



Figure 2-12. SCAQS and SCAQMD equipment inside the Burbank site building, including the C1-C10 canister.

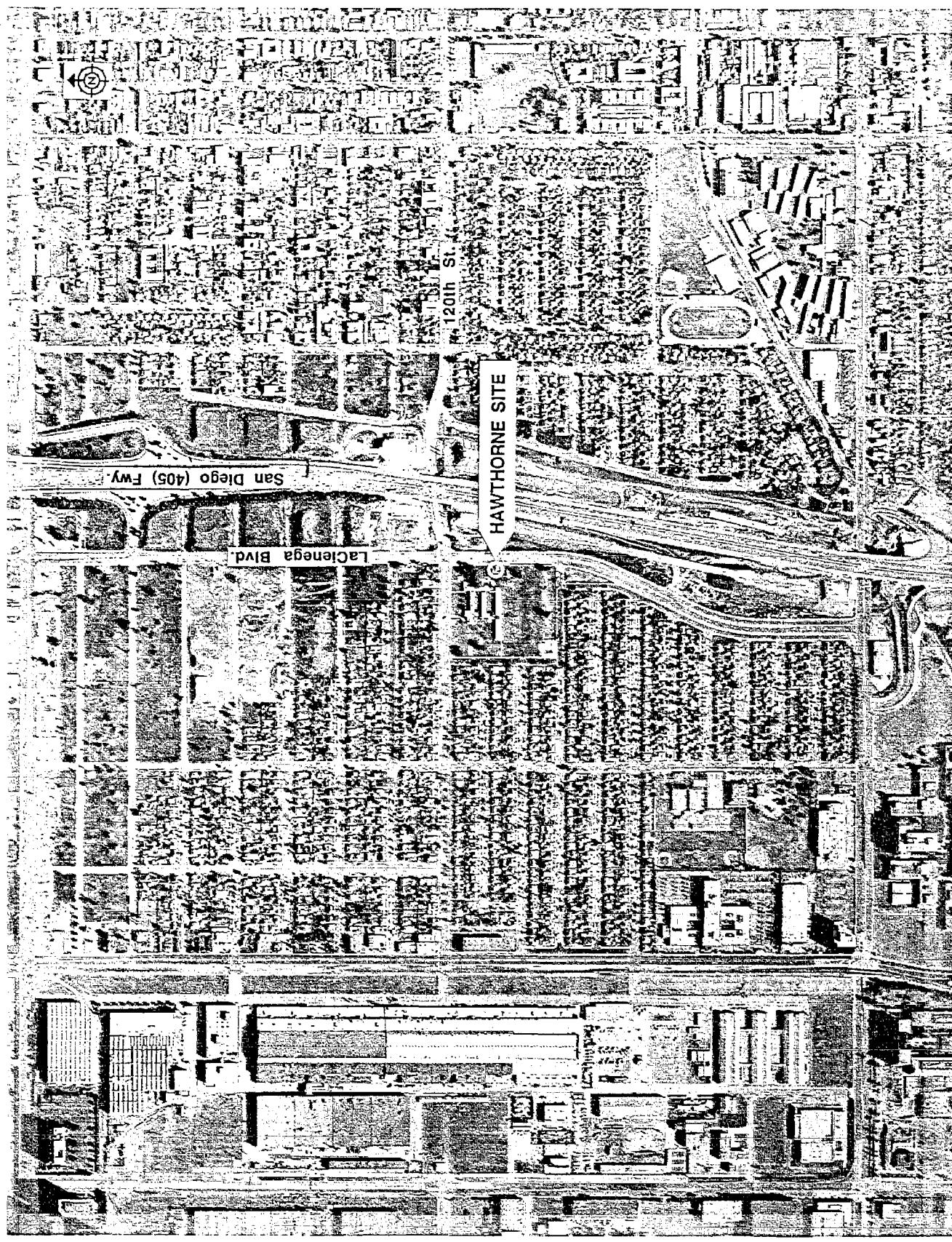


FIGURE 2-13. Hawthorne site. Air Photo Services©, Santa Ana, CA

The land use in the immediate vicinity of the sampling site is mainly commercial, with predominantly commercial traffic, but residential neighborhoods surround the site to the north, south and west. Large industrial buildings line Aviation Boulevard, about 1/2 mile to the west. Nearby there is a great deal of commuter and arterial traffic due to the major roadways, freeways and LAX. There are undeveloped blocks south of the Imperial Highway, starting less than 1/8 mile to the north, as well as the strips of exposed soil between La Cienega Boulevard and the San Diego Freeway. The surrounding terrain is relatively flat and the site has good exposure to air flow with only slight blockage from some trees about 50 feet to the northwest.

The existing SCAQMD station monitors SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>3</sub>, TSP, temperature, dew point, and wind speed and direction. Additional SCAQS instrumentation included a SCAQS sampler, a nephelometer, a PM-10 sampler, a carbonyl sampler, a C<sub>1</sub>-C<sub>10</sub> hydrocarbon sampler, and a PAN GC. The SCAQS and PM-10 samplers were obtained from the ARB, the nephelometer was obtained from NWC, the carbonyl sampler from ENSR, the C<sub>1</sub>-C<sub>10</sub> hydrocarbon sampler from Biospherics, and the PAN GC from DGA. All additional SCAQS instruments were operated and maintained by AV except the nephelometer, which was operated by SCAQMD, and the PAN GC, which was operated by DGA.

The nephelometer and the PAN GC were located in the existing SCAQMD station. The SCAQS and PM-10 samplers were on the roof of the Hawthorne SCAQS station, while the carbonyl and C<sub>1</sub>-C<sub>10</sub> hydrocarbon samplers were inside the SCAQS station. The sampling probe for the program was 2 to 3 feet above the roof of the trailer.

Figures 2-14, 2-15 and 2-16 are pictures of the overall site, the rooftop samplers and the filter handling area inside the trailer, respectively.

