintenance Plan Under CAA Section 175A

Section 107(d)(3)(E)(iv) of the CAA provides that for an area to be redesignated to attainment, the Administrator must have fully approved a maintenance plan for the area meeting the requirements of section 175A of the CAA. Section 175A of the CAA sets forth the elements of a maintenance plan for areas seeking redesignation from nonattainment to attainment. The maintenance plan must demonstrate continued attainment of the applicable NAAQS for at least ten years after the Administrator approves a redesignation to attainment. Eight years after the promulgation of the redesignation, the State must submit a revised maintenance plan that demonstrates continued attainment for the subsequent ten-year period following the initial ten-year maintenance period. To address the possibility of future NAAQS violations, the maintenance plan must contain contingency measures, with a schedule for adoption and implementation, that are adequate to assure prompt correction of a violation. In addition, we issued further maintenance plan interpretations in the ''General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990'' (57 FR 13498, April 16, 1992), ''General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental'' (57 FR 18070, April 28, 1992), and the EPA guidance memorandum entitled ''Procedures for Processing Requests to Redesignate Areas to Attainment'' from John Calcagni, Director, Air Quality Management Division, Office of Air Quality and Planning Standards, to Regional Air Division Directors, dated September 4, 1992 (hereafter the September 4, 1992 Calcagni Memorandum).

In this **Federal Register** action, EPA is approving the maintenance plan for the El Paso CO nonattainment area because we believe, as detailed below, that the State's maintenance plan submittal meets the requirements of section 175A and is consistent with our interpretations of the CAA, as reflected in the documents referenced above. Our analysis of the pertinent maintenance plan requirements, with reference to the State's February 13, 2008, submittal, is provided as follows:

1. Emissions Inventories—Attainment Year and Projections

EPA's interpretations of the CAA section 175A maintenance plan requirements are generally provided in the General Preamble (see 57 FR 13498, April 16, 1992) and the September 4, 1992 Calcagni Memorandum referenced above. Under our interpretations, areas seeking to redesignate to attainment for CO may demonstrate future maintenance of the CO NAAQS either by showing that future CO emissions will be equal to or less than the attainment year emissions or by providing a modeling demonstration.

For the El Paso area, the State selected the emissions inventory approach for demonstrating maintenance of the CO NAAQS; however, the State also conducted ''hot spot'' CO modeling to demonstrate that CO exceedances are not currently occurring at a potential hot spot and will not occur at such locations in the future. The maintenance plan submitted by the TCEQ on February 13, 2008, includes comprehensive inventories of CO emissions for the El Paso area. These inventories include emissions from stationary point sources, area sources, non-road mobile sources, and on-road mobile sources. The State selected 2002 as the year from which to develop the attainment year inventory and included a projection out to 2020. More detailed descriptions of the 2002 attainment year inventory and the projected inventory are documented in the maintenance plan in Chapter 2. Summary emission figures from the 2002 attainment year and the final maintenance year of 2020 are provided in Table 1 below.

TABLE 1—EL PASO COUNTY CO EMISSIONS FOR 2002–2020 (TPD)

Year	Point source	Area	Non-road mobile	On-road mobile	Total
2002	4.67	16.42	45.90	360.34	427.33
2020	5.13	19.10	63.77	230.26	318.26

As presented in Chapter 3, Table 3–1 of the State's maintenance plan, ambient air quality monitoring data for consecutive calendar years 1999 through 2005 show a measured exceedance rate of the CO NAAQS of 1.0 or less per year, per monitor, in the El Paso nonattainment area. To further demonstrate maintenance of the CO NAAQS, the TCEQ agreed to additional ''hot spot'' modeling as requested by EPA on the basis of EPA's Office of Air Quality Planning and Standards' (OAQPS) September 30, 1994 Ozone/Carbon Monoxide Redesignations Reference Document. The modeling was done specifically to address two concerns—the El Paso CO monitoring network has a limited number of sites, and therefore may not have identified all the hot spots in the El Paso area; and in the future, urban growth may increase mobile emissions enough to cause exceedances of the NAAQS.

The TCEQ performed CO modeling at a heavily utilized intersection to demonstrate that CO exceedances are not currently occurring at a potential hot spot and will not occur at that location in the future. A modeling protocol detailing hotspot selection, proposed model usage, and data analysis was submitted by the State on February 17, 2005, and was approved by EPA via a letter dated March 30, 2005. The modeling protocol and approach taken are detailed in Chapter 4 of the maintenance plan. As shown in Table 4–2 of the maintenance plan, the current (base) case hot spot analysis predicted a maximum 8-hour CO concentration of 7.8 ppm, and the 2020 future case analysis predicted a maximum 8-hour CO concentration of 2.0 ppm. Both of these values are below the 9 ppm NAAQS, and demonstrate current and projected compliance with the CO standard. A more detailed evaluation by EPA of this hot spot analysis is provided in the TSD.

2. Demonstration of Maintenance—Projected Inventories

As we noted above, total CO emissions were projected forward by the State for the year 2020. We note the State's approach for developing the projected inventory follows EPA guidance on projected emissions and we believe it is acceptable.[2] The projected inventory shows that CO emissions are not estimated to exceed the 2002 attainment level during the time period 2002 through 2020 and, therefore, the El Paso area has satisfactorily demonstrated maintenance. The projected inventory was developed using EPA-approved technologies and methodologies. No new control strategies for point and area sources were relied upon in the projected inventory. CO emission reductions anticipated from EPA's national rule for the Spark Ignition Small Engine Rule, Phase 1, were relied upon as a new control strategy for Nonroad sources. TCEQ relied upon emissions reductions anticipated from existing control strategies: FMVCP, Texas Oxygenated Fuel SIP, and the Texas I/M Program. Please see the TSD for more information on EPA's review and evaluation of the State's methodologies, modeling, inputs, etc., for developing the projected emissions inventory.

3. Monitoring Network and Verification of Continued Attainment

The TCEQ commits to maintain an appropriate air monitoring network for the El Paso area throughout the 10-year maintenance period. As required by 40 CFR part 58.20(d), TCEQ will consult with EPA in annual review of the air monitoring network to determine the adequacy of the CO monitoring network, whether or not additional monitoring is needed, and if/when monitor sites can be discontinued. The TCEQ also commits to adhere to data quality requirements as specified in 40 CFR part 58 Quality Assurance Requirements.

In El Paso County, there are eight monitoring sites, each of which has monitored attainment with the 8-hour CO NAAQS from 2002 through 2007. The 8-hour CO NAAQS is 9 ppm based on the three-year average of the fourth-highest daily maximum 8-hour CO concentration measured at each monitor within an area. The standard is considered to be attained at 9.4 parts per million (ppm). The three most recent 8-hour CO design values for El Paso County are 6.4 ppm for 2005, 5.4 ppm for 2006, and 3.8 ppm for 2007.

Texas commits to track the progress of the maintenance plan by continuing to periodically update the emissions inventory (EI). It will compare the updated EIs against the projected 2020 EIs.

TCEQ also commits to continuing all the applicable control strategies, i.e., the measures approved into the El Paso SIP. For example, these measures include the Federal Motor Vehicle Control Program (FMVCP), an oxygenated fuels program, and a motor vehicle inspection and maintenance (I/M) program.

Based on the above, we are approving these commitments as satisfying the relevant requirements and we note that this final rulemaking approval will render the State's commitments federally enforceable.

4. Contingency Plan

Section 175A(d) of the CAA requires that a maintenance plan include contingency provisions. To meet this requirement, the State has identified appropriate contingency measures along with a schedule for the development and implementation of such measures. In the February 13, 2008 submittal, Texas specifies the contingency trigger as a violation of the 8-hour CO standard based upon air quality monitoring data from the El Paso monitoring network. In the event that a monitored violation of the 8-hour CO standard occurs in any portion of the maintenance area, the State will first analyze the data to determine if the violation was caused by actions outside TCEQ's jurisdiction (e.g., emissions from Mexico or another state) or within its jurisdiction. If the violation was caused by actions outside TCEQ's jurisdiction, TCEQ will notify the EPA. If TCEQ determines the violation was caused by actions within TCEQ's jurisdiction, TCEQ commits to adopt and implement the identified contingency measures as expeditiously as practicable, but no later than 18 months.

The State specifically identifies the following contingency measures to reattain the standard:

- Vehicle idling restrictions.
- Improved vehicle I/M.
- Improved traffic control measures.

[2] ''Use of Actual Emissions in Maintenance Demonstrations for Ozone and Carbon Monoxide (CO) Nonattainment Areas,'' signed by D. Kent Berry, Acting Director, Air Quality Management Division, November 30, 1993.

• Implementation of a vanpool program using Federal Congestion Mitigation and Air Quality Program (CMAQ) funds.

The maintenance plan indicates that the State may evaluate other potential strategies to address any future violations in the most appropriate and effective manner possible. Based on the above, we find that the contingency measures provided in the State's El Paso CO maintenance plan are sufficient and meet the requirements of section 175A(d) of the CAA.

5. Subsequent Maintenance Plan Revisions

In accordance with section 175A(b) of the CAA, Texas has committed to submit a revised maintenance plan eight years after our approval of the redesignation. This provision for revising the maintenance plan is contained in Chapter 5, Section 5.1 of the El Paso CO maintenance plan.

The maintenance plan adequately addresses the five basic components of a maintenance plan. EPA believes that the 8-hour CO maintenance plan SIP revision submitted by the State of Texas for the El Paso area meets the requirements of Section 175A of the CAA. For more information, please refer to our Technical Support Document.

III. EPA's Evaluation of the Transportation Conformity Requirements

Table 2–7 of the maintenance plan documents the motor vehicle emissions budget (MVEB) for the El Paso CO nonattainment area that has been established by this CO redesignation request. The MVEB is that portion of the total allowable emissions defined in the SIP revision allocated to on-road mobile sources for a certain date for meeting the purpose of the SIP, in this case maintaining compliance with the NAAQS in the nonattainment or maintenance area. EPA's conformity rule (40 CFR part 51, subpart T and part 93, subpart A) requires that transportation plans, programs and projects in nonattainment or maintenance areas conform to the SIP. The motor vehicle emissions budget is one mechanism EPA has identified for demonstrating conformity. Upon the effective date of this SIP approval, all future transportation improvement programs and long range transportation plans for the El Paso area will have to show conformity to the budgets in this plan; previous budgets approved or found adequate will no longer be applicable.

TABLE 2—EL PASO CO MVEB FOR 2020 (TPD)

Year	MVEB
2020	29.66

Our analysis indicates that the above figures are consistent with maintenance of the CO NAAQS throughout the maintenance period. In accordance with EPA's adequacy process, these MVEBs were posted on EPA's adequacy Web site for public notice on March 19, 2008 and were open for comment until April 18, 2008. No comments were received during this period. Therefore, we are finding as adequate and approving the 29.66 tpd for 2020 and beyond, CO emissions budget for the El Paso area. Budget modeling was developed for TCEQ under contract by the Texas Transportation Institute (TTI), utilizing El Paso travel model datasets developed by the El Paso Metropolitan Planning Organization. The modeling incorporated three onroad source control strategies that apply in the El Paso area: The FMVCP, the El Paso Oxygenated Fuel Program, and the I/M program (both detailed in Chapter 5, Section 5.4.2 of the maintenance plan).

IV. Consideration of Section 110(l) of the CAA

Section 110(l) of the CAA states that a SIP revision cannot be approved if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress towards attainment of a NAAQS or any other applicable requirement of the CAA. As stated above, the El Paso area has shown continuous attainment of the CO NAAQS since 1999 and has met the applicable Federal requirements for redesignation to attainment. The maintenance plan will not interfere with attainment or any other applicable requirement of the CAA. No control measures in the El Paso SIP are being removed.

V. Final Action

EPA is approving the redesignation of the El Paso area to attainment of the 8-hour CO NAAQS, as well as approving the El Paso area CO maintenance plan. We also are approving the associated MVEBs.

We have evaluated the State's submittal and have determined that it meets the applicable requirements of the Clean Air Act and EPA regulations, and is consistent with EPA policy.

EPA is publishing this rule without prior proposal because we view this as a non-controversial amendment and anticipate no adverse comments. However, in the "Proposed Rules" section of today's **Federal Register**, we are publishing a separate document that will serve as the proposed rule to approve the SIP revision if relevant adverse comments are received on this direct final rule. We will not institute a second comment period on this action. Any parties interested in commenting must do so at this time. For further information about commenting on this rule, see the **ADDRESSES** section of this document.

If EPA receives adverse comment, we will publish a timely withdrawal in the **Federal Register** informing the public that the rule will not take effect. We would address all public comments in a subsequent final rule based on the proposed rule. Please note that if we receive adverse comment on an amendment, paragraph, or section of this rule and if that provision may be severed from the remainder of the rule, we may adopt as final those provisions of the rule that are not the subject of an adverse comment.

VI. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this Action:

• Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);

• Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);

• Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);

• Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);

• Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);

• Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
• Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
• Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
• Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the state, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

The Congressional Review Act, 5 U.S.C. section 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by October 3, 2008. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations.

40 CFR Part 81

Environmental protection, Air pollution control, National parks, Wilderness areas.

Dated: July 18, 2008.

Richard E. Greene,

Regional Administrator, Region 6.

■ 40 CFR parts 52 and 81 are amended as follows:

PART 52—[AMENDED]

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart SS—Texas

■ 2. In § 52.2270, the second table in paragraph (e) entitled ''EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the Texas SIP'' is amended by adding an entry at the end of the table to read as follows:

(e) * * *

EPA APPROVED NONREGULATORY PROVISIONS AND QUASI-REGULATORY MEASURES IN THE TEXAS SIP

Name of SIP provision	Applicable geographic or nonattainment area	State submittal/effective date	EPA approval date	Comments
*	*	*	*	*
El Paso County Carbon Monoxide Maintenance Plan.	El Paso, TX	2/13/08	8/04/08 [Insert FR page number where document begins].	

PART 81—[AMENDED]

■ 3. The authority citation for part 81 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

■ 4. Section 81.344 is amended by revising the Carbon Monoxide table entry for El Paso County to read as follows:

§ 81.344 Texas.

* * * * *

TEXAS—CARBON MONOXIDE

Designated area	Designation		Category/classification	
	Date[1]	Type	Date[1]	Type
El Paso El Paso County	8/04/08	Attainment.		
*	*	*	*	*

[1] This date is November 15, 1990, unless otherwise noted.

* * * * *

[FR Doc. E8–17700 Filed 8–1–08; 8:45 am]

BILLING CODE 6560–50–P

REVISION TO THE

NEW MEXICO PM10 STATE IMPLEMENTATION PLAN

FOR ANTHONY, NEW MEXICO

Prepared by the
New Mexico Environment Department
Air Quality Bureau

November 8, 1991

Roy S. Walker

Approved
Roy Walker, Chairman
Environmental Improvement Board

11/8/91

Date

I. Background

A. History

Soil in Anthony and the surrounding region tends to be sandy and friable. This, in concert with the sparse vegetation, low rainfall and gusty winds inherent to the region, can result in relatively high levels of naturally occurring rural fugitive dust. In 1987, New Mexico petitioned EPA and was granted Rural Fugitive Dust Area (RFDA) designation for Anthony. This designation was based on a list of criteria which included reviews of air sampling data, particulate emission sources, available control strategies and demographics. Under the RFDA policy, it was recognized that exceedances of the particulate matter ambient standard were primarily due to blowing dust inherent to the region and thus the development of control strategies would be pointless.

With the implementation of the 1990 Clean Air Act Amendments (CAAA), EPA discontinued the RFDA program. Under the CAAA, all areas violating the PM10 standard prior to January 1, 1989 were designated non-attainment whether or not the particulate matter could actually be controlled. PM10 is defined as particulate matter with an aerodynamic diameter less than or equal to 10 microns. EPA adopted the National Ambient Air Quality Standards (NAAQS) for PM10 in July of 1987. These standards limit the PM10 24-hour average to 150 micrograms per cubic meter (ug/m^3) and the annual arithmetic mean to 50 ug/m^3.

All non-attainment areas, including Anthony, have been initially classified as moderate. EPA may subsequently redesignate moderate areas as serious, subjecting them to stricter control requirements. This may happen if an area cannot practicably attain the PM10 standard by the moderate area deadline of December 31, 1994, or if the State fails to submit a PM10 State Implementation Plan revision by the November 15, 1991 deadline. However, the CAAA also provides for a waiver to the attainment date for areas where non-anthropogenic emissions contribute significantly to a NAAQS violation. As discussed in this plan, the Department believes a waiver is appropriate for Anthony and that further controls for serious areas are unwarranted.

The State Implementation Plan or SIP contains all federally required air quality plans and regulations developed to ensure that the provisions of the federal Clean Air Act and its amendments are satisfied. This includes the attainment and maintenance of the NAAQS. New Mexico's air quality SIP, first adopted in 1972, incorporates the control strategies and regulations found necessary to meet these standards.

The purpose of this revision to the New Mexico SIP is to address the mandatory federal requirements for PM10 non-attainment areas applicable to Anthony. In those moderate PM10 non-attainment areas where the State's control strategy cannot demonstrate attainment by the applicable date mandated in the Act, EPA requires the State to document that its control strategy represents the application of the available control measures to all source categories. Available control measures include those which are technologically and economically feasible for the area. The State has considered partial implementation of control measures where full implementation is not feasible. In addition, the State has addressed the impacts of individual source categories on ambient air levels, legal responsibility for and enforceability of chosen control measures and relevant quantitative milestones. Sources whose emissions are shown to be insignificant ("de minimis") are excluded from further consideration.

B. Anthony, NM and Surrounding Region

The community of Anthony is located in south central New Mexico, just east of where the Rio Grande first crosses the border into Texas. Las Cruces, New Mexico, with a population of 62,126 (1990 census) lies 35 kilometers (km) to the north. El Paso, Texas, with a population of 515,342 (1990 census) lies 30 km to the south. Although the community of Anthony, New Mexico, is not incorporated as a municipality, its 1990 population as a Census Designated Place (CDP) was 5160. Anthony, Texas, directly across the border to the south, is incorporated and has a population of 3,328. The County of Dona Ana (in which both Anthony and Las Cruces are situated) had a 1990 population of 135,510. Figure 1 presents a map of Dona Ana County. Figure 2 is a map of Anthony, including the designated non-attainment area (sections 35 and 36 of Township 26 south, Range 3 east).

The south (Mesilla) valley, created by the Rio Grande, is defined in this report as extending south of Las Cruces to north of El Paso (Texas). The valley is about five kilometers wide, narrowing towards El Paso and bordered by the West Mesa and, to the east, by the Franklin Mountains. Unless otherwise noted, demographic information does not include the Texan (south-eastern) portion of the valley.

Of the 21 communities in Dona Ana County, only Las Cruces, Sunland Park, Hatch and Mesilla (adjoining Las Cruces) are incorporated. The reason is financial. Most communities lack the tax base necessary to support a municipal government. As a result, the county carries the burden for roads, planning and other services. Unfortunately, the county's tax base is also weak. Approximately 86 percent of the county is non-taxable (state or federally owned) land. Much of the county's work is funded by state or federal grants. For example, 75 to 100% of road work money (depending on the project) is provided by the state.

Preliminary (1990 estimated) census figures support the common observation that the area is poor:

	Median Yearly Household Income	Per Capita Yearly Income
United States	$27,000	$13,900
New Mexico	$20,500	$9,600
Dona Ana County	$17,300	$7,400
South Valley	$14,900	$5,300

While the median yearly household income in the south valley is low, at 55% of the national average, the per capita income is even less, at only 38%. This area has a higher percentage of children, elderly and unemployed, all of which require services while not necessarily paying taxes. The 1990 census results verify that New Mexico and Dona Ana County residents are younger than the national average and live in larger households:

	Median Age	Persons per household
United States	32.9	2.63
New Mexico	31.3	2.74
Dona Ana County	27.9	2.92
Anthony CDP	NA	3.96

It is estimated (1980 census) that approximately 30% of the valley's population is over 16 years of age and works. The 1990 census results indicate that 40% of Anthony's population is 16 years of age or younger and that 23% of Anthony's households have one or more persons who are 60 years old or older. The County estimates that 16% of the population receives unemployment benefits in any given year, with 8% unemployed for 15 or more weeks per year. In 1980, 28% of all families were below the poverty level (compared to 22% nationally).

Anthony's population has been doubling in size each decade, with (New Mexico) populations of 1700 in '70, 3200 in '80 and 5160 in '90. This growth is not expected to slow. The population is swelling due to the birthrate and to incoming immigrants looking for work. In 1980, about one quarter of the population was foreign born, mostly from Mexico. Since then, the 1987 Amnesty law has allowed hundreds of Mexican laborers to establish legal residence in the Mesilla valley. Many have subsequently brought their families.

The opening of a new border crossing and the continuing expansion of El Paso will further stimulate growth in the area. Anthony is particularly attractive to developers as the community has municipal sewer service. Without such service, state regulations limit the minimum size of residential plots to 3/4 acre. Only three communities in the south valley (Santa Teresa, Sunland Park and Anthony) have sewage treatment plants. State funds have been allotted to double the capacity of the Anthony plant over the next 2 years.

C. Air Quality Data

The State has been monitoring PM10 in Anthony since March of 1988. Air quality data is included in Appendix A. As of the end of the second quarter of 1991, a total of twelve PM10 24-hour averages greater than the standard have been recorded. Four of these exceedances occurred within the first month of monitoring. The state measured 7, 4 and 1 exceedances in 1988, 1989 and 1990, respectively. There have been no exceedances measured in the first two quarters of 1991. This downward trend is also reflected in Figure 3, where the monthly averages tend to drop with each passing year.

Prior to 1990, the standard for the annual arithmetic mean was also exceeded. The annual arithmetic means have been calculated using the method described in 40 CFR Part 50 appendix K. These values include high wind and flagged data. The annual arithmetic mean for 1991 reflects only the first two quarters of the year.

The 24-hour and annual mean exceedances are listed in Table 1. Half of the 24-hour exceedances occurred on windy days. Two have been flagged by EPA as exceptional events, and the state has requested that the four additional high wind days also be flagged. As seen in Figure 3, PM10 concentrations and exceedances tend to be higher during the windier seasons of Spring and Fall. Exceedances which occurred on low wind days were possibly caused by atmospheric inversions trapping locally generated dust.

The filters which recorded the 1989 and 1990 exceedances have been analyzed and are discussed in Appendix B. Analysis has shown that the particulates in the air on both high and low wind days are characteristic of, and likely derived from, local soils. Meteorological data presented is from the La Union monitoring tower, 11 km southwest of Anthony.

II. Emission Sources and Control Strategies

In accordance with the April 2, 1991 EPA policy document titled PM-10 Moderate Area SIP Guidance, all listed and known area and point source categories have been analyzed for the Anthony area. The Guidance requires that anthropogenic (man-made) source categories with significant emissions be analyzed for the technical and economic feasibility of implementing control measures. For point sources, such measures are called "RACT" or "reasonably available control technology". For area sources, these measures are called "RACM" or "reasonably available control measures". The EPA guidance document described above includes a list of RACT and RACM strategies to be considered. Indications of the legal responsibility for and enforceability of chosen control measures and relevant quantitative milestones are also required.

PM10 emission sources within Dona Ana county and the Anthony non-attainment area are discussed below and in Table 2. Where particulate emissions from any specific category were determined to be de minimis or insignificant, the category was dropped from further consideration for the implementation of RACT or RACM. As shown, all source categories are being currently controlled and/or are de minimis. As such, the application of quantitative milestones or contingency plans are not relevant. The greatest source of PM10 in Dona Ana county, windblown soil from partially vegetated areas such as range lands and desert, is non-anthropogenic.

A. Point Sources

Industrial point sources of PM10 have been analyzed to determine their impacts on Anthony and the appropriateness of retrofitting reasonably available control technology or RACT. Because Anthony is located on the New Mexico-Texas border, the point source analysis included sources within Texas. An emission inventory was compiled and used as input for dispersion modeling to predict the impact on Anthony.

In the past, several cotton gins operated in this area. These gins, included in the emission inventory (Table 2) and modeling summary (Appendix C), have all been closed within the last year in order to consolidate their operations into a single, larger gin near Vado (11 km north of Anthony). Anticipated PM10 emissions from the new gin are 1.14 pounds per hour. The gin is to operate a maximum of 24 hours per day for 4 months of each year (mid-September to mid-January).

There are no other industrial point sources of any size in or adjacent to Anthony located within New Mexico. This determination is based on a search of all existing emission inventory, permitting, and registration files. The closest point sources to Anthony in New Mexico are both located in Sunland Park which is approximately 23 km away. All PM10 point sources within 50 km of Anthony were included regardless of size. Using this criterion, three sources besides the cotton gins were identified. One of the three sources, Ribble Construction, is a portable sand and gravel plant which had been located 30 km from Anthony but is currently not in Dona Ana County.

The Texas Air Control Board furnished the Department with a complete PM10 point source inventory which has been compiled for the El Paso PM10 SIP. For purposes of this analysis, the six sources closest to Anthony were included. Even though it is located 26 km from Anthony, the Asarco Smelter was included due to its high PM10 emission rate. The two point sources closest to Anthony are located across the state line in Texas. These facilities, Proler International and Border Steel, are each within 5 km of Anthony.

A summary of the point source emission inventory and modeling inputs, outputs and results are included as Appendix C to this revision. Maximum impact due to these sources was modeled using ISCST (version 90346). It was determined that the most representative meteorological data was from a station in Las Cruces. One full year of meteorological data (1990) was used. The maximum predicted 24-hour impact from all historical and current point sources was 2.86 ug/m3. The cumulative annual average was predicted to be 0.69 ug/m3.

These two values are extremely low and considered to be de minimis, especially when compared to the 24-hour and annual PM10 standards of 150 ug/m3 and 50 ug/m3 respectively. For comparison, EPA non-attainment new source review requirements in 40 CFR Part 51, Appendix S establish significance levels which define when a major source is causing or contributing to a violation of a NAAQS. Impacts below these Appendix S concentrations are deemed de minimis. The Department has used these same values in AQCR 702-Permits to define sources impacting non-attainment areas. For PM10, the significance values are 5 ug/m3 and 1 ug/m3 for the 24-hour and annual standards, respectively. Not only does each point source in the analysis have an ambient impact below these concentrations, but the cumulative impact of all sources combined is below these significance levels.

Based on the modeling analysis, the Department finds industrial point sources have no significant impact on air quality in Anthony. As allowed by the EPA SIP Guidance for PM10 Moderate Areas, it is not necessary to consider the appropriate level of RACT to be required of point sources because the current impact is de minimis. There would be no improvement in PM10 concentrations in Anthony brought about through additional controls on point sources. In addition, there is no reason to conduct any other more advanced modeling analysis regarding point sources when their impact is very clearly minimal.

Regarding future emissions from point sources, the Department recognizes that Anthony is officially designated non-attainment for PM10. As such existing requirements for new sources locating in or impacting Anthony in AQCR's 702 and 709 will be applied and followed. The Department will also strive to meet EPA guidance on non-attainment new source review issued in response to the 1990 Amendments prior to revising AQCR's 702 and 709 when this is possible.

EPA recently promulgated new test methods (201 and 201A) for PM10 and proposed test method 202 for measurement of condensible particulate emissions. Although this SIP revision contains no emission limits, any future source given PM10 emission limits will be required to use appropriate EPA approved test methods.

B. Area Sources

Available emission inventories indicate that the majority of PM10 emissions in New Mexico are from area sources. Area sources include fugitive and reentrained dust from roads, fugitive dust from sparsely vegetated surfaces, range lands and agricultural areas, motor vehicles and residential woodburning.

