

APPENDIX D

**SOUTH COAST AIR QUALITY MANGEMENT DISTRICT
LEAD (Pb) MONITORING NETWORK PLAN**

JULY 2009

Prepared by

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Introduction

On November 12, 2008 the Environmental Protection Agency (EPA) issued final revisions to the National Ambient Air Quality Standards (NAAQS) for lead (Pb). EPA revised the level of the primary standard from 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to $0.15 \mu\text{g}/\text{m}^3$, measured as total suspended particulates (TSP), and revised the secondary standard to be identical in all respects to the primary standard. EPA also promulgated new monitoring requirements including new design requirements for the Pb NAAQS surveillance network. Monitoring is now required for all Pb sources (source oriented monitoring) that may contribute to violations of the Pb NAAQS and/or emit more than 1 ton/year of lead. Monitoring is also required in large urban areas for Pb as part of a non source-oriented surveillance network. According to 40 CFR Part 58 Appendix D, monitoring agencies are required to begin source-oriented monitoring by January 1st, 2010 and are required to identify Pb sources to be monitored and sampling locations in the annual network plan submitted by July 1st, 2009.

Public Comments

Pursuant to Federal regulations, this plan is to be made available for public inspection and comments for at least 30 days prior to submission to U.S. EPA. Hard copies of this document were made available on June 1, 2009 at the South Coast AQMD Public Information Desk in Diamond Bar, CA. The document was also posted to the public South Coast AQMD website at www.aqmd.gov on June 1, 2009, with links under the South Coast AQMD home page titled “Current Programs, Events and Topics.” Links to the document are also provided in the “Air Quality” area of the website. The draft document will also be made available to U.S. EPA during this period for review.

Monitoring Objectives

The primary objective for the Pb monitoring network is to provide data on the ambient Pb air concentrations in areas where there is the potential for violation of the NAAQS. Revisions to the primary and secondary NAAQS for Pb provide requisite protection of public health and welfare respectively. Modifications made to the existing network design requirements for the Pb surveillance monitoring network will help to achieve better understanding of ambient Pb air concentrations near Pb emission sources and to provide better information on exposure to Pb in large urban areas.

Methodology

EPA has elected to continue use of current Pb-TSP Federal Reference Method (FRM, 40 CFR part 50 Appendix G), sampler with no substantive changes. The current method is based on the use of a high volume TSP FRM to collect a particulate matter (PM) filter sample and the use of EPA-approved Pb analysis methods. Upon data submission, monitoring agencies must now report the average pressure and temperature during the twenty four hour sample period, and report Pb concentrations using actual flow, rather than standard flow.

Monitoring Requirements

New network design requirements specify that monitoring agencies conduct ambient air Pb monitoring near sources that have the potential to cause Pb concentrations in ambient air in excess of the new NAAQS ($0.15 \mu\text{g}/\text{m}^3$, 3-month average). Agencies are required to have at a minimum, one source-oriented State and Local Air Monitoring Station (SLAMS) site located at

the maximum expected Pb concentration in ambient air resulting from each Pb source that emits 1.0 or more tons/year based on the latest EPA National Emissions Inventory (NEI) or other scientifically justifiable method or data. The monitoring location is to be determined based on the modeled the point of maximum impact, taking into consideration population exposure and logistical considerations. EPA requires at a minimum, one non source-oriented monitor in every Core Based Statistical Area (CBSA) with a population of 500,000 people or more with 15% collocation for all monitors. These monitors are to be placed in neighborhoods within urban areas impacted by re-entrained dust from roadways, closed industrial sources of Pb, or other fugitive dust sources of Pb. EPA is allowing monitoring agencies to stagger installation of newly required monitors over a two year period. Monitoring agencies are required to install and operate the required source-oriented monitors by January 1 2010. The non source monitors are required to be installed and operated by January 1 2011. The annual monitoring plan due July 1, 2009 must describe the planned monitoring that will begin by January 1, 2010 and the plan due July 1, 2010 must describe the planned monitoring to take place January 1, 2011. The minimum sampling frequency for the monitoring network remains at the current 1-in-6 day sampling frequency.

Background

South Coast AQMD currently collects TSP Pb measurements at 10 sites (with two sites collocated) as part of an ambient Pb network. This established network meets the EPA requirements for the non source-oriented monitoring network. The spatial distribution of these sites is shown in Figure 1.

In 1990, U.S. EPA requested that the South Coast AQMD collect ambient air particulate Pb samples near several large Pb handling (battery recycling) sources. Long-term source oriented monitoring began in 1991. Quemetco RSR in the City of Industry exceeded the previous federal ambient particulate Pb standard of $1.5 \mu\text{g}/\text{m}^3$ during the second quarter of 1991. Lead monitoring ended at Martin Brass Foundry Inc. in the City of Torrance during 1993 when measurements were consistently below the ambient standard. Sampling also ended at Quenell Enterprises Inc. in the City of Commerce in 2006 when the monitoring site was redeveloped. The facility is now owned by Exide Inc, and has reported emissions of 0.03007 tons/yr.

South Coast AQMD currently conducts source-oriented monitoring at three facilities. At Exide Inc. in the city of Vernon, Pb emissions are reported as 1.998 tons/yr and sampling is currently conducted at two sites identified as “Rehrig” and “ATSF”. The Rehrig location began sampling in November 2007 in response to a request from AQMD compliance staff. The Rehrig site began monitoring on a 1-in-6 day schedule, but sampling frequency at Rehrig and ATSF was changed to either 1-in-2 or 1-in-3 day between February and May 2008, and the Rehrig site began daily sampling in May 2008. The monthly averages at Rehrig for December 2007 through April 2008 exceeded $1.5 \mu\text{g}/\text{m}^3$. The results of sampling near Exide are summarized in Table 1. Monthly averages at Rehrig continue to exceed the new Pb NAAQS of $0.15 \mu\text{g}/\text{m}^3$.

At Quemetco in the City of Industry, monitoring emissions are reported as 0.321 tons/yr and sampling is currently conducted at one site identified as “Closet World”. This location monitors on a 1-in-6 day sampling schedule and no exceedances of the previous $1.5 \mu\text{g}/\text{m}^3$ Pb NAAQS have taken place since 1991. Monthly averages last exceeded the new standard of $0.15 \mu\text{g}/\text{m}^3$ Pb

in 2005. In 2006, monthly averages ranged between 0.02 and 0.10 $\mu\text{g}/\text{m}^3$. Sampling did not take place in 2007 and most of 2008 due to the loss of access to our sampling location.

At Trojan Battery in Santa Fe Springs monitoring emissions are reported as 0.0145 tons/yr and sampling is conducted at one site identified as “UDDH”. The UDDH site operates on a 1-in-6 day sampling schedule and no exceedances of the 1.5 $\mu\text{g}/\text{m}^3$ Pb NAAQS have taken place since 2006. The highest monthly average since 2006 was 0.23 $\mu\text{g}/\text{m}^3$ occurring in May 2007. Since September 2007, all monthly averages have been below the new Pb NAAQS of 0.15 $\mu\text{g}/\text{m}^3$.

Pb Sources and Emissions

EPA National Emission Inventory data from 2005 reports that there are three sources of Pb in South Coast AQMD that emit more than 1.0 ton/year (Table 2). In contrast, the most recent data from South Coast AQMD annual emissions reports (2006-2007) shows only one source greater than 1.0 ton/year (Table 3). The Quenell Enterprises facility in the City of Commerce, now owned by Exide has emissions of 0.03007 tons/year and Quemetco RSR has reported emissions of 0.321312 tons/yr. Based on these recent emissions reports, Exide is the only non-aviation source currently emitting over 1.0 ton/year. The new monitoring guidance also requires general aviation sources to be monitored if Pb emissions exceed 1.0 ton/yr. General aviation aircraft use leaded aviation fuel and have been identified as a source of Pb emissions. The EPA Technical Support Document, “Lead Emissions from the Use of Leaded Aviation Gasoline in the United States” reports Pb emissions estimates for the general aviation Pb sources across the country. Of these sources, one is located within South Coast AQMD boundaries; the top five airports above 1.0 tons/year are shown in Table 4. Estimates for airport emissions of Pb for Van Nuys Airport are given as 1.4 tons/year. Current plans are to find a suitable location on the grounds of Van Nuys Airport or adjacent property at which to monitor for Pb. The monitor will be sited as close as feasible to the blast fence where the majority of piston-driven aircraft begin their take-off. Talks are underway with airport management and surrounding businesses to secure a location, and monitoring is to begin before the end of 2009. The current and planned source-oriented Pb monitoring network site information is included in Table 5 and depicted in Figure 2. Even though Quemetco and Trojan Battery emit less than 1.0 ton/year Pb, and recent data does not suggest potential exceedances of the new Pb standard, AQMD will continue monitoring in the coming year to demonstrate compliance with the new Pb NAAQS at these sites.

Rule 1420 Monitoring

On September 11, 1992 South Coast AQMD adopted Rule 1420 in order to reduce emissions of lead from non-vehicular sources. The rule applies to all persons who own or operate facilities that use or process Pb containing materials such as primary or secondary Pb smelters, foundries, lead-acid battery manufacturers, or recyclers and lead-oxide, brass and bronze producers. Requirements include a provision that all facilities that process more than 10 tons of lead per year must install, maintain, and operate ambient air quality monitoring equipment. Any facility that processes more than 2 tons per year, but less than or equal to 10 tons of Pb per year must determine ambient Pb concentrations by either monitoring or dispersion modeling. Air quality samples must be collected using approved equipment from a minimum of two sampling sites at or beyond the property line of the facility where maximum ground level Pb concentrations are indicated by air dispersion modeling calculations. Samples are to be collected for 24 hours consecutively for 30 days, and thereafter every 6th day. Continuous recording of wind speed and

direction is required during sampling periods using approved equipment. Samples are submitted to an approved laboratory for analysis. Results are reported to South Coast AQMD each calendar quarter and any exceedances are reported within 24 hours of the completed sample analysis.

Results of Rule 1420 sampling conducted by Exide show two occasions between December 2007 and May 2009 when monthly averages were greater than $1.5 \mu\text{g}/\text{m}^3$ (Table 1). During January 2009 the North (N) site recorded a monthly average of $1.55 \mu\text{g}/\text{m}^3$ and in March 2009 the monthly average was $2.08 \mu\text{g}/\text{m}^3$.

Rule 1420 sampling conducted at Quemetco shows the highest monthly average value recorded between February 2007 and February 2009 was $0.76 \mu\text{g}/\text{m}^3$ just inside the fence line. Monthly means of values taken on the property of Quemetco are given in Table 6.

Since Rule 1420 monitors are operated by the facilities and are often located on facility property within the fence line, data collected may not meet the definition of “ambient” and siting may not conform to relevant EPA siting criteria. Therefore they are not designated as SLAMS sites at this time. However these sites will provide data to aid in the enforcement of regulations designed to meet the new Pb standard.

Source-oriented Monitor Siting

Source-oriented micro-scale sites are to be located at the site of maximum ambient impact, taking into account population exposure and logistical considerations. In practice, this generally equates to monitoring at the fence line or beyond at a site that is as close as feasible to point of highest modeled concentrations. Modeling was completed for each of source-oriented locations indicating the expected location of maximum impact for Pb. Dispersion modeling for each facility was performed using AERMOD (version 07026) to determine the monthly lead concentrations. The AERMOD default regulatory option was used and building downwash was included. AERMAP was used to determine the terrain base elevations for each receptor and source and a hill height scale value for each receptor. AERSURFACE was used to determine the surface albedo and surface roughness. A Bowen ratio of 1.0 was used, instead of the AERSURFACE output value. This was done because the National Land Cover Data (NLCD) 92 dataset does not include the recent land development projects that occurred within Southern California, which would result in a lower Bowen ratio. AERMET was used to develop the necessary meteorological data for each project using the meteorological data from the appropriate monitoring station and upper air sounding data collected at the Miramar Naval Air Station. A 100-meter by 100-meter receptor grid centered on the facility was used, as well as fenceline receptors placed using 25-meter intervals. All facility boundary, source parameters, and emission rates were obtained from the most recently submitted (Health Risk Assessment) HRA for each facility.

Using the U.S. EPA’s post processor, the maximum 3-month rolling average lead concentration was calculated. The results are plotted in Figures 3, 4 and 5.