#### o Los Angeles

Station: Downtown Los Angeles	Code: DLA
Address: 1630 North Main Street, Los Angeles, CA 90012	
Latitude: 34° 04' 02" N	Longitude: 118° 13' 31" W
UTM Northing: 3770.1 km	UTM Easting: 386.9 km
Elevation (above MSL): 87 m	

The Downtown Los Angeles site, at an existing SCAQMD air monitoring station (Los Angeles -- North Main), is located in Building 3 in the Los Angeles County Department of Water and Power (DWP) maintenance yard. The entrance to the yard is on North Main Street between Leroy and Gibbons Streets. The filter-handling and instrument area is in a two-room office on the second floor of a 2-1/2 story (36-foot) building. The samplers and air intakes are located on the roof of the same building. Other DWP buildings surround the site building, including two one-story buildings to the north, three two-story buildings to the northeast, south and east, and three three-story buildings to the south, southeast and

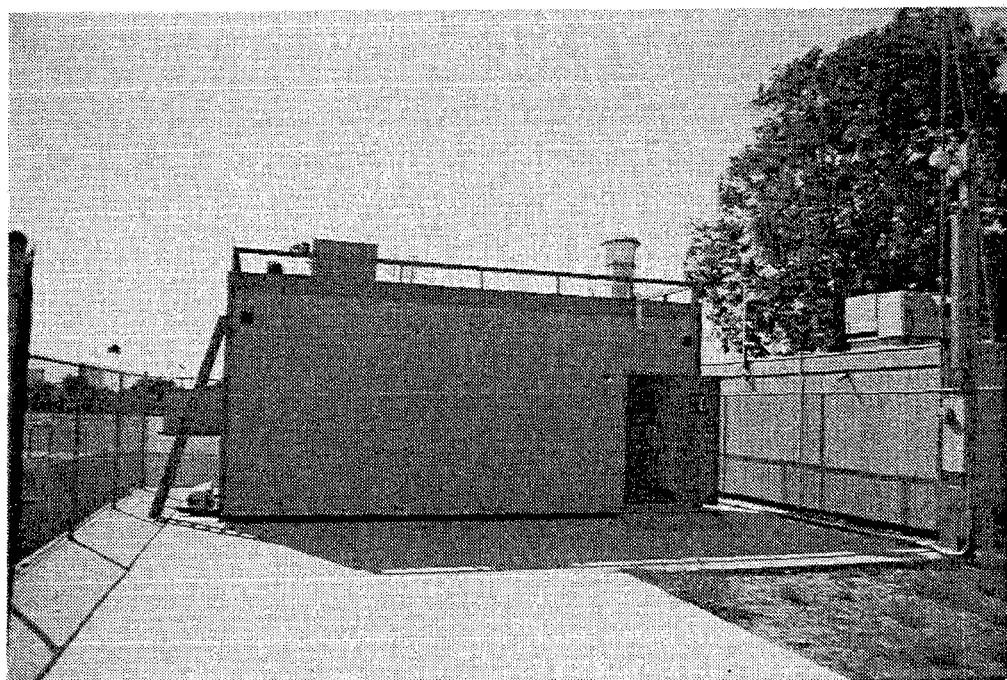


Figure 2-14. The Hawthorne site building at Anza Elementary School.

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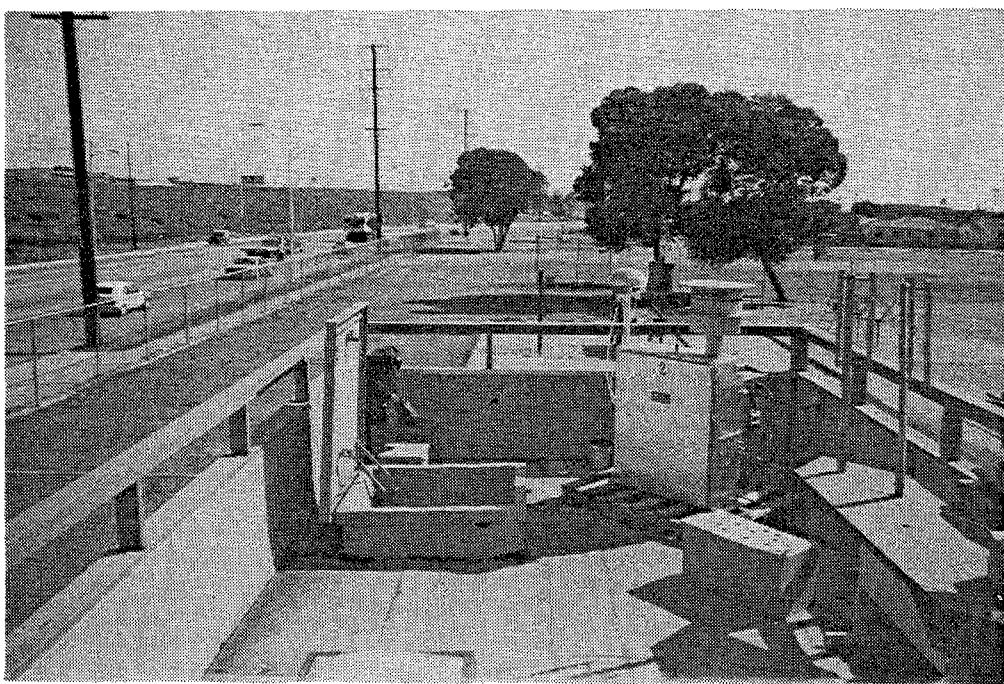


Figure 2-15. The SCAQS sampler on the Hawthorne site roof.

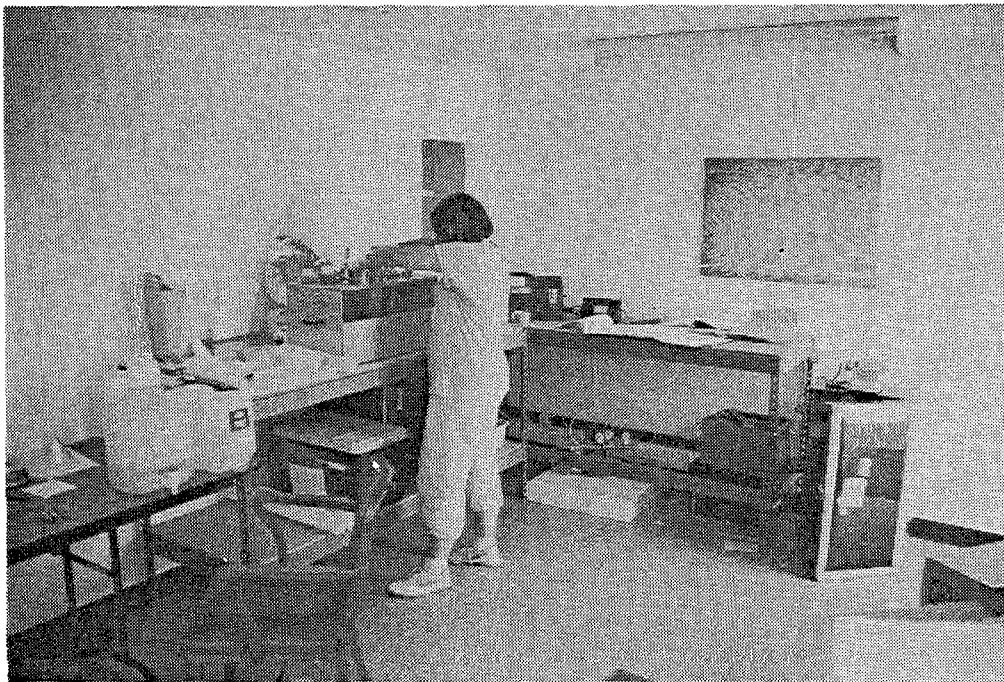


Figure 2-16. The filter handling area inside the Hawthorne site trailer.

