SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
MONITORING AND ANALYSIS

Rule 1158 Follow-Up Study #11

Sampling Conducted
October 2004 – December 2004

Program Monitoring Conducted By
RPS Environmental, Inc.
865 Via Lata, Colton, CA 92324

Sample Analysis By
Steven Barbosa, Principal Air Quality Chemist
Sandra Hom, Senior Air Quality Chemist
Roger Bond, Air Quality Chemist
Jorge Diez, Laboratory Technician

Report Prepared By
Jeremy C. O'Kelly, Air Quality Chemist
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Reviewed By
Henry Hogo
Assistant DEO, Science and Technology Advancement

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EXECUTIVE SUMMARY

Purpose

In June 1999, Rule 1158 affecting storage, handling and shipment of petroleum coke, coal, and sulfur was amended to further reduce particulate emissions from these sources. The mandated date for full compliance with the Rule was June 2004. This study is one of an ongoing series examining elemental carbon (EC) contained in the inhalable particulate fraction (PM_{10}) in the greater Long Beach/Wilmington area. This series of studies consists of PM_{10} sampling in the spring/summer and fall/winter, observing trends in ambient PM_{10} concentration and the EC content of collected samples.

Sampling

Sampling was conducted between October 30, 2004 and December 5, 2004, coincident with the AQMD PM_{10} monitoring network one-in-six day schedule. Sampling locations were identical to those utilized for the previous Rule 1158 follow-up studies. It is intended that these sites be used throughout the entire series of studies. Field operations were conducted by RES Environmental, Inc., while all laboratory operations and data analysis were performed by AQMD staff. Twenty samples were collected over seven non-consecutive sampling days.

Key Findings

1. Measured average ambient PM_{10} and elemental carbon concentrations at the Hudson and Edison School sites are higher than the AQMD Long Beach and Central Los Angeles network stations for the duration of the study. The average PM_{10} measured at Hudson School and Edison School were 48 $\mu g/m^3$ and 42 $\mu g/m^3$ respectively, during the study, while all other sites examined had averages ranging from 27-35 $\mu g/m^3$.

2. While averages are used to analyze PM_{10} trends over the course of the nine Rule 1158 follow-up studies, individual sites often experienced days where PM_{10} exceeded the State 24-hour PM_{10} standard of 50 $\mu g/m^3$. In 1998, approximately 70% of all measurements exceeded this standard. The incidence of 24-hour exceedences has since steadily declined and constituted 20% of the PM_{10} measurements in the current study.

3. The current and previous monitoring studies indicate that higher PM_{10} and EC concentrations are measured at the Hudson School site than any other study sites, and measurements are often higher compared to most of the AQMD network sites for PM_{10}. During this study the average EC at Hudson School (7.0 $\mu g/m^3$) was 59% higher than any other study site. The two closest AQMD network sites that have measurements of EC, Central Los Angeles and Long Beach, reported concentrations of 2.7 $\mu g/m^3$ and 3.6 $\mu g/m^3$, respectively.

4. Monitoring at Long Beach shows a significant decline in ambient elemental carbon since Rule 1158 was amended in July 1999. In 1998, prior to Rule amendment, EC at the study sites averaged 7.8 $\mu g/m^3$ and steadily declined to an average of 4.5 $\mu g/m^3$ by fall 2000. More recent studies have shown average EC concentration to fluctuate within a narrow range between 5.0-5.5 $\mu g/m^3$. This increase from the lowest observation (4.5 $\mu g/m^3$ in 2000) may be attributed to increased commercial and private vehicular traffic in the area, and year to year variations in meteorology.

5. Monitoring during the spring/summer period shows lower and more consistent PM_{10} levels, whereas fall/winter measurements (which are historically higher throughout the Basin than springtime measurements) have been illustrative of trends in the area. Examination of all of the monitoring data for spring and fall suggests that measurable benefits of Rule 1158 have been observed, and increasing emissions from other sources of PM_{10} and EC in the area may be greater contributors to PM_{10}, compared to PM_{10} from the coke/coal sources.

1.0 INTRODUCTION

Over the course of several years prior to 1997, the AQMD had received complaints of black, oily airborne dust from residents of Long Beach and Wilmington area neighborhoods. Surveys of the area noted that there were numerous coal and petroleum coke production, storage, and shipment facilities. These included open stockpiles of green coke, enclosed "coke barns", refinery kilns producing petroleum coke, and a variety coke and coal carrying trains and trucks. Other industrial processes including sulfur distribution facilities, heavy traffic patterns, and general construction activities were also noted in the area.

In August 1996, AQMD staff attended a public meeting in San Pedro that focused on public concern over the levels of particulate matter in the region. Subsequently, the AQMD staff coordinated with various public action groups to select several sites for particulate monitoring, including sites located at specific areas of community concern.

Two studies were conducted at these sites, one in May 1997[1] and one in fall/winter 1998[2]. These studies were designed to characterize local micrometeorological parameters, and to microscopically and chemically characterize airborne particulate collected in the area. The most pronounced findings of these studies were the elevated levels of elemental carbon and inhalable particulate matter at some study sites, including a monitoring site adjacent to Elizabeth Hudson Elementary School in Long Beach.

In June 1999 the AQMD amended Rule 1158 affecting storage, handling and shipment practices for petroleum coke, coal, and sulfur. Subsequent California State legislation HSC 40459 (AB 1775 – Lowenthal) requires that the AQMD, in conjunction with the California Air Resources Board (CARB), prepare an annual study for the California State Legislature examining the frequency and severity of violations related to AQMD Rule 1158. To monitor the efficacy of the Rule and provide supporting data for the Legislative Report, the AQMD initiated a series of *Rule 1158 Follow-up Studies*. These studies are conducted twice annually on an ongoing basis; once each spring/summer and fall/winter.

Removal and enclosure of open coke storage piles, and modification to equipment and work practices to comply with Rule 1158 requirements is ongoing. The Rule 1158 compliance schedule mandates implementation of the majority of control measures by August 1999, with full implementation of all measures by June 2004. AQMD Compliance staff have documented a high rate of compliance with the initial rule implementation requirements, including covered transport, truck washing, prompt roadway/spill clean-up and the removal of several large open coke piles that has resulted in the reduction of fugitive coke emissions from storage, handling, and shipping

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[1] South Coast Air Quality Management District. (September 1997) *Micrometeorological and Ambient Air Quality Monitoring Conducted Simultaneously in the Vicinity of the Los Angeles and Long Beach Harbors.* Diamond Bar, CA.

[2] South Coast Air Quality Management District. (March 1999) *Micrometeorological and Ambient Air Quality Monitoring Conducted Simultaneously in the Vicinity of the Los Angeles and Long Beach Harbors.* Diamond Bar, CA.

operations. Implementation of Rule 1158 has contributed to a decrease in ambient PM_{10} concentrations in the local area.

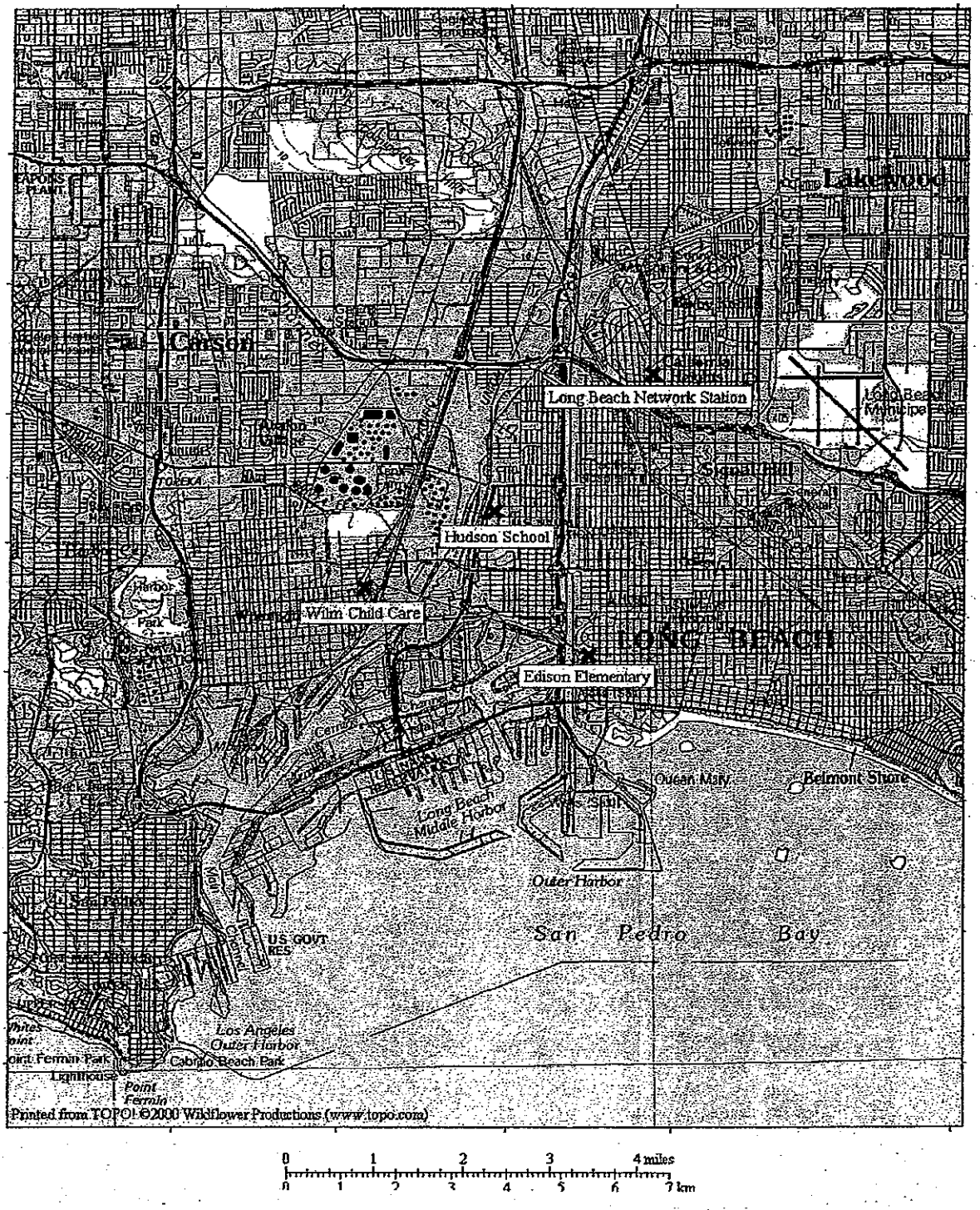


Figure 1 – Study Sampling Sites

2.0 PROJECT DISCUSSION

From October 30 to December 5, 2004, PM_{10} monitoring was conducted at three locations in the cities of Long Beach (two sites) and Wilmington (one site). This study constituted the eleventh in a series of follow-up studies evaluating improvements in local air quality precipitated through implementation of Rule 1158, as amended on June 11, 1999.

This study builds on a base of knowledge established by several previous studies: two prior to Rule amendment and ten follow-up studies. Together they constitute a set of seven spring/summer studies[3,4] and six fall/winter[5,6]. The primary objectives of the current study are to collect data suitable for the evaluation of:

- Current inhalable particulate (PM_{10}) ambient concentration trends for the study area.
- Speciation of the carbonaceous component of the collected particulate samples for elemental and organic carbon content.
- Comparison of 2004 PM_{10} mass and carbon data with that obtained during the earlier Rule 1158 studies.

The prevailing winds in the study area place portions of the community downwind of coal and coke production and/or storage facilities, and fugitive dust from these activities has been a longstanding community concern. This fugitive dust contributes to increases in the PM_{10} particulate concentration. Mobile sources such as diesel trucks, trains and ships in the area also contribute to the overall ambient particulate matter concentrations.

Site selection and the sampling calendar were influenced by several factors. Sampling dates were scheduled to repeat as closely as possible the sampling dates of the previous studies, while coinciding with the U.S. EPA one-in-six monitoring schedule utilized by the AQMD in its PM_{10} monitoring network. Samples were scheduled for collection on October 30, 2004, November 5, 11, 17, 23, and 29, 2004, and December 5, 2004, producing a data set consisting of 21 samples. One sample was invalid due to a power failure at Edison School on December 5th.

The three current monitoring sites were chosen from seven sites used in the fall/winter 1998 study, *Micrometeorological and Ambient Air Quality Monitoring Conducted Simultaneously in the Vicinity of the Los Angeles and Long Beach Harbors* (March 1999); the sites have remained constant during the course of the *Rule 1158 Follow-Up* series of studies (Figure 1.) Site selection criteria included site locations relative to coal

[3] South Coast Air Quality Management District. (September 1997)
[4] South Coast Air Quality Management District. *Rule 1158 Follow-Up Study #2, #4, #6. #8 and #10.* Diamond Bar, CA.
[5] South Coast Air Quality Management District. (March 1999)
[6] South Coast Air Quality Management District. *Rule 1158 Follow-Up Study #1, #3, #5, #7 and #9.* Diamond Bar, CA.

and coke facilities with respect to the local prevailing wind patterns, and their importance as locations at or near student populations (the sites include two schools and a child care center. Of the seven sites included in the 1998 study, the two school sites exhibited the highest levels of ambient PM_{10} and elemental carbon. Detailed site maps can be found in Appendix A-2.

2.1 SITE DESCRIPTIONS

RES Environmental, Inc. (RES), was contracted by the AQMD to perform field operations for the current study at three sampling locations:

Site 1: School Building Services Facilities/Hudson School (HUD)
2401 Webster Avenue
Long Beach, California

The monitoring site is located at the Long Beach School Building Services facility (maintenance yard), adjacent to the Hudson Middle School. The PM_{10} sampler was installed on top of two adjoining steel containers. Potential exposures consist of Henry Ford Freeway, which runs parallel to the monitoring site to the west; and the maintenance yard to the north, east and south of the monitoring site. The maintenance yard consists of repairs and fabrication of materials, including welding. Meteorological monitoring equipment was included at this site.

Site 2: Edison Elementary School (EDI)
625 Maine Avenue
Long Beach, California

This site was located at the Edison Elementary School in Long Beach. The PM_{10} sampler was located on a steel container at the western side of the school and playground. The sampler was also installed on a five-foot platform to clear the school building to the east. Potential exposures consist of a main street artery (16^{th} Street) located to the north, which carries heavy vehicle traffic; and a small bus terminal to the west of the monitoring site.

Site 3: Wilmington Childcare Center (WIL)
1419 Young Street
Wilmington, California

The monitoring equipment was installed on the roof of the Childcare Center. Potential exposures consist of a commercial/industrial development to the east; and a parking area to the west of the monitoring site.

2.2 SAMPLING AND ANALYSIS METHODOLOGY

The AQMD maintains a PM_{10} monitoring network throughout the South Coast Air Basin (Basin). The Federal Reference Method (FRM) selective size inlet (SSI) PM_{10} samplers utilized in the PM_{10} network and analytical procedures are summarized here.

The SSI sampler used in this study is the U.S. EPA's FRM sampler found in the Code of Federal Regulations (40CFR50 Appendix J). It is used to monitor particulate matter 10 microns in diameter and less (PM_{10}). For the purposes of this study, the SSI samplers are used to collect PM_{10} samples, which were also used for the determination of organic carbon (OC), elemental carbon (EC), and total carbon.

The SSI sampler contains a pump controlled by a programmable timer. An elapsed time accumulator, linked in parallel with the pump, records total pump operation time in hours. During operation, a known quantity of air is drawn through a particle size separator, which achieves particle separation, by impaction. The correct flow rate through the inlet is critical to collection of the correct particle size so that after impaction, only particles with a diameter of 10 microns or less remain suspended in the airstream. The flow of air then passes through a quartz filter medium, upon which the particles are collected. A programmable timer automatically turns the pump off at the end of the 24-hour sampling period.

Once a sample has been collected it is returned to the laboratory, following chain-of-custody protocols, where both PM_{10} mass and carbon content are determined. Ambient PM_{10} mass is determined by subtracting the weight of the clean unsampled filter (measured in the laboratory prior to sampling) from the weight of the sampled filter containing the collected PM_{10}, to yield the mass of the PM_{10} collected on the filter. This mass is then divided by the amount of air drawn through the filter to give the ambient concentration, expressed as mass per cubic meter ($\mu g/m^3$).

Ambient carbon levels are determined by taking a small portion of the PM_{10} filter and putting it into a carbon analyzer. The analyzer consists of a computer-controlled programmable oven, computer controlled gas flows, a laser, and a flame ionization detector (FID). The sample is first heated in the oven in increasing amounts of oxygen. As the temperature rises, organic carbon followed by elemental carbon are evolved from the filter. The laser beam passes through the filter, and the transmitted intensity increases at the detector as the light-absorbing carbon leaves the filter, causing the filter to become less black. The evolved carbon is swept from the oven by gas flow, and is transported to the FID where it is detected (in the form of methane) throughout the heating process. The computer that controls these processes collects data on the oven temperature profile, laser light absorption, and FID response to determine the OC and EC content of the filter. This information, combined with the volume of air sampled, provides the OC and EC concentration in the ambient air.

3.0 DATA ANALYSIS

Data collected from the current study are compared with data collected from the previous Long Beach/Wilmington area studies. The following sections discuss the results of the analysis.

3.1 PM_{10} AMBIENT CONCENTRATION ANALYSIS

PM_{10} ambient concentrations observed during the study are shown in Table 1. Complete data tabulations can be found in Appendix A-1. Long Beach values are provided for comparison. The Central Los Angeles data reflect conditions within the urban core, where particulate levels are typically higher in carbonaceous compounds, as a result of a higher contribution from vehicle emissions.