Exide

The most recent Health Risk Assessment (HRA) for Exide was prepared in June 2007 using the emission inventory for the 2005/2006 inventory year, which reports a total facility emission of 1.16 tons of lead per year from 18 on-site emission points. The meteorological data from the Lynnwood monitoring station was used. The maximum ground-level lead concentration is $0.88 \mu\text{g}/\text{m}^3$ and is shown in Figure 3 along with current monitoring locations.

South Coast AQMD will continue to monitor at the Rehrig and ATSF locations. The current sampling schedule for Rehrig and ATSF are daily, and 1-in-3 respectively. These schedules may be changed over FY 2009-10 to 1-in-6 depending on compliance needs. South Coast AQMD may relocate the ATSF sampler in FY 2009-10 to a location closer to the facility where higher concentrations are expected.

Quemetco

The most recent HRA for Quemetco was prepared in January 2009 based on source tests performed in November 2008. The HRA reports total facility emissions of 0.15 tons of lead per year from 10 on-site emission points. Although the facility includes an on-site meteorological station, the data collected at the station is not sufficient to use in AERMET. Therefore, the meteorological data from the La Habra monitoring station was used. The maximum ground-level lead concentration is $0.03 \mu\text{g}/\text{m}^3$. Using the post processor, the concentrations are rounded off to two decimal places. Therefore the maximum lead concentration is not identified at a particular point as there are five receptor locations with the same maximum concentration. Instead, the maximum lead concentration is represented by an area bounded by the $0.03 \mu\text{g}/\text{m}^3$ isopleth in Figure 4.

South Coast AQMD will continue to monitor at the Closet World location downwind of Quemetco. The current sampling site is located within the maximum modeled isopleth and cannot be located closer to the fence line due to the proximity of a flood control channel. The Closet World location currently monitors on a 1-in-6 day schedule.

Trojan Battery

Modeling for Trojan Battery was based on the emissions reported for the 2006/2007 inventory year, which reports a total facility emission of 0.04 tons of lead per year from one on-site emission point. The meteorological data from the Lynnwood monitoring station was used. Since no stack parameters were available, the default parameters for SCC 31306505, obtained from the US EPA, were used. The maximum ground-level lead concentration is $0.04 \mu\text{g}/\text{m}^3$. Using the post processor, the concentrations are rounded off to two decimal places. Therefore the maximum lead concentration is not identified at a particular point as there are two receptor locations with the same maximum concentration. Instead, the maximum lead concentration is represented by an area bounded by the $0.03 \mu\text{g}/\text{m}^3$ isopleth in Figure 5.

South Coast AQMD currently monitors for Pb adjacent to Trojan Battery at a site designated as UDDH. The sampling location is as close to the highest modeled concentration area as possible given logistical siting constraints. Sampling will continue to confirm that Pb levels continue to remain below the new Pb NAAQS of $0.15 \mu\text{g}/\text{m}^3$. Since emissions from this facility are much

lower than 1.0 ton/year, and two years of data show no exceedances, this site may be discontinued in FY2009-10.

Pb Non Source Monitors

Non source-oriented monitors are located in urban areas to gather information on general population Pb exposure. One non source-oriented monitor is required in each CBSA with a population > 500,000 as determined by the most recent census data. South Coast AQMD currently operates a non source-oriented monitoring network of 10 locations with three collocated sites detailed in Table 7 and depicted in Figure 1. South Coast AQMD's current Pb monitoring network exceeds the minimum required monitoring as part of the final revision to the NAAQS for Pb. Any redesign of this network will be addressed in the 2010 Annual Network Plan.

TABLE 1
Exide Monthly Average Pb Concentrations

Month	ATSF ¹	Rehrig ¹	ATSF ²	SE ²	SW ²	NW ²	NE ²	N ²
December, 2007	0.16	1.97	0.25	0.33	0.90			
January, 2008	0.17	2.88	0.20	0.42	1.14			
February, 2008	0.23	2.50	0.23	0.35	0.97			
March, 2008	0.25	2.09	0.33	0.17	0.28			
April, 2008	0.18	2.28	0.24	0.17	0.19			
May, 2008	0.13	0.90	0.22	0.16	0.18	0.77		
June, 2008	0.11	0.60	0.16	0.10	0.18	0.57		
July, 2008	0.14	0.61	0.19	0.14	0.31			
August, 2008	0.20	0.80	0.25	0.32	0.27			
September, 2008	0.17	0.95	0.24	0.18	0.34			
October, 2008	0.17	0.74	0.23	0.16	0.36			
November, 2008	0.13	0.70	0.24	0.19	0.28			
December, 2008	0.06	0.94	0.10	0.35	0.25			
January, 2009	0.07	0.35	0.11	0.34	0.32		1.15	1.55
February, 2009	0.08	0.32	0.10	0.10	0.15		1.08	1.21
March, 2009	0.08	0.59	0.12	0.07	0.17		1.07	2.08
April, 2009	0.09	0.54	0.09	0.07	0.15		0.83	1.31
May, 2009	0.05	0.16	0.12	0.12	0.23		0.75	0.86

¹ South Coast AQMD Monitor

² Rule 1420 Monitor

All values in µg/m³

TABLE 2
2005 U.S. EPA National Emission Inventory Data

NEI SITE ID	NEI Facility Name	Category	2005 NEI v 2 Emissions (tons/yr)	City
NEI21201	QUEMETCO INC	Lead Compounds	1.935600987	CITY OF INDUSTRY
NEI21202	QUENELL ENTERPRISES INC	Lead Compounds	1.9334615	COMMERCE
NEI2CA124838	EXIDE CORPORATION	Lead Compounds	1.62809	VERNON
NEI20307	BP WEST COAST PRODUCTS LLC CARSON	Lead Compounds	0.78605	CARSON
NEI22117	JOHNSON CONTROLS BATTERY GROUP	Lead Compounds	0.4499375	FULLERTON

TABLE 3
South Coast AQMD
Lead Inventory 2006-07

Facility Id	Facility Name	Category	Emissions (lb/yr)	Emissions (tons/yr)	City
124838	EXIDE TECHNOLOGIES	Lead Compounds	3996.75	1.998375	Vernon
8547	Quemetco, Inc. An RSR Corporation	Lead Compounds	642.6247	0.321312	City of Industry
800436	Tesoro Corporation	Lead Compounds	309.5451	0.154773	Wilmington
800089	Exxon Mobil Oil Corporation	Lead Compounds	182.8288	0.091414	Torrance
11192	Hi-Shear Corp	Lead Compounds	170.2574	0.085129	Torrance

TABLE 4
Airport Specific Estimates of Pb Emissions¹

FIPS ²	Airport	State	County	Airport Name	Tons/yr
06037	VNY	CA	Los Angeles	Van Nuys	1.4
08005	APA	CO	Arapahoe	Centennial	1.2
04013	DVT	AZ	Maricopa	Phoenix Deer Valley	1.1
12117	SFB	FL	Seminole	Orlando Sanford	1.0
12127	DAB	FL	Volusia	Daytona Beach International	1.0

¹ Source: Lead Emissions from the Use of Leaded Aviation Gasoline in the United States, EPA420-R-08-020 (2008)

² Federal Information Processing Standards Code

TABLE 5
South Coast AQMD
Source-Oriented Monitoring Facilities

Source	Address	Facility ID	South Coast Inventory ton/yr	Start Date	Schedule
Exide Technologies	2700 S Indiana St. Vernon, CA 90058	124838	1.998375	4/91	1-in-6
Quemetco RSR	720 S 7th Ave. City of Industry, CA 91746	8547	0.321312	1991	1-in-6
Trojan Battery	9440 Ann St. Santa Fe Springs, CA 90670	21872	0.042768	11/92	1-in-6
Van Nuys Airport ¹	16461 Sherman Way. Van Nuys CA, 91406	12127 ²	1.4	Planned 2009	1-in-6

¹ Data Source: Lead Emissions from the Use of Leaded Aviation Gasoline in the United States; EPA420-R-08-020 October 2008

² Federal Information Processing Standards Code (FIPS)

TABLE 6
 Quemetco Monthly Lead Concentrations for the Period Sept 2007 to Feb 2009

Statistics	Monitor #1	Monitor #2	Monitor #4	Monitor #5
Minimum ($\mu\text{g}/\text{m}^3$)	0.14	0.14	0.07	0.07
Mean ($\mu\text{g}/\text{m}^3$)	0.28	0.22	0.13	0.40
Maximum ($\mu\text{g}/\text{m}^3$)	0.51	0.33	0.20	0.76
Number of monthly means	16	16	16	16
Standard deviation ($\mu\text{g}/\text{m}^3$)	0.13	0.05	0.04	0.19
95% confidence interval ($\mu\text{g}/\text{m}^3$)	0.22-0.34	0.18-0.25	0.11-0.15	0.31-0.49

TABLE 7
 Non-Source Lead Monitoring Locations

Location	Site Code	ARB No.	AQS No.	Start Date	Schedule
Compton ²	COMP	70112	060371302	11/08	1-in-6
LAX Hastings	LAXH	70111	060375005	4/04	1-in-6
Long Beach ³ (North)	LGBH	70072	060374002	10/62	1-in-6
Los Angeles ³ (Main)	CELA	70087	060371103	9/79	1-in-6
Lynwood ¹	LYNN	70084	060371301	10/73	1-in-6
Pico Rivera #2	PICO	70185	060371602	9/05	1-in-6
Riverside ³	RIVM	33146	060651003	10/72	1-in-6
Rubidoux	RIVR	33144	060658001	9/72	1-in-6
San Bernardino	SNBO	36203	060719004	5/86	1-in-6
South Long Beach	SLGB	70110	060374004	6/03	1-in-6
Upland	UPLA	36175	060711004	3/73	1-in-6