southwest. The concrete-lined Los Angeles River runs near the site, less than 1/8 mile to the east. Railroad tracks with moderate use run along both sides of the river as well as through a freight yard 1/4 mile to the north and another rail transportation center 3/4 mile to the south. There are several small DWP employee parking lots in the yard with traffic predominantly at shift transition times. DWP service trucks are often running in the yard. The site is close to the high-rise buildings of downtown and about 1 1/2 miles northeast of the Los Angeles Civic Center. Elysian Park (Dodger Stadium) is on a hill less than one mile to the northwest. The 110 (Pasadena) Freeway is about 3/4 mile to the west, the I-5 (Golden State) Freeway is just over 1/2 mile to the east, and the junctions of the 101 (Hollywood), I-5 (Santa Ana/Golden State), and I-10 (San Bernardino) Freeways are about one mile to the south. Figure 2-17 is an aerial photograph within about a 1/2 mile radius of the site.

The surrounding area is predominantly industrial with a large amount of industrial and commercial truck and train traffic, as well as automobile traffic on the nearby streets and freeways. Vehicle emissions and secondary pollutants from photochemical processes lead to most of the air quality degradation monitored by this site. The air flow exposure to the site is good, except for the broad 90-foot-tall building to the south, which probably obstructs southerly flow. The terrain immediately around the yard is relatively flat, but there are high hills to the north, starting about a mile away.

The existing SCAQMD station monitors SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>3</sub>, TSP, PM-10, temperature, dew point, and wind speed and direction. During the SCAQS summer study period, a SCAQS sampler, a nephelometer, a carbonyl sampler, a C<sub>1</sub>-C<sub>10</sub> hydrocarbon sampler, a PAN GC, a UV radiometer, an H<sub>2</sub>O<sub>2</sub> sampler, and two air toxics samplers (one using Tedlar bags and one using canisters) were installed. During the SCAQS fall study period, the H<sub>2</sub>O<sub>2</sub> sampler was removed and a low pressure impactor (Berner), a drum impactor (DRUM), a low pressure micro-orifice impactor (MOUDI), two types of optical particle canisters (OPC and Probe), and an electrical aerosol analyzer (EAA) were added.

AV operated all additional SCAQS instruments except the following: the nephelometer, which was operated by SCAQMD; PAN GC, which was operated by DGA; the MOUDI, which was operated by University of Minnesota (UM); the Berner, which was operated by the Air and Industrial Hygiene Laboratories (AIHL); and the DRUM, which was operated by the University of California Davis (UCD).

The SCAQS and air toxics (Tedlar bags) samplers and the Probe were obtained from the ARB. The nephelometer for the summer was obtained from the EPA and for the fall from NWC. The EPA also provided the UV sampler. The carbonyl sampler was obtained from ENSR, the C<sub>1</sub>-C<sub>10</sub> hydrocarbon and air toxics (canisters) samplers from Biospherics, the PAN GC from DGA, the H<sub>2</sub>O<sub>2</sub> sampler from EMSI, the Berner from AIHL, the MOUDI from UM, the DRUM from UCD, the OPC from University of California Riverside (UCR), and the EAA from STI.



FIGURE 2-17. Downtown Los Angeles site. Air Photo Services©, Santa Ana, CA

The SCAQMD sampling probe is 40.5 feet above ground, about 4.5 feet above the roof. AV's inlets for the SCAQS instruments were collocated with these, with tubes running about 25 feet into the office through a window. The SCAQMD also has five hi-vol samplers, two PM-10 samplers and an air toxics sampler on the roof. The SCAQS sampler was placed in a clear area of the roof, about 20 feet further west.

Figures 2-18, 2-19, and 2-20, respectively, are pictures of Building 3, the rooftop samplers, and the instrument rack inside the site office.

o **Rubidoux**

Station: Rubidoux	Code: RUB
Address: 5888 Mission Boulevard, Rubidoux, CA 92509	
Latitude: $33^{\circ} 59' 59''$ N	Longitude: $117^{\circ} 25' 01''$ W
UTM Northing: 3762.0 km	UTM Easting: 461.5 km
Elevation (above MSL): 214 m	

The Rubidoux site, an existing SCAQMD monitoring station, is located in the parking lot behind the Riverside Health Facility on Mission Boulevard. It is about 115 feet southwest of Mission Boulevard and 840 feet northwest of Riverview Drive, the nearest through street. The 60 (Pomona) Freeway is about 1/2 mile to the north. Flabob Airport, a small airstrip, is about one mile to the south. Figure 2-21 is an aerial view of the Rubidoux site, within about a 1/2 mile radius.

The land use within about two miles of the site is primarily residential or undeveloped, with some small commercial buildings to the northeast, east, southeast and northwest. There is a relatively large amount of vacant land in the vicinity, some of which is agricultural. The immediate neighborhood within 1/4 mile to the north is mainly single-story residential homes. The lots on either side the Health Facility along Mission Boulevard are vacant, followed by a restaurant and a residential trailer park to the northwest and another trailer park to the southeast. The land directly behind the site is also vacant, except for a small electric substation to the south.

Traffic in the area is moderate and on paved roads. The topography within a two-mile radius is characterized as rolling, with an outstanding landmark, Rattlesnake Mountain, standing about 200 feet tall about one mile to the north. The exposure of the site to air flow is fair, with some obstruction from scattered trees (up to about 45 feet tall), the nearby buildings, and a 10-foot-high wall across the parking lot to the northwest. These may cause some turbulence in the flow from the north, northwest and southwest.