Table 1: Fall/Winter 2004 PM_{10} Concentrations ($\mu g/m^3$) at Sampling Sites

	Date						
Location	10/30/04	11/5/04	11/11/04	11/17/04	11/23/04	11/29/04	12/5/04
HUD	40	43	45	77	36	72	21
EDI	36	39	35	66	30	45	*
WIL	31	39	25	64	32	40	13
Los Angeles	23	31	26	41	24	28	18
Long Beach	47	32	28	53	30	32	18

Twenty-four hour ambient PM_{10} concentrations during the study period ranged from a maximum of 77 $\mu g/m^3$ at HUD on November 17th, to a minimum of 13 $\mu g/m^3$ obtained at the WIL site on December 5th. The average PM_{10} concentration for the three study sites was 41 $\mu g/m^3$.

Four of the 20 (20%) samples collected during the course of the study exceeded the State 24 hour PM_{10} standard of 50 $\mu g/m^3$. The Federal PM_{10} 24-hour standard of 150 $\mu g/m^3$ was not exceeded in the current study. The highest site average value of 48 $\mu g/m^3$ over the course of the study occurred at the Hudson School site. As observed in previous studies, the Hudson School site ranked highest for PM_{10}.

On every sampling day other than October 30th, one or more study samples exceeded both the nearby Long Beach and Central Los Angeles network stations.

For all studies except the fall/winter 2000 study, the HUD site exhibited the highest PM_{10} average. It should also be noted that on several occasions in the previous studies the HUD site PM_{10} concentrations are significantly higher than those observed at EDI and WIL. Taken together, these trends suggest that HUD consistently experiences higher PM_{10} concentrations than elsewhere in the study area. Such elevated samples may be the result of local sources or meteorological conditions influencing the immediate area adjacent to the sampler, and underscore the complexity and variety of particulate sources that contribute to ambient PM_{10}.

3.2 PM_{10} Trend Analysis

Figure 2 summarizes the ambient PM_{10} concentrations observed over the course of the seven fall/winter studies. The black line represents the three-site study average for each study. The data show a varying three-site seasonal PM_{10} decline from a 2000 average 64.5 $\mu g/m^3$, to a 2003 average 42.3 $\mu g/m^3$ – an average decline of 7 $\mu g/m^3$ per year. The 2004 average of 41.5 $\mu g/m^3$ is statistically unchanged from the prior study.

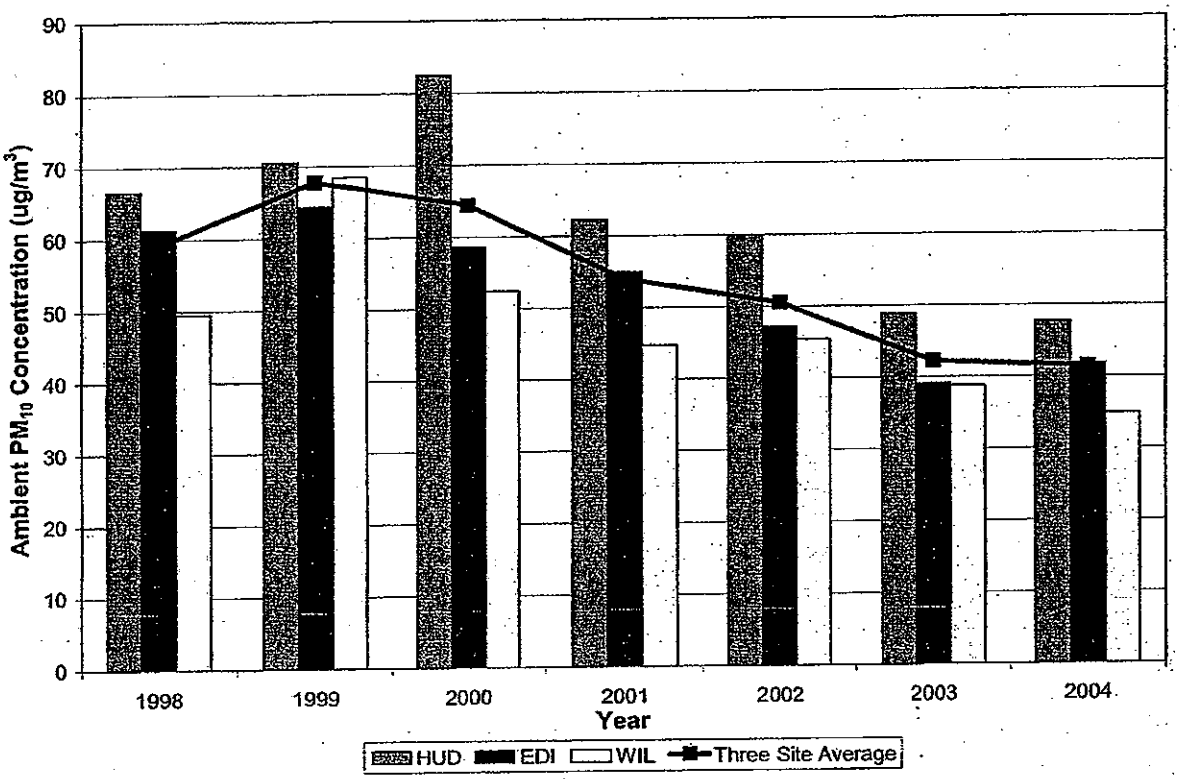


Figure 2: Fall/Winter Ambient PM_{10} Concentrations by Site and Year

Exceedences of the state 24-hour PM_{10} standard of 50$\mu g/m^3$ are shown in Figure 3. During the course of the fall/winter study sampling, yearly exceedences of the state PM_{10} standard have declined from approximately 70% of the samples taken in 1998 to 20% of the samples in 2004.

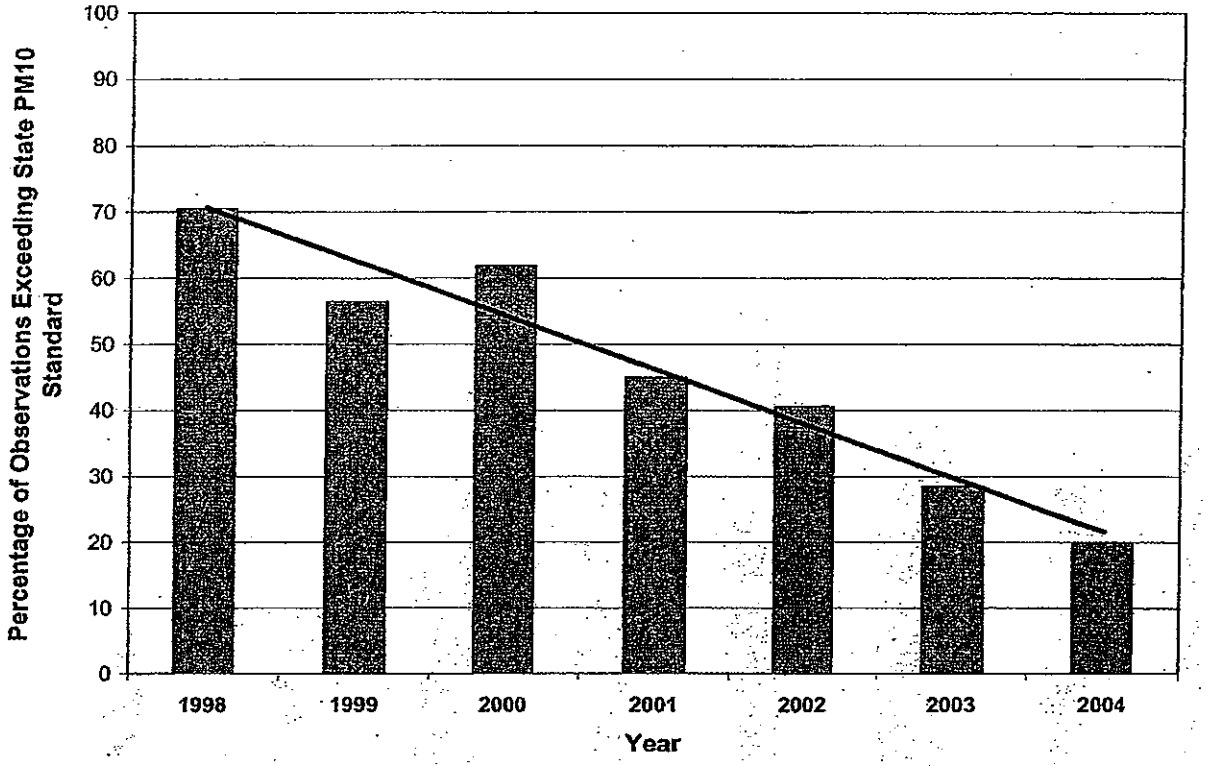


Figure 3: Percent of Study Observations Exceeding State PM10 Standard

3.3 ELEMENTAL CARBON ANALYSIS

Elemental carbon (EC) is of particular interest in this study, as it arises in part from coke and coal storage as well as from transportation including diesel emissions from trucks, trains and ships. During the 2004 study, EC analysis was performed on samples collected at the Long Beach and Central Los Angeles network stations in addition to the samples collected at the study sites. The highest average ambient EC concentration of 7.0 $\mu g/m^3$ was measured at the Hudson School site (HUD). A summary of the EC data is provided in Table 2.

Table 2: Fall/Winter 2004 EC Concentrations ($\mu g/m^3$) at Sampling Sites

	Date						
Location	**10/30/04**	**11/5/04**	**11/11/04**	**11/17/04**	**11/23/04**	**11/29/04**	**12/5/04**
HUD	3.4	0.9	0.4	17.6	7.5	14.1	5.1
EDI	3.4	2.6	1.7	6.1	5.7	7.0	*
WIL	0.4	1.1	2.3	9.3	6.1	5.6	3.5
Los Angeles	2.5	2.8	2.4	3.7	2.5	3.5	1.7
Long Beach	4.1	3.8	3.2	5.0	3.9	3.2	2.0

* No Sample

Elemental carbon concentrations were averaged over the duration of each study, and the results are presented in Figure 4. Complete data tabulations can be found in Appendix A-1. The compiled fall/winter data in Figure 4 shows the ambient EC downward trend from 1998 through implementation of Rule 1158 revisions in 2000. Subsequently, average EC has remained between 5.0 $\mu g/m^3$ and 5.5 $\mu g/m^3$ during the past four years.

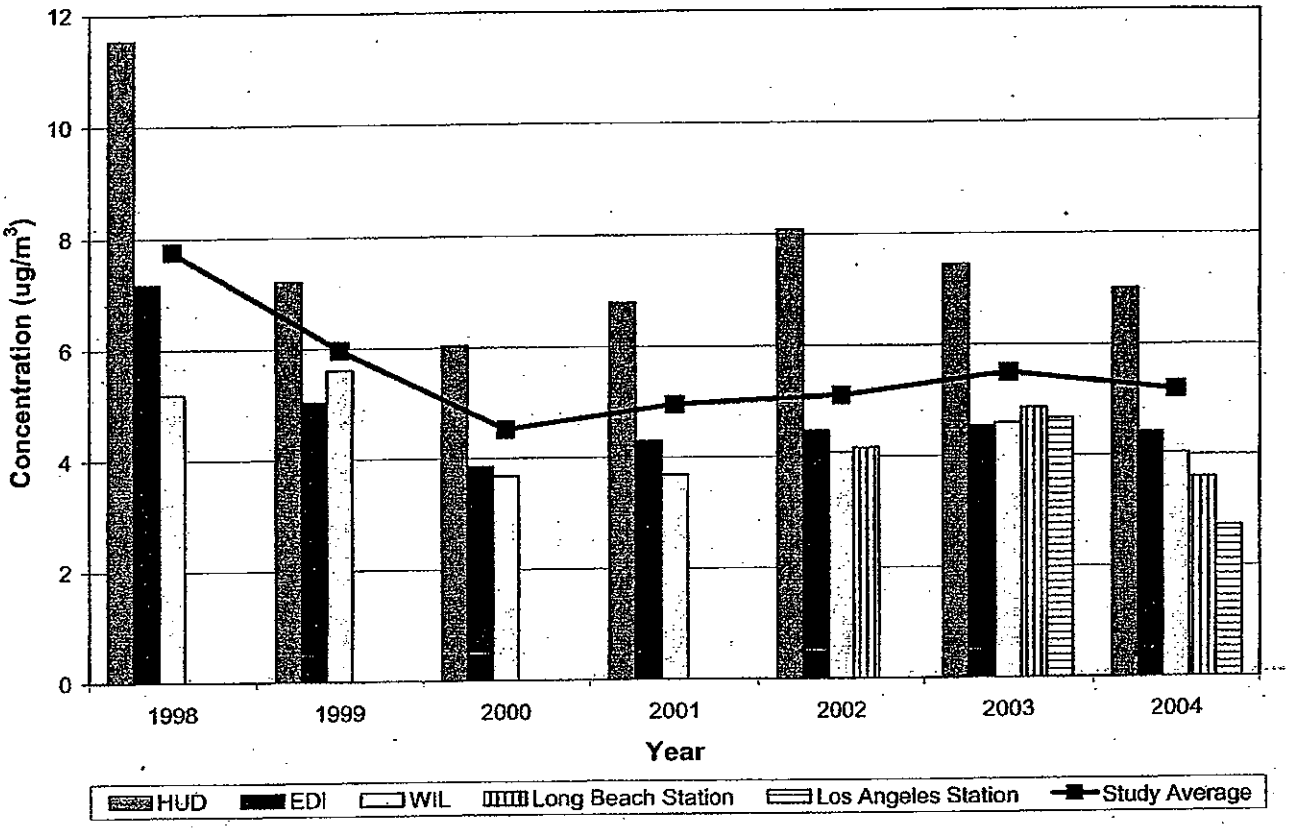


Figure 4: Fall/Winter Average EC by Site and Year

The marked EC reduction from 1998 thru 2000 can be attributed to implementation of the amended Rule 1158. After the major benefits of the Rule were realized, EC concentrations increased slowly over the following years as contributions from heavier commercial and private vehicular traffic increased. However, ambient EC concentrations have not returned to pre-rule amendment levels.

After an initial decline in EC concentration between 1997 and 2000, the spring/summer studies do not show any consistent trend (see Figure 5). However, these studies do reinforce the observation that HUD is characteristically higher for EC than other sites examined.

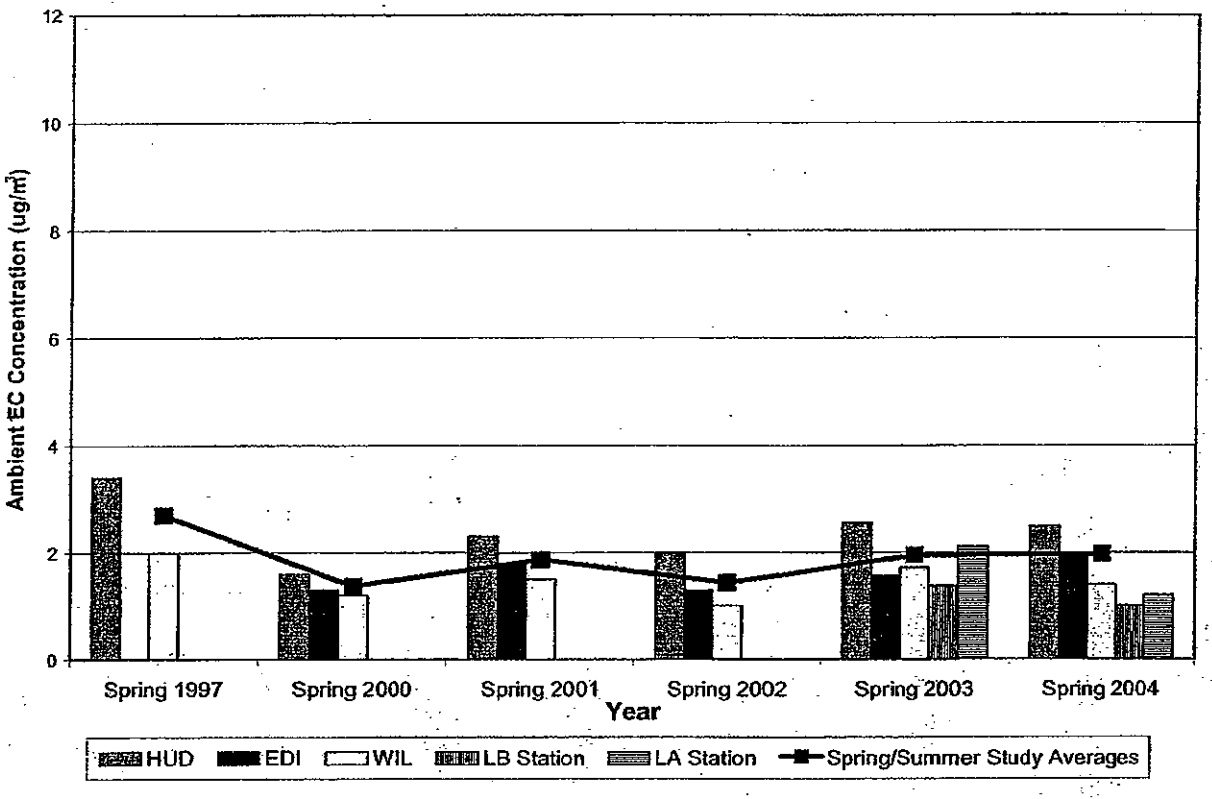


Figure 5: Spring/Summer Average EC by Site and Year

4.0 CONCLUSIONS

Other than the Hudson School site, measured average ambient PM_{10} and elemental carbon were comparable to the AQMD Long Beach and Central Los Angeles network stations for the duration of the study. This suggests that pollution contributions from coal/coke operations has been reduced, and that the majority of existing ambient PM_{10} in the greater Long Beach/Wilmington area arises from sources similar to those in Central Los Angeles.

