

Union Pacific Railroad

Application for Development Project Approval

Intermodal Container Transfer Facility (ICTF) Modernization Project

Appendix H

Preliminary Environmental Site Assessment Data

Appendix H

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Union Pacific Railroad

Application for Development Project Approval

Intermodal Container Transfer Facility (ICTF) Modernization Project

Section I

LeRoy Crandall and Associates' Geotechnical Investigation Reports for
Southern Pacific Transportation Company – Original ICTF Construction
(obtained by Union Pacific Railroad from MACTEC Engineering and
Consulting, Inc.)

Part I - Proposed ICTF and Rail Access Facilities
(August 10, 1983)

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

MACTEC ENGINEERING AND CONSULTING, INC.

REPORT OF GEOTECHNICAL INVESTIGATION
PART I
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
AND RAIL ACCESS FACILITIES
223RD STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY
(OUR JOB NO. ADE-82284)

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

MACTEC ENGINEERING AND CONSULTING, INC.

August 10, 1983

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. ADE-82284)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Our "Report of Geotechnical Investigation, Part I, Proposed Intermodal Container Transfer Facility (ICTF) and Rail Access Facilities, 223rd Street and San Diego Freeway, Los Angeles, California, for the Southern Pacific Transportation Company" is herewith submitted. Part I covers the work performed within the ICTF site. Part II of the investigation covers the rail access facilities and will be presented in a separate report.

The scope of the investigation was planned in collaboration with various personnel of Southern Pacific Transportation Company, who also advised us of the features of the proposed ICTF. The results of our investigation and recommendations were discussed with the parties concerned as the data became available. Since the layout and operational plan of the proposed ICTF development have not been finalized and some of the structural features noted herein are subject to change, the recommendations presented herein should be reviewed as more definitive information becomes available.

With respect to geologic and seismic hazards, the site is considered as safe as any within the general area. Based on the geologic findings, no active faults are known to exist within the site. The potentially active Richfield Fault crosses the southern portion of the site at depth. The possibility of surface rupture of the site due to faulting is remote. Although the site could be subject to violent ground shaking in the event of a major earthquake, this hazard is common to Southern California, and the effects of the shaking can be minimized by proper structural design and proper construction. Because of the

relatively deep water table beneath the site, the potential for liquefaction is considered to be very low and need not be considered in the design of the project.

Existing fill soils, up to nine feet in thickness, were encountered in a majority of the 81 exploration borings. The firmness of the fill soils, which consist primarily of silty sand and sandy silt, is quite variable across the site, varying from moderately loose to firm. Only nominal amounts of debris were observed in the fill. The underlying natural soils consist primarily of silty sand, sandy silt, clayey silt, and sand. These soils are moderately soft to moderately firm at present moisture contents and would become weaker and more compressible at increased moisture contents.

The soil and geologic conditions are described in the report, and recommendations are presented for grading and subgrade preparation, for subgrade characteristics for use in paving design, and for foundation design. Also presented are the results of characteristic site period studies. We will be pleased to work with you and your staff to provide supplementary recommendations as the design and construction of the project proceed.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

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LC-RC-GB/pa
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REPORT OF GEOTECHNICAL INVESTIGATION

PART I

PROPOSED INTERMODAL CONTAINER

TRANSFER FACILITY (ICTF)

AND RAIL ACCESS FACILITIES

223RD STREET AND SAN DIEGO FREEWAY

LOS ANGELES, CALIFORNIA

FOR THE

SOUTHERN PACIFIC TRANSPORTATION COMPANY

(OUR JOB NO. ADE-82284)

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SCOPE

This report presents the results of Part I of our geotechnical investigation for the subject project. Part I of the geotechnical investigation covers the work to be performed within the ICTF site. An interim report for Part I was submitted in April, 1983. Part II covers the rail access facilities that will extend from the Southern Pacific Dolores Yard to the northerly limits of the Intermodal Container Transfer Facility (ICTF) site. An interim report for Part II was submitted on September 13, 1982 (our Job No. ADE-82210).

The proposed facilities within the ICTF site and the locations of current and prior exploration borings are shown on Plate 1 (in jacket), Site Plan, Intermodal Container Transfer Facility. We previously performed a preliminary geotechnical investigation at the ICTF site for the Port of Los Angeles and presented the results in our report dated October 14, 1981 (our Job No. A-81196).

This investigation was authorized to evaluate the geotechnical conditions of the site with regard to their possible effects on the proposed development, and to develop design information on the following:

- o recommendations to modify and prepare the site for a pavement structure that will be composed of asphaltic concrete, portland cement concrete, cement stabilized base, and aggregate base, and will be subjected to large repetitions of truck traffic, heavy crane wheel loadings, and container stacking.

- o recommendations for design of feasible building foundation types for all buildings, tower and light standards, including predicted settlements for anticipated loadings.
- o lateral earth pressures on subterranean walls, if any.
- o frictional and passive values for the resistance of lateral forces.
- o criteria for building floor slab support.
- o recommendations for excavation, compaction, and backfilling.
- o characteristic site period.
- o bedding requirements for underground utility lines.

In addition, a fault hazard and seismicity evaluation of the site was to be performed.

The recommendations contained herein are based on the results of our field explorations and laboratory tests, the engineering analyses based thereon, and on the geologic studies. The results of the field explorations, laboratory tests, and downhole seismic survey are presented in Appendix A. The geologic and seismic reference data are presented in Appendix B. A discussion of the seismicity of the site is presented in Appendix C.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has

been prepared for Southern Pacific Transportation Company and their design consultants to be used solely in the design of the proposed facilities. The report has not been prepared for use by other parties, and may not contain sufficient information for purposes of other parties or other uses.

PROJECT DESCRIPTION

The proposed Intermodal Container Transfer Facility (ICTF) development will provide transfer facilities for marine, rail, and highway transported containers and will be a joint project of the Port of Los Angeles and the Port of Long Beach. The site of the proposed ICTF, which comprises approximately 135 acres, is shown on Plate 1. The site is approximately 7,000 feet long in the north-south direction and averages about 900 feet in width in the east-west direction.

The ICTF will include the following functional areas:

- o Intermodal transfer area
- o Center storage area for trailers on chassis and containers on the ground.
- o Remote storage area
- o Customs processing and storage area
- o Circulation roadways and lanes
- o Guard house(s)
- o Gate house(s)
- o Customs and administration building
- o Maintenance area and building(s)
- o Chassis parking area
- o Hostler parking area
- o Office employee parking area
- o Yard employee parking area(s)
- o Entrance(s) and exit(s) with multilanes and queuing space.

The overall facility will be constructed in phases, which are described as follows: Phase I will include five working tracks and two

return/runaround tracks using center storage operational mode of storing containers on chassis and some grounding of containers. The relative locations of the tracks, storage areas, and crane runways are shown on Plate 2, Tentative Typical Cross-section, ICTF Loading Area. Phase II will include the addition of various paved working tracks in one of the center storage rows and inclusion of additional adjoining property for use of storage of containers on chassis in remote location. The operational mode of storing of containers will consist of combined center storage and remote storage of containers on chassis. Phase III will include the addition of more working tracks in the remaining two center storage rows and the inclusion of additional adjoining property for use of storage of containers on chassis in remote location. The operational mode of storing of containers will be remote storage of containers on chassis.

The layout of the facility is subject to change at this time. Available information regarding the specific project elements for Phase I is presented below.

LOADING AREA

A typical cross-section for one of the concepts being considered for the loading area is presented on Plate 2. Tentative plans are to use bridge cranes over each of the five working tracks. The four-wheeled, rubber-tired cranes will have maximum wheel loads of about 80 to 90 kips. The distances between wheels will be 18 to 21, 42 to 45, and 60 to 62 feet for the different cranes. The maximum bearing pressure

beneath each wheel of the cranes will be on the order of 110 pounds per square inch.

The cranes will be supported on a pavement structure that will reduce the stresses and strains on the subgrade soils to acceptable values. Adjacent to each working track there will be paved truck loading/unloading lanes to be designed for HS-20 loading and heavy traffic repetitions. The center storage areas will also be paved to accommodate HS-20 loading and grounding of containers stacked to a maximum of three high.

The proposed grades across the site have not been finalized at this time. However, we were advised that the working tracks will be established at essentially a level grade. Because of the maximum difference in elevation across the site of some six feet, a moderate amount of grading will be required to achieve the desired operational grade. For a balanced grading program, the northerly half of the site will require excavation while the southerly half will require placement of compacted fill.

ADMINISTRATION BUILDING

The proposed administration building will be three stories in height; a basement is not planned. Foundation load information is not available at this time.

TOWER

The proposed tower will be six stories in height, constructed with pre-cast concrete panels. A basement is not planned. Maximum

column loads will be on the order of 300 kips (dead load plus live load).

MAINTENANCE BUILDING

The proposed maintenance building will be one story high with metal siding. Loads will be relatively light.

HAZARDOUS WASTE RETENTION BASIN

A hazardous waste retention basin, which is planned in the northwesterly portion of the site, will be approximately 400 feet by 140 feet in plan and about 10 feet deep.

SOUND WALL

A sound wall is planned to minimize the noise level at the residential area which is adjacent to the northeastern corner of the site. The wall, which will be of masonry construction, will be some 900 feet along the west side of Hesperian Avenue and some 900 feet extending easterly along the south edge of the residential area. The height of the sound barrier will vary from about 12 to 18 feet.

SITE CONDITIONS

The ICTF site is just north of Sepulveda Boulevard and the northerly terminus of the Terminal Island Freeway. The northern boundary of the parcel is 223rd Street and the San Diego Freeway. It is bounded on the west by various privately owned parcels that in turn have their boundaries on Alameda Street and Dominguez Channel. The site is almost totally bordered on the east by the Southern California Edison Company (SCE) transmission line right-of-way and on the south by Sepulveda Boulevard/Willow Street.

During the time of our recent field explorations, the site was partially occupied by various operations including pipe and container storage, commercial carrier parking, auto storage, and farming; the remaining areas were vacant.

A number of oil lines parallel the site along its boundaries. A group of pipelines extend north along the eastern property line some 1,800 feet from Sepulveda Boulevard; an eight-inch-diameter line extends along Sepulveda.

An existing railroad track spur is located within the southeasterly portion of the site.

An existing 60-inch-diameter reinforced concrete storm drain traverses the site. Other subsurface utility pipes may also be in existence.

Areas of gravel surfacing and oil paving exist in various portions of the site which have been used for roads and storage areas.

The vegetation at the site varies from sparse to heavy weeds and brush in localized areas. Portions have been disced to some 12 inches in depth for purpose of weed control.

Varying amounts of debris are scattered in localized areas.

The site is relatively flat and drains to the south. Based on the topographic information provided, there is a maximum difference in grade across the site of about six feet.

SUBSURFACE CONDITIONSEXPLORATIONS

The subsurface conditions at the site were explored by drilling a total of 81 borings. Borings 1 through 40 were drilled as part of the preliminary investigation, and Borings 41 through 81 were drilled as part of the current investigation. Logs of the borings are presented in Appendix A. No unusual or unanticipated soil conditions were encountered at the site.

SOILS

Existing fill soils were encountered in a majority of the borings. The depth of existing fill is indicated opposite each boring on the upper portion of Plate 3.1, Existing Soil Conditions, Depth of Fill. As shown on Plate 3.1, the greatest concentration of fill soils was encountered in the southerly and north central portions of the site where the depth of fill ranges from 5 to 9 feet and 3 to 4½ feet, respectively, below the existing grade. Elsewhere, the depth of fill varies from zero to about two feet. Deeper fill may occur between boring locations. The fill soils consist primarily of silty sand and sandy silt, with varying amounts of gravel and cobbles. Sandy clay was encountered in Boring 68. Only nominal amounts of debris were observed in the fill. The firmness of the fill soils is quite variable across the site, varying from moderately loose to firm.

Although the sources of the fill materials are not known, it is suspected that at least some of the fill materials were imported,

especially those materials in the areas of the deeper fill. In areas of shallow fill, the materials possibly came primarily from within the site. Based on the fill materials encountered in the field explorations, there is no evidence that the rubbish landfill of the old Alameda Street dump extended easterly into the ICTF site.

The natural soils beneath the site consist of silty sand, sandy silt, clayey silt, and sand. These soils are moderately soft to moderately firm at present moisture contents and would become weaker and more compressible at increased moisture contents, adversely affecting pavement performance. The effect of increased moisture content is indicated by the consolidation curves in Appendix A on Plates A-4.1, A-4.3, and A-4.16, where the compressibility is shown to increase significantly subsequent to the addition of water.

For purposes of evaluating the firmness of the soils, both fill and natural, within the upper six feet, the site was divided into seven sections as shown on Plates 3.2 through 3.4, Existing Soil Conditions, Percent Compaction. For each section, the percent compaction was determined for three increments of depth: 0 to two feet, two to four feet, and four to six feet. The results of this analysis are summarized in Table 1, and are also presented in plan on Plates 3.2 through 3.4.

Table 1. Summary of Compaction Values
for Soil Depths 0 to 6 Feet

<u>Section</u>	<u>Percent Compaction*</u>					
	<u>Depth: 0-2'</u>		<u>Depth: 2-4'</u>		<u>Depth: 4-6'</u>	
	<u>Range</u>	<u>Average</u>	<u>Range</u>	<u>Average</u>	<u>Range</u>	<u>Average</u>
1	74-90	79	59-76	69	69-84	75
2	63-82	75	69-81	75	70-81	77
3	74-98	90	71-95	82	68-100	81
4	74-96	84	74-78	76	64-87	77
5	76-95	84	69-91	76	69-88	79
6	82-95	87	68-85	80	74-88	78
7	79-98	89	73-95	83	74-94	83
Average		84		77		79

*Percent compaction based on dry densities of undisturbed samples and maximum dry densities obtainable by ASTM Designation D1557-70 method of compaction.

The results shown in Table 1 and on Plates 3.2 through 3.4 are based on approximately 175 determinations of the percent compaction values of the soils within the upper six feet. The percent compaction values were based on dry densities of relatively undisturbed ring samples and maximum dry densities obtainable by the ASTM Designation D1557-70 method of compaction. The dry densities and moisture contents are indicated on the boring logs opposite the depths at which the undisturbed samples were taken. A total of 17 compaction curves were performed to determine the maximum dry density values. The compaction test results are presented on Plates A-6.1 through A-6.6 in Appendix A.

An analysis of the percent compaction values indicates that the percent compaction of the soils within the upper six feet range from 63 to 98, with the average compaction being about 80 percent. As indicated

by the data, the average compaction varies with depth. The highest average compaction of 84 percent is for the soils within the upper two feet. The lowest average compaction of 77 percent is for the soils between depths of two and four feet. A slight increase in the average compaction to about 79 percent was found for the soils between depths of four to six feet. It is estimated that at least 75 percent of the soils within the upper six feet are compacted to less than 85 percent.

In terms of lateral distribution, there is no readily apparent pattern of compaction, except that Sections 3 and 7 consistently have the highest average compaction at each of the three depth increments.

To provide data for paving design, California Bearing Ratio (CBR) tests were performed on 17 bulk samples of the upper soils. The CBR test results are summarized on Table 2; the individual test results are presented on Plates A-6.1 through A-6.6 in Appendix A. As shown in Table 2, the average CBR values are presented for three major soil types found at the site and for three levels of percent compaction. The results indicate very clearly that the CBR is very dependent on the percent compaction or more directly the density of the soil. As previously stated, the average compaction of the soils within the upper six feet is about 80 percent. For the in-situ density of these soils, the average CBR values for all soil types would be very low. By increasing the average compaction from 80 percent to 90 percent, the corresponding increases in the average CBR values would range from about 100 percent for the clayey soils to about 500 percent for the silty sand soils.

Table 2. Summary of Average CBR Values

<u>Soil Type</u>	<u>Number of Tests</u>	<u>Average CBR (%)</u>		
		<u>80% Compaction</u>	<u>90% Compaction</u>	<u>95% Compaction</u>
Silty Sand	7	3	18	35
Sandy Silt	8	4	15	27
Clayey Silt and Silty Clay	2	2	4	6

The CBR values may also be increased by adding cement. For example, the addition of 6% cement (by weight) to the soils resulted in increasing the CBR values of both the silty sand and sandy silt soils to at least 80%.

WATER

Water was encountered in only two bucket borings (Borings 41 and 43) at depths of about 40 feet below the existing grade, corresponding to about Elevation -22. At the rail access facility site, immediately north of the ICTF site, water was measured in a rotary wash boring (Boring 5) at a depth of about 45 feet, corresponding to about Elevation -21. This relatively deep water level beneath the site should not be a factor that will adversely affect pavement performance. However, the water level may limit the depth of drilled piles that may be utilized.

GASES

In several of the borings (Borings 12 through 15), a petroleum odor was encountered within the upper five feet of fill soils; none was encountered in the underlying natural soils. Gas measurements performed in seven borings (Borings 32 through 39) revealed zero accumulation of

gas after periods of 15 minutes to 12 hours during which time the borings were covered. It is possible that gas may be encountered between boring locations, since this portion of the site is immediately adjacent to the Watson Land Company parcel that was formerly the Alameda Street Dump. Reportedly, gas is currently being generated as a result of the decomposition of waste contained in the dump.

GEOLOGY

GENERAL

The proposed ICTF site is in the Dominguez Gap area of the Los Angeles River plain. The site is about one-half mile east of the Dominguez Channel and about one mile west of the Los Angeles River Channel. The Los Angeles River plain rises gently northward from San Pedro Bay and represents the present day stage of backfilling of an ancestral river channel. Signal Hill, an uplifted area along the Newport-Inglewood Fault Zone, is located about three miles east of the site. The site is located about 4.5 miles north of Long Beach Harbor at an elevation of about 25 feet above sea level (U.S.G.S. datum).

Plate 4, Regional Geology, shows the site in relation to regional geologic features. Plate 5, Local Geology, shows the geology and topography in the vicinity of the site. Plate 6, Regional Seismicity, indicates the locations of major faults and earthquake epicenters in Southern California.

GEOLOGIC MATERIALS

The site is underlain by varying amounts of artificial fill as previously described. Beneath the fill are about 100 feet of Holocene age river deposits consisting of silty sand, sandy silt, and sand. Beneath the river deposits are about 250 feet of alluvial deposits of the upper Pleistocene Lakewood Formation consisting of interbedded sand, silt and gravel.

The lower Pleistocene San Pedro Formation underlies the upper Pleistocene deposits and extends to a depth of about 1,100 feet below the site. Tertiary sedimentary rocks of the Pico, Repetto, and Puente Formations, respectively, underlie the San Pedro Formation. These Tertiary rocks extend to a depth of about 14,000 feet beneath the site where they rest on the Catalina Schist. The Catalina Schist is considered to be the basement rock of the area.

GROUND WATER

The site is in Section 15, Township 4S, Range 13W in the Central Hydrologic Subarea of the Coastal Plain of Los Angeles County.

Water level measurements at Los Angeles County Flood Control Well No. 876X, located about 800 feet north of the site, indicate that the water surface elevation was about 69 feet below sea level on April 22, 1982, corresponding to a depth of about 94 feet beneath the site. As previously stated, water was measured in Borings 41 and 43 at a depth of about 40 feet and in Boring 5 (rail access facility site to the north) at a depth of 45 feet below the existing ground surface. In our

opinion, the ground water encountered beneath the site represents perched water rather than the regional ground water table.

GEOLOGIC HAZARDS

The geologic hazards at the site are essentially limited to those caused by major earthquakes. The major cause of damage from earthquakes is the result of violent shaking from earthquake waves; damage due to actual displacement or fault movement beneath a structure is much less frequent. The shaking would occur not only immediately adjacent to the earthquake epicenter, but within areas for many miles in all directions.

Faults

The numerous faults in Southern California are categorized as active, potentially active, and inactive. Detailed information concerning the faults in the area is presented in Tables B-1, B-2, and B-3 in Appendix B. No fault or fault associated features were observed on or adjacent to the site during our field reconnaissance. The Seismic Safety Plan of the City of Los Angeles (1974) and the Seismic Safety Element of the City of Long Beach (1975) were reviewed as part of our literature analyses.

The site is not within a City of Los Angeles Special Studies Zone, nor within an Alquist-Priolo Special Studies Zone. In our opinion, there is very little probability of surface rupture due to faulting occurring beneath the site.

The nearest active fault to the site is the Cherry Hill Fault of the Newport-Inglewood Fault Zone, located about 1.5 miles northeast of the site. An Alquist-Priolo Special Studies Zone has been established along the Newport-Inglewood Fault Zone. Other nearby branches of the Newport-Inglewood Fault include the Avalon-Compton and Reservoir Hill Faults, located 3.4 miles northwest and 4.8 miles east-southeast of the site, respectively. Other more distant faults of the Newport-Inglewood Fault Zone include the Potrero and Inglewood Faults, located 9.4 and 9.9 miles northwest of the site.

The active San Fernando Fault Zone is located 34 miles to the north and the major San Andreas Fault is located about 49 miles to the north-northeast.

The nearest potentially active fault to the site is the Richfield Fault (low potential), which crosses the southern part of the proposed ICTF site at depth. This fault appears to offset materials older than middle Pleistocene. The upper 300 feet of materials do not appear to be structurally displaced (LACFCD, 1962).

Other potentially active faults in the area include the Palos Verdes Fault, located 4.8 miles southwest of the site and the Charnock, Norwalk, and Overland Faults, located 12, 11.5 and 16 miles from the site, respectively.

Seismicity

The epicenters of earthquakes with magnitudes equal to or greater than 4.0 within a radius of 100 kilometers of the site are shown

in Table C-1 in Appendix C. Other pertinent information regarding these earthquakes is also shown in Table C-1. The earthquake recurrence curve based on that information is presented on Plate C-1, Recurrence Curve.

The maximum credible earthquake is defined as the maximum earthquake that appears capable of occurring under the presently known tectonic framework. Tables B-2 and B-3 in Appendix B list the maximum credible earthquakes for faults in the Southern California area.

The location of the site in relation to known active faults indicates that the immediate area would not be exposed to greater than normal seismic risk for the Los Angeles Coastal Plain.

Stability

The Wilmington Oil Field Subsidence area, a major zone of subsidence due to petroleum extraction, is located south of the site; however, subsidence is not known to have occurred at the site. Re-pressurization of the Wilmington Oil Field, which started in 1959, has substantially arrested the subsidence.

The property is located on relatively flat lying ground with no slope stability problems and no potential for lurching (movement at right angles to a steep slope during strong ground shaking). Additionally, the property is not known to be on or in the path of any existing or potential landslide.

Flooding, Tsunamis and Seiches

The site is not within a designated flood prone area. Dominguez Channel and the Los Angeles River have been channelized for flood control.

As the site is not within a coastal area, the risk of damage from earthquake induced sea waves called tsunamis need not be considered.

The site is not located downslope of any large bodies of water that would adversely affect the site in the event of earthquake induced failure or seiches (oscillations in a body of water due to earthquake shaking).

RECOMMENDATIONS

GENERAL

The layout and operational plan of the proposed ICTF development have not been finalized. The structural features of some of the components will be subject to change from the descriptions presented in this report. Accordingly, the recommendations presented below should be reviewed as more definitive information becomes available.

The existing fill soils are not uniformly well compacted and are not considered suitable for crane runway, rail trackage, building foundations, floor slabs, or paving support. The natural soils beneath the site are generally only moderately soft to moderately firm at present moisture content and would become weaker and more compressible when wet. As discussed in more detail under "GRADING", the existing fill soils and upper natural soils should be excavated and replaced as properly compacted fill, and any required additional fill should be properly compacted. Alternate methods of improving the site, including

the use of deep in-place compaction, cement-modified soil, and combinations thereof were considered but are not discussed in detail herein. Other sections of the recommendations cover the crane runways, foundation design, characteristic site period, floor slab support, paving, railroad trackage, and utility pipe bedding and backfill.

GRADING

General

Moderate excavation and filling will be required to achieve a relatively level (slightly sloping) grade for the loading area in the north-south direction which is required for efficient operations. The maximum difference in existing grade in the north-south direction is on the order of six feet. For a balanced earthwork operation, cuts and fills up to about three feet will be required. In addition, all existing fill soils and the upper natural soils to a certain depth should be excavated and replaced as properly compacted fill.

As previously discussed, the firmness of the upper soils is quite variable both laterally and vertically. The percent compaction of the soils within the upper six feet varies from a low of 63% to a high of 98%, with the average being about 80%. At their present condition, the upper soils (both fill and natural) are not capable of providing the level of support normally expected for paving, crane runways, rail trackage, building foundations, floor slabs and miscellaneous other design elements planned at the ICTF site. Because of their relatively low and non-uniform compaction, the soils are compressible and will

settle non-uniformly under imposed loads; the compressibility will become significantly increased if the soils are subjected to increased moisture content. In addition, at their present low average compaction, the soils are capable of only developing relatively low CBR values, resulting in the need of relatively thick pavement sections to provide the level of support normally expected of pavements under many repetitions of heavy loads.

To improve the supporting capacity of the subgrade soils, we recommend that the level of their compaction be increased by overexcavation and replacement with properly compacted fill. The depth of overexcavation will be determined by the specific pavement structural section, loading environment, and engineering properties of the subgrade soils. Requirements for specific levels of compaction with depth have been established by such agencies as the Corps of Engineers, Federal Aviation Administration, Asphalt Institute, Portland Cement Association, and others. For example, the Corps of Engineers specifies in their Technical Report No. 3-529 the following compaction requirements for flexible pavements overlying cohesionless subgrades in fill areas:

<u>Gross Weight</u>	<u>Minimum Percent Compaction</u>	<u>Depth Below Surface of Subgrade</u>
60,000-150,000 pounds	100	0 to 21 in.
	95	21 to 36 in.
	90	36+ in.

Site stabilization may also be achieved by other alternatives which may consist of a combination of overexcavation, and/or cement modified soil, soil-cement base, and in-place compaction. These alternatives were considered but are not discussed in detail herein.

Subgrade Preparation

Subgrade preparation consists of providing a required minimum thickness of properly compacted subgrade beneath the structural element by a combination of overexcavation and replacement as properly compacted fill and in-place compaction. Recommendations for minimum subgrade compaction requirements beneath specific structural elements are presented in Table 3.

Table 3
Recommended Minimum Subgrade Compaction Requirements

<u>Structural Element</u>	<u>Percent Compaction</u>	<u>Depth Below Surface of Subgrade (Inches)</u>
1. Crane Runways		
Container Storage Areas		
Roadways		
a. Flexible pavement	95	0 to 24
	90	24 to 36
b. Rigid pavement	95	0 to 6
	90	6 to 18
2. Rail Trackage	95	0 to 24
	90	24 to 36
3. Parking Areas (light traffic)	95	0 to 6
	90	6 to 18
4. Building Areas		
a. Spread Footings	90	0 to 36
b. Floor Slabs and Walkways	90	0 to 18

The lower portion of the required compaction may be obtained by in-place compaction with heavily loaded equipment. For the on-site silty sand and sandy silt soils, it may be possible with appropriate equipment to achieve an effective depth of in-place compaction greater than the 8 and 12 inches that are normally considered as maximum thicknesses of loose lifts in compacting to achieve 95% and 90% compaction, respectively. However, the contractor should demonstrate in a test section his capability to achieve greater effective depths of compaction with the equipment he plans to utilize.

All existing vegetation should be stripped, and the site should be cleared of all obstructions including any surface debris. The cleared materials should be removed from the site. After clearing the site and excavating as required, the site should be carefully inspected and any remaining fill soils or disturbed natural soils should be excavated. This excavation should be made throughout building areas, crane runway and trackage areas and at least three feet beyond in plan, and within all paved areas.

After excavating as recommended, the exposed natural soils should be scarified to the planned depth of in-place compaction, moistened as necessary to bring the moisture to within 2 percent of optimum moisture content, and rolled with heavy compaction equipment. The entire depth of in-place compaction should be compacted to at least 90% of the maximum density obtainable by the ASTM Designation D1557-70 method of compaction.

After completion of the in-place compaction, all required fill should be placed in loose lifts not more than eight inches in thickness and compacted to at least 95%. It is recommended that the moisture content of the soils at the time of compaction vary no more than 2% below or above optimum moisture content.

The on-site soils, except for any clay soils and for any organic matter or debris within the existing fills, may be used in required fills. The excavation operations should be planned so as to obtain a blending of the silty sands and the sandy silts. This blending would result in more uniform subgrade characteristics across the site. Any required imported fill should consist of relatively non-expansive and predominantly granular soils such as a silty sand. The expansion index of the import material should be less than 35, and no more than 50% of the material should pass a No. 200 sieve. Imported material should contain sufficient fines (binder) so as to produce a compacted fill which will not rut under construction traffic and which will be stable in shallow trenches.

In computing fill quantities, a shrinkage of about 15% may be expected when excavating and compacting the on-site soils to 90%. That is, it will require about 1.15 cubic yards of excavation to make one cubic yard of fill. If the soils are compacted to 95%, a shrinkage value of 20% should be anticipated.

The excavation of the upper soils and the compaction of all required fill should be observed and tested by our firm. Imported fill materials should be approved prior to importing.

PAVING

As recommended in the previous section on grading, to provide improved support for paving of the crane runways, roadways, container storage areas, and parking areas, the existing fill and upper natural soils should be excavated and replaced as properly compacted fill, and all required new fill should be properly compacted. The subgrade soils should be compacted in accordance with the minimum requirements presented in Table 3. Proper drainage of the paved areas should be provided since this will reduce moisture infiltration into the subgrade and increase the life of the paving.

As previously stated, California Bearing Ratio tests were performed on 17 samples of the upper soils to provide data for design of asphaltic paving. The selection of the design CBR is based on the procedure recommended by both the Asphalt Institute and U. S. Navy; that procedure defines the design CBR as that value which is equal to or less than 85 percent of all of the CBR values. Based on this selection criterion, the design CBR values for both the on-site silty sand and sandy silt soils are recommended as equal to 11% at 90% compaction and 20% at 95% compaction.

In the extreme northerly portion of the site, the clayey silt and silty clay soils that were encountered in Borings 30 and 68, respectively, developed significantly lower CBR values. These conditions are localized and found primarily within the upper three feet. Where encountered, such low CBR soils should be excavated and replaced with predominantly granular soil, such as the on-site silty sands.

The tentative scheme is to use a 24-inch-thick flexible pavement section for the crane runways consisting of aggregate base, cement stabilized base, and asphaltic concrete. For such pavements, the CBR values recommended above for the subgrade soils may be used. For use in the design of crane runways constructed of portland cement concrete, a modulus of subgrade reaction "k" for fill compacted to 95% may be assumed to be 300 pounds per cubic inch. For fills compacted to 90%, the modulus of subgrade reaction may be assumed to be 200 pounds per cubic inch. For a soil-cement base consisting of the on-site soils (silty sand or sandy silt) and 6% (by weight) of cement, a modulus of 400 pounds per cubic inch may be used.