¹ Site Closed on 10/30/08

² Replaced Lynwood AMS on 11/05/08

³ Collocated sites

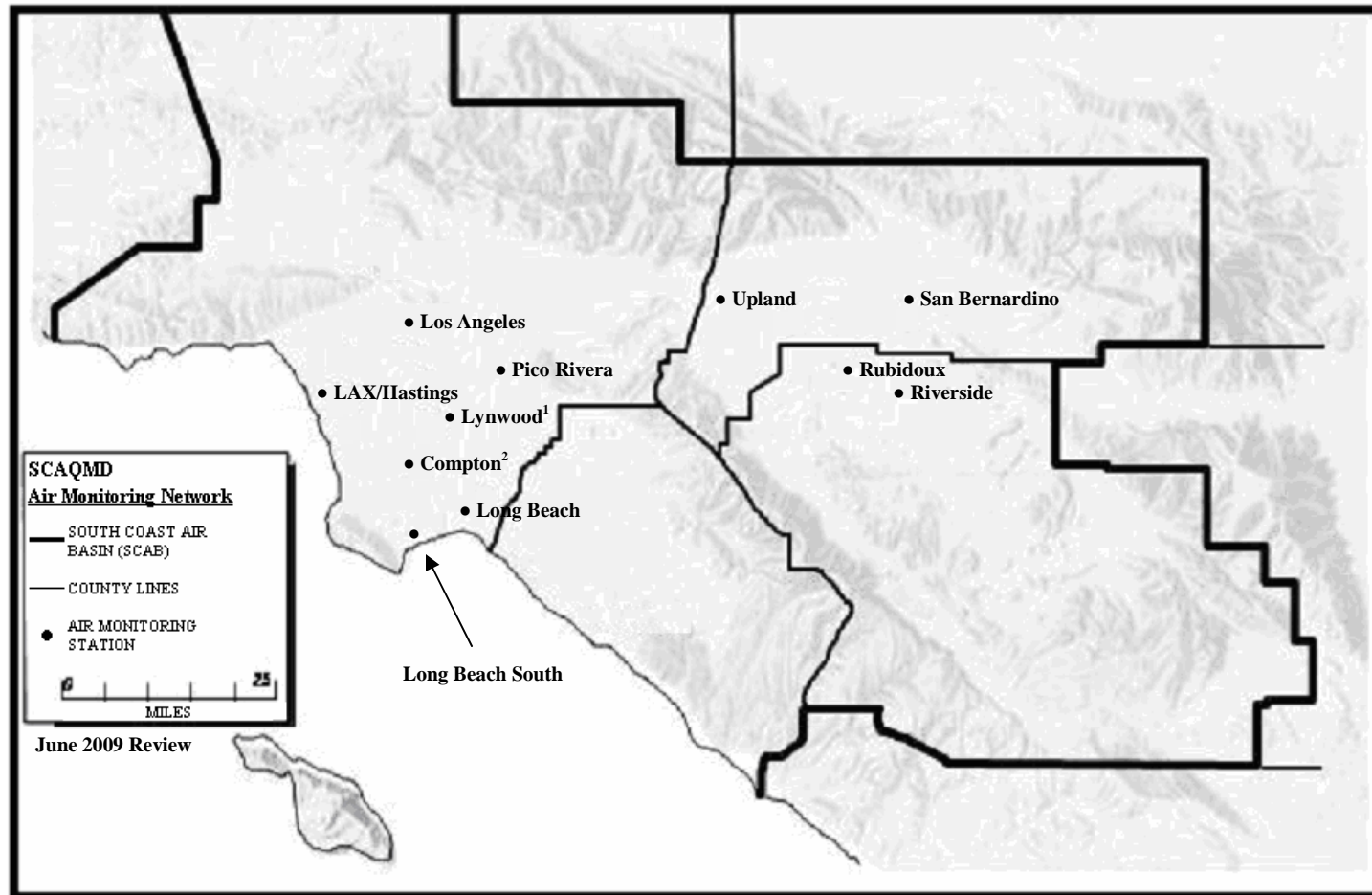


Figure 1 SCAQMD Non-Source Lead Monitoring Locations

¹ Site closed on 10/30/08

² Site replaced Lynwood 11/05/08

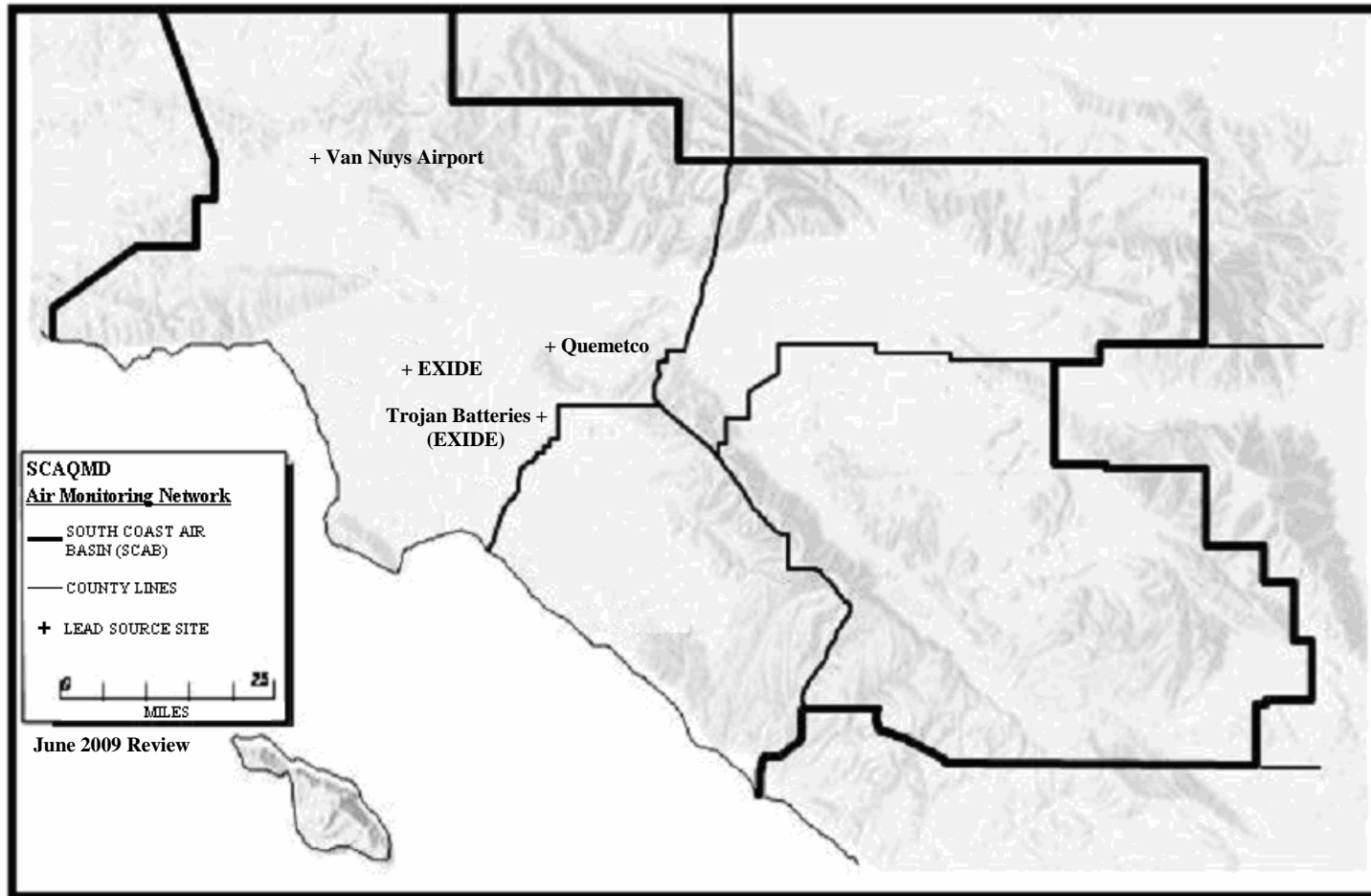


Figure 2 SCAQMD Lead Sources

EXIDE

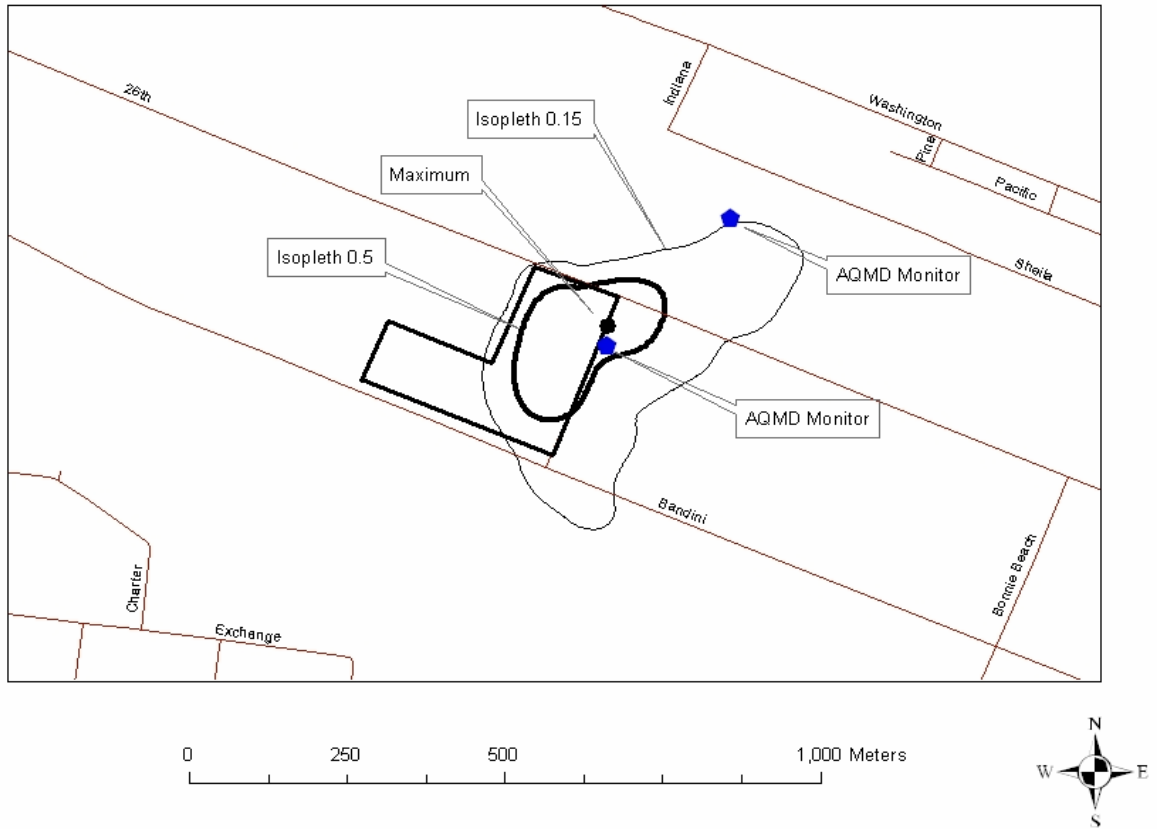


Figure 3 Exide Maximum Modeled Pb Locations

QUEMETCO

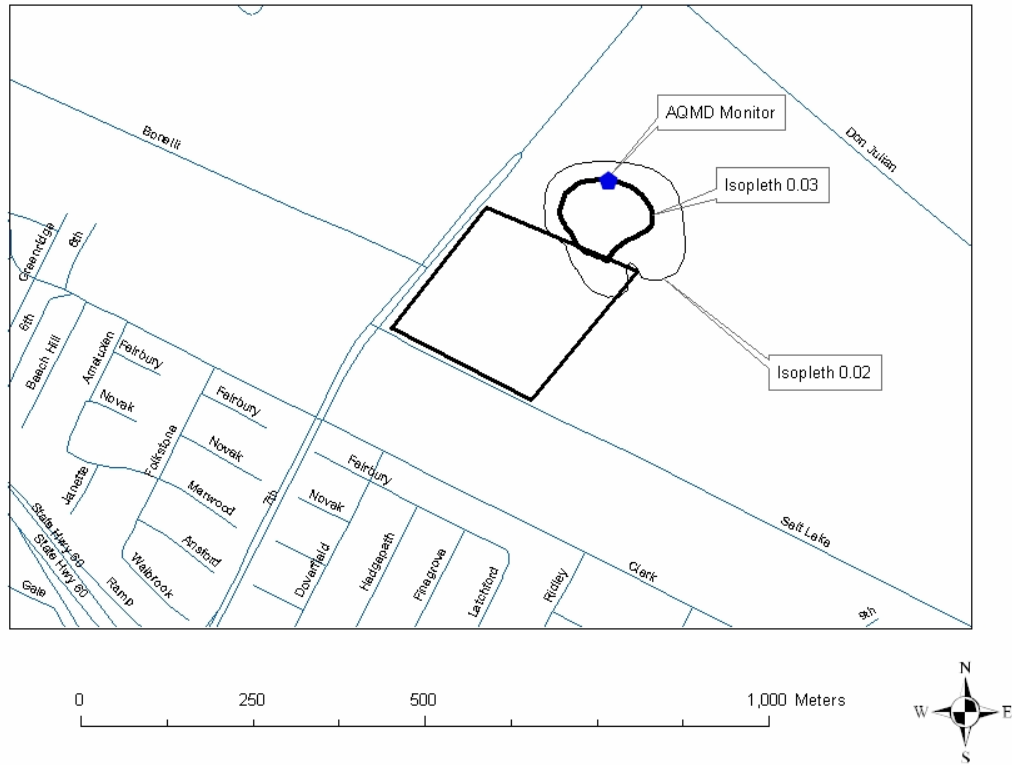


Figure 4 Quemetco Maximum Modeled Pb Locations

TROJAN

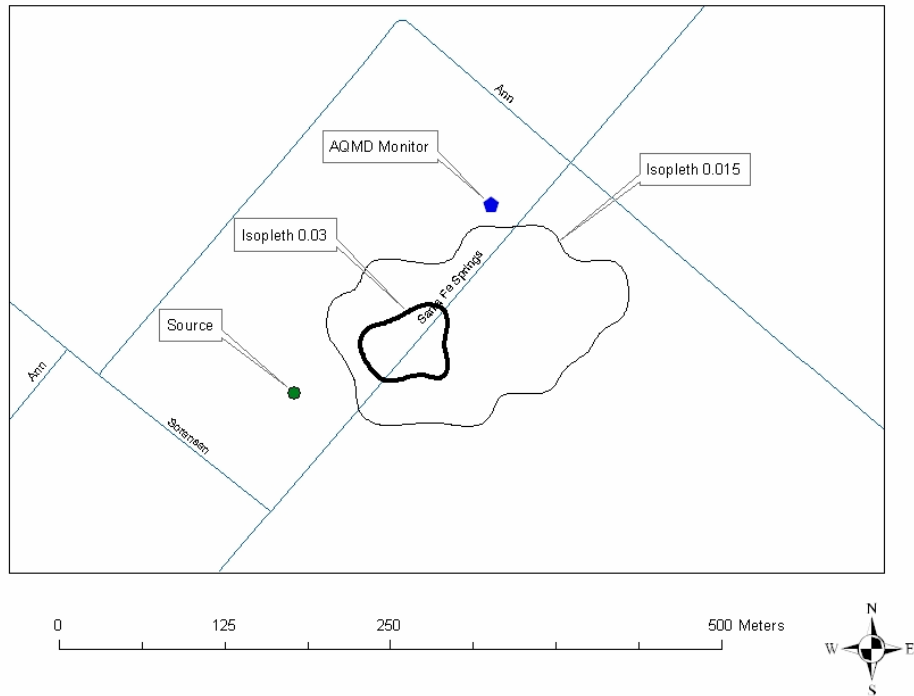
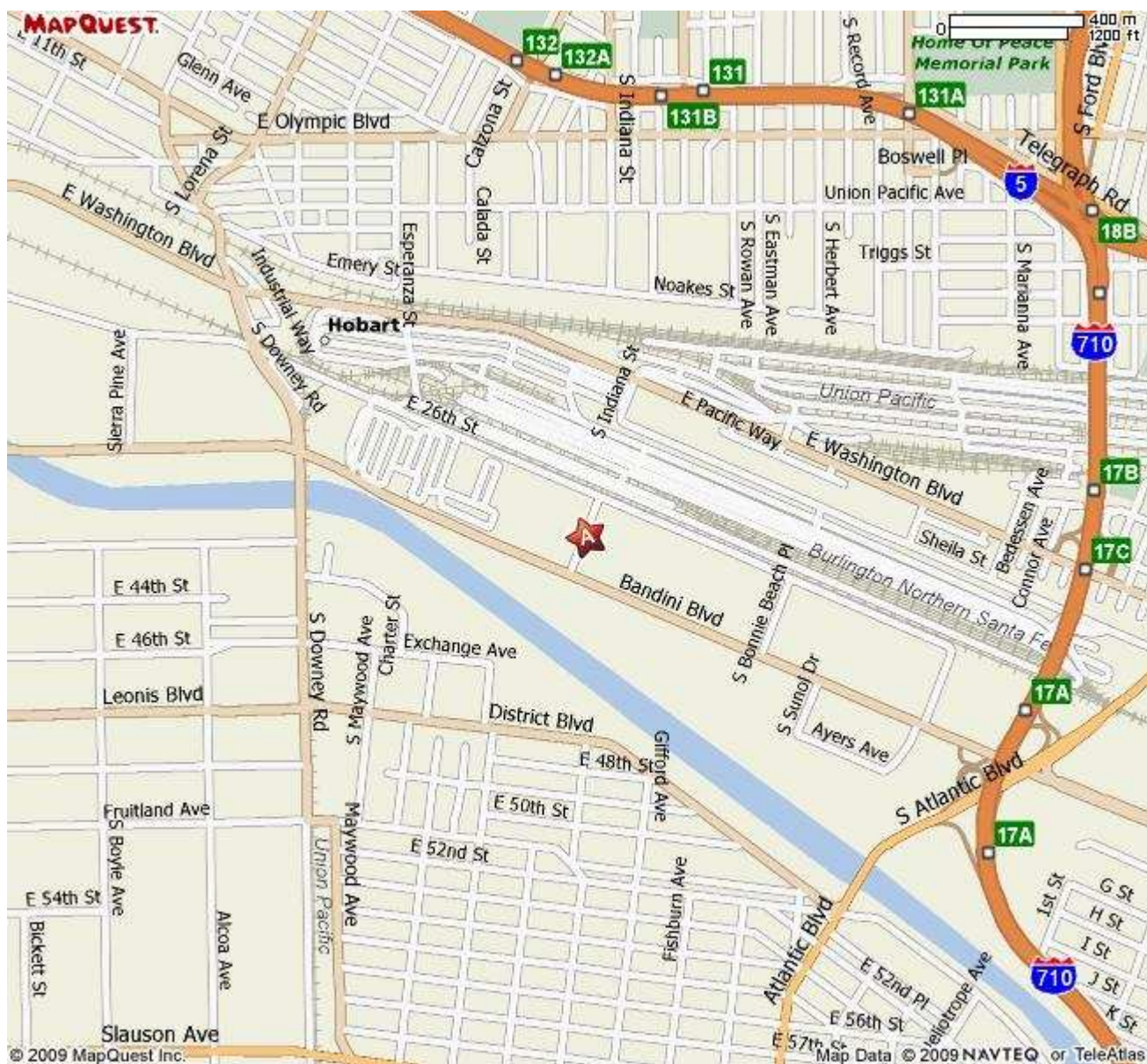


Figure 5 Trojan Battery Maximum Modeled Pb Location

Site Survey Report for Exide

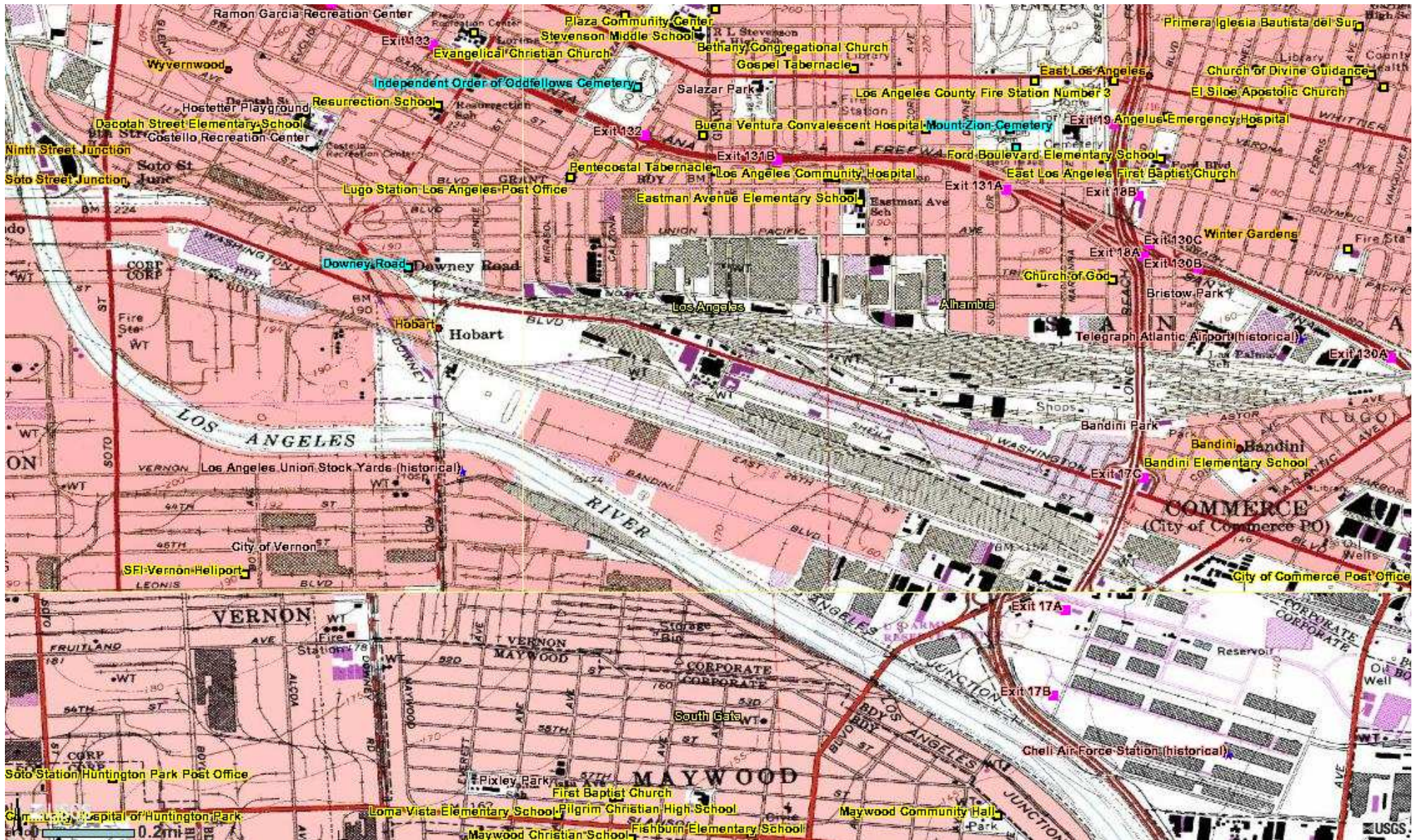
Last updated June, 2009



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
NA	NA	4/1991	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude	Longitude	Elevation
2700 S Indiana St. Vernon, CA 90058	Los Angeles	South Coast	34° 00' 28"	-118° 11' 32"	55 m

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Site Survey Report

Siting Information

Site Name: Exide	Date: 6/30/2009	State Code: NA	AIRS Number: NA
Address: 2700 S Indiana St. Vernon, CA 90058	Latitude: 34° 00' 28"	Longitude: -118° 11' 32"	Elevation (m): 55
	Senior AQIS: Albert Dietrich	Site Technician: TBD	Site Phone: N/A
Operating Agency: South Coast AQMD			

General Siting Conditions

Station Temperature Controlled: No Recorded: No	Traffic Description: Residential Distance: 30 m Count (Veh/Day):	Topography Site: Level Region: Level	Predominant Wind Direction: SW
		QA Manual Approved: Yes Agency: South Coast AQMD	Arc Air Flow (Deg): 360
			Probe Last Cleaned Date: N/A
Meteorology Located With Instruments: No	Non-vehicular Local Sources Description: Train Distance: 5 m Direction: surrounding	Manifold Clean: N/A	Cleaning Schedule: N/A
		Urbanization: Suburban	Autocalibrator Type: N/A
		Ground Cover: Asphalt / Gravel	Site Survey Complete: Yes
		Logbook Up To Date: Yes	

Action Items

Comments

Detailed Site Information