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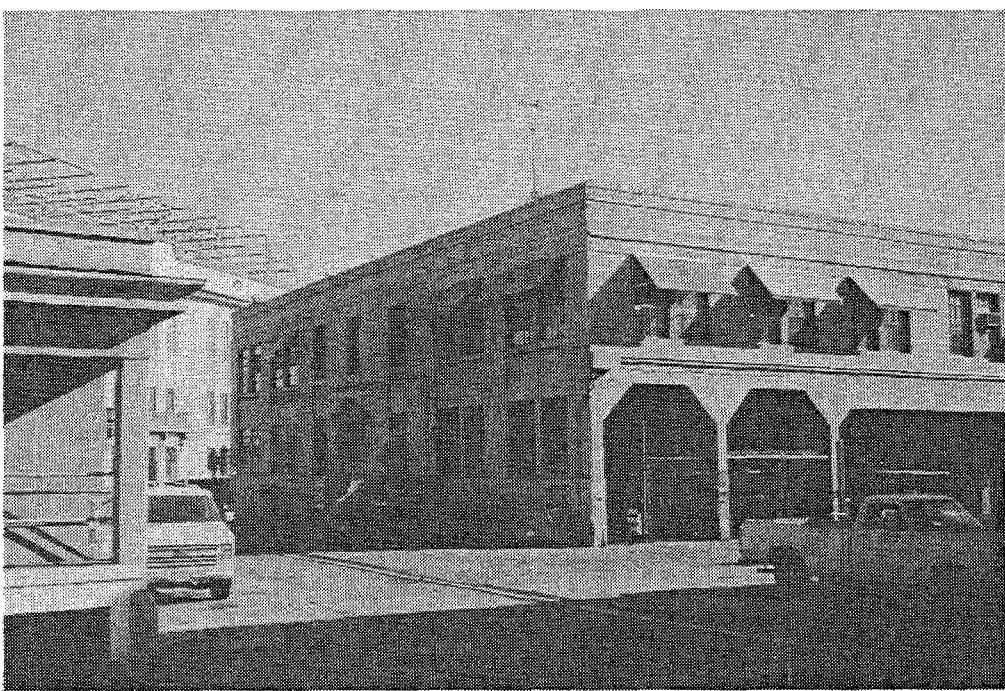


Figure 2-18. The Downtown Los Angeles site, Building 3 in the DWP maintenance yard.

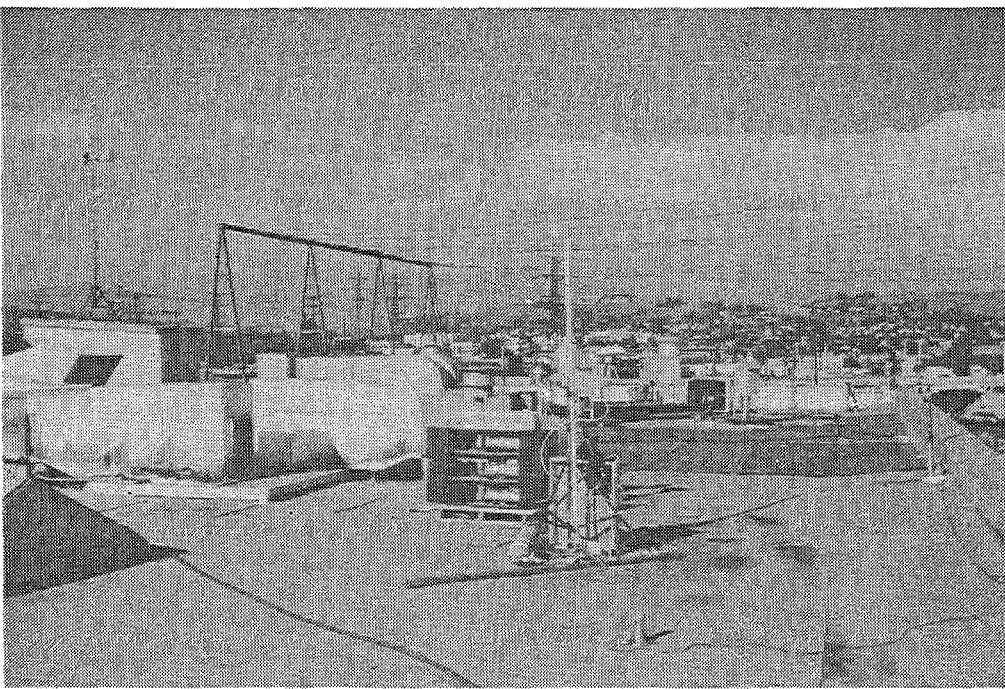


Figure 2-19. The SCAQS sampler and other rooftop instrumentation on the Downtown Los Angeles site building.

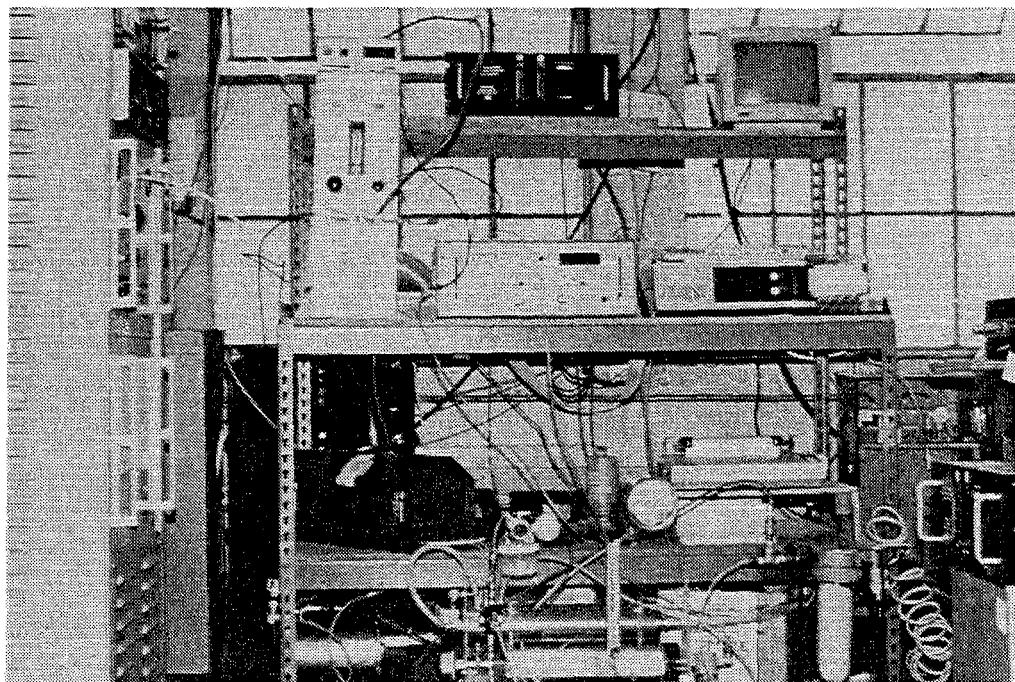


Figure 2-20. The SCAQS instrument rack inside the Downtown Los Angeles site office.