1. Unpaved Roads

The Dona Ana County Planning Department has estimated that almost 10 miles, or about 1/3, of the streets in Anthony are unpaved. Traffic along unpaved roads is observed to be slow, an apparent attempt to minimize dust. PM10 emissions from unpaved roads in the non-attainment area are estimated to be 36.7 tons per year (see Table 2 for calculations).

Area residents are eager to have these streets paved, or at least improved. However, County and State funds only cover 2 road projects per year in each (Road Commissioner) district. Anthony shares District 2 with 5 other communities. As a result, progress has been slow. However, some streets have been primed (sprayed with oil) or treated by double penetration (grading, oil and large aggregate, oil and small aggregate) until funds are available to pave them. Priming is expected to last about a year. Double penetration treatment should last 5 to 6 years. Last year, 4 streets were primed in Anthony. Other streets were treated (double penetration) in conjunction with the installation of new sewer lines.

In the 1986 EPA Rural Fugitive Dust Area Study in Grant County, New Mexico, researchers determined that:

> "The possible control strategies for the area are limited due to the nature of the dust sources. Because agricultural tilling and wind erosion represent negligible dust sources, common controls such as conservation tilling and acreage stabilization are unwarranted. Since the greatest source of dust is generated by vehicular traffic on dirt roads, the control having the greatest effect would be paving or treating the dirt roads. This form of dust control may prove to be cost prohibitive. Grant County road officials estimated paving costs to be $80,000 per mile. This would amount to $2,000 per ton of particulates removed assuming paving would eliminate the 22,997 tons/year particulates reported in [the 1983] NEDS. The county paved a total of 3 miles in 1985."

It is not clear whether EPAs cost estimate has been annualized, or if it includes the continuing costs of maintaining and repaving these roads. However, the Division agrees that the cost to government of paving public roads as a form of dust control is prohibitive. This cost has risen since the 1986 Grant County report. The Dona Ana County Road Department estimates that one mile of (hot mix) paved road costs $4.59 per square yard, or $108,000 per mile (40 foot width). This 26% cost increase translates to an estimated control cost of $2520 per ton of particulate. Assuming that 47% of the total suspended particulate is PM10 (PM10 SIP Development Guide, EPA, June 1987), the cost of controlling PM10 by paving roads may be estimated at approximately $5360 per ton.

The County and State continue to pave and treat roads as expeditiously as funding allows. However, to pave all of the unpaved roads in Anthony (assuming a road width of 24 feet) will cost approximately $693,000 (1991 dollars). Paving as a PM10 control strategy is economically infeasible.

Recent growth in the area has raised concerns about the creation of additional unpaved residential roads. A number of low-cost housing developments have been built or proposed in the region. The recently revised Land Subdivision Regulations of Dona Ana County (December 11, 1990) require most developers to pave newly established roads. If these streets are up to (hot mix) code, the county will annex and maintain them. The New Mexico Constitution prohibits the county from paving or maintaining private roads.

2. Paved Roads

The Dona Ana County Road Department is responsible for maintaining the paved public roads in Anthony. This includes clean-up after heavy rains or winds have deposited soil onto paved roads. Climate has not necessitated the salting of roads in the winter. Due to a lack of funding, sidewalks are rare in Anthony and street sweepers are operated on a complaint basis only.

The State has estimated PM10 emissions due to re-entrained dust from paved roads to be 0.7 tons per year. These emissions are considered de minimis.

3. Haul Trucks

By policy, all Dona Ana County haul trucks are covered. Most commercial trucks are covered as well, in order to avoid material loss and complaints from broken windows. Emissions from these sources are considered de minimis.

4. Unvegetated Areas

Dona Ana County receives less than 9 inches of rain per year. This scarcity of water virtually guarantees an abundance of dry, dusty yards, vacant lots and ball fields. All of these fugitive dust sources are adjacent to (and up wind of) the monitor. The only ballfield in Anthony is about 1000 feet southwest of the monitor. This well used ballpark is devoid of plantlife, and the parking area and adjacent road are unpaved.

Nearer the monitor, the (historically) paved parking lot on which the monitors sit is now either ground to dust and gravel or simply covered with dust and gravel. A vacant lot sits across the street (south and slightly west). Although the nearest streets are paved, there are no curbs, sidewalks or lawns. A partially vegetated vacant lot sits due east of the monitors (emissions from this vacant lot are shown in Figures 21 and 22 of Appendix B).

Clearly, these sources can be significant, although during high winds dust from surrounding range land may dominate impacts on the monitor site. However, for a region in which virtually all areas not covered by pavement or buildings are sparsely vegetated and subject to wind erosion, feasible control strategies are not forthcoming. Irrigated crop lands and school lawns are notable exceptions; however, in the desert not all areas can be irrigated. In fact, water pressures in the overextended residential water system in Anthony are often feeble and erratic. Even with the planned improvements to the system, area water resources cannot sustain the kind of groundcover necessary to prevent wind erosion. It is technologically infeasible to vegetate the surrounding area with ground cover.

Earth moving activities further raise dust. An ordinance regarding the grading of land has recently been developed by the County Road Department. The new ordinance requires individuals to obtain a permit and to water while grading.

5. Trash Burning

New Mexico Air Quality Control Regulation (AQCR) 301, included as Appendix G, prohibits the burning of refuse in towns the size of Anthony. It is also illegal to burn trash in Dona Ana County (Dona Ana County Ordinance No. 79-1, Section III.E). Violators may be fined up to $300 or sentenced to up to 90 days in jail for each offense of the County regulation, and fined up to $1000 per day for violation of the State regulation. In addition, the transfer facility where residents deposit their trash will not accept the remains of burnt trash. This policy was instituted after smoldering garbage ignited and destroyed one of their bins. The county is also developing a system to provide household pick-up. These efforts reduce both blowing trash and trash burning.

PM-10 emissions due to the burning of trash are considered well controlled and de minimis.

6. Wood Burning (home heating)

The 1990 census information regarding the use of wood burning for home heating is not yet available. According to the 1980 census for Anthony, 'House heating fuel' use was 71% utility gas, 27% bottled, tank or LP gas, 2% electricity and zero wood, fuel oil, coal or other fuel. However, it is not clear how many migrants, illegals or illiterate were included in the 1980 census, or how many of these individuals winter in Anthony. The 1990 results will likely be higher, as woodstoves became more popular during the 1980's. Although fireplaces have always been common, the regional practice is to use them on Christmas Eve and not for general home heating.

Woodsmoke contributions to PM10 exceedances would be most significant on low wind days in the winter. However, the filter analyses described in Appendix B have shown that wood smoke was not a significant contributor to any of the exceedances, including the exceedance which occurred on the (low wind) Christmas Eve of 1989. Based on filter analyses and available information, emissions from these sources are considered de minimis.

7. Off-road recreational vehicles

Due to low income levels, off-road recreational vehicles are uncommon in or around Anthony. Although some of these vehicles were observed near Sunland Park, aerial photographs do not show any areas near Anthony with the distinctive patterns of off-road vehicle use.

8. Agricultural and range lands

A report describing the PM10 contributions from rural land soils in the Anthony area is included as Appendix D. As documented in that report and in Appendix F (correspondence from the Soil Conservation Service), Dona Ana County's croplands are in compliance with the Food Securities Act. The EPA PM10 Moderate Area SIP Guidance: Final Staff Work Product (April 1991) lists, as an available fugitive dust control measure, reliance "upon the soil conservation requirements... of the Food Security Act to reduce emissions from agriculture operations." Thus, the favored RACM for agricultural land is already in place. PM10 emissions from these areas are not considered significant.

As discussed in Appendix D, open burning (for weed control) is not commonly practiced in this area. However, New Mexico Air Quality Control Regulation (AQCR) 301 (Open Burning) is included as reference in Appendix G. AQCR 301 was most recently revised in February of 1983.

The federal Bureau of Land Management (BLM) leasing requirements are designed, in part, to minimize overgrazing. In fact, the average carrying capacity for allotments in the area is less than two animal units per (640 acre) section per year. However, the soil composition of regional rangelands are inherently susceptible to wind erosion, regardless of impacts from humans. Estimated potential PM10 emissions from rangelands, based on soil types and natural vegetation, are high, approximately 150 tons per acre per year, and apt to contribute significantly to windy day exceedances (Control of Open Fugitive

Dust Sources, EPA-450/3-88-008, September 1988). There are no range lands within the Anthony non-attainment area. However, approximately 86%, or 3350 square miles, of Dona Ana county are classified as range lands. This represents potential countywide emissions of 502,584 tons per year. Similar desert soils in Mexico, Arizona, Texas, California and other parts of New Mexico are also likely PM10 contributors during high wind seasons. Long range transport of PM10 is an established phenomenon. The State finds that these emissions, while significant, should not be considered anthropogenic.

C. Summary

The State finds all point and area sources of PM10 in or effecting the Anthony non-attainment area to be de minimis, with the exception of unpaved roads, unvegetated and sparsely vegetated areas, and range lands. Of these, the paving of roads is economically infeasible and enhancement of ground cover in the area or region is technologically infeasible. Emissions from range lands are considered non-anthropogenic. The State is aware of no additional reasonable or available control measures for anthropogenic sources of PM10 in the Anthony area.

III. Attainment Feasibility and Waivers

The State finds the attainment of the PM10 NAAQS in Anthony by the required deadline impracticable. Although the continuing efforts of County, State and Federal agencies have reduced dust levels within the area, the State is not confident that the implemented control strategies can prevent exceedances which are predominantly non-anthropogenic. As acknowledged by EPA in the establishment of the RFDA program and current waiver provisions, high winds, friable soils and low annual rainfall are not within regulatory control.

Under section 188(f) of the CAAA, the EPA Administrator may waive the attainment date if he or she determines that non-anthropogenic (natural) sources of PM10 contribute significantly to a violation of the PM10 NAAQS in the area. The State believes this to be the case in Anthony, as filter analyses have shown that the overwhelming contributor to PM10 violations is airborne soil. Although some of this soil may originate from unpaved roads, a significant portion arises from regional terrain which is sandy, dry and only partially vegetated.

The State understands that a waiver of the attainment date does not release it from full implementation of its moderate area SIP requirements. Despite significant economic hardship and onerous control costs, anthropogenic sources of PM10 are being controlled as rapidly as practicable.

IV. Conclusion

The State and County have been working steadily to reduce PM10 levels in Anthony. Existing roads are being paved as quickly as funding allows. Permitting regulations in both New Mexico and Texas are designed to prevent industrial source contributions to PM10 violations. Agricultural and range lands are being managed as recommended and required by Federal agencies.

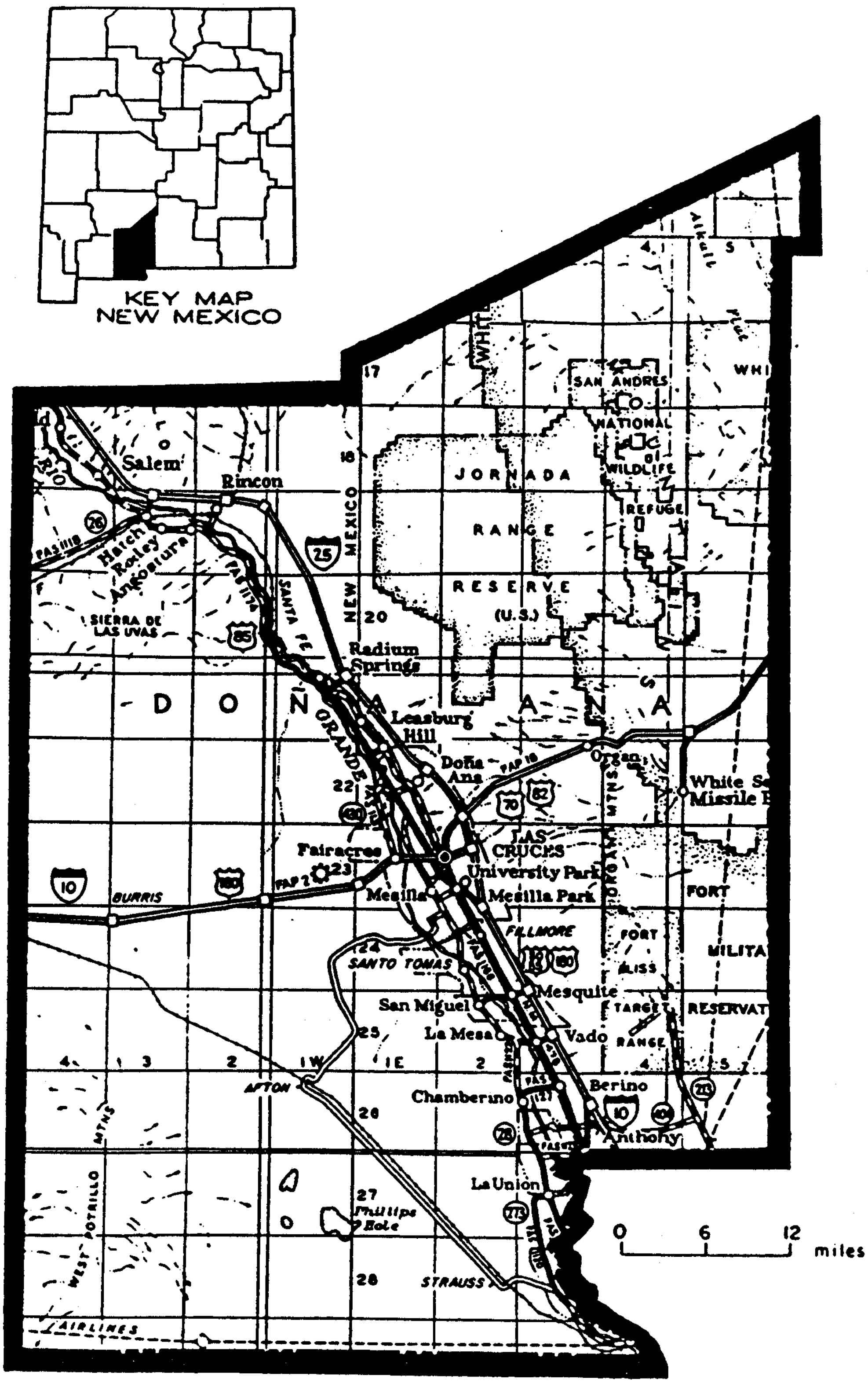
These State, County and Federal efforts have been successful. Whereas in 1988, the first year of PM10 monitoring, seven exceedances were measured, in 1989 four were measured and in 1990 only one. No exceedances have been measured to date in 1991. Likewise, the annual arithmetic mean in 1990 was significantly lower than those measured previously.

However, the region continues to be dry and sparsely vegetated. Recent improvements in air quality may be the result of fortunate climactics. Dust storms and dust devils will continue to occur, especially in the Spring. Non-anthropogenic sources persist and will, at times, prevail. This was acknowledged in EPA's acceptance of Anthony as an RFDA.

The State remains committed to the dust control measures implemented by Dona Ana County, moderate area control strategies as agreed to in this SIP submittal and to the established air quality monitoring schedule. However, the State is requesting a waiver of the moderate area attainment deadline of December 31, 1994. While efforts towards the mitigation of anthropogenic sources continue, recurring non-anthropogenic sources thwart ambitions of consistent attainment.

Appendices:

A. Air Quality Data
B. PM10 Exceedances at Anthony and Sunland Park, New Mexico
C. Air Quality Dispersion Modeling Summary for Anthony PM10 SIP
D. PM10 Contributions from Rural Land Soils and Open Burning
E. Dona Ana County Soils Information from the Soil Conservation Service
F. Soil Conservation Service Correspondence Regarding Food Security Act
G. Air Quality Control Regulation 301



DOÑA ANA COUNTY

NOTE: ALL OF THIS COUNTY IS LOCATED WITHIN THE RIO GRANDE BASIN

Figure 1

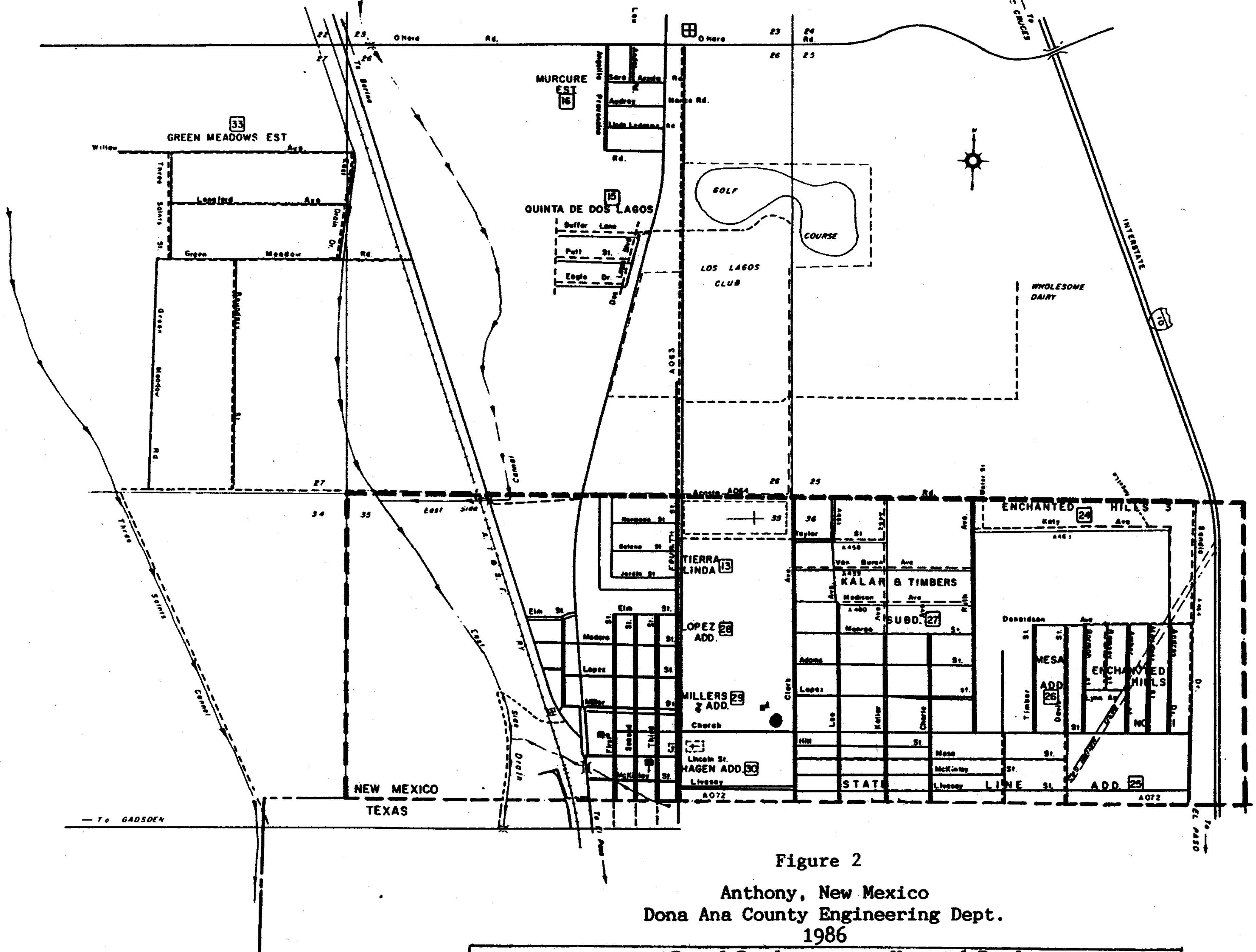
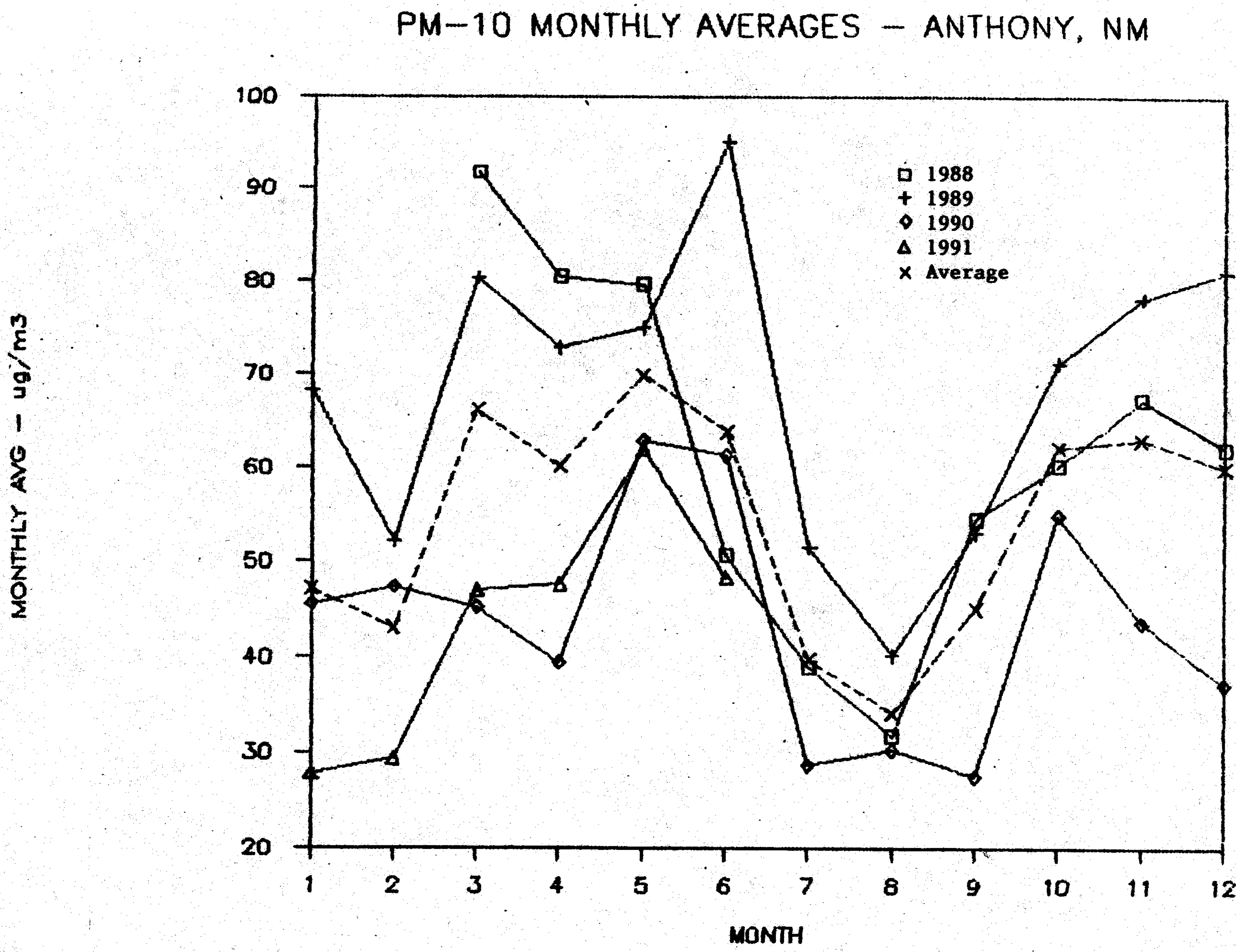


Figure 2

Anthony, New Mexico
Dona Ana County Engineering Dept.
1986

—— Paved Roads ---- Unpaved Roads
▬ ▬ Non-attainment Area ● - PM10 Monitoring Site
Note: Fourth St. and Green Meadows Est have since been paved
1 inch equals 1500 feet

Figure 3



Total Number Exceedances
in Each Month:

0	0	5	1	2	0	0	0	0	1	0	2

Table 1
PM10 Exceedances at Anthony, New Mexico

24-Hour Average (Standard: 150 ug/m3)

Date	Concentration (ug-PM10 /m3)	Remarks
3/10/88	170	High wind day (1)
3/19/88	151	
3/28/88	227	
3/29/88	226	
4/21/88	223	High wind day (1)
5/01/88	154	High wind day (1)
12/31/88	173	
3/03/89	297	Flagged as exceptional event
6/13/89	202	High wind day (1)
10/27/89	176	
12/24/89	176	
5/19/90	198	Flagged as exceptional event

(No exceedances recorded in first 2 quarters of 1991)

(1) Requested to be flagged as an exceptional event

Annual Arithmetic Mean (Standard: 50 ug/m3)

Year	Concentration (ug-PM10 /m3)
1988	59
1989	68
1990	44 (2)
1991	44 (3)

(2) In compliance with standard
(3) First two quarters only

Table 2
PM10 Emission Inventory
(Tons per Year)

Source	Area: Dona Ana County	Area: Anthony Non-Attainment Area	Notes
Point Sources			(1)
Joab Incin.	7.5	0	
Ribble Asphalt	13.1	0	
El Paso Electric	46.0	0	
Santo Tomas Gin	1.4	0	(2)
Santo Tomas Short	1.4	0	(2)
Chamberino Coop	1.8	0	(2)
Mesa Farmer's Coop	0.9	0	(3)
Area Sources			(4)
Unpaved Roads	N/A	36.7	(5)
Paved Roads	N/A	0.7	(6)
Rangelands/Desert	502,584	0	(7)

Notes:

(1) Emission estimates derived from permit files and AIRS data base. Only sources in New Mexico are included in this table. Sources in both New Mexico and Texas are listed and modeled in Appendix C.

(2) Closed down as of January, 1991. While in operation, these cotton gins ran a maximum of 24 hours a day, 4 months per year (September 15 - January 15). Also closed in January was the Anthony Gin in Texas, just across the state line and near the southwest corner of the Anthony non-attainment area.

(3) Opened October 1991, to replace closed gins. Permitted to operate a maximum of 24 hours a day, 4 months per year (September 15 - January 15).

(4) Specific emission estimates regarding haul trucks, trash burning, wood burning, off-road vehicles and agricultural practices are not available but are expected to be minimal (see text).