Site Name	Exide			
AQS ID (AIRS #)	N/A			
GIS coordinates	Latitude: 34° 00' 28" Longitude: -118° 11' 32"			
Location	Train yard			
Address	2700 S Indiana St. Vernon, CA 90058			
County	Los Angeles			
Dist. to road	30 m			
Traffic count				
Groundcover	Asphalt/Gravel			
PEP audit?	N/A			
NPAP audit?	N/A			
Flow audit?	N/A			
Representative Area	31100-Los Angeles-Long Beach-Santa Ana			
Pollutant	TSP- A Rehrig	TSP- B Rehrig	TSP- C Rehrig	TSP- ATSF
Monitor obj	REPRESENTATIVE CONCENTRATION	REPRESENTATIVE CONCENTRATION	REPRESENTATIVE CONCENTRATION	REPRESENTATIVE CONCENTRATION
Spatial scale	Microscale	Microscale	Microscale	Microscale
Sampling method	GMW TSP	GMW TSP	GMW TSP	GMW TSP
Serial #	NA	NA	NA	NA
Property #	1563	1553	1581	1545
Last Calibration Date	4/2/09	4/24/09	6/11/09	6/11/09
Analysis method	Weighed by SCAQMD lab	Weighed by SCAQMD lab	Weighed by SCAQMD lab	Weighed by SCAQMD lab
Start date	4/1991	4/1991	4/1991	4/1991
Operation schedule	1:6	1:6	1:6	1:6
Sampling season	All Year	All Year	All Year	All Year
Probe height	2.6	2.6	2.6	2.6
Distance from supporting structure	N/A	N/A	N/A	N/A
Distance from obstructions on roof	N/A	N/A	N/A	N/A
Distance from obstructions not on roof	N/A	N/A	N/A	N/A
Distance from trees	N/A	N/A	N/A	N/A
Distance to furnace or incinerator flue	N/A	N/A	N/A	N/A
Distance between collocated monitors	N/A	N/A	N/A	N/A
Unrestricted airflow	Yes	Yes	Yes	Yes
Probe material	N/A	N/A	N/A	N/A
Residence time	N/A	N/A	N/A	N/A
Will there be changes within the next 18 months?	No	No	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	N/A	N/A	N/A

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Frequency of flow rate verification for manual PM samplers audit	N/A	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers audit	N/A	N/A	N/A	N/A
Frequency of one-point QC check (gaseous)	N/A	N/A	N/A	N/A
Last Annual Performance Evaluation (gaseous)	N/A	N/A	N/A	N/A
Last two semi-annual flow rate audits for PM monitors	N/A	N/A	N/A	N/A

**Exide - Rehrig
Site Photos**



Looking North



Looking East from the probe.