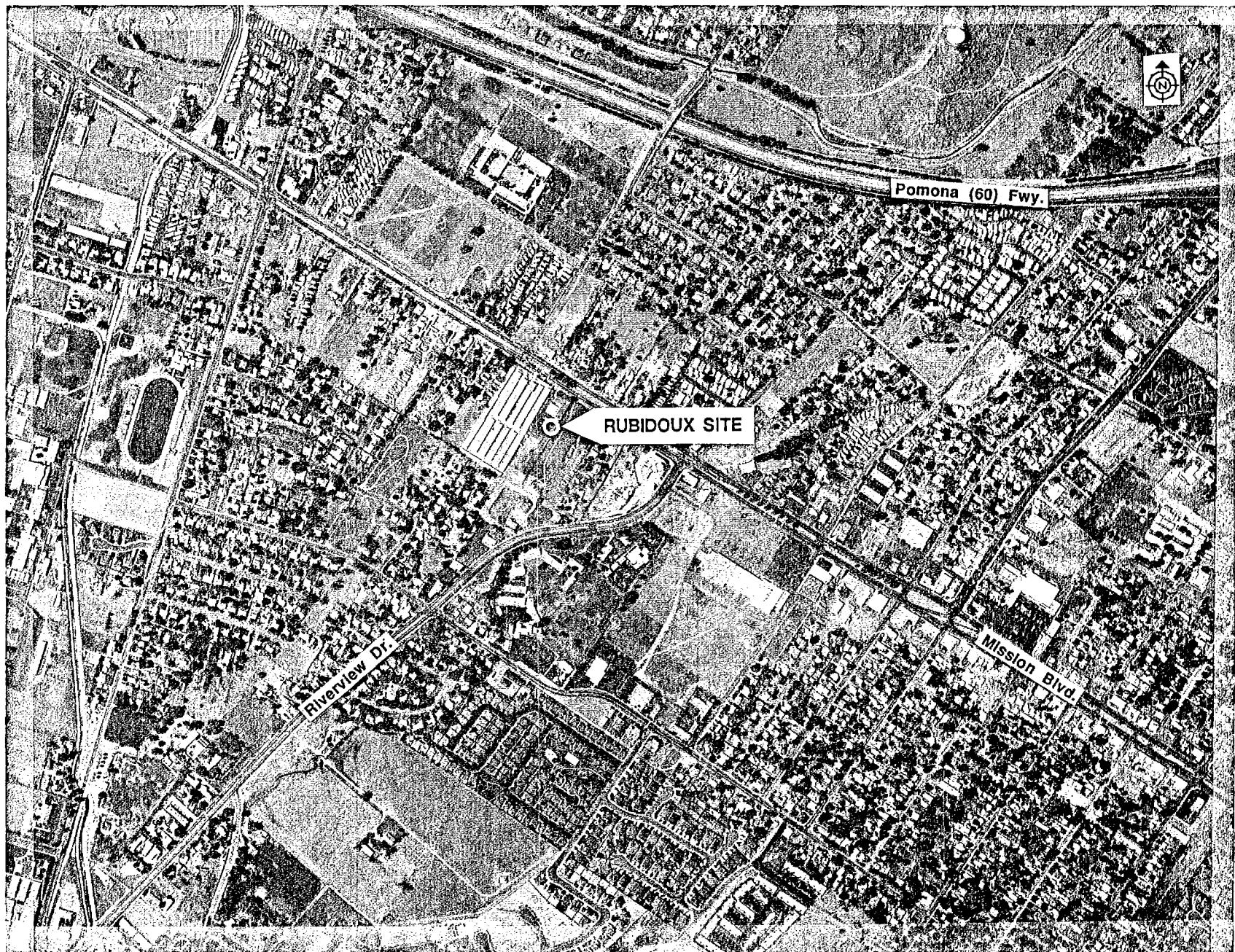


FIGURE 2-21. Rubidoux site. Air Photo Services©, Santa Ana, CA

The existing SCAQMD station monitors SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>3</sub>, TSP, PM-10, temperature, dew point, and wind speed and direction. During the SCAQS summer study period, a SCAQS sampler, a nephelometer, a carbonyl sampler, a C<sub>1</sub>-C<sub>10</sub> hydrocarbon sampler, a PAN GC, a UV radiometer, an H<sub>2</sub>O<sub>2</sub> sampler, two air toxics samplers (one using Tedlar bags and one using canisters), a Berner, a DRUM, a MOUDI, an OPC, an EAA, and a Probe were installed. During the SCAQS fall study period, the following instruments were removed: the H<sub>2</sub>O<sub>2</sub> and air toxics samplers, OPC, Probe, EAA, MOUDI, Berner and DRUM.

AV operated all additional SCAQS instruments except the following: nephelometer, which was operated by SCAQMD; PAN GC, which was operated by DGA; MOUDI, which was operated by UM; Berner, which was operated by AIHL; and DRUM, which was operated by UCD.

The SCAQS and air toxics (Tedlar bags) samplers were obtained from the ARB. The nephelometer for the summer was obtained from Susanne Hering and for the fall, from EPA. The carbonyl sampler was obtained from ENSR, the C<sub>1</sub>-C<sub>10</sub> hydrocarbon and air toxics (canisters) samplers from Biospherics, the PAN GC from DGA, the H<sub>2</sub>O<sub>2</sub> sampler and EAA from EMSI, the UV radiometer from AV, the Berner from AIHL, the MOUDI from UM, the DRUM from UCD, the OPC from Rancho Los Amigos Medical (RLAM) and the Probe from STI.

The meteorology tower, two hi-vol samplers and a measurement probe are located on the roof of the County Health building, which is about 16 feet high. Behind the building, in the northwest corner of the parking lot, is the SCAQMD trailer, which also has a sampling probe on its roof. Four dichot, two hi-vols and two PM-10 samplers are situated on platforms south of this trailer along the edge of the parking lot. A second trailer for the summer SCAQS intensive was placed along the back of the county building, next to the SCAQMD trailer. The SCAQMD trailer served as the site office for the fall intensive. The sampling probe for the SCAQS instrumentation was located about 3 feet above the roof of the trailer. There may have been some restriction of northerly flow to the probes on the trailers due to the height of the County building, which was 1 to 2 feet above the probe height. The SCAQS sampler was placed on a 3-foot-tall platform in the field approximately 50 feet to the south of the SCAQS trailer.

Figures 2-22, 2-23 and 2-24, respectively, are pictures of the SCAQMD trailer, the sampler platforms outside the trailer, and the measurement equipment inside the trailer.