(5) Calculated to be 36.74 tons/yr using AP-42 (Section 11.2.1) and CARB (Calif. Air Resources Board) factors, County estimates and observation:
Emission Factor, $EF = k\ (5.9)\ (s/12)\ (S/30)\ (W/3)^{0.7}\ (w/4)^{0.5}\ (d/365)$ lb/VMT
Where: k (particle multiplier) = 0.49 for PM-10 (from CARB)
s (silt) = 15% (AP-42)
S (speed) = 20 mph (observation)
W (weight) = 3 tons (AP-42, observation)
w (wheels) = 4 (observation)
d (dry days per year) = 305 (AP-42)
Emissions = (EF) (VMT per day) (m) (365 days/year) / (2000 lb/ton)
Where: EF = 2.013 lb/VMT (calculated above)
VMT (vehicle miles traveled) = 10/day (CARB for equivalent areas)
m (miles of unpaved roads) = 10 (County estimate)

(6) Calculated using AP-42 (Section 11.2.5) (which recommends a PM-10 emission factor of 0.018 lb/VMT for local streets) and above assumptions for 20 miles of paved roads: (0.018)(10)(20)(365)/(2000) = 0.657 t/y

(7) Non-Anthropogenic Source

APPENDIX A

STATE: NEW MEXICO (32) — AQDHS-II AIR QUALITY DATA REPORT — DISPLAY N>9997 — PAGE 178

AQCR: 153 AGENCY: STATE
COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
SITE: 016 UNITS: MICROGRAMS PER CUBIC METER
6C/6CM ANTHONY ELEMENTARY SCHOOL ANTHONY
PRIMARY

COLLECTION METH: HIVOL SA321A
ANALYSIS METHOD: GRAVIMETRIC
SAMPLING INTERVAL: DAILY
SAROAD KEY: 32153034003400
KEY-1: 321530340034001 6F02888 KEY-2: 811025201 KEY-3: 030100
SECONDARY

YEAR: 1988
MIN DET: 4
UNITS CODE: 01

FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

MONTH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01				20.2	153.5			31.3			85.7	34.5	5	65.04	153.5
02				47.8		68.8	24.4		19.0	60.4			5	44.08	68.8
03				81.2	82.3			26.7			53.0	80.7	5	64.78	82.3
04				83.7		44.5	38.0		30.6	67.0			5	52.76	83.7
05				60.4	75.7			23.2			96.1	34.0	5	57.88	96.1
06				79.1		85.5	28.1		59.2	88.1			5	68.0	88.1
07				74.3	77.4			27.7			117.2	109.3	5	81.18	117.2
08			42.7	61.1		68.7	15.8		90.7	34.7			6	52.28	90.7
09			58.9	138.9	50.1			64.6			38.4	15.4	6	61.05	138.9
10			169.5	112.4			31.6		76.6	16.4			5	81.30	169.5
11			56.5	85.0	90.2			29.3			68.8	38.5	6	61.38	90.2
12			41.9	91.7		45.5	34.9		24.6	57.5			6	49.35	91.7
13			28.6	104.4	101.5			37.4			53.5	67.9	6	65.55	104.4
14			60.3			50.1	41.5		66.1	51.4			5	53.88	66.1
15			69.7	99.8	103.3			39.3			78.2	34.8	6	70.85	103.3
16			114.5			36.1	31.7		46.0	37.2			5	53.10	114.5
17			38.8	16.9	50.3			20.3			66.2	32.1	6	37.43	66.2
18			72.9			50.7	29.0		7.4	76.1			5	47.22	76.1
19			150.7	54.4	58.5			29.3			37.2	34.1	6	60.70	150.7
20			94.6			44.8			49.8	71.9			4	65.28	94.6
21			74.2	233.0	50.7			34.4				66.4	5	91.74	233.0
22			63.7			50.4	56.1		33.7	37.2			5	48.22	63.7
23			90.8	68.1	56.1			23.0			123.8	41.1	6	67.15	123.8
24			66.9			67.2	78.3		77.3	73.0			5	72.54	78.3
25			108.3	54.2	111.8			35.4			53.7	131.9	6	82.55	131.9
26			74.0			32.9	50.0		82.7	68.1			5	61.54	82.7
27			109.4	105.8	85.7			22.2			19.1	34.1	6	62.72	109.4
28			226.6			26.3	41.2		68.4	58.3			5	84.16	226.6
29			225.8	17.3	66.2			10.9			49.6	64.5	6	72.38	225.8
30			85.7			39.6	43.5		85.8	105.6			5	72.04	105.6
31			77.0		59.1			51.7				172.9	4	90.18	172.9
NO	0	0	24	21	16	14	14	16	15	15	14	16	165		
MN			91.75	80.46	79.53	50.79	38.86	31.67	54.53	60.19	67.18	62.01		64.12	
MX			226.6	233.0	153.5	85.5	78.3	64.6	90.7	105.6	123.8	172.9			233.0

STATE: NEW MEXICO (32)   AQDHS-II AIR QUALITY DATA REPORT
DISPLAY N>9997

AQCR: 153   AGENCY: STATE   COLLECTION METH: H1VOL SA321B   YEAR: 1989
COUNTY: 0340   PROJECT: SOURCE-ORIENTED AMBIENT SURV.   ANALYSIS METHOD: GRAVIMETRIC
AREA: 0340   PARAMETER: PM10 TOTAL 0-10 MICRONS   SAMPLING INTERVAL: DAILY   MIN DET: 4
SITE: 016   UNITS: MICROGRAMS PER CUBIC METER   SAROAD KEY: 32153034003400   UNITS CODE: 01
, 6C   ANTHONY ELEMENTARY SCHOOL   ANTHONY   KEY-1: 3215303400340016F02889 KEY-2: 81102[illegible]6401 KEY-3: 010100
PRIMARY   SECONDARY
FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

MONTH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01		31.8	46.3			64.9	76.6		52.5				5	54.42	76.6
02	75.4			27.0	84.1			41.1					4	56.90	84.1
03		32.5	297.0			92.8	59.3		41.6	104.4			6	104.6	297.0
04	25.5			85.5	93.1			42.6					4	61.68	93.1
05		82.7	30.1			67.4	53.6		28.5	27.0			6	48.22	82.7
06	54.7			66.3	120.2			70.8					4	78.0	120.2
07		25.7	111.6			79.8	70.5		30.6	50.8			6	61.50	111.6
08	26.9			54.5	89.9			31.4					4	50.68	89.9
09		39.1	107.6			89.7	67.1		63.6	40.1			6	67.87	107.6
10	95.2			85.2	36.3			96.6					4	78.33	96.6
11		91.1	42.8			67.7	81.0		69.4	71.1			6	70.52	91.1
12	99.3			55.8	65.9			47.8					4	67.20	99.3
13		86.5	63.9			202.3	58.5		17.7				5	85.78	202.3
14	87.4			103.5	76.4			25.0					4	73.08	103.5
15		51.7	97.6			76.8	75.4		75.6				5	75.42	97.6
16	76.8			57.2	65.3			27.8					4	56.78	76.8
17		25.6	106.2			117.0	33.8		40.3				5	64.58	117.0
18	67.7			59.0	16.3			30.6					4	43.40	67.7
19		32.5	83.4			80.2	90.7						4	71.70	90.7
20	87.8			82.4	88.7			20.1					4	69.75	88.7
21		25.7	39.6			88.8	39.4		48.7				5	48.44	88.8
22	64.4			77.4	54.2			45.4					4	60.35	77.4
23		85.8	54.2			56.9	24.8		40.2				5	52.38	85.8
24	87.0			59.9	59.3			62.3					4	67.13	87.0
25		41.8	62.3			117.1	22.8		51.3				5	59.06	117.1
26	121.6			85.7	75.7			18.5					4	75.38	121.6
27		79.1	6.1			106.2	22.7		67.7				5	56.36	106.2
28	19.4			108.7	149.6			13.6					4	72.83	149.6
29			25.9			115.5	20.1		115.2				4	69.18	115.5
30	34.0			82.9	47.5			27.4					4	47.95	82.9
31			109.3				29.2						2	69.25	109.3
NO	15	14	16	15	15	15	16	15	14	5	0	0	140		
MN	68.21	52.26	80.24	72.73	74.83	94.87	51.59	40.07	53.06	58.68				65.27	
MX	121.6	91.1	297.0	108.7	149.6	202.3	90.7	96.6	115.2	104.4					297.0

STATE: NEW MEXICO (32)

AQDHS-II AIR QUALITY DATA REPORT
DISPLAY N>9997

AQCR: 153	AGENCY: STATE	COLLECTION METH: HIVOL WEDDING INLET	YEAR: 1989
COUNTY: 0340	PROJECT: SOURCE-ORIENTED AMBIENT SURV.	ANALYSIS METHOD: GRAVIMETRIC	
AREA: 0340	PARAMETER: PM10 TOTAL 0-10 MICRONS	SAMPLING INTERVAL: DAILY	MIN DET: 4
SITE: 016	UNITS: MICROGRAMS PER CUBIC METER	SAROAD KEY: 32153034003400	UNITS CODE: 01
6C	ANTHONY ELEMENTARY SCHOOL ANTHONY PRIMARY	KEY-1: 3215303400340016F02889 KEY-2: 811026201 SECONDARY	KEY-3: 100100

FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

MONTH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01													0		
02											52.7	31.3	2	42.0	52.7
03													0		
04											98.7	78.5	2	88.60	98.7
05													0		
06											73.8	86.0	2	79.90	86.0
07													0		
08											86.8	85.8	2	86.30	86.8
09													0		
10											132.0	134.7	2	133.4	1
11													0		
12											96.5	67.9	2	82.20	9
13										96.1			1	96.10	9
14											83.1	89.1	2	86.10	8
15										64.0			1	64.0	6
16											107.7	91.0	2	99.35	10
17										62.4			1	62.40	6
18											43.5	49.5	2	46.50	4
19										64.9			1	64.90	6
20											75.3	108.3	2	91.80	10
21										33.4			1	33.40	3
22											63.3	73.3	2	68.30	7
23										64.2			1	64.20	6
24											88.2	176.1	2	132.2	17
25										60.6			1	60.60	6
26											61.8	91.9	2	76.85	9
27										176.0			1	176.0	17
28											81.0	31.9	2	56.45	8
29										50.1			1	50.10	5
30											25.5	17.4	2	21.45	2.
31										100.5			1	100.5	10
NO	0	0	0	0	0	0	0	0	0	10	15	15	40		
MN										77.22	77.99	80.85		78.87	
MX										176.0	132.0	176.1			176.1

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AQCR: 153 AGENCY: STATE
COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
SITE: 016 UNITS: MICROGRAMS PER CUBIC METER
60 ANTHONY ELEMENTARY SCHOOL ANTHONY

COLLECTION METH: HIVOL WEDDING INLET
ANALYSIS METHOD: GRAVIMETRIC
SAMPLING INTERVAL: DAILY
SAROAD KEY: 321530340034 0
KEY-1: 321530340034 016F02891 KEY-2: 81102621 KEY-3: 11011

YEAR: 1990
MIN DET: 4
UNITS CODE: 01

PRIMARY SECONDARY
FEDERAL STANDARD 15 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

MONTH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01	[illegible]			28.5	93.0			31.9			64.9	70.9	6	55.0	83.0
02		43.9	45.4			73.5	35.3		39.2	13.4			6	43.68	73.9
03				20.1	15.8	77.0		38.3			24.9	18.7	6	32.47	77.0
04		38.7	33.3			95.7			20.9	28.1			5	43.34	95.7
05	18.1			40.6	23.8			18.3				60.5	5	32.14	60.5
06		55.2	119.9				37.2		23.1	47.2			5	53.32	119.9
07	42.1			36.2	40.2	42.5		12.2			[illegible]	34.7	7	41.20	84.7
08		35.9	63.1			52.7	32.6		17.2	34.7			6	35.87	63.1
09	84.6			35.2	44.5			29.8			50.0	121.7	6	61.63	121.7
10		39.9	17.6			34.1	26.7		24.7	58.7			6	33.62	58.7
11	74.8			35.5	72.7			43.2			47.2	47.8	6	53.60	74.8
12		46.3	18.7			22.6	[illegible]		37.6	57.0			6	33.53	57.0
13	72.6			36.8	47.4			13.9			41.7	21.7	6	39.0	72.6
14		79.9	12.9			34.4	25.7		34.2	46.7			6	38.97	79.9
15	63.9			61.7	71.4			17.3			63.7	12.8	6	48.47	71.4
16		38.0	27.9			47.6	26.4		25.3	51.7			6	36.15	51.7
17	39.8			55.4	52.7			28.1			68.2	0.3	6	40.75	68.2
18		59.2	82.0			57.6	31.9		37.7	69.3			6	55.12	82.0
19	20.6			31.1	197.7			[illegible]			69.3	11.5	6	61.53	197.7
20		16.9	52.1			72.7	35.9		26.8	37.9			6	40.38	72.7
21	16.7			26.8	77.5			15.6			27.5	19.4	6	30.58	77.5
22		43.0	54.5			146.3	27.1		14.0	74.7			6	59.93	146.3
23	16.1			44.1	47.0			24.1			42.1	0.1	6	28.92	47.0
24		92.8	42.1			78.2	35.3		26.3	72.5			6	57.87	92.8
25	46.3			33.4	44.1			44.6			30.2	38.4	6	35.50	46.3
26		60.5	[illegible]			51.1	24.0		38.6	92.5			6	51.62	92.5
27	39.9			32.7	63.3			46.7			43.5	31.4	6	42.92	63.3
28		10.8	36.9			56.2	24.3		32.3	49.2			6	33.45	56.2
29	51.5			65.8	61.0			37.0			5.4		5	44.74	68.8
30						34.3	15.3		13.0	101.6			4	41.05	101.6
31								43.7				15.2	2	29.45	43.7
NO	14	14	14	15	15	16	14	16	15	15	14	15	177		
MN	45.53	47.43	45.24	35.41	62.81	61.24	28.55	30.23	27.39	54.95	43.51	37.01		43.68	
MX	84.6	92.8	119.9	65.8	197.7	146.3	39.3	46.7	39.2	101.6	69.3	121.7			197.7

STATE: NEW MEXICO (32)

AQDHS-II AIR QUALITY DATA REPORT
DISPLAY N>9997

AQCR: 153 AGENCY: STATE
COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
SITE: 016 UNITS: MICROGRAMS PER CUBIC METER
6C ANTHONY ELEMENTARY SCHOOL ANTHONY

COLLECTION METH: HIVOL WEDDING INLET
ANALYSIS METHOD: GRAVIMETRIC
SAMPLING INTERVAL: DAILY
SAROAD KEY: 32153034003400
KEY-1: 3215303400340016F02891 KEY-2: 811026201 KEY-3: 010100

YEAR: 1991
MIN DET: 4
UNITS CODE: 01

PRIMARY SECONDARY
FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

MONTH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01		18.7	27.0			45.7							3	30.47	45.7
02	48.2			33.4	105.9								3	62.50	105.9
03		16.3	29.4			48.6							3	31.43	48.6
04	39.9			89.8	38.5								3	56.07	89.8
05		43.1	25.7			54.7							3	41.17	54.7
06	13.2			34.1	70.4								3	39.23	70.4
07			56.0			55.1							2	55.55	56.0
08	17.5			35.6	53.7								3	35.60	53.7
09		51.9	32.3			21.5							3	35.23	51.9
10	13.7	21.4		55.7	66.4								4	39.30	66.4
11		12.8	82.5			28.6							3	41.30	82.5
12	49.7			33.9	58.0								3	47.20	58.0
13		17.8	46.5			29.3							3	31.20	46.5
14	28.7			34.3	83.2								3	48.73	83.2
15		27.6	50.9			46.4							3	41.63	50.9
16	50.0			47.1	34.8								3	43.97	50.0
17		14.3	39.9			51.2							3	35.13	51.2
18	13.1			34.4	79.3								3	42.27	79.3
19		13.3	131.3			58.2							3	67.60	131.3
20	14.4			54.1	98.8								3	55.77	98.8
21		27.0	18.6			60.1							3	35.23	60.1
22	26.9			31.5	27.7								3	28.70	31.5
23		50.1	69.3			56.0							3	58.47	69.3
24	22.5			41.6	46.7								3	36.93	46.7
25		53.4	58.7			76.6							3	62.90	76.6
26	31.1			54.5	53.7								3	46.43	54.5
27		42.8	22.0			47.0							3	37.27	47.0
28	26.8			81.3	49.8								3	52.63	81.3
29			24.0			46.3							2	35.15	46.3
30	20.9			54.0	61.5								3	45.47	61.5
31			38.5										1	38.50	38.5
NO	15	14	16	15	15	15	0	0	0	0	0	0	90		
MN	27.77	29.32	47.04	47.69	61.89	48.35								43.87	
MX	50.0	53.4	131.3	89.8	105.9	76.6									131.3

APPENDIX B

PM_{10} Exceedances at Anthony and Sunland Park, New Mexico

LIST OF TABLES

LIST OF FIGURES

1. Problem Statement.

Exceedances of the federal PM_{10} standard have been recorded at two monitoring sites operated by the New Mexico Air Quality Bureau. Both sites are in Dona Ana County close to the Texas border and within about fifteen miles of the El Paso/Ciudad Juarez metropolitan area. PM_{10} sampling was begun at Anthony in March, 1988 on an alternate-day schedule, and alternate-day sampling was begun at Sunland Park in February, 1989. Sampling frequency at Sunland Park was increased to daily in July, 1989.

Through June, 1991, the following PM_{10} exceedances have occurred at these two sites:

TABLE 1

	AIRS #	DATE	PM_{10} CONC. ug/m^3 (STP)
ANTHONY	35-013-0016	3/10/88	170
		3/19/88	151
		3/28/88	227
		3/29/88	226
		4/21/88	233
		5/1/88	154
		12/31/88	173
		3/03/89	297
		6/13/89	202
		10/27/89	176
		12/24/89	176
		5/19/90	198
SUNLAND PARK	35-013-0017	3/03/89	169
		11/23/89	221
		4/24/90	169
		5/19/90	177
		3/26/91	161

2. Description of the Area.

Both Sunland Park and Anthony are in the Rio Grande valley just north of a narrow gap between two mountain ridges (Figure 1). South and east of the gap lie El Paso on the north side of the river and Juarez on the south side. To the north of the gap the valley spreads out into a 5-km wide, shallow agricultural strip. Chief crops are cotton, alfalfa, pecans, asparagus and other table vegetables. Commercial milk production is currently growing rapidly in this area. Agricultural practices that might create airborne particles are plowing (mainly in the spring), burning of irrigation ditches to rid them of unwanted vegetation, especially wind-blown tumbleweed, and activies associated with milk production (see Figures 2, 3, and 4).

In addition to agriculture, there is some industry in the valley, especially close to the gap separating Sunland Park from El Paso. The most visible industry is the Asarco smelter right in the gap, on the El Paso side. In addition, there are concrete and brick factories (Figure 5) in the gap, an oil/gas fired power plant operated by El Paso Electric Company (Figure 6) about a quarter mile from the Sunland Park site, a steel mill (Figure 7) about three miles from Anthony in Vinton, Texas, and numerous other small factories and shops.

The community of Anthony spans the border between Texas and New Mexico. It is a small community (combined NM and TX 1990 population = 8488) on the unirrigated shelf just to the east of the agricultural strip along the river. It lies on the old road connecting Las Cruces and El Paso. There is still heavy local traffic on this road, but through traffic and commuters now use Interstate 10 which skirts the eastern edge of Anthony.

The Anthony monitoring site (Figure 8) is located at the corner of Church and Clark Streets, in the parking lot of Dona Ana Community College. The parking lot, approximate area 22,000 sq. ft., is paved although the pavement is covered with a layer of loose soil that is an inch or more deep in places. Vehicle tire tracks are visible in the soil covering (Figure 9). Three Wedding PM_{10} monitors are installed on a sturdy wooden platform which is about five feet above ground level (Figure 10). The wooden platform is enclosed in an area of about 400 sq. ft. by a chain-link fence. There are vacant lots to the east and southwest of the site. Two churches are located on Church Street which is paved. No ambient air constituents other than PM_{10} are monitored at Anthony.

The Sunland Park monitoring site lies about 100 yards to the north of New Mexico route 273, which is the major road on the southern and western periphery of the agricultural strip. It carries mostly local traffic, except for traffic to the Sunland Park Raceway and truck traffic to a landfill and incinerator on the west mesa. The monitoring site is next to a sewage treatment plant where sludge appears to be always damp and not a source of particulates (Figure 11). Sulfur dioxide and lead are also monitored at this site because of the presence of the Asarco smelter about 3 km to the southeast (Figure 12).

The annual rainfall in the area is less than 10 inches per year. The long term average for nearby Las Cruces, for example, is 8.7 inches per year.

3. Data analysis.

3a. Overview. There is no meteorological tower at the Anthony site and the one at Sunland Park was established only in May of 1990. Thus, except for 5/19/90 and 3/26/91, no meteorological data were recorded at either site on exceedance days. The nearest meteorological tower in the New Mexico monitoring network is located at La Union, which is approximately 17 km northwest of Sunland Park and 11 km southwest of Anthony (Figure 1). Table 2 gives the maximum hourly windspeeds and maximum gusts recorded at La Union on exceedance days. Simultaneous PM_{10} concentrations from selected El Paso sites are included for comparison.

TABLE 2

ANTHONY AND SUNLAND PARK PM_{10} EXCEEDANCES

	PM_{10} (ug/m3)				PM_{10} FROM EL PASO SITES (ug/m3)		
DATE	ANTHONY 350130016	SUNLAND 350130017	LA UNION MAX HR WIND SPEED (mph)	MAX GUST (mph)	2G 481410002	41F 481410041	DAY OF WEEK
3/10/88	170		20.8	40.7	177		TH
3/19/88	151		5.8	14.5	86		SA
3/28/88	227		1.1	17.9	85		M
3/29/88	226		15.2	29.8			TU
4/21/88	233		21.9	45.9	263		TH
5/1/88	154		13.3	41.4	136		SU
12/31/88	173		4.5	10.1	105		SA
3/03/89	297	169	31.2	NA	272	412	F
6/13/89	202	71	19.1	50.5	61	67	TU
10/27/89	176		9.0	NA	109	93	F
11/23/89		221	9.2	20.3			TH
12/24/89	176	126	4.4	8.1	126	161	SU
4/24/90		169	34.7	NA	129		TU
5/19/90	198	177	31.7(27.9)	NA		165	SA
3/26/91		161	(32)	(>56)			TU

(Wind speeds in parentheses are from Sunland Park.)

The most striking fact that emerges from this table is that some -- but not all -- of the exceedances are correlated with high winds as measured at La Union. A high wind may be considered to be an hourly average wind speed greater than 30 mph or a gust greater than 40 mph. These are the criteria used to define an exceptional wind event in Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EPA-450/4-86-007). A reasonable hypothesis to draw from Table 2 is that exceedances on the following dates were caused by wind-entrainment of loose soil:

3/10/88
4/21/88
5/01/88
3/03/89
6/13/89
4/24/90
5/19/90
3/26/91

Of the other seven (low-wind) exceedance days high PM_{10} concentrations appear to have been regional on 12/24/89 and possibly on 12/31/88 as well. The time of year of these two exceedances suggests the trapping of locally generated particulates by an atmospheric inversion. Another possible explanation is traffic-caused dust connected with church activities on these holidays. There are two churches on Church Street close to the monitoring site, one at the corner of 4th and Church and the other at the corner of Lee and Church (see Figure 8).

3.b <u>Elemental Distributions</u>. To aid in the identification of the source of air particulates in Anthony and Sunland Park, 28 exposed PM_{10} filters and soil samples were submitted to Nuclear Environmental Associates of Tigard, Oregon, for elemental analysis by x-ray fluoresence. (See Appendix BA for details.) All 1989 exceedance filters were analyzed, along with other filters exhibiting a wide range of loadings from Anthony (6C), Sunland Park (6ZG) and Las Cruces (6R). Seven soil samples from the Anthony site and seven samples from Sunland Park were also submitted for analysis. These soil samples were taken from the loose crust at distances on the order of 100 m from the PM_{10} samplers. (More detail is given in Appendices BB and BC.)

If the hypothesis of section 3.a is correct, then the three 1989 exceedance filters from high-wind days (3/03/89 and 6/13/89) should exhibit elemental distributions similar to the corresponding soil patterns. Figures 13 through 17 show that this is indeed the case.

In these figures elemental distributions in mass percent have been plotted on a logarithmic scale where total mass is the sum of all elements included in the analysis, not total mass collected. This mode of display makes it possible to span a broad range of concentrations, but has the drawback of overemphasizing the relative abundance of elements in low concentrations. Disregarding aluminum, sulfur and copper, the only elements in these figures with a relative mass greater than 1% are the crustal elements K, Ca, Ti, and Fe, which exhibit roughly the same pattern in both air and soil samples. This tends to confirm the hypothesis of soil as the major source of PM_{10} matter on windy days.

The justification for disregarding aluminum is the very high uncertainty entailed in its measurement by x-ray fluoresence. (This can be seen by perusal of the laboratory data of Appendix BA. The estimated uncertainties associated with aluminum are an order of magnitude greater than for other elements.) Copper should be ignored because of its very high representation in control samples of Anthony soil possibly because of contamination from brass beads used to break up the soil and suspend it in air during analysis (Appendix BB). Sulfur warrants special consideration, because it is a constituent of Sunland Park soil, but not Anthony soil. This is not unexpected, since the Sunland Park PM_{10} site is close to the Asarco copper smelter, the biggest source of air-borne sulfur in the region. Note that the composite Sunland Park soil sample shows not only a greater relative abundance of sulfur but also of As, Cd, Sb and Pb, which are commonly emitted by copper smelters. Of the six potentially toxic elements As, Cd, Sb, Se, Hg, and Pb, only Pb at an average of 0.04 mass percent was above the level of 0.005 mass percent in the Anthony fine soil fraction. The corresponding averages for Sunland Park were: 0.01 for

As, Cd, Sb; 0.07 for Pb; and less than 0.005 for Se and Hg. The role of sulfur is dicussed more fully in section 3.c below.

Note that two major crustal elements do not appear on any of the graphs, namely oxygen and silicon. The former because it is not detected by x-ray fluoresence and silicon because it is a major constituent of the quartz filters used to collect the PM_{10} particles and therefore interferes with the measurement of small amounts of silicon in particulate matter deposited on the filters.

The seven soil samples from each site were suspended in air and divided into fractions greater and smaller than about 2.5 microns using dichotomous samplers. The fine fraction distributions have been used in Figures 14 and 17 because the fine fractions are thought to be more like PM_{10} in size. (The coarse and fine fractions are similar chemically, so conclusions do not depend on this choice.) The fine soil distributions shown are averages of the seven separate soil distributions in the interest of simplicity. The variation among the individual soil distributions is small (on the order of 10%) for major elements, and the averages can be considered quite representative, as is demonstrated in section 3.c.

Available exceedance PM_{10} elemental distributions for low-wind days are compared with soil distributions in Figures 18, 19, and 20, where, for ease of comparison, both distributions have been plotted together. What is striking in all these figures is the similarity in the patterns of the elements characteristic of the local soil, namely K, Ca, Ti, and Fe. This suggests soil as the major source of particulates even when the air at La Union was comparatively still.

Figures 21 and 22 offer an explanation. These photos were taken toward the west on Church Street in Anthony within 50 feet of the PM_{10} monitoring site on a day (3/14/91) when the maximum hourly wind speed at La Union was 25 mph, below the criterion for an exceptional event as defined above. The dust blowing across the street appears to be a very localized disturbance not caused by vehicular traffic in this case, although there is so much loose dirt and sand on the street that it is conceivable that it could easily become air-borne during heavy traffic.

Piles of wind-blown soil collected along fences to the east and south of the Anthony site can be seen in Figures 23 and 24. Figure 25 shows tire tracks in the silt on the paved Anthony parking lot. In order to enter the monitoring compound at this site, operators must occasionally first remove silt and sand piled against the gate. The nature of the unvegetated soil at Sunland Park can be seen in Figure 12. The looseness of the soil at the Sunland Park site is evident in Figure 26.

3.c Crustal Fraction of PM_{10} Deposits. Soil appears to be the major component of PM_{10} at Anthony and Sunland Park on high-wind days, and possibly on low-wind days as well. The contribution of crustal material to each of the PM_{10} deposits analyzed by x-ray fluoresence can be calculated if we assume that certain elements in the PM_{10} deposits come only from soil. Looking at Tables 3 and 4, it is clear that soil tracer condidates are Al, Si, K, Ca, Ti, and Fe, these being the major components of soil from both Anthony and Sunland Park. Silicon cannot be used, because of its presence in quartz filters. Potassium is not a good choice, because it is a component of organic matter often used as a tracer for woodsmoke, and the uncertainty in the aluminum determinations is comparatively high. That leaves Ca, Ti, and Fe. There is no clear choice among these three based upon the data of Tables 3 and 4. Calcium is more abundant than iron or titanium, but the variability of titanium among the seven soil samples is less at Sunland Park and the variability of iron is less for Anthony soil samples. Since there is no clear choice, the fraction of soil in PM_{10} has been computed all three ways for all 25 analyzed PM_{10} deposits from Anthony and Sunland Park. Using three different elements as a tracer can be useful in detecting an error in the underlying assumption, namely that Ca, Ti and Fe in the PM_{10} deposits do in fact come only from soil.