Looking South from the probe.



Looking West from the probe

**Exide - ATSF
Site Photos (Cont.)**



Looking at the probe to the West.



Looking from the probe to the East.



Looking from the probe to the South.



Looking from the probe to the North.

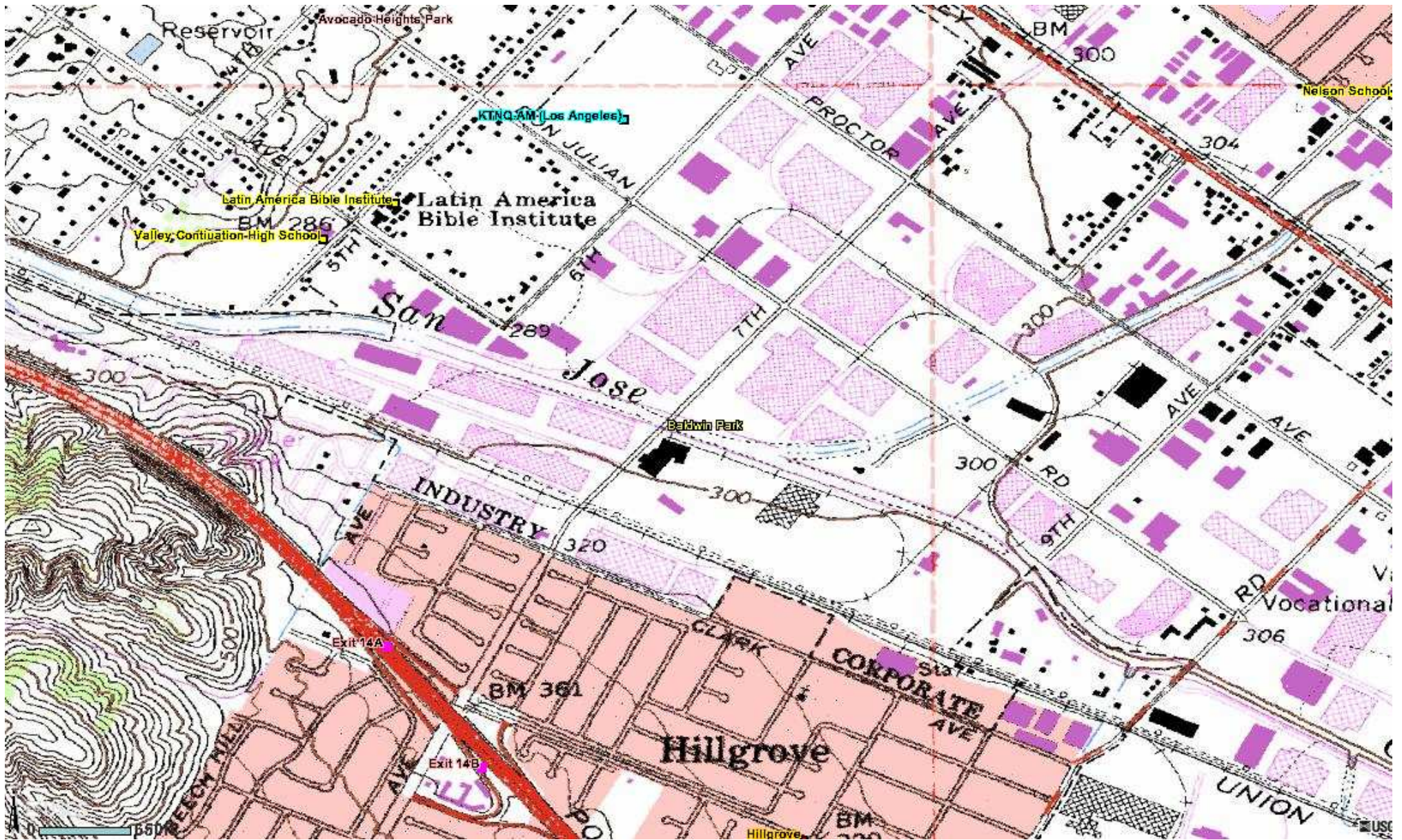
Site Survey Report for Quemetco

Last updated June, 2009



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
NA	NA	1991	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude	Longitude	Elevation
720 S 7th Ave. City of Industry, CA 91746	Los Angeles	South Coast	34° 01' 35"	-117° 58' 57"	89 m



Site Survey Report

Siting Information

Site Name: Quemetco	Date: 6/30/2009	State Code: NA	AIRS Number: NA
Address: 720 S 7th Ave. City of Industry, CA 91746	Latitude: 34° 01' 35"	Longitude: -117° 58' 57"	Elevation (m): 89
	Senior AQIS: Albert Dietrich	Site Technician: TBD	Site Phone: N/A
Operating Agency: South Coast AQMD			

General Siting Conditions

Station Temperature Controlled: No Recorded: No	Traffic Description: Suburban Distance: 20 Count (Veh/Day): 20,000	Topography Site: Level Region: Level	Predominant Wind Direction: SW Arc Air Flow (Deg): 360 Probe Last Cleaned Date: N/A
		QA Manual Approved: Yes Agency: South Coast AQMD	Manifold Clean: N/A Cleaning Schedule: N/A
			Autocalibrator Type: N/A Site Survey Complete: Yes
Meteorology Located With Instruments: No	Non-vehicular Local Sources Description: None Distance: N/A Direction: N/A	Urbanization: Suburban Ground Cover: Asphalt	Logbook Up To Date: Yes

Action Items

Comments

Detailed Site Information

Site Name	Quemetco			
AQS ID (AIRS #)	N/A			
GIS coordinates	Latitude: 34° 01' 35" Longitude: -117° 58' 57"			
Location	Parking lot			
Address	720 S 7th Ave. City of Industry, CA 91746			
County	Los Angeles			
Dist. to road	10			
Traffic count	20,000			
Groundcover	Asphalt			
PEP audit?	N/A			
NPAP audit?	N/A			
Flow audit?	N/A			
Representative Area	31100-Los Angeles-Long Beach-Santa Ana			
Pollutant	TSP			
Monitor obj	REPRESENTATIVE CONCENTRATION			
Spatial scale	Microscale			
Sampling method	GMW TSP			
Serial #	NA			
Property #	1577			
Last Calibration Date	4/3/09			
Analysis method	Weighed by SCAQMD lab			
Start date	1991			
Operation schedule	1:6			
Sampling season	All Year			
Probe height	2.6			
Distance from supporting structure	N/A			
Distance from obstructions on roof	N/A			
Distance from obstructions not on roof	N/A			
Distance from trees	N/A			
Distance to furnace or incinerator flue	N/A			
Distance between collocated monitors	N/A			
Unrestricted airflow	Yes			
Probe material	N/A			
Residence time	N/A			
Will there be changes within the next 18 months?	No			
Is it suitable for comparison against the annual PM2.5?	N/A			

Air Quality Monitoring Network Plan – July 2009

Frequency of flow rate verification for manual PM samplers audit	N/A			
Frequency of flow rate verification for automated PM analyzers audit	N/A			
Frequency of one-point QC check (gaseous)	N/A			
Last Annual Performance Evaluation (gaseous)	N/A			
Last two semi-annual flow rate audits for PM monitors	N/A			

**Quemetco – Closet World
Site Photos**



Looking North from the probe



Looking East from the probe.



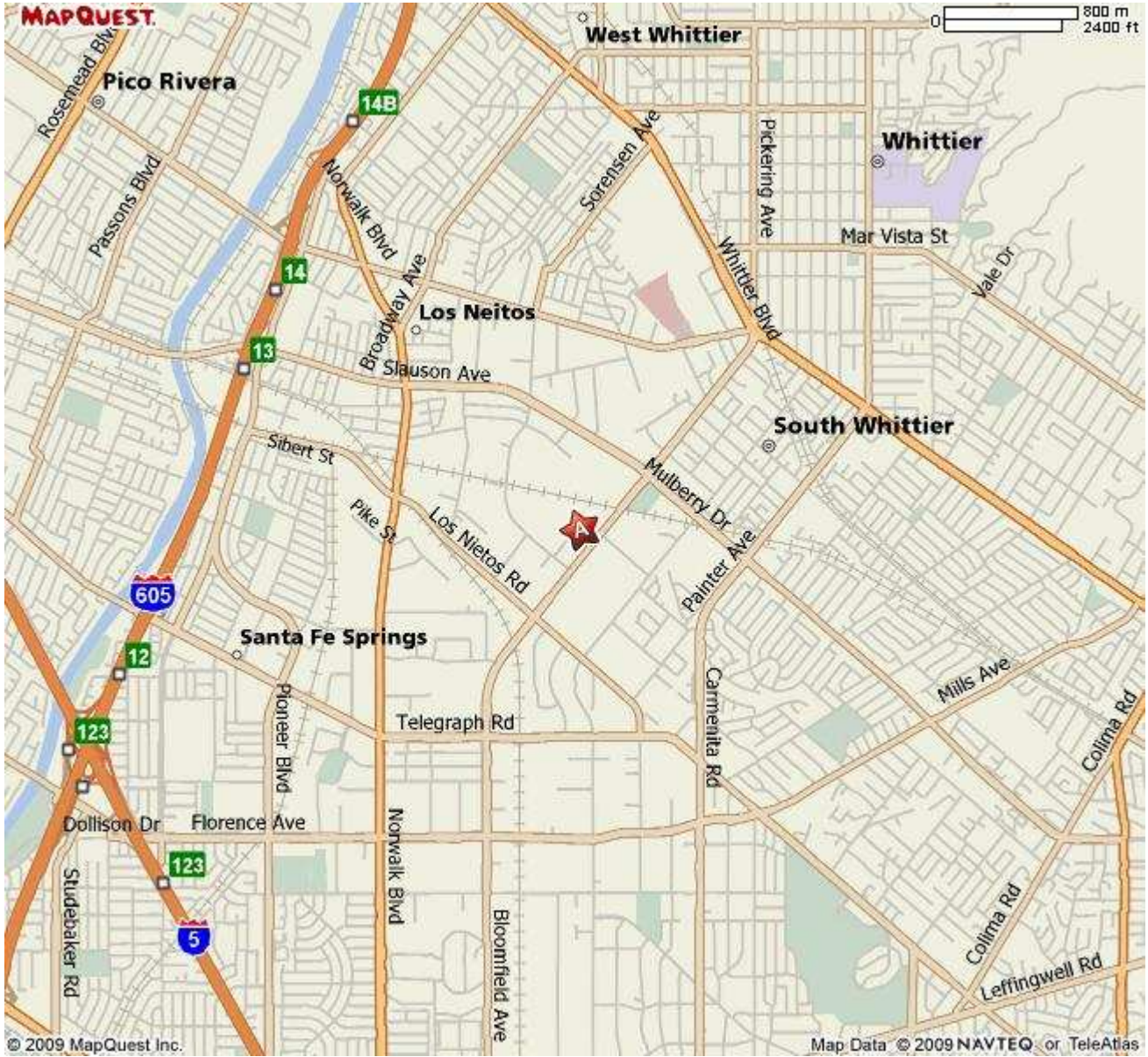
Looking South toward the probe.