#### o Claremont

Station: Claremont	Code: CLA
Address: Pomona College, Foothill Boulevard, Claremont, CA 91711	
Latitude: 34° 06' 07" N	Longitude: 117° 42' 14" W
UTM Northing: 3773.6 km	UTM Easting: 435.1 km
Elevation (above MSL): 364 m	

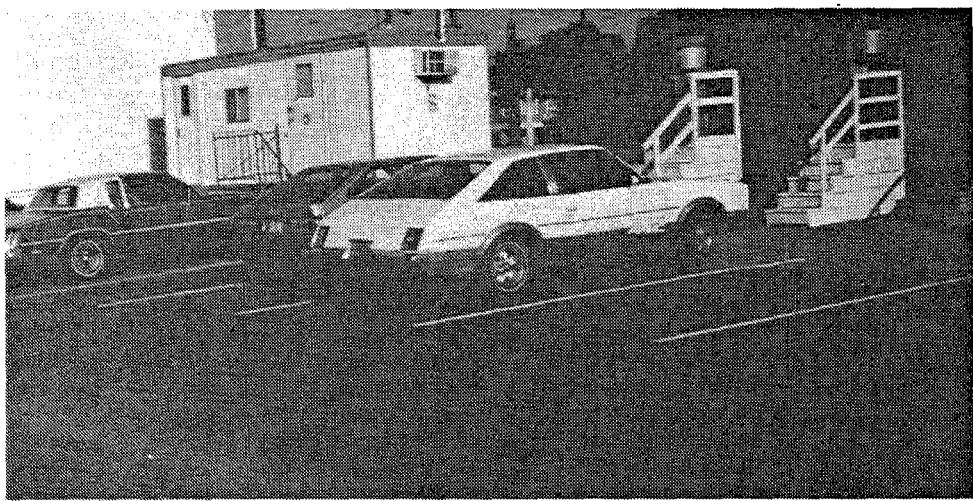


Figure 2-22. The SCAQMD trailer at the Rubidoux site (fall intensive SCAQS site office).

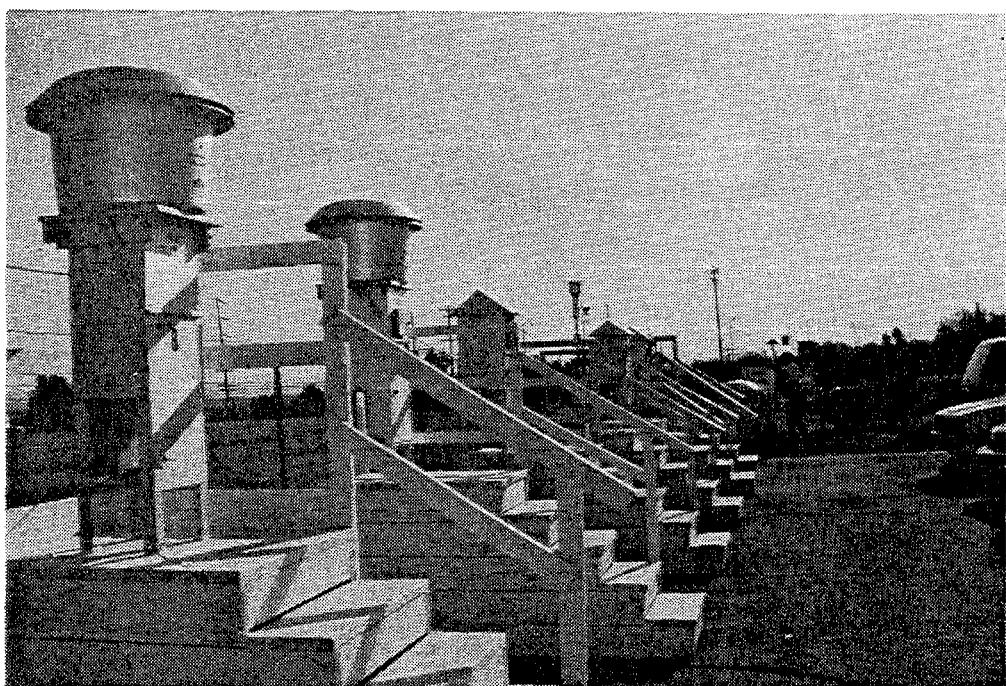


Figure 2-23. The sampler platforms outside the Rubidoux site trailer.

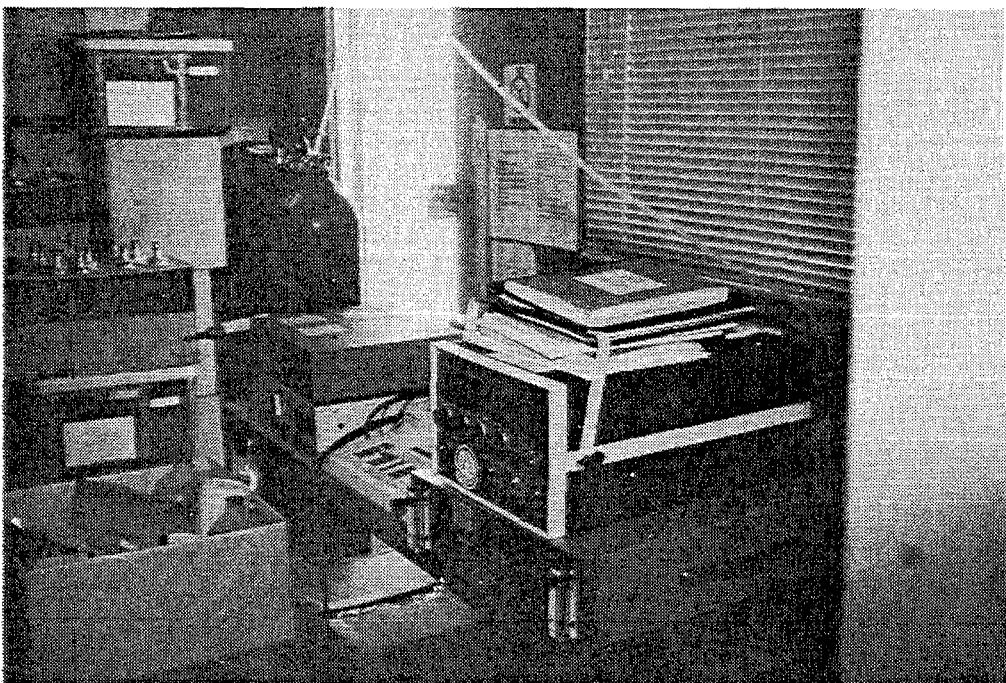


Figure 2-24. SCAQS measurement equipment inside the Rubidoux site trailer.

The Claremont site was located at the Claremont McKenna College campus, south of Foothill Boulevard at 10th Street and North College Avenue. This is in the city of Claremont in eastern Los Angeles County, about 1/4 mile from San Bernardino County. The sampling site is situated south of Bower Center on a platform in a large parking lot with sampling devices and experiments from numerous organizations, including Ford, General Motors Research Laboratories (GMRL), Unisearch and the Environmental Protection Agency (EPA), in addition to AeroVironment's SCAQS equipment. The I-10 (San Bernardino) Freeway is about 1 1/2 miles south of the site. The small Cable Airport is just over one mile to the northwest in Upland. The campus is roughly a square with sides of about 3/4 mile. The site is near the eastern edge of campus, surrounded by college buildings. These buildings are two to three stories high, but the closest is several hundred feet away. Figure 2-25 is an aerial view of the Claremont site within a radius of about 1/2 mile.