The process here is very simple. From the average mass fraction found for Ca, Ti and Fe in the crustal samples, the crustal mass in PM_{10} deposits can be calculated if the Ca, Ti and Fe in the PM_{10} deposits come only from soil. The results are presented in Table 5 where the crustal contribution to total PM_{10} has been calculated using the appropriate averaged soil mass fractions for Ca, Ti and Fe. In all cases the calculated crustal fraction is on the order of 1 or less, which is consistent with the assumption that Ca, Ti and Fe are indeed satisfactory crustal tracers. For Anthony titanium gives the highest crustal fractions for the most part (column L), and for Sunland Park iron does (column M). This may reflect biases in in XRF determinations, or it may be that there is another source of Ti in Anthony and another source of Fe in Sunland Park. Simply averaging the three results (column N) shows clearly a division between high and low PM_{10} loadings with respect to crustal contributions.

For high (>75 ug/m^3) PM_{10} loadings the averaged crustal contribution is on the order of 65% for both Anthony and Sunland Park. For low (<20 ug/m^3) PM_{10} loadings the crustal contribution is considerably less, on the order of 30-40%. Presumably the representation of background aerosol is higher in low PM_{10} loadings. This is reinforced -- since the background PM_{10} aerosol is high in sulfate -- by the observation that the fractional contribution of sulfur (column O) in the low PM_{10} loadings is much higher than in the high loadings for both Anthony and Sunland Park. The sulfur mass fraction at Sunland Park is also consistently higher than at Anthony, as would be expected from its proximity to the Asarco smelter.

Of special interest in Table 5 is the fact that there is no clear division of computed crustal fraction between high- and low-wind days. Of the 10 Anthony filters with loading >75 ug/m^3, the average crustal fraction of the four filters corresponding to wind speeds greater than 15 mph is 70%, whereas those corresponding to lower wind speeds is 60%, not an overwhelming difference. Of the seven Sunland Park filters with loadings >75 ug/m^3 the same breakdown is 70% versus 68%, a negligible difference. This may simply mean that winds recorded at La Union are not representative of winds at Anthony and Sunland Park.

The last column of Table 5 has been included to find out whether there is any K enrichment in any of the samples. There is none obvious, suggesting no major contribution from wood or agricultural burning.

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TABLE 3

XRF RESULTS

ANTHONY SOIL, FINE FRACTION

ELEMENT MASS AS PERCENT OF TOTAL DEPOSIT

	T03	T05	T07	T09	T11	T13	T15	AVG	STD	STD/AVG*100
AL	3.168	3.752	3.168	9.344	5.976	8.347	3.947	5.39	2.56	47.6
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
CL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
K	2.235	2.068	1.659	2.073	1.850	2.152	2.122	2.02	0.20	9.9
CA	26.287	23.183	15.997	20.320	17.698	19.162	20.498	20.45	3.43	16.8
TI	0.286	0.231	0.203	0.151	0.224	0.198	0.263	0.22	0.04	20.0
V	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.00	0.00	264.6
CR	0.008	0.007	0.018	0.007	0.007	0.005	0.004	0.01	0.00	56.0
MN	0.108	0.126	0.084	0.026	0.085	0.059	0.097	0.08	0.03	39.3
FE	2.978	2.683	2.523	2.401	2.818	2.759	3.046	2.74	0.23	8.4
NI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
CU	4.917	3.442	1.286	2.028	1.274	0.431	0.379	1.97	1.67	84.9
ZN	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.00	0.01	259.9
GA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
AS	0.000	0.000	0.000	0.000	0.001	0.000	0.005	0.00	0.00	224.5
SE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.00	0.00	254.8
BR	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.00	0.00	147.9
RB	0.005	0.007	0.013	0.009	0.014	0.010	0.003	0.01	0.00	47.7
SR	0.104	0.078	0.065	0.061	0.073	0.059	0.071	0.07	0.02	20.8
Y	0.000	0.000	0.000	0.001	0.001	0.000	0.003	0.00	0.00	142.3
ZR	0.014	0.011	0.009	0.004	0.010	0.005	0.002	0.01	0.00	56.1
MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
PD	0.012	0.000	0.000	0.000	0.000	0.001	0.002	0.00	0.00	212.9
AG	0.052	0.000	0.000	0.006	0.005	0.014	0.000	0.01	0.02	170.9
CD	0.014	0.000	0.000	0.007	0.005	0.008	0.000	0.00	0.01	110.9
IN	0.031	0.000	0.012	0.000	0.000	0.000	0.000	0.01	0.01	193.1
SN	0.414	0.288	0.053	0.141	0.105	0.036	0.018	0.15	0.15	98.0
SB	0.000	0.018	0.000	0.000	0.000	0.003	0.000	0.00	0.01	229.4
BA	0.000	0.000	0.000	0.023	0.023	0.033	0.000	0.01	0.01	128.2
LA	0.000	0.000	0.000	0.000	0.000	0.057	0.000	0.01	0.02	264.6
HG	0.000	0.000	0.000	0.002	0.000	0.000	0.003	0.00	0.00	159.9
PB	0.100	0.098	0.037	0.020	0.027	0.023	0.005	0.04	0.04	87.7

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TABLE 4

XRF RESULTS

SUNLAND PARK SOIL, FINE FRACTION

ELEMENT MASS AS PERCENT OF TOTAL DEPOSIT

	1F	2F	3F	4F	5F	6F	7F	AVG	STD	STD/AVG*100
AL	6.355	4.584	4.950	11.003	6.815	6.932	5.511	6.59	2.14	32.5
SI	18.446	19.273	20.946	13.586	14.787	19.731	19.042	17.97	2.72	15.1
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
S	0.193	0.088	0.051	0.061	0.180	0.000	0.164	0.11	0.07	70.3
CL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
K	2.391	2.527	2.509	1.896	1.925	2.420	2.928	2.37	0.36	15.2
CA	8.700	11.235	8.008	5.976	7.251	10.373	10.272	8.83	1.90	21.5
TI	0.418	0.444	0.467	0.361	0.382	0.435	0.408	0.42	0.04	8.8
V	0.010	0.002	0.008	0.000	0.003	0.004	0.009	0.01	0.00	70.3
CR	0.023	0.050	0.026	0.156	0.073	0.044	0.110	0.07	0.05	70.8
MN	0.113	0.082	0.122	0.104	0.092	0.087	0.083	0.10	0.02	16.1
FE	3.306	3.351	3.700	2.960	2.554	3.064	3.120	3.15	0.36	11.3
NI	0.001	0.012	0.000	0.053	0.022	0.011	0.037	0.02	0.02	100.8
CU	0.057	0.053	0.068	0.153	0.112	0.046	0.061	0.08	0.04	50.0
ZN	0.075	0.052	0.138	0.091	0.069	0.042	0.045	0.07	0.03	46.1
GA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
GE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
AS	0.010	0.013	0.008	0.018	0.017	0.006	0.009	0.01	0.00	40.6
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
BR	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.00	0.00	127.8
RB	0.006	0.008	0.007	0.000	0.002	0.006	0.004	0.00	0.00	61.3
SR	0.052	0.061	0.044	0.032	0.028	0.038	0.074	0.05	0.02	34.8
Y	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.00	0.00	118.6
ZR	0.012	0.015	0.014	0.011	0.018	0.017	0.013	0.01	0.00	17.3
MO	0.000	0.005	0.000	0.021	0.003	0.004	0.006	0.01	0.01	127.3
PD	0.000	0.000	0.006	0.000	0.000	0.000	0.017	0.00	0.01	195.7
AG	0.000	0.000	0.008	0.003	0.008	0.000	0.010	0.00	0.00	104.8
CD	0.010	0.000	0.004	0.028	0.002	0.020	0.027	0.01	0.01	91.5
IN	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.00	0.00	264.6
SN	0.000	0.000	0.009	0.000	0.001	0.000	0.000	0.00	0.00	247.9
SB	0.000	0.000	0.003	0.049	0.000	0.000	0.000	0.01	0.02	247.6
BA	0.000	0.000	0.000	0.000	0.000	0.031	0.171	0.03	0.06	221.2
LA	0.000	0.084	0.000	0.000	0.241	0.113	0.045	0.07	0.09	127.6
HG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
PB	0.087	0.040	0.123	0.063	0.066	0.024	0.069	0.07	0.03	47.6

FILE:TABLE5

TABLE 5

CALCULATION OF CRUSTAL FRACTION IN PM10*

A	B	C	D	E	F	G	H	I	K	L	M	N	O	P
SITE	DATE	PM10 ug/m3	LA UNION MAX HR AVG WIND SPEED mph	S ug/m3	K ug/m3	CA ug/m3	TI ug/m3	FE ug/m3	CRUSTAL FRACTION FROM CA %	TI %	FE %	CRUSTAL FRACTION AVERAGE %	S/PM10 %	K/PM10 %
ANTHONY	3-03-89	297	31.2	0.338	3.393	18.394	0.531	6.020	30	81	74	62	0.11	1.14
ANTHONY	6-13-89	202	19.1	0.266	2.563	18.111	0.365	4.490	44	82	81	69	0.13	1.27
ANTHONY	12-24-89	176	4.4	1.267	1.836	13.881	0.219	2.632	39	56	55	50	0.72	1.04
ANTHONY	10-27-89	176	9	0.384	1.299	9.449	0.195	2.065	26	50	43	40	0.22	0.74
ANTHONY	5-28-89	150	20.0	0.394	1.893	12.293	0.307	3.385	40	93	82	72	0.26	1.26
ANTHONY	3-06-90	111	24.3	0.095	1.470	7.687	0.265	2.723	34	108	90	77	0.09	1.32
ANTHONY	10-3-89	104	5.8	0.705	1.397	9.968	0.000	2.553	47		90	68	0.68	1.34
ANTHONY	5-08-89	90	8.6	0.189	1.175	9.196	0.179	1.997	50	90	81	74	0.21	1.31
ANTHONY	12-14-89	89	11.7	0.251	0.910	6.865	0.140	1.569	38	72	64	58	0.28	1.02
ANTHONY	9-15-89	76	5.6	0.401	0.581	7.317	0.139	1.278	47	83	61	64	0.53	0.76
ANTHONY	12-30-89	17	6.3	0.069	0.202	0.364	0.000	0.178	10		38	24	0.40	1.19
ANTHONY	8-28-89	14	6.3	0.204	0.000	0.049	0.009	0.162	2	31	42	25	1.46	0.00
ANTHONY	3-14-90	13	18.5	0.113	0.000	0.445	0.022	0.222	17	75	62	51	0.87	0.00
ANTHONY	2-28-90	11	11.7	0.080	0.103	0.462	0.000	0.103	21		34	27	0.73	0.93
SUNLAND	11-23-89	221	9.2	0.474	3.368	7.667	0.632	7.167	39	68	103	70	0.21	1.52
SUNLAND	3-03-89	169	32.1	0.767	2.723	6.920	0.468	4.697	46	66	88	67	0.45	1.61
SUNLAND	12-23-89	141	3.4	1.716	1.087	10.234	0.159	1.707	82	27	38	49	1.22	0.77
SUNLAND	11-22-89	95	11.2	0.335	1.585	3.926	0.311	3.507	47	78	117	81	0.35	1.67
SUNLAND	2-19-90	91	26.5	0.398	1.285	5.233	0.000	2.297	65		80	73	0.44	1.41
SUNLAND	11-16-89	79	4.3	0.375	0.873	6.860	0.154	1.823	98	46	73	73	0.47	1.11
SUNLAND	6-23-89	77	9.3	0.801	0.836	4.203	0.183	1.934	62	57	80	66	1.04	1.09
SUNLAND	5-18-89	17	15.2	0.223	0.000	0.369	0.033	0.327	25	46	61	44	1.31	0.00
SUNLAND	4-02-89	17	19.4	0.081	0.022	0.396	0.040	0.357	26	56	67	50	0.48	0.13
SUNLAND	3-15-90	14	14.4	0.195	0.000	0.380	0.022	0.243	31	38	55	41	1.40	0.00
SUNLAND	2-09-90	10	13.9	0.219	0.065	0.241	0.000	0.128	27		41	34	2.19	0.65

*) Based on elemental soil fractions calculated in Tables 3 and 4.

All in all the elemental data support the notion of a major crustal contribution to high (>75 ug/m^3) PM_{10} loadings at both Anthony and Sunland Park. If one uses only Ti (Table 5, column L) as a tracer at Anthony and Fe (Table 5, column M) as a tracer at Sunland Park, the crustal component accounts for essentially all of the PM_{10} matter collected for high PM_{10} loadings.

It is important to keep in mind the uncertainties involved in such calculations. Table 6 shows the differences in percent obtained by Nuclear Environmental Associates in replicate XRF analyses. The averages are about 10% for Ca and Ti, and about 5% for Fe, suggesting that we should have a little more confidence in the results based on iron than on the other two elements. Even so, the uncertainty in the crustal contribution to PM_{10} is on the order of 20% at best, namely in the case of iron, because of the uncertainty in the mass determinations and the number of mathematical operations involved.* Uncertainty in the Ca and Fe results is at least on the order of 30% under the assumption of no bias.

TABLE 6

Precision of Elemental Determinations by XRF

	CA	TI	FE
PM_{10} SAMPLE 852	16.7	13.9	8.0
PM_{10} SAMPLE 866	6.0	12.8	5.7
PM_{10} SAMPLE 874	18.3	**	2.1
ANTHONY SOIL T07	5.1	11.0	6.0
SUNLAND SOIL T0284	6.5	8.9	0.9
AVERAGES	10.5	11.7	4.5

**) Below detection limit.

*) The crustal mass in PM_{10} is obtained (when Fe comes only from soil) by multiplying the mass of the Fe (or Ca, or Ti) in PM_{10} by the ratio of total soil mass to soil Fe. The crustal fraction in PM_{10} is then obtained by division by total PM_{10} mass. i.e.,

$$X_{crust} = M_{Fe,Pm10}*(M_{tot,soil}/M_{Fe,soil})/M_{PM10}$$

Since the uncertainties in these four factors are all about 5%, the overall uncertainty, obtained by summing individual uncertainties in percent, is about 20% for Fe.

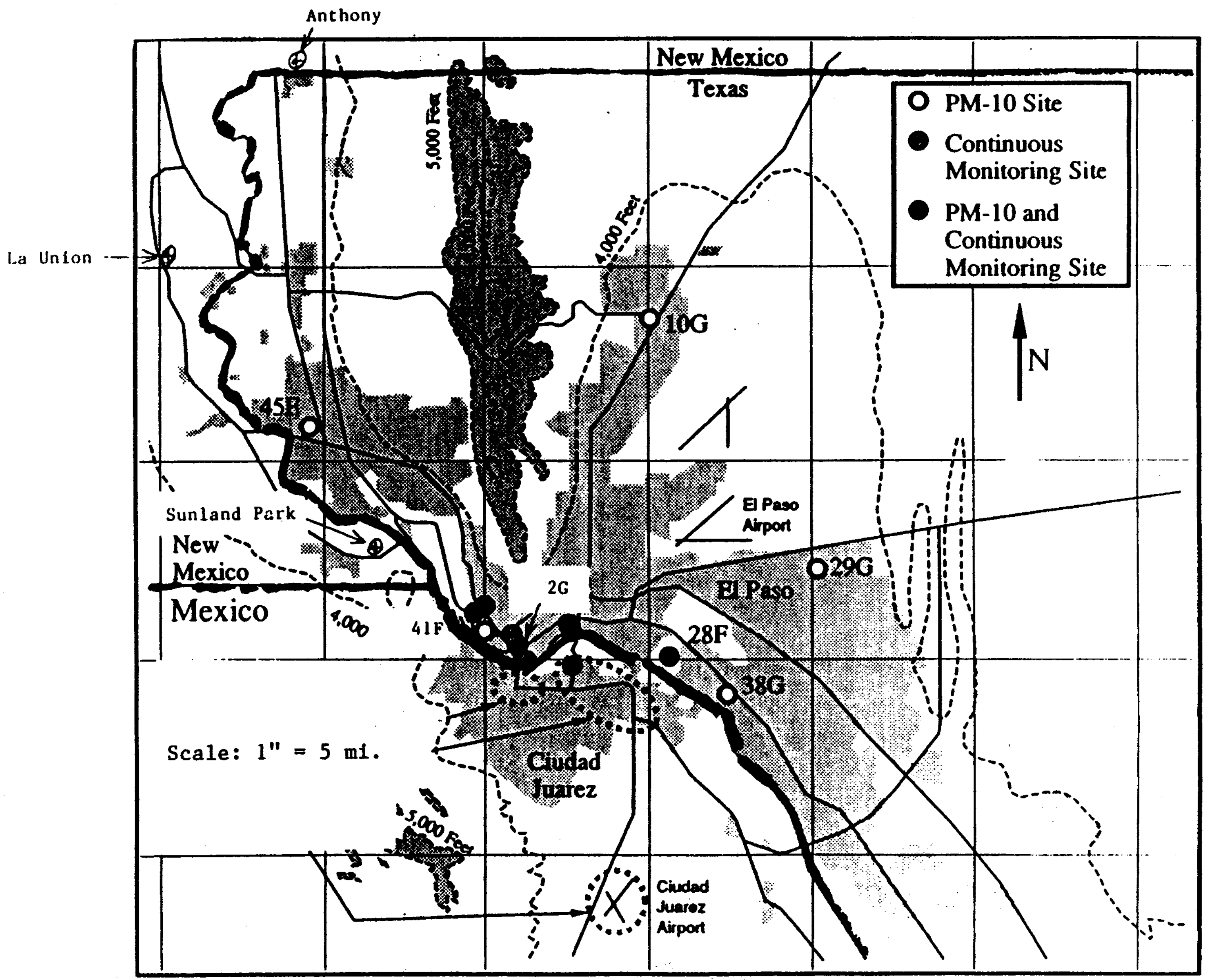
3.d Meteorological/PM_{10} Correlations. To obtain a comprehensive understanding of the dependence of PM_{10} loadings at Anthony and Sunland Park on other factors, it is of interest to plot various potential interacting factors against one another. Figure 27 is an XY plot of all simultaneous PM_{10} pairs recorded at Anthony and Sunland Park in 1989 and the first three quarters of 1990. The slope of the least-squares straight line based on the points in Figure 13 is about 1/2 whether or not exceedance values are included, indicating that PM_{10} concentrations at Anthony are roughly twice as high as at Sunland Park. Thus the problem is more severe at Anthony, as already suggested by the relative number of exceedances at the two sites.

Figure 28 shows maximum daily gusts plotted against maximum hourly averaged wind speeds for the same day during the first half of 1991 at Sunland Park. This demonstrates that there are many days at Sunland Park when gusts exceed 40 mph even though the maximum hourly average remains below 30 mph. Thus the dual definition of "exceptional wind event" as found in Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EPA-450/4-86-007) may not be appropriate for Dona Ana County.

Figure 29 tends to support this possibility. It shows all PM_{10} measurements at Sunland Park plotted against the maximum hourly average wind speed since the meteorological tower was installed at Sunland Park. The distribution is two-tailed with the highest PM_{10} concentrations occurring at low and high wind speeds. This conforms to the notion of high PM_{10} measurements being correlated with inversions (low winds) or high gusts. Interestingly, high values in the right-hand tail begin at an hourly average of about 24 mph, not 30 mph. As time goes on and more data accumulates, this relationship should continue to be watched.

4. Summary.

All in all the available data support the hypothesis that most high PM_{10} concentrations at Sunland Park and Anthony have a very large crustal component, whether or not winds are high at La Union. It is unfortunate that there is no coincident meteorological data for most PM_{10} exceedances at Anthony and Sunland Park. However, the relationship between wind speed and PM_{10} concentrations in Dona Ana County should become clearer as meteorological data from Sunland Park accumulate.



Anthony
La Union
New Mexico
Texas
PM-10 Site
Continuous Monitoring Site
PM-10 and Continuous Monitoring Site
N
5,000 Feet
4,000 Feet
10G
45H
El Paso Airport
Sunland Park
New Mexico
Mexico
29G
El Paso
2G
4,000
41F
28F
38G
Scale: 1" = 5 mi.
Ciudad Juarez
5,000 Feet
Ciudad Juarez Airport

Figure 1

Figure 2

Figure 3

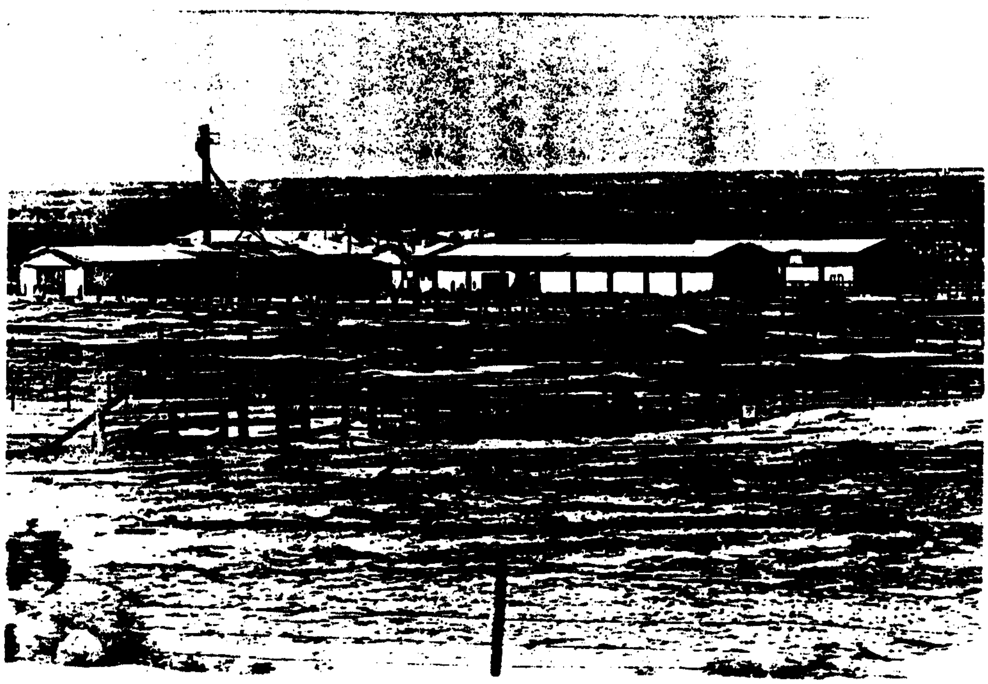


Figure 4

Figure 5

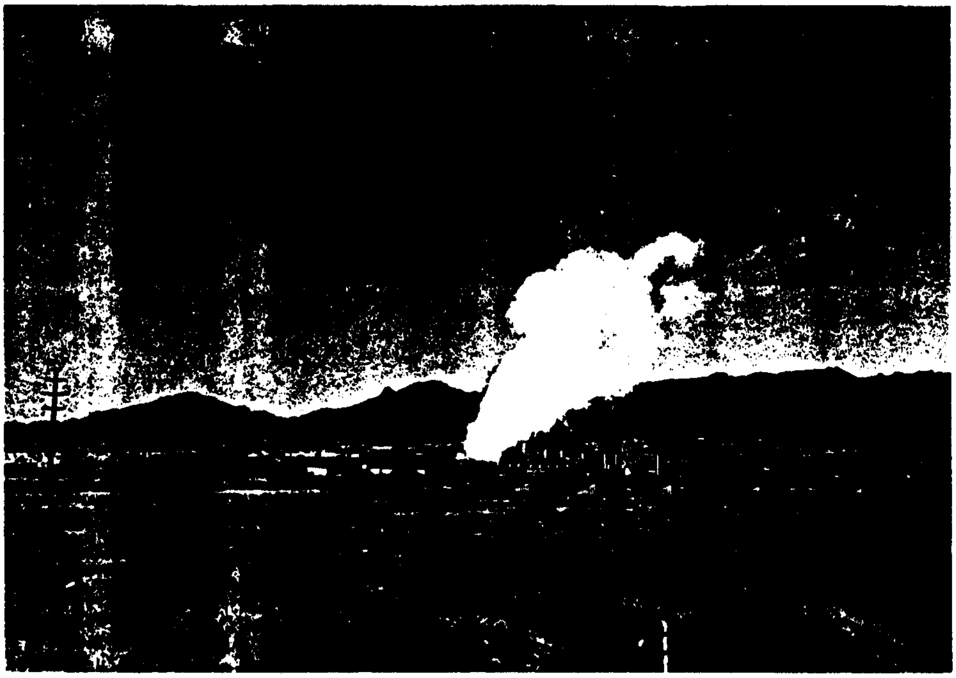


Figure 6

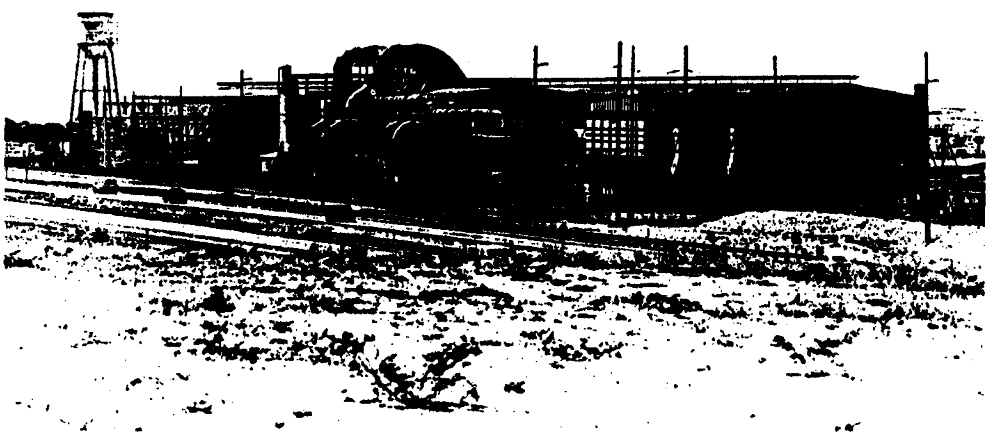
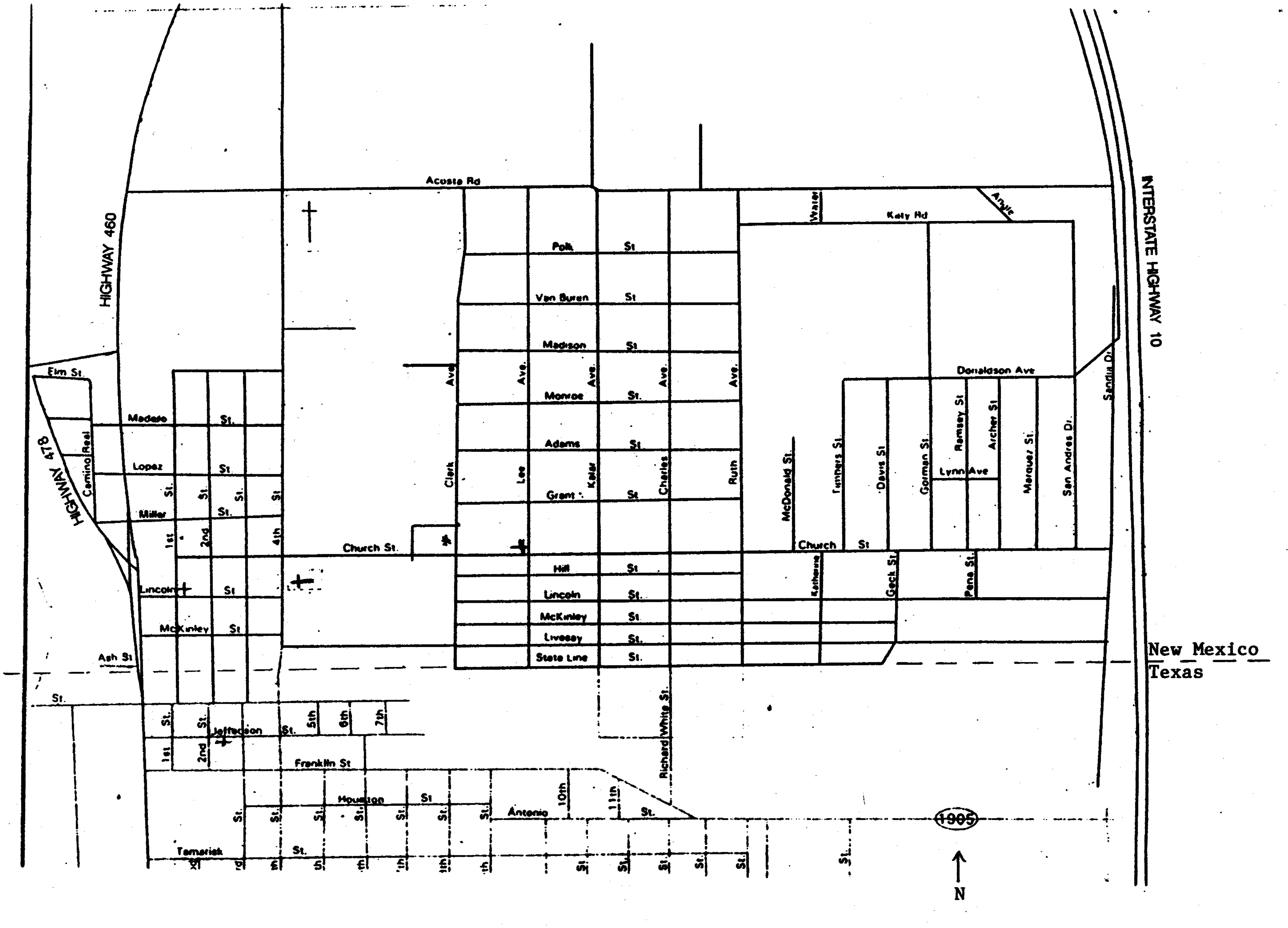


Figure 7



*)Monitoring site

Figure 8 - Street Map Anthony, N.M.