FOUNDATIONS

GENERAL

If the grading recommendations are followed, relatively light structures, such as the maintenance building and the low sound wall and retaining walls, may be supported on spread footings. Footings should be underlain by at least three feet of properly compacted fill.

To provide foundation support with minimum settlement for the heavier structures, such as the administration building, tower, high sound wall and retaining walls, and light standards, drilled cast-in-place concrete piling may be used.

SPREAD FOOTINGSBearing Value

Spread footings established in properly compacted fill may be designed to impose a net dead plus live load pressure of 2,000 pounds per square foot. Exterior footings should extend to a depth of at least two feet below the adjacent final grade. Interior footings should extend to a depth of at least two feet below the top of the adjacent floor slab. A one-third increase in the bearing value may be used for wind or seismic loads. Since the recommended bearing value is a net value, the weight of concrete in the footings may be taken as equal to 50 pounds per cubic foot, and the weight of soil backfill may be neglected.

If desired, loading dock walls and low retaining walls may be supported on shallower spread footings using a lesser bearing value. Footings for such light loads established in properly compacted fill and extending at least one foot below the lowest adjacent final grade may be designed to impose a pressure of 1,000 pounds per square foot. Dock walls and retaining walls should be designed to resist the lateral earth pressure developed by a fluid with a density of 30 pounds per cubic foot. Backfill adjacent to the walls should be compacted to at least 90% of the maximum density obtainable by the ASTM Designation D1557-70 method of compaction.

The settlement of the structures, supported on spread footings in the manner recommended, will depend on the loads imposed. When

considering column loads of 100 kips, the settlement would be on the order of one-half to three-fourths inch. We can perform settlement analyses at such time as more definitive load information becomes available.

While the actual bearing value of the compacted fill will depend on the material used and the compaction methods employed, the quoted bearing value will be applicable if the on-site or other acceptable soils are used and are compacted as recommended. The bearing value of the fill should be confirmed after completion of the grading.

Lateral Loads

Lateral loads may be resisted by soil friction and by the passive resistance of the soils. A coefficient of friction of 0.4 may be used between footings or the floor slabs and the supporting soils. The passive resistance of the compacted fill against footings may be assumed to be equal to the pressure developed by a fluid with a density of 250 pounds per cubic foot. A one-third increase in the passive value may be used for wind or seismic loads. The frictional resistance and the passive resistance of the soils may be combined without reduction in determining the total lateral resistance.

Footing Observation

To verify the presence of firm compacted fill soils at design elevations, all footing excavations should be observed by personnel of our firm. Footing excavations should be cleaned of any loosened soils and debris before placing steel or concrete.

Backfill

All required footing backfill and utility trench backfill within the building areas should be mechanically compacted; flooding should not be permitted. The exterior grades should be sloped to drain away from the buildings to minimize ponding of water adjacent to foundations.

DRILLED PILING

Drilled Pile Capacities

The downward and upward capacities of 18- and 24- and 30-inch-diameter drilled piles are presented as a function of penetration below pile cap on Plate 7, Drilled Pile Capacities. Dead plus live load capacities are shown; a one-third increase may be used for wind or seismic loads. The capacities presented are based on the strength of the soils; the compressive and tensile strength of the pile sections should be checked to verify the structural capacity of the piles.

Piles in groups should be spaced at least $2\frac{1}{2}$ diameters on centers. If the piles are so spaced, no reduction in the downward capacities of the piles need be considered due to group action.

The settlement of the proposed tower (maximum 300-kip column load), supported on drilled piling, will be on the order of one-fourth inch. The settlement of other structures will be evaluated at such time as more definitive load information becomes available.

Lateral Loads

Lateral loads may be resisted by the piles, by soil friction on the floor slabs, and by the passive resistance of the soils. The

natural soils or properly compacted fill soils adjacent to a 24-inch-diameter pile, at least 20 feet long, can resist horizontal loads imposed at the top of the pile up to 20,000 pounds. The lateral resistance of other sizes of piles may be assumed to be proportional to the diameter.

In calculating the maximum bending moment in a pile, the lateral load imposed at the top of the pile may be multiplied by a moment arm of five feet. For design, it may be assumed that the maximum bending moment will occur near the top of the pile and that the moment will decrease to zero at a depth of 20 feet below the pile cap. The lateral capacity and reduction in the bending moment are based in part on the assumption that any required backfill adjacent to the pile caps and grade beams will be properly compacted.

A coefficient of friction of 0.4 may be used between the floor slabs and the supporting soils. The passive resistance of the natural soils or properly compacted fill against pile caps and grade beams may be assumed to be equal to the pressure developed by a fluid with a density of 250 pounds per cubic foot. A one-third increase in the quoted passive value may be used for wind or seismic loads.

The resistance of the piles, the passive resistance of the soils against pile caps and grade beams, and the frictional resistance between the floor slabs and the supporting soils may be combined without reduction in determining the total lateral resistance.

Installation

The drilling of the piles should be observed by personnel of our firm to verify that the desired diameters and depths of piles are achieved.

Precautions should be taken during the installation of the piles to reduce caving and raveling. Among other precautions, we would suggest the use of bucket-type drilling equipment with a reduced drilling speed as necessary to minimize vibration and sloughing of the soils. Because of the anticipated caving, a greater volume of concrete may be required than the minimum calculated volume.

Closely spaced piles should be drilled and filled alternately, allowing the concrete to set at least eight hours before drilling an adjacent hole. Pile excavations should be filled with concrete as soon after drilling as possible. In no event should the piles be left open overnight. The concrete should be placed with special equipment so that the concrete is not allowed to fall freely more than five feet and to prevent concrete from striking the walls of the excavations and possibly causing caving.

CHARACTERISTIC SITE PERIOD

The evaluation of the characteristic site period, T_s , is necessary to determine the coefficient of site-structure resonance, S , in accordance with Section 2305 of the 1980 Edition of the City of Los Angeles Building Code. The characteristic period of the site was evaluated following the procedures suggested in SEAOC Standard No. 1,

Recommended Lateral Force Requirements and Commentary, Seismology Committee, Structural Engineers Association of California, 1980. The site period determination requires the knowledge of the shear wave velocities of the various soil deposits underlying the site. The shear wave velocity values for the soils underlying this site were determined based on the results of a downhole seismic survey. The details and the results of the survey are presented in the attached Appendix A.

The average shear wave velocities that were utilized in the determination of the site period are presented on the following page for two geotechnical profiles that are judged to reflect a possible range of depths below the foundation level at which the shear wave velocity is 2,500 feet per second or greater.

<u>Profile A</u>		
<u>Depth Below Ground Surface (Feet)</u>	<u>Layer Thickness (Feet)</u>	<u>Shear Wave Velocity (Ft./Sec.)</u>
0 - 13	13	500
13 - 56	43	940
56 - 80	24	1300
80 - 120	40	1300*
120 - 180	60	1600*
180 - 250	70	2000*
250+	-	2500*

*Extrapolated for depths greater than 80 feet below existing grade; based on "Correlations of Seismic Velocity with Depth in Southern California" by Campbell, Chieruzzi, Duke and Lew (UCLA Technical Report No. UCLA-ENG-7965, October 1979).

<u>Profile B</u>		
<u>Depth Below Ground Surface (Feet)</u>	<u>Layer Thickness (Feet)</u>	<u>Shear Wave Velocity (Ft./Sec.)</u>
0 - 13	13	500
13 - 56	43	940
56 - 80	24	1300
80 - 120	40	1300*
120 - 200	80	1600*
200 - 300	200	2000*
300+	-	2500*

*Extrapolated for depths greater than 80 feet below existing grade; based on "Correlations of Seismic Velocity with Depth in Southern California" by Campbell, Chieruzzi, Duke and Lew (UCLA Technical Report No. UCLA-ENG-7965, October 1979).

Based on two methods of analysis (equivalent single-layer method and multi-layer method), the characteristic period of the site, T_s , for the two profiles was determined to range from 0.9 to 1.2 seconds. The value within the range from 0.9 to 1.2 seconds which is closest to the fundamental period of the building may be used for T_s in determining the site-structure resonance coefficient, S .

FLOOR SLAB SUPPORT

If the subgrade is prepared as recommended, the building floor slabs may be supported on grade. The required thickness and reinforcing of the concrete floor slabs will depend on the imposed loadings. For design of concrete slabs, a modulus of subgrade reaction, k , of 200 pounds per cubic inch may be used for the compacted subgrade. This value is based on CBR test values and published empirical data. If the slabs will be subjected to heavy floor loads or wheel loads, joints in

the slabs should be keyed or dowelled to prevent differential movements at the joints.

If a floor covering that would be critically affected by moisture, such as vinyl, is to be used in any area of the buildings, we suggest that the floor slabs in such areas be supported on a four-inch-thick layer of gravel or on an impermeable membrane as a capillary break. These two methods are essentially equal and either one may be used. A suggested gradation for the gravel layer would be as follows:

<u>Sieve Size</u>	<u>Percent Passing</u>
3/4"	90 - 100
No. 4	0 - 10
No. 100	0 - 3

If a membrane is used, a low-slump concrete should be used to minimize possible curling of the slabs due to the unequal rates of drying of the slab. Because of the lower amount of moisture in low-slump concrete, the differential rate of curing between the top and bottom of the slab would be decreased. The concrete slabs should be allowed to cure properly before placing vinyl or other moisture-sensitive floor covering.

RAILROAD TRACKAGE

To provide improved support for railroad trackage, the upper soils should be excavated and replaced as properly compacted fill as recommended in the section on grading.

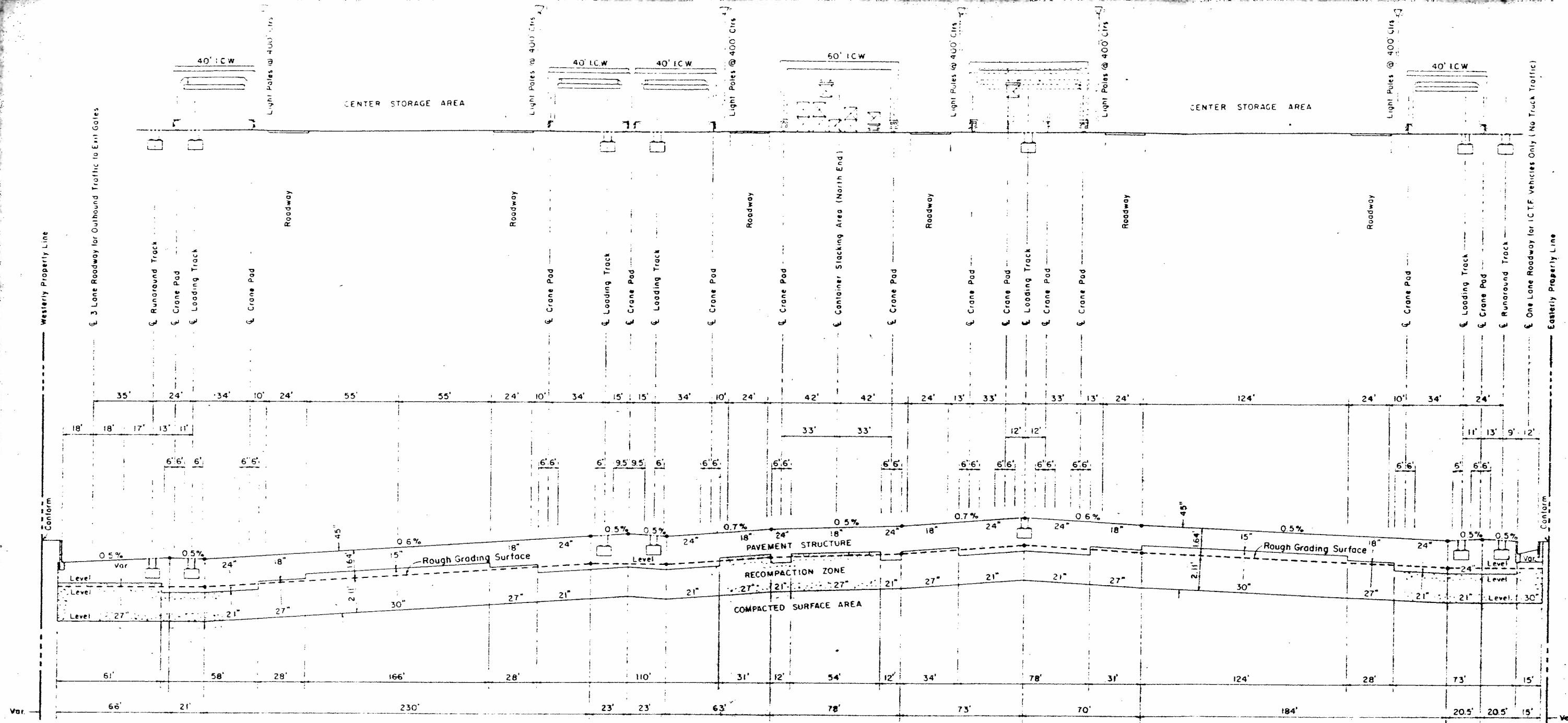
The trackage may be constructed in the conventional manner where the rails are supported on ties and ballast placed over the existing

subgrade soils, provided the recommendations regarding grading are followed.

UTILITY PIPE BEDDING AND BACKFILL

Where bedding is required for utility lines, the on-site sands may be used. However, based on the results of sand equivalent tests presented on Plate A-7 in Appendix A, the on-site silty sands and silts would not be acceptable as bedding material.

The on-site sands and silty sands may be used as trench backfill. We recommend that all trench backfill be placed in layers and compacted to at least 90% of the maximum density obtainable by the ASTM Designation D1557-70 method of compaction. Where granular soils occur at the bottom of the trench, the lower portion of the backfill could be placed by flooding and jetting. At least the upper two or three feet of backfill should be placed in layers and compacted with mechanical or vibratory compaction equipment. Proper compaction of the backfill will be required to provide support for paving. Precautions should be taken in the compaction of the backfill to avoid damage to the pipes.

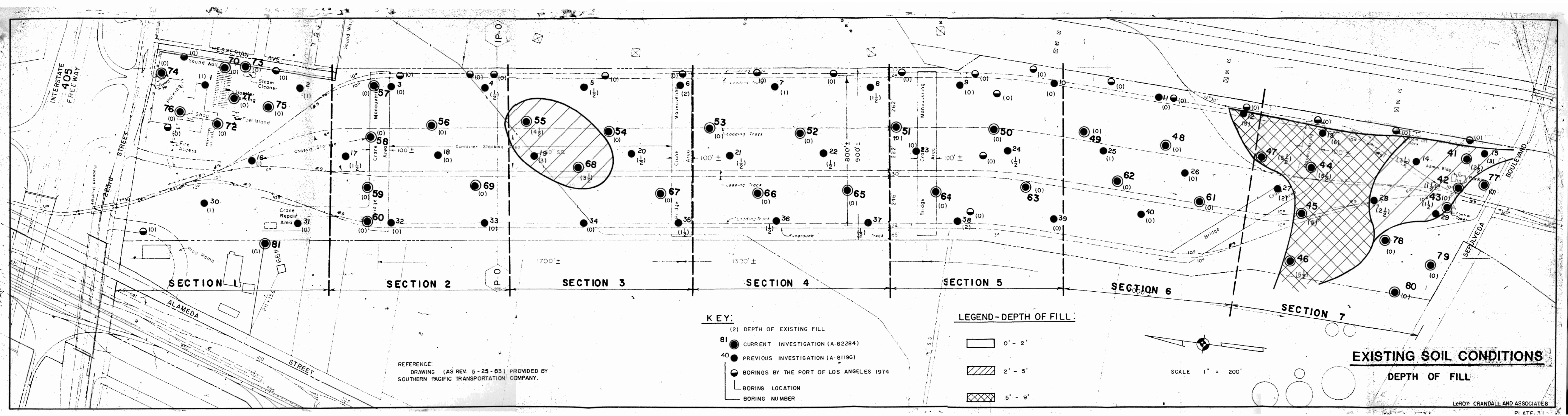


REFERENCE:
 DRAWING PROVIDED BY
 SOUTHERN PACIFIC TRANSPORTATION
 (UNDATED).

SCALES:
 HORIZ. 1" = 60'
 VERT. 1" = 6'

TYPICAL CROSS SECTION I.C.T.F. LOADING AREA (LOOKING NORTH)

FC-1111 13

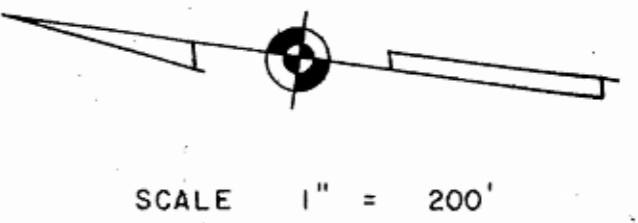


REFERENCE:
DRAWING (AS REV. 5-25-83) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

- KEY:**
- (2) DEPTH OF EXISTING FILL
 - 81 CURRENT INVESTIGATION (A-82284)
 - 40 PREVIOUS INVESTIGATION (A-81196)
 - BORINGS BY THE PORT OF LOS ANGELES 1974
 - BORING LOCATION
 - BORING NUMBER

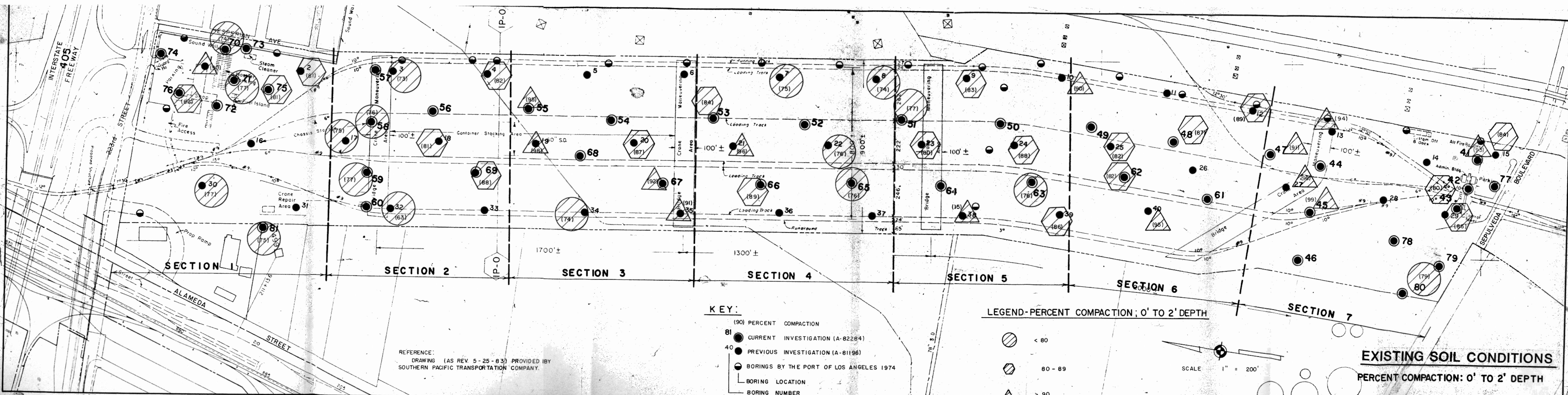
LEGEND-DEPTH OF FILL:

- 0' - 2'
- ▨ 2' - 5'
- ▩ 5' - 9'



EXISTING SOIL CONDITIONS

DEPTH OF FILL



KEY:

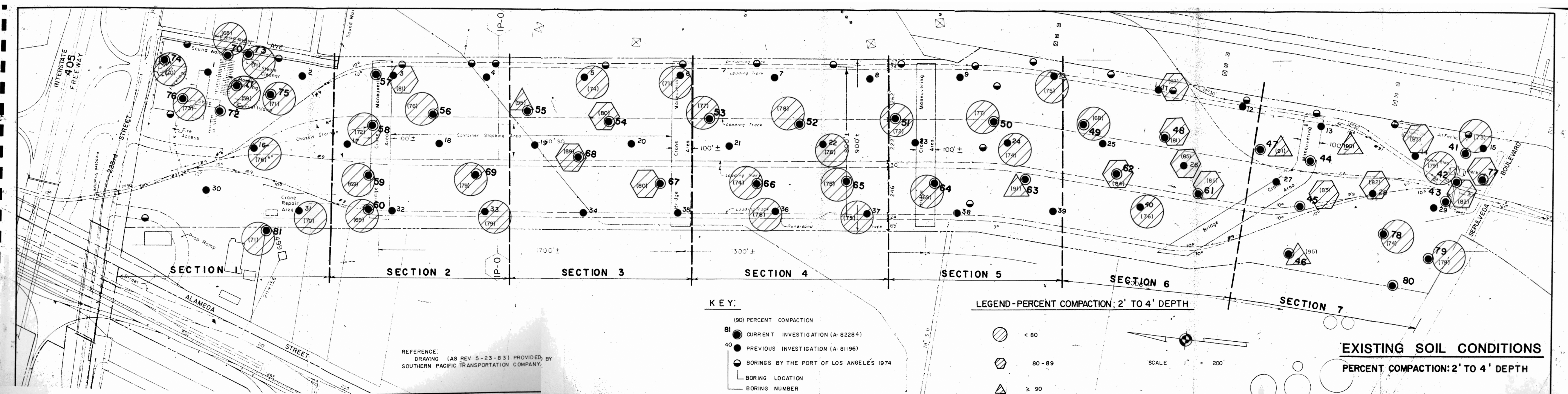
- (90) PERCENT COMPACTION
- CURRENT INVESTIGATION (A-82284)
- PREVIOUS INVESTIGATION (A-81196)
- BORINGS BY THE PORT OF LOS ANGELES 1974
- BORING LOCATION
- BORING NUMBER

LEGEND-PERCENT COMPACTION ; 0' TO 2' DEPTH

- ◌ < 80
- ◌ 80 - 89
- ◌ ≥ 90

REFERENCE:
DRAWING (AS REV. 5-25-83) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

EXISTING SOIL CONDITIONS
PERCENT COMPACTION: 0' TO 2' DEPTH



REFERENCE:
DRAWING (AS REV. 5-23-83) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

KEY:

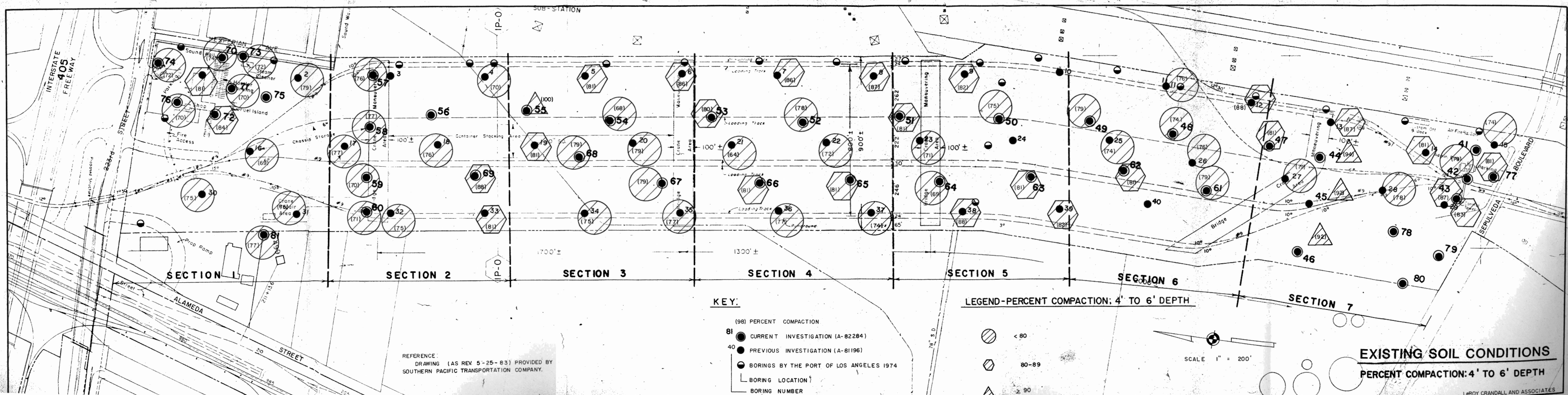
- (90) PERCENT COMPACTION
- CURRENT INVESTIGATION (A-82284)
- PREVIOUS INVESTIGATION (A-81196)
- BORINGS BY THE PORT OF LOS ANGELES 1974
- BORING LOCATION
- BORING NUMBER

LEGEND-PERCENT COMPACTION, 2' TO 4' DEPTH

- < 80
- ◊ 80 - 89
- △ ≥ 90

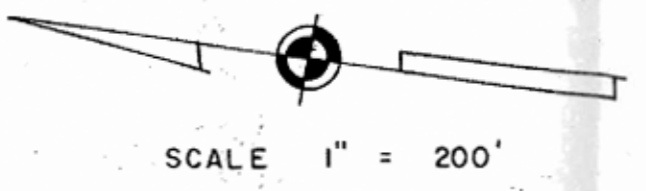


EXISTING SOIL CONDITIONS
PERCENT COMPACTION: 2' TO 4' DEPTH



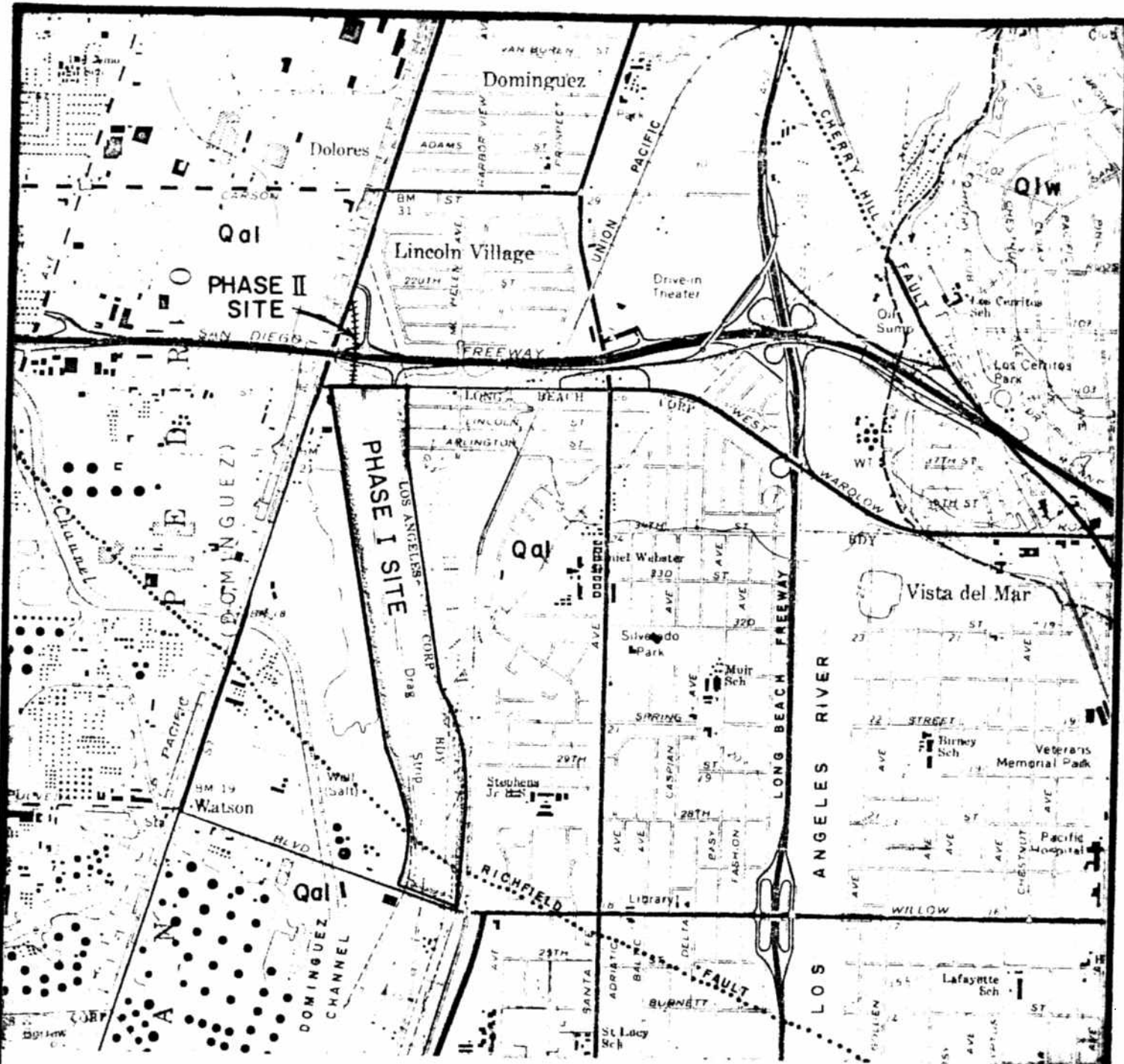
- KEY:**
- (98) PERCENT COMPACTION
 - CURRENT INVESTIGATION (A-82284)
 - PREVIOUS INVESTIGATION (A-81196)
 - BORINGS BY THE PORT OF LOS ANGELES 1974
 - └ BORING LOCATION
 - └ BORING NUMBER

- LEGEND-PERCENT COMPACTION: 4' TO 6' DEPTH**
- ◐ < 80
 - ◑ 80-89
 - △ ≥ 90



REFERENCE:
DRAWING (AS REV. 5-25-83) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

EXISTING SOIL CONDITIONS
PERCENT COMPACTION: 4' TO 6' DEPTH



EXPLANATION

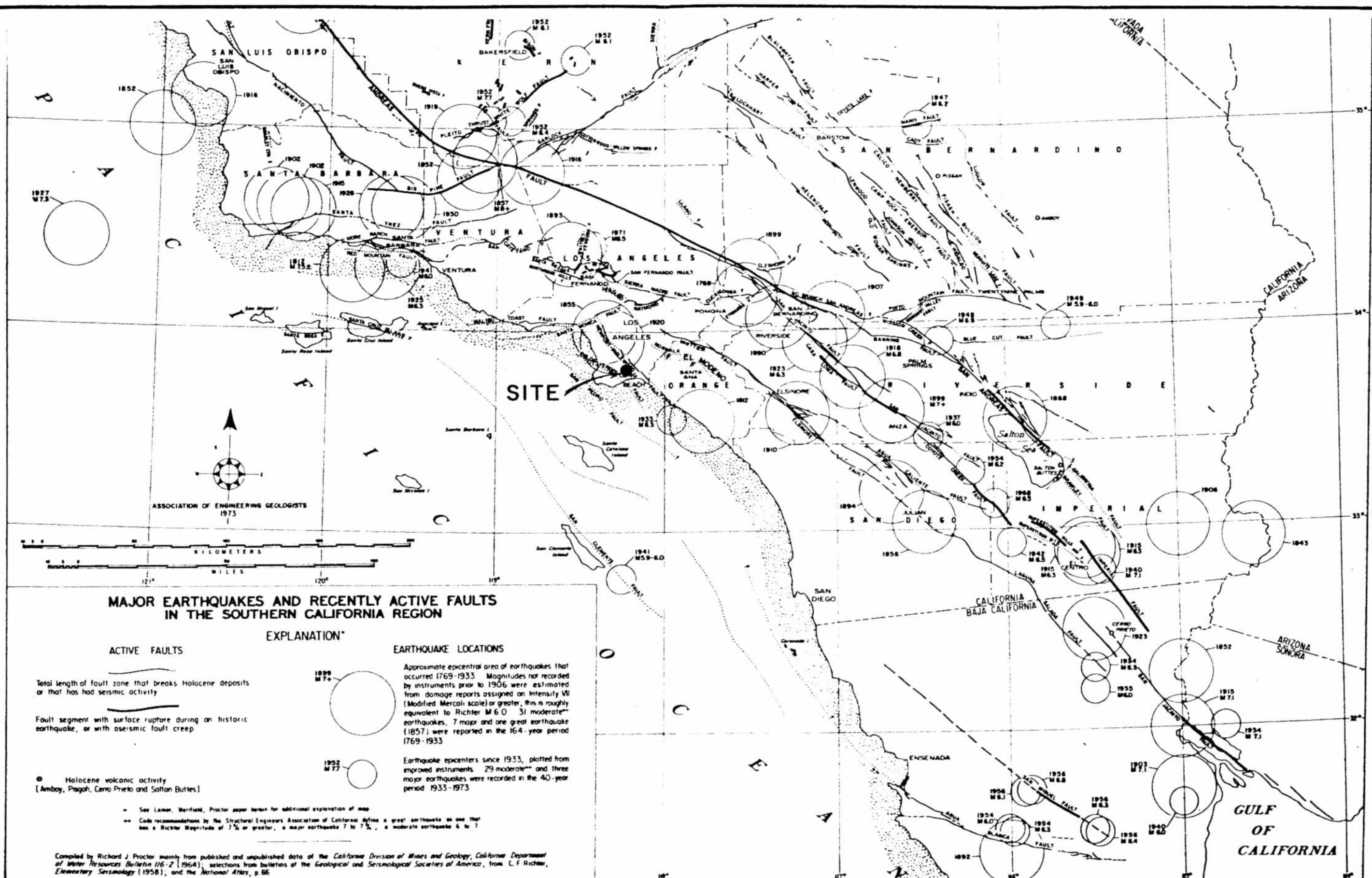
- Qa1 HOLOCENE ALLUVIUM
- Qlw PLEISTOCENE LAKEWOOD FORMATION
- GEOLOGIC CONTACT
- FAULT, DOTTED WHERE CONCEALED

REFERENCE: BASE MAP USGS LONG BEACH 7.5' QUADRANGLE, 1972
 GEOLOGY ADAPTED FROM LACFCO, 1962, USGS. WATER SUPPLY PAPER 1109, 1956 AND ALQUIST PRIOLO ZONE MAP. LONG BEACH QUADRANGLE, 1976

LOCAL GEOLOGY

SCALE 1" = 2000'

LeROY CRANDALL AND ASSOCIATES



**MAJOR EARTHQUAKES AND RECENTLY ACTIVE FAULTS
IN THE SOUTHERN CALIFORNIA REGION**

EXPLANATION*

ACTIVE FAULTS

— Total length of fault zone that breaks Holocene deposits or that has had seismic activity

— Fault segment with surface rupture during an historic earthquake, or with aseismic fault creep

● Holocene volcanic activity
[Amboy, Pinnac, Cerro Prieto and Salton Buttes]

EARTHQUAKE LOCATIONS

○ Approximate epicentral area of earthquakes that occurred 1769-1933. Magnitudes not recorded by instruments prior to 1906 were estimated from damage reports assigned an Intensity VI (Modified Mercalli scale) or greater; this is roughly equivalent to Richter M 6.0. 31 moderate earthquakes, 7 major and one great earthquake (1857) were reported in the 164-year period 1769-1933.