Looking West from the probe

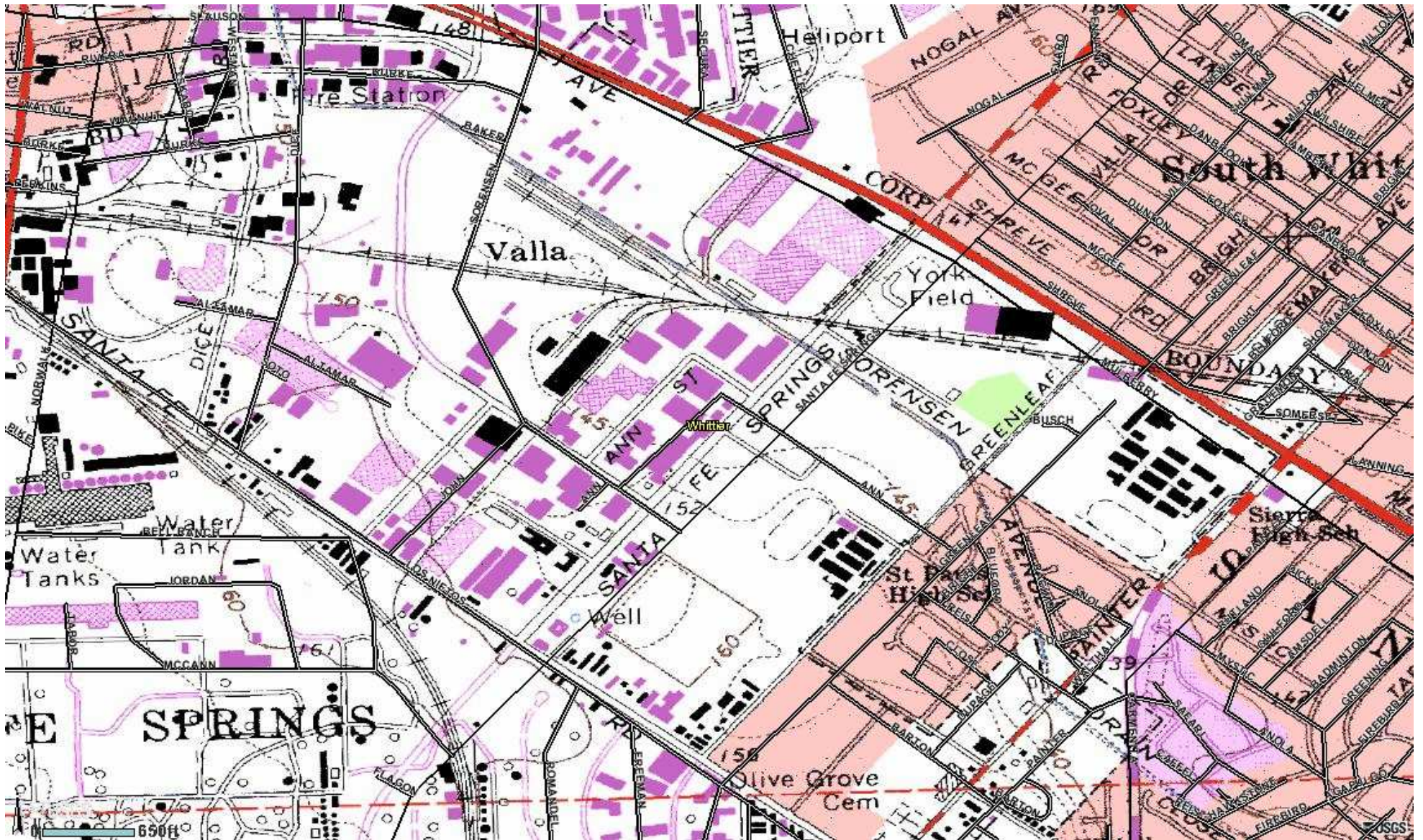
Site Survey Report for Trojan Battery

Last updated June, 2009



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
NA	NA	11/26/92	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude	Longitude	Elevation
9440 Ann St. Santa Fe Springs, CA 90670	Los Angeles	South Coast	33° 57' 18"	-118° 03' 23"	44 m



Site Survey Report

Siting Information

Site Name: Trojan Battery	Date: 6/30/2009	State Code: NA	AIRS Number: NA
Address: 9440 Ann St. Santa Fe Springs, CA 90670	Latitude: 33° 55' 17"	Longitude: 117° 34' 20"	Elevation (m): 197
	Senior AQIS: Albert Dietrich	Site Technician: TBD	Site Phone: N/A
Operating Agency: South Coast AQMD			

General Siting Conditions

Station Temperature Controlled: No Recorded: No	Traffic Description: Suburban Distance: 10 Count (Veh/Day): 5,000	Topography Site: Level	Predominant Wind Direction: SW
		Region: Level	Arc Air Flow (Deg): 360
		QA Manual	Probe Last Cleaned Date: N/A
Meteorology Located With Instruments: No	Non-vehicular Local Sources Description: None Distance: N/A Direction: N/A	Approved: Yes	Manifold Clean: N/A
		Agency: South Coast AQMD	Cleaning Schedule: N/A
		Urbanization: Suburban	Autocalibrator Type: N/A
		Ground Cover: Asphalt	Site Survey Complete: Yes Logbook Up To Date: Yes

Action Items

Comments

Detailed Site Information

Site Name	Trojan Battery			
AQS ID (AIRS #)	N/A			
GIS coordinates	Latitude: 34° 01' 34" Longitude: 117° 58' 54"			
Location	Parking lot			
Address	9440 Ann St. Santa Fe Springs, CA 90670			
County	Los Angeles			
Dist. to road	10			
Traffic count	5,000			
Groundcover	Asphalt			
PEP audit?	N/A			
NPAP audit?	N/A			
Flow audit?	N/A			
Representative Area	31100-Los Angeles-Long Beach-Santa Ana			
Pollutant	TSP			
Monitor obj	REPRESENTATIVE CONCENTRATION			
Spatial scale	Microscale			
Sampling method	GMW TSP			
Serial #	NA			
Property #	4903			
Last Calibration Date	12/30/08			
Analysis method	Weighed by SCAQMD lab			
Start date	11/26/92			
Operation schedule	1:6			
Sampling season	All Year			
Probe height	2.6			
Distance from supporting structure	N/A			
Distance from obstructions on roof	N/A			
Distance from obstructions not on roof	N/A			
Distance from trees	N/A			
Distance to furnace or incinerator flue	N/A			
Distance between collocated monitors	N/A			
Unrestricted airflow	Yes			
Probe material	N/A			
Residence time	N/A			
Will there be changes within the next 18 months?	No			
Is it suitable for comparison against the annual PM2.5?	N/A			

Air Quality Monitoring Network Plan – July 2009

Frequency of flow rate verification for manual PM samplers audit	N/A			
Frequency of flow rate verification for automated PM analyzers audit	N/A			
Frequency of one-point QC check (gaseous)	N/A			
Last Annual Performance Evaluation (gaseous)	N/A			
Last two semi-annual flow rate audits for PM monitors	N/A			

**Trojan Battery - UDDH
Site Photos**



Looking North from the probe



Looking East from the probe.



Looking South toward the probe.



Looking West from the probe

Site Survey Report for Van Nuys Airport

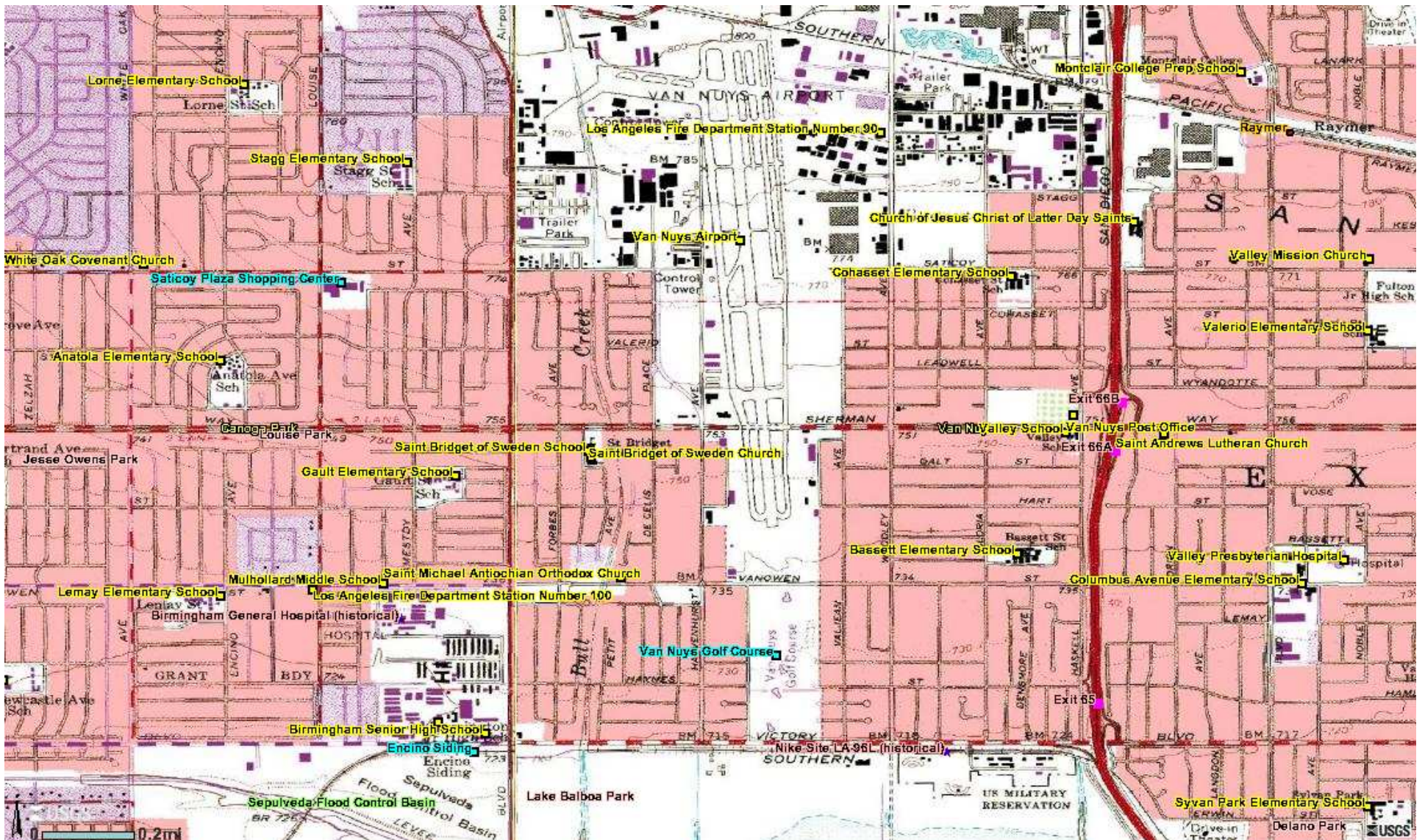
Last updated June, 2009



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
NA	NA	TBD	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude	Longitude	Elevation
16461 Sherman Way, Van Nuys CA, 91406	Los Angeles	South Coast	34° 12' 29"	-118° 29' 31"	236 m

Air Quality Monitoring Network Plan – July 2009



Site Survey Report

Siting Information

Site Name: Van Nuys A.P.	Date: 6/30/2009	State Code: NA	AIRS Number: NA
Address: 16461 Sherman Way, Van Nuys CA, 91406	Latitude: 34° 12' 29"	Longitude: -118° 29' 31"	Elevation (m): 236 m
	Senior AQIS: Albert Dietrich	Site Technician: TBD	Site Phone: N/A
Operating Agency: South Coast AQMD			

General Siting Conditions

Station Temperature Controlled: No Recorded: No	Traffic Description: TBD Distance: TBD Count (Veh/Day):	Topography Site: Level Region: Level	Predominant Wind Direction: Arc Air Flow (Deg): 360 Probe Last Cleaned Date: N/A
		QA Manual Approved: Yes Agency: South Coast AQMD Urbanization: Suburban Ground Cover: Asphalt / Gravel	Manifold Clean: N/A Cleaning Schedule: N/A Autocalibrator Type: N/A
			Site Survey Complete: Yes
			Logbook Up To Date:
Meteorology Located With Instruments: No	Non-vehicular Local Sources Description: Airplane Distance: TBD Direction: TBD		

Action Items

Comments

Detailed Site Information

Site Name	Van Nuys Airport			
AQS ID (AIRS #)	N/A			
GIS coordinates	Latitude: 34° 12' 29" Longitude: -118° 29' 31"			
Location	Airport			
Address	16461 Sherman Way, Van Nuys CA, 91406			
County	Los Angeles			
Dist. to road	TBD			
Traffic count	TBD			
Groundcover	Asphalt			
PEP audit?	N/A			
NPAP audit?	N/A			
Flow audit?	N/A			
Representative Area	31100-Los Angeles-Long Beach-Santa Ana			
Pollutant	TSP			
Monitor obj	REPRESENTATIVE CONCENTRATION			
Spatial scale	Microscale			
Sampling method	GMW TSP			
Serial #	TBD			
Property #	TBD			
Last Calibration Date	TBD			
Analysis method	Weighed by SCAQMD lab			
Start date	TBD			
Operation schedule	1:6			
Sampling season	All Year			
Probe height	2.6			
Distance from supporting structure	N/A			
Distance from obstructions on roof	N/A			
Distance from obstructions not on roof	N/A			
Distance from trees	N/A			
Distance to furnace or incinerator flue	N/A			
Distance between collocated monitors	N/A			
Unrestricted airflow	Yes			
Probe material	N/A			
Residence time	N/A			
Will there be changes within the next 18 months?	No			
Is it suitable for comparison against the annual PM2.5?	N/A			

Air Quality Monitoring Network Plan – July 2009

Frequency of flow rate verification for manual PM samplers audit	N/A			
Frequency of flow rate verification for automated PM analyzers audit	N/A			
Frequency of one-point QC check (gaseous)	N/A			
Last Annual Performance Evaluation (gaseous)	N/A			
Last two semi-annual flow rate audits for PM monitors	N/A			

ENCLOSURE 4

**STATE OF CALIFORNIA
SUPPLEMENTAL INFORMATION TO SUPPORT RECOMMENDED
NONATTAINMENT AREA FOR THE 2008 FEDERAL LEAD STANDARD**

Los Angeles County - South Coast Air Basin

The presumptive boundary for a lead nonattainment area is the boundary of the county in which the violating monitor(s) is located. However, the Air Resources Board (ARB) recommends the Los Angeles County lead nonattainment area not be defined as the entire County, but be limited to the portion of the County within the South Coast Air Basin (South Coast). As described below, this recommendation is based on the characteristics of lead emissions, concentrations measured at other monitors in the surrounding area, and existing jurisdictional boundaries and emissions control rules.