Figure 9

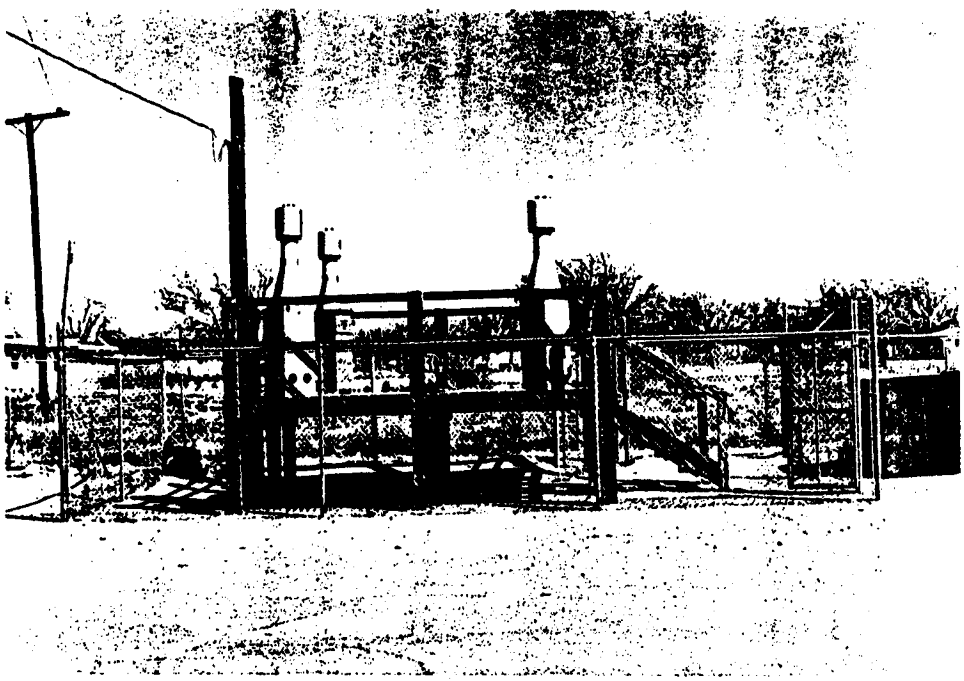


Figure 10

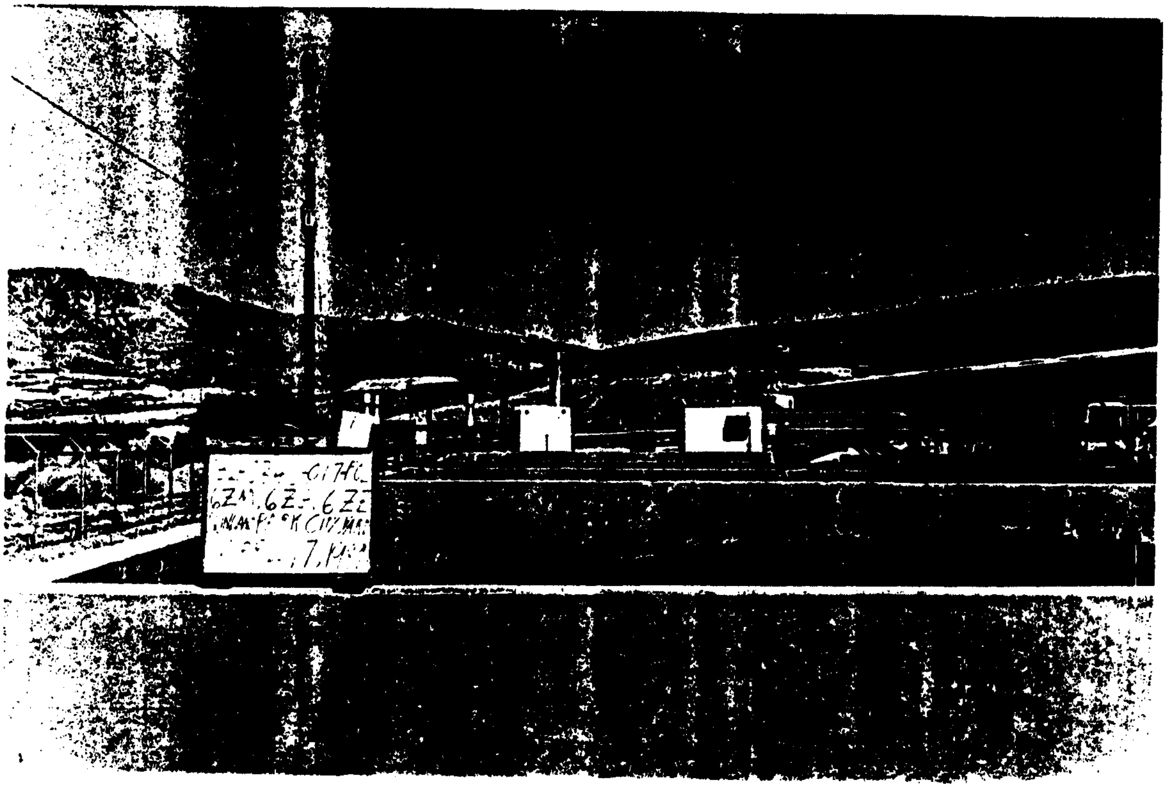


Figure 11

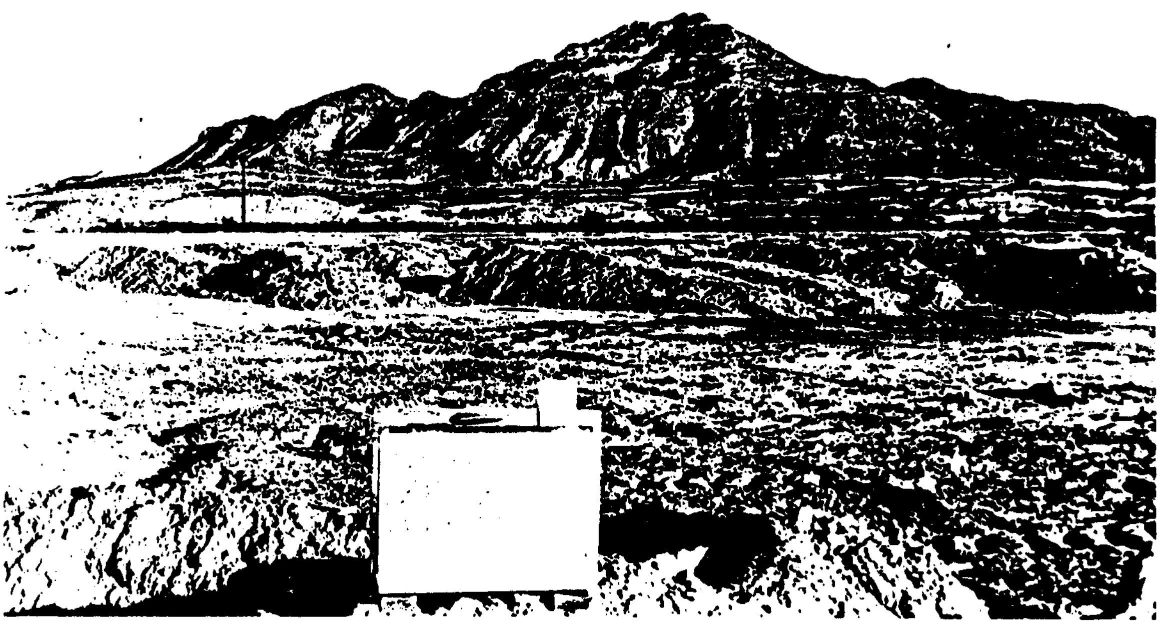


Figure 12

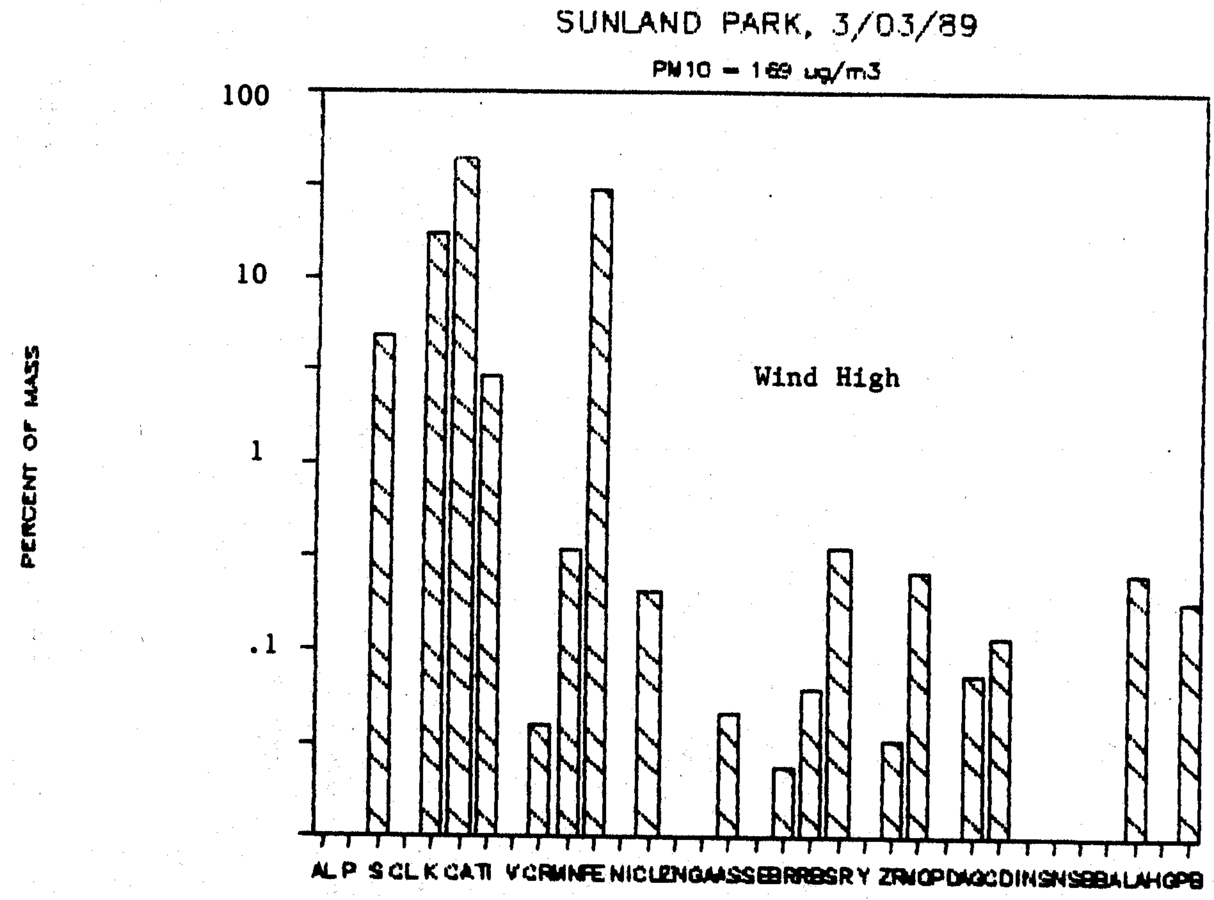


Figure 13

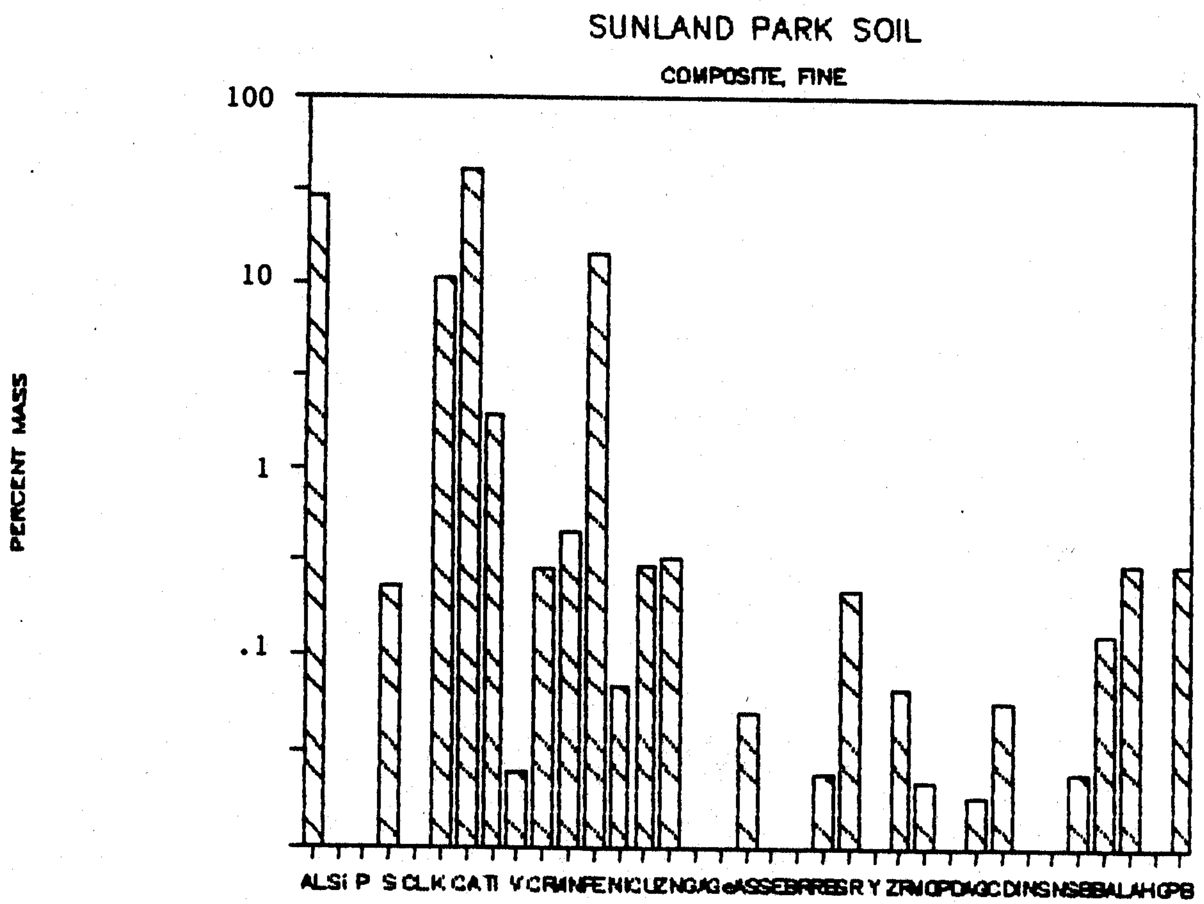


Figure 14

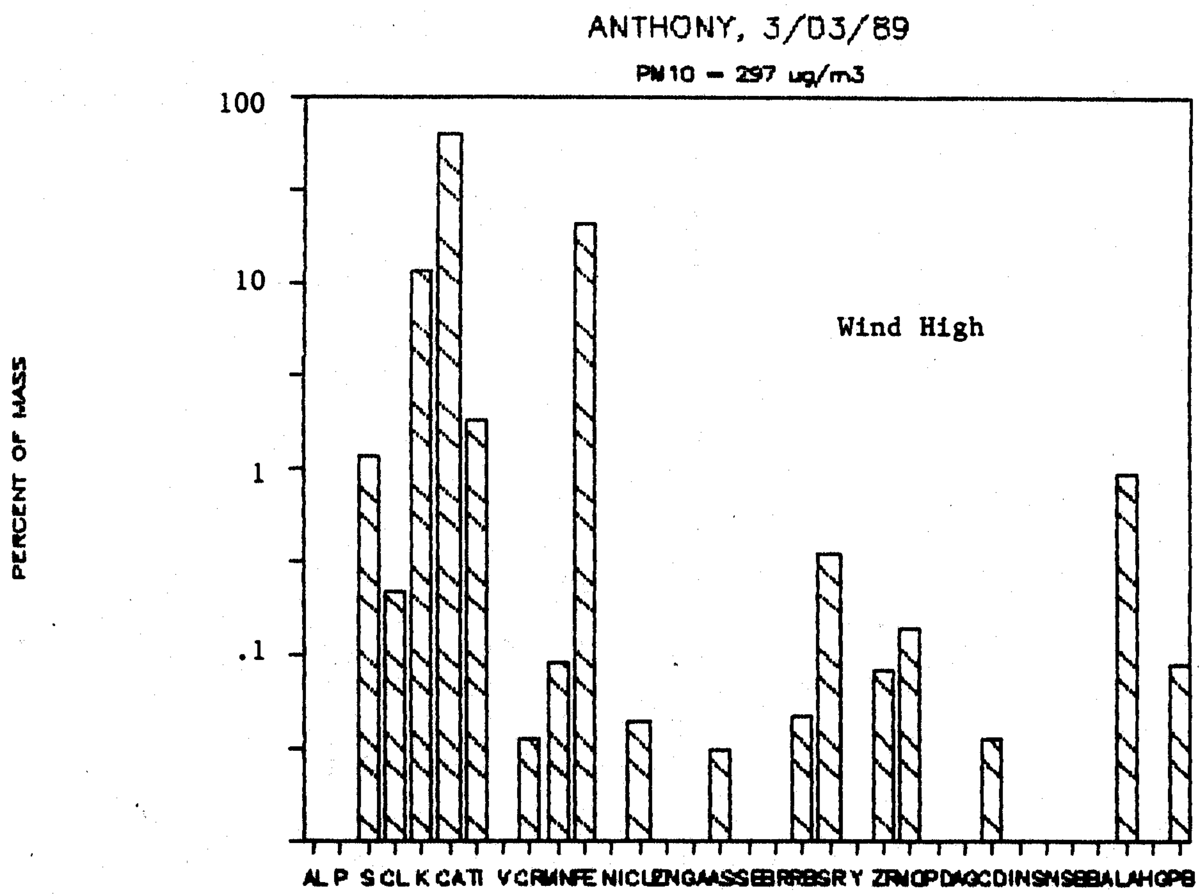


Figure 15

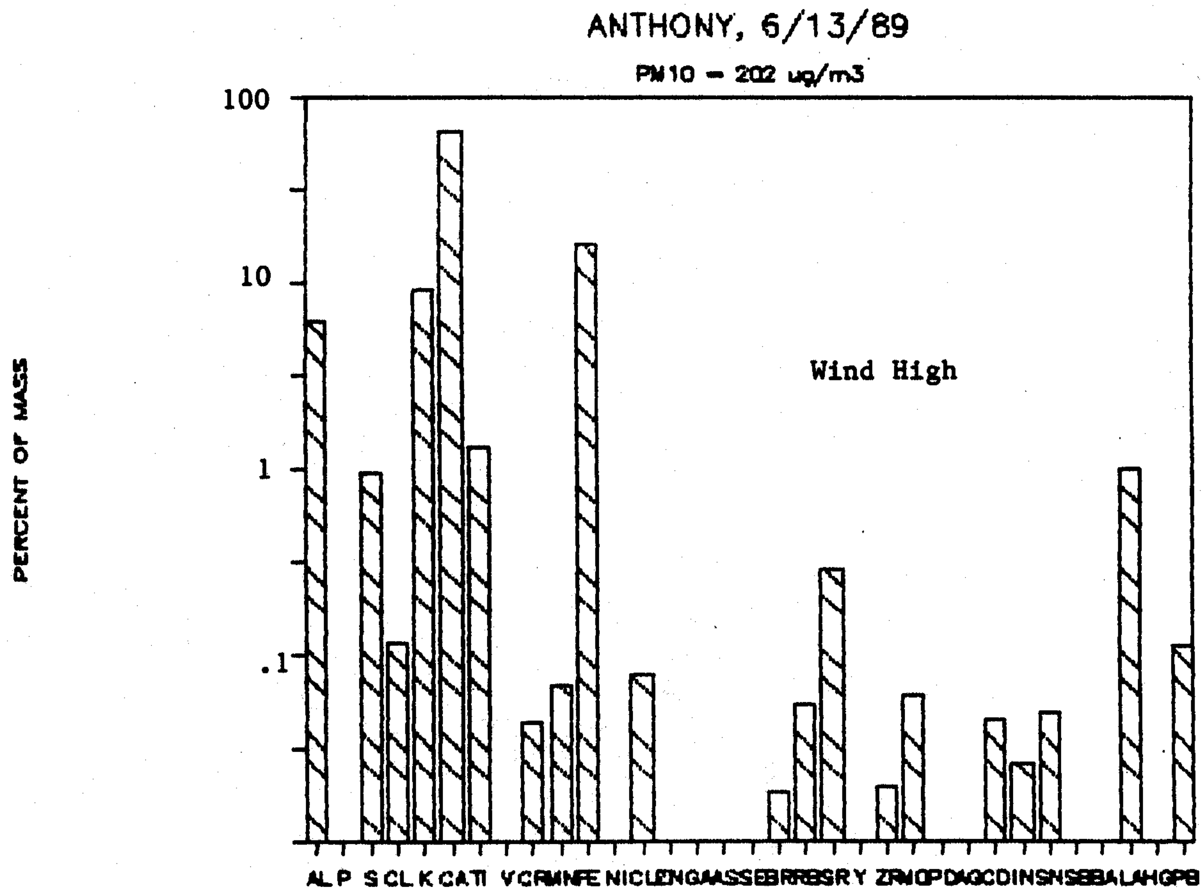


Figure 16

ANTHONY SOIL

COMPOSITE, FINE

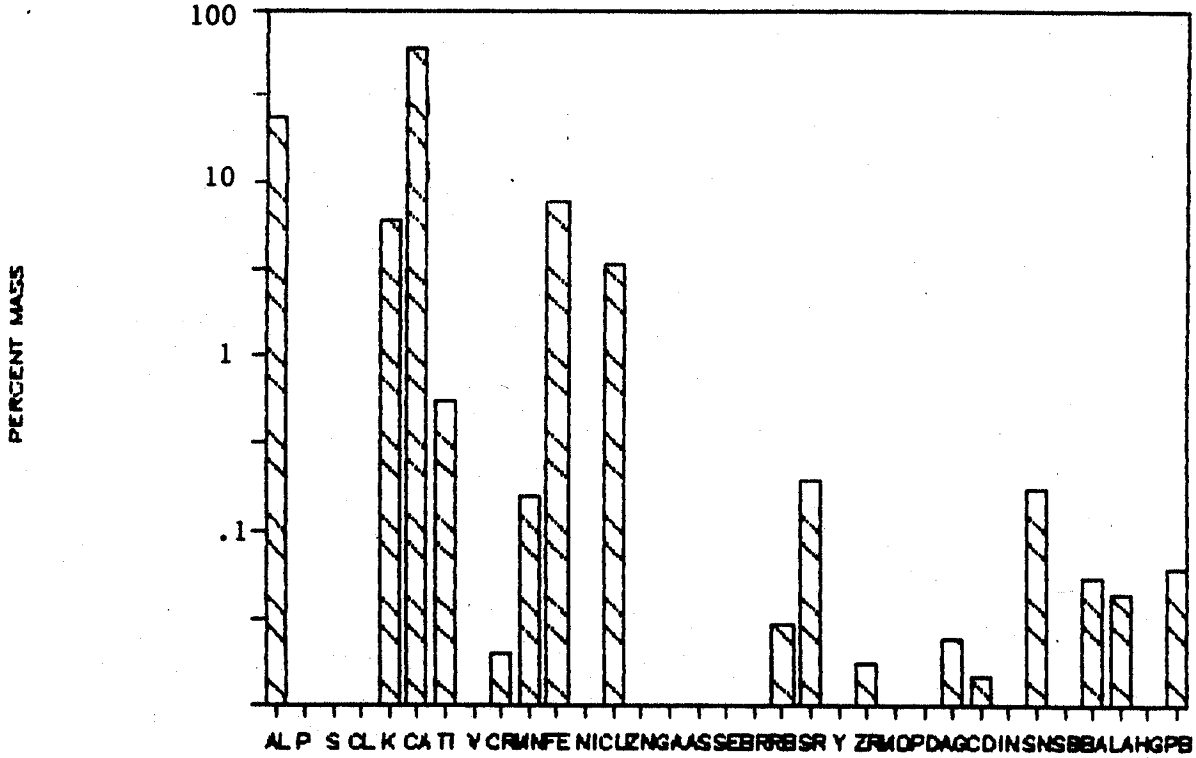


Figure 17

SUNLAND PARK, 11/23/89, AND FINE SOIL

PM10 = 221 ug/m3

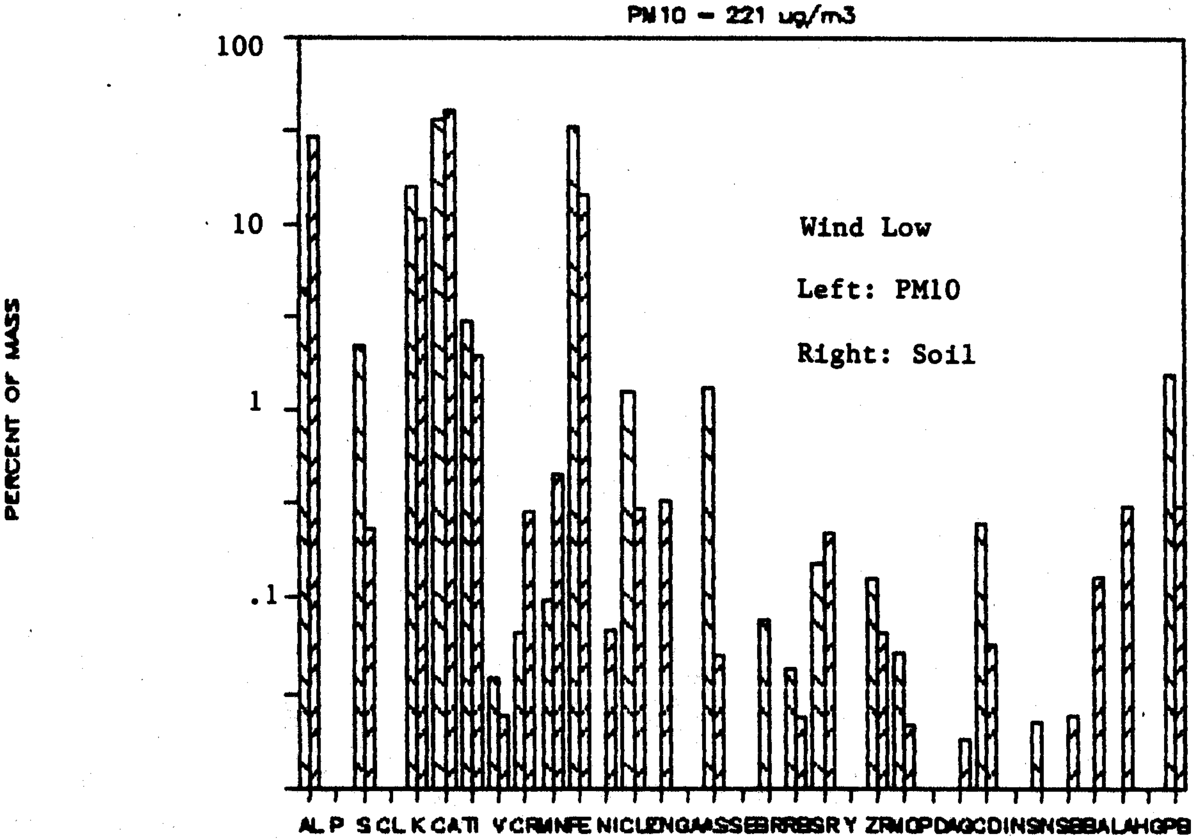


Figure 18

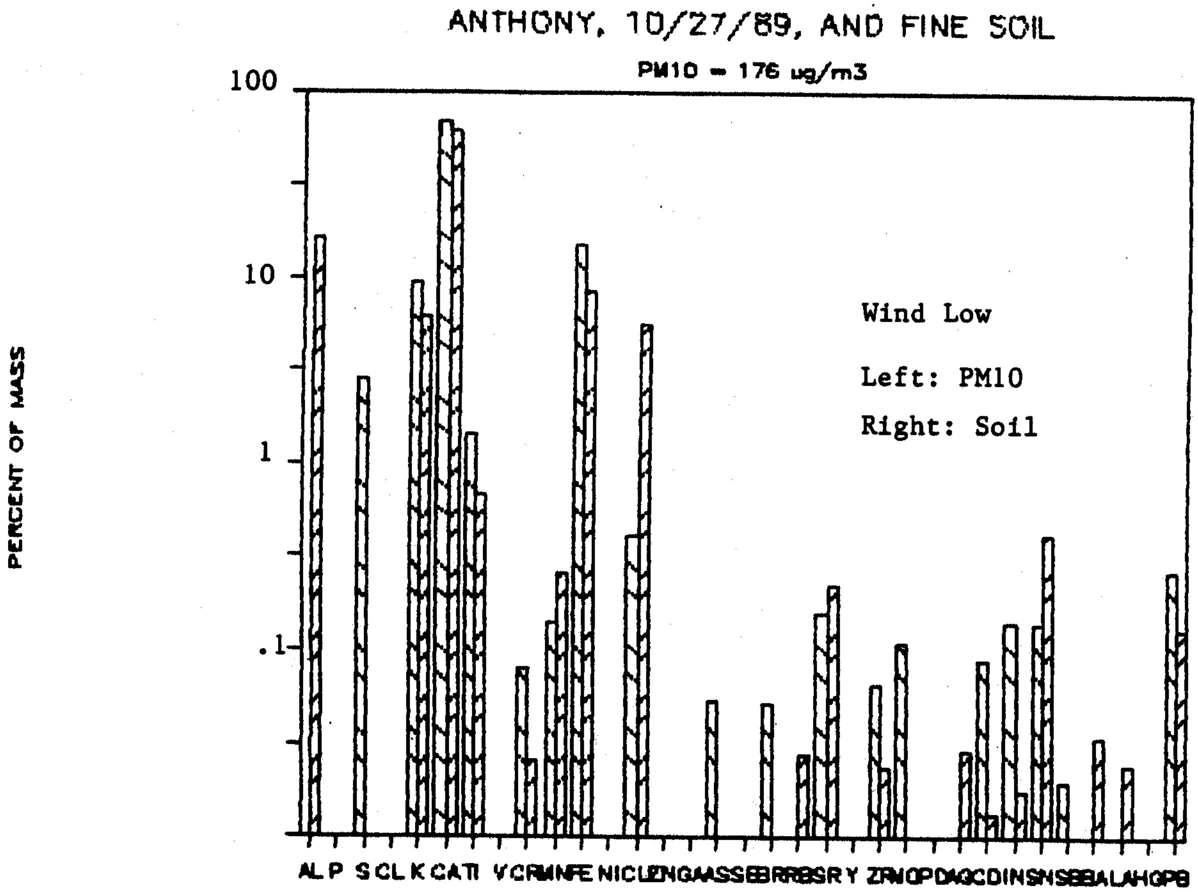


Figure 19

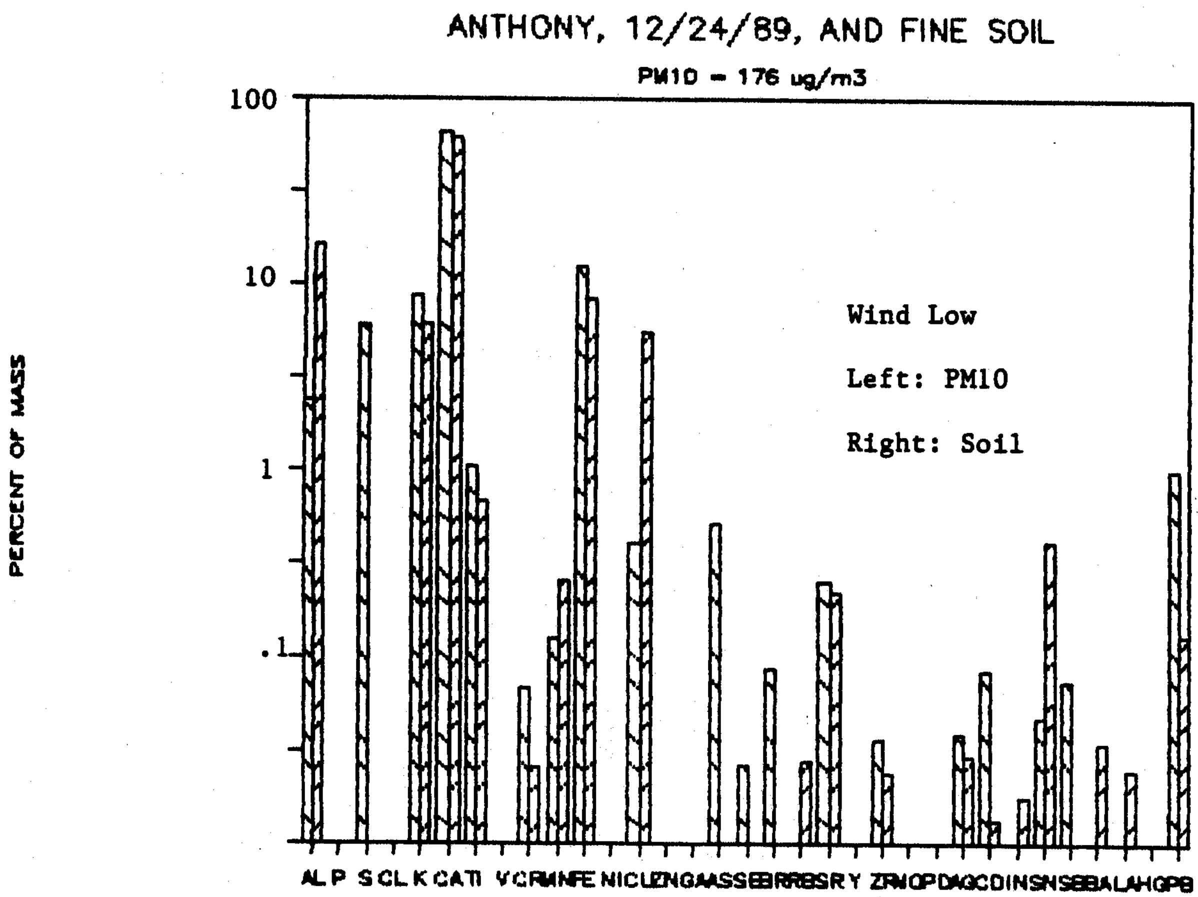


Figure 20

Figure 21

Figure 22

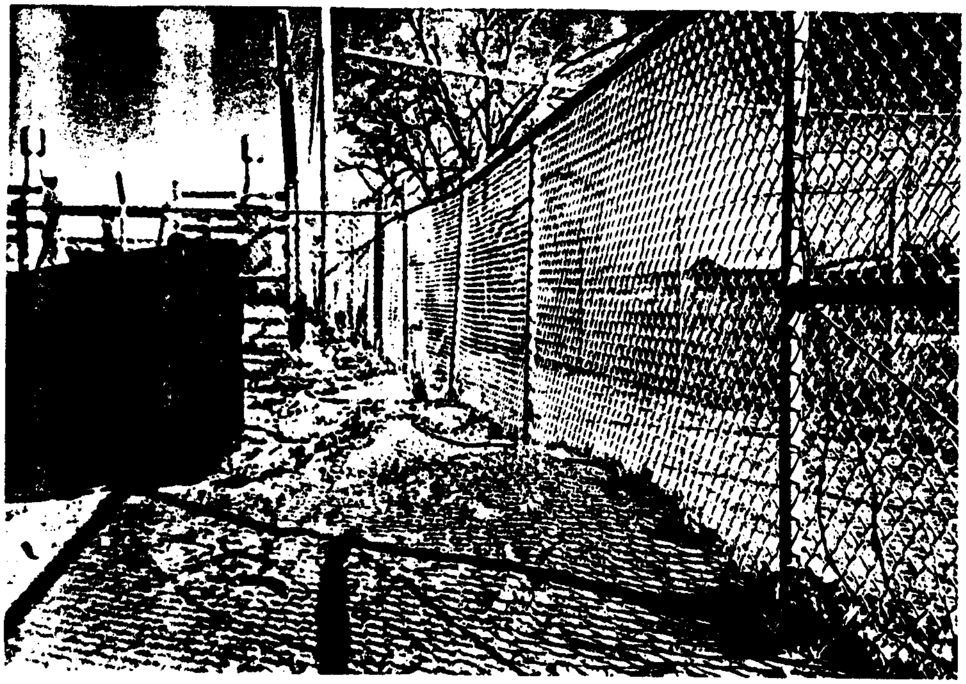


Figure 23

Figure 24

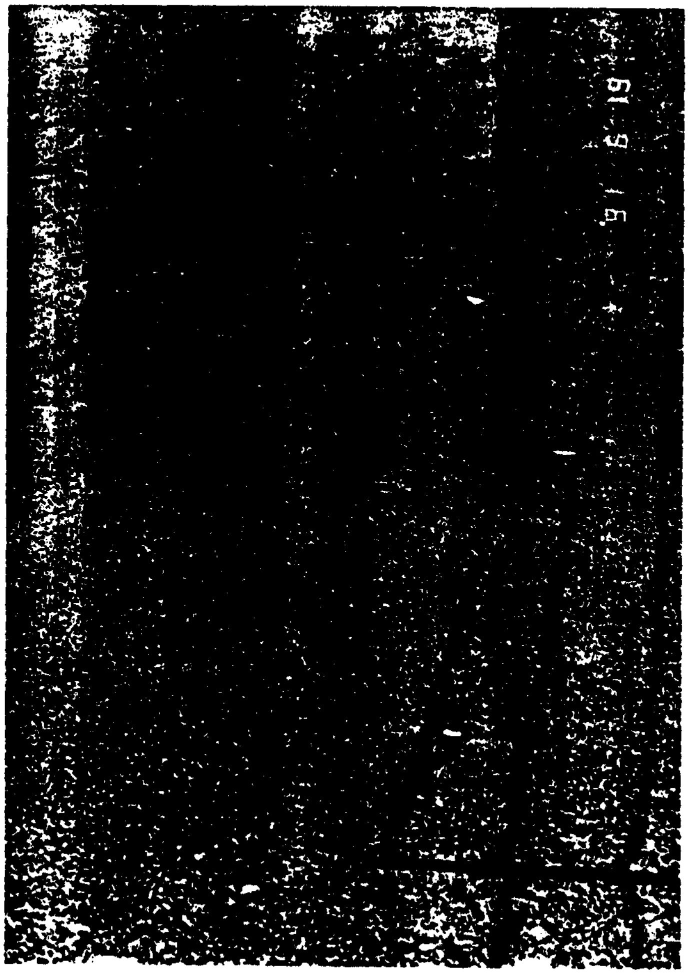


Figure 25

Figure 26

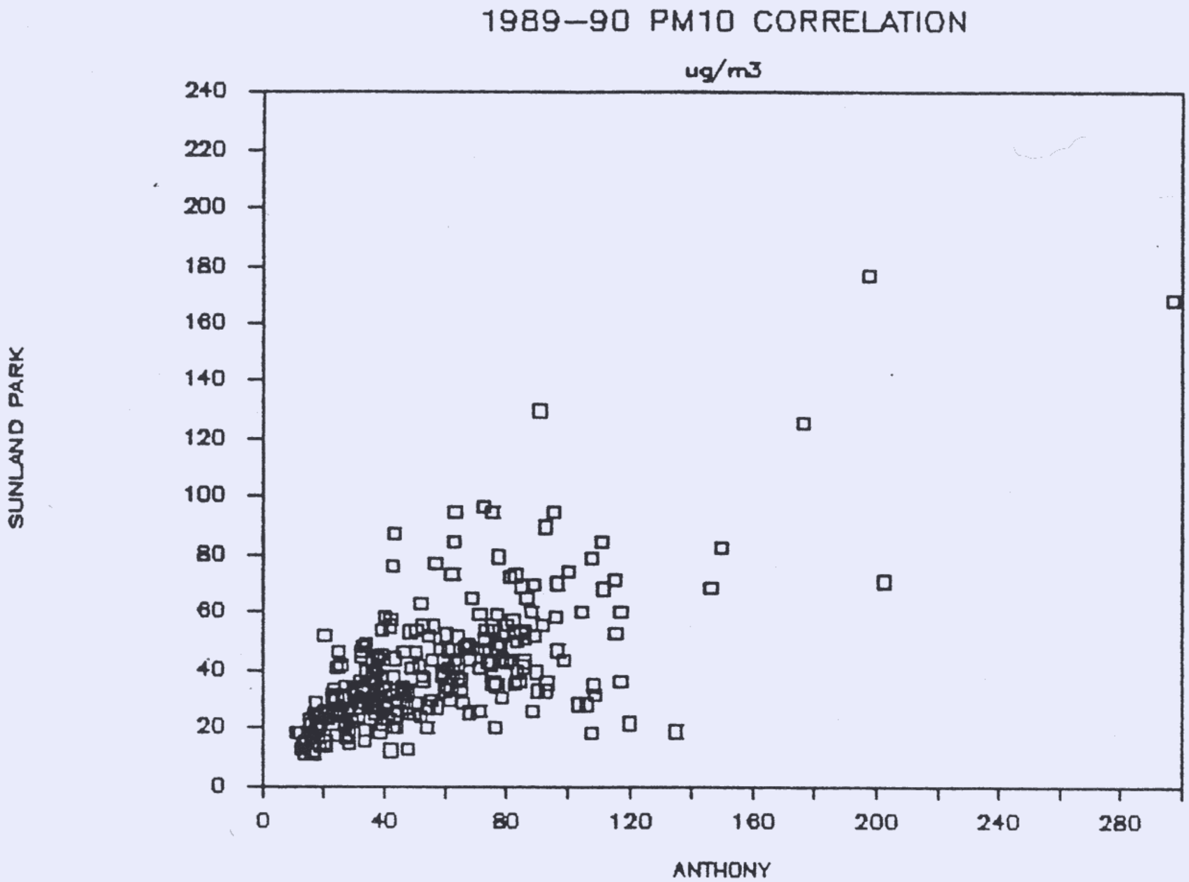

1989–90 PM10 CORRELATION
ug/m3
SUNLAND PARK
ANTHONY
0
20
40
60
80
100
120
140
160
180
200
220
240
280

Figure 27

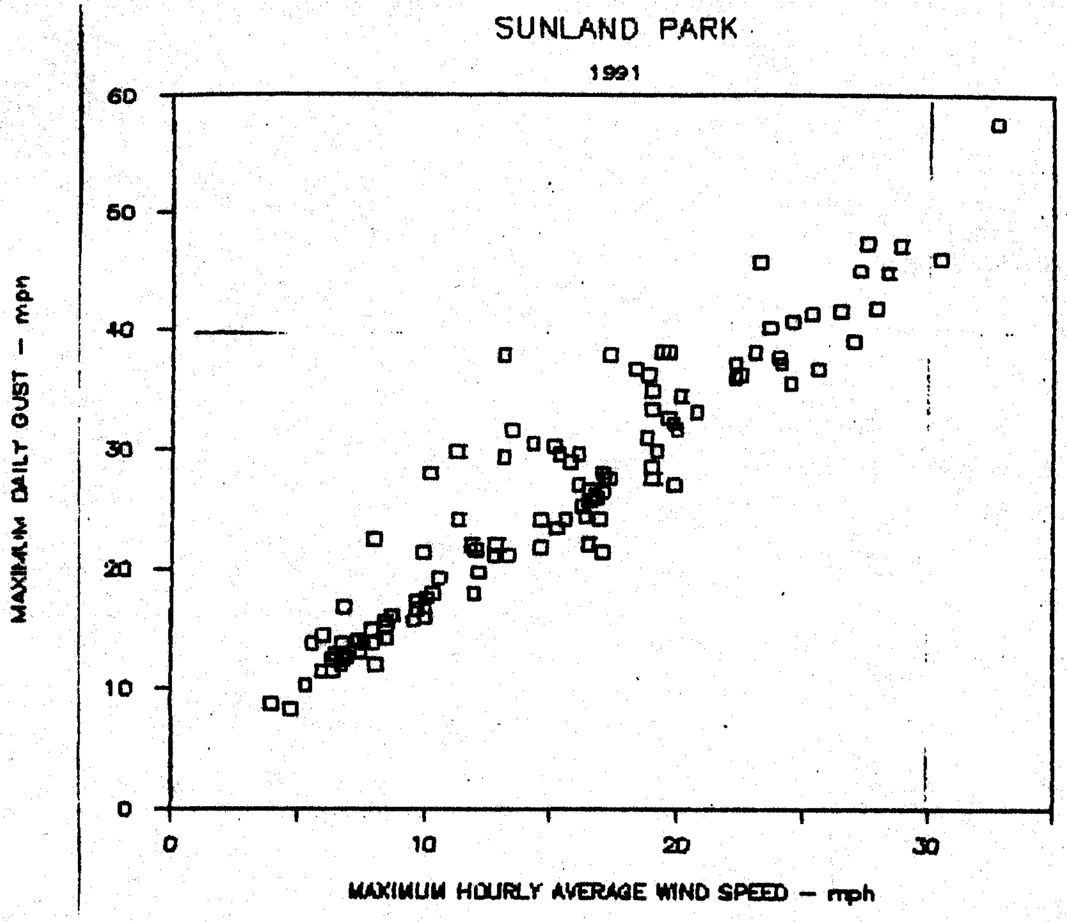


Figure 28

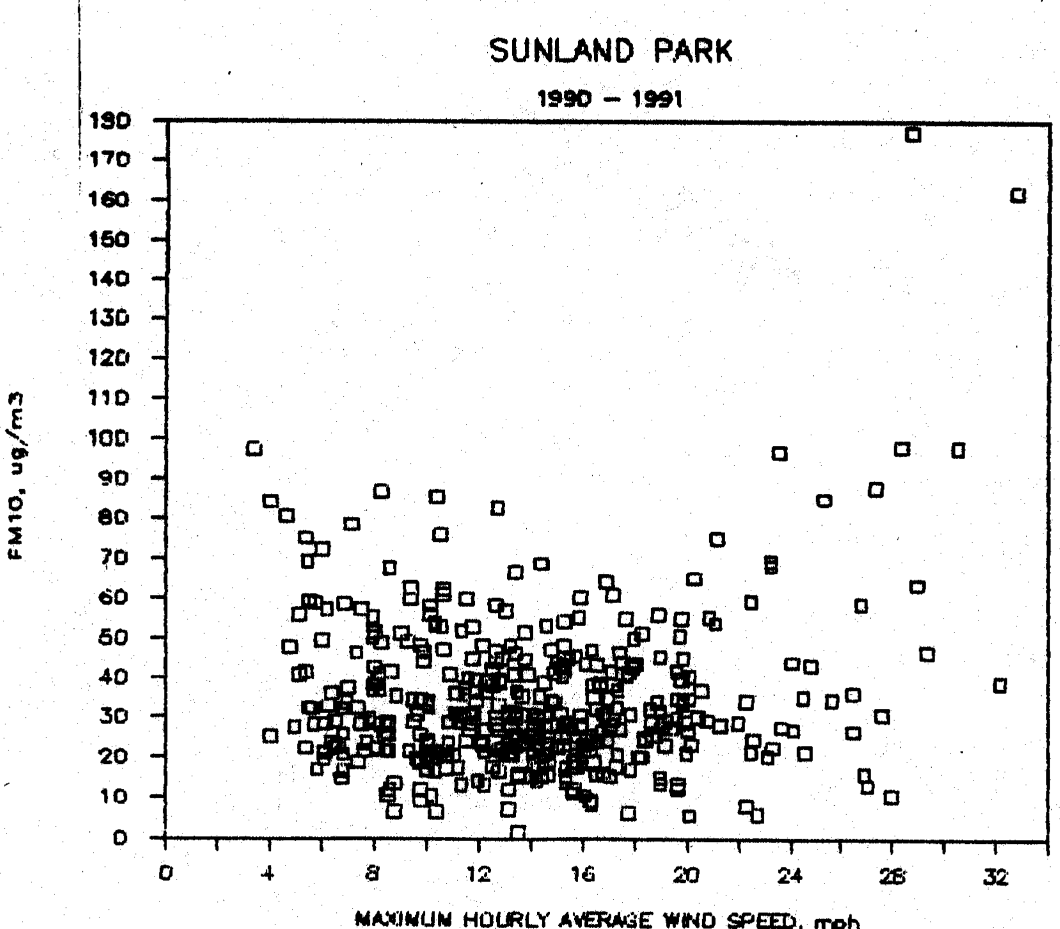


Figure 29

APPENDIX BA

REPORTS OF X-RAY FLUORESCENCE ANALYSES OF PM_{10} SAMPLES FROM ANTHONY, SUNLAND PARK, AND LAS CRUCES, NM BY NUCLEAR ENVIRONMENTAL ASSOCIATES

A total of 28 PM_{10} filters from Anthony, Sunland Park and Las Cruces were analysed by Nuclear Environmental Associates of Tigard, Oregon, using x-ray fluorescence. The numbers of filters from these three sites were 11, 11, and 3 respectively. All filters from 1989 exceedances were included. Other filters were selected to give a variety of filter loadings. Filters from the Las Cruces site were included simply to permit broader comparison.

In addition, two blank filters were analysed to provide background correction.

The PM_{10} filters were made of quartz which has the drawbacks of preventing useful microscopic analysis and preventing the determination of silicon, because of the large background contribution to the silicon signal from the filter.

DELETED FROM THIS COPY OF THE NM PM10 SIP REVISION ARE APPROXIMATELY 100 PAGES OF DATA FROM FILTER ANALYSES. THIS INFORMATION IS AVAILABLE UPON REQUEST FROM THE AIR QUALITY BUREAU (827-2859).

APPENDIX C

AIR QUALITY DISPERSION MODELING SUMMARY

Including Inputs, Outputs,