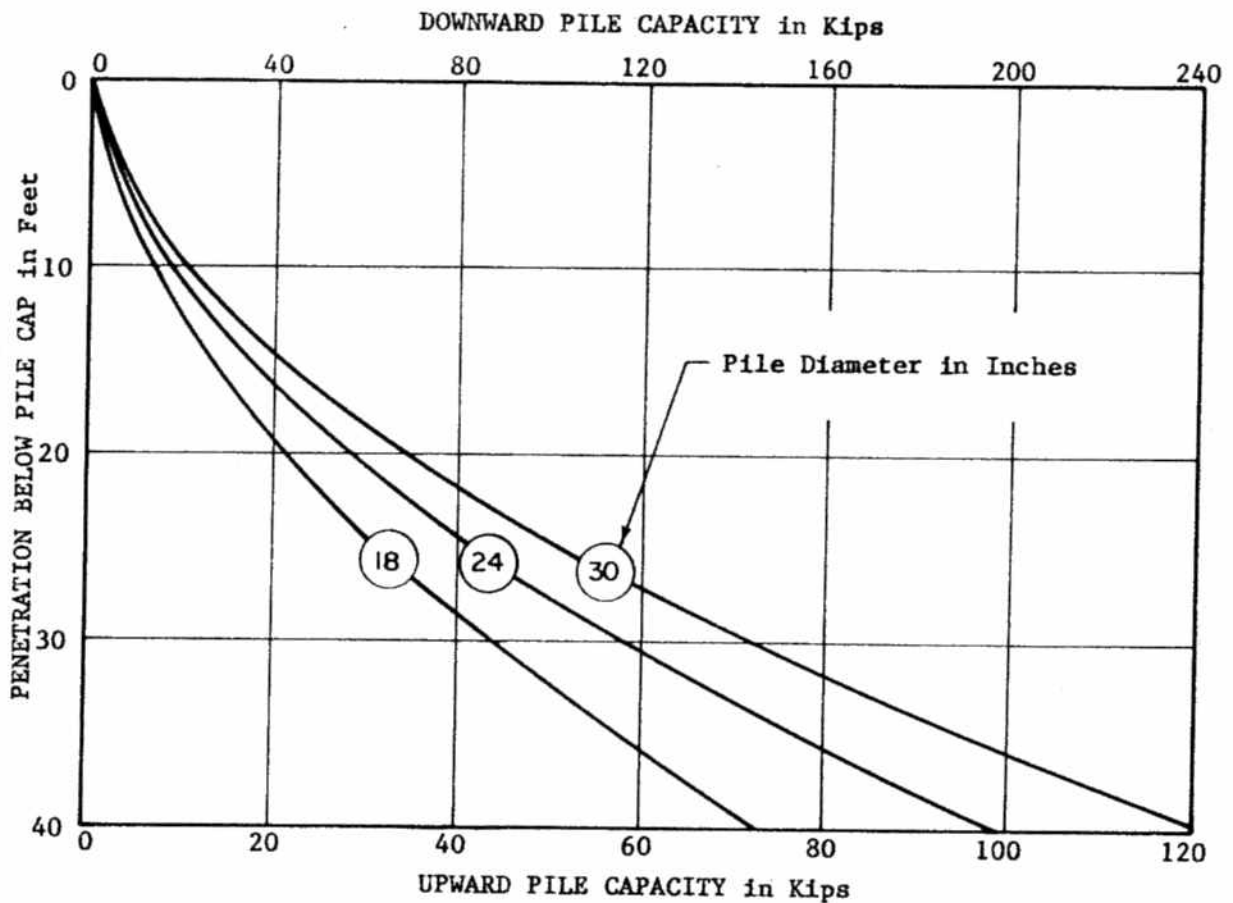
○ Earthquake epicenters since 1933, plotted from improved instruments. 29 moderate and three major earthquakes were recorded in the 40-year period 1933-1973.

* See Lamer, Merrifield, Proctor paper herein for additional explanation of map
 ** Code recommendations by the Structural Engineers Association of California define a great earthquake as one that has a Richter Magnitude of 7.5 or greater, a major earthquake 7 to 7.5, a moderate earthquake 6 to 7

Compiled by Richard J. Proctor mainly from published and unpublished data of the California Division of Mines and Geology, California Department of Water Resources Bulletin 116-2 (1964); selections from bulletins of the Geological and Seismological Societies of America, from L.F. Richter, *Elementary Seismology* (1958), and the *National Atlas*, p. 66

REGIONAL SEISMICITY

LoROY CRANDALL AND ASSOCIATES



NOTE:

- (1) The indicated values refer to the total of dead plus live loads; a one-third increase may be used when considering wind or seismic loads.
- (2) Piles in groups should be spaced a minimum of $2\frac{1}{2}$ diameters on centers, and should be drilled and filled alternately with the concrete permitted to set at least 8 hours before drilling an adjacent hole.
- (3) The indicated values are based on the strength of the soils; the actual pile capacities may be limited to lesser values by the strength of the piles.

DRILLED PILE CAPACITIES

APPENDIX A
EXPLORATIONS

The site was explored by drilling 81 borings at the locations shown on Plate 1. Most of the borings were drilled to depths of 5 to 45 feet below the existing grade using 17-, 20-, and 24-inch-diameter bucket-type drilling equipment. Boring 42 was drilled to a depth of 80 feet using 5-inch-diameter rotary wash-type equipment. Borings 78, 79, and 80 were drilled using hand drilling equipment. Caving and raveling of the boring walls occurred during drilling of the bucket borings in approximately one half of the borings, as indicated on the boring logs. A pipe approximately 12 inches in diameter was encountered in Boring 12 at a depth of eight feet. Drilling mud was used with the rotary wash equipment to prevent caving.

Upon the completion of Boring 42, a 2-inch-diameter PVC pipe was installed in the boring, and pea gravel backfill was placed around the outside of the pipe. A downhole seismic survey was subsequently performed in this boring as discussed in a following section.

The soils encountered were logged by our field technician, and undisturbed and samples were obtained for laboratory inspection and testing. The logs of the borings are presented on Plates A-1.1 through A-1.81; the depths at which undisturbed samples were obtained are indicated to the left of the boring logs. The energy required to drive the sampler twelve inches is indicated on the logs. The soils are classified in accordance with the Unified Soil Classification System described on Plate A-2.

LABORATORY TESTS

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs.

Direct shear tests were performed on selected undisturbed samples to determine the strength of the soils. The samples were tested at field and increased moisture contents and at various surcharge pressures. The yield-point values determined from the direct shear tests are presented on Plates A-3.1 and A-3.2, Direct Shear Test Data.

Confined consolidation tests were performed on 31 undisturbed samples to determine the compressibility of the soils. Water was added to 27 of the samples during the tests to illustrate the effect of moisture on the compressibility. The results of the tests are presented on Plates A-4.1 through A-4.16, Consolidation Test Data.

To determine the particle size distribution and confirm the field classification of the soils, mechanical analyses were performed on 14 samples. The results of the mechanical analyses are presented on Plates A-5.1 through A-5.8, Particle Size Distribution.

The optimum moisture content and maximum dry density of the soils were determined by performing compaction tests on 17 samples. The tests were performed in accordance with the ASTM Designation D1557-70 method of compaction. After completion of the compaction tests, California Bearing Ratio tests were performed on the samples in accordance with the ASTM Designation D1883-73 method. The results of the tests are

presented on Plates A-6.1 through A-6.6, Compaction and C.B.R. Test Data. To six of the samples, 6% (dry weight) cement was added and compacted to form soil-cement specimens. After a curing period of seven days, California Bearing Ratio tests were performed in accordance with the ASTM Designation D1883-73 method. The results of the tests are presented on Plates A-6.7 and A-6.8.

To determine the suitability of the on-site materials for backfill and bedding, sand equivalent determinations were made on four samples. The results of the tests are presented on Plate A-7, Sand Equivalent Test Data.

DOWNHOLE SEISMIC SURVEY

After completion of drilling, and after installing the PVC pipe and placing gravel backfill in Boring 42, a downhole seismic survey was performed in this boring to determine the propagation velocities of the compressional waves (P-waves) and shear waves (S-waves).

A borehole seismometer, connected with cable to an amplifier and recorder, was lowered to the bottom of the boring. A wooden plank was placed adjacent to the boring and weighted down with the front wheels of a vehicle. The S-waves were generated by horizontally striking the end of the plank with a sledge hammer; the P-waves were generated by vertically striking the top of the plank. The S-waves and P-waves were detected by the three orthogonal geophones of the borehole seismometer. When the measurements were completed at a given depth, the seismometer was raised to a higher level and a new set of measurements was taken.

The times of first arrivals of the S-waves and P-waves were determined from the recordings and were plotted versus distance from the source on a travel time curve which is presented on Plate A-8, Downhole Seismic Survey. The propagation velocities were computed and are presented on Plate A-8.

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form 123 JOB 8-81120 DATE 8/4/81 DR. JOHN O.E. W.P. CHKD

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING 1

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
23.7 *					
	5	11.6	104	3	SM ML
	10	26.1	94	2	ML
	15	8.4	85	3	SM
	20	12.4	81	2	ML
	25	38.8	83	<1	ML

ELEVATION 23.7 *

FILL - SILTY SAND and SILT - few gravel, small pieces of oil paving, mottled brown SANDY SILT - brown and grey
 Lenses of Silty Sand
 Layer of Clayey Silt
 SILTY SAND - fine, light brown and grey
 SANDY SILT - grey

NOTE: Water not encountered. Caving from 10' to 14' (to 2½' in diameter).

* Elevations refer to datum of reference drawing; see Plate 1.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.1

BORING 2

DATE DRILLED: July 29, 1981
EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
		11.2	94	3		FILL - SANDY SILT - small pieces of oil paving, brown
					ML	SANDY SILT - brown and grey
20					SM	SILTY SAND - fine, light grey
	5	40.5	84	<1	ML	CLAYEY SILT - dark grey and brown
15		31.9	85	2		
					SM	SILTY SAND - fine, grey and brown
	10	25.5	96	2	ML	CLAYEY SILT - grey and brown
						Traces of organic matter
10					SM	SILTY SAND - fine, brown and grey
15		12.4	101	5		

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 3

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.1

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		1.4	86	2	SM	SILTY SAND - fine, greyish-brown Lenses of Sand
	5	27.3	93	2	ML	SANDY SILT - dark brown
15		8.3	79	2	SM	SILTY SAND - fine, greyish-brown
	10	35.6	84	<1	ML	CLAYEY SILT - greyish-brown
10					SM	SILTY SAND - fine, brown and grey
15		10.2	102	5		

NOTE: Water not encountered. Caving from 0 to 2½' (to 3' in diameter).

LOG OF BORING

BORING 4

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 13.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.	DESCRIPTION
15		4.2	97	2	SM	FILL - SILTY SAND - fine, about 10% gravel brown
	5	23.0	78	2	ML	SILTY SAND - fine, greyish-brown SANDY SILT - greyish-brown
10		17.8	91	2		
	10	21.9	100	3		
5					SM	SILTY SAND - fine, grey and brown
15		23.5	93	5		Layer of Sandy Silt

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 5

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		6.2	83	2	SM	FILL - SILTY SAND - fine, brown
					SM	SILTY SAND - fine, greyish-brown
	5				ML	SANDY SILT - grey and brown Lenses of Silty Sand
15		18.1	91	2		Lenses of Clayey Silt
		19.8	105	2		
10					SM	SILTY SAND - fine, brown and grey
10		12.8	99	5		
15		7.3	91	5	SP	SAND - fine, light greyish-brown
5						
20						

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 6

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		7.7	79	2	SM ML	FILL - SILTY SAND and SILT - small pieces of oil paving and vegetation, mottled greyish-brown
	5				SM	SILTY SAND - fine, greyish-brown Lenses of Sandy Silt
15		20.9	91	<1	ML	CLAYEY SILT - grey Layer of Sandy Silt
	10	31.3	83	3	SP	SAND - fine, light grey
10		9.1	107	3	ML SM	SANDY SILT - brown and grey SILTY SAND - fine, brown and grey
15		1.8	100	5	SP	SAND - fine, light brown and grey
5						
20						

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 7

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		5.5	87	2	ML	FILL - SANDY SILT - small pieces of oil paving, brown
					ML	SANDY SILT - grey and brown
						Lenses of Clayey Silt
5		20.7	100	3		
15					SM	SILTY SAND - fine, light grey
						Lenses of Sandy Silt
10		13.5	83	3		
10		6.2	91	5	SP	SAND - fine, grey

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.7

BORING 8

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.5

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
20		8.4	84	2	SM
					SM
15	5	7.4	99	3	
		19.8	94	3	
10	10	12.3	90	2	
15		18.0	111	5	

FILL - SILTY SAND - fine, small pieces of oil paving, brown
 SILTY SAND - fine, grey
 Layer of Sandy Silt
 Layer of Sandy Silt
 Few shells

NOTE: Water not encountered. No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

BORING 9

DATE DRILLED: July 30, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.5

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
20		4.4	95	3	SM
					SP
	5	14.4	93	2	SM
15					ML
		20.6	100	2	SM
10	10	21.1	106	2	ML
					ML
		8.8	100	5	SM
15					

SILTY SAND - fine, greyish-brown

SAND - fine, light grey

SILTY SAND - fine, grey and brown

SANDY SILT - some Clay, brownish-grey

SILTY SAND - fine, brownish-grey

CLAYEY SILT - grey

SANDY SILT - grey and brown

SILTY SAND - fine, grey and brown

NOTE: Water not encountered. Caving from 2' to 4' (to 3' in diameter).

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 10

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
15	5	3.3	103	2	SM	SILTY SAND - fine, brown
		8.1	86	2	SP	SAND - fine, grey
		21.3	94	2	ML	SANDY SILT - grey and brown
10	10	22.0	101	2	SM	SILTY SAND - fine, grey and brown
					ML	CLAYEY SILT - brownish-grey
5	15	12.9	104	6	SM	SILTY SAND - fine, grey and brown

NOTE: Water not encountered. Caving from 2' to 4½' (to 3' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING II

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
		8.3	95	2	SM	SILTY SAND - fine, grey and brown
15	5				SP	SAND - fine, grey
		16.4	87	2	ML	SANDY SILT - greyish-brown
10	10	34.2	86	2	SM	SILTY SAND - fine, greyish-brown
		13.6	107	2		
5	15	4.3	95	6	SP	SAND - fine, grey
0	20					

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 12

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 24.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
24.0	0					6" Rock, Sand and Oil Surface
20	5	8.6	108	11	SM	FILL - SILTY SAND - fine, brown Lenses of Clayey Sand
15	10	10.7	107	6	SP	Bits of vegetation, petroleum odor FILL - SAND - fine, grey Lenses of Silt and Silty Sand (ENCOUNTER LARGE PIPE, BORING MOVED 1')
10	15	7.5	92	2	SM	SILTY SAND - fine, very Silty, greyish-brown
5	20	12.2	90	3	ML	SANDY SILT - grey
0	24.7	24.7	95	2		

NOTE: Water not encountered. Caving from 6' to 9' (to 3' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 13

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		9.5	114	19	SM	9" Rock, Sand and Oil Surface FILL - SILTY SAND - fine, grey and brown
	5	12.9	105	8	SP SM	FILL - SAND and SILTY SAND - fine, small pieces of wood, petroleum odor, mottled grey and brown
15		4.3	93	2	SP	SAND - fine, grey Lenses of Silty Sand
10		12.1	94	3	SM	SILTY SAND - fine, greyish-brown
15		17.2	109	3		Layer of Sandy Silt

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 14

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15	5	7.9	105	5	SP SM ML
10	10	5.4	98	<1	SM
5	15	9.1	101	3	SP
0	20	3.1	92	3	
		6.1	88	3	

3" Rock and Oil Surface
 FILL - SAND, SILTY SAND and SILT - few gravel, petroleum odor, grey and brown

SILTY SAND - fine, grey

Greyish-brown

SAND - fine, light grey

NOTE: Water not encountered. Caving from 4½' to 6' (to 2½' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 15

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 13.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15		9.0	102	10	SM
	5	3.7	89	2	ML
					SM
10		10.4	89	2	SM
	10	11.9	93	2	SP
	5				ML
					SM
5		5.0	96	8	SP

3" Rock and Oil Surface
 FILL - SILTY SAND and SILT - few gravel, mottled greyish-brown
 FILL - SILTY SAND - fine, petroleum odor, dark brown and grey
 SILTY SAND - fine, grey
 Brown and grey
 Lenses of Sandy Silt
 SAND - fine, light grey
 SANDY SILT - brownish-grey
 SILTY SAND - fine, grey
 SAND - fine, light brown and grey

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 16

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
22.5					
20		13.5	87	2	SM
					SM
					ML
5		12.6	81	2	SM
15		34.3	79	2	
10		27.7	91	<1	ML
10					
15		20.9	105	5	ML
5					
20					

ELEVATION 22.5

FILL - SILTY SAND - fine, few gravel, cobble (9" in size), brown
 SILTY SAND - fine, light brown and grey
 SANDY SILT - grey and brown

SILTY SAND - fine, light brown and grey

Layer of Sandy Silt

CLAYEY SILT - dark brownish-grey

SANDY SILT - grey and brown

NOTE: Water not encountered. No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 17

DATE DRILLED: July 27, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		4.0	88	2	SM ML	FILL - SILTY SAND and SILT - few gravel, pieces of glass, brown
	5	13.2	88	2	SM ML	SILTY SAND - fine, light grey SANDY SILT - grey and brown Lenses of Clayey Silt
15		38.3	81	<1	SM ML	SILTY SAND - fine, grey CLAYEY SILT - greyish-brown
10		26.7	94	2	SM	SILTY SAND - fine, greyish-brown
15		14.4	106	5		

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.17

BORING 18

DATE DRILLED: July 27, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		2.8	95	2	SM	SILTY SAND - fine, light greyish-brown
	5	13.5	87	2	ML	SANDY SILT - dark greyish-brown Lenses of Clayey Silt
15		28.8	81	<1	ML	CLAYEY SILT - grey and brown
10		25.3	93	2	ML	SANDY SILT - grey and brown
10					SM	SILTY SAND - fine, greyish-brown
15		16.7	108	5		

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.18

BORING 19

DATE DRILLED: July 27, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		10.8	116	8	SM ML	FILL - SILTY SAND and SILT - some Clay, mottled brown
5		23.4	91	<1	SM ML	SILTY SAND - fine, brownish-grey SANDY SILT - grey and brown
15		37.8	85	<1	SM	SILTY SAND - fine, grey
10		31.7	90	<1	ML	CLAYEY SILT - few cemented lumps, grey and brown
10		18.3	103	5	ML	SANDY SILT - greyish-brown
15						
5						
20						

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 20

DATE DRILLED: July 27, 1981
EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft. - kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		4.3	97	3	SM	FILL - SILTY SAND - fine, about 20% gravel, grey and brown
					SM	SILTY SAND - fine, greyish-brown
15	5	24.7	88	<1	ML	SANDY SILT - some Clay, grey and brown
		35.6	77	2	ML	CLAYEY SILT - small pieces of charcoal, brown and grey
					SM	SILTY SAND - fine, grey
10	10	26.7	97	<1	ML	CLAYEY SILT - grey and brown
					ML	SANDY SILT - grey and brown
15		20.7	94	5	SM	SILTY SAND - fine, grey and brown

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 21

DATE DRILLED: July 27, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.8

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		7.3	106	5	SM	FILL - SILTY SAND - fine, about 20% gravel and pieces of asphaltic paving, brown SILTY SAND - fine, brown
					SM	
	5	40.7	74	2	ML	SANDY SILT - grey and brown Lenses of Clayey Silt
15		37.3	83	2	ML	CLAYEY SILT - greyish-brown
	10	9.6	93	3	SM	SILTY SAND - fine, grey and brown
10		9.1	96	5		Sandier
15						

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.21

BORING 22

DATE DRILLED: July 27, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
20		14.1	88	2	SM
					SM
					ML
	5				SM
15		11.0	83	2	ML
					SM
	10	6.2	89	3	SP
		3.0	87	3	
	15	9.0	84	3	
20					

FILL - SILTY SAND - fine, about 20% gravel and asphaltic paving, brown
 SILTY SAND - fine, brown
 SANDY SILT - dark brown
 SILTY SAND - fine, greyish-brown
 SANDY SILT - brown
 SILTY SAND - fine, grey and brown
 SAND - fine, light grey and brown

Lenses of Silty Sand

NOTE: Water not encountered. Patchy caving below 8½' (to 3' in diameter).

LOG OF BORING

BORING 23

DATE DRILLED: July 27, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.9

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
15	5	7.3	91	3	ML	2" Rock and Oil Paving
					SM	SANDY SILT - brown
					ML	SILTY SAND - fine, brown
					ML	SANDY SILT - greyish-brown
		29.9	82	2		
		26.3	86	3		
10	10				SM	SANDY SILT - fine, dark brown
		7.0	104	5		
					SP	SAND - fine, light grey
5	15	3.6	95	6		

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 24

DATE DRILLED: July 27, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
		5.7	100	2	SM	FILL - SILTY SAND - fine, small pieces of oil paving, brown
					SM	
15	5	6.7	84	2	SP	SILTY SAND - fine, brown SAND - fine, light grey and brown
		29.8	88	<1	ML	SANDY SILT - grey and brown
10	10	10.8	103	3	SM	SILTY SAND - fine, dark grey and brown
5	15	5.9	94	5	SP	SAND - fine, grey and brown

NOTE: Water not encountered. Caving from 2½' to 4½' (to 2½' in diameter).

LOG OF BORING

BORING 25

DATE DRILLED: July 27, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 18.8

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips / ft.)	SAMPLE LOC.	DESCRIPTION
15		6.3	94	2	SM	FILL - SILTY SAND - fine, small pieces of asphaltic paving, brown
	5	13.9	84	2	SP	SAND - fine, light grey and brown Lenses of Silty Sand
		17.4	88	2	ML	SANDY SILT - grey and brown Layer of Sand
10		24.7	100	<1	SM	SILTY SAND - fine, grey and brown
	10				ML	SANDY SILT - dark grey and brown Lenses of Clayey Silt
5		11.1	102	5	SM	SILTY SAND - fine, brown

NOTE: Water not encountered. Caving from 1' to 3' (to 2½' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 26

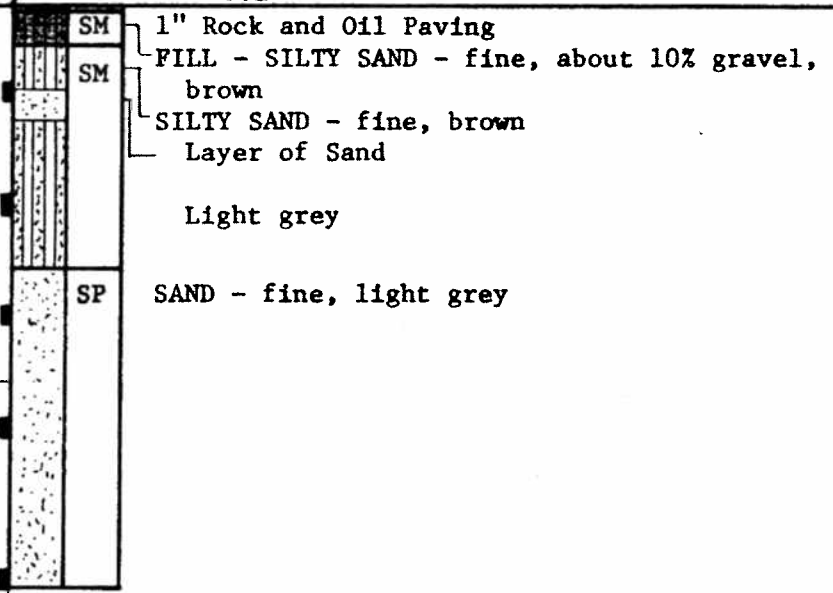
DATE DRILLED: July 27, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 18.1

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15		6.8	97	3	SM
	5	8.6	87	2	SM
10		3.2	93	5	SP
	10	3.9	90	3	
5					
	15	6.2	96	6	
0					
20					



NOTE: Water not encountered. Caving below 8' (to 3½' in diameter).

LOG OF BORING

BORING 27

DATE DRILLED: July 28, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 17.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.	DESCRIPTION
15		7.9	119	13	SM ML	FILL - SILTY SAND and SILT - mottled brown
	5	16.9	88	2	ML	SANDY SILT - grey and brown
10		16.7	96	3	SM	SILTY SAND - fine, grey and brown Lenses of Sandy Silt
	10	12.7	88	3	SP ML SM	SAND - fine, grey SANDY SILT - grey and brown SILTY SAND - fine, grey and brown
5		6.1	91	5	SP	SAND - fine, grey
15						

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 28

DATE DRILLED: July 28, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 16.9

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15		13.1	99	8	SM
	5	7.4	92	5	ML
	10	6.9	94	8	SP
	15	5.4	95	3	
	20	4.9	86	6	

1" Rock and Oil Paving
 FILL - SILTY SAND - fine, about 20% gravel and pieces of asphaltic paving, grey and brown
 SANDY SILT - brown
 SAND - fine, light brown

Light grey

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 29

DATE DRILLED: July 28, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 16.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15		11.6	104	3	SM
	5	4.4	101	3	SM
10		2.6	90	3	SP
	10	1.7	95	5	
5		2.7	98	8	

FILL - SILTY SAND - fine, few gravel, pieces of asphaltic paving, brown
 SILTY SAND - fine, greyish-brown
 SAND - fine, light greyish-brown
 Light grey

NOTE: Water not encountered. Caving below 7'(to 3' in diameter).

LOG OF BORING

BORING 30

DATE DRILLED: July 30, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 22.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		17.4	82	<1	SM ML	FILL - SILTY SAND and SILT - small pieces of plaster and oil paving, mottled brown
	5	6.9	88	2	SM	CLAYEY SILT - some Sand, grey and brown SILTY SAND - fine, grey and brown
15		34.1	83	3		Layer of Clayey Silt
10		40.3	76	<1	ML	CLAYEY SILT - dark brown Lenses of Sandy Silt
10					SM	SILTY SAND - fine, grey and brown
15		8.0	92	3		

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 31

DATE DRILLED: July 30, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lb./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
20		29.2	81	2		ML SANDY SILT - grey and brown
	5					Lenses of Silty Sand
15		9.6	86	2		Layer of Silty Sand
		16.1	88	3		Some Clayey Silt
10		13.8	89	2		
						ML CLAYEY SILT - dark brownish-grey
						ML SANDY SILT - grey and brown
5		10.0	100	6		
20						

NOTE: Water not encountered. No caving.