During the course of fall/winter study sampling, yearly exceedences of the state PM_{10} standard have declined from approximately 70% of samples taken in 1998 to 20% of samples in 2004. This suggests a decreased incidence of acute exposures to PM_{10} in the area.

The current and previous monitoring studies indicate that PM_{10} and EC concentrations measured at the Hudson School site are often higher than the other study sites, and higher than many AQMD network sites for PM_{10}. This indicates that localized sources or meteorological conditions may disproportionately impact the Hudson site. Hudson School is located in close proximity to BP-Arco, a large oil refining facility, which is located to the northwest, and is adjacent to the Terminal Island Freeway and a significant rail spur (see map, Appendix A-3).

Ambient EC remains well below concentrations observed in studies prior to Rule 1158 amendment (June 1999). The compiled fall/winter data in Figure 4 clearly shows the ambient EC downward trend from 1998 through implementation of Rule 1158 revisions in 2000. The marked EC reduction from 1998 thru 2000 can be attributed to implementation of the Amended Rule 1158.

Subsequently, EC has fluctuated in a narrow range over the past four years. After the major benefits of coke/coal abatement were realized, EC concentrations have increased slowly, as contributions from heavier commercial and private vehicular traffic increased. However, ambient EC concentrations have not returned to pre-rule amendment levels.

In summary, the spring/summer series of studies is yielding increasingly less information on the impact of Rule 1158. However, the fall/winter measurements have been more illustrative of trends in the area. The longer trend shown in the data for the spring and fall studies suggests that the measurable benefits of Rule 1158 revision have been observed, and other sources of PM_{10} and EC in the area are now more dominant than the coke/coal contribution.

The studies indicate higher PM_{10} and EC concentrations at the Hudson School site than at the other study sites, and that monitoring at Hudson School often show higher measured levels than many of the AQMD PM_{10} network sites. This suggests greater influence of the ambient air quality at the Hudson School site by nearby PM_{10} and EC sources, among them BP Arco and local commercial and private vehicular traffic, than by Port coke/coal operations.

APPENDIX A-1 RULE 1158 LONG BEACH PM_{10} MONITORING DATA

2004 Fall/Winter PM_{10} Ambient Concentration Results

Location	10/30/04	11/5/04	11/11/04	11/17/04	11/23/04	11/29/04	12/5/04	Average
HUD	40	43	45	77	36	72	21	48
EDI	35	39	35	66	30	45	*	42
WIL	31	39	25	64	32	40	13	35
Los Angeles	23	31	28	41	24	28	18	27
Long Beach	47	32	28	53	30	32	18	34
* No Sample								41.5

2004 Fall/Winter Organic Carbon Ambient Concentration Results

Location	10/30/04	11/5/04	11/11/04	11/17/04	11/23/04	11/29/04	12/5/04	Average
HUD	13.4	13.9	14.8	13.9	6.9	12.7	4.8	11.5
EDI	8.9	9.6	9.0	17.1	6.3	8.6	*	9.9
WIL	11.8	10.9	5.2	9.9	6.5	7.6	4.4	8.0
Los Angeles	7.1	6.2	5.9	7.9	5.0	7.6	5.1	6.4
Long Beach	10.5	7.4	5.6	10.2	8.4	7.5	5.3	7.8
								9.8

2004 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	10/30/04	11/5/04	11/11/04	11/17/04	11/23/04	11/29/04	12/5/04	Average
HUD	3.4	0.9	0.4	17.6	7.5	14.1	5.1	7.0
EDI	3.4	2.6	1.7	6.1	5.7	7.0	*	4.4
WIL	0.4	1.1	2.3	9.3	6.1	5.6	3.5	4.0
Los Angeles	2.5	2.8	2.4	3.7	2.5	3.5	1.7	2.7
Long Beach	4.1	3.8	3.2	5.0	3.9	3.2	2.0	3.6

2004 Fall/Winter Total Carbon Ambient Concentration Results

Location	10/30/04	11/5/04	11/11/04	11/17/04	11/23/04	11/29/04	12/5/04	Average
HUD	16.8	14.9	15.2	31.5	14.4	26.8	9.9	18.5
EDI	12.3	12.2	10.7	23.2	12.0	15.6	*	14.3
WIL	12.2	12.0	7.5	19.2	12.6	13.2	7.9	12.1
Los Angeles	9.6	9.0	8.3	11.6	7.5	11.1	6.8	9.1
Long Beach	14.6	11.2	8.8	15.2	12.3	10.7	7.3	11.4

2003 Fall/Winter PM_{10} Ambient Concentration Results

Location	10/24/03	10/30/03	11/5/03	11/11/03	11/17/03	11/23/03	11/29/03	Average
HUD	54	40	52	39	35	71	51	49
EDI	45	27	44	29	31	55	43	39
WIL	45	22	42	33	34	55	41	39
Los Angeles	51	27	32	25	24	31	24	35
Long Beach	48	24	44	26	28	50	29	36
* No Sample								42.3

2003 Fall/Winter Organic Carbon Ambient Concentration Results

Location	10/24/03	10/30/03	11/5/03	11/11/03	11/17/03	11/23/03	11/29/03	Average
HUD	5.0	4.6	7.5	6.2	6.8	11.3	6.8	6.9
EDI	4.3	3.2	6.6	4.6	5.4	8.7	6.8	5.7
WIL	3.9	2.9	5.9	4.3	6.1	9.1	7.1	5.6
Los Angeles	9.2	3.4	4.2	4.3	5.0	2.9	3.7	4.7
Long Beach	3.5	2.6	5.2	3.9	4.9	5.3	4.3	4.2
								6.1

2003 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	10/24/03	10/30/03	11/5/03	11/11/03	11/17/03	11/23/03	11/29/03	Average
HUD	4.3	3.9	9.9	7.7	8.3	10.2	7.9	7.5
EDI	2.6	1.7	6.3	4.3	5.1	6.2	5.7	4.5
WIL	4.0	1.9	5.2	3.8	6.3	6.1	5.8	4.6
Los Angeles	7.2	2.2	4.3	4.0	4.3	6.0	4.7	4.7
Long Beach	3.6	1.6	6.6	4.5	6.9	6.7	4.3	4.9

2003 Fall/Winter Total Carbon Ambient Concentration Results

Location	10/24/03	10/30/03	11/5/03	11/11/03	11/17/03	11/23/03	11/29/03	Average
HUD	9.3	8.5	17.4	13.9	15.1	21.5	14.7	14.3
EDI	6.9	4.9	12.9	8.9	10.5	14.9	12.5	10.2
WIL	7.9	3.9	11.1	8.1	12.4	15.2	12.9	10.2
Los Angeles	16.4	5.6	8.5	8.3	9.3	8.9	8.4	9.4
Long Beach	7.1	4.2	11.8	8.4	11.8	12.0	8.6	9.1

2002 Fall/Winter PM_{10} Ambient Concentration Results

Location	10/5/02	10/17/02	10/23/02	10/29/02	11/4/02	11/10/02	11/16/02	11/22/02	11/28/02	12/4/02	12/10/02	12/16/02	Average
HUD	46	43	52	37	58	*	87	88	*	98	63	28	60
EDI	46	40	45	48	48	25	*	55	62	78	47	26	47
WIL	*	39	32	38	55	20	34	75	66	78	38	25	45
LB Station	45	35	43	32	50	23	28	51	51	75	44	24	42

* No Sample

2002 Fall/Winter Organic Carbon Ambient Concentration Results

Location	10/5/02	10/17/02	10/23/02	10/29/02	11/4/02	11/10/02	11/16/02	11/22/02	11/28/02	12/4/02	12/10/02	12/16/02	Average
HUD	6.6	5.1	5.3	3.6	4.7	*	10.5	10.7	*	9.8	9.8	3.0	6.9
EDI	6.9	4.4	4.4	3.9	5.0	3.8	*	7.4	8.7	7.4	8.4	2.5	5.7
WIL	*	4.8	3.3	3.8	7.5	3.0	5.3	8.6	9.9	7.3	7.8	2.2	5.8
LB Station	7.2	4.0	3.4	3.9	3.7	2.8	4.0	6.7	6.6	10.2	6.7	3.4	5.2

2002 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	10/5/02	10/17/02	10/23/02	10/29/02	11/4/02	11/10/02	11/16/02	11/22/02	11/28/02	12/4/02	12/10/02	12/16/02	Average
HUD	2.8	3.1	5.5	3.1	3.7	*	11.0	17.0	*	17.1	12.7	4.8	8.1
EDI	2.7	2.0	2.8	1.5	1.6	2.8	*	8.5	6.5	11.0	6.0	3.5	4.5
WIL	*	2.1	1.3	2.2	0.3	1.6	4.6	10.0	5.3	10.6	3.5	3.3	4.1
LB Station	2.5	1.7	3.0	1.8	3.1	2.8	4.4	7.3	7.0	5.9	7.6	2.7	4.2

2002 Fall/Winter Total Carbon Ambient Concentration Results

Location	10/5/02	10/17/02	10/23/02	10/29/02	11/4/02	11/10/02	11/16/02	11/22/02	11/28/02	12/4/02	12/10/02	12/16/02	Average
HUD	9.5	8.2	10.8	6.7	8.4	*	21.6	27.8	*	26.9	22.4	7.7	15.0
EDI	9.6	6.4	7.2	5.4	6.6	6.6	*	15.9	15.2	18.5	14.4	6.0	10.2
WIL	*	7.0	4.6	6.0	7.8	4.7	9.9	18.7	15.2	17.9	11.3	5.5	9.9
LB Station		5.7	6.4	5.7	6.8	5.7	8.4	13.9	13.6	16.2	14.3	6.1	9.3

2002 Fall/Winter Elemental Carbon as a Percentage of Total PM_{10}

Location	10/5/02	10/17/02	10/23/02	10/29/02	11/4/02	11/10/02	11/16/02	11/22/02	11/28/02	12/4/02	12/10/02	12/16/02	Average
HUD	6.2%	7.2%	10.6%	8.4%	6.4%	*	12.7%	19.4%	*	17.5%	20.1%	17.1%	12.6
EDI	5.9%	5.1%	6.3%	3.2%	3.3%	11.2%	*	15.5%	10.6%	14.1%	12.8%	13.3%	9.2
WIL	*	5.4%	4.1%	5.7%	0.5%	8.1%	13.5%	13.4%	8.0%	13.6%	9.3%	13.2%	8.6
LB Station	*	4.8%	7.1%	5.7%	6.3%	12.3%	15.9%	14.3%	13.8%	7.9%	17.2%	11.1%	10.6

APPENDIX A-1 RULE 1158 LONG BEACH PM_{10} MONITORING DATA (CONTINUED)

2001 Fall/Winter PM_{10} Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	40	62	97	39	36	76	86	62
EDI	24	*	105	33	33	63	72	55
WIL	16	43	47	37	25	75	70	45
LB Station	25	14	24	30	24	56	*	29

* No Sample

2001 Fall/Winter Organic Carbon Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	5.6	12.9	10.9	9.7	6.9	16	17.2	11.3
EDI	3.3	*	8.8	8.7	7	13.9	15.9	9.6
WIL	2.9	9.2	6.9	9.4	4.7	15.5	13.5	8.9

2001 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	5.2	7.8	7.1	4.7	4.6	8.4	9.7	6.8
EDI	2.3	*	4.3	3.8	3.3	5.5	6.6	4.3
WIL	1.4	4.2	2.7	4.1	1.8	6.2	5.4	3.7

2001 Fall/Winter Total Carbon Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	10.8	20.7	18	14.4	11.5	24.4	26.9	18.1
EDI	5.6	*	13.1	12.5	10.3	19.4	22.5	13.9
WIL	4.3	13.4	9.6	13.5	6.5	21.7	18.9	12.6

2000 Fall/Winter PM_{10} Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	134	56	143	73	100	28	43	82
EDI	52	48	78	73	105	18	37	59
WIL	56	45	55	65	93	16	37	52
LB Station	44	49	92	*	105	20	35	58

* No Sample

2000 Fall/Winter Organic Carbon Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	17.1	10.6	22.6	9	9.2	4.6	8.7	11.7
EDI	8.9	9.7	15.4	7.6	10.2	2.8	7.8	8.9
WIL	10.5	9.7	10.9	7	8.1	2.9	7.2	8.0

2000 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	7.6	6.4	11.6	4.8	4.6	3.7	3.6	6.0
EDI	3.8	4.1	7.4	4.3	3.3	2	2.1	3.9
WIL	4.6	4.1	5.1	3.8	3.6	1.7	2.9	3.7

2000 Fall/Winter Total Carbon Ambient Concentration Results

Location	11/8/00	11/14/00	11/20/00	11/26/00	12/2/00	12/8/00	12/14/00	Average
HUD	24.7	17	34.2	13.8	13.8	8.3	12.3	17.7
EDI	12.7	13.8	22.8	11.9	13.5	4.8	9.9	12.8
WIL	15.1	13.8	16	10.8	11.7	4.6	10.1	11.7

1999 Fall/Winter PM_{10} Ambient Concentration Results

Location	11/2/99	11/8/99	11/14/99	11/20/99	11/26/99	12/2/99	12/8/99	12/14/99	Average
HUD	92	38	50	30	47	69	68	171	71
EDI	85	33	47	37	49	74	93	97	64
WIL	92	89	46	30	65	70	*	87	68
LB Station	77	22	38	27	38	50	55	59	46

* No Sample

1999 Fall/Winter Organic Carbon Ambient Concentration Results

Location	11/2/99	11/8/99	11/14/99	11/20/99	11/26/99	12/2/99	12/8/99	12/14/99	Average
HUD	9.9	6	6	4.5	11	13.3	10.4	22.2	10.4
EDI	8.3	4.8	5.8	4.9	10.5	14.1	13.4	14.2	9.5
WIL	8.1	14.1	6.4	4.4	12.6	13.5	*	12.2	10.2

1999 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	11/2/99	11/8/99	11/14/99	11/20/99	11/26/99	12/2/99	12/8/99	12/14/99	Average
HUD	7.9	4.1	4.8	2.7	5.9	7.9	6.6	17.8	7.2
EDI	5.7	2.6	4	2.7	4.6	6.1	6.1	8.5	5.0
WIL	6	6.7	4.1	2.4	7.4	5.5	*	7.2	5.6

1999 Fall/Winter Total Carbon Ambient Concentration Results

Location	11/2/99	11/8/99	11/14/99	11/20/99	11/26/99	12/2/99	12/8/99	12/14/99	Average
HUD	17.8	10.1	10.8	7.2	16.9	21.2	17	40	17.6
EDI	14	7.4	9.8	7.6	15.1	20.2	19.5	22.6	14.5
WIL	14.1	20.8	10.5	6.8	20	19	*	19.4	15.8

1998 Fall/Winter PM_{10} Ambient Concentration Results

Location	11/1/98	11/7/98	11/13/98	11/19/98	11/25/98	12/13/98	Average
HUD	61	56	72	89	*	55	67
EDI	50	49	67	73	74	55	61
WIL	54	43	45	52	70	33	50
LB Station	43	31	39	54	*	27	39

* No Sample

1998 Fall/Winter Organic Carbon Ambient Concentration Results

Location	11/1/98	11/7/98	11/13/98	11/19/98	11/25/98	12/13/98	Average
HUD	7.5	6.4	11.2	14.2	*	8.6	9.6
EDI	7	5.5	11.3	10.4	9.3	10.1	8.9
WIL	6.9	5.7	8.4	8.3	9.9	5.8	7.5

1998 Fall/Winter Elemental Carbon Ambient Concentration Results

Location	11/1/98	11/7/98	11/13/98	11/19/98	11/25/98	12/13/98	Average
HUD	6.2	6.2	16.6	19.8	*	8.9	11.5
EDI	4.3	3.3	9.2	12.5	7.9	5.8	7.2
WIL	4.1	3.8	5.9	7.3	6.6	3.4	5.2

1998 Fall/Winter Total Carbon Ambient Concentration Results

Location	11/1/98	11/7/98	11/13/98	11/19/98	11/25/98	12/13/98	Average
HUD	13.7	12.6	27.9	34	*	17.5	21.1
EDI	11.3	8.8	20.5	22.9	17.2	15.9	16.1
WIL	11	9.4	14.4	15.6	16.5	9.2	12.7

APPENDIX A-1 RULE 1158 LONG BEACH PM_{10} MONITORING DATA (CONTINUED)

2004 Spring/Summer PM_{10} Ambient Concentration Results

Location	5/15/04	5/21/04	5/27/04	6/2/04	6/8/04	6/14/04	6/20/04	7/2/04	Average
HUD	37	28	32	36	38	32	37	32	34
EDI	37	20	33	31	34	21	39	23	30
WIL	34	23	25	33	31	29	30	23	27
LB Station	34	20	31	33	30	30	34	24	30
LA Station	37	20	31	44	29	41	35	25	33

2004 Spring/Summer Organic Carbon Ambient Concentration Results

Location	5/15/04	5/21/04	5/27/04	6/2/04	6/8/04	6/14/04	6/20/04	7/2/04	Average
HUD	3.6	3.4	3.7	3.3	4.3	3.1	4.0	6.8	4.0
EDI	3.9	2.8	5.0	3.3	4.0	2.9	3.6	4.0	3.7
WIL	3.7	2.4	3.1	3.9	3.3	2.4	3.1	3.9	3.2
LB Station	3.5	3.2	3.6	3.8	3.8	2.6	3.7	3.5	3.5
LA Station	4.5	3.0	3.6	4.5	4.3	4.1	3.5	3.6	3.9