and Test Cases to Verify Model

October 24, 1991 (8:22am)
Robert L. Myers III

AIR QUALITY DISPERSION MODELING SUMMARY for ANTHONY PM_{10} SIP

Anthony PM_{10} Monitor Site
Section 35, T 26 S, R 3 E, Doña Ana County
UTM coordinates: 348.713 E, 3541.762 N, zone 13
Elevation = 3820 feet

Brief: In response to the EPA PM_{10} SIP call for the Anthony Station 6C monitor, point source modelling was performed by the Bureau using New Mexico and Texas sources of particulate emissions with a single model receptor representing the Anthony monitor. The results of this modelling indicate that these point sources did not significantly contribute to the federal PM_{10} violations registered at this monitor.

Ambient Impact from PM_{10} Emissions

Source(s)	Averaging period	max impact (ug/m^3)	day
federal standard	annual	50.00	n/a
all w/ old gins	annual	0.69	n/a
all w/ new gin	annual	0.56	n/a
federal standard	24-hour	150.00	n/a
1990 violation	24-hour	198.00	139
Asarco only	24-hour	1.93	259
Border + Proler	24-hour	0.67	259
4 old gins only	24-hour	1.37	218
new gin only	24-hour	0.25	253
all w/ old gins	24-hour	2.86	259
all w/ new gin	24-hour	2.82	259

Note: If the NMAAQS is more stringent than the NAAQS, only the NMAAQS is listed.

Stack Parameters: see Table I for complete list of input parameters.

Facility	UTMH (km)	UTMV (km)	Rate (lb/hr)
Anthony Gin (TX)	343.4	3540.6	0.98
Santo Tomas Gin	340.0	3560.0	0.98
Santo Tomas Short	340.0	3560.0	1.24
Chamberino Coop	343.0	3548.0	1.24
Mesa Farmer's Coop	346.6	3551.8	0.60
Ribble Asphalt	348.0	3521.0	1.70
Joab Incinerator	330.0	3567.0	3.00
Chevron (TX)	367.8	3515.3	15.6
El Paso Refining	367.1	3515.5	34.8

Stack Parameters: (continued)

Facility	UTMH (km)	UTMV (km)	Rate (lb/hr)
Proler Intx	349.3	3537.9	1.1
Border Steel	350.3	3537.5	5.0
Asarco	355.8	3517.0	128.5
Jobe-McKelligan	360.5	3520.0	14.3
El Paso Electric	353.6	3519.6	10.5

Model(s) Used: ISCST (dated 90346)

Number of Model Runs: two

Modeling Parameters: ISCST -- regulatory default (stack tip downwash, buoyancy induced dispersion, default vertical potential temperature gradients, default wind profile exponents, final plume rise), calms processing, flat terrain.

Receptor Grid: single receptor located at the Anthony Elementary School Station 6C monitoring site.