LOG OF BORING

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING 32

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
20		18.0	74	<1	SM	SILTY SAND - fine, greyish-brown
	5	27.0	86	2	ML	CLAYEY SILT - dark brownish-grey
15		34.1	86	2	ML	SANDY SILT - grey and brown
						Lenses of Clayey Silt and Silty Sand
10		36.7	79	<1		
15		28.0	92	2	SM	SILTY SAND - fine, grey and brown

NOTE: Water not encountered. No Caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 33

DATE DRILLED: July 29, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		5.7	93	2	SM	SILTY SAND - fine, lenses of Silt, brown
					ML	SANDY SILT - grey and brown
	5	20.8	91	2		Lenses of Clayey Silt
15		35.4	85	<1		
	10	26.9	95	2	ML	SANDY SILT - grey and brown
10					SM	SILTY SAND - fine, grey and brown
	5	14.5	108	5		
5						
20						

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 34

DATE DRILLED: July 28, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 18.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
15		4.3	87	2	SM	SILTY SAND - fine, brown
	5	11.1	84	2	ML	SANDY SILT - light grey
10		8.0	81	3	SM	SILTY SAND - fine, light grey
	10	44.3	77	<1	ML	CLAYEY SILT - traces of organic matter, grey and brown
5		39.5	77	2		

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 35

DATE DRILLED: July 28, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.6

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-lbs./ft.)	SAMPLE LOC.	DESCRIPTION
20		2.7	107	5	SM	FILL - SILTY SAND - fine, about 20% gravel, brown
					SM	SILTY SAND - fine, brown
	5	11.4	86	3	ML	SANDY SILT - grey and brown
15		6.1	95	5	SM	SILTY SAND - fine, light brown and grey
	10	19.9	95	2	ML	SANDY SILT - grey and brown
					ML	CLAYEY SILT - brownish-grey
		10.1	98	6	ML	SANDY SILT - grey and brown
15						

NOTE: Water not encountered. Caving from 1½' to 3½' (to 2½' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 36

DATE DRILLED: July 28, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.6

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20		11.0	90	2	SM	FILL - SILTY SAND and SILT - about 20% gravel and pieces of asphaltic paving, mottled brown
					ML	SANDY SILT - grey Lenses of Silty Sand and Clayey Silt
15	5	14.2	85	2	SM	SILTY SAND - fine, grey and brown
		3.4	87	3	SP	SAND - fine, light brown and grey
10	10	31.2	89	<1	ML	CLAYEY SILT - traces of organic matter, dark brownish-grey
5	15	9.0	92	5	SM	SILTY SAND - fine, grey and brown

NOTE: Water not encountered. Caving from 6½' to 9½' (to 3' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

JOB NO. 81120 DATE 8/8/81 DR. JOHN C. W.P. 120

BORING 37

DATE DRILLED: July 28, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15	5	13.6	86	2	SM
		8.8	84	3	SM
10	10	6.7	90	3	SP
		22.1	103	<1	ML
5	15	8.6	96	5	ML
					SM
0	20				

FILL - SILTY SAND - fine, about 20% gravel, brown
 SILTY SAND - fine, brown
 Lenses of Sandy Silt
 Layer of Sandy Silt

SAND - fine, light brown and grey

CLAYEY SILT - dark brownish-grey

SANDY SILT - grey and brown

SILTY SAND - fine, grey and brown

NOTE: Water not encountered. Caving from 8' to 10' (to 2½' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 38

DATE DRILLED: July 28, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
		15.3	108	8	SM ML	FILL - SILTY SAND and SILT - few gravel, small pieces of vegetation and wood, mottled brown
15	5	21.0	102	2	SM ML	SILTY SAND - fine, brown SANDY SILT - grey and brown
		28.1	84	3	SP	SAND - fine, light brown and grey
10	10	13.6	109	3	ML	SANDY SILT - brownish-grey
5	15	10.1	101	6	SM	SILTY SAND - fine, grey and brown

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 39

DATE DRILLED: July 28, 1981

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
15	5	8.1	98	2	SM	SILTY SAND - fine, greyish-brown
					ML	SANDY SILT - dark brown
		13.6	91	2		
					SP	SAND - fine, light grey and brown
		21.9	97	2	ML	SANDY SILT - grey and brown
10	10				SM	SILTY SAND - fine, light brown and grey
		20.5	88	3		
					SP	SAND - fine, light brown and grey
5	15	37.4	84	2	ML	SANDY SILT - brownish-grey

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 40

DATE DRILLED: July 28, 1981
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION (ft.)	DEPTH (ft.)	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15		5.6	108	3	SM
	5	26.7	84	2	ML
		11.6	89	3	SM
10					SP
	10	5.1	93	2	SM
5					
	15	32.4	85	2	

ELEVATION 18.1

SILTY SAND - fine, brown
 SANDY SILT - greyish-brown
 SILTY SAND - fine, greyish-brown
 SAND - fine, light grey and brown
 SILTY SAND - fine, grey and brown

Some Clayey Silt

NOTE: Water not encountered. Caving from 8' to 10' (to 2½' in diameter)..

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

DATE 6/28/81 DR VJHN U.E. 1.0 W.P. CHKO

BORING 41

DATE DRILLED: December 21, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

ELEVATION 18.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft. - kips / ft.)	SAMPLE LOC.	DESCRIPTION
18.4	0						1" Oil Surface
		6.6	112	6		SM	FILL - SILTY SAND - fine, light brown
15		11.2	88	3		SM	SILTY SAND - fine, light brown
	5	9.4	101	2			
		15.3	91	3			
10						ML	SANDY SILT - light grey
	10	15.0	95	5			
5		15.7	102	5			
15						SM	SILTY SAND - fine, brown
0							
20		6.1	100	8		SP	SAND - fine, light brown
-5							
25		7.7	102	6			

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.41a

BORING 41 (CONTINUED)

DATE DRILLED: December 21, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
-10	30	29.7	88	5		ML
-15	35	22.5	87	6		
-20	40	37.9	86	4		ML
-25	45	19.4	104	6		SP

SANDY SILT - light grey

CLAYEY SILT - light grey

SAND - fine, grey

NOTE: Water seepage encountered at 43'.
 Water level measured at 40½' 10 minutes after completion of drilling.
 Caving and sloughing below 42'.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 42

DATE DRILLED: December 20, 1982
 EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION 19.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft. - kips / ft.)	SAMPLE LOC.
15			19.0	96	2	SM
	5		6.3	95	3	ML
			5.3	99	5	SM
10			3.0	94	4	SP
			5.7	98	5	
	15					
0			6.0	94	5	
	20					
-5			8.8	103	6	
	25					
-10			5.8	96	6	
	30					
-15		88				
	35		14.2	104	8	
-20						
40						

1/2" Oil Surface
 FILL - SILTY SAND and SAND - fine, pieces asphalt, shells and gravel, grey and brown
 SANDY SILT - greyish-brown
 SILTY SAND - fine, greyish-brown

SAND - fine, light grey

Layer of Silty Sand

Few gravel

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.42a

BORING 42 (CONTINUED)

DATE DRILLED: December 20, 1982

EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lb./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
40						ML
-25						SP
45		23.3	96	6		
-30						
50		89				
-35						CL
55		21.3	106	6		
-40						SP
60		22.3	104	20		
-45						
65		19.8	110	20		
-50						ML
70		25.8	100	9		
-55						ML
75		24.6	103	7		
-60						SM
80		17.5	116	8		

SANDY SILT - dark grey

SAND - fine grey

Lenses of Silt

SILTY CLAY - grey

SAND - fine, grey

SANDY SILT - grey and brown

CLAYEY SILT - grey and brown

SILTY SAND - fine, few gravel, grey

NOTE: Drilling mud used in drilling process. Water level not established. Installed 2" PVC pipe to 79'. Annular space outside of pipe backfilled with gravel.

LOG OF BORING

BORING 43

DATE DRILLED: December 6, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 17.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC	DESCRIPTION
15		5.3	98	13		ML	SANDY SILT - light brown
		2.9	99	5		SM	SILTY SAND - fine, light grey
5		1.7	105	13			Sandier
10		2.0	102	13			
10		2.5	92	6			
5							
15		21.2	106	5		ML	SANDY SILT - grey
0							
20		14.8	114	6			
-5							
25		9.4	124	19		SM	SILTY SAND - fine, few gravel, petroleum odor, grey and brown
-10						SP	SAND - fine, few gravel, petroleum odor, grey
30		4.5	116	20			
-15							
35		4.1	96	11			About 10% gravel
-20						SM	SILTY SAND - fine, few gravel, grey
40		23.0	94	9		SP	SAND - fine, grey

NOTE: Water encountered at 39'. Water level measured at 39½' 10 minutes after completion of drilling. Caving from 6' to 15' (to 3' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 44

DATE DRILLED: December 21, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

ELEVATION 21.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.
20			8.7	109	6	SM
	5		8.7	114	8	
15			8.0	94	3	SM
			5.6	103	5	SP
10			4.7	98	8	
	15		8.3	94	5	
5						SM
0	20		7.8	98	6	
25						

1" Oil Surface
 FILL - SILTY SAND - fine, pieces of asphalt, few shells, mottled brown
 Petroleum odor, black

SILTY SAND - fine, light brown

SAND - fine, light grey

SILTY SAND - fine, light brown

NOTE: Water not encountered. Caving below 8' (to 3½' in diameter).

LOG OF BORING

BORING 45

DATE DRILLED: December 22, 1982

EQUIPMENT USED: 17"-Diameter Bucket

ELEVATION 18.3

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15	6.6	111	5				ML
5	19.6	93	24				ML
10	24.8	97	11				SM
10	16.9	105	16				
5	17.2	102	8				
15	12.5	119	13				
0							
20	5.6	99	14				

FILL - SANDY SILT - some Clay, few cobbles, mottled brown

CLAYEY SILT - grey

SILTY SAND - fine, light grey

Large amount of Silt

Small amount of Silt

NOTE: Water not encountered.
No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.45

BORING 46

DATE DRILLED: December 22, 1982

EQUIPMENT USED: 17"-Diameter Bucket

ELEVATION 18.3

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
18.3	0					SC	1" Oil Surface
	0	14.1	116	5		ML	FILL - CLAYEY SAND - fine, reddish-brown
	5	23.0	98	5		ML	FILL - CLAYEY SILT - mottled brown
	10	18.0	105	18		ML	CLAYEY SILT - greyish-brown
	10	15.5	111	14		SM	SILTY SAND - fine, grey Large amount of Silt
	15	3.0	102	16			
	15	8.6	111	22			
	20	4.8	106	18			
	25						

NOTE: Water not encountered.
Slight raveling below 15' (to 2' in diameter).

LOG OF BORING

BORING 47

DATE DRILLED: December 21, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD PEN. TEST	MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	ELEVATION	22.5
									1" Oil Surface
		12.4	104	10			SM		FILL - SILTY SAND - fine, pieces of asphalt, some shells, mottled brown
		8.7	104	6					Petroleum odor, dark brown
20									
	5	8.4	92	2			SM		SILTY SAND - fine, light brown
		9.7	101	3			SP		SAND - fine, light grey and brown
15									
	10	6.2	98	3			SM		SILTY SAND - fine, light grey and brown
							SP		SAND - fine, light grey
10									
	15	3.4	92	6					
5									
									Layer of Silty Sand
	20	7.1	94	6					

NOTE: Water not encountered.
 Caving from 15' to 19'
 (to 3' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.47

BORING 48

DATE DRILLED: December 3, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 13.9

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - lbs/ft)	SAMPLE LOC.	DESCRIPTION
13.9	0						SM SILTY SAND - fine, grey
	5	8.2	99	3			Light grey
	10	25.6	92	2			
	15	17.3	84	3			
	20	6.1	90	3			
	25	28.3	96	<1		ML	SANDY SILT - some Clay, grey
	30	13.8	113	8		SM	SILTY SAND - fine, light grey
	35						Few gravel
	40	26.9	97	6			

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.48

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BORING 49

DATE DRILLED: December 20, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft)	SAMPLE LOC.	DESCRIPTION
19.3						SM	SILTY SAND - fine, light brown
		7.3	77	< 1		SP	SAND - fine, few roots, brown
15	5	3.4	88	< 1		ML	SANDY SILT - greyish-brown
		34.3	88	< 1			
		25.1	94	3		SM	SILTY SAND - fine, greyish-brown
10	10						
		10.6	104	3			
5	15						
		9.2	100	5			
0	20						Layer of Clayey Silt, traces of organic matter Light brown
		15.2	74	2			
-5	25						

NOTE: Water not encountered.
 Caving from 2' to 5' and 18' to 19' (to 3' in diameter).

LOG OF BORING

BORING 50

DATE DRILLED: December 17, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.	DESCRIPTION
			4.3	88	1	SM	SILTY SAND - fine, light brown
	5	26.1	86	2		SP	SAND - fine, light brown Few lenses of Silt
		28.6	85	2		ML	SANDY SILT - some Clay, grey
	10	18.5	105	2			
		14.5	105	2		SM	SILTY SAND - fine, light brown
	15	4.8	96	5		SP	SAND - fine, light brown
	20	49.1	74	2		CL	SILTY CLAY - grey
-5	25						

NOTE: Water not encountered.
 No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.50

BORING 5I

DATE DRILLED: December 17, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
20						SM	SILTY SAND - fine, light brown
		7.6	88	2			
		33.5	83	<1		ML	SANDY SILT - light grey and brown
15	5	24.8	94	1			
		11.1	87	2		SM	SILTY SAND - fine, light grey and brown
10	10	12.0	104	3			
5	15	14.3	102	6			
20		36.6	84	2		ML	CLAYEY SILT - grey

NOTE: Water not encountered.
Caving from 2' to 3'
and 12' to 16' (to 3'
in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.51

BORING 52

DATE DRILLED: December 17, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips/ft)	SAMPLE LOC.	DESCRIPTION
20			17.6	87	2	SM	SILTY SAND - fine, light brown
	5		5.3	87	2		
15			7.7	89	2	ML	SANDY SILT - light grey
			2.4	87	3	SP	SAND - fine, light brown
10	10		4.0	98	3		
5	15		4.8	93	6		
0	20		15.5	103	3	SM	SILTY SAND - fine, brown
25							

NOTE: Water not encountered. Caving from 7' to 12' (to 4' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 53

DATE DRILLED: December 2, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 20.4

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC
20			13.2	93	2	SM
			15.7	89	2	ML
15	5		26.5	93	3	
			25.4	94	3	
10	10		17.6	110	5	SM
5	15		9.0	110	10	
20			30.0	92	5	

SILTY SAND - fine, greyish-brown

SANDY SILT - light brown

SILTY SAND - fine, greyish-brown

Large amount of Silt

NOTE: Water not encountered. No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 54

DATE DRILLED: December 2, 1982

EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 20.9

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC	
20						SM	SILTY SAND - fine, greyish-brown
		18.3	89	2			
	5	26.8	76	2			Large amount of Silt
15		30.3	90	3			
		5.3	90	3		ML	SANDY SILT - grey
10							
10		15.8	86	2		SM	SILTY SAND - fine, light brown
						ML	SANDY SILT - light grey
5							
5		19.5	96	5		SM	SILTY SAND - fine, light grey
							Large amount of Silt
0		30.1	91	5			
25							

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 55

DATE DRILLED: December 2, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 20.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-kips/ft)	SAMPLE LOC	
20		14.8	112	3			SM FILL - SILTY SAND - fine, pieces of wood, paper and metal, mottled brown
		14.1	112	8			
15	5	10.7	121	10			SM SILTY SAND - fine, brown
		4.2	110	6			
10	10	22.0	101	6			ML SANDY SILT - some Clay, grey
5	15	14.4	111	11			SM SILTY SAND - fine, light grey
20		11.7	103	6			

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.55

BORING 56

DATE DRILLED: December 2, 1982

EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION . 21.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.
20						SM
		20.2	90	2		
	5	8.6	88	3		ML
15		17.9	87	3		ML
		26.7	89	3		
10						
10		19.0	109	6		SM
	15	7.9	111	10		
5						
20		7.2	91	5		
0						
25						

SILTY SAND - fine, grey

SANDY SILT - grey

CLAYEY SILT - grey

SILTY SAND - fine, grey

Large amount of Silt

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 57

DATE DRILLED: December 3, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 21.8

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD PEN TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft.)	DRIVE ENERGY (ft - tips/ft)	SAMPLE LOC.	DESCRIPTION
20			4.8	90	3	SM	SILTY SAND - fine, some roots, light grey
	5		16.6	90	2		
15			24.4	92	3		Lenses of Silt
			34.1	85	2		
10						ML	SANDY SILT - grey
10			21.2	105	2		
15						SM	SILTY SAND - fine, light grey
5			8.5	111	13		
20							Large amount of Silt
0			8.5	96	5		
25							

NOTE: Water not encountered. No caving.

LOG OF BORING

BORING 58

DATE DRILLED: December 2, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 21.8

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
20		3.9	90	2			SM	SILTY SAND - fine, large amount of Silt, light brown
		28.9	85	2				
5		13.5	89	2			ML	SANDY SILT - light grey
15		8.4	85	2				Large amount of Sand
10		25.3	97	2				Less Sand
10								
15		11.0	108	5			SM	SILTY SAND - fine, light grey
5								
20		13.0	94	2				

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.58

BORING 59

DATE DRILLED: December 16, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD PEN TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
20		16.6	88	1		ML	SANDY SILT - large amount of Sand, brown Less Sand, some alkali, dark grey Light grey
5		28.9	79	1			
15		17.0	81	2			
10		34.1	80	2			
10		23.6	100	2			
15		14.5	100	5		SM	SILTY SAND - fine, light grey and brown
5						ML	SANDY SILT - light grey and brown
20		38.7	86	2			

NOTE: Water not encountered.
No caving.

LOG OF BORING

BORING 60

DATE DRILLED: December 16, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20			22.8	81	<1	SM	SILTY SAND - fine, brown
	5		21.9	82	2	ML	SANDY SILT - grey and brown
15			37.2	84	1		
			37.3	82	1		
10			50.9	70	<1	ML	CLAYEY SILT - traces of organic matter, grey and brown
	5		22.8	94	3	SM	SILTY SAND - fine, light grey and brown
						ML	SANDY SILT - light grey and brown
0	20		20.3	107	3	SM	SILTY SAND - fine, grey and brown
25							

NOTE: Water not encountered.
No caving.

LOG OF BORING

BORING 6I

DATE DRILLED: December 3, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 17.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
15		3.8	97	5		SM	SILTY SAND - fine, light grey Large amount of Silt
5		6.7	89	5		ML	SANDY SILT - light brown
10		3.0	97	8			
		3.7	92	8		SM	SILTY SAND - fine, light brown
10							
5		4.8	91	3			Large amount of Silt
15		17.7	91	5			
0							
20							Sandier
		7.7	104	10			
-5							
25							

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.61

BORING 62

DATE DRILLED: December 20, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 18.9

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
18.9	0	6.2	94	8		
15	5	9.6	96	3		SM
10	10	3.0	92	3		SP
5	15	3.3	90	3		
0	20	4.9	95	3		
		11.5	93	<1		

SILTY SAND - fine, brown

 SAND - fine, light grey

NOTE: Water not encountered.
 Slight caving below 5'
 (to 3' in diameter).

LOG OF BORING

BORING 63

DATE DRILLED: December 20, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	ELEVATION	DESCRIPTION
							19.2	
		11.8	84	<1		ML		SANDY SILT - large amount of Sand, light brown
15	5	18.3	101	2				
		26.0	90	2				
		7.9	95	3		SM		SILTY SAND - fine, light brown
10	10	16.7	93	3				Large amount of Silt
5	15	11.8	96	5				
						ML		CLAYEY SILT - traces of organic matter, light grey
0	20	8.8	89	<1		SM		SILTY SAND - fine, light grey and brown

NOTE: Water not encountered.
 No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 64

DATE DRILLED: December 20, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft - kips/ft.)	SAMPLE LOC.	
19.7	0					SM	SILTY SAND - fine, light brown
	5	10.0	79	<1			
	5	24.6	77	2		ML	SANDY SILT - light brown
		16.9	92	3			
	10	14.8	109	3			
		10.9	98	3			
	15	14.6	98	6			Layer of Clayey Silt
	20	45.8	77	3		CL	SILTY CLAY - traces of organic matter, grey
-5	25						

NOTE: Water not encountered.
No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 65

DATE DRILLED: December 20, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 20.3

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD PEN TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips/ft.)	SAMPLE LOC.	DESCRIPTION
20			26.0	87	2	SM	SILTY SAND - fine, large amount of Silt, light brown
			21.3	86	2		
15	5		7.1	92	2		Sandier
			4.4	96	3		
10	10		15.4	108	2	ML	SANDY SILT - grey
						SM	SILTY SAND - fine, light grey and brown
5	15		10.3	102	6		
						ML	CLAYEY SILT - traces of organic matter, light grey
20			28.1	91	2		

NOTE: Water not encountered.
 No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 66

DATE DRILLED: December 17, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 21.1

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
20			9.2	99	2	SM	SILTY SAND - fine, brown
			24.8	82	<1		
15	5		26.2	90	3	ML	SANDY SILT - light greyish-brown
			17.6	91	2		
10	10		15.0	91	2	SM	SILTY SAND - fine, light brown
						ML	SANDY SILT - light grey and brown
5	15		15.4	105	5	SM	SILTY SAND - fine, large amount of Silt, light grey and brown
						ML	CLAYEY SILT - greyish-brown
20			32.8	92	2		

NOTE: Water not encountered.
No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.66

BORING 67

DATE DRILLED: December 3, 1982
EQUIPMENT USED: 20"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft - kips/ft)	SAMPLE LOC
20		9.9	102	3		SM
		8.7	89	2		
15	5	24.2	92	2		ML
		25.8	86	2		
10	10	22.7	92	3		
5	15	11.9	96	8		SM
20	20	10.9	87	5		

ELEVATION 21.1

SILTY SAND - fine, light grey

Siltier

SANDY SILT - grey

Large amount of Sand

SILTY SAND - fine, large amount of Silt, light grey

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 68

DATE DRILLED: December 3, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 21.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE % of dry wt	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft - wips / ft.)	SAMPLE LOC	DESCRIPTION
20		15.8	115	5		CL	FILL - SANDY CLAY - some gravel, mottled brown (LL=33, PI=17)
5		25.0	93	2		SM	SILTY SAND - fine, large amount of Silt, grey
15		16.8	87	2		ML	SANDY SILT - grey Some Clay
10		27.4	89	3			
10		38.2	81	1			
15		16.7	95	3			
5						SM	SILTY SAND - fine, light brown
20		4.8	104	5			
0							
25							

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.68

BORING 69

DATE DRILLED: December 2, 1982
 EQUIPMENT USED: 20"-Diameter Bucket

ELEVATION 21.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD PEN. TEST	MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips/ft)	SAMPLE LOC	DESCRIPTION
20		4.9	98	6		ML	SANDY SILT - light grey
							Less Sand
	5	20.2	89	3			
15		17.4	98	3			
		11.4	84	3			Large amount of Sand
10		24.5	97	3		ML	CLAYEY SILT - grey
10							
15		13.2	113	6		SM	SILTY SAND - fine, light grey
5							
20		9.4	96	6			

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 70

DATE DRILLED: December 16, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	
		16.5	87	2		SM	SILTY SAND - fine, large amount of silt, brown
20		9.5	80	<1		ML	SANDY SILT - brown
	5	18.8	86	2			
15		24.4	77	2			Dark grey
	10	28.3	88	<1			
10		13.9	110	3		SM	SILTY SAND - fine, light grey and brown
	15						
5							
	20	25.9	96	3			

NOTE: Water not encountered.
 No caving.

LOG OF BORING

BORING 71

DATE DRILLED: December 16, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
		10.5	89	2			ML SANDY SILT - brown
20		39.5	68	<1			
	5	20.2	81	2			
15		38.2	79	2			
	10	26.7	92	<1			
10		11.6	105	3			SM SILTY SAND - fine, brown
	15						
5		17.0	95	5			ML SANDY SILT - light greyish-brown
	20						
0		19.2	103	3			
	25						
-5		22.5	100	5			Some cemented nodules
	30						

NOTE: Water not encountered.
Caving from 16' to 18'
(to 3' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 72

DATE DRILLED: December 16, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.	DESCRIPTION
								6" Sand and Gravel Surface
							SM	SILTY SAND - fine, large amount of Silt, brown
	5		13.6	79	2			
			24.9	97	1		ML	SANDY SILT - dark brown
			25.3	83	2		ML	CLAYEY SILT - dark brown
	10		32.7	88	2			
			20.0	87	3		SM	SILTY SAND - fine, large amount of Silt, light grey and brown
	15		41.7	80	<1		ML	CLAYEY SILT - dark greyish-brown
								Traces of organic matter
	20		32.5	92	3			
0								
25								

NOTE: Water not encountered.
 Caving from 10' to 12'
 (to 3½' in diameter).

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 73

DATE DRILLED: December 16, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
23.5	0					SM
20	5	24.8	84	<1		SM
15	10	33.1	84	<1		ML
10	15	23.6	93	2		ML
5	20	33.1	83	2		ML
0	25	26.4	94	1		ML
		13.2	108	6		SM
		43.6	79	2		ML

SILTY SAND - fine, light brown

SANDY SILT - grey and brown

SILTY SAND - fine, greyish-brown

CLAYEY SILT - grey and brown

NOTE: Water not encountered.
 No caving.

LOG OF BORING

BORING 74

DATE DRILLED: December 16, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 24.0

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
24.0	0					ML SANDY SILT - light brown
	5	24.9	81	<1		
	5	23.1	84	<1		
	10					
	15					

NOTE: Water not encountered.
 No caving.

LOG OF BORING

BORING 75

DATE DRILLED: December 16, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.6

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC.
23.6	0					
20	5	8.4	96	2		SM SILTY SAND - fine, brown
15	10	18.6	82	< 1		ML SANDY SILT - greyish-brown
10	15	23.9	89	2		

NOTE: Water not encountered.
No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 76

DATE DRILLED: December 16, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 23.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
		15.3	93	2		ML
20		17.3	85	2		
	5	18.4	80	2		
15						
	10					
10						
	15					

3" Sand and Gravel Surface
 SANDY SILT - brown

NOTE: Water not encountered.
 No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.76

BORING 77

DATE DRILLED: December 21, 1982

EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 17.8

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft. - kips / ft.)	SAMPLE LOC.
15		15.2	97	2		SM
	5	12.5	98	2		
10						
	10					
5						
15						

1" Oil Surface
 SILTY SAND - fine, few roots,
 large amount of Silt, brown

NOTE: Water not encountered.
 No caving.

LOG OF BORING

BORING 78

DATE DRILLED: December 23, 1982
 EQUIPMENT USED: 4"-Diameter Hand Auger

ELEVATION 19.3

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15	5	16.5	87	1		ML SM
10	10					
5	15					

SANDY SILT - light greyish-brown
 SILTY SAND - fine, light grey

NOTE: Water not encountered.
 No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 79

DATE DRILLED: December 23, 1982

EQUIPMENT USED: 4"-Diameter Hand Auger

ELEVATION 17.3

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15		6.9	95	1		ML SANDY SILT - light brown
	5					SM SILTY SAND - fine, brown
10						
	10					
5						
15						

NOTE: Water not encountered.
No caving.

LOG OF BORING

BORING 80

DATE DRILLED: December 23, 1982

EQUIPMENT USED: 4"-Diameter Hand Auger

ELEVATION 17.3

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft - kips/ft)	SAMPLE LOC.
15		9.4	93	2		ML
	5					
	10					
	5					
	15					

SANDY SILT - grey and brown

NOTE: Water not encountered.
No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.80

BORING 81

DATE DRILLED: December 23, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

ELEVATION 22.2

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft-kips/ft.)	SAMPLE LOC.
20		16.0	86	1		ML
		11.7	82	2		
5		31.8	89	3		
15		8.1	90	2		SM
10		16.3	89	2		ML
10		24.6	88	2		
5						
20		11.9	91	5		SM

SANDY SILT - brown

SILTY SAND - light brown

SANDY SILT - greyish-brown

SILTY SAND - fine, grey

NOTE: Water not encountered.
 No caving.

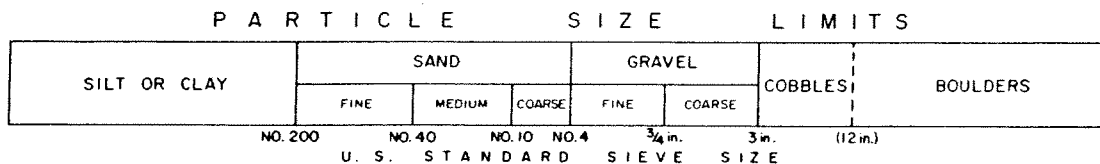
LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.81

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES	
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.	
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.	
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM	Silty gravels, gravel-sand-silt mixtures.	
			GC	Clayey gravels, gravel-sand-clay mixtures.	
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.	
			SP	Poorly graded sands or gravelly sands, little or no fines.	
		SANDS WITH FINES (Appreciable amt. of fines)	SM	Silty sands, sand-silt mixtures.	
			SC	Clayey sands, sand-clay mixtures.	
			SILTS AND CLAYS (Liquid limit LESS than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
SILTS AND CLAYS (Liquid limit GREATER than 50)	OL	Organic silts and organic silty clays of low plasticity.			
	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.			
	CH	Inorganic clays of high plasticity, fat clays.			
	OH	Organic clays of medium to high plasticity, organic silts.			
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.	