2004 Spring/Summer Elemental Carbon Ambient Concentration Results

Location	5/15/04	5/21/04	5/27/04	6/2/04	6/8/04	6/14/04	6/20/04	7/2/04	Average
HUD	2.1	2.5	2.2	2.1	2.8	2.3	2.2	3.5	2.5
EDI	2.0	1.4	2.4	1.9	2.1	1.4	2.6	2.3	2.0
WIL	1.7	1.0	1.4	1.7	1.2	1.5	0.7	2.0	1.4
LB Station	0.8	1.0	1.2	0.8	0.9	0.9	1.0	1.2	1.0
LA Station	2.1	0.7	1.3	1.5	1.1	1.2	0.8	0.9	1.2

2004 Spring/Summer Total Carbon Ambient Concentration Results

Location	5/15/04	5/21/04	5/27/04	6/2/04	6/8/04	6/14/04	6/20/04	7/2/04	Average
HUD	5.7	5.9	5.9	5.4	7.1	5.4	6.2	10.3	6.5
EDI	5.9	4.2	7.4	5.2	6.1	4.3	5.2	6.3	5.6
WIL	5.4	3.4	4.5	5.6	4.5	3.9	3.8	5.9	4.6
LB Station	4.3	4.2	4.8	4.6	4.7	3.5	4.7	4.7	4.4
LA Station	6.6	3.7	4.9	6.0	5.4	5.3	4.3	4.5	5.1

2003 Spring/Summer PM_{10} Ambient Concentration Results

Location	5/15/03	5/21/03	5/27/03	6/2/03	6/8/03	6/14/03	6/20/03	Average
HUD	29	53	44	31	20	41	37	36
EDI	28	50	48	26	9	48	31	34
WIL	29	48	38	32	19	33	27	32
LB Station	26	38	49	22	18	31	24	30
LA Station	35	46	53	58	35	41	28	42

2003 Spring/Summer Organic Carbon Ambient Concentration Results

Location	5/15/03	5/21/03	5/27/03	6/2/03	6/8/03	6/14/03	6/20/03	Average
HUD	4.0	8.7	5.5	2.9	2.9	5.3	3.2	4.6
EDI	3.2	6.9	6.0	2.7	2.8	5.0	2.8	4.2
WIL	3.4	6.6	4.2	2.9	2.7	4.2	2.6	3.8
LB Station	3.2	4.7	3.7	2.9	2.8	4.1	3.0	3.5
LA Station	4.7	7.6	6.9	6.1	4.1	3.4	3.0	5.1

2003 Spring/Summer Elemental Carbon Ambient Concentration Results

Location	5/15/03	5/21/03	5/27/03	6/2/03	6/8/03	6/14/03	6/20/03	Average
HUD	1.5	3.9	1.7	1.4	1.6	3.3	4.5	2.6
EDI	1.1	3.4	0.9	0.9	0.6	2.4	1.7	1.6
WIL	1.1	4.7	1.4	1.0	1.0	1.7	1.1	1.7
LB Station	1.1	2.3	2.4	0.5	0.9	1.1	1.3	1.4
LA Station	2.1	3.7	3.4	0.9	0.4	3.2	1.1	2.1

2003 Spring/Summer Total Carbon Ambient Concentration Results

Location	5/15/03	5/21/03	5/27/03	6/2/03	6/8/03	6/14/03	6/20/03	Average
HUD	5.5	12.6	7.2	4.3	4.5	8.6	7.7	7.2
EDI	4.3	10.3	6.9	3.6	3.4	7.4	4.5	5.8
WIL	4.5	11.3	5.6	3.9	3.7	5.9	3.7	5.5
LB Station	4.3	7.0	6.1	3.4	3.7	5.2	4.3	4.9
LA Station	6.8	11.3	10.3	7.0	4.5	6.6	4.1	7.2

2002 Spring/Summer PM_{10} Ambient Concentration Results

Location	5/8/02	5/14/02	5/20/02	5/26/02	6/1/02	6/7/02	6/13/02	6/19/02	Average
HUD	50	58	22	22	28	20	55	32	36
EDI	40	56	18	21	31	18	50	32	33
WIL	37	54	47	19	21	17	41	31	33
LB Station	NS	NS	16	27	24	21	34	30	25

2001 Spring/Summer Organic Carbon Ambient Concentration Results

Location	5/8/02	5/14/02	5/20/02	5/26/02	6/1/02	6/7/02	6/13/02	6/19/02	Average
HUD	5.4	4.8	3.3	2.1	1.8	2.4	5.0	2.4	3.4
EDI	3.4	4.5	3.1	2.3	2.6	2.0	3.5	2.8	3.0
WIL	2.8	4.5	2.2	1.9	2.0	2.4	3.2	2.6	2.7

2001 Spring/Summer Elemental Carbon Ambient Concentration Results

Location	5/8/02	5/14/02	5/20/02	5/26/02	6/1/02	6/7/02	6/13/02	6/19/02	Average
HUD	3.5	2.2	2.6	0.9	1.0	1.2	3.5	1.0	2.0
EDI	1.5	2.0	1.7	1.1	0.8	0.9	1.7	0.9	1.3
WIL	1.1	1.8	0.7	0.8	0.5	1.1	1.3	1.1	1.0

2001 Spring/Summer Total Carbon Ambient Concentration Results

Location	5/8/02	5/14/02	5/20/02	5/26/02	6/1/02	6/7/02	6/13/02	6/19/02	Average
HUD	8.9	7.1	5.9	3.1	2.8	3.6	8.5	3.4	5.4
EDI	4.9	6.5	4.9	3.4	3.4	3.0	5.2	3.7	4.4
WIL	3.8	6.3	2.9	2.7	2.5	3.5	4.5	3.7	3.7

2001 Spring/Summer PM_{10} Ambient Concentration Results

Location	5/25/01	5/31/01	6/6/01	6/12/01	6/18/01	6/24/01	6/30/01	Average
HUD	39	70	47	34	63	36	38	47
EDI	31	67	41	32	49	36	33	41
WIL	39	56	43	36	47	35	35	42
LB Station	30	48	45	29	43	32	37	38

2001 Spring/Summer Organic Carbon Ambient Concentration Results

Location	5/25/01	5/31/01	6/6/01	6/12/01	6/18/01	6/24/01	6/30/01	Average
HUD	3.6	6.6	4.6	3.1	6.1	3.2	3.4	4.4
EDI	3.4	5.1	4.9	2.5	4.9	3.4	3.3	3.9
WIL	4.1	3.7	4.0	3.2	4.8	3.1	3.1	3.7

2001 Spring/Summer Elemental Carbon Ambient Concentration Results

Location	5/25/01	5/31/01	6/6/01	6/12/01	6/18/01	6/24/01	6/30/01	Average
HUD	1.7	3.9	2.0	1.1	3.5	1.3	2.2	2.3
EDI	1.0	2.9	1.6	1.1	3.0	1.2	1.5	1.8
WIL	2.3	1.2	1.8	1.1	2.1	1.1	0.9	1.5

2001 Spring/Summer Total Carbon Ambient Concentration Results

Location	5/25/01	5/31/01	6/6/01	6/12/01	6/18/01	6/24/01	6/30/01	Average
HUD	5.3	10.5	6.6	4.2	9.6	4.6	5.6	6.6
EDI	4.4	8.0	6.5	3.6	7.9	4.7	4.8	5.7
WIL	6.4	4.9	5.8	4.3	6.9	4.2	4.0	5.2

APPENDIX A-1 RULE 1158 LONG BEACH PM_{10} MONITORING DATA (CONTINUED)

2000 Spring/Summer PM_{10} Ambient Concentration Results

Location	5/24/00	5/30/00	6/5/00	6/11/00	6/17/00	6/23/00	6/29/01	Average
HUD	27	31	40	32	18	19	42	30
EDI	20	28	37	31	25	17	35	28
WIL	22	38	41	33	19	24	37	31
LB Station	*	*	32	30	17	19	34	26

* No Sample

2000 Spring/Summer Organic Carbon Ambient Concentration Results

Location	5/24/00	5/30/00	6/5/00	6/11/00	6/17/00	6/23/00	6/29/01	Average
HUD	2.9	2.6	3.8	3.0	2.3	2.0	3.7	2.9
EDI	2.5	2.6	3.6	2.8	2.6	2.1	3.1	2.8
WIL	2.5	2.9	3.7	3.0	2.4	2.9	3.3	3.0

2000 Spring/Summer Elemental Carbon Ambient Concentration Results

Location	5/24/00	5/30/00	6/5/00	6/11/00	6/17/00	6/23/00	6/29/01	Average
HUD	1.7	1.2	2.6	1.4	0.7	0.8	2.5	1.6
EDI	1.2	1.2	1.7	1.4	0.8	0.6	1.3	1.3
WIL	1.3	1.2	1.8	1.1	0.9	1.0	1.6	1.2

2000 Spring/Summer Total Carbon Ambient Concentration Results

Location	5/24/00	5/30/00	6/5/00	6/11/00	6/17/00	6/23/00	6/29/01	Average
HUD	4.6	3.7	6.4	4.4	3	2.8	6.2	4.4
EDI	3.7	3.8	5.3	4.2	3.4	2.7	4.4	3.9
WIL	3.8	4.1	5.5	4.1	3.3	3.9	4.9	4.2

1997 Spring/Summer PM_{10} Ambient Concentration Results

Location	5/4/97	5/8/97	5/12/97	5/14/97	5/20/97	5/22/97	5/27/97	Average
HUD	48	50	36	*	32	39	58	44
EDI	*	*	*	*	*	*	*	*
WIL	43	50	35	42	30	36	48	41
LB Station								

* No Sample

1997 Spring/Summer Organic Carbon Ambient Concentration Results

Location	5/20/97	5/22/97	5/27/97	Average
HUD	3.6	4.3	6.9	4.9
EDI	*	*	*	*
WIL	4.1	4.2	5.8	4.7

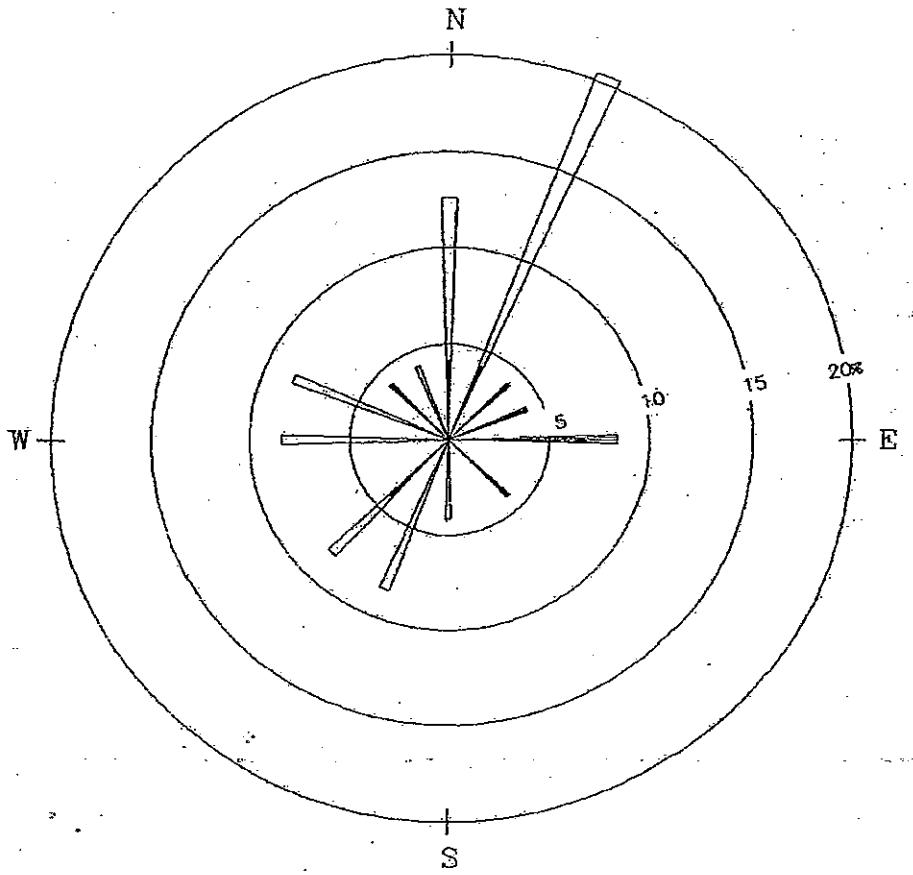
1997 Spring/Summer Elemental Carbon Ambient Concentration Results

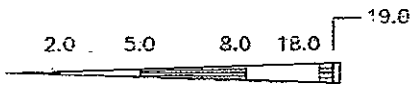
Location	5/20/97	5/22/97	5/27/97	Average
HUD	2.3	2.4	5.4	3.4
EDI	*	*	*	
WIL	1.2	1.6	3.3	2.0

1997 Spring/Summer Total Carbon Ambient Concentration Results

Location	5/20/97	5/22/97	5/27/97	Average
HUD	5.9	6.7	12.3	8.3
EDI	*	*	*	
WIL	5.3	5.8	9.1	6.7

APPENDIX A-2 STUDY WIND DATA





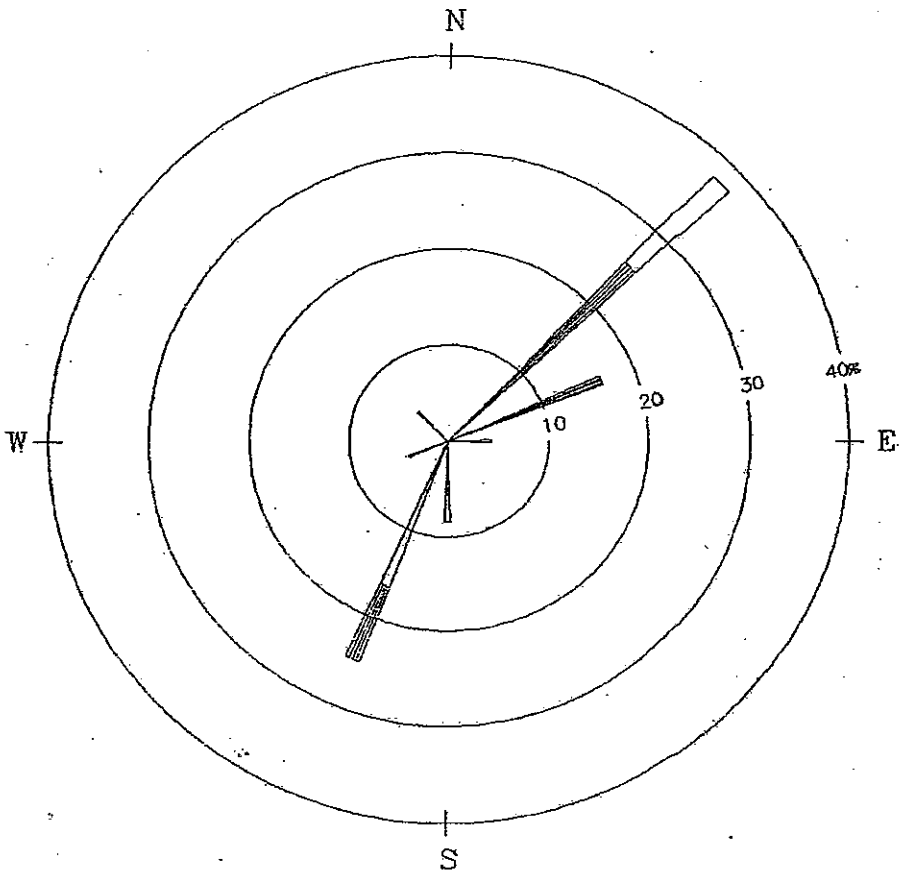
WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

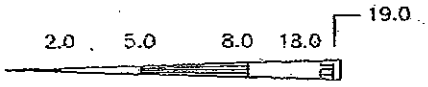
NOTES:
DIAGRAM OF THE FREQUENCY OF OCCURRENCE FOR EACH WIND DIRECTION. WIND DIRECTION IS THE DIRECTION FROM WHICH THE WIND IS BLOWING. EXAMPLE – WIND IS BLOWING FROM THE NORTH 12.6 PERCENT OF THE TIME.