Met Data: One (1) year, 1990 Las Cruces Armory

Adjacent Sources: New Mexico particulate sources were obtained from 1) EPA Aerometric Information Retrieval System (AIRS) Quicklook retrieval, 2) data obtained from AQB's Control Strategy Section field trip, and 3) permit file research, including the permit application for Mesa Farmer's new cotton gin in Vado and the subsequent shutdown of four older gins. Texas particulate sources obtained from the Control Strategy Section of the Texas Air Control Board as used in their El Paso County PM_{10} SIP.

Two sets of emission rates were supplied by TACB - maximum hourly emission rates to determine maximum 24-hour impact and annualized emission rates to estimate the average annual impact. The modelling run done here used only the higher hourly emission rates to estimate both the 24-hour and the annual averages.

Results Discussion and Conclusion

ISCST was run with several source groups to show the impact of individual facilities. Based on this modelling run, it would appear that particulate point sources are not significantly contributing to the federal PM_{10} violations registered at the Anthony monitor.

The calculated annual PM_{10} average concentration for 1990 from all sources including the four cotton gins to be replaced by the Mesa Farmer's Coop gin) was 0.69 ug/m^3. With the new gin operational and the old gins shut down, the maximum annual PM_{10} concentration is estimated to be 0.56 ug/m^3.

The maximum 24-hour average concentration from all sources, including the older gins, was estimated to be 2.86 ug/m^3 on day 259 (Sunday, Sept. 16). The primary contributors to this maximum were Asarco, with 1.93 ug/m^3, and Proler Intx and Border Steel (the two closest TX sources to the monitor) with 0.67 ug/m^3. With the new gin operational and the old gins shut down, the maximum 24-hour PM_{10} concentration is estimated to be 2.82 ug/m^3.

Table I

Anthony PM_{10} SIP Point Sources

	Emission Rate g/s	UTMH	UTMV	Height meters	Temp °K	Velocity m/sec	Diameter meters
Anthony Roller Gin							
11	0.984	343700.	3540580.	6.10	327.8	10.36	0.46
Santo Tomas Roller Gin							
12	0.984	340000.	3560000.	6.10	327.8	10.36	0.46
Chamberino Coop Gin							
13	1.236	343000.	3548000.	6.10	327.8	10.36	0.46
Santo Tomas Short Staple Gin							
14	1.236	340000.	3560000.	6.10	327.8	10.36	0.46
Mesa Farmer's Coop Gin							
21	0.178	346600.	3551800.	6.02	322.1	10.20	0.45
22	0.420	346600.	3551800.	9.14	322.1	9.90	1.22
Ribble Asphalt							
101	0.214	348000.	3521000.	7.62	1311.0	7.62	1.01
Joab Sunland Park Incinerator							
102	0.378	330000.	3567000.	6.09	344.0	20.18	0.70
Chevron							
1001	0.004	367840.	3515380.	27.43	511.0	2.74	1.83
1002	0.033	367860.	3515340.	27.43	461.0	4.63	1.83
1003	0.029	367870.	3515330.	27.43	438.7	5.43	1.83
1004	0.019	367780.	3515140.	40.84	783.2	8.20	2.36
1005	0.013	367790.	3515150.	35.36	783.2	6.46	2.13
1006	0.004	367920.	3515330.	27.43	744.3	10.27	1.22
1007	0.006	368090.	3515280.	27.43	633.2	6.07	1.68
1008	0.003	367780.	3515390.	28.65	705.4	2.38	1.83
1009	0.002	367650.	3515650.	22.86	727.6	1.31	1.37
1010	0.002	368080.	3515190.	44.50	894.3	2.59	1.37
1011	0.001	368060.	3515290.	30.78	561.0	.31	1.83
1012	0.003	367760.	3515200.	31.09	683.2	2.77	1.37
1013	0.003	367760.	3515190.	31.09	663.7	3.44	1.37
1014	0.020	367740.	3515200.	45.72	466.5	3.81	2.67
1015	0.009	367730.	3515210.	45.72	455.4	1.61	2.67
1016	0.031	367890.	3515060.	41.15	444.3	8.75	1.83
1017	0.031	367600.	3515400.	7.01	699.9	4.57	.24
1018	1.842	367890.	3515080.	41.15	549.9	18.90	1.83
1019	0.002	368000.	3515080.	45.72	273.0	.01	1.00
El Paso Refining							
1101	0.114	367270.	3515420.	27.74	451.5	5.29	1.93
1104	0.109	367110.	3515530.	25.91	469.3	11.78	1.40
1105	0.021	367120.	3515520.	25.91	491.5	2.74	1.40
1106	0.003	367030.	3515590.	39.93	705.4	4.69	1.22
1107	0.022	367160.	3515650.	30.18	705.4	8.27	1.47
1108	4.212	367090.	3515570.	58.83	1086.0	24.45	1.62
Proler Intx							
1201	0.074	349330.	3537940.	14.33	293.2	20.12	.46
1202	0.040	349330.	3537940.	13.72	293.2	13.41	.59
1203	0.049	349330.	3537940.	3.05	273.0	.01	1.00
1203	0.001	349330.	3537940.	9.14	293.2	.06	.20
1205	0.001	349330.	3537940.	10.06	322.1	6.61	.73

Table I (cont.)

Anthony PM_{10} SIP Point Sources

	Emission Rate g/s	UTMH meters	UTMV meters	Height meters	Temp °K	Velocity m/sec	Diameter meters
Border Steel							
1301	0.030	350380.	3537140.	6.10	316.5	19.81	1.37
1302	0.100	350350.	3537560.	13.41	316.5	.01	.30
1303	0.030	350360.	3537680.	30.48	408.2	20.73	2.68
1304	0.104	350300.	3537550.	1.00	298.2	.01	.30
1305	0.104	350300.	3537550.	1.00	273.0	.01	1.00
1314	0.062	350250.	3537500.	3.05	299.9	3.05	.61
1315	0.012	350250.	3537540.	3.05	299.9	3.05	.61
1321	0.012	350250.	3537590.	6.10	1088.7	4.46	.91
1324	0.010	350280.	3537620.	16.76	1088.7	13.71	.97
Asarco							
1401	0.354	355860.	3516990.	8.36	308.2	.01	1.00
1402	0.096	355860.	3516990.	1.16	355.4	.01	1.00
1405	0.157	355870.	3516990.	9.14	273.0	.01	1.00
1407	0.020	355910.	3517020.	4.18	422.1	1.27	.32
1408	0.007	355700.	3517340.	5.29	505.4	1.75	.28
1409	0.010	355770.	3517260.	4.83	505.4	.94	.40
1410	0.013	355910.	3517010.	4.18	422.1	.64	.32
1411	0.020	355820.	3516950.	9.14	273.0	.01	1.00
1412	0.527	355690.	3517400.	31.09	338.7	17.68	1.68
1413	1.314	355290.	3517160.	39.93	305.4	9.75	2.74
1414	0.323	355790.	3517090.	13.72	299.9	.61	5.49
1415	0.137	355790.	3517090.	3.05	294.3	.01	.30
1416	9.335	355710.	3517210.	252.37	322.1	3.96	4.08
1417	0.162	356100.	3516930.	1.00	273.0	.01	1.00
1418	3.980	355760.	3517150.	20.12	294.3	9.75	2.29
Jobe-McKelligon							
1501	1.515	360300.	3521100.	1.22	273.0	.01	1.00
1502	0.017	360810.	3520730.	8.53	355.4	20.76	1.25
1503	0.003	360810.	3520730.	.91	273.0	.01	1.00
1504	0.636	360300.	3521630.	9.14	273.0	.01	1.00
1505	0.001	360890.	3520460.	6.10	273.0	.01	1.00
1506	0.028	360760.	3520680.	5.49	273.0	.01	1.00
1507	0.296	360540.	3521130.	3.05	273.0	.01	1.00
1508	0.080	360870.	3520940.	7.62	273.0	.01	1.00
El Paso Electric							
1601	0.378	353500.	3519600.	31.70	394.4	6.87	3.66
1602	0.416	353600.	3519600.	34.75	400.0	6.35	3.66
1603	0.530	353600.	3519600.	43.28	400.0	11.37	4.57

DELETED FROM THIS COPY OF THE NM PM10 SIP REVISION ARE 37 PAGES OF INPUT/OUTPUT DATA AND MODEL TEST CASES. THIS INFORMATION IS AVAILABLE UPON REQUEST FROM THE AIR QUALITY BUREAU (827-2859).

APPENDIX D

PM10 CONTRIBUTIONS FROM RURAL LAND SOILS AND OPEN BURNING IN THE ANTHONY AREA

Rural Land Derived Soils

Dona Ana County is located in the Rio Grande Basin in south-central New Mexico and shares its southern border with both Texas and Mexico. It is bordered on the west, north and east by Luna, Sierra, and Otero Counties respectively (see Figure 1). The general terrain can be characterized as flat with low lying mountains. The Rio Grande river traverses the county from the northwest corner to the southeast corner. Elevation ranges up to 9,012 feet (Organ Needle) with an average area elevation of 3,896. Dona Ana County is the sixteenth largest New Mexico county in land area covering 3,804 square miles and is the second most populated county with 135,510 people. The average population density is 35.6 persons per square mile but nearly half the population (62,126 or 46%) lives in Las Cruces, the county seat and third largest city in the state (Ref. 1, 1990 census data). With an annual precipitation of 8.49 inches and 350 sunny days annually, the climate in Dona Ana is semi-arid. Daytime temperatures range from an average of 41.6° Fahrenheit in January to an average of 79.5 in July and the annual average relative afternoon humidity is 27 percent. The prevailing wind in Dona Ana County is southwesterly (Ref. 2).

Industrially Dona Ana County is quite diverse. Of the county's labor force of approximately 60,000 people about 12,500 are employed in agriculture. The long growing season of 200 days, plenty of irrigation water, good soil along the Rio Grande river valley, and a high degree of solar insolation make this county so productive agriculturally. Dona Ana County is ranked number one among all New Mexico counties in agricultural production. Receipts for 1986 totaled $171 million dollars, amounting to about 17 percent of the state's cash receipts from farm commodities. Receipts from the dairy industry alone totalled nearly $56 million, making it the largest agricultural industry in Dona Ana County.

Chiles and pecans grow well on the Rio Grande flood plain. New Mexico leads the country in chile production and nearly half of its annual crop is grown in Dona Ana County. Pecans are grown in large orchards in Dona Ana County which boasts the largest pecan orchard in the world at Stahman Farms, Inc. In 1986, the combined value of the chile and pecan crops from Dona Ana County was estimated to be in excess of $40 million dollars (Ref. 2). Dona Ana County farmers and ranchers also produce cotton, lettuce, onions, alfalfa, beef, and poultry. With the exception of ranching, most of the agricultural activity in Dona Ana County takes place exclusively in the Rio Grande river valley on the broad flood plain.

The reason nearly all prime and important farmlands are located along the Rio Grande river (see Figure 2) is because that is where soils suitable for economic plant production have formed and water is available for crop irrigation. Outside of the narrow Rio Grande valley area soils are relatively poor for crop production and water is not available for irrigation. The rural lands in Dona Ana County fall into two large generalized categories whether you talk about water availability (irrigated and non-irrigated), land use (cropland and rangeland), or ownership (private and public). These categories generally correspond to and are primarily the result of the two general soil types found in Dona Ana County: the well developed rich soils and the young, poorly developed soils. Compare Figures 2 and 3 and the close agreement of location of prime and important farmlands with the location of the best soils for economic plant production becomes apparent. The remaining rural lands are rangeland nearly all of which is state or federally owned (86% of Dona Ana County) and characterized by relatively poorly developed soils. For the purpose of this report rural lands in the Anthony area of Dona Ana County will be discussed categorically as rangelands and crop lands.

Rangeland Derived (Soil) PM10 Contributions

Eighty six percent of Dona Ana County is state or federally owned. Nearly all these public lands lie outside of the Rio Grande river valley and are here termed rangelands. The Bureau of Land Management oversees resource activities through policy and guidance on these lands. The BLM has participated in the National Cooperative Soil Survey Program with the United States Department of Agriculture (USDA) Soil Conservation Service (SCS). The most recent soil survey of Dona Ana County was issued in 1980. The survey culminated from fieldwork done from 1961 through 1975 (Ref. 3). The work was quite thorough in identifying and describing soil types for all of Dona Ana County. Presently soil surveys and soil interpretive data continues to be updated for use in planning, support and implementation of resource activities. The BLM emphasizes prevention of deterioration as well as conservation of soil resources. The Conservation Reserve Program affords some protection as some highly erodible lands aren't suitable for agricultural leases or desert land entry petition applications.

Anthropogenic activities on the public lands that may impact air quality are reduced through mitigation measures developed on a case-by-case basis. For instance, road construction projects or sand and gravel extraction projects are required to have fugitive dust abatement programs as part of their permits or contracts.

The breakdown of ownership of the rangelands in the Anthony area outside of the Rio Grande Valley is illustrated in Figure 4. As can be seen, the vast majority of rangelands are state and federally owned and under BLM management. The BLM leases areas of range to private operators for grazing. Those allotments near Anthony are depicted in Figure 4. As the soils support limited vegetation, very few animal units per section (640 acres) are allowed under the lease. The average carrying capacity for allotments in the area is less than 2 animal units per section per year. Of course, animals are not kept on the same pasture areas year round but overall estimates are made from analysis of number of animal units on acreage over the seasons as they are pastured. This limiting of grazing is in the best interest of the private operators and landowners as well as the BLM. Overgrazing can have a deleterious effect on the proliferation of desirable forage species and associated vegetative ground cover resulting in increased wind erosion of the loose unstable soils.

However, if grazing is controlled as it is on both public and private rangelands, it has a beneficial effect on soil resources. The Southern Rio Grande and Las Cruces/Lordsburg Management Framework Plans analyses done on impacts from grazing found that benefits included long-term increased ground cover, increased production of desirable forage species and reduced wind erosion (Ref. 4).

Wind erosion of the rangeland soils results in seasonally high concentrations of particulate matter in the Anthony area. During the spring, especially large dust storms occur entraining and depositing particulate matter forming dunes, shearing off vegetation at ground level (particularly young seedling plants), and blackening the sky. The soil is easily entrained in high winds. The ease of entrainment is due to low soil moisture, poor vegetative cover and loose soil structure. These factors are understandable when the soil characteristics are studied and the conditions of soil formation are examined.

The transformation of rock into soil is influenced primarily by climate, topography, parent material, vegetation, and time. Soils formed in the Desert Southwest owe much of their character to the absence of regular rainfall or humid conditions. Soil moisture allows for chemical weathering processes of solution, oxidation and carbonization as well as physical weathering processes associated with freezing and thawing actions. Desert soils are poorly developed or young in comparison to most soils because of the lower degree of chemical weathering process exposure. Most weathering processes occurring in desert or arid soils are physical weathering from extreme diurnal temperature range, and the subsequent fracturing due to expansion and contraction, and abrasion due to sand and wind. Clay formation is a slow process as chemical dissolution of minerals and material transport within the soil only occurs during infrequent rains. Another aspect of low moisture content (low rainfall and high evapotranspiration rate) is sparse density of plants, animals and microorganisms. This results in a very small amount of organic matter accumulating in the soil as a product of microorganisms decay of plant and animal residues (Ref. 5).

Organic matter normally resides in the upper horizon of a soil's profile. The profile is a vertical cross section through the soil. Humid soils normally have well developed horizons or layers. Soils of the Desert Southwest (Anthony is technically in the northern portion of the Chihuahua Desert) are not as distinct in their profile as those formed in the floodplains of river valleys or areas with extensive irrigation. The discernible differences in well developed soil horizons are structure, color, texture salt accumulation, alkalinity/acidity, etc. Soil profiles in the Anthony area rangelands exhibit very loose structured sand to loess constituency. Sulfur is prevalent in the soil as is lime, gypsum and other salts (Ref. 6). These soils are various aridisols, entisols (psamments) and fluvents easily entrained due to sandy loess loam textures (Figure 5), loose structure (Figure 6), and poor vegetative cover (Figures 5, 7 and 8). Further evidence of low soil development is the color of the rangeland soil being light yellow to red indicating little organic matter and a fair amount of iron oxides. Wind erosion is evidenced by dune formation. Figures 8, 9, 10, 11 and 12 all show dunes formed in the rangeland near Anthony. Figure 8 shows typical small dune formation around vegetation (creosote bush and yucca). Figures 9, 10, 11 and 12 show less common massive dune formation. Figures 9 and 10 are an interesting example of dune progression. The railroad tracks (arrow) were in commercial use forty years ago. Now they disappear into the large dunes in the area intermittently. These photographs illustrate how poorly the desert climate and soil supported vegetative cover inhibits wind erosion of the rangelands. Clearly control strategies less than onerous in design are not feasible for control of PM10 contributions from the rangelands.

In an attempt to estimate PM10 contributions from the rangeland area source the Modified Windblown Dust Equation (Ref. 7) was used. The PM10 wind erosion losses (E) were estimated to be 150.5 tons/acre/year by this equation (Fig. 13). Multiply this factor by the number of acres of open range and the potential for rangeland area source ambient PM10 contributions becomes more than adequate to account for recorded exceedances. It is notable that the climatic factor (C) supplied in the EPA document Control of Open Fugitive Dust Sources is the highest in the country at 200. This is consistent with the effect of low rainfall and high evapotranspiration rates on soil structure and texture.

Cropland Derived (Soil) PM10 Contributions

Dona Ana County has 96,030 acres of irrigated land (Ref. 8). Nearly all of this land lies within the Rio Grande river valley and is privately owned. Wind erosion of croplands is much less severe than wind erosion of rangelands. There are several reasons for this. The foremost is that irrigated soils are more well developed in structure and texture and have some degree of moisture at all times as opposed to dry desert soils. Irrigated soils are generally more clayey and alluvial in origin due to their proximity to the river valley flood plain. They are more mature as chemical weathering has had more influence in their development. They have more distinct discernible horizons in their profile and the top soil is cloddy and contains much more organic matter (see Figures 14, 15, 16 and 17).

Another reason for less wind erosion of croplands in the Anthony area is the conservation measures employed by farmers. Not only are economic crop production plants much better vegetative cover but tilling practices are consistent with conservation guidelines outlined in the conservation requirements of the Food Security Act. Appendix E is a letter and attachments from the Albuquerque Soil Conservation Service (SCS) supplying soil data on croplands in Dona Ana County and verifying that all mapped units in Dona Ana County fall into the Highly Erodible Land Listing. Appendix F is a letter from the Las Cruces office verifying compliance with Food Security Act provisions on all croplands in Dona Ana County. These conservation measures are intended to preserve top soil and therefore mitigate wind erosion.

Soil Derived PM10 Contributions from Lands Outside of New Mexico

Long range transport of PM10 is an established phenomenon. Outside of New Mexico many potential sources of soil derived PM10 exist. These include Mexican, Arizonan, Texan and Californian desert soils. The Mexican Chihuahua desert is, due to its proximity and upwind location, particularly suspect.

These sources must be taken into consideration when assessing ambient PM10 level impacts.

Open Burning on Rural Lands

Open burning on rural lands in New Mexico is regulated under State Air Quality Control Regulation (AQCR) 301. Agricultural burning is exempt from the permitting process under AQCR 301; however, agricultural burning is limited in the Anthony area. There are no crops which require field burns in Dona Ana County. Agriculture burns are generally limited to weed control measures along ditches and fencelines normally conducted in the spring.

Rangeland burns on private property are rare and limited to control of invasive catclaw. The BLM and SCS rarely employ burning as a rangeland practice on public lands. Chemical measures are the preferred means of devegetation when necessary.

The State of New Mexico Air Quality Bureau is presently involved in a cooperative effort with land management agencies throughout the State to develop a better understanding of smoke management needs in the state. The Bureau is also upgrading permitting procedures for prescribed burns by requiring more stringent permitting conditions be met.

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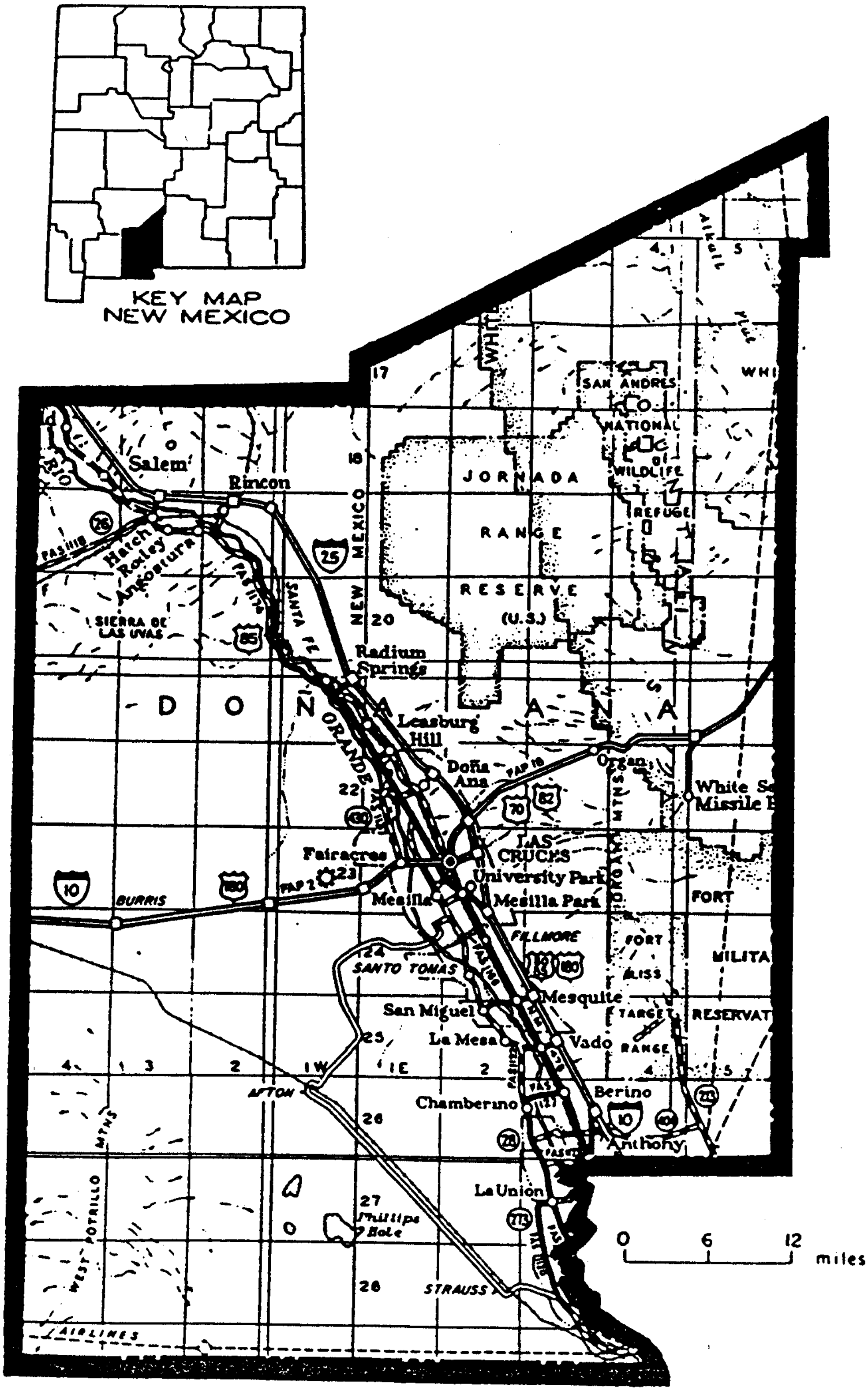
8. USDA New Mexico Department of Agriculture. New Mexico Agricultural Statistics. 1989.