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

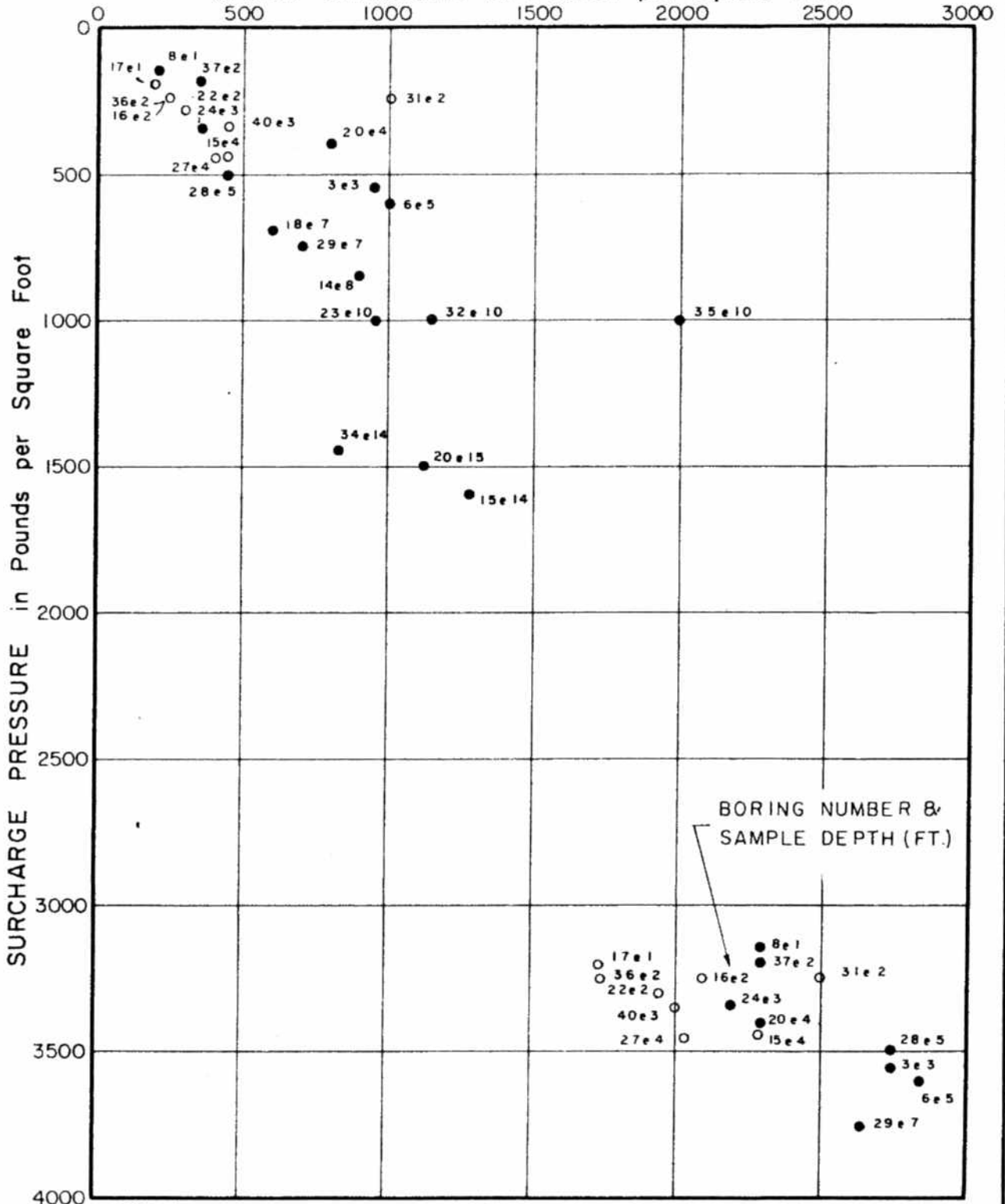


UNIFIED SOIL CLASSIFICATION SYSTEM

Reference:
 The Unified Soil Classification System, Corps of Engineers, U. S. Army Technical Memorandum No. 3-357, Vol. I, March, 1953. (Revised April, 1960)

LEROY CRANDALL AND ASSOCIATES

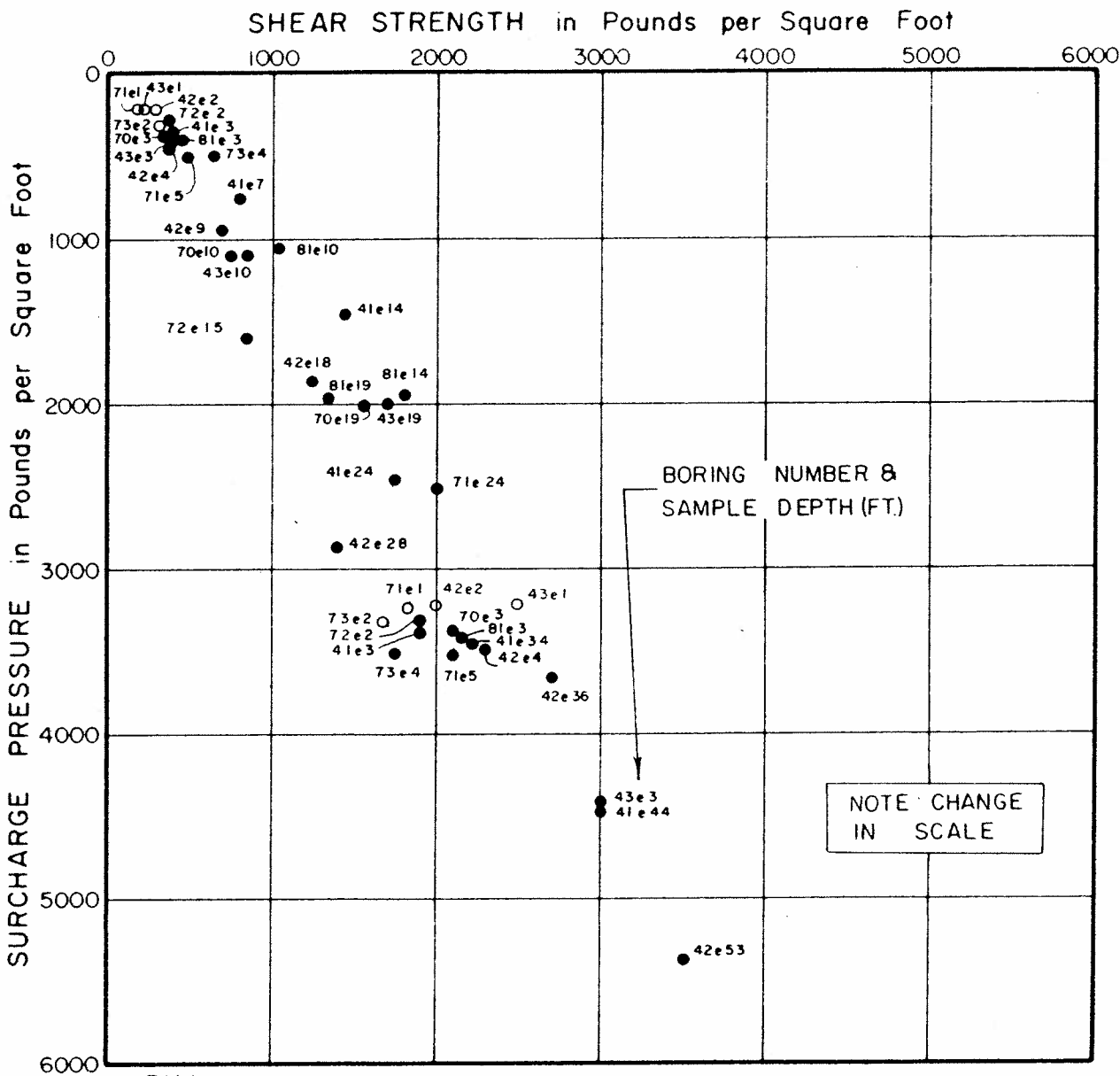
SHEAR STRENGTH in Pounds per Square Foot



KEY:
 ● Tests at field moisture content
 ○ Tests at increased moisture content

DIRECT SHEAR TEST DATA

LEROY CRANDALL & ASSOCIATES

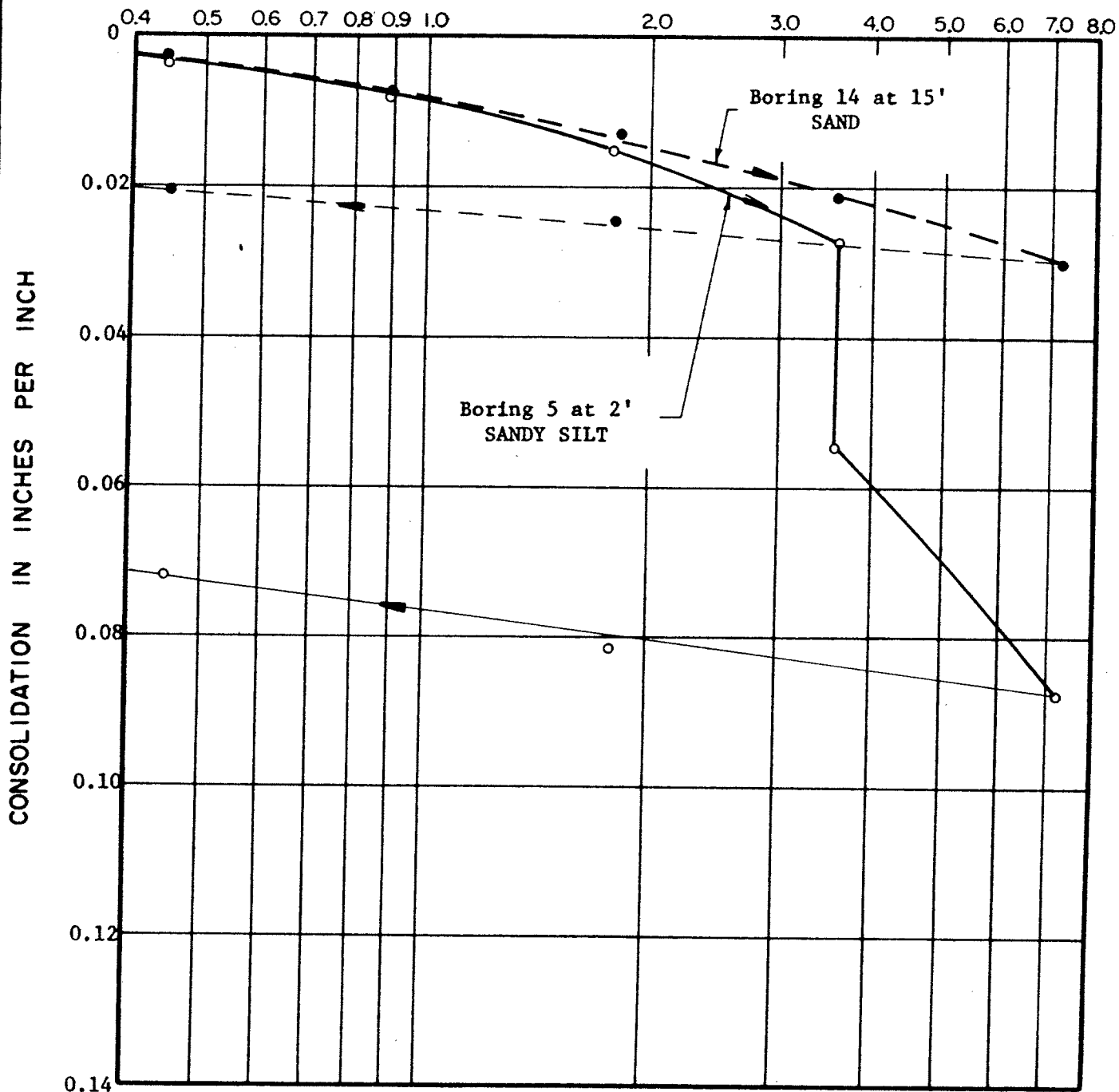


KEY:

- Tests at field moisture content
- Tests at increased moisture content

DIRECT SHEAR TEST DATA

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to sample from Boring 5 after consolidation under a load of 3.6 kips per square foot. The other sample tested at field moisture content.

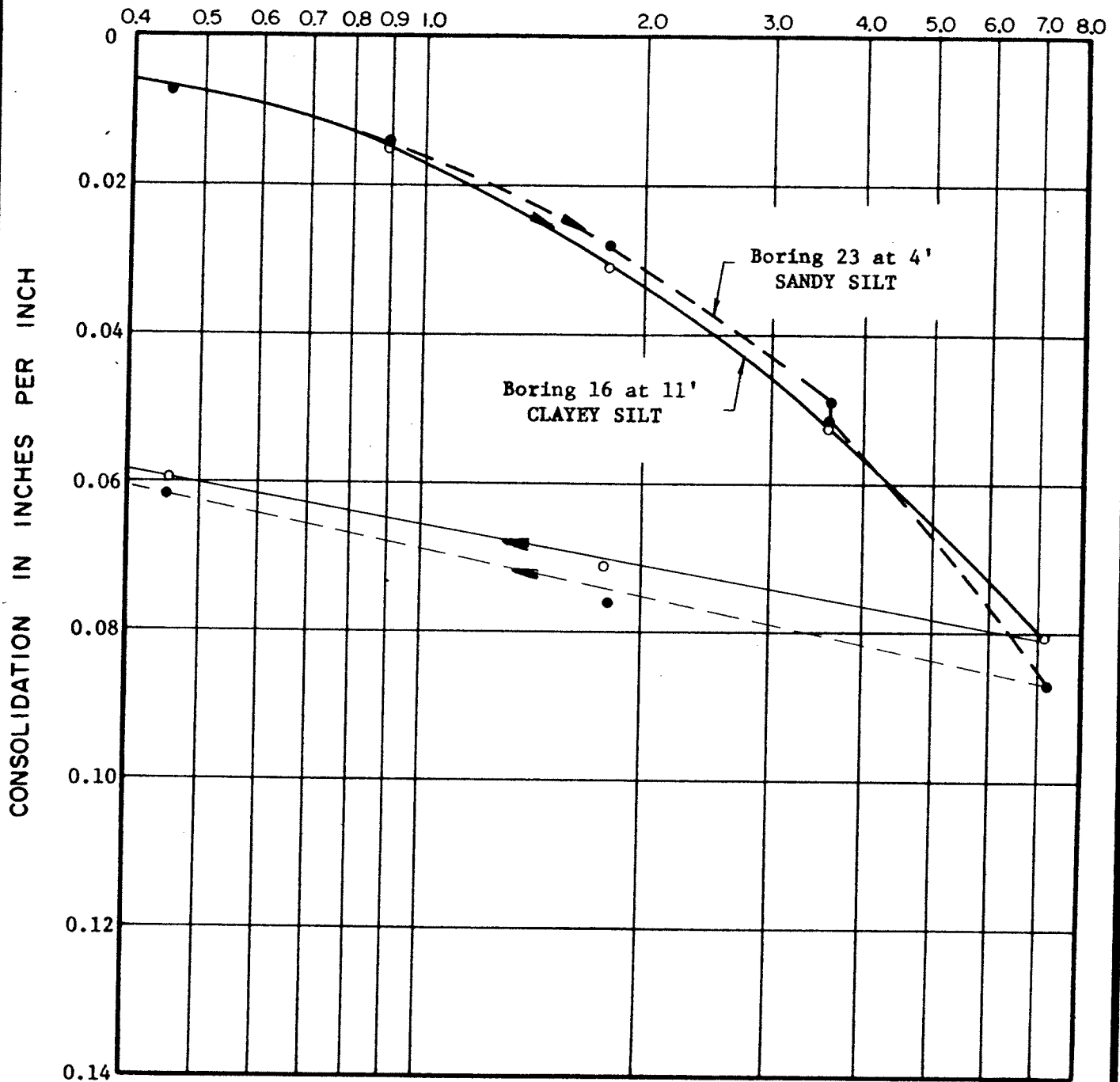
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.1

DATE 01/10/81 DR. JOHN O.E. W.P. CHKO
 JUNE 1979

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to sample from Boring 23 after consolidation under a load of 3.6 kips per square foot. The other sample tested at field moisture content.

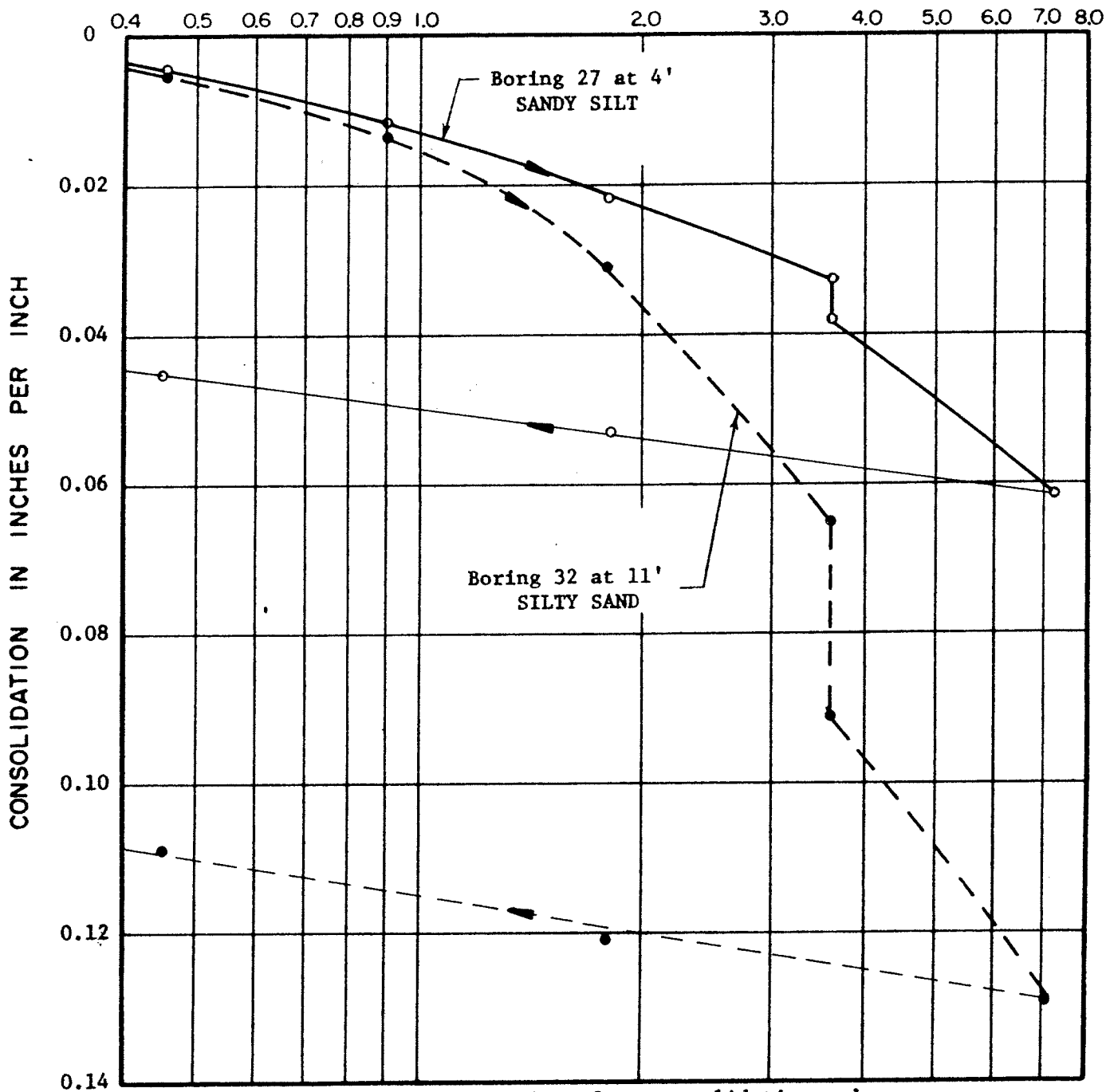
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.2

JOB A-81196 DATE 8/6/81 DR. JOHN O.E. DM W.P. FM CHKD

LOAD IN KIPS PER SQUARE FOOT



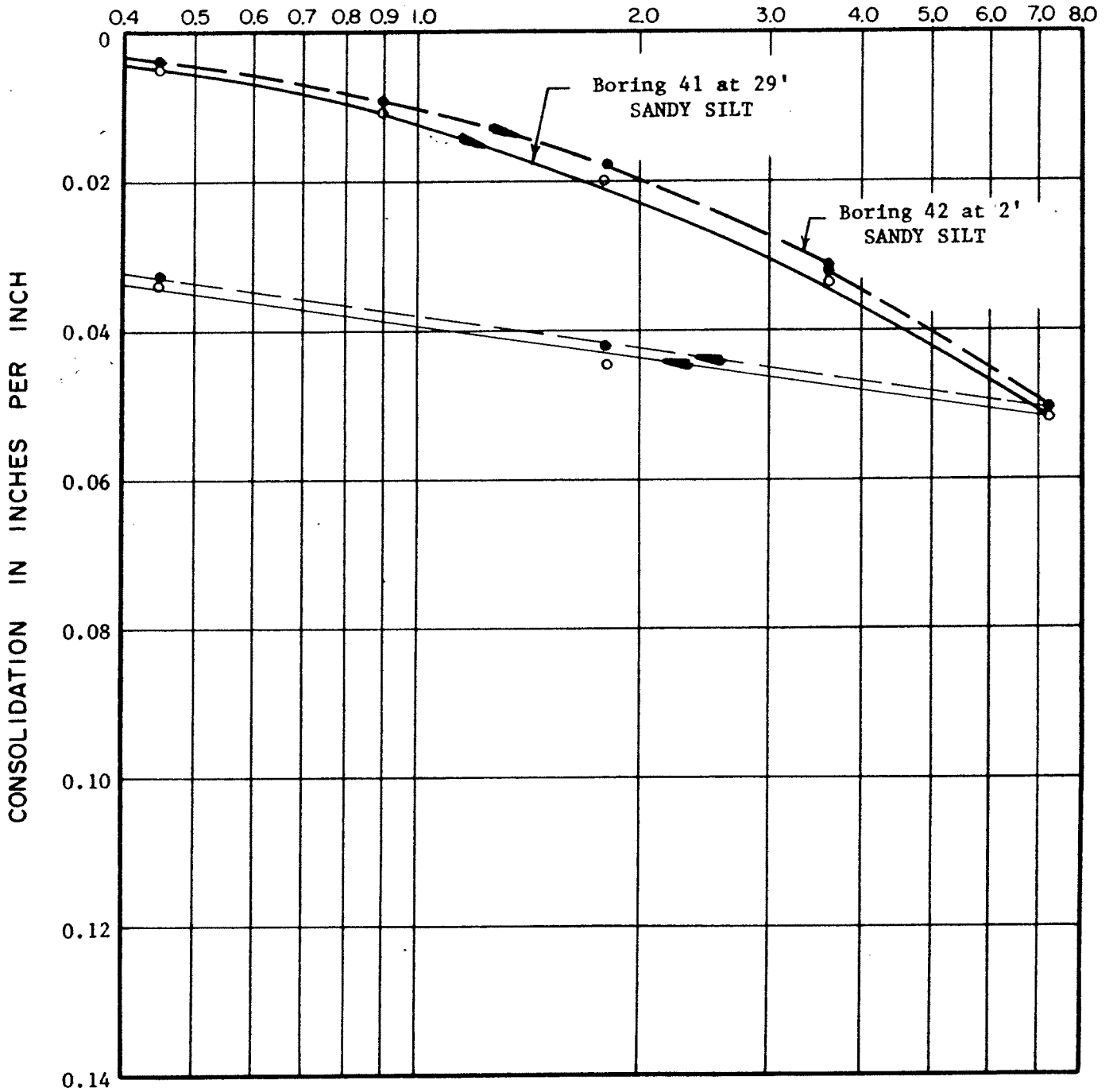
NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

JOB A-21156
 DATE 5/16/81
 DR. JOHN O.E.
 W.P. im
 CHKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to sample from Boring 42 after consolidation under a load of 3.6 kips per square foot. The other sample tested at field moisture content.

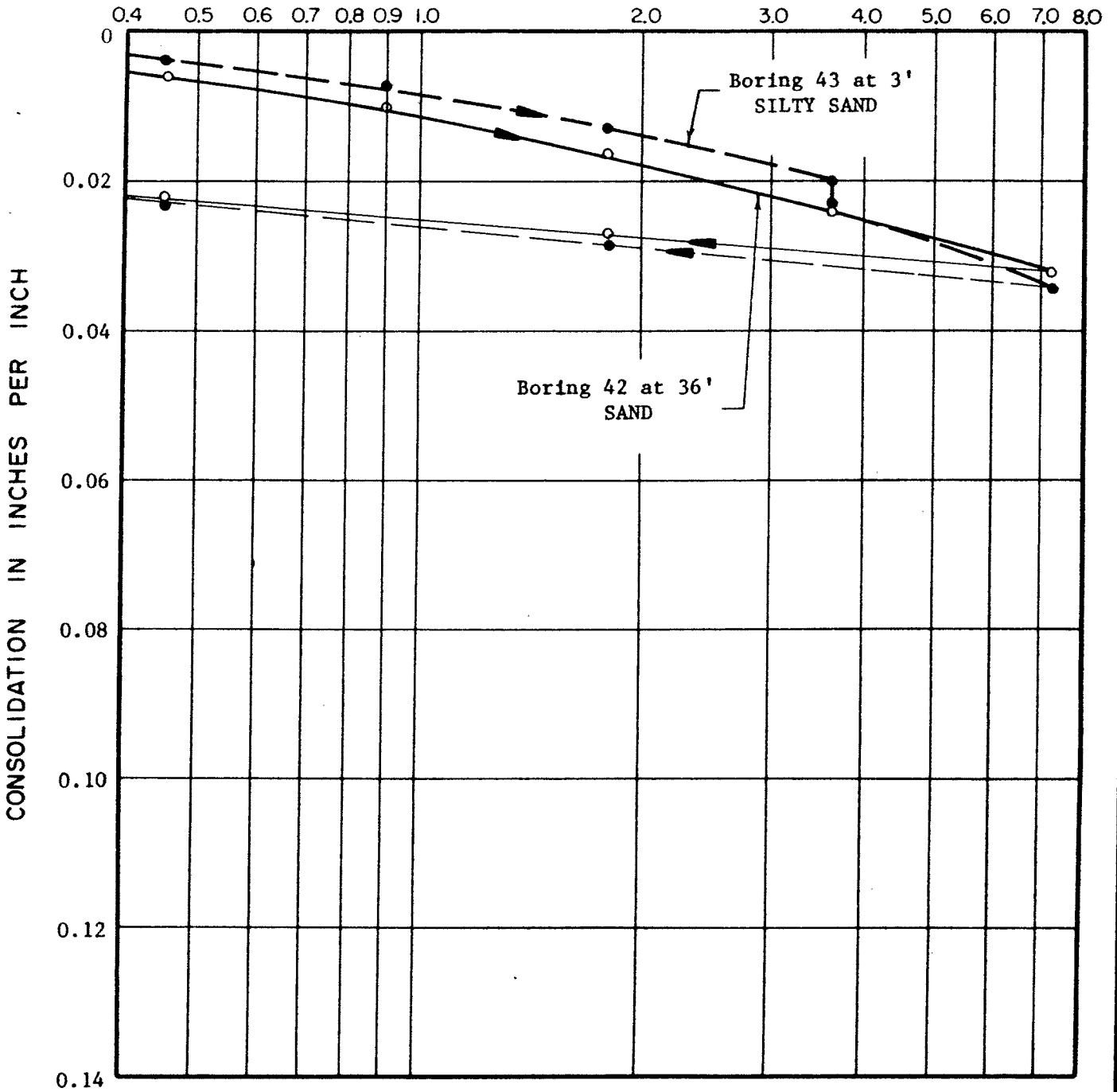
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.4

JOB A-82484 DATE 1/12/63 DR. JOHN U.E. W.P. K 08 UNNO

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to sample from Boring 43 after consolidation under a load of 3.6 kips per square foot. The other sample tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.5

CHKD

W.P.

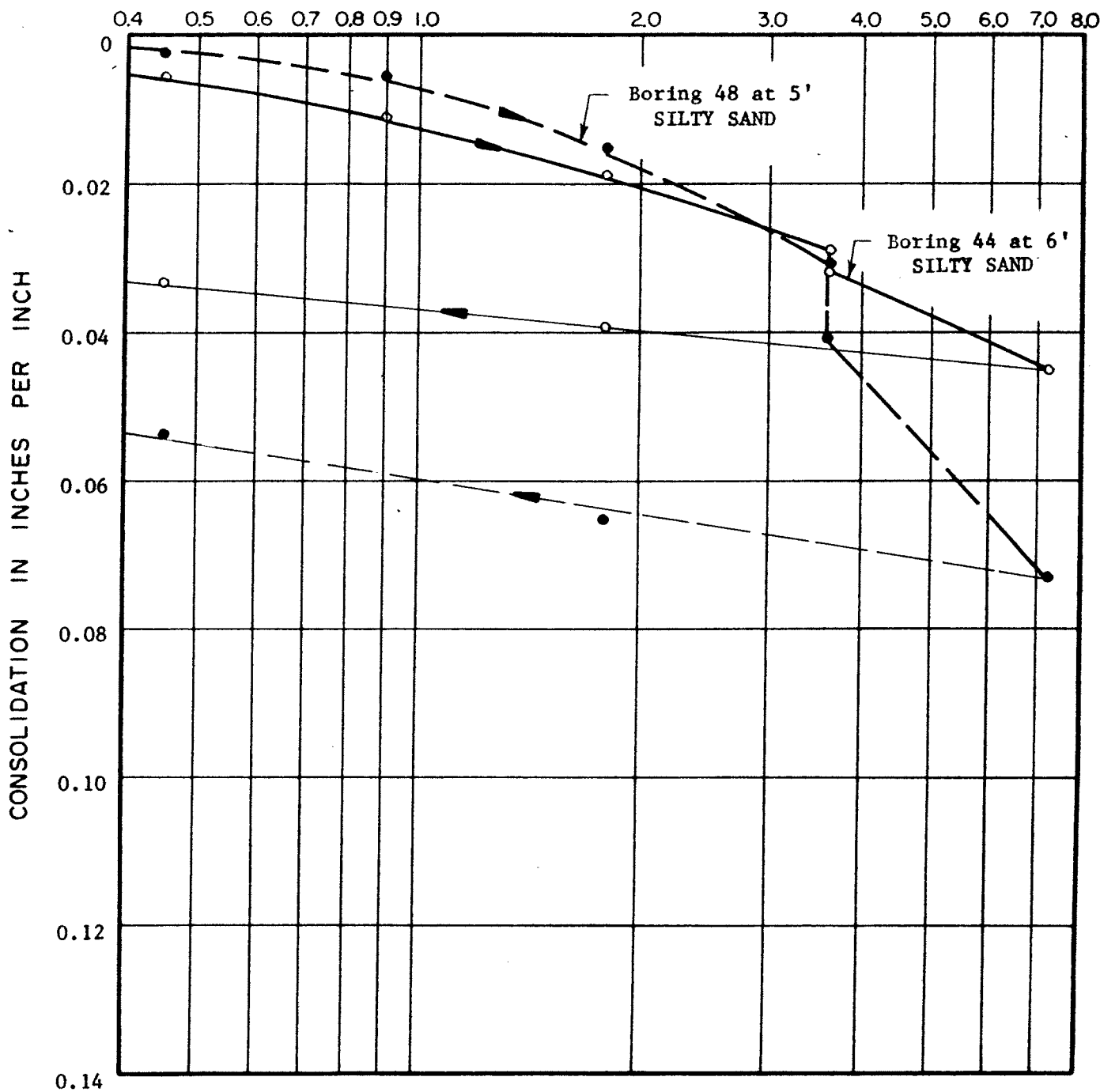
O.E.