WINDROSE

AQMD
PERIOD: 10/30/04

APPENDIX A-2 STUDY WIND DATA





WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

NOTES:
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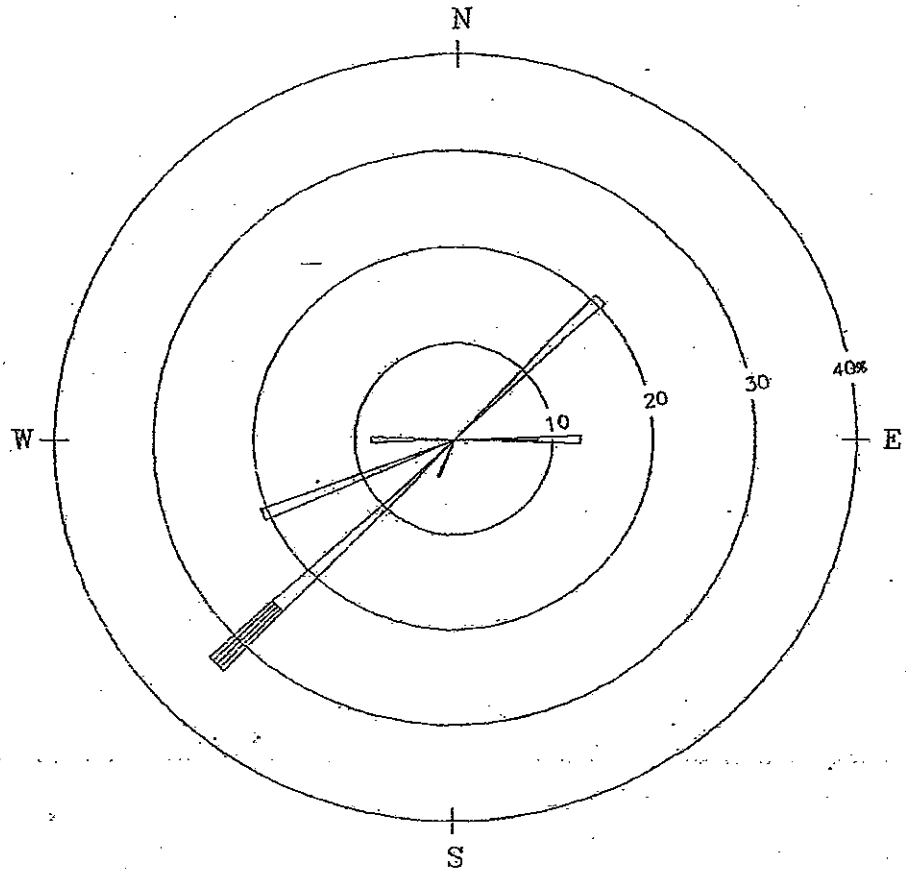
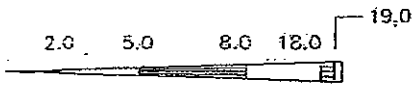
WINDROSE

AQMD
PERIOD: 11/5/04

APPENDIX A-2 STUDY WIND DATA





WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

NOTES:
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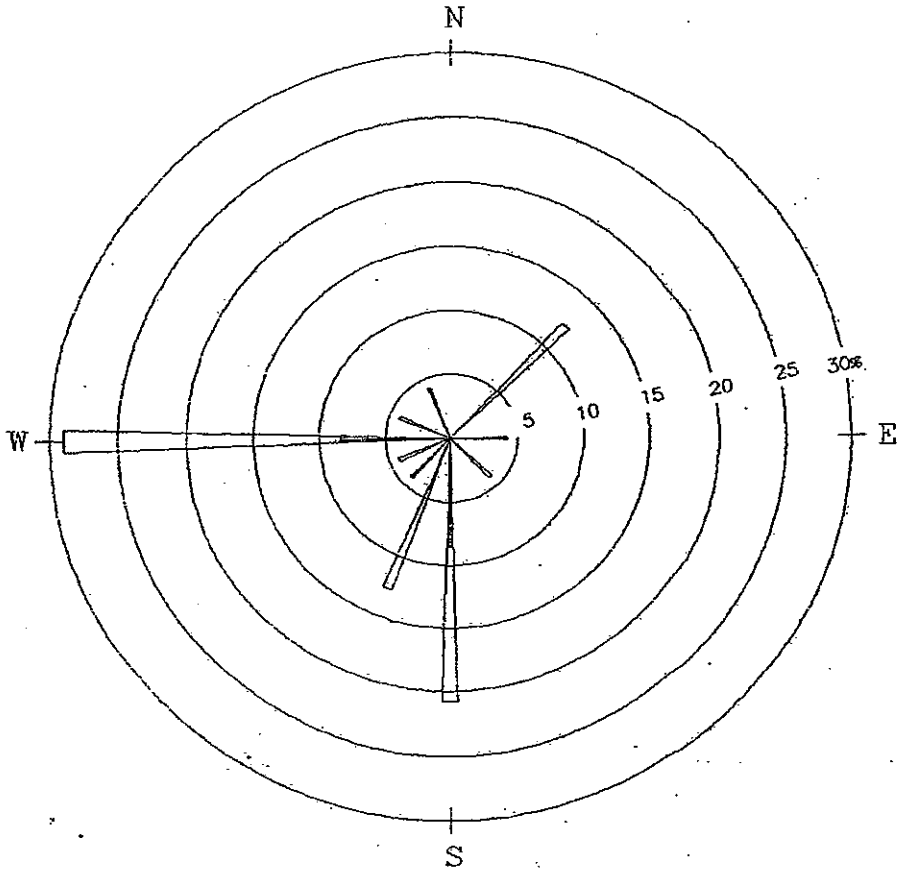
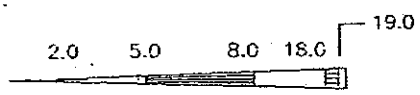
WINDROSE

AQMD
PERIOD: 11/11/04

APPENDIX A-2 **STUDY WIND DATA**





WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

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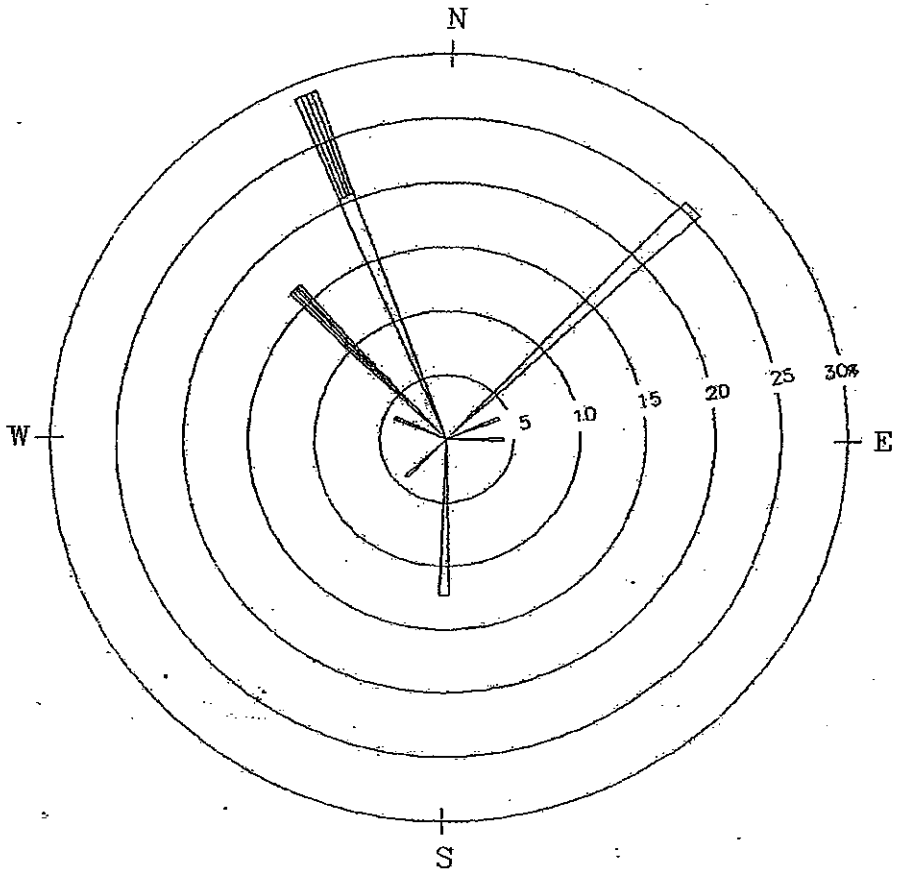
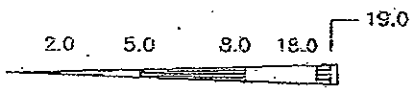
WINDROSE

AQMD
PERIOD: 11/17/04

APPENDIX A-2 STUDY WIND DATA





WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

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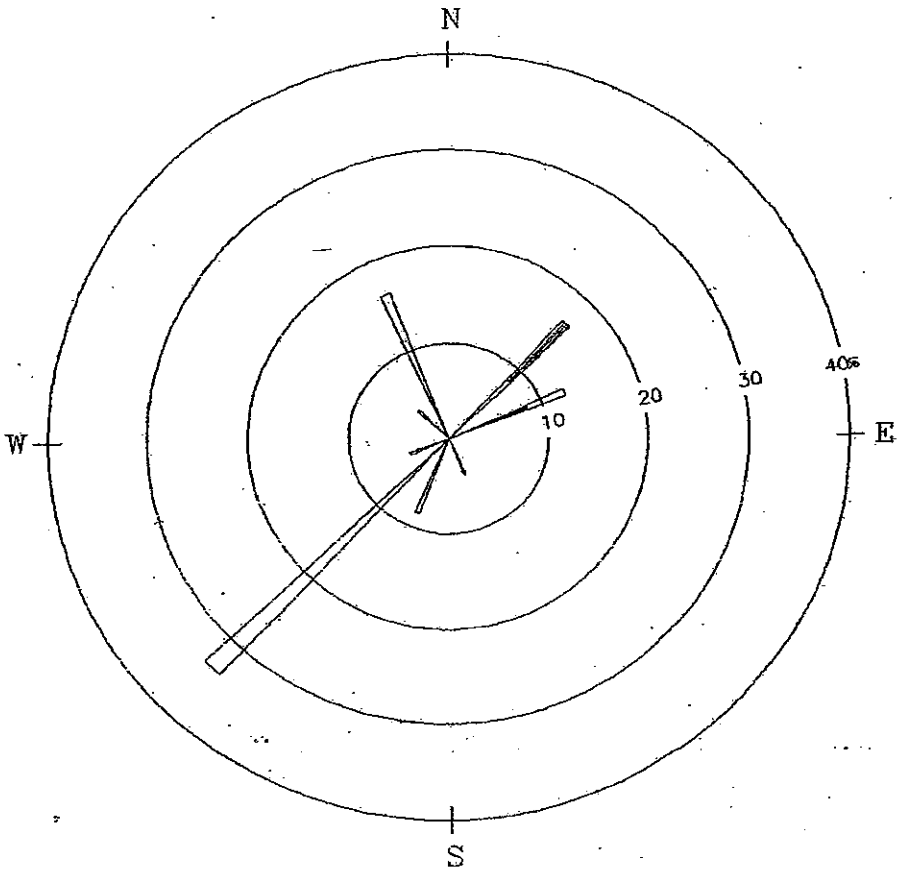
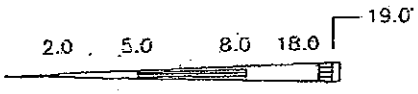
WINDROSE

AQMD
PERIOD: 11/23/04

APPENDIX A-2 STUDY WIND DATA





WIND SPEED CLASS BOUNDARIES
(MILES/HOUR)

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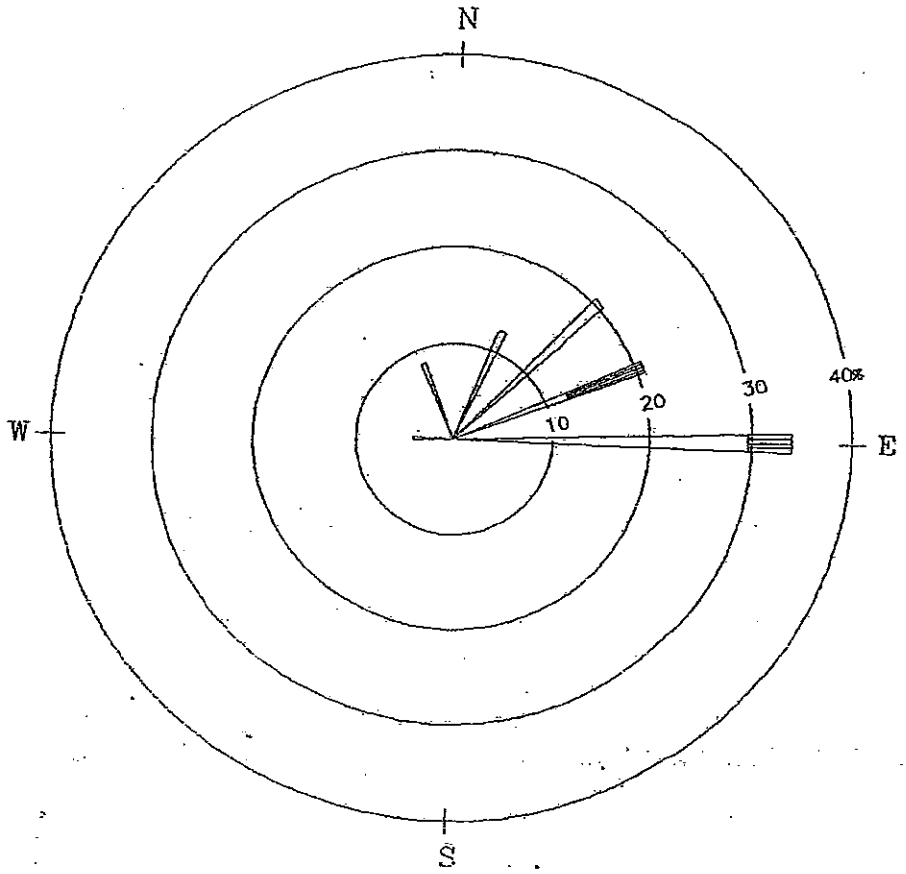
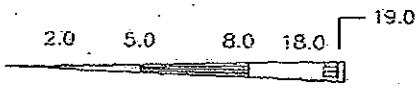
WINDROSE

AQMD
PERIOD: 11/29/04

APPENDIX A-2 STUDY WIND DATA





WIND SPEED CLASS BOUNDARIES
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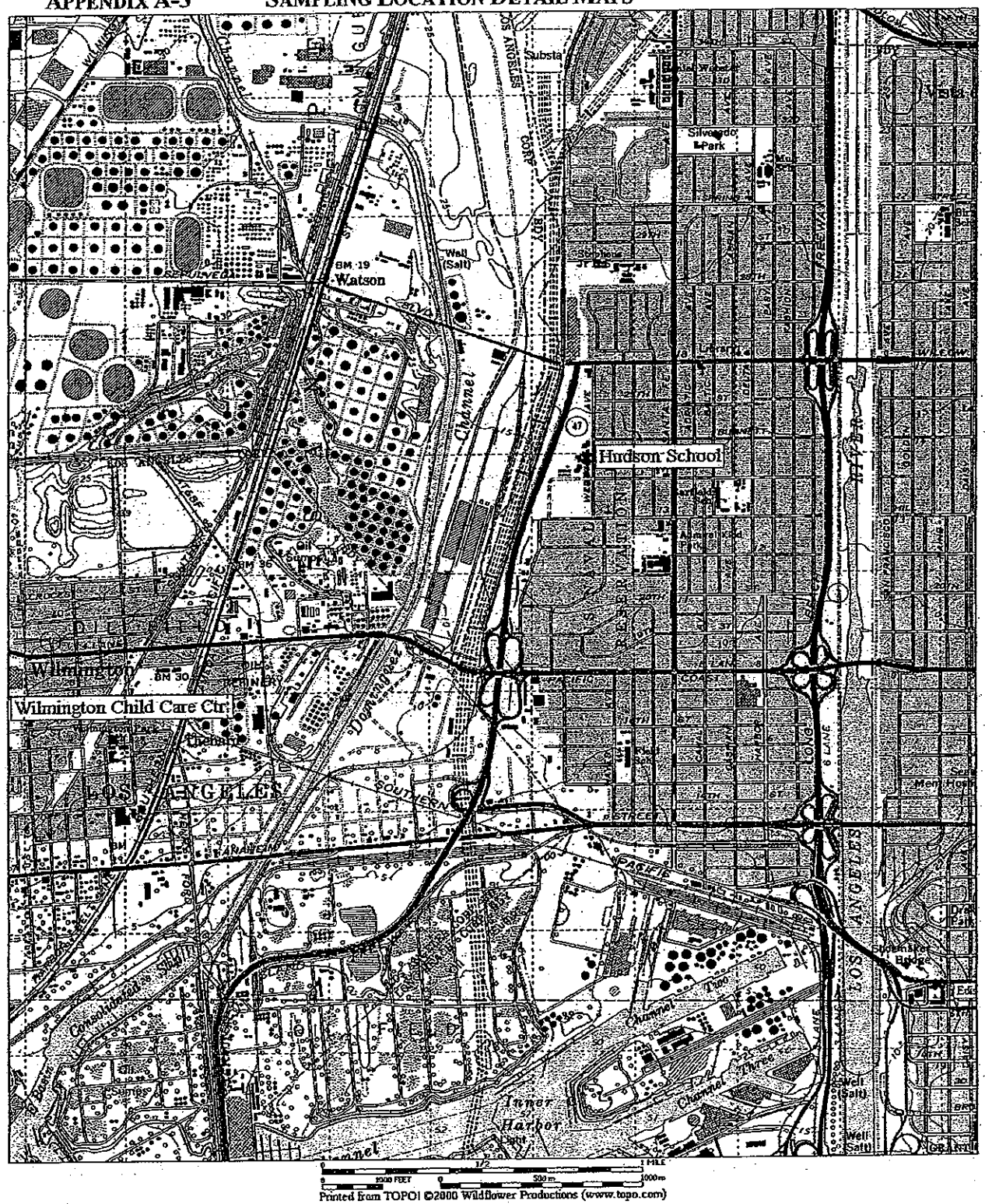
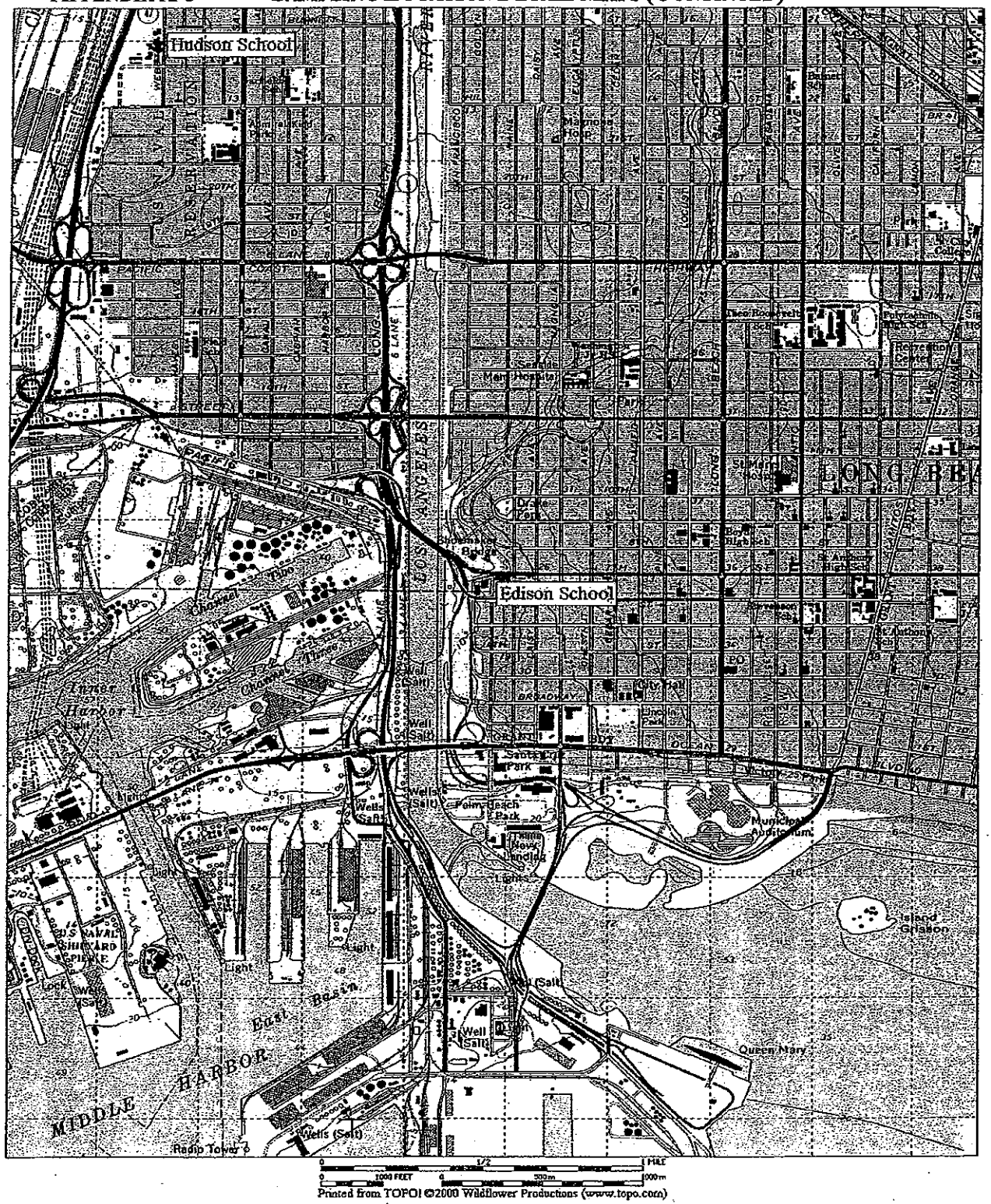
WINDROSE