The South Coast portion of Los Angeles County is home to several lead-related industrial sources. These facilities are Exide Technologies in the City of Commerce, Quemetco, Inc. in the City of Industry, Trojan Battery Company in Santa Fe Springs, and Exide Technologies in Vernon. The four facilities are located within a 20 mile radius in the southern portion of the County. In 1992, the South Coast Air Quality Management District (District) adopted Rule 1420: Emissions Standard for Lead. The purpose of Rule 1420 is to reduce lead emissions from non-vehicular sources. It applies to all facilities that use or process materials containing lead, including primary or secondary lead smelters, foundries, and lead-acid battery manufacturers or recyclers, as well as facilities that produce lead-oxide, brass, and bronze. Under Rule 1420, facilities shall not discharge lead emissions into the atmosphere which cause ambient concentrations beyond the property line to exceed 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), averaged over 30 days. This concentration reflects the current California ambient air quality standard for lead, and it is generally comparable with the level of the previous federal standard ($1.5 \mu\text{g}/\text{m}^3$ averaged over a calendar quarter).

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The District operates a network of source-oriented monitors around four separate facilities. In addition, Rule 1420 requires facilities with specific lead processing amounts or emissions to conduct monitoring at their fence-line. The District's source-oriented monitors are located at or beyond the fence-line of the facility, and the District indicates they comply with U.S. EPA siting and operating criteria for a microscale monitoring site. While lead samples are generally collected on a 1-in-6 day schedule, samples may be collected more frequently at sites with high concentrations. Table 1 provides a summary of design values for the District's source-oriented monitors. Design values exceed the federal standard near two

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facilities: Trojan Battery Company and Exide Technologies in Vernon. The value for the Exide monitoring site is by far the highest.

**TABLE 1
LEAD DESIGN VALUES FOR SOURCE-ORIENTED MONITORS**

Facility Name	City	Monitor	3-Month Period	Lead Design Value*
Exide Technologies	City of Commerce	LA Paper Box, 61st Street	Jan-Mar 2006	0.14 µg/m³*
Quemetco, Inc.	City of Industry	Closet World, 500 S. 7 th Street	Jan-Mar 2006	0.09 µg/m ³
Trojan Battery Co.	Santa Fe Springs	Uddeholm, 9331 Santa Fe Springs Road	May-Jul 2007	0.18 µg/m ³
Exide Technologies	Vernon	Rehrig-Pacific Street	Jan-Mar 2008	2.49 µg/m ³

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Quenell Inc.~~

* Data available for LA Paper Box monitor from January 2006 through May 2006 only. Data available for Closet World monitor from January through December 2006 and October through December 2008. Data available for Rehrig-Pacific Street monitor from mid-November 2007 through mid-July 2009.

Exide Technologies is a lead-acid battery recycling facility. The most reliable estimate puts lead emissions from this facility at about 2 tons per year. The District currently maintains a network of three source-oriented lead monitors around Exide. All three are located beyond the fence-line, in publically accessible areas. In addition, the monitors are located near points of modeled maximum concentration. Based on violations of the 1.5 µg/m³ lead standard, as specified in their Rule 1420, the District issued violation notices to Exide for exceeding the limit during five consecutive months (December 2007 through April 2008). Concentrations during this time period also exceeded the 2008 federal standard. Since this time, District monitors show concentrations that are much lower, although they still exceed the revised lead standard of 0.15 µg/m³ calculated as a rolling three-month average.

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Fugitive lead particles are relatively large, and tend to settle out quickly after they are emitted. As a result, the highest concentrations occur in the immediate vicinity of an emission source. The U.S. EPA final lead rule states that data from non-source-oriented monitors can be helpful in determining the appropriate nonattainment area boundary. In addition to the source-oriented monitors summarized above, the District maintains a network of six non-source-oriented lead monitors in Los Angeles County, two in Riverside County, and two in San Bernardino County. Although data are not currently available for 2008, data from these non-source monitors are available for 2005 through 2007. Table 2 provides a summary of design values for the non-source-oriented sites. The design values range from 0.01 µg/m³ to 0.03 µg/m³, demonstrating the significant difference in concentrations measured by the non-source-oriented monitors versus the source-oriented monitors. This provides additional support for limiting the

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geographic extent of the recommended nonattainment area.

**TABLE 2
LEAD DESIGN VALUES AT SOUTH COAST
NON-SOURCE-ORIENTED MONITORS**

Site Name	County	2005-2007 Design Value
Long Beach-East Pacific Coast Highway	Los Angeles	0.02 µg/m ³
Los Angeles-North Main Street	Los Angeles	0.03 µg/m ³
Los Angeles-Westchester Parkway	Los Angeles	0.01 µg/m ³ *
Lynwood	Los Angeles	0.03 µg/m ³
North Long Beach	Los Angeles	0.01 µg/m ³
Pico Rivera **	Los Angeles	0.03 µg/m ³ *
Riverside-Magnolia	Riverside	0.01 µg/m ³
Riverside-Rubidoux	Riverside	0.02 µg/m ³
San Bernardino-4 th Street	San Bernardino	0.02 µg/m ³ *
Upland	San Bernardino	0.02 µg/m ³ *

* Data are not complete for some months during the three-year period.

** Reflects data from two sites: Pico Rivera (Jan 2005-Apr 2005) and Pico Rivera-4144 San Gabriel (Sep 2005-Dec 2007).

In summary, ARB staff recommends the South Coast portion of Los Angeles County be designated as nonattainment for the 2008 federal lead standard based on data from the Exide Rehrig-Pacific Street monitor. Although concentrations have dropped over the last year, they still exceed the 2008 federal lead standard. Design values for all non-source-oriented monitors in Los Angeles County, as well as in the rest of the Air Basin, show compliance with the revised standard. The District's Rule 1420 provides a mechanism for reducing emissions from lead-related industrial sources. Although the concentration limit currently specified in the Rule reflects the California lead standard, the District is planning to revise Rule 1420 to be more consistent with the level of the 2008 federal lead standard (0.15 µg/m³). In addition, the District plans to propose Rule 1420.1 which will apply to large lead-acid battery recycling facilities. The recommended nonattainment area falls under the jurisdiction of the South Coast Air Quality Management District, the agency responsible for administrating and enforcing Rule 1420.

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**STATE OF CALIFORNIA
SUPPLEMENTAL INFORMATION FOR
RECOMMENDED LEAD NONATTAINMENT AREA
SOUTH COAST AIR BASIN PORTION OF LOS ANGELES COUNTY
EIGHT FACTOR ANALYSIS**

INTRODUCTION

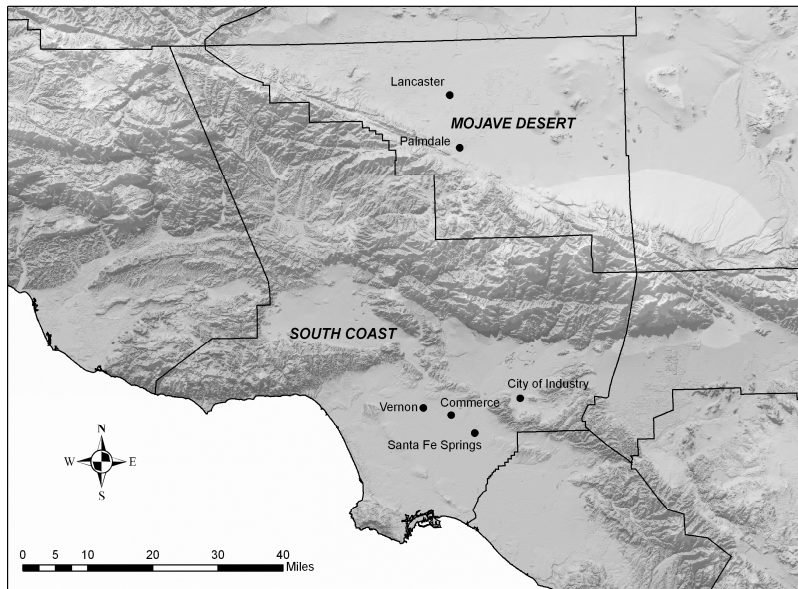
This document provides additional justification for recommending only the South Coast Air Basin portion of Los Angeles County be designated as nonattainment for the 2008 lead national ambient air quality standard. Specifically, the following sections address the eight factors U.S. EPA recommends for evaluating lead area designations.

ANALYSIS

Jurisdictional Boundaries

As shown in Figure 1, Los Angeles County is divided between two air basins. The southern two-thirds of the County is located in the South Coast Air Basin (South Coast) and falls under the jurisdiction of the South Coast Air Quality Management District (South Coast AQMD or District). The northern third of the County is located in the Mojave Desert Air Basin (Mojave Desert) and falls under the jurisdiction of the Mojave Desert Air Quality Management District. Pollutant concentrations are substantially higher in the South Coast portion of the County because several significant lead-related stationary sources are located there, in the City of Commerce, the City of Industry, Santa Fe Springs, and Vernon. As a result, the South Coast AQMD has implemented rigorous, source-specific, emissions control requirements. The jurisdictional differences, along with the disparity among emissions sources and other factors, justify limiting the lead nonattainment area to the South Coast portion of Los Angeles County.

**FIGURE 1
LOS ANGELES COUNTY**



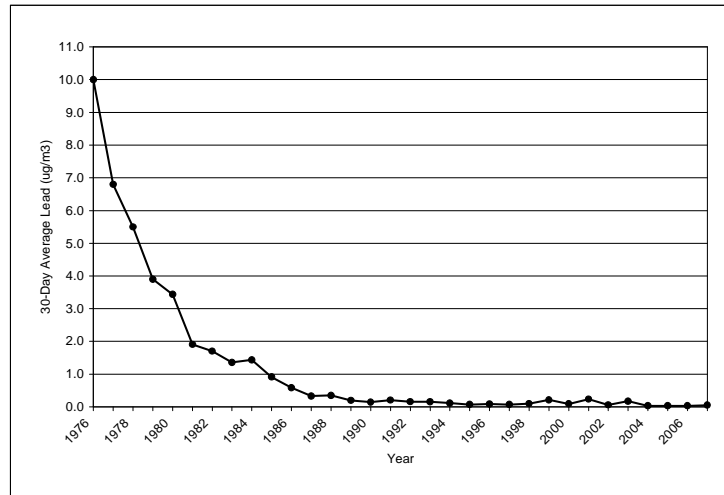
Air Quality Data

Mobile sources were once the major source of lead emissions in California, contributing over 90 percent of ambient lead concentrations. Since the 1970s, federal and State regulations have virtually eliminated lead from gasoline sold in the State, except for very limited use in general aviation applications. Figure 2 shows the dramatic decrease in ambient lead concentrations since 1975. Values plotted in Figure 2 are representative of the South Coast, which generally has the highest lead concentrations in the State. Although lead from gasoline no longer poses an air quality problem, lead emissions from remaining industrial sources, and potentially from general aviation airports, may still pose “hot spot” problems at isolated South Coast locations. Such sources are not reflected in Figure 2.