The land east of Claremont Boulevard, which is about 1/8 mile east of the site, is predominantly undeveloped. The land in other directions is used primarily for campus and residential buildings, with patches of undeveloped lots. Nearby traffic is light to moderate but increases when classes are in session. The terrain at the site is relatively flat, with foothills and mountains in the distance. Exposure to air flow is good, with little turbulence induced by the surrounding campus buildings.

The GMRL air quality monitoring laboratory monitored SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>3</sub>, temperature, dew point, wind speed and direction, and UV radiation. Additional SCAQS instruments included a PM-10 sampler, a SCAQS sampler, a nephelometer, a carbonyl sampler, a C<sub>1</sub>-C<sub>10</sub> hydrocarbon sampler, a PAN GC, an H<sub>2</sub>O<sub>2</sub> sampler, two air toxics samplers (Tedlar bags and canisters), a Berner, a DRUM, a MOUDI, an OPC, an EAA, and a Probe.

The GMRL operated and maintained its instruments. AV operated all other SCAQS instruments except the following: the PAN GC, which was operated by DGA; the MOUDI, which was operated by UM; the Berner, which was operated by AIHL; and the DRUM, which was operated by UCD. AV also assisted EMSI in operating the H<sub>2</sub>O<sub>2</sub> sampler.

The SCAQS and air toxics (Tedlar bags) samplers and Probe were obtained from the ARB, the nephelometer from the EPA, the carbonyl sampler from ENSR, the C<sub>1</sub>-C<sub>10</sub> hydrocarbon and air toxics (canisters) samplers from Biospherics, the PAN GC from DGA; the PM-10 sampler and the EAA from STI, the H<sub>2</sub>O<sub>2</sub> sampler from EMSI, the Berner from AIHL, the MOUDI from UM, the DRUM from UCD,

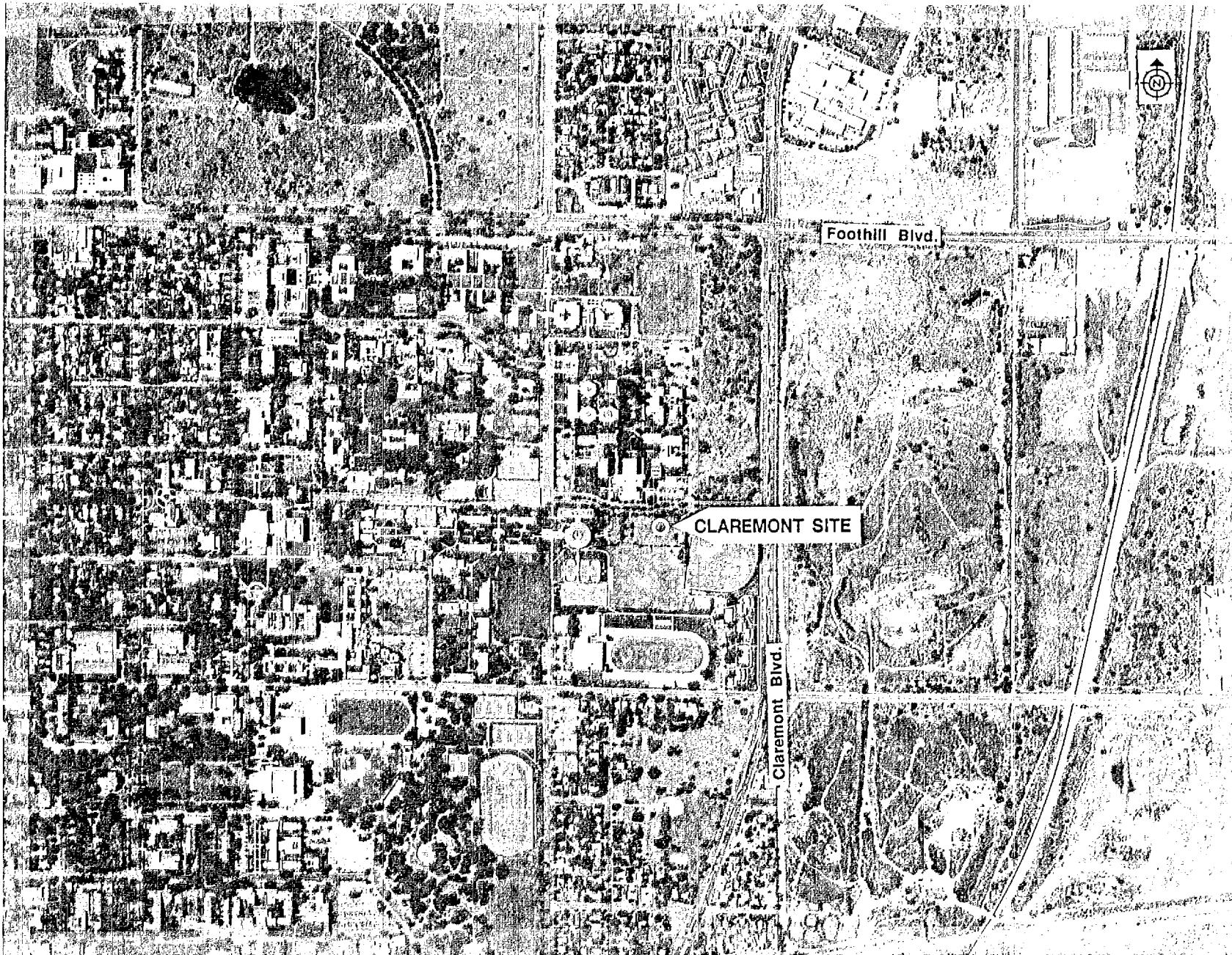


FIGURE 2-25. Claremont site. Air Photo Services<sup>©</sup>, Santa Ana, CA

and the OPC from UCR. The SCAQS instrumentation was located in the headquarters trailer with sampling probes about 3 feet above the roof. The SCAQS sampler was situated on the center front of the platform.

Figures 2-26, 2-27 and 2-28 are pictures of the overall sampler platform, the SCAQS sampler on the platform, and the SCAQS instrumentation inside the headquarter's trailer.