AQMD
PERIOD: 12/5/04

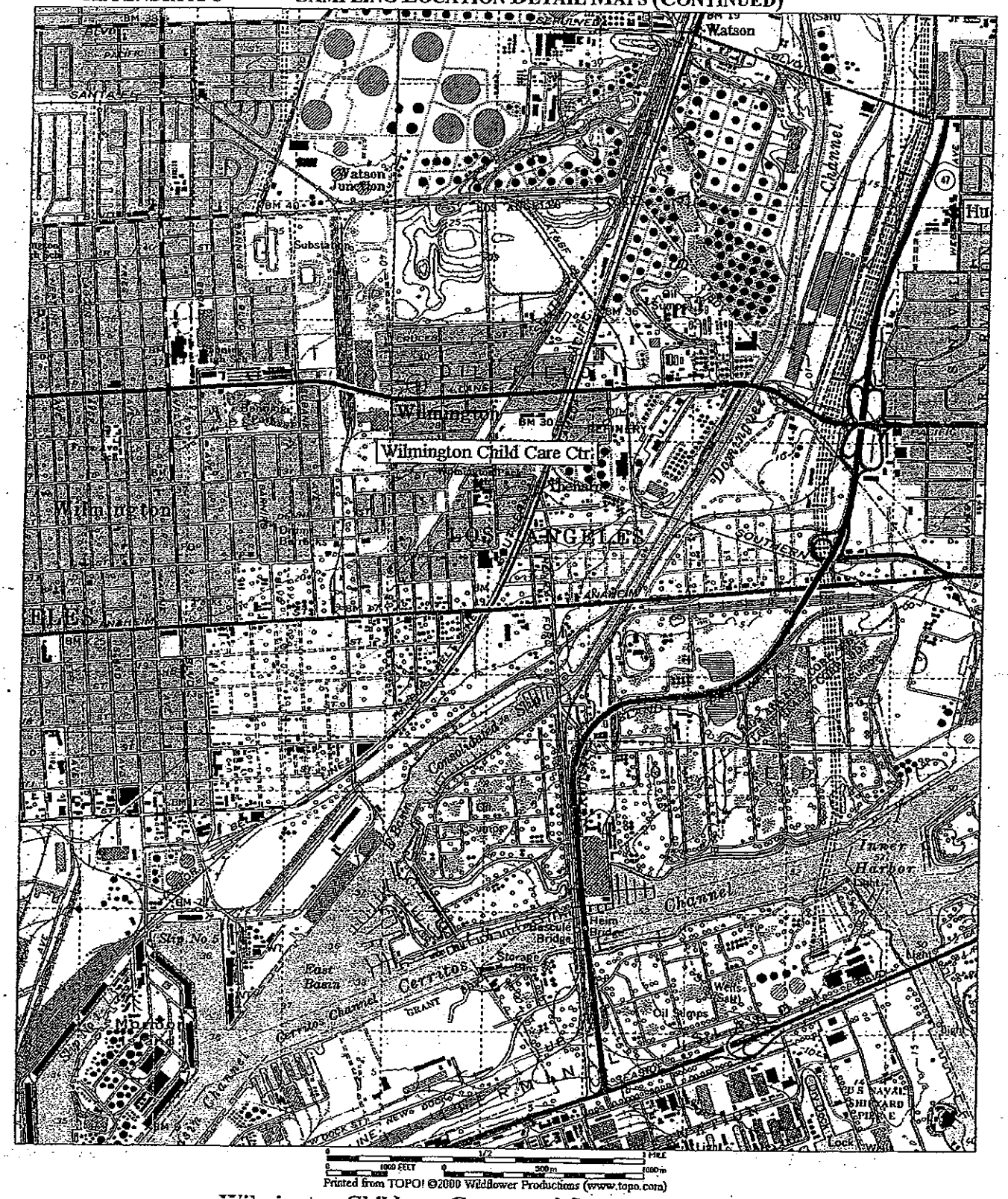
APPENDIX A-3 SAMPLING LOCATION DETAIL MAPS



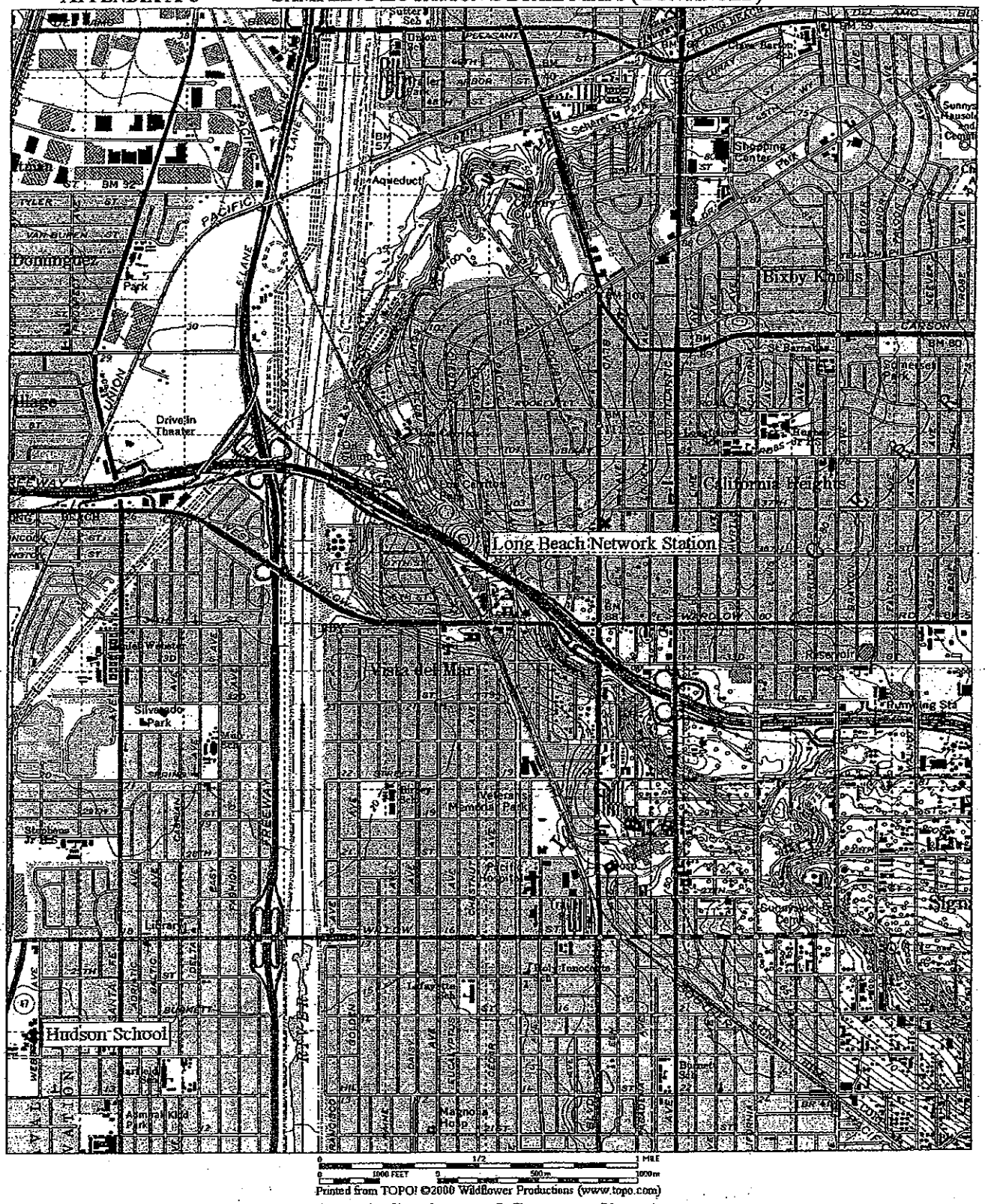
Hudson School and Surrounding Area



Edison School and Surrounding Area



Wilmington Childcare Center and Surrounding Area



Long Beach Station and Surrounding Area

Post Office Box 90 Wilmington, California 90748

December 15, 2005

Dr. Ralph Appy
City of Los Angeles Harbor Department (Port of Los Angeles)
Environmental Management Division
425 South Palos Verdes Street
P.O. Box 151
San Pedro, CA 90733-0151

Dear Dr. Appy:

In order to represent the view of the members of the Wilmington Chamber of Commerce, I would like to take this opportunity to request the following items be considered during the environmental review process of the Southern California International Gateway (the "project").

As the Chamber promotes business activity in the Wilmington area, we are keenly concerned about the impact on existing businesses that will be affected as a result of the project, both directly (within the boundaries of the project) and indirectly (prior to and during the construction phase as well as operational changes required after completion of the project). We would like to see these impacts thoroughly evaluated during the EIR process.

We are also concerned about how increases and changes in traffic (particularly truck traffic) will affect the community, particularly since significant changes in major highways/freeways are being contemplated in the scoping of the project.

In addition to congestion, pollution (air, light, noise) is a very important impact to consider to the communities surrounding the project *and* the region. While we recognize that the benefit to the region may be considerable (with regard to congestion and pollution), that benefit must be balanced with the potential negative impacts, that can't be mitigated completely, to the community within close proximity to the project.

We urge you to carefully consider how this project will relate to and impact other projects that are currently being considered (the ACTA SR 47 improvements, for example) and future projects being contemplated. This is an opportunity to "get it right" for the business interests as well as the community needs.

As we understand it, there will be an opportunity to install and utilize the most modern and state of the art handling equipment to operate within the project. This is a real opportunity to showcase how industry growth does not have to come at the expense of the environment. We hope this opportunity will be exploited to its fullest extent.

Thank you for your consideration of our comments. Good luck with your project and we look forward to the Draft Environmental Impact Report.

Regards,

Robert McKoy
Vice President

(310) 834-8586 • Fax (310) 834-8887

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

December 15, 2005

Dr. Ralph G. Appy
Director of Environmental Management
Los Angeles Harbor Department
425 South Palos Verdes Street
P.O. Box 151
San Pedro, CA 90733-0151

Dear Dr. Appy:

Notice of Preparation of a Draft Environmental Impact Report for Southern California International Gateway

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The SCAQMD staff understands the importance of efficient port activity and goods movement. However, the proposed scope and location of the Southern California International Gateway (SCIG) project should not be assumed acceptable since it has the clear potential to significantly impact local and regional air quality. The location of this project is in a non-attainment area, adjacent to already-impacted residential communities that have raised environmental justice concerns, and in close proximity to several schools. Thus a thorough assessment of environmental and public health impacts is needed. In addition, in order to comply with CEQA, the port must apply its creative energies to identify emission control measures and project alternatives—including alternative sites and the no project alternative—to mitigate significant adverse impacts identified through the impact analysis.

We submit the following comments regarding the analysis of potential air quality impacts, mitigation measures and project alternatives that must be included in the Draft Environmental Impact Report (DEIR):

Characterization of Emissions. The EIR must thoroughly characterize the types of air contaminants that will be emitted from equipment, and their health and environmental impacts. Of particular concern, the project will result in emission of diesel particulate matter, a complex mixture of gases and fine particles that contains many carcinogenic compounds, including arsenic, benzene, formaldehyde, 1-3-butadiene, and ethylene dibromide.[1] In 1998, the California Air Resources Board (CARB) identified diesel

[1]California Environmental Protection Agency, Air Resources Board and Office of Environmental Health Hazard Assessment, 1998. Executive Summary for the "Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant."

exhaust as a Toxic Air Contaminant (TAC) based on its cancer causing potential. The lead agency must conduct a thorough health risk assessment to quantify the potential health risks from sources associated with the proposed project and its alternatives, including alternative sites (discussed below).

Project Location, Objectives and Alternatives Analysis. The SCAQMD is concerned about the site selected for the proposed SCIG project. The community adjacent to the Terminal Island Freeway is already heavily impacted by neighboring refineries, diesel truck traffic on the Terminal Island Freeway, and the intermodal facility north of the proposed SCIG project. The SCAQMD has examined elemental carbon contained in the inhalable particulate fraction (PM10) in the Long Beach and Wilmington area. Based on SCAQMD sampling data, average elemental carbon at Hudson Elementary School (7.0 ug/m^3) was 59 percent higher[2] than any other study sites evaluated in the Long Beach and Wilmington area. Hudson Elementary School is within a quarter-mile from the project site and would likely be significantly impacted. The environmental analysis should thoroughly consider effects on this sensitive receptor, and among others.

The SCAQMD is pleased that the lead agency has added Alternative #3: Alternative Site Location. The SCAQMD staff is concerned, however, that the proposed SCIG project objective still includes construction of a "near-dock" intermodal rail facility. Such a foregone conclusion or objective should not be reached at this stage of the environmental review process. It is essential that this statement of project objectives not constrain consideration of alternative sites. As required in the CEQA Guidelines, the lead agency must thoroughly consider alternative site locations that will result in reduced public health impacts to residences and sensitive receptors. "The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." CEQA Guidelines §15126.6(b) (emphasis added). Due to the magnitude of the proposed rail project and proximity to sensitive receptors, the SCAQMD believes that the lead agency must consider an on-dock or on-port alternative that could minimize diesel truck emissions and localized impacts to residences and sensitive receptors. An on-dock or on-port facility is also potentially more efficient as cargo is loaded from the ships more directly to the trains, eliminating many heavy-heavy duty diesel truck trips.

The Draft EIR must thoroughly analyze the ability to alter historical operating practices, land use agreements and any other impediments to implementation of an on-dock or on port alternative before rejecting such a possibility as infeasible. While CEQA Guidelines list a number of factors, which may be considered in determining the feasibility of an alternative, "no one of these factors establishes a fixed limit on the scope of reasonable alternatives." CEQA Guidelines §15126.6(f)(1). The fact that an alternative may even require legislative change does not necessarily make it infeasible. Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal3d 553, 573. Thus, the fact that an alternative may require changes to the project, changes to port operations such as leases, or impede some project objectives, does not make it infeasible.

---

[2] South Coast Air Quality Management District Monitoring Analysis Rule 1158 Follow-up Study #11, October 2005.