DOÑA ANA COUNTY

NOTE: ALL OF THIS COUNTY IS LOCATED WITHIN THE RIO GRANDE BASIN

Figure 1

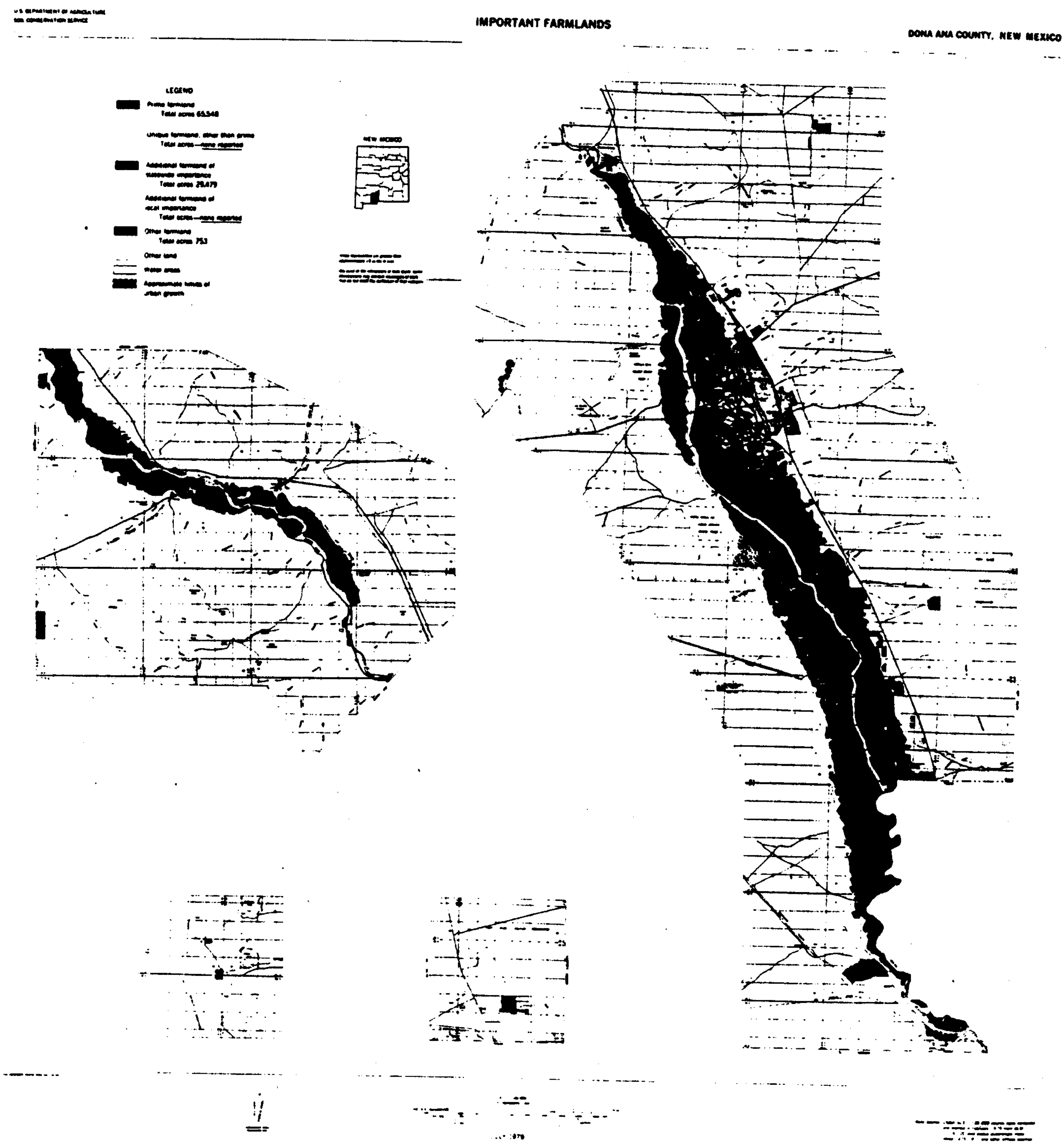

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
IMPORTANT FARMLANDS
DONA ANA COUNTY, NEW MEXICO
LEGEND
Prime farmland
Total acres 65,548
Unique farmland, other than prime
Total acres—none reported
Additional farmland of statewide importance
Total acres 29,479
Additional farmland of local importance
Total acres—none reported
Other farmland
Total acres 753
Other land
Water areas
Approximate limits of urban growth
NEW MEXICO

FIGURE 2

MAP UNITS

DEEP, NEARLY LEVEL, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM; ON FLOOD PLAINS AND STREAM TERRACES

Glendale-Harkey: Deep, nearly level, well drained soils that formed in alluvium; on flood plains and stream terraces

SHALLOW OR DEEP, NEARLY LEVEL TO VERY STEEP, WELL DRAINED TO EXCESSIVELY DRAINED SOILS THAT FORMED IN ALLUVIUM, ALLUVIUM MODIFIED BY WIND, AND EOLIAN MATERIAL; ON FANS, TERRACES, RIDGES, VALLEY AND BASIN FLOORS, FLOOD PLAINS, AND PIEDMONTS

2 Bluepoint: Deep, gently undulating to moderately rolling, somewhat excessively drained soils that formed in alluvium modified by wind; on fans, terraces, and ridges

3 Caliza-Bluepoint-Yturbide: Deep, gently undulating to very steep, well drained, somewhat excessively drained, and excessively drained soils that formed in alluvium, gravelly alluvium, and alluvium modified by wind; on fans and terraces

4 Pajarito-Onite-Pintura: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

5 Pintura-Wink: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

6 Berino-Dona Ana: Deep, gently undulating to undulating, well drained soils that formed in alluvium and alluvium modified by wind; on fans, piedmonts, and valley and basin floors

7 Mimbres-Stellar: Deep, nearly level to gently undulating, well drained soils that formed in alluvium; on fans, basin floors, and flood plains

8 Nickel-Upton: Shallow or deep, undulating to moderately rolling, well drained soils that formed in gravelly and very gravelly alluvium; on fans, terraces, ridges, and piedmonts

SHALLOW TO DEEP, NEARLY LEVEL TO UNDULATING, WELL DRAINED SOILS THAT FORMED IN RESIDUUM, ALLUVIUM, AND EOLIAN MATERIAL; ON MESAS, PLAINS, RIDGES, BASIN FLOORS, AND FANS

Cacique-Cruces: Shallow to moderately deep, nearly level to gently sloping, well drained soils that formed in alluvium; on basin floors

Harrisburg-Simona-Wink: Shallow to deep, gently undulating to undulating, well drained soils that formed in residuum from sandstone, eolian material, and alluvium modified by wind; on mesas, plains, ridges, and fans

ROCK OUTCROP AND SHALLOW TO DEEP, GENTLY UNDULATING TO EXTREMELY STEEP, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM, COLLUVIUM, RESIDUUM, AND EOLIAN MATERIAL; ON MOUNTAINS, UPLANDS, AND RIDGES

11 Rock outcrop-Motoqua: Rock outcrop and shallow, moderately rolling to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

12 Akela-Rock outcrop-Aftaden: Rock outcrop and shallow, gently undulating to moderately rolling, well drained soils that formed in eolian material and residuum from basalt; on lava flows, uplands, and ridges

13 Rock outcrop-Torriorthents: Rock outcrop and shallow to deep, hilly to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

Compiled 1979

FIGURE 3A

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

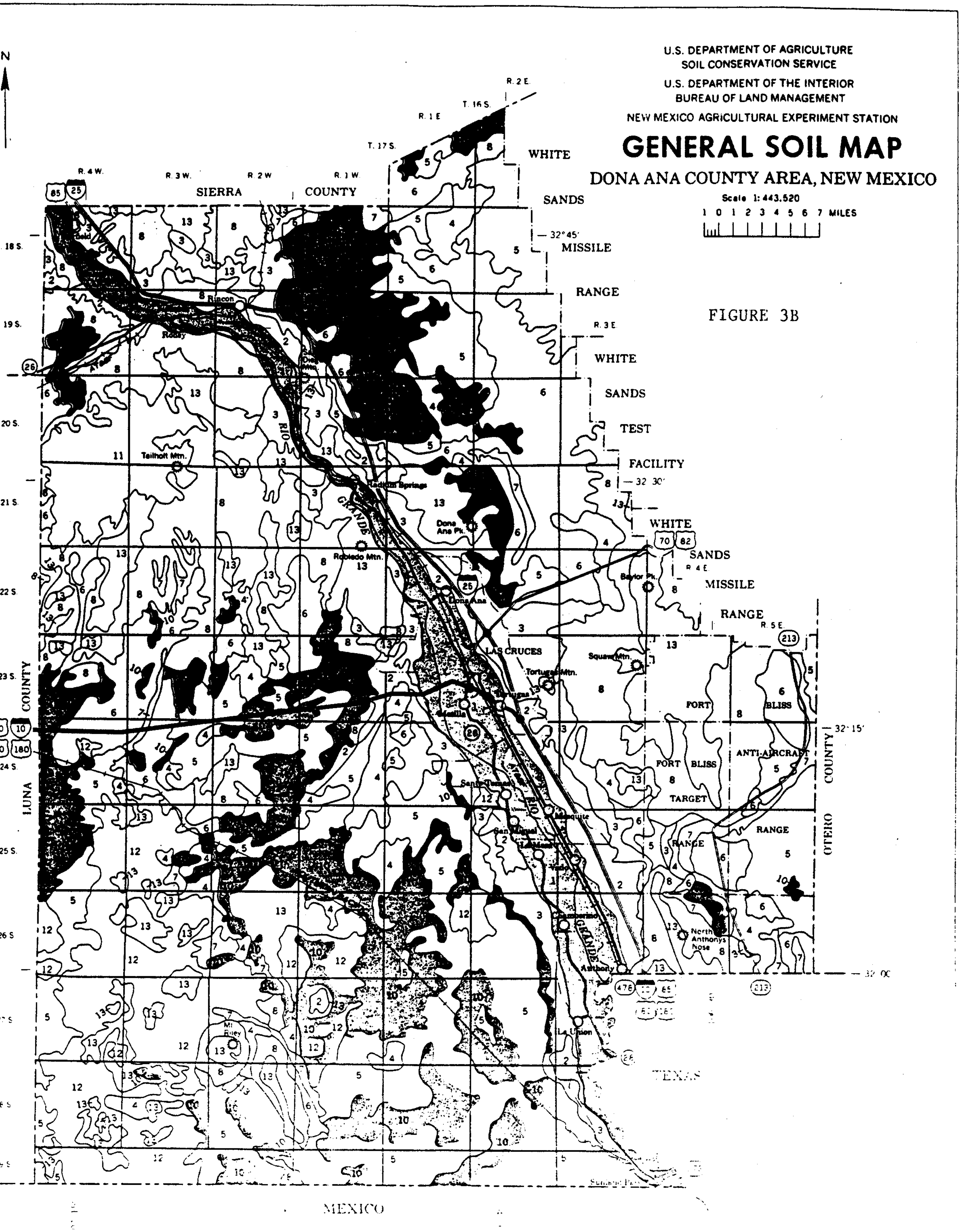

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
NEW MEXICO AGRICULTURAL EXPERIMENT STATION
GENERAL SOIL MAP
DONA ANA COUNTY AREA, NEW MEXICO
Scale 1: 443,520
1 0 1 2 3 4 5 6 7 MILES
N
SIERRA COUNTY
WHITE SANDS MISSILE RANGE
WHITE SANDS TEST FACILITY
WHITE SANDS MISSILE RANGE
LUNA COUNTY
OTERO COUNTY
FORT BLISS
FORT BLISS ANTI-AIRCRAFT TARGET RANGE
TEXAS
MEXICO
RIO GRANDE
Rincon
LAS CRUCES
Dona Ana
Mesquite
Anthony
La Union
Tortugas Mtn.
Squaw Mtn.
Robledo Mtn.
Radium Springs
Dona Ana Pk.
Tailholt Mtn.
Baylor Pk.
North Anthonys Nose
San Miguel
Chamberino

FIGURE 3B

VISUAL A

LAND STATUS and AlIOTMENT BOUNDARIES

LEGEND

PLANNING AREA BOUNDARY

ALLOTMENT BOUNDARY

3013 ALLOTMENT NUMBER

NA NOT ALLOTED

PUBLIC LAND

STATE LAND

PRIVATE LAND

WATER & POWER RESOURCES SERVICE

SCALE: 1/4 INCH = 1 MILE

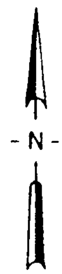
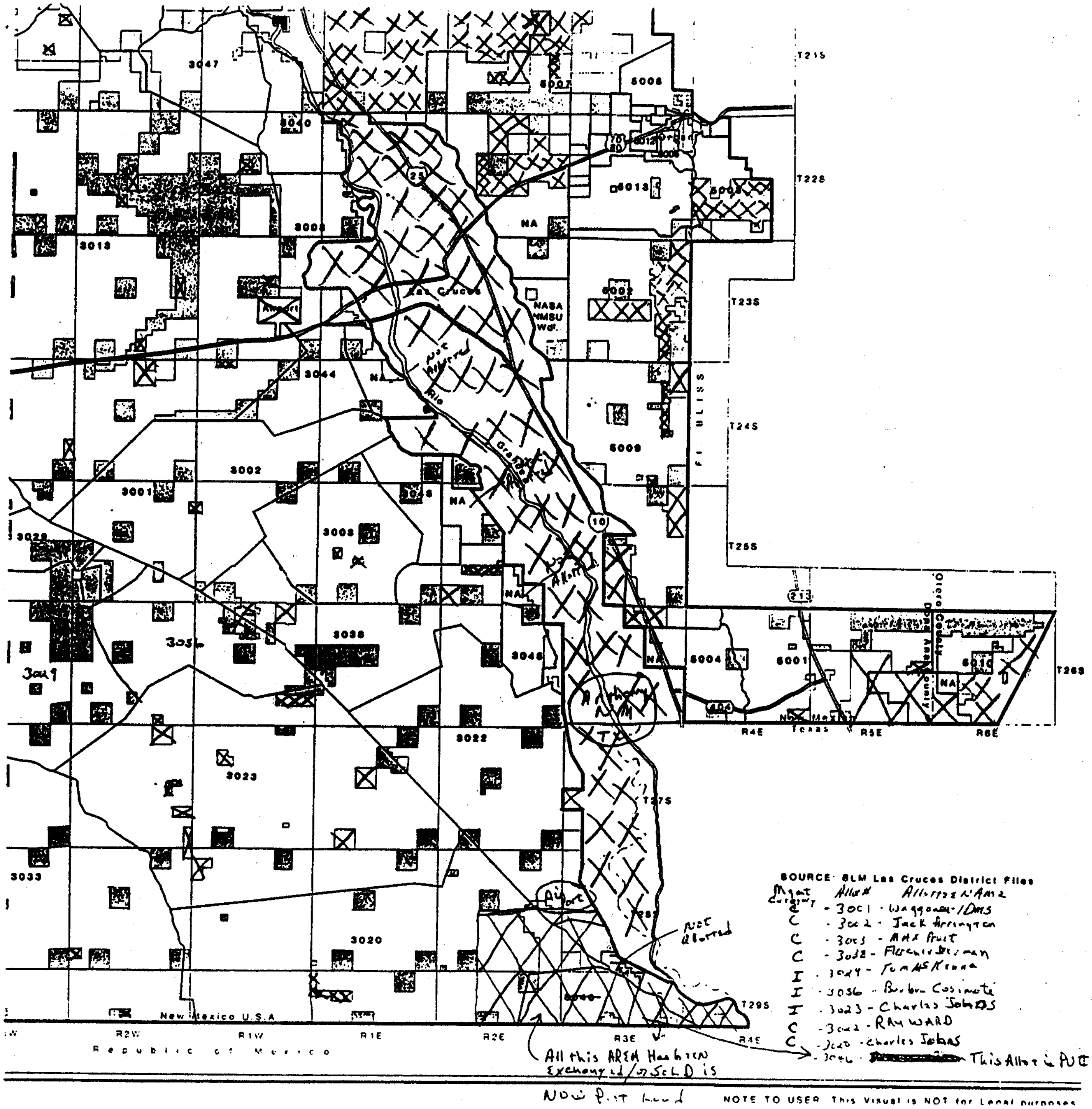


FIGURE 4A



3047
3040
3008
3013
3044
3002
3001
3003
3028
3036
3046
3022
3023
3033
3020
3029
3056
6007
6008
6012
6013
6002
6009
6004
6001
6010
NA
NASA NMSU Wdl.
Las Cruces
Airport
Rio Grande
Not Allotted
Allotted
Anthony N.M. TX
Ft. Bliss
T21S
T22S
T23S
T24S
T25S
T26S
T27S
T29S
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
New Mexico U.S.A.
Texas
Republic of Mexico
SOURCE: BLM Las Cruces District Files
Mgmt Category / Allot # / Allottee Name
C - 3001 - Waggoner/Dms
C - 3002 - Jack Arrington
C - 3003 - MAX Pruit
C - 3032 - Florence Dosman
I - 3024 - Tom McKenna
I - 3036 - Barbara Cosimati
I - 3023 - Charles Johns
C - 3022 - RAY WARD
C - 3020 - Charles Johns
- 3046 - [redacted] This Allot is PVT
Not Allotted
All this AREA Has been Exchanged/or SOLD is NOW Pvt Land
NOTE TO USER This Visual is NOT for Legal purposes

FIGURE 4B

RANGE SITES

- HILLS
- GRAVELLY
- GRAVELLY LOAM
- GRAVELLY SAND
- GRAVELLY SAND (ARROYO)
- SANDY
- DEEP SAND
- SHALLOW SAND
- LOAMY
- SALT FLATS
- BOTTOMLAND & DRAW
- CLAYEY
- BREAKS
- MALPAIS
- UNCLASSIFIED

Sites just west of Anthony

VEGETATION TYPES

1 FORBS
2a SHORT GRASS
2b MID GRASS
2c TALL GRASS
3 CREOSOTEBUSH
4 TARBUSH
5 BROOM DALEA
6 WINTERFAT
7 MESQUITE
8 FOURWING SALTBUSH
9 MIXED DESERT SHRUB
10 SAND SAGE
11 MOUNTAIN MOHOGANY
12 OAKBRUSH
13 CACTUS
14 YUCCA
15 WHITE THORN
16 SOTOL
17 MARIOLA
18 SNAKEWEED
19 WILLOW
20 BURROBUSH
21 MORMON TEA
22 SUMAC
23 OCOTILLO
24 BEARGRASS
25 DESERT WILLOW
26 COTTONWOOD
27 MIXED MOUNTAIN SHRUB
28 PONDEROSA PINE
29 PINON-JUNIPER
30 FARMLAND and UNCLASSIFIED

FIGURE 5A

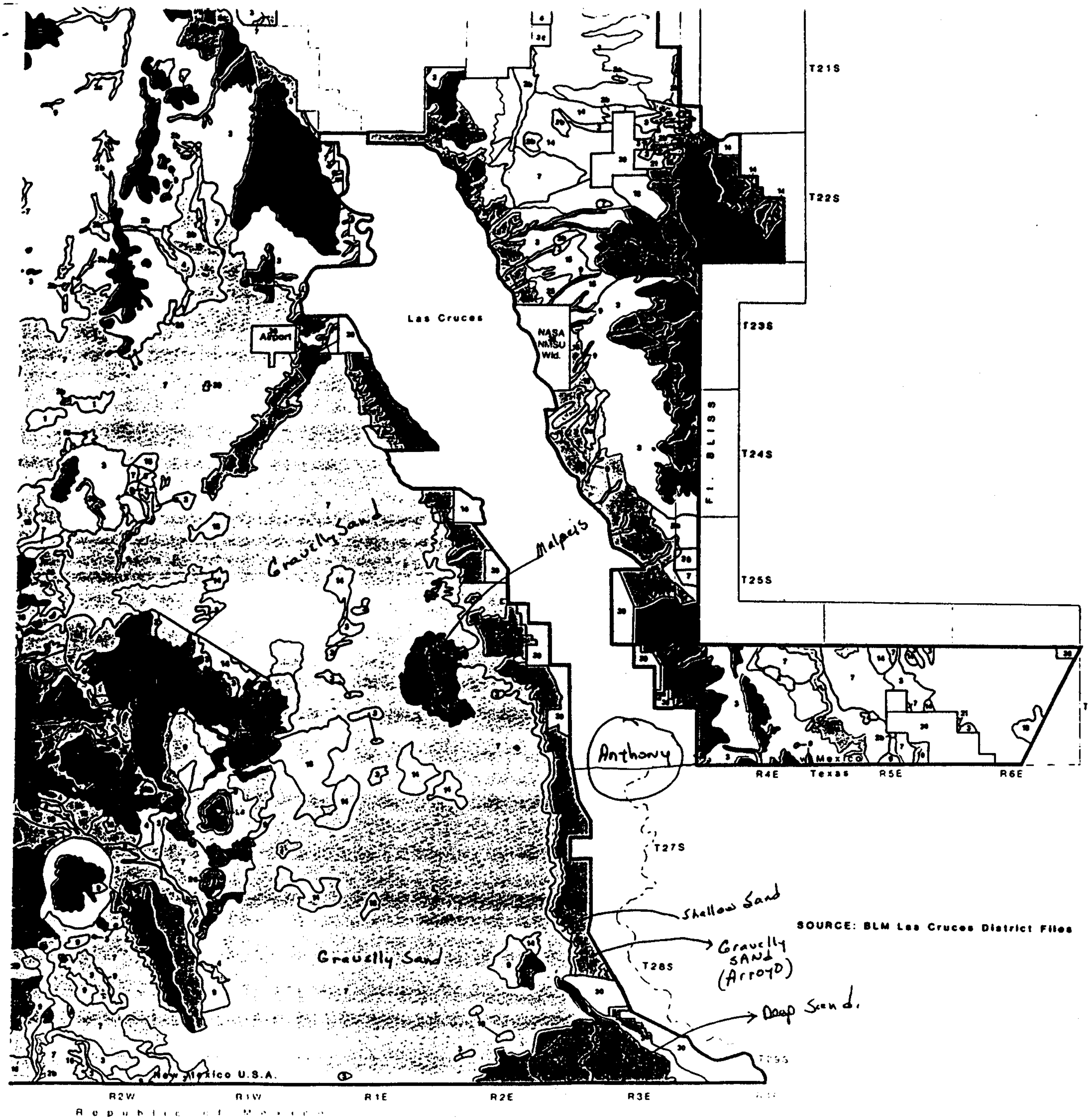

T21S
T22S
T23S
T24S
T25S
T26S
T27S
T28S
Las Cruces
Airport
NASA
NMSU
Wld.
Ft. BLISS
Gravelly Sand
Malpais
Anthony
Shallow Sand
Gravelly SAND (Arroyo)
Deep Sand.
Gravelly Sand
New Mexico U.S.A.
Texas
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
SOURCE: BLM Las Cruces District Files

FIGURE 5B

FIGURE 6

FIGURE 7

FIGURE 8

FIGURE 9

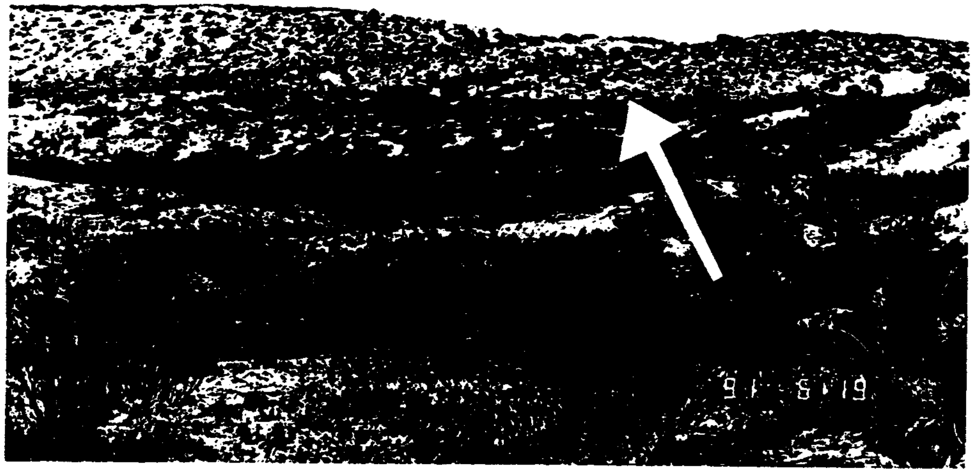


FIGURE 10

FIGURE 11

FIGURE 12

$$E = K\ a\ I\ K\ C\ L'\ V'$$

$$= 0.5\ (.025)\ (86)\ (.7)\ (200)\ (1.0)\ (1.0)$$

$$= 150.5 \text{ tons/acre/year}$$

E is PM10 Wind Erosion Losses

K is Constant

a is Constant

I is from Table 7-1 and Figure 7-2

K is from Figure 7-3

C is from Figure 7-4

L' is from Figure 7-5

V' is from Figure 7-6

FIGURE 13

Windblown Dust Equation
EPA Document Control of Open Fugitive Dust Sources

FIGURE 14

FIGURE 15

FIGURE 16

APPENDIX E

United States Department of Agriculture
Soil Conservation Service
517 Gold Ave., SW.
Room 3301
Albuquerque, NM 87102

Date: June 25, 1991
File Code: 430

Subject: SOI- Dona Ana County Soils Information

Albion Carlson
Air Quality Division
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, NM 87502

As we discussed on the phone, here is the available soils data for prime farmland, farmland of statewide importance and the Highly Erodible Land listing for Dona Ana County. Also attached are the first two sheets from the Federal Register outlining the Final Rule, Food Security Act of 1985. These should be helpful in locating the document in your library. Hope you are successful in locating the old Prime and Important Farmland map.

If we can provide any other information, we would be happy to do so.

Thomas R. McKay
Assistant State Soil Scientist
Albuquerque, NM

attachments.

Mapping Units of Prime Farmland in Dona Ana, County, New Mexico (Irrigated)

August 1978

C = 100

* I = less than 60

Ad	Adelino sandy clay loam
Ae	Adelino clay loam
Ag	Agua loam
Ah	Agua clay loam
An	Anapra silt loam
Ao	Anapra clay loam
Ar	Anthony-Vinton loams
As	Anthony-Vinton clay loams
Ge	Glendale loam
Gf	Glendale clay loam
Hg	Harkey loam
Hk	Harkey clay loam
Mo	Mimbres silty clay loam
Vg	Vinton Variant sandy clay loam

* I values estimates based on sieving

Mapping Units of Additional Farmland of Statewide Importance in Dona Ana County, New Mexico (Irrigated) August 1978

Ap	Anthony-Vinton fine sandy loams
At	Armijo loam
Aw	Armijo clay loam
Ax	Armijo clay
Be	Belen loam
Bf	Belen clay loam
Bg	Belen clay
Bm	Bluepoint loamy sand, 1 to 5 percent slopes
Br	Brazito loamy fine sand
Bs	Brazito very fine sandy loam, thick surface
Cb	Canuito and Arizo gravelly sandy loams
Gg	Glendale clay loam, alkali
Hf	Harkey fine sandy loam
Hh	Harkey loam, saline-alkali
Pa	Pajarito fine sandy loam
Vf	Vinton Variant fine sandy loam

APPENDIX F

United States Department of Agriculture

Soil Conservation Service

Subject: FSA Requirements

Date: 7/22/91

To: Albion Carlson
Environmental Department
Air Quality Bureau, S2100
1190 St. Francis Drive
Santa Fe, New Mexico 87502

File Code:

Dear Mr. Carlson:

Concerning your request for information about the activities of the Soil Conservation Service regarding the Food Security Act. We are presently working with the farmers of Dona Ana County to develop and implement plans that meet the requirements of the Food Security Act for wind and water erosion. Our work has shown that essentially all of the cropland in Dona Ana County is in compliance with the provisions of this Act.

If a problem exists, of air borne particulates exceeding the limits, the source of the problem is probably something other than cropland. Possible sources include: rangelands on the west mesa, construction sites, roads, rangelands in Mexico, and from industry in the El Paso area.

If we can be of any further assistance, please let us know.

Sincerely,

John D. Allen
District Conservationist

cc/Richard T. Smith, AC
Roswell, New Mexico

APPEDDIX G

New Mexico Environmental Improvement Board
P. O. Box 968 - Crown Building
Santa Fe, New Mexico 87504-0968

AQCR 301

AIR QUALITY CONTROL REGULATION 301 - REGULATION TO CONTROL OPEN BURNING

(Supersedes Air Quality Control Regulation 301, filed February 7, 1983)

A. Except as otherwise provided in this regulation, no person shall permit, cause, suffer or allow open burning.

B. 1. Open burning is permitted for recreational and ceremonial purposes, for barbecuing, for heating purposes in fireplaces, for the noncommercial cooking of food for human consumption and for warming by small wood fires at construction sites.

2. Open burning of natural gas is permitted at gasoline plant and compressor stations and when used or produced in drilling, completion and workover operations on oil and gas wells when necessary to avoid serious hazard to safety.

3. Open burning of explosive materials is permitted where the transportation of such materials to other facilities could be dangerous.

C. Subject to the conditions contained in Subsection E, open burning of refuse is permitted in communities having:

1. a population of less than 3000; and

2. no public refuse collection service or the economic means of obtaining or establishing one.

Subsection C does not apply to any kind of salvage operation or to any person to whom a collection service is available.

D. Subject to the conditions contained in Subsection E, open burning is permitted for the following purposes:

1. disposal of fully dried tumbleweeds; and

2. agricultural management, excluding timber, directly related to the growing or harvesting of crops.

E. Any open burning permitted under Subsections C and D must be maintained under the following conditions:

1. the emission of smoke shall not be allowed to pass onto or across a public road or landing strip such that a hazard is created by impairment of visibility;

2. no natural or synthetic rubber or petroleum products may be burned. For the purpose of frost control in agricultural operations, natural petroleum products may be burned;

3. care must be taken to minimize the amount of dirt on the material being burned;

4. all burning, except agricultural burning, must take place between the hours of 10:00 a.m. and 4:00 p.m.;

5. the material to be burned must be as dry as possible; and

6. the wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation.

F. Subject to whatever conditions the department may impose, open burning is permitted for the following purposes when a permit is obtained from the department: weed abatement; prevention of fire hazards; disposal of dangerous materials; instruction and training of bona fide fire-fighting and fire- rescue personnel; civil defense; conservation; game management; disease and pest control; land clearance for highway construction; forestry management; control of vegetation in irrigation ditches and canals; clearance and maintenance of watercourses and flood control channels to eliminate flood hazards; disposal of hydrocarbons spilled or lost from pipeline breaks or other transport failure; and other special circumstances.

G. A permit to burn shall not be issued if the department determines that:

1. a practical alternative to burning exists;

2. the health or welfare of any other person may be detrimentally affected; or

3. ambient air quality of other property may be detrimentally affected.

H. Any person seeking a permit to open burn shall do so by submitting a request to the Air Quality Control Unit of the department. The department may require the requestor to submit his request in writing and any or all of the following information:

1. the requestor's name, address and telephone number;

2. the location where the burning is to be conducted;

3. the type and quantity of material to be burned;

4. the date when the burning is to be conducted;

5. the methods that will be followed to ignite, maintain and control the burning;

6. reasons why the requestor believes the burning is necessary; and

7. the alternatives to burning and the reasons why the requestor believes them not to be feasible.

I. As used in this regulation "open burning" means any manner of burning not in a device or chamber designed to achieve combustion, where the products of combustion are emitted, directly or indirectly, into the open air.