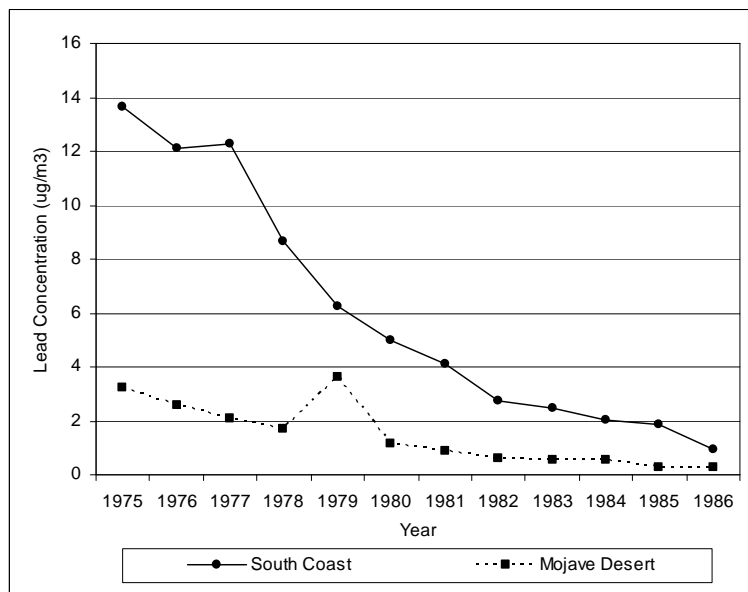
Figure 3 compares maximum 24-hour measured lead concentrations in the South Coast portion of Los Angeles County with those in the Mojave Desert portion. Although the 24-hour concentrations are not comparable with the federal lead standard, they provide an indication of the differences in ambient concentrations. Data for the Mojave Desert portion of the County are available only through 1986, when lead sampling was discontinued at the Lancaster site because concentrations were very low. Data in Figure 3 represent neighborhood scale sites, and concentrations in the South Coast were, on average, four and a half times the level of concentrations in the Mojave Desert. In terms of the current 0.15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) federal standard, the highest three-month average concentration at Lancaster during 1986 was 0.126 $\mu\text{g}/\text{m}^3$,

which is below the federal standard. In contrast, the highest three-month average for the South Coast portion of the County was $0.443 \mu\text{g}/\text{m}^3$, a value that exceeds the standard and is three and a half times the value for Lancaster. Based on data for 2005 through 2007, the most recent complete three-year period for which data area available, design values for the continuing network of

**FIGURE 2
MAXIMUM 30-DAY AVERAGE LEAD CONCENTRATIONS IN CALIFORNIA**



**FIGURE 3
MAXIMUM 24-HOUR LEAD CONCENTRATIONS IN THE SOUTH COAST AND MOJAVE DESERT PORTIONS OF LOS ANGELES COUNTY**



neighborhood scale sites in the South Coast portion of the County are now all below the federal standard, ranging from less than 0.01 $\mu\text{g}/\text{m}^3$ to 0.03 $\mu\text{g}/\text{m}^3$. Based on the continuing large differences in emissions, we expect the discrepancy in ambient concentrations in the South Coast and Mojave Desert portions of Los Angeles County still exists.

Although concentrations at all of the South Coast neighborhood scale sites meet the standard, concentrations measured near lead-related stationary sources do not. To address this hot spot problem, the South Coast AQMD established a network of source-specific lead sampling sites in the early 1990s and has expanded the network over the years. A number of these source-oriented sites were established as part of the District's Rule 1420 -- Emissions Standard for Lead. The samplers are located at or beyond the property line of lead-related facilities, and they comply with U.S. EPA siting and operating criteria. Lead samples are generally collected on a 1-in-6 day schedule, although samples are collected more frequently at sites with the highest concentrations.

Design values for the affected facilities are summarized in Table 1. Based on these data, the design value for the South Coast portion of Los Angeles County is 2.49 $\mu\text{g}/\text{m}^3$, which exceeds the 0.15 $\mu\text{g}/\text{m}^3$ federal lead standard. Although the design value is much higher than the 2008 federal lead standard, values for the District's other source-oriented sites surrounding the Exide facility are lower, with maximum 3-month averages ranging from 0.03 $\mu\text{g}/\text{m}^3$ to 0.55 $\mu\text{g}/\text{m}^3$. Although one of these values also exceeds the standard, both values are significantly lower than the high concentration. In addition, concentrations at these other sites decrease with distance from the Exide facility, confirming the rapid drop in lead concentrations with distance from a source. This relationship provides additional support for limiting the size of the nonattainment area.

**TABLE 1
LEAD DESIGN VALUES FOR
SOUTH COAST SOURCE-ORIENTED MONITORS**

Facility Name	City	Monitor	3-Month Period	Lead Design Value*
<i>Exide Technologies</i>	<i>City of Commerce</i>	<i>LA Paper Box, 61st Street</i>	<i>Jan-Mar 2006</i>	<i>0.14 $\mu\text{g}/\text{m}^3$*</i>
<i>Quemetco, Inc.</i>	<i>City of Industry</i>	<i>Closet World, 500 S. 7th Street</i>	<i>Jan-Mar 2006</i>	<i>0.09 $\mu\text{g}/\text{m}^3$</i>
<i>Trojan Battery Co.</i>	<i>Santa Fe Springs</i>	<i>Uddeholm, 9331 Santa Fe Springs Road</i>	<i>May-Jul 2007</i>	<i>0.18 $\mu\text{g}/\text{m}^3$</i>
<i>Exide Technologies</i>	<i>Vernon</i>	<i>Rehrig-Pacific Street</i>	<i>Jan-Mar 2008</i>	<i>2.49 $\mu\text{g}/\text{m}^3$</i>

* Data available for LA Paper Box monitor from January 2006 through May 2006 only. Data available for Closet World monitor from January through December 2006 and October through December 2008. Data available for Rehrig-Pacific Street monitor from mid-November 2007 through mid-July 2009.

Emissions Data and Level of Emissions Control

As shown in Table 2, there are significant differences between lead emissions in the South Coast and Mojave Desert portions of Los Angeles County. In combination, sources in the South Coast portion of the County emit nearly three times more lead than sources in the Mojave Desert portion of the County. When looking only at stationary sources, emissions in the Mojave Desert portion of the County are less than 1 percent of the South Coast value. In addition, the Air Resources Board's emissions inventory indicates there are no stationary sources or general aviation airports located in the Mojave Desert portion that come close to meeting the 0.5 ton per year threshold of concern established by U.S. EPA. While the Exide facility and several general aviation airports in the South Coast portion of the County exceed the 0.5 ton per year threshold U.S. EPA is currently considering (only Exide Technologies and Van Nuys Airport exceed 1 ton/year), the closest one is more than 20 miles from the South Coast-Mojave Desert air basin boundary. Given the rapid drop in lead concentration with distance, the South Coast facilities do not have any measurable impact on concentrations in the Mojave Desert portion of the County.

TABLE 2
LEAD EMISSIONS IN THE SOUTH COAST AND MOJAVE DESERT
PORTIONS OF LOS ANGELES COUNTY

<i>Emissions Category</i>	<i>Los Angeles County South Coast Portion (tons / day)</i>	<i>Los Angeles County Mojave Desert Portion (tons / day)</i>
<i>Stationary</i>	4.45	0.03
<i>Area-wide</i>	13.63	6.59
<i>On-Road Mobile</i>	0.20	0.01
<i>Other Mobile</i>	0.09	0.34
TOTAL	18.37	6.97

In September 1992, the South Coast District adopted Rule 1420, which is specifically aimed at reducing lead emissions from non-vehicular sources. Rule 1420 (Emissions Standard for Lead) applies to all facilities that use or process materials containing lead, including primary or secondary lead smelters, foundries, lead-acid battery manufacturers or recyclers, as well as facilities that produce lead-oxide, brass, and bronze. The Rule has been, and will continue to be, very effective in dealing with high, facility-related lead concentrations, and forms the basis of the District's lead attainment strategy. This type of rule is not warranted in the Mojave Desert portion of the County because of the lack of lead sources and measurable impact.

Population Density, Degree of Urbanization, and Expected Growth

Similar to air quality and emissions, there are vast differences between the population and degree of urbanization in the two portions of Los Angeles County. Based on estimates for 2010, the highly urbanized South Coast portion of the County has a population of more than 10 million, compared with a population of 328,000 in the Mojave Desert portion. This means that nearly 97 percent of the County population lives in the South Coast portion, compared with only 3 percent in the Mojave Desert portion of the County. In terms of urbanization, the South Coast portion of Los Angeles County is part of the largest metropolitan area in California. In contrast, the Lancaster-Palmdale area is the only urbanized area in the Mojave Desert portion of the County. In terms of size, the South Coast portion of Los Angeles County is a little more than one and a half times larger than the Mojave Desert portion (2538 square miles versus 1522 square miles). However, the population density is 3,992 people per square mile, compared with only 216 people per square mile in the Mojave Desert portion.

Over the last decade, the South Coast and Mojave Desert portions of Los Angeles County have realized similar growth rates, with population in both areas showing a seven percent increase from 2000 to 2005 and a two percent increase from 2005 to 2010. These trends are expected to continue, thereby maintaining the significant differences in population between the two sub-county areas.

Geography and Meteorology

Meteorological conditions in the South Coast and Mojave Desert portions of Los Angeles County are substantially different. The South Coast portion is bounded by the Pacific Ocean, which makes for a more temperate climate with cooler temperatures and a diurnal pattern of on-shore / off-shore air flow. Temperatures generally average in the 70s during the summertime and the 50s during the wintertime. Average annual precipitation is about 15 inches per year. In contrast to the coastal area, the Mojave Desert portion of Los Angeles County is a high desert area with average temperatures in the 80s during summer and the 40s during the winter. This desert portion of the County receives half as much rainfall, averaging about 7 inches per year.

The South Coast portion of Los Angeles, where the major lead emissions sources are located, is surrounded by mountains which act as barriers to airflow between the South Coast and Mojave Desert (refer to Figure 1). Although there are a limited number of gaps in these mountains where transport has been documented, transport of lead emissions from the South Coast into the Mojave Desert is highly unlikely, given the weight of lead particles and the rapid decrease in concentration with distance from a source. As a result, emissions sources in the South Coast are not expected to have an impact on lead concentrations in the Mojave Desert portion of the County.

SUMMARY AND RECOMMENDATION

The South Coast and Mojave Desert portions of Los Angeles County are two distinct areas. The highly urbanized South Coast portion is primarily a coastal area with a high population density and a concentration of several lead-related processing facilities that have the potential to violate the federal lead standard. In contrast, the Mojave Desert portion of the County is a sparsely populated high desert area that lacks any notable lead emissions sources.

Because of these differences, the lead air quality problem in the South Coast portion of the County is much more significant than in the Mojave Desert portion. Even so, lead concentrations exceeding the federal standard are found only near the lead-related facilities that are generally located in the coastal plain area of the South Coast. Lead measurements show these concentrations decrease rapidly with distance from the source, and transport of lead particles or pollutants from the South Coast to the Mojave Desert is not expected to occur. The two areas are separated by mountains, and although there are some documented transport routes, the heavy weight of lead particles and the quick decrease in concentration with distance from the source make any measurable transport impact extremely unlikely.

In terms of air quality regulation, the two County portions fall under the jurisdiction of two separate air pollution control districts. The primary strategy for dealing with the high concentrations in the South Coast portion of Los Angeles County is the South Coast District's Rule 1420, which has been effective in reducing source-specific emissions and resulting high concentrations. This strategy will continue to address violations of the federal lead standard. Rule 1420 has no application in the Mojave Desert portion of the County because there are no sources.

Based on the previous analyses, the Air Resources Board recommends that U.S. EPA limit the extent of the federal lead nonattainment area to the portion of Los Angeles County located in the South Coast Air Basin.