DATE 1/12/83

JOB A-82284

DR. JOHN

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

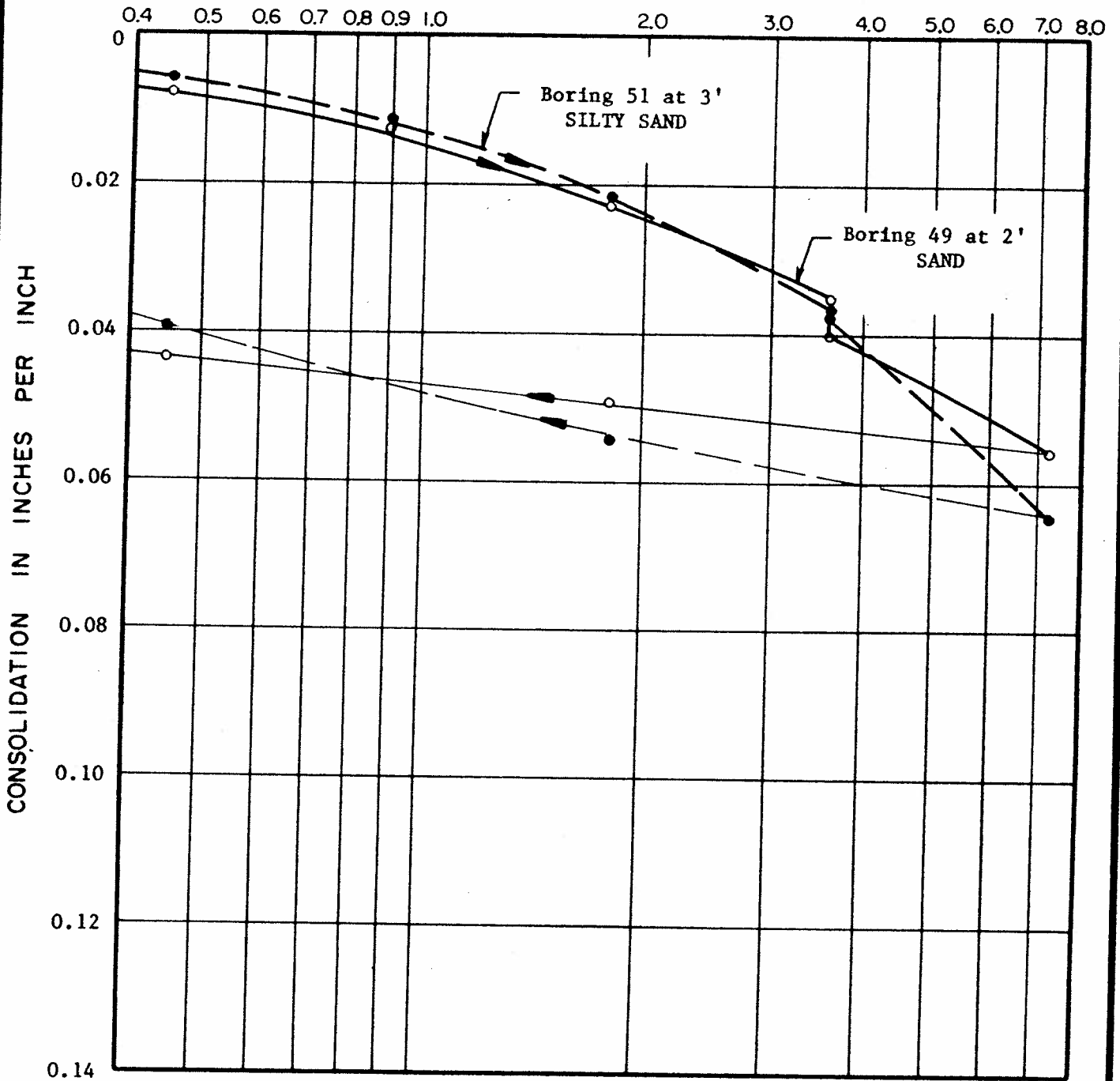
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.6

JOB A-82284 DATE 1/12/83 DR. JOHN O.E. W.P. CHKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

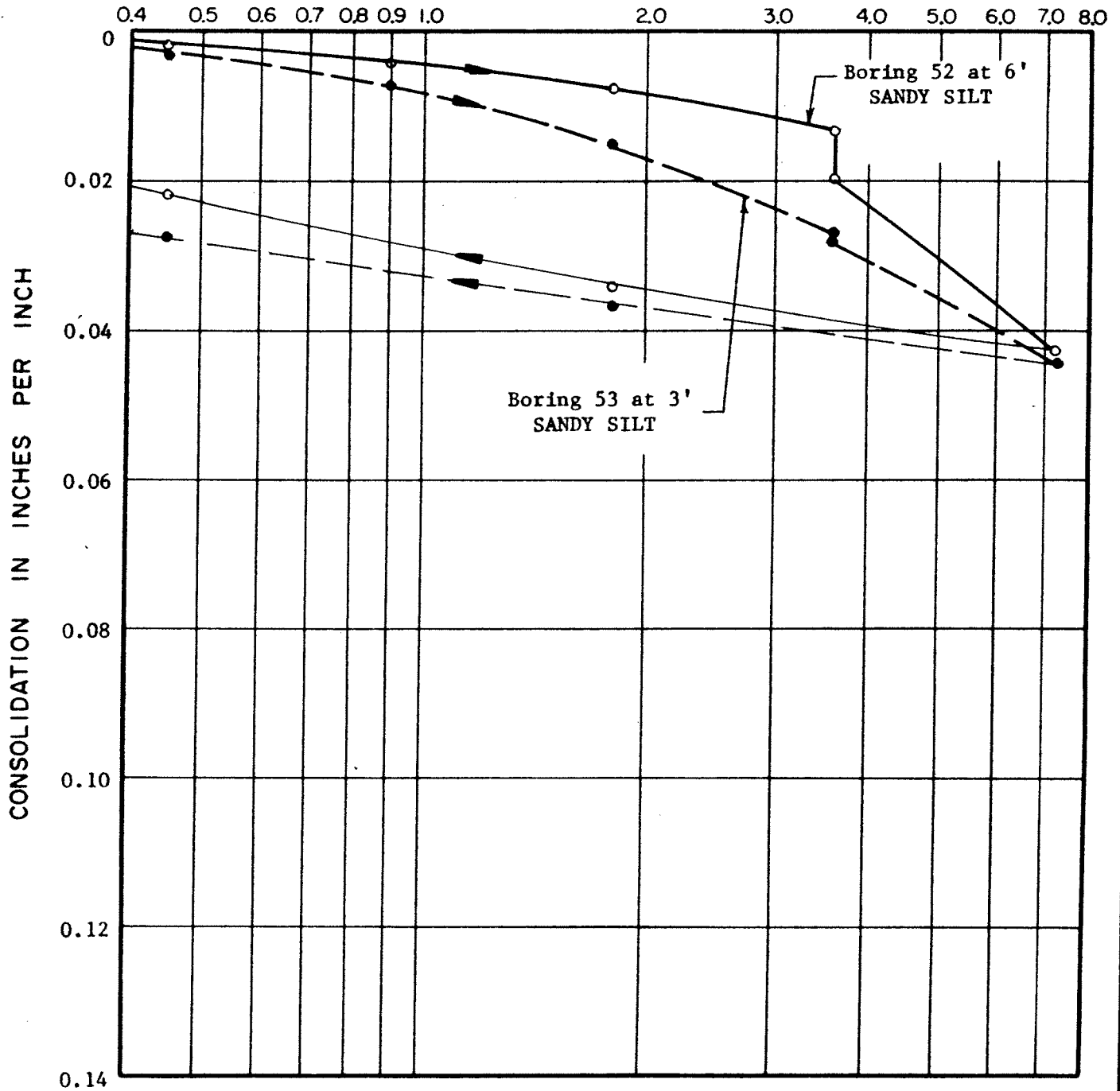
CONSOLIDATION TEST DATA

LEROY CRANDALL AND ASSOCIATES

PLATE A-4.7

JOB A-86654 DATE 1/12/83 DR. JOHN O.E. W.P. CKKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.8

CHKD

kg

W.P.

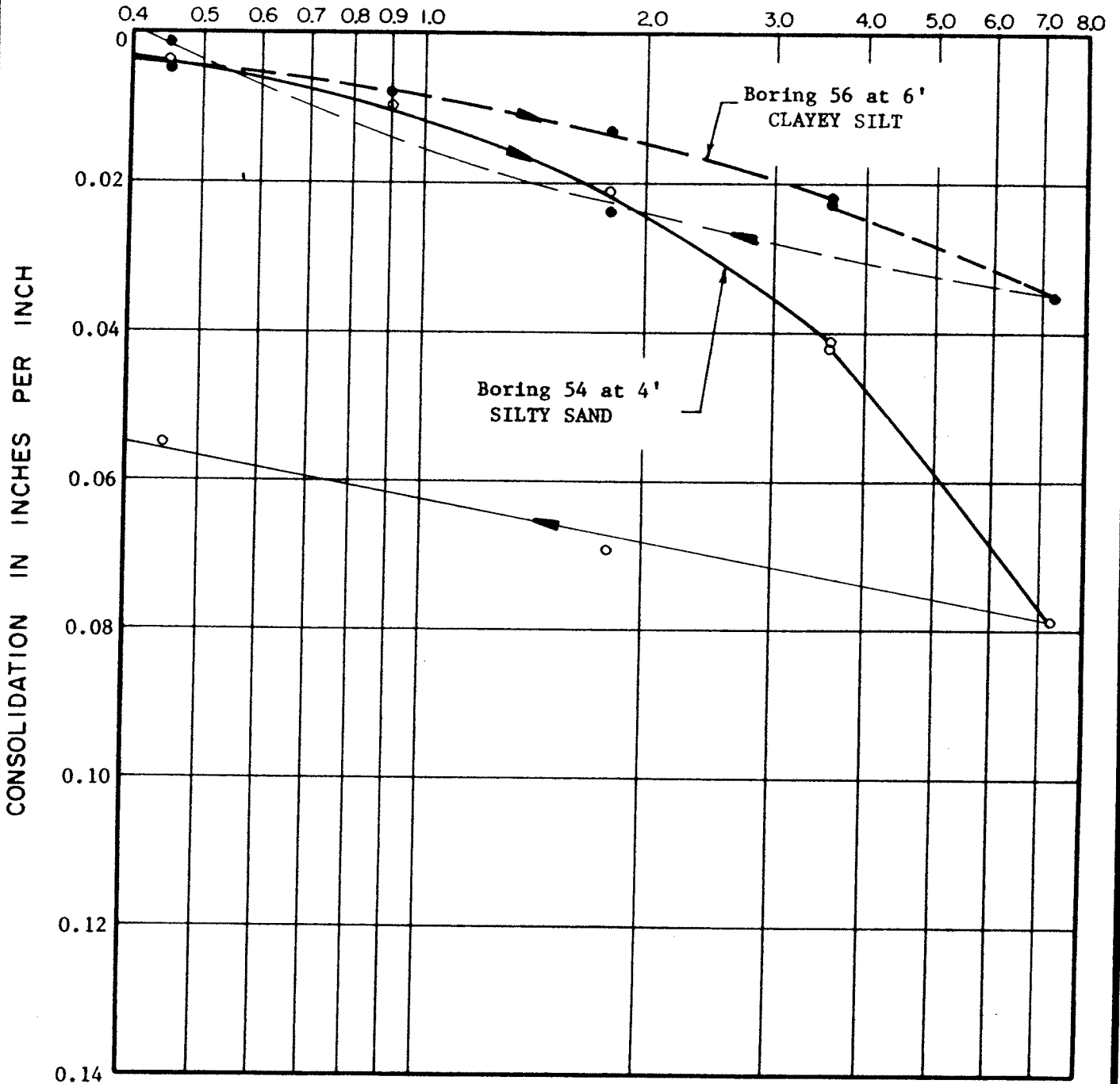
O.E.L.

DR. VJHN

DATE 1/12/63

JOB A-82604

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

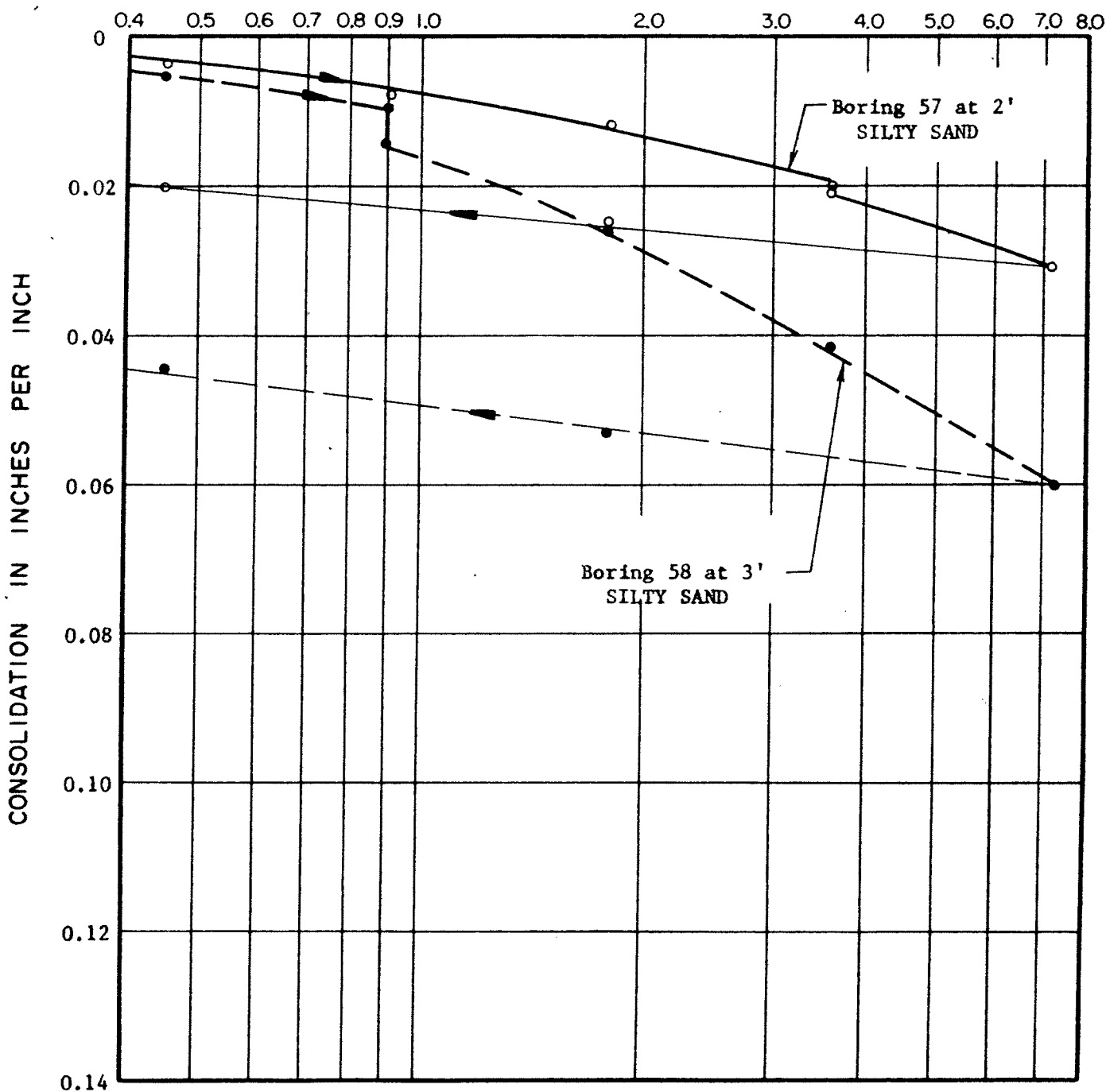
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.9

JOB A-82284 DATE 1/12/83 DR. JOHN O.E. W.P. CHKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples from Boring 57 and Boring 58 after consolidation under loads of 3.6 and 0.9 kips per square foot, respectively.

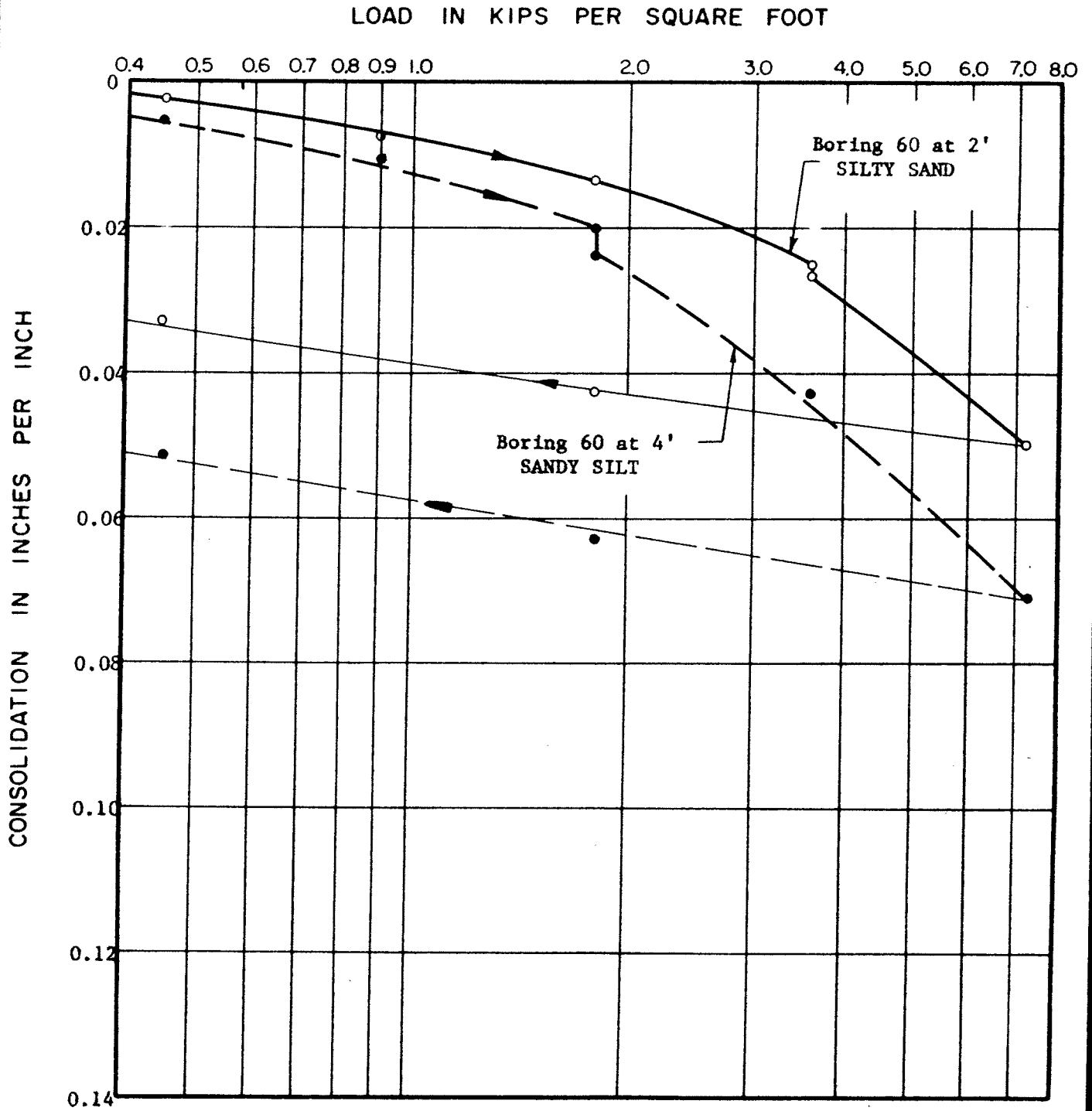
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.10

JOB A-82284 DATE 2/4/83 DR. JOHN O.E. W.P. CHKD

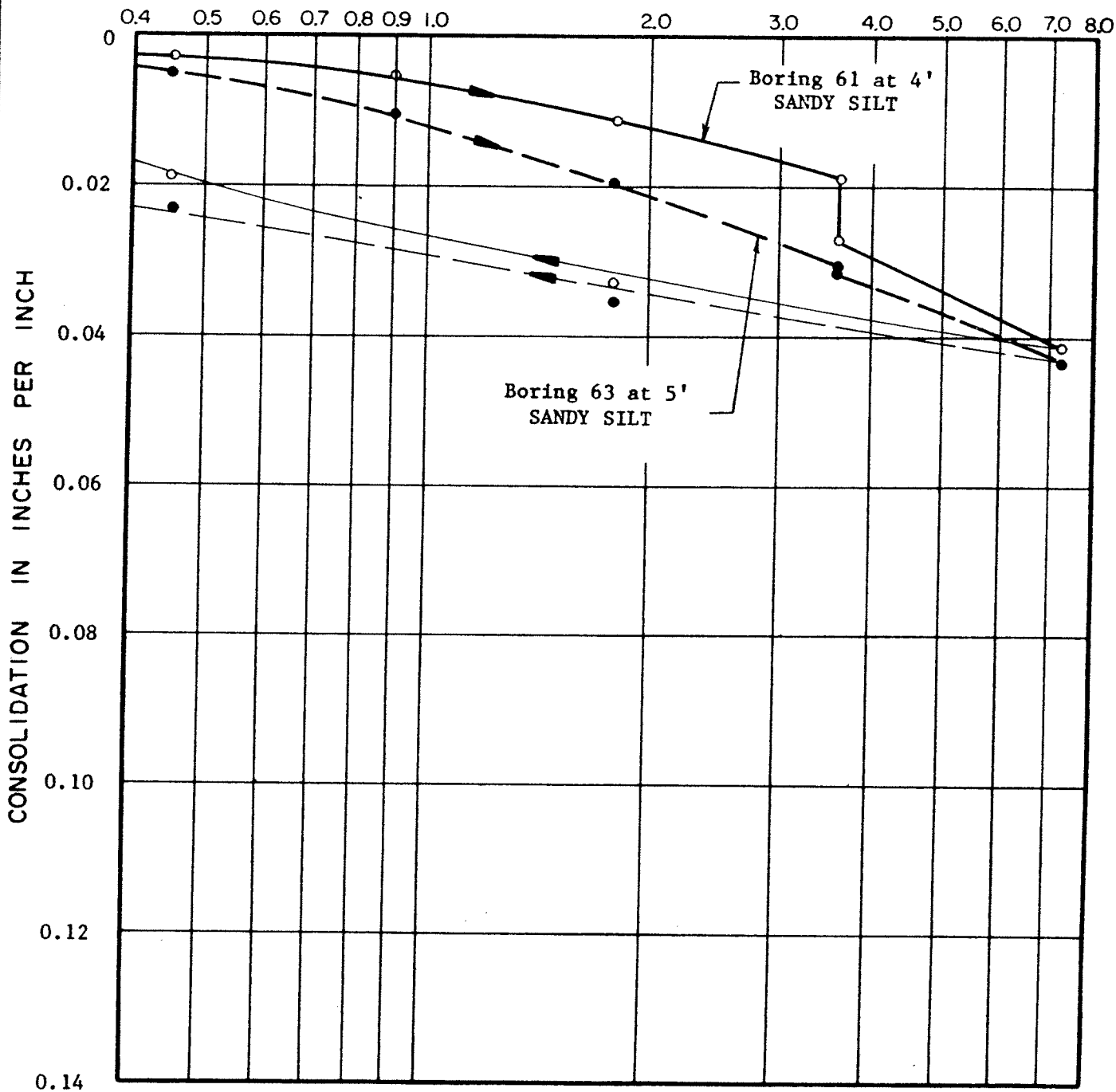
JOB A-82284 DATE 2/4/83 DR. JOHN O.E. W.P. CHKD



NOTE: Water added to samples from 2' and 4' after consolidation under loads of 3.6 and 1.8 kips per square foot, respectively.

CONSOLIDATION TEST DATA

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

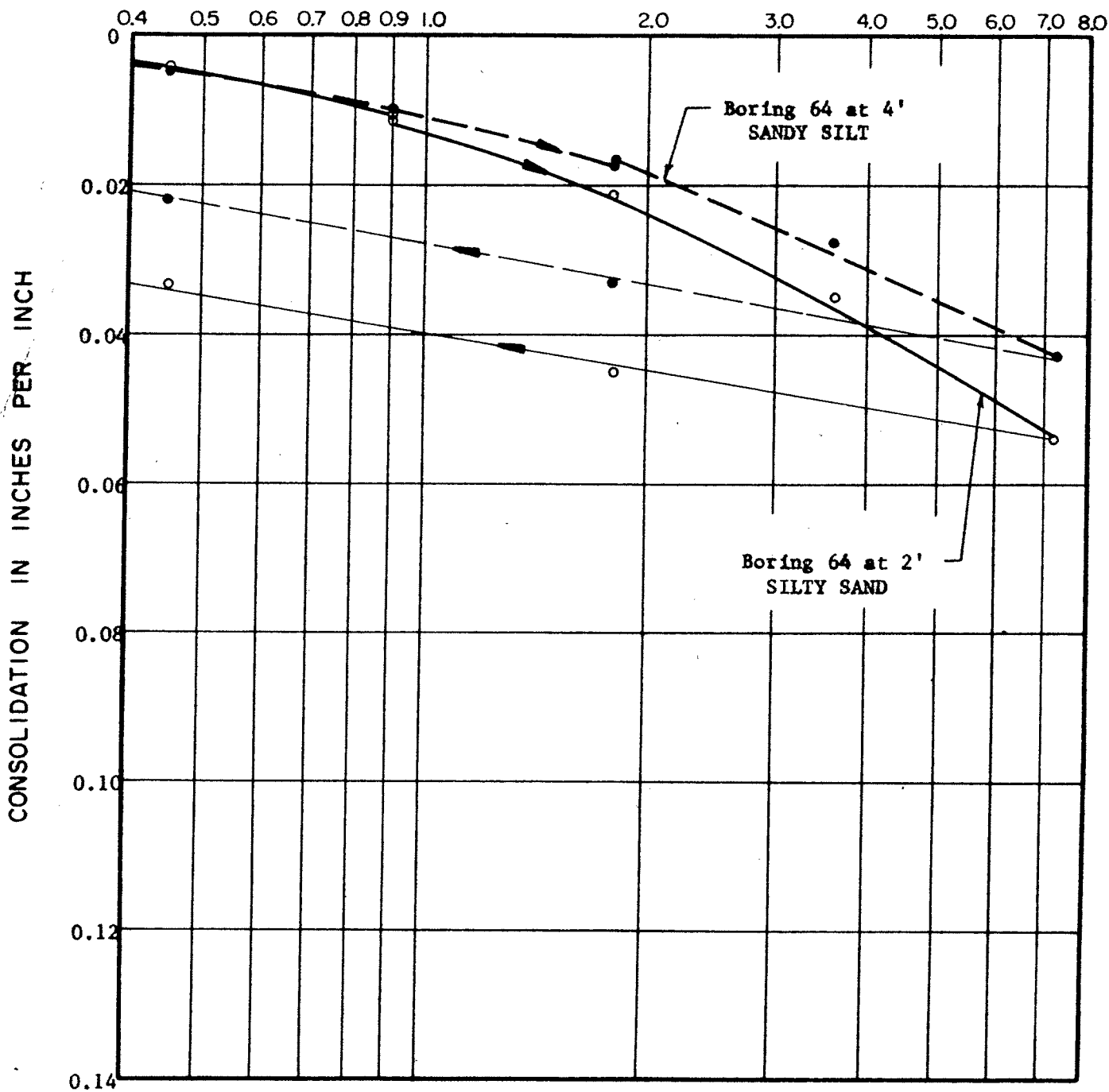
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.12

JOB A-82284 DATE 1/12/83 DR. JOHN O.E. W.P. CHKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Water added to samples from 2' and 4' after consolidation under loads of 0.9 and 1.8 kips per square foot, respectively.