#### o Long Beach

Station: Long Beach	Code: LB
Address: 4901 East Carson Street, Long Beach, CA 90807	
Latitude: 33° 49' 49" N	Longitude: 118° 08' 18" W
UTM Northing: 3743.7 km	UTM Easting: 394.7 km
Elevation (above MSL): 17 m	

The Long Beach site is located on the Long Beach City College (LBCC) campus, between Carson Street to the north and Conant Street to the south and between Lakewood Boulevard to the west and Faculty Avenue to the east. It is just south of the LBCC track field, beside the baseball diamond to the west, and directly north of hangers for McDonnell-Douglas Aircraft. Access is gained through a gate on Faculty Avenue. The 405 (San Diego) Freeway is about 1 1/2 miles south of the site. The Long Beach Municipal Airport begins about 1/2 mile to the southwest. The buildings to the south of the site for about 1/4 mile are part of McDonnell-Douglas and beyond that is a large golf course. More large industrial complexes to the west, between the site and the airport, also belong to the aircraft company. There is another large golf course 1/2 mile to the northwest. Beyond the college to the north and east are mainly residential neighborhoods. Figure 2-29 is an aerial photograph of the Long Beach site, within about a 1/2-mile radius.

The land use of the area is mainly industrial and commercial, with residential neighborhoods to the north and east, beyond the campus. Traffic is moderate but increases significantly due to college classes and industrial shift changes. The traffic is largely arterial from automobiles commuting to and from the area, as well as from commercial vehicles. The terrain surrounding the site is relatively flat except for Signal Hill, about four miles to the west. The air flow to the site is good, except from the south where the large aircraft hangars are an obstacle.

Sulfur dioxide, NO<sub>2</sub>, CO, O<sub>3</sub>, temperature, dew point, and wind speed and direction were monitored by the ARB with its own instruments in an air quality trailer. During the SCAQS summer study period, a PM-10 sampler, a SCAQS sampler, a nephelometer, a UV radiometer, a carbonyl sampler, a C<sub>1</sub>-C<sub>10</sub>

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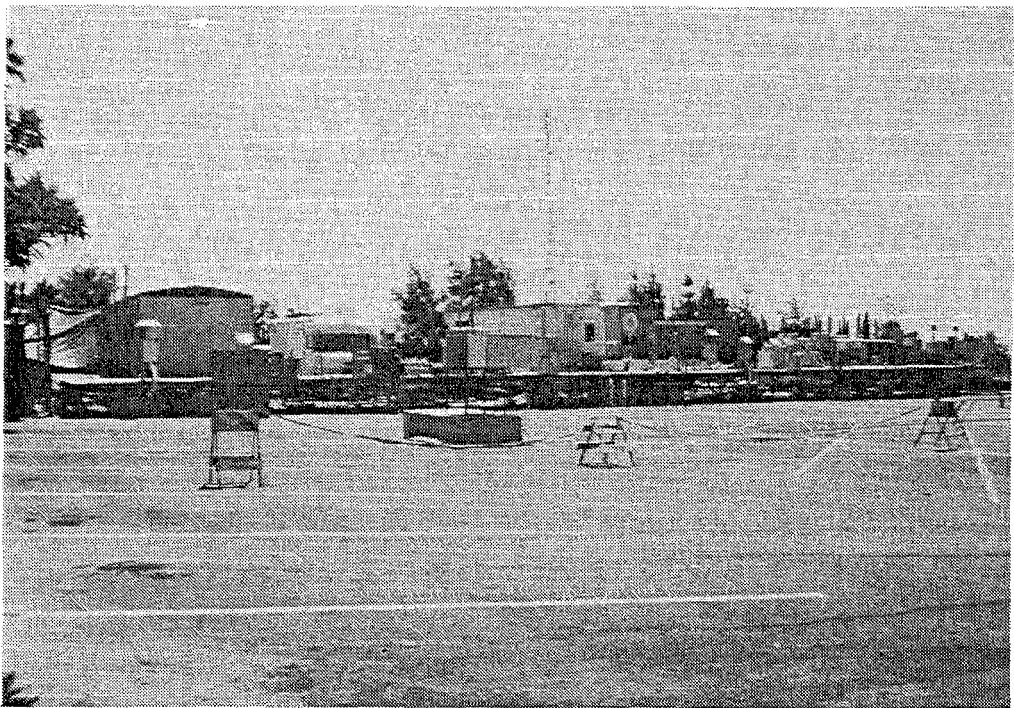


Figure 2-26. The Claremont site platform, trailers and instrumentation in the campus parking lot.

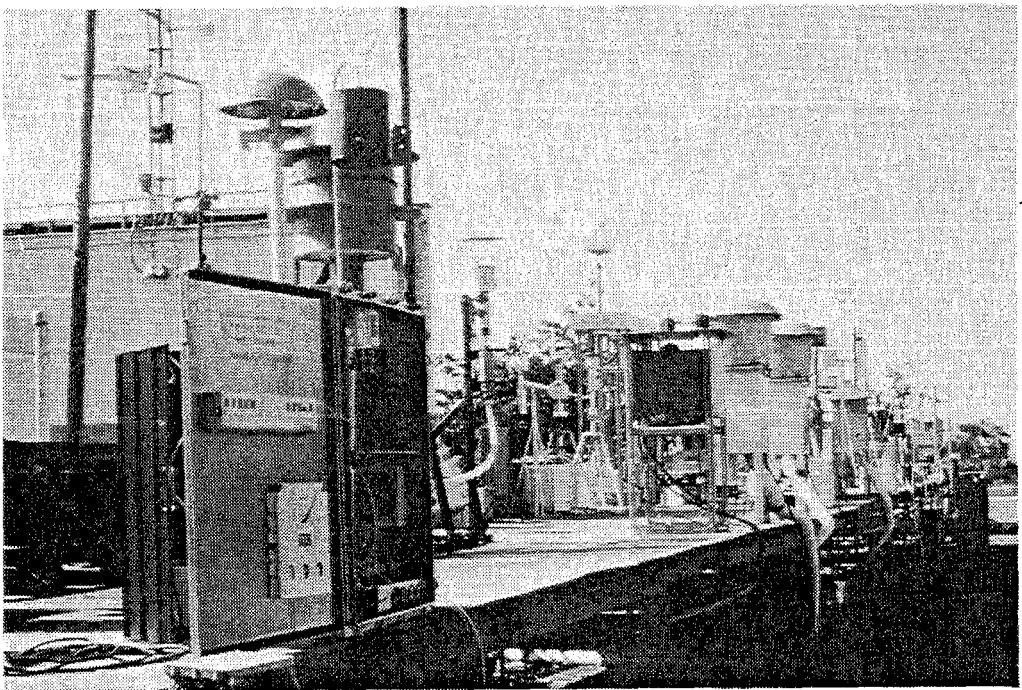


Figure 2-27. The SCAQS sampler and other instruments on the Claremont site platform.