Mitigation of Emissions from Line Haul Locomotives. The proposed project lacks sufficient mechanisms to minimize diesel particulate emissions from line-haul locomotives. The CARB railroad MOUs and recently approved regulation for Cargo Handling Equipment at Ports and Intermodal Rail Yards also will not adequately address public health and air quality impacts. Line haul locomotives will clearly cause significant emissions impacts, yet the NOP identifies no mitigation measures or alternatives to be analyzed to mitigate these impacts. The Port of Los Angeles No Net Increase report included measures directed to the line haul locomotives that must be included in the EIR and implemented as feasible measures to mitigate identified significant impacts. "An EIR shall describe feasible mitigation measures which could minimize significant adverse impacts." (CEQA Guidelines §15126.4(a)(1).) These measures, at a minimum, should be included as required mitigation in the Draft EIR. "(A)n adequate EIR must respond to specific suggestions for mitigating a significant environmental impact unless the suggested mitigation is facially infeasible." Los Angeles Unified School District v. City of Los Angeles (1997) 58 Cal.App.4th 1019, 1029.

Proposed Emissions Control Strategies Identified in NOP. The SCAQMD staff commends BNSF Railway and the lead agency for their initial plans to incorporate alternatives to diesel-powered railroad switch engines and yard hostling trucks, electric cranes, and plans to evaluate alternative non-diesel delivery systems for containers. However substantial uncertainties regarding the scope of these plans remain, that must be better defined. The project proponent apparently is still evaluating the feasibility of alternative technologies, and the proposed project thus lacks commitment to implement them. In addition, it is unclear in the NOP which cranes will be electric, or whether other cargo handling equipment such as sideloaders, chassis stackers, etc. will be electric.

The Draft EIR must definitively specify where alternative technologies will be used throughout the project, and quantify the potential emissions impact associated with their use. In addition, the Draft EIR must quantify emissions associated with all equipment associated with the proposed project such as rail maintenance of way equipment (anchors, ballast regulators, ballast sweepers, compactors, locomotive cranes, spike reclaimers, etc.), hy-rail trucks or other rail-related equipment. Agencies may not defer the formulation of mitigation measures until some future time. (CEQA Guidelines §15126.4(a)(1)(B); Sundstrom v. County of Mendocino (1988) 202 Cal.App.3rd 296, 308-309.

In short, the project must use the cleanest technologies feasible for *all* equipment in order to mitigate identified significant impacts. To the extent that low emitting technologies may not be immediately feasible, the project approval must include enforceable commitments and schedules to implement such technologies when they become feasible, as necessary to mitigate identified significant adverse effects. "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments." CEQA Guidelines §15126.4(a)(2).

Buffer zones, Grade Separations, etc. A full review of alternative sites and consideration of the no project alternative must occur prior to proceeding with the proposed project. If BNSF Railway continues to pursue the currently proposed location, the revised NOP states that the lead agency will be assessing the feasibility of a new grade separation from the Terminal Island Freeway directly into the proposed SCIG site. Although this approach may reduce localized impacts to those residents adjacent to the Terminal Island Freeway from trucks, impacts from the trucks, locomotives, and intermodal equipment within the proposed SCIG site will continue to impact an already impacted area. The SCAQMD staff recommends that the lead agency design the project to minimize exposure of all emissions to residents and sensitive receptors by locating truck entrances and exits away from receptors, building a buffer zone to protect sensitive receptors, locating fueling stations and service and maintenance areas away from receptors, and any other design features to minimize exposure of emissions to receptors. In addition, the grade separation may enable an increase in traffic onto the site. These impacts should be analyzed and mitigated, if impacts are significant. CEQA Guidelines §15126.4(a)(1)(D).

Additional comments relating to air quality analyses, data sources and mitigation guidance are included in Attachment I.

The SCAQMD staff appreciates the opportunity to comment on this project. Please send the SCAQMD a copy of the Draft EIR upon its completion. In addition, please send with the Draft EIR all appendices or technical documents related to the air quality analysis and electronic versions of all air quality modeling and health risk assessment files. The SCAQMD staff plans on commenting on the Draft EIR, including selection of the most appropriate of the project alternatives contained in the analysis. If you have any questions, please call me at (909) 396-3105.

Sincerely,

Susan Nakamura

Susan Nakamura
Planning Manager

BRW:PG:EC:SN:CB

LAC050921-01LI
Control Number

Attachment I

The SCAQMD staff recommends that the lead agency follow the procedures, guidelines and methodologies described below to assess potential air quality and health impacts from the proposed project.

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. Alternatively, lead agency may wish to consider using the California Air Resources Board (CARB) approved URBEMIS 2002 Model. This model is available on the SCAQMD Website at: www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction and operations should be calculated. Construction-related air quality impacts for this type of project will typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment), equipment to build the rail line, and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, locomotive emissions, intermodal equipment, emissions from stationary sources (e.g., generators, boilers, internal combustion engines), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust) including delivery trucks.

CEQA Guidelines Sections 15130 and 15355 require lead agencies to evaluate cumulative impacts, i.e., emissions from the proposed project as well as those from existing or approved projects in the immediate vicinity of the proposed project.

Consistent with the SCAQMD's environmental justice enhancement I-4, in October 2003, the SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts and localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

Regarding health risk assessment, SCAQMD staff has developed guidelines for estimating emissions from railyards and for conducting health risk assessments as part of the Rule 3503 – Emissions Inventory and Health Risk Assessments for Railyards. SCAQMD staff recommends that the lead agency utilize these guidance documents when estimating the health risks from the proposed project. In addition, the SCAQMD staff recommends that the lead agency refer to the SCAQMD's "Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis" which can be found on the SCAQMD's CEQA webpages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

Since the proposed project is expected to generate significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. Additional mitigation measures for emissions from railyards and delivery trucks can be found in:

- SCAQMD's "Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis"
- Riverside Air Quality Task Force "Good Neighbor Guidelines"
- Report to Mayor Hahn and Councilwoman Hahn by the No Net Increase Task Force, June 24, 2005.

Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

NRDC
THE EARTH'S BEST DEFENSE
NATURAL RESOURCES DEFENSE COUNCIL

CBE
LA CAUSA

RESIDENTS OF PICO RIVERA
FOR ENVIRONMENTAL JUSTICE

Coalition For A
Safe Environment

CALIFORNIA
EARTH CORPS

SAN PEDRO & PENINSULA
HOMEOWNERS COALITION

Pacoima
Beautiful

AMERICAN
LUNG
ASSOCIATION.
of Los Angeles County

PSR
PHYSICIANS FOR SOCIAL RESPONSIBILITY

California
Safe Schools

December 15, 2005

Via Facsimile, Electronic and U.S. Mail

Dr. Ralph G. Appy
Director of Environmental Management
Los Angeles Harbor Department
425 South Palos Verdes Street
P.O. Box 151
San Pedro, CA 90733-0151

Re: Notice of Preparation Southern California International Gateway Project

Dear Dr. Appy:

On behalf of the Natural Resources Defense Council ("NRDC"), the American Lung Association of LA County, California Earth Corps, California Safe Schools, the Coalition for a Safe Environment, Communities for a Better Environment, Pacoima Beautiful, Physicians for Social Responsibility – Los Angeles, Residents of Pico Rivera for Environmental Justice, and the San Pedro & Peninsula Homeowners Coalition, we submit these comments on the Southern California International Gateway Project ("SCIG," "Project") to bring the Los Angeles Harbor Department's ("LAHD") attention to several important issues relating to the Notice of Preparation ("NOP") and upcoming Environmental Impact Report ("EIR") on the SCIG. We request that LAHD fully examine the issues raised below in its EIR.

1. The EIR must not narrowly define project objectives and should address a reasonable range of alternatives. We appreciate the inclusion of new alternatives in the Supplemental NOP to reflect comments received at the public scoping meetings. In particular, we are pleased that the LAHD plans to evaluate, as one component of the Project, non-diesel delivery systems such as magnetic levitation ("maglev") and electric to transport containers from the ports to the rail facility. In light of the California Environmental Quality Act's ("CEQA")[1] requirement that a reasonable range of feasible alternatives be considered in the EIR process, including measures that employ alternative technology or strategies to mitigate the Project's environmental impacts, inclusion of these alternatives is a step in the right direction. *See* Cal. Code. Reg, § 15126.6.[2] These alternative delivery systems should receive a thorough evaluation, as vessel-to-rail container transport is a substantial and essential component of the proposed Project.

We are concerned, however, that the objectives of the Project may artificially limit the range of alternatives considered in the EIR in spite of the addition of new alternatives in the Supplemental NOP. If the project objective is defined too narrowly, the subsequent analysis of alternatives in the EIR may be inadequate, for it is the project objective that guides the identification and consideration of alternatives. *See* CEQA Guidelines § 15124(b).

Here, the objective and purpose of the Project appears to be the "[e]ffective[] and efficient[] . . . manage[ment] [of] the demands of current and anticipated growth in containerized cargo." (Supplemental NOP, p.A-3).[3] Yet, the NOP narrowly limits this objective by essentially requiring the development of a near-dock intermodal facility. Indeed, the Project objectives are listed as: "a *near-dock* intermodal rail facility . . . for the transfer of marine containers between *truck* and rail" (NOP, p.A-3); "to help address the need for increased *near-dock* facilities and to provide an efficient connection to the Alameda Corridor" (NOP, p.A-4); and to "help manage existing and projected growth in containerized cargo at the San Pedro Ports by providing for increased *near-dock* rail loading facilities" (NOP, p.32) (emphasis added).

Incorrectly focusing the Project objectives on the construction of a *near-dock* facility effectively preludes consideration of reasonable alternative projects, such as on-dock facilities that could mange existing and projected growth at the port. In fact, the only "alternatives" other than the no action alternative identified in the original NOP were both near-dock facilities. In the Supplemental NOP, the only new project alternative is an alternative site location, which would presumably involve all of the same components and technology as the proposed near-dock project, only at a different location. Non-diesel delivery methods are mentioned as well, but these represent mitigation measures rather than independent alternatives to the proposed Project. Other alternatives, such as on-dock Agile Port Systems ("APS")[4] are completely absent from the list.[5]

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1 Cal. Pub. Res. Code § 21000 *et seq.*

2 Cal Code Reg. § 15000 *et seq.* ("CEQA Guidelines")

3 Hereafter all references to the NOP refer to pages corresponding to the numbering in the Supplemental NOP.

4 *See* CENTER FOR THE COMMERCIAL DEPLOYMENT OF TRANSPORTATION TECHNOLOGIES (CCDoTT), EFFICIENT MARINE TERMINAL FULL SCALE DEMONSTRATION (Sept. 15, 2003), available at http://www.ccdott.org/content/AE_fr.html.

Narrowly-defined Project objectives could also set viable alternatives up for rejection in the EIR. For example, neither throughput-optimized on-dock facilities nor the "no action" alternative could serve the purpose of providing increased near-dock facilities. CEQA prohibits an unduly restrictive definition of project purposes. And, as you know, CEQA requires that the EIR present reasonable alternatives "which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree attainment of the project objectives, or would be more costly." CEQA Guidelines § 15126.6(b). We therefore expect that the EIR will incorporate a more accurate set of Project objectives that does not limit the range of alternatives to near-dock facilities, and which includes a reasonable range of alternatives, including but not limited to the implementation of state-of-the-art, on-dock Agile Port System methods. With respect to APS, the EIR should study all aspects of APS methods to evaluate the possible use of APS at the ports including, but not limited to: (1) integration of vessel and rail information systems in a marine terminal; and (2) on-terminal equipment structuring providing for simultaneous container loading and discharge, an arrangement called an Efficient Marine Terminal (EMT).

2. **The EIR must address all components of the Project.** The EIR must provide a clear and accurate project description that addresses all of the project's components. *See County of Inyo v. City of Los Angeles*, 124 Cal.App.3d 1, 9 (1981) ("An accurate, stable, and finite project description is the *sine qua non* of an informative and legally sufficient EIR."). Here, the NOP's description of the proposed Project is unclear, particularly with respect to the use of entrances to the site and the level and nature of use of the San Pedro track north of Sepulveda Boulevard. The level of truck traffic on the Terminal Island freeway will depend on whether and to what extent the northern entrance to the site is used. Because the Terminal Island freeway is immediately adjacent to schools, residential neighborhoods, churches, and parks, the level of truck traffic on the freeway is essential to the EIR's impacts analysis. The NOP is also unclear with respect to the uses of the San Pedro rail line, referring to this area as supporting "less frequent train movements." NOP, p.A-3, Figure 2. Again, this segment of track is adjacent to schools, residences, and other non-industrial land uses. Thus, the EIR must provide greater specificity if impacts from the use of this segment of the Project are to be adequately analyzed.

3. **The EIR must present an accurate environmental baseline.** Under CEQA, the baseline conditions for determining "significant impacts" are those local and regional conditions that exist when the NOP is made available for review. *See* CEQA Guidelines, §15125(a) (an EIR must describe the "physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published . . . from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."). Here, neither the local nor regional conditions in the vicinity of the Project area appear to have been adequately described in the NOP.

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[5] While the cover letter accompanying the Supplemental NOP invites comments on alternative locations for the proposed facility, including an on-dock alternative, it is not clear from the NOP that the on-dock alternative will receive full consideration in the EIR. *See* Letter from Dr. Ralph Appy, Director of Environmental Management, to the public (Oct. 31, 2005) (on file with the Los Angeles Harbor Department).

First, the NOP provides only a vague description of the current operations at the Project site. For instance, the NOP states that the proposed Project area "currently supports a significant amount of Port-related activities," including "cross docking, warehousing, and container and/or trailer maintenance servicing and storage." NOP, pp.A-2, 5. The NOP repeatedly characterizes the current activities at the proposed Project site as "heavy industrial," (NOP, pp.5, 6, 12, 32), and suggests that if the Project is built, the new uses of the site would be "generally consistent with current industrial activities." NOP at 28. Without an objective, detailed presentation of the baseline conditions, however, this conclusion has no sound basis. The current use of the site is far different and has far less severe environmental impacts than the proposed Project will, even though both may be characterized as industrial uses. The EIR must include a detailed analysis of the current environmental conditions so that a meaningful comparison of impacts can be made.[6]

For instance, the EIR must include a detailed analysis of the current levels of noise, air pollution, light pollution, vibration, as well as traffic conditions, and make a realistic comparison of the environmental impacts of the proposed Project versus the existing conditions. We expect that the EIR will contain an accurate characterization of the environmental baseline of the proposed Project area and resolve the problem of vagueness in the NOP. In addition, the EIR must contain documentation to support baseline numbers and sufficient analysis to explain and justify the estimated truck trips, yard activities, locomotive trips, and other activities that will be generated by the proposed Project.

Second, the NOP's documentation of the local and regional environmental conditions in the vicinity of the proposed Project site is also inadequate. For instance, several schools, a shelter for veterans, churches, parks, and residential neighborhoods are proximate to the proposed Project site. The NOP gives short shrift to these surrounding conditions. For example, the NOP only recognizes the proximity of schools to the proposed Project site twice; and only once with any (albeit misleading) specificity. *See* NOP, pp.2, 21. In addition, the NOP misleadingly suggests that only three schools are nearby, NOP, p.21, when in fact, *eight* public schools are close to the proposed site:[7] Stephens Fine Arts Magnet Middle School (<0.5 mi.), Webster Elementary School (<1.0 mi.), Hudson School (<0.25 mi.), Cabrillo High School (<0.75 mi.), Mary Bethune Program for the Homeless (<0.25 mi.), Reid Senior High School (<0.25 mi.), Garfield Elementary School (<0.75 mi.), and John Muir Elementary School (<1.0 mi.). These schools represent a population of over 9,400 students within a mile radius of the Project site. Other parochial schools, such as St. Lucy's, and at least one daycare center are also in the immediate vicinity and must be described.

The environmental baseline substantially informs impact analysis in the EIR, including analysis of cumulative impacts. *See* CEQA Guidelines § 15125(a); *see also* CEQA Guidelines Discussion accompanying § 15125 ("this section requires an EIR to describe the environmental setting of the

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[6] In only one context does the NOP acknowledge that the uses associated with the proposed Project will differ from existing uses, though both are industrial. See NOP, pp.24-26, 39 (noting that operations at the site "will change from warehousing, container and trailer parking and maintenance to an active intermodal rail loading and unloading facility").

[7] Also of concern is that while the NOP refers readers to Figure 2 for the location of the three schools mentioned in the project description, Figure 2 does not label any schools.

project so that the changes can be seen *in context*.") (emphasis added). For this reason, the existing local and regional physical environmental conditions are relevant to the environmental baseline and must be analyzed accordingly. Thus, even though the checklist's inquiry into the proximity of schools is limited to the hazardous materials safety context and only refers to schools within a quarter-mile radius, the substantial proximity of several schools is an element of the Project's environmental context. The EIR must comprehensively address the existing conditions in the vicinity of the Project area so that an accurate analysis of the Project's and alternatives' impacts is feasible.

Third, under CEQA an EIR must include a description of the physical environmental conditions in the vicinity of the project from both a local and regional perspective. *See* CEQA Guidelines §15125(a). We are concerned that the NOP appears to incorporate *regional* truck traffic and emissions in its report of *local* environmental baseline conditions.[8] This is improper. While the EIR must accurately reflect both local and regional conditions, local baseline conditions should not be distorted by the inclusion of regional conditions. Only existing, local truck traffic and emissions should be included.