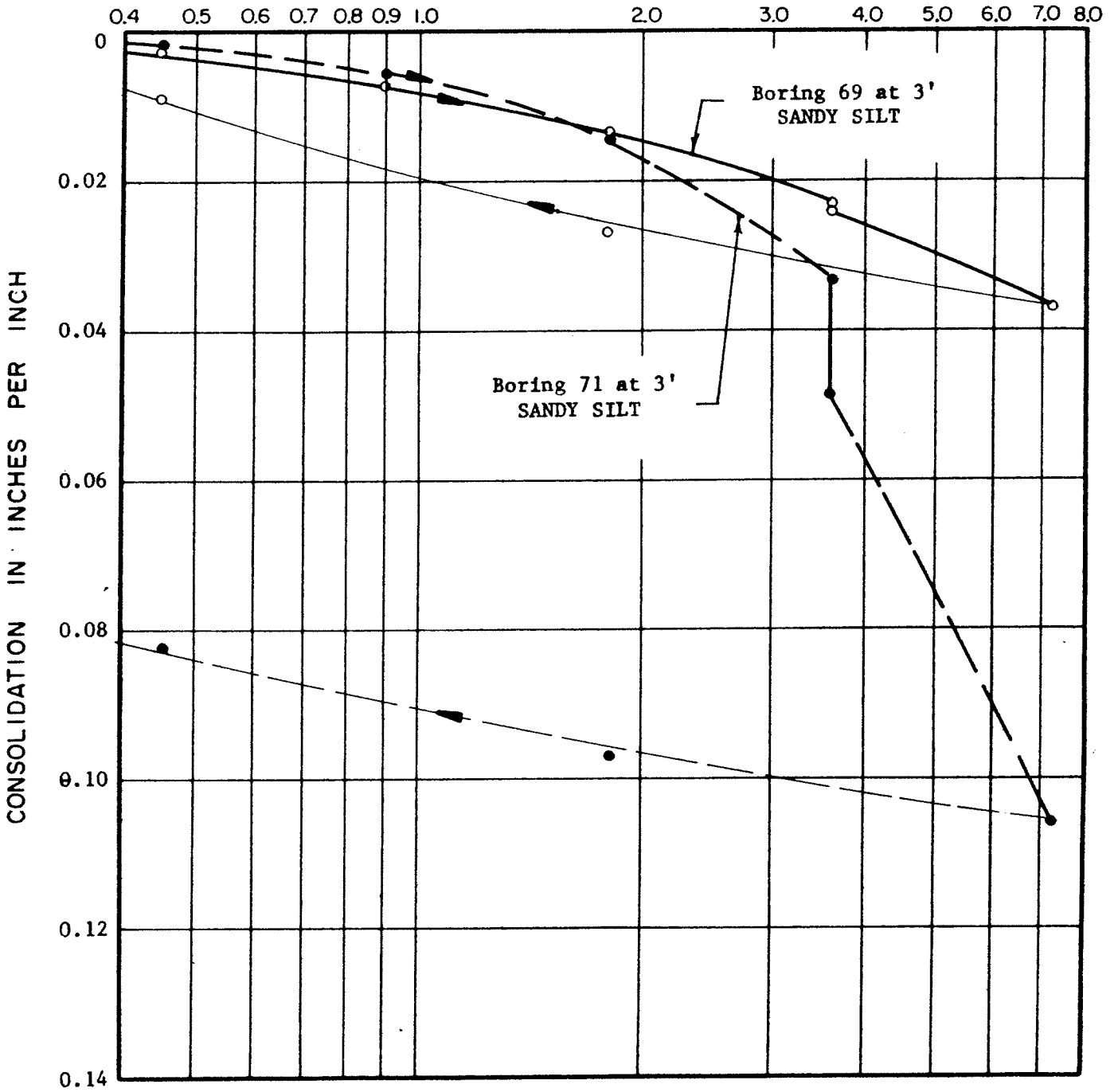
CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.13

JOB A-82284
 DATE 2/4/83
 DR. JOHN O.E.
 W.P.
 P8
 CMKD

LOAD IN KIPS PER SQUARE FOOT



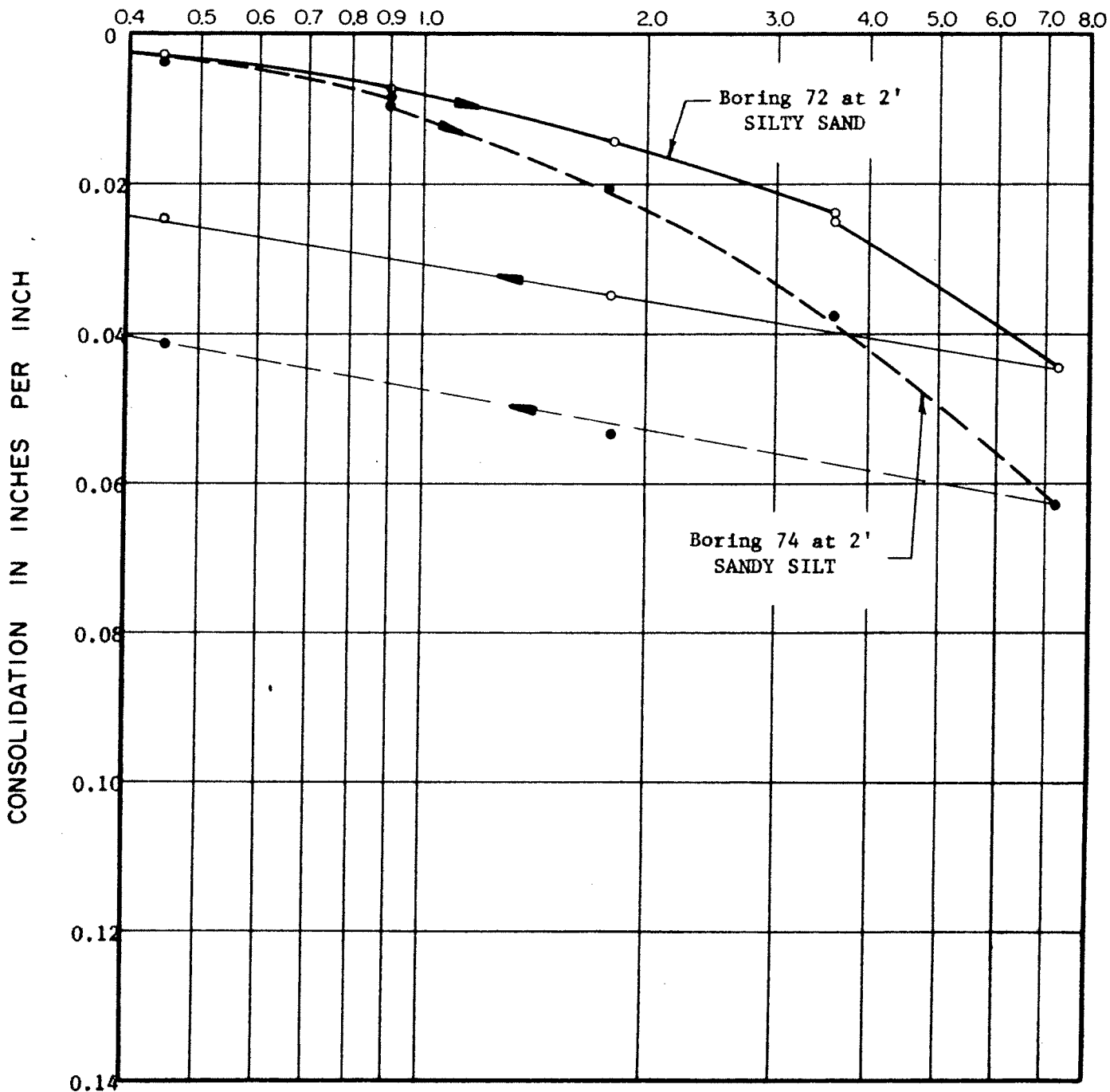
NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

CONSOLIDATION TEST DATA

LEROY CRANDALL AND ASSOCIATES

JOB # 82204 DATE 11/12/62 DR. WARD V.E. W.P. kg WIND

LOAD IN KIPS PER SQUARE FOOT



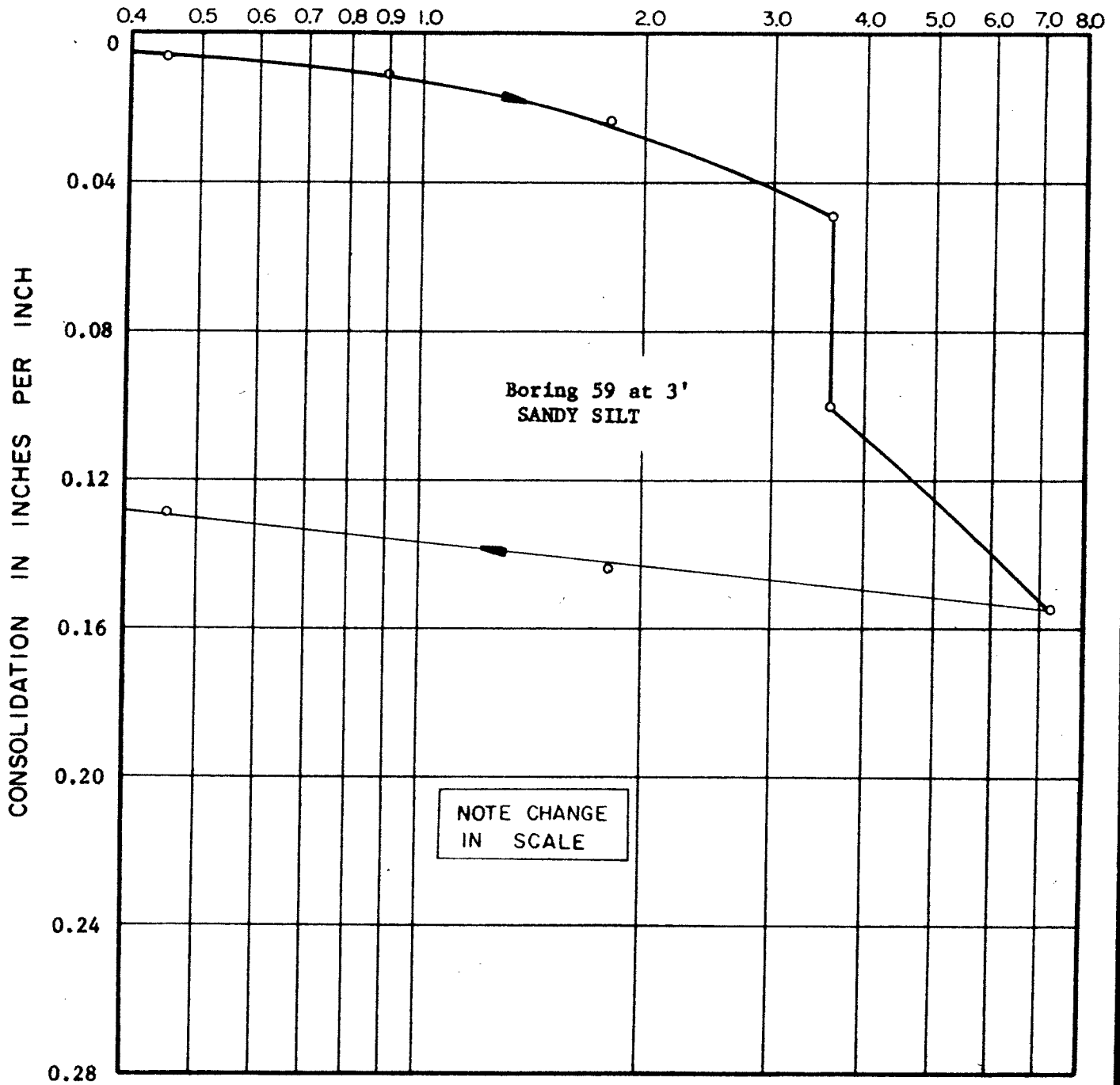
NOTE: Water added to samples from Boring 72 and Boring 74 after consolidation under loads of 3.6 and 0.9 kips per square foot, respectively.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

JOB A-82404 DATE 4/4/52 DR. JOHN U.E. W.P. 78 LMKD

LOAD IN KIPS PER SQUARE FOOT



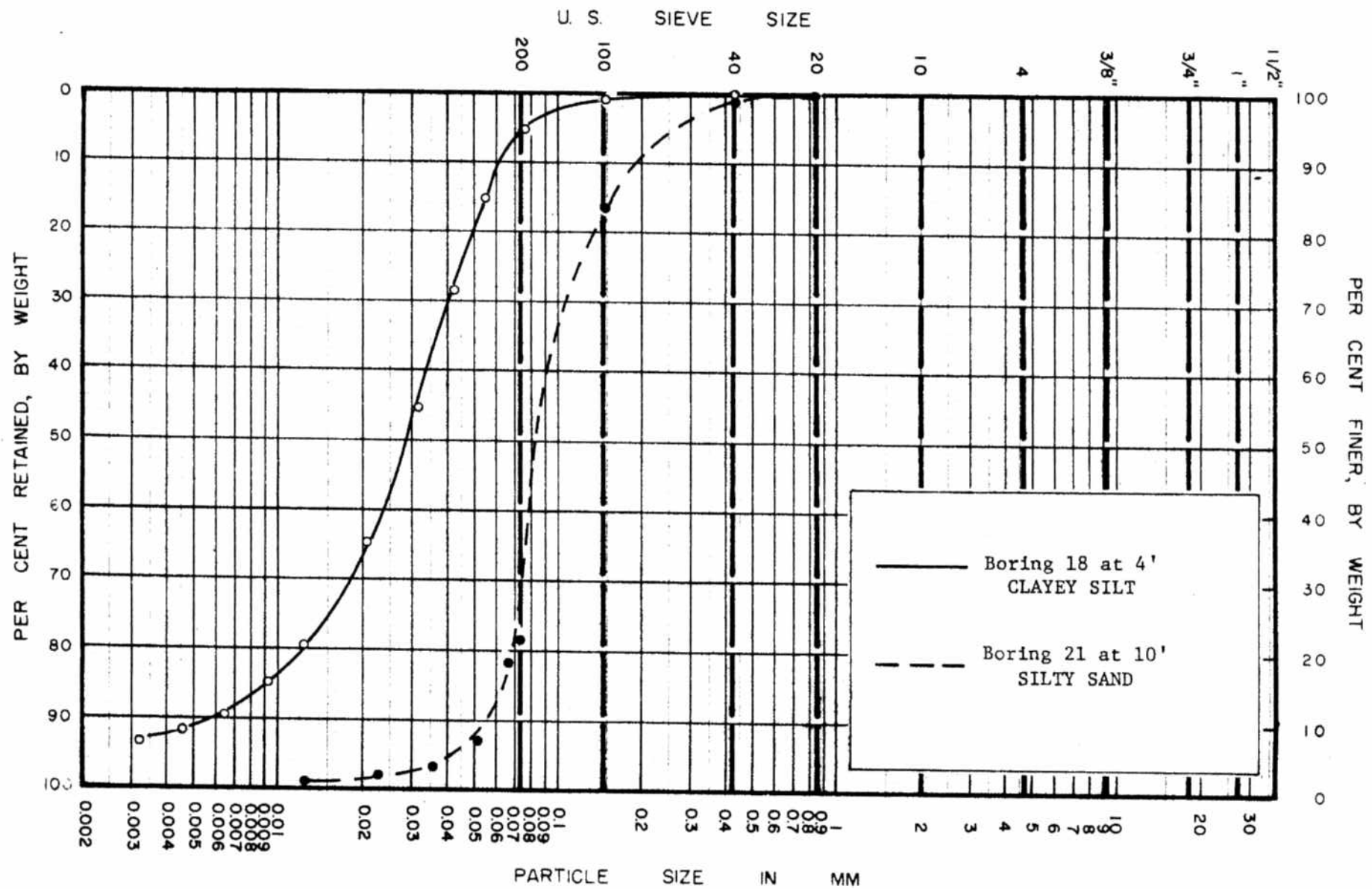
NOTE: Water added to sample after consolidation under a load of 1.8 kips per square foot.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