4. **The scope of analysis in the EIR must address local as well as regional effects.** Just as the environmental baseline must address the local as well as the regional context, CEQA requires that the EIR analyze the local and regional environmental impacts of a proposed project. "The EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the *full* environmental context." CEQA Guidelines § 15125(c) (emphasis added). The NOP asserts that the Project would divert truck traffic from the 710 to "existing major traffic arteries in the Project Site area." NOP, p.36. The NOP states that by reducing truck traffic on the 710 freeway, the proposed Project will thereby reduce air quality impacts in the region, and even states that by enabling greater use of the Alameda Corridor, the Project will actually realize improvements in air quality. *See* NOP, pp.A-4, 9. These assertions severely understate the effects that as many as 1.5 million truck trips per year on local roads will have on local air quality. It is imperative that the EIR address the local impacts that this Project implicates, including impacts on the several schools in close proximity to the Project site. These schools—and the thousands of children who attend them—will be affected not only by air pollution, but also noise and traffic congestion caused by truck traffic on the roads serving the Project Site. The EIR must address the maximum volume of local truck traffic that could occur as a result of the proposed Project and take a realistic view of the regional *and* local effects of diverting truck traffic from the 710 to local roads.

Moreover, we are concerned that given the fact that the ports expect at least a tripling of cargo throughput over the next two to three decades, it is unrealistic to suggest that the proposed Project would replace truck traffic on the 710 with rail transport. *See* NOP, p.A-4. Rather, the more realistic view—and the one that should be reflected in the EIR—is that this rail activity will enable a significant increase in goods movement and thus air pollution and health impacts in the region.

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[8] *See* NOP, pp.A-4, 9, suggesting that by diverting truck traffic from the 710 freeway to roads in the Project area, the Project would reduce air quality impacts in the region and achieve improvements in air quality.

5. The EIR must address the effects of atmospheric deposition on water quality. The NOP does not appear to address water quality impacts from atmospheric deposition at either the local or regional level. Diesel exhaust is known to contribute to water pollution through the process of atmospheric deposition. *See e.g.*, U.S. E.P.A., FREQUENTLY ASKED QUESTIONS ABOUT ATMOSPHERIC DEPOSITION: A HANDBOOK FOR WATERSHED MANAGERS, Appendix 1, at 79, (2001). As proposed, this Project would introduce a tremendous amount of diesel emissions locally. The EIR should address this potentially local and regional impact and identify appropriate mitigation measures.

6. The EIR should address the No Net Increase mitigation measures as well as other technology to mitigate the project's environmental impacts. Under CEQA, all feasible mitigation measures must be considered and implemented to reduce environmental impacts to a level of insignificance. *See* CEQA Guidelines § 15126.4. To that end, the EIR for this project should adopt all applicable mitigation measures identified in the No Net Increase ("NNI") Plan, including the forty NNI measures that apply to cargo handling equipment, rail, and heavy-duty vehicles. These measures include strategies to utilize alternative fuel yard equipment, cleaner switcher and line haul locomotives, and heavy-duty trucks with pollution control devices. Additionally, the EIR should address electrification of the Alameda Corridor and Alameda Corridor East – an element of the NNI plan – since maximizing use of the Alameda Corridor is both a goal and foreseeable result of this project.

The EIR should address mitigation measures relevant to this project that may not be included in the NNI plan as well, including air quality mitigation for construction impacts and non-diesel delivery systems such as magnetic levitation and electric technology. We appreciate the addition of some such measures to the list of alternatives in the Supplemental NOP. *See* NOP, p.A-6. Other mitigation measures that the EIR should address include, but are not limited to, conveyor technology such as that currently used in the quarry transport context. *See* Muids-Daubeuf Conveyor-belt and River Transport, http://www.lafarge.com (follow "Sustainable Development" hyperlink; then follow "Case Studies" hyperlink; then follow "Transport" hyperlink; then follow "Muids-Daubeuf Conveyor-belt and river transport" hyperlink).

In addition to air quality impacts, other environmental impacts must be also be mitigated, including noise, light pollution, and traffic. Furthermore, although the NOP does not address the water quality impacts implicated through atmospheric deposition of air pollutants, the EIR should address these impacts and must include mitigation measures to reduce such impacts to a level of insignificance and beyond to NNI and health-protective levels.

Finally, although the project description contemplates the "investigation" and "evaluation" of certain green technologies with respect to BNSF's proposed rail yard operations, (NOP, p.A-1, A-2, A-5) mere investigation of such technologies is insufficient to meet CEQA's requirements where such technologies are feasible. All feasible mitigation measures must be adopted, and must be fully enforceable. *See* CEQA Guidelines § 15126.4(a)(2).

7. **The EIR must address all reasonably foreseeable future impacts.** The EIR must address and analyze all significant direct and indirect impacts caused by the Project, which include all reasonably foreseeable impacts. *See* CEQA Guidelines §§ 15126, 15358. Although it is not mentioned in the NOP, we have reason to believe that the ports may be considering expanding the proposed Project to meet the nearby UP-ICTF to create a "super ICTF." *See Intermodal Container Rail Yard Improvements Put Huge Dent in Freeway Truck Traffic*, INTERCHANGE (Port of Long Beach), Apr. 2005, at 2 ("Long-term plans could call for the possible merging of the new and the old ICTF facilities into one 'super yard.'"). Indeed, recent documents submitted by the Port of Los Angeles to the Board of Harbor Commissioners refer to plans to expand both the UP-ICTF and the proposed BNSF facility to create one large facility. *See* PORT OF LOS ANGELES, EXECUTIVE DIRECTOR'S REPORT TO THE BOARD OF HARBOR COMMISSIONERS, EXCLUSIVE NEGOTIATING AND FUNDING AGREEMENT BETWEEN THE CITY OF LOS ANGELES AND THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, at 3 (Nov. 16, 2005). It is clear from these documents that the so-called "super yard" is a reasonably foreseeable future project related to the current proposed Project. Under CEQA, it is improper segmentation of this Project to examine only a discrete component of a much larger project. *See* CEQA Guidelines § 15130. The environmental effects of a potential future expansion must be considered where, as here, the expansion "is a reasonably foreseeable consequence of the initial project; and the future expansion . . . will be significant in that it will likely change the scope or nature of the project or its environmental effects." *Laurel Heights Improvement Ass'n of San Francisco, Inc. v. Regents of the Univ. of California*, 47 Cal.3d 376, 396 (1988). The potential expansion of this Project and the UP-ICTF to create a super yard meets these two requirements, and must be addressed in the EIR. Furthermore, if expansion to create a super yard would entail increased capacity, the effects of such increased capacity must be taken into account.

Further, as you know, CEQA requires that an EIR address growth-inducing effects of a proposed project. *See* CEQA Guidelines § 15358(a)(2). Here, the NOP makes clear that this Project is intended to enable the San Pedro Bay ports to accommodate anticipated growth in containerized cargo. *See* NOP, p.A-3. Where a project will enable growth that itself implicates environmental impacts, those impacts must be considered in the EIR, even if such impacts will occur "later in time." CEQA Guidelines § 15358(a)(2). The proposed SCIG is intended to facilitate the accommodation of growth up to 300 percent at the ports in the next two to three decades. Thus, the EIR must address environmental impacts of growth at the ports and related increased container movement.

In addition, the NOP acknowledges that the Project would "cause an increase in traffic load on existing major traffic arteries in the Project Site area," and that the increased traffic load could exceed "a level-of-service standard for congestion management program intersections in the Port area." NOP, p.36. Given this anticipated increase in local traffic load, the EIR should address the impacts of future road expansion if that is a reasonably foreseeable future project. We submit that it is.

8. **The EIR must fully assess cumulative impacts.** Under CEQA, the EIR must discuss cumulative impacts "when the project's incremental effect is cumulatively considerable." CEQA

Guidelines § 15130; *see also* § 15355. An adequate cumulative impacts analysis is particularly important where, as in the South Coast, ozone pollution already far exceeds applicable state and federal ambient thresholds. Under these circumstances, any addition of ozone precursors exacerbates an already unacceptable condition. We are pleased that the Supplemental NOP acknowledges the important issue of cumulative air emissions impacts. *See* NOP, p.10. A full assessment of the cumulative impacts of the Project should take into account the several existing pollution sources in the vicinity, including the refineries, freeways, ports, and the UP-ICTF. Also, because it is a "reasonably foreseeable probable future project[]," (CEQA Guidelines § 15355) the EIR should address the potential cumulative impact of the likely expansion of the UP-ICTF. *See Intermodal Container Rail Yard Improvements Put Huge Dent in Freeway Truck Traffic*, INTERCHANGE (Port of Long Beach), Apr. 2005, at 2 ("Union Pacific has asked the ports to investigate the possible expansion of the ICTF to handle an estimated 1.6 million marine containers annually.").

The importance of a thorough analysis of the cumulative impacts implicated by this proposed Project is also underscored by the proximity of several schools and other non-industrial land uses to the proposed Project site. Eight public schools are located within a mile of the site, with a total enrollment of at least 9,400 students, as discussed above. The EIR should address the cumulative effects of all environmental impacts specifically as they will affect these sensitive receptors. The proposed Project's impacts must be analyzed with an eye to the existing impact of air pollution, noise, and ground-borne vibration on schools. *See Los Angeles Unified Sch. Dist. v. City of Los Angeles*, 58 Cal.App.4th 1019, 1025 (1997) ("[T]he relevant issue to be addressed in the EIR is not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant in light of the serious nature of the traffic noise problem already existing around the schools.") (citing *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 718 (1990)). The same considerations apply to all environmental impacts that will affect the schools – and residential neighborhoods – in close proximity to the proposed Project site. The NOP recognizes that the surrounding area is already affected by noise, light pollution, and air pollution from industrial activities at the site and other nearby industrial sources. *See* NOP, pp.7, 9, 10, 31. We therefore expect that the EIR will evaluate not only the Project's impacts, but also the cumulative impacts of other existing and planned facilities in the area on residential neighborhoods and sensitive receptors, including any growth at the port that this Project will enable.

9. **The EIR must contain a comprehensive health risk assessment.** This proposed Project could generate a tremendous amount of diesel exhaust from trucks, yard equipment, and locomotives. Given that diesel exhaust causes 71% of the cancer risk faced by Californians, the EIR should include a full health risk assessment ("HRA") that includes the level of toxic risk, as well as pollution, that the nearby communities will face from this proposed Project. We urge that the health risk impacts affecting communities along the Alameda Corridor be assessed as well, since one of the objectives and a likely outcome of this Project is increased use of the Alameda Corridor. The HRA should follow protocol set forth by the South Coast Air Quality Management District ("SCAQMD") or be prepared in conjunction with the SCAQMD. The HRA should evaluate the health risk not only from activities at the Project site, but also from the trucks that

would deliver containers to the SCIG. The HRA must also assess the cumulative risk from other sources in the region, including the refineries, freeways, ports, and UP-ICTF, as well as the cumulative risk posed from the growth at the port that this Project will enable.

10. Environmental justice impacts must be considered in the EIR. The proposed Project Site is located near two low-income communities of color: west Long Beach and Wilmington. According to the 2000 census, Latinos, African-Americans, Asians, and other non-white ethnicities represent over 85% of the population in these communities. However, the NOP does not make clear that the EIR will assess and mitigate environmental justice impacts.

The California Air Resources Board recently observed that "[t]he Californians who live near ports, rail yards, and along high traffic corridors are subsidizing the goods movement sector with their health." *See* CALIFORNIA AIR RESOURCES BOARD, DRAFT EMISSION REDUCTION PLAN FOR PORTS AND INTERNATIONAL GOODS MOVEMENT IN CALIFORNIA, Chapter 5, at1, (Dec. 1, 2005). Wilmington and west Long Beach are already burdened by all three of those pollution sources—including the Port of LA, Port of Long Beach, the 710 freeway, the Terminal Island Freeway, and the UP-ICTF—in addition to the nearby refineries. And the proposed Project would site yet another source of pollution in these communities. Of particular concern in this area are the adverse health effects of diesel emissions, dramatically increased local levels of which are implicated by the proposed Project's use of trucks, locomotives, switch engines, and yard equipment. The EIR must consider and implement mitigation measures to eliminate all environmental justice impacts implicated by the proposed Project, taking into account impacts introduced by the Project itself as well as cumulative impacts that arise from existing and foreseeable future sources of air, light, and noise pollution—including any growth at the port that this project will enable.

Thank you for considering these comments.

Sincerely,

Melissa C. Lin Perrella
Senior Project Attorney
Natural Resources Defense Council

Dorothée Alsentzer
Legal Fellow
Natural Resources Defense Council

Jesse N. Marquez
Executive Director
Coalition For A Safe Environment

Jonathan Parfrey
Executive Director
Physicians for Social Responsibility – Los Angeles

Enrique Chiock
President/CEO
American Lung Association of LA County

Don May
President
California Earth Corps

Bahram Fazeli
Communities for a Better Environment

Louis Cabrales
Pico Rivera Residents for Environmental Justice

Robina Suwol
Executive Director
California Safe Schools

Noel Park
President
San Pedro & Peninsula Homeowners Coalition

Marlene Grossman
Executive Director
Pacoima Beautiful

From: Thoa Le <thoa_le@dot.ca.gov>
To: <dhagner@portla.org>
Date: 12/15/2005 11:16:08 AM
Subject: Southern California International Gateway Project's separate NEPA and CEQAdocuments

Dear Dennis Hagner,

Based on Mike Christensen's email saying that you are the primary contact for the Southern California International Gateway Project, and as we learnt that the Port of LA intended to seek federal funding and planned to prepare separate NEPA and CEQA environmental documents for this project, we would like to let you know that per response from our Federal Highway Administration's representative, Mr. Steve Heallow, the FHWA is opposed to the separate NEPA and CEQA documents for the following reasons:

- Environmental streamlining has long been a priority in our agency. We are directed to look for creative ways to enhance our processes to deliver the projects. Joint NEPA/CEQA documents are the ultimate streamlining mechanism because they effectively help the project sponsor and all involved agencies avoid duplication of effort. FHWA has developed this approach in partnership with Caltrans because we want to show the consulting agencies and the public we avoid unnecessary cost and delay.

- In our experience, one of the risks associated with separate CEQA/NEPA documents is that they may conclude different project impacts. In that case the public could (rightfully) question the veracity of one or both documents.

- Another risk with separate documents involves scoping. Scoping for CEQA and NEPA are more alike than different. If there are Fed. resource agencies involved in scoping they will be unenthusiastic about a project with separate documents, requiring separate processes, making needless demands on their scarce available resources. Since the resource agencies are generally strapped for people, they will out of necessity prioritize, and a project with split documents/studies is most likely to be a lower priority.

- If you review the Council on Environmental Quality Regulations for Implementing NEPA in 40 CFR 1500 through 1508[http://ceq.eh.doe.gov/nepa/regs/ceq/toc_ceq.htm] you'll notice several recurring themes. One is early consultation, i.e. engaging the consulting/resource agencies early in the process. This makes the NEPA process meaningful. Another theme is: avoid or minimize needless duplication of effort by public agencies through a coordinated environmental process. This shows the other agencies we will consult with them as often as necessary, but not more often than necessary.

- In terms of dollars (adjusted for inflation) and people, the Federal Aid Highway program over the past 30 years has tripled in size as our agency has shrunk by half. We have learned to appreciate the value of streamlining our processes. Thus when a project sponsor asks to advance separate CEQA and NEPA documents, we see it as counterproductive.

Please consider this opinion in your decision to prepare environmental documents.

Please do not hesitate to contact me if you have any questions.

Thank you

Thoa Le
Environmental Planner
Division of Environmental Planning
Caltrans-District 7
100 S Main St., Los Angeles, CA 90012, Mail Stop 16A
Tel: (213) 897-2819
Fax: (213) 897-0685
Email: thoa_le@dot.ca.gov
Location: 04-094

CC: "Chris Cannon" <CCannon@portla.org>, "Dennis Hagner" <DHagner@portla.org>, <rappy@portla.org>, "Dave Walsh" <DWalsh@portla.org>, <mchristensen@portla.org>, <karl.price@dot.ca.gov>

December 15, 2005

Dr. Ralph G. Appy
Director of Environmental Management
Los Angeles Harbor Department
425 South Palos Verdes Street
San Pedro, Ca 90731

Subject: Comments Submittal Regarding Supplemental Notice of Preparation (NOP) for the Southern California International Gateway Project

In response to the Subject NOP, please consider and respond to the questions related to (1) Project Objectives and (2) Air Quality as stated below.

1. Questions regarding Project Objectives include the following:
    a. How will the project support the Port's Policy Objective of No Net Increase in Air Pollution over year 2001 levels?
    b. How will the project support the Port's Policy Objective of environmental stewardship and concern for the community in consideration of net results?
    c. What is the Port's intended Policy regarding On Dock Rail initiatives?

2. Questions regarding Air Quality include the following:
    a. What is the specific quantity (tons) in air pollution by category (e.g., Particulate Matter) that will result from the Project if implemented through year 2025?
    b. What is the specific quantity (tons) in air pollution by category (e.g., Particulate Matter) that will result from continuing transport utilizing Heavy Duty Vehicles (on-road trucks) based on reduced per-truck pollution resulting from incorporation of currently planned regulatory changes incorporated through year 2025?
    c. What is the quantity-of-containers-per-train basis for the calculation applicable to a., above.
    d. What is the specific quantity (tons) in air pollution by category (e.g., Particulate Matter) that will result from continuing transport utilizing Heavy Duty Vehicles converted to operate on Liquid Natural Gas through year 2025?

Thank you.

Sincerely,

Richard Havenick (signature on file)
Richard Havenick
3707 Parker Street
San Pedro, CA 90731