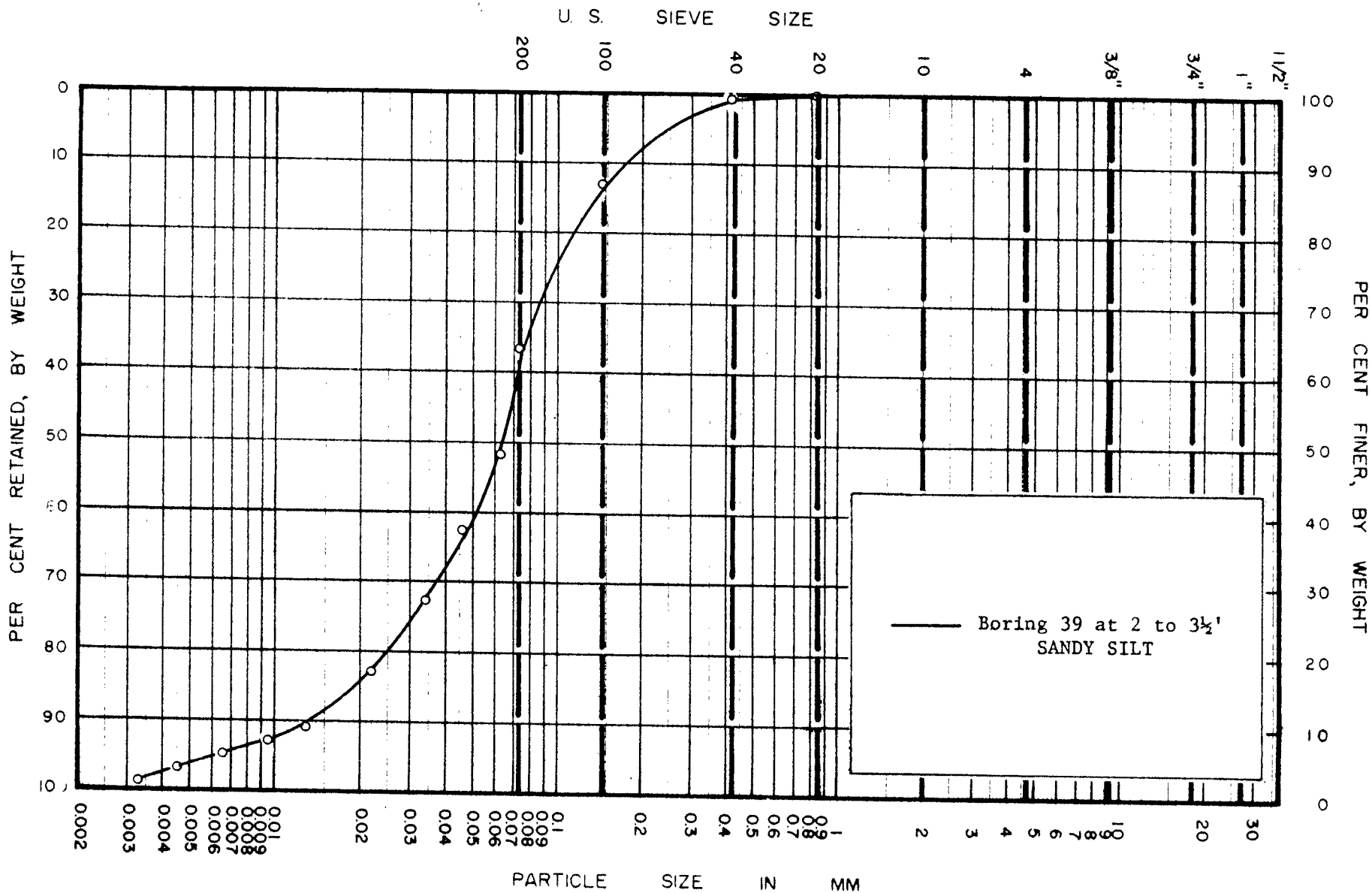
PLATE A-4.16

JOB A-82284 DATE 2/4/83 DR. JOHN O.E. W.P. CHKO



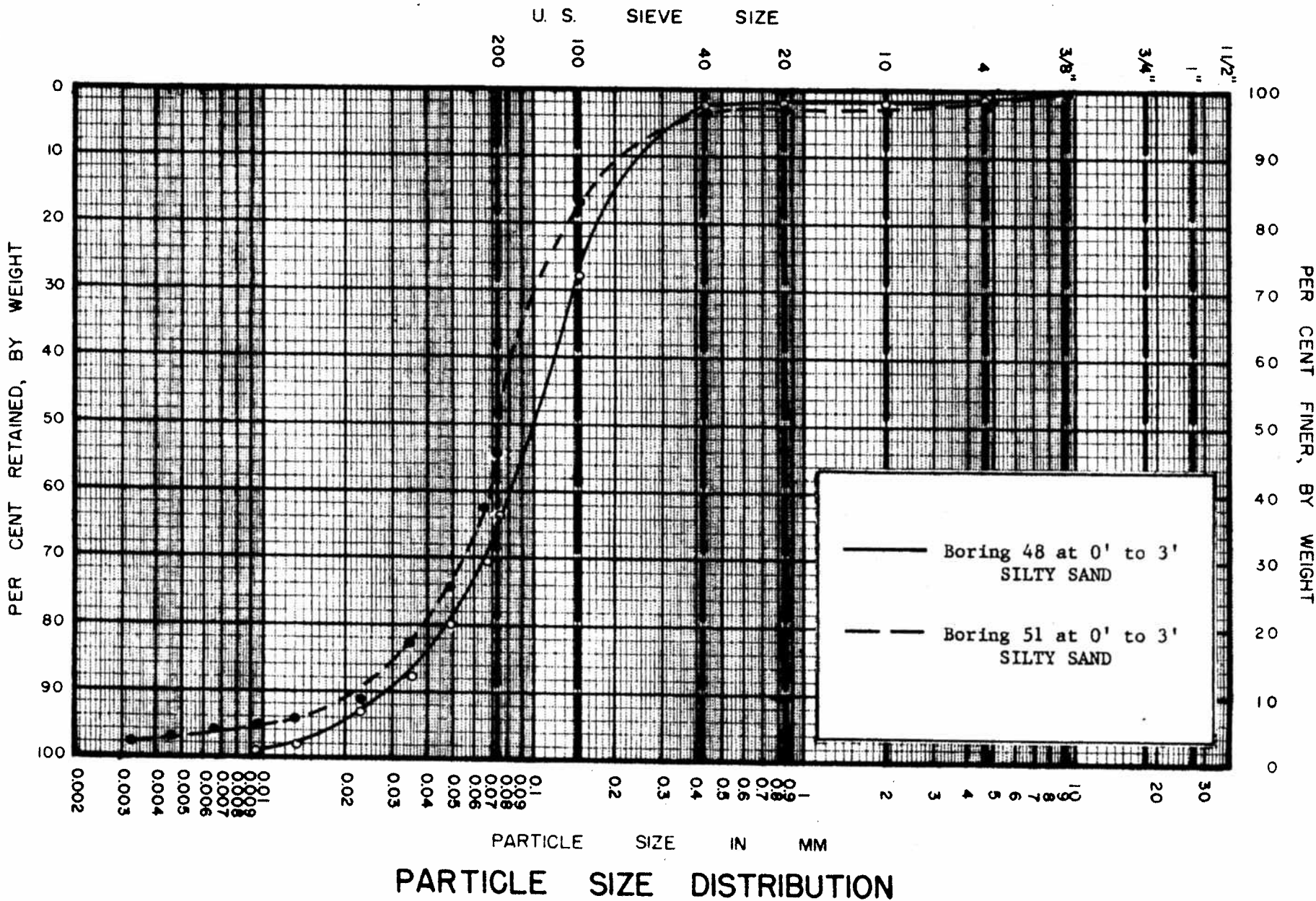
PARTICLE SIZE DISTRIBUTION

LEROY CRANDALL & ASSOCIATES
PLATE A-5.1

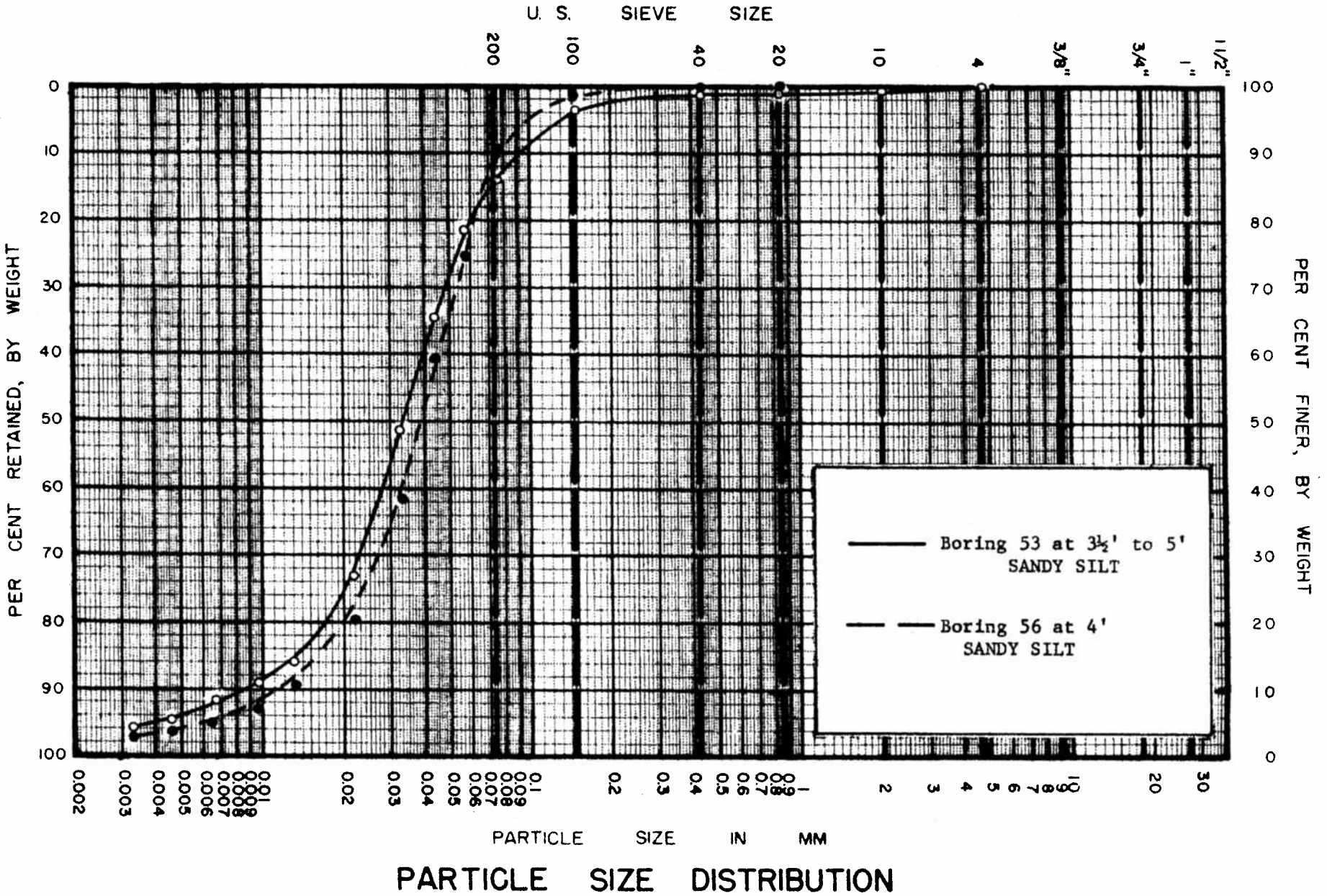


LEROY CRANDALL & ASSOCIATES
PLATE A-5.2

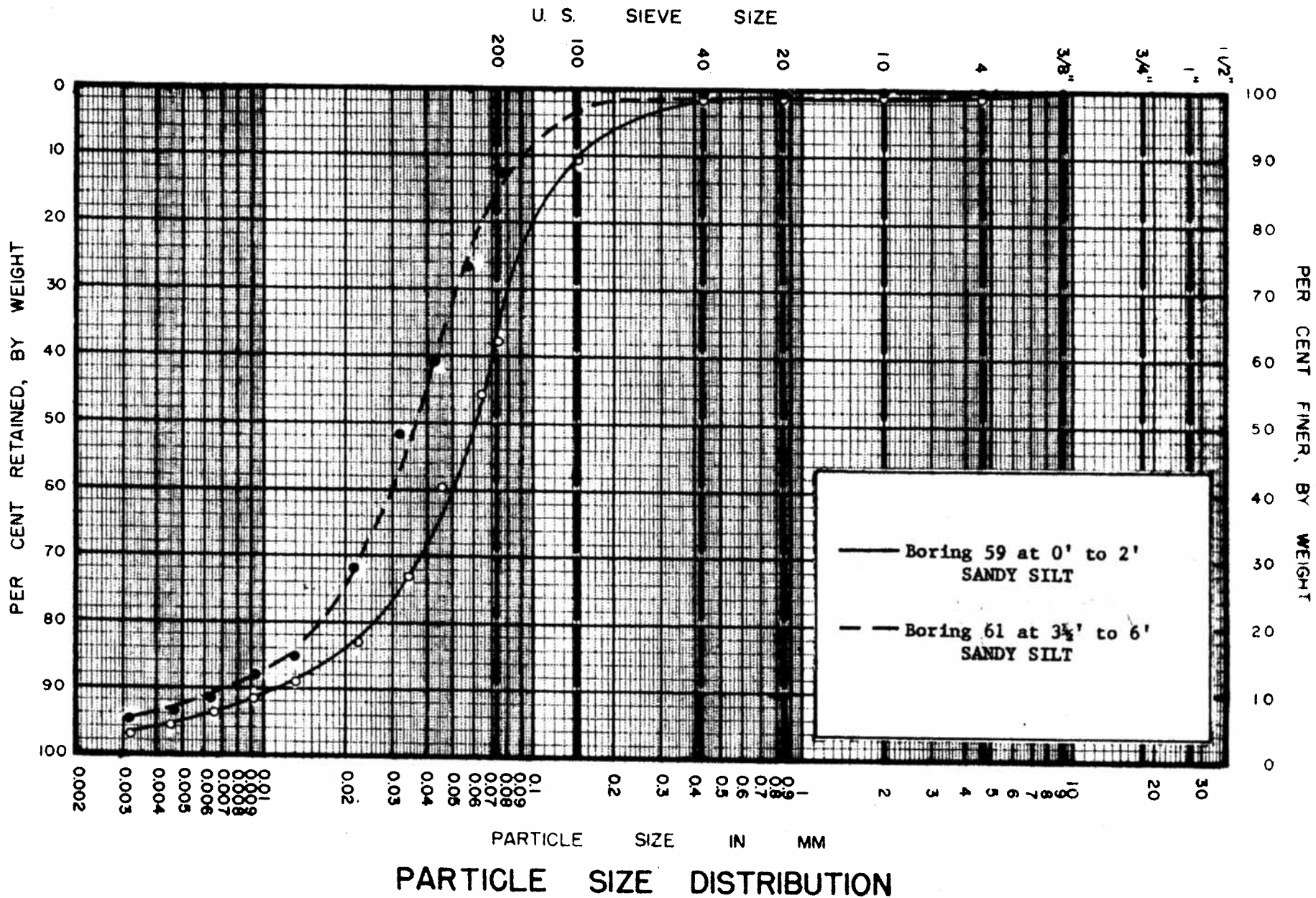
PARTICLE SIZE DISTRIBUTION

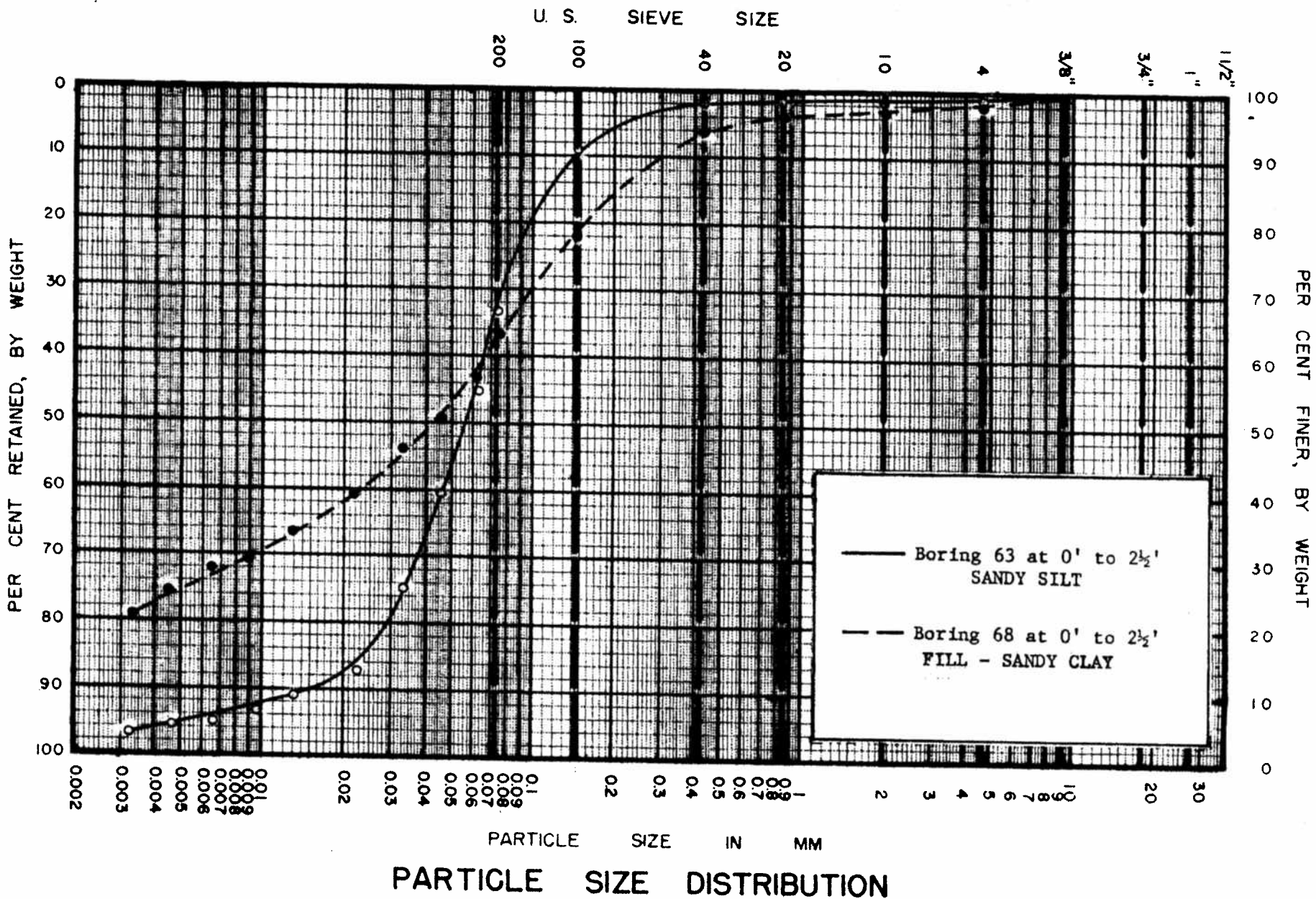


LEROY CRANDALL AND ASSOCIATES
PLATE A-5.3



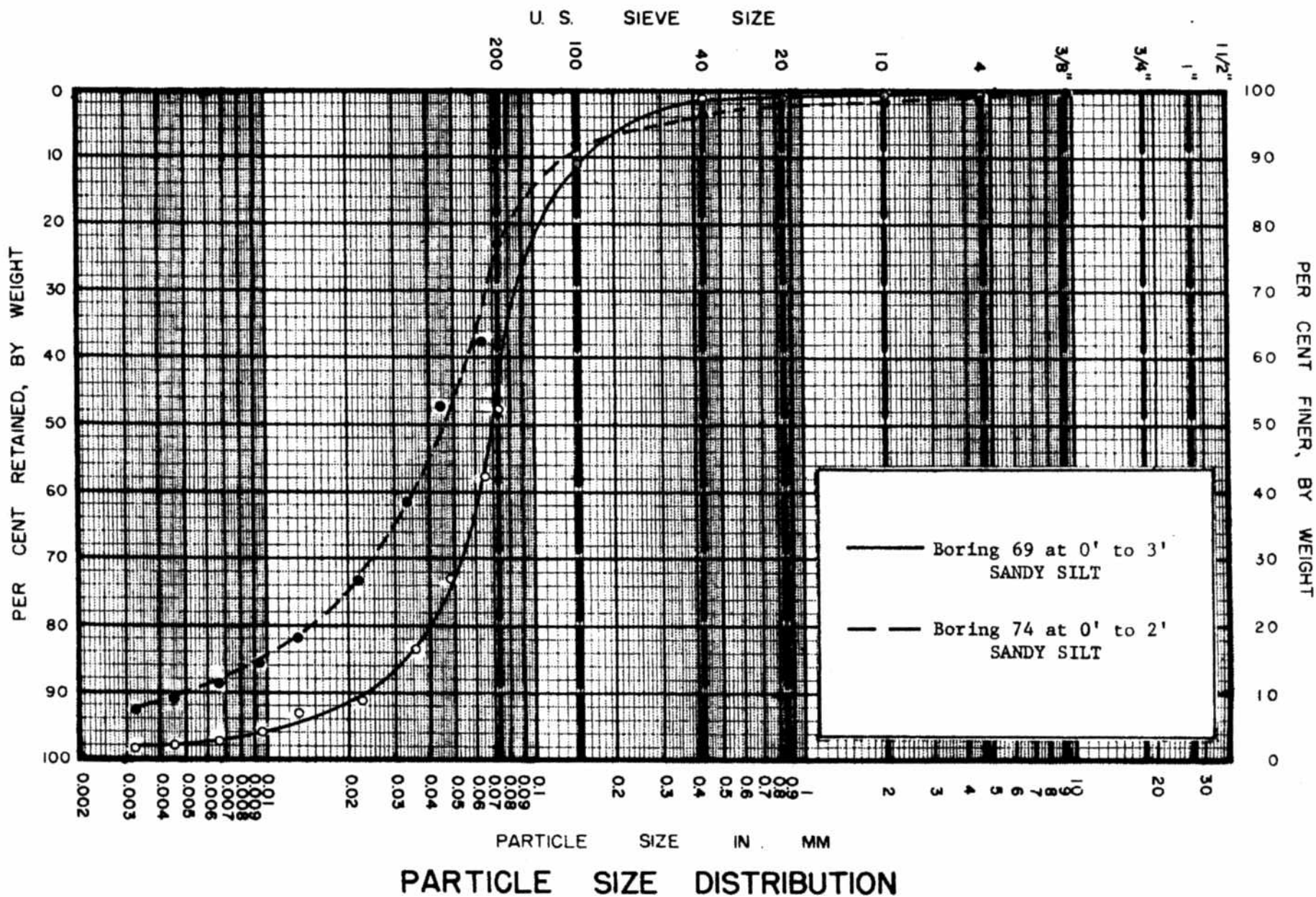
LERROY CRANDALL AND ASSOCIATES
PLATE A-5.4





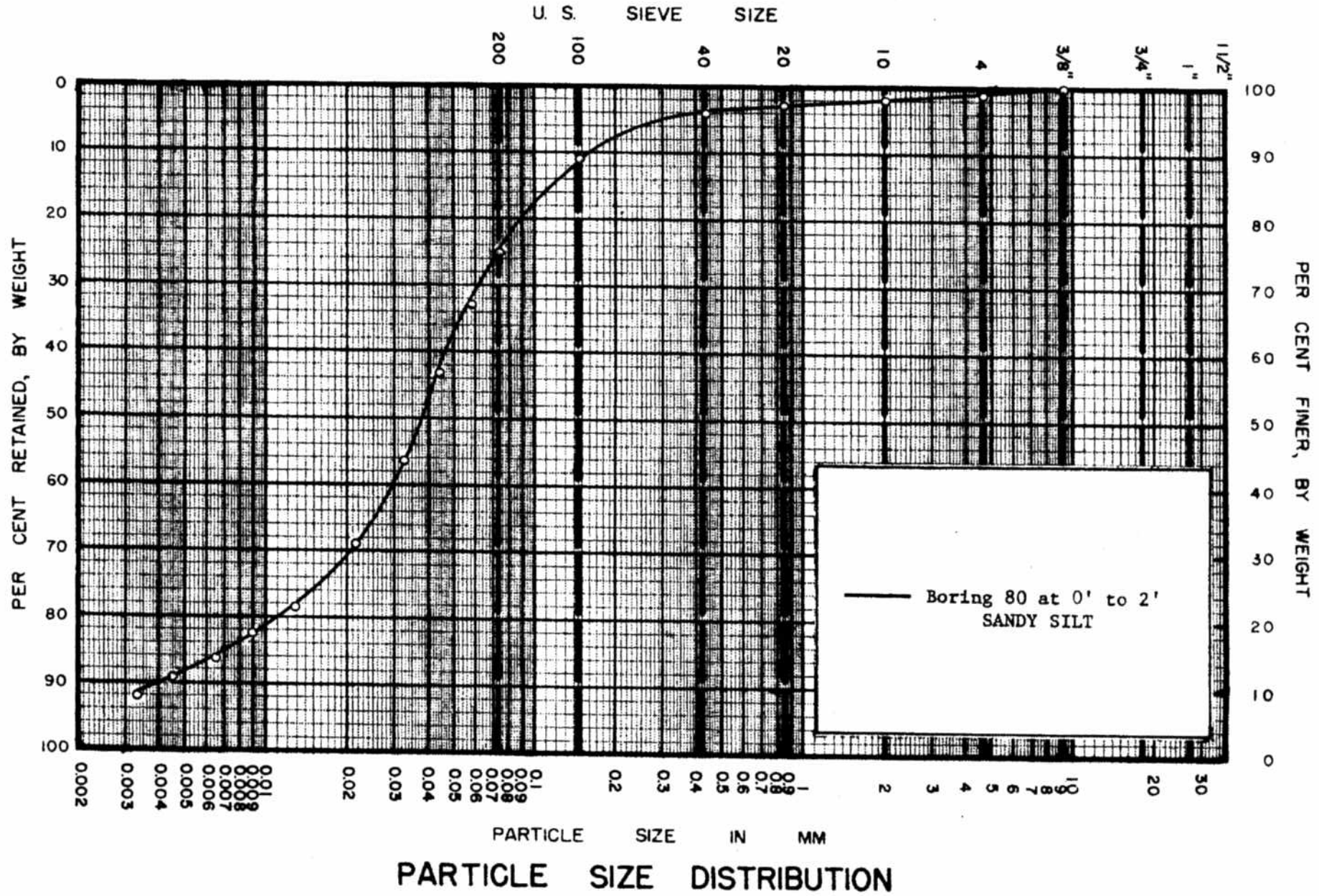
LERROY CRANDALL AND ASSOCIATES
PLATE A-5.6

PARTICLE SIZE DISTRIBUTION



LERROY CRANDALL AND ASSOCIATES

PLATE A-5.7



LERROY CRANDALL AND ASSOCIATES
PLATE A-5.8

BORING NUMBER AND SAMPLE DEPTH: 4 at ½' to 3' 15 at 0' to 1½' 22 at 1½' to 3'

SOIL TYPE: SILTY SAND FILL-SILTY SAND SANDY SILT

MAXIMUM DRY DENSITY * : 118 121 116
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 12 11 14
(% OF DRY WT.)

EXPANSION (%) : 0.6 0.2 2.4
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION :	18	25	16
AT 95% COMPACTION :	33	55	26

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

JOB A-81190
DATE 7/2/81
DR. O.E.
DM W.P.
IM
CHKO

BORING NUMBER
AND SAMPLE DEPTH: 28 at 2½' to 4' 30 at 1' to 3' 44 at 1' to 4'

SOIL TYPE: SANDY SILT CLAYEY SILT FILL - SILTY SAND

MAXIMUM DRY DENSITY * :
(LBS./CU. FT.) 122 106 119

OPTIMUM MOISTURE CONTENT * :
(% OF DRY WT.) 12 17 12

EXPANSION (%) :
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT) 2.4 4.6 0.2

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION :	12	5	12
AT 95% COMPACTION :	24	9	24

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

JOB A-82284 DATE 4/12/83 DR. O.E. MS. W.P. DG CHKD

BORING NUMBER
AND SAMPLE DEPTH: 48 at 0' to 3' 51 at 0' to 3' 53 at 0' to 3'

SOIL TYPE: SILTY SAND SILTY SAND SILTY SAND

MAXIMUM DRY DENSITY * : 114 114 111
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 14 14 17
(% OF DRY WT.)

EXPANSION (%) : 0.2 0.4 1.8
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION : 21 19 10

AT 95% COMPACTION : 34 50 16

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

JOB A-82284 DATE 1/21/85 DR. O.E. DN P.P. W.P. KG CMKD

JOB A-82284 DATE 1/21/83 DR. O.E. DM. W.P. kg CHKO

BORING NUMBER AND SAMPLE DEPTH:	68 at 0' to 2½'	69 at 0' to 2½'	74 at 0' to 2'
SOIL TYPE:	FILL - SANDY CLAY	SANDY SILT	SANDY SILT
MAXIMUM DRY DENSITY * : (LBS./CU. FT.)	129	112	116
OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.)	10	15	14
EXPANSION (%) : (FROM OPTIMUM TO SATURATED MOISTURE CONTENT)	4.6	0.4	1.5
C. B. R. ** (% OF STANDARD)			
AT 90% COMPACTION :	2	15	10
AT 95% COMPACTION :	3	30	20

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

JOB A-82284 DATE 4/12/83 DR. O.E. DM W.P. DB CHKO

BORING NUMBER AND SAMPLE DEPTH: 75 at 0' to 3' 80 at 0' to 2'

SOIL TYPE: SILTY SAND SANDY SILT

MAXIMUM DRY DENSITY * : (LBS./CU. FT.) 117 118

OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.) 13 12

EXPANSION (%): (FROM OPTIMUM TO SATURATED MOISTURE CONTENT) 0.7 1.7

C. B. R. ** (% OF STANDARD) AT 90% COMPACTION: 22 14 AT 95% COMPACTION: 41 34

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

BORING NUMBER AND SAMPLE DEPTH: 48 at 0 to 3' 53 at 0 to 3' 63 at 0 to 2½'

SOIL TYPE: SILTY SAND SILTY SAND SANDY SILT

MAXIMUM DRY DENSITY * : 114 117 111
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 14 17 16
(% OF DRY WT.)

EXPANSION (%) : 0 0 0
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION :	> 80	> 80	> 80
AT 95% COMPACTION :	> 80	> 80	> 80

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

*** SAMPLES COMPACTED AT OPTIMUM MOISTURE CONTENT PLUS 2%.
6% CEMENT ADDED, 7 DAYS CURING

COMPACTION AND C. B. R. TEST DATA

JOB A-82284 DATE 2/21/83 DR. O.E. DM W.P. ng CHKO

FORM

BORING NUMBER
AND SAMPLE DEPTH: 69 at 0 to 2½' 74 at 0 to 2' 80 at 0 to 2

SOIL TYPE: SANDY SILT SANDY SILT SANDY SILT

MAXIMUM DRY DENSITY * : 112 116 118
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 15 14 12
(% OF DRY WT.)

EXPANSION (%) : 0 0 0.1
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION : > 80 > 80 > 80

AT 95% COMPACTION : > 80 > 80 > 80

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

*** SAMPLES COMPACTED AT OPTIMUM MOISTURE CONTENT PLUS 2%.
6% CEMENT ADDED, 7 DAYS CURING

COMPACTION AND C. B. R. TEST DATA

BORING NUMBER
AND
SAMPLE DEPTH

SOIL
TYPE

SAND
EQUIVALENT

18 at 0' to 2'

SILTY SAND

40

21 at ½' to 2½'

SILTY SAND

18

23 at 2' to 3'

SILTY SAND

23

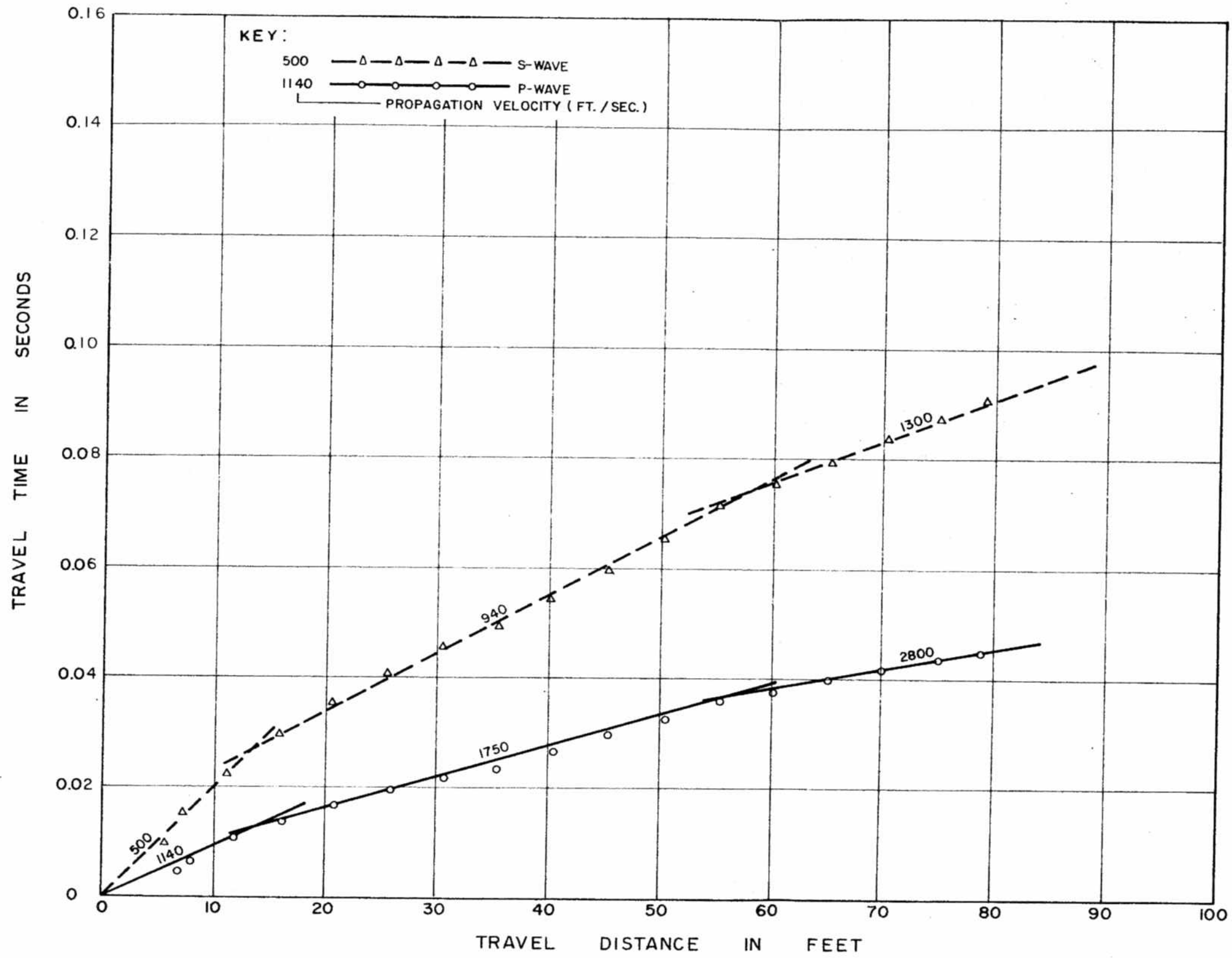
39 at 2' to 3½'

SANDY SILT

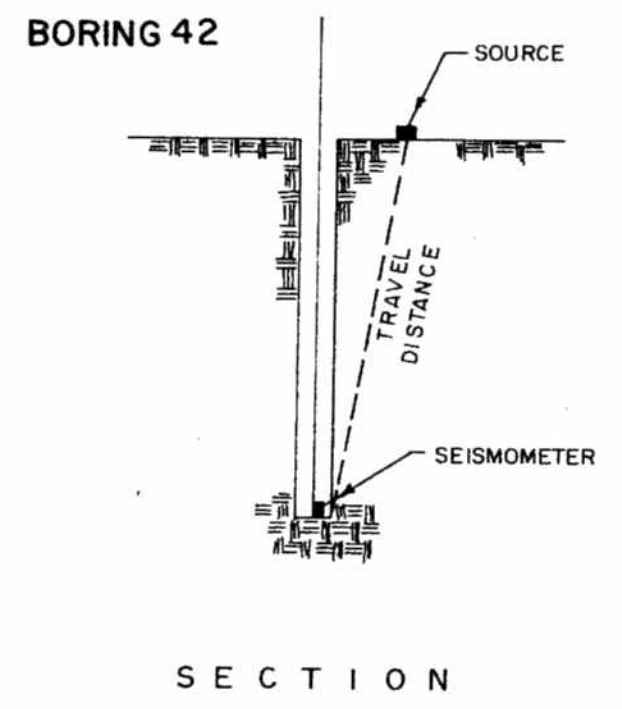
17

NOTE: Test performed according to
California Test Method No. 217-F.

SAND EQUIVALENT TEST DATA



DOWNHOLE SEISMIC SURVEY



APPENDIX BGEOLOGIC AND SEISMIC DATAGENERAL

The geologic-seismic studies included a field reconnaissance on and adjacent to the site, as well as office analysis of published and unpublished literature pertinent to the study area. The Seismic Safety Plan for the City of Los Angeles, 1974, and the Seismic Safety Element of the City of Long Beach, 1975, were reviewed as part of our literature analysis.

This Appendix presents additional background information regarding faults, seismicity, and ground shaking.

FAULTS

The numerous faults in Southern California include active, potentially active, and inactive faults. The criteria for these major groups, as established by the Association of Engineering Geologists, 1973, are presented in Table B-1. Table B-2 presents a listing of active faults in Southern California with the distance in miles between the site and the nearest point on the fault, and the maximum credible earthquake for the fault. Table B-3 provides a similar listing for potentially active faults. No faults or fault associated features were observed on the site during the field reconnaissance.

TABLE B-1

CRITERIA FOR CLASSIFICATION OF FAULTS WITH
REGARD TO SEISMIC ACTIVITY

(From Association of Engineering Geologists,
Geology and Earthquake Hazards, 1973)

A. Active Faults: (See Table B-2)

These faults are those which have shown historical activity. This category includes such faults as the San Andreas, San Jacinto, and Newport-Inglewood.

B. Potentially Active Faults: (See Table B-3)

These faults are those, based on available data, along which no known historical ground surface ruptures or earthquakes have occurred. These faults, however, show strong indications of geologically recent activity. Potentially active faults can be placed in two subgroups that are based on the boldness or sharpness of their topographic features and the estimates related to recency of activity. These subgroups are:

1. Subgroup One - High Potential

- a. Offsets affecting the Holocene deposits (age less than 10 - 11,000 years).
- b. A ground water barrier or anomaly occurring along the fault within the Holocene deposits.
- c. Earthquake epicenters (generally from small earthquakes occurring close to the fault).
- d. Strong geomorphic expression of fault origin features (e.g. faceted spurs, offset ridges or stream valleys or similar features, especially where Holocene topography appears to have been modified).

2. Subgroup Two - Low Potential

This subgroup is the same as 1-a, b, or d above, with the exception that the indications of fault movement can be only determined in Pleistocene deposits (less than 1,000,000 years ago).

C. Inactive Faults:

These faults are without recognized Holocene or Pleistocene offset or activity.

TABLE B-2
 MAJOR NAMED FAULTS CONSIDERED TO BE ACTIVE (a)
 IN SOUTHERN CALIFORNIA

Fault (in alphabetical order)	Date of Latest Major Activity	Maximum Credible Earthquake	Distance From Site (Miles)	Direction From Site
Big Pine	1852	7.5 (b)	82	NW
Coyote Creek	1968	7.2 (c)	105	ESE
Elsinore	1910	7.5 (b)	32	E
Garlock	(d)	7.75(b)	78	NNW
Malibu Coast	1973	7.0 (c)	22	NW
Manix	1947	6.25(b)	125	NE
More Ranch	(d)	7.5 (b)	97	WNW
Newport-Inglewood	1933	7.0 (b)	1.5	NE
San Andreas Zone	1857	8.25(b)	49	NNE
San Fernando Zone	1971	6.5 (b)	34	N
San Jacinto Zone	1968	7.5 (b)	46	NE
Superstition Hills	1951	7.0 (b)	145	ESE
White Wolf	1952	7.75(b)	95	NNW
Whittier	1929 (?)	7.1 (c)	16	NE

- (a) Historic movement (1769 - present).
 (b) Greensfelder, C.D.M.G. Map Sheet 23, 1974.
 (c) Mark (1977) Length-Magnitude relationship.
 (d) Intermittent creep.

TABLE B-3
 MAJOR NAMED FAULTS CONSIDERED TO BE POTENTIALLY ACTIVE (a)
 IN SOUTHERN CALIFORNIA

Fault (in alphabetical order)	Maximum Credible Earthquake	Distance From Site (miles)	Direction From Site
Calico-Newberry	7.25(b)	109	NE
Charnock	6.6 (c)	12	NW
*Chino	6.7 (c)	31	ENE
Cucamonga	6.5 (b)	38	ENE
*Duarte	6.3 (c)	27	NE
Helendale	7.5 (b)	82	NE
Northridge Hills	6.5 (b)	32	NNW
Norwalk	6.4 (c)	11.5	ENE
Oakridge	7.5 (b)	49	NW
*Overland	6.2 (c)	16	NW
Ozena	7.3 (c)	86	NW
Palos Verdes	7.0 (b)	4.8	SW
Pinto Mountain	7.5 (b)	87	E
Raymond	6.6 (c)	21	N
*Richfield	6.2 (c)	0.8	SSW
San Cayetano	6.75(c)	49	NW
*San Gabriel	7.5 (c)	31	NE
*San Jose	6.5 (c)	25	ENE
Santa Cruz Island	7.2 (c)	70	W
Santa Monica-Hollywood	6.8 (c)	22	NNW
Santa Susana	6.5 (b)	38	NNW
Santa Ynez	7.5 (b)	65	NNW
Sierra Madre	7.5 (b)	26	NE
Sierra Nevada	8.25(b)	102	N
*Verdugo	6.8 (c)	24	N

- (a) Pleistocene deposits disrupted.
 (b) Greensfelder, C.D.M.G. Map Sheet 23, 1974.
 (c) Mark (1977) Length-Magnitude relationship.
 * Low Potential per A.E.G. definition.

Active Faults

The active fault closest to the site is the Cherry Hill branch of the Newport-Inglewood Fault Zone. The Cherry Hill Fault is located approximately 1.5 miles northeast of the site. Although the Cherry Hill Fault is not known to displace Holocene materials, numerous earthquake epicenters plot along the trace of this fault, indicating activity at depth.

The Avalon-Compton Fault of the Newport-Inglewood Fault System is located about 3.4 miles northwest of the site. This fault does not appear to have structurally affected upper Pleistocene and Holocene deposits. Water well logs and other subsurface data indicate that the Gage aquifer within the Lakewood Formation, estimated to be about 300,000 years old, does not appear to be structurally affected by movement on the Avalon-Compton Fault. However, numerous earthquake epicenters indicate activity at depth. The locations of several other branches of the Newport-Inglewood Fault Zone are shown on Plate 2.

Potentially Active Faults

The potentially active fault nearest the site is the Richfield Fault, which may be present at depth beneath the south end of the site. This fault is considered to have a low potential for activity because Holocene and upper Pleistocene materials appear to be undisturbed by the fault.

The potentially active Palos Verdes Fault is located about 4.8 miles southwest of the site. The Palos Verdes Fault is a reverse type fault with schist basement rocks being displaced in excess of 3,000 feet on the upthrown southern side of the fault (Yerkes et al, 1965).

Other nearby potentially active faults include the Charnock, Norwalk and Overland Faults, located 12 miles northwest, 11.5 miles east-northeast and 16 miles northwest of the site, respectively.

GROUND SHAKING

Movements on any of the above described active and potentially active faults could cause ground shaking at the site. The relationship between the duration of strong shaking and magnitude of an earthquake has been investigated by Bolt (1973). Strong shaking may be defined as that period of time when the acceleration of the ground, due to seismic waves, is in excess of 0.05g.

TABLE B-4
BRACKETED DURATION AS A FUNCTION OF MAGNITUDE AND DISTANCE TO SOURCE
(after Bolt, 1973)

Distance to Source (km)	Bracketed Duration (seconds)						
	Magnitude						
	5.5	6.0	6.5	7.0	7.5	8.0	8.5
10	8	12	19	26	31	34	35
25	4	9	15	24	28	30	32
50	2	3	10	22	26	28	29
75	1	1	5	10	14	16	17
100	0	0	1	4	5	6	7
125	0	0	1	2	2	3	3
150	0	0	0	1	2	2	3
175	0	0	0	0	1	2	2
200	0	0	0	0	0	1	2

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APPENDIX CSEISMICITY

The seismicity of the region surrounding the site was determined from a computer search of a magnetic tape catalog of earthquakes. The catalog of earthquakes included those compiled by the California Institute of Technology for the period from 1932 to 1981 and those earthquakes for the period 1812 to 1931 compiled by Richter and the U.S. National Oceanic and Atmospheric Administration (NOAA). The computer printout of the earthquakes is presented as Table C-1 and follows the text of this appendix. The search indicates that 291 earthquakes of Richter magnitude 4.0 and greater have occurred within 100 kilometers (62 miles) of the site during the period from 1932 to 1981.

The epicenter of the March 11, 1933 Long Beach earthquake, magnitude 6.3, was located approximately 20 miles southeast of the site. This earthquake, although of only moderate magnitude, ranks as one of the major disasters in Southern California. The majority of the damage was suffered by structures which are now considered substandard construction and/or were located on filled or saturated ground.

The epicenter of the February 9, 1971, San Fernando earthquake of magnitude 6.4, was about 47 miles north of the site. Surface rupture occurred on the Sylmar and Tujunga Faults, which are segments of the San Fernando Fault.

The information listed for each earthquake found in Table C-1, includes date and time in Greenwich Civil Time (GCT), location of the epicenter in latitude and longitude, quality of epicentral determination (Q), depth in kilometers, and magnitude. Where a depth of 0.0 is given, the solution was based on an assumed 16-kilometer focal depth. The letter code for the quality factor is presented on the first page of the table.

The computer analyses were utilized to develop an earthquake recurrence curve which is presented on Plate C-1, Recurrence Curve. The recurrence curve was developed on the basis of the seismicity of an area having a radius of 100 kilometers. The application of the Poisson probability law to the resulting recurrence curve, as shown on Plate C-2, Estimated Probability of Earthquake Occurrence, provides an estimate of the probability of earthquake activity that may affect the site.

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TABLE C-1
(Sheet 1 of 15)

LIST OF HISTORIC EARTHQUAKES OF MAGNITUDE 4.0 OR
GREATER WITHIN 100 KM OF THE SITE
(CAL TECH DATA 1932-1981)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1932	11	1	4	45	0	34.00 N	117.25 W	E	92	0.0	4.0
1933	3	11	1	54	8	33.62 N	117.97 W	A	32	0.0	6.3
1933	3	11	2	4	0	33.75 N	118.08 W	C	15	0.0	4.9
1933	3	11	2	5	0	33.75 N	118.08 W	C	15	0.0	4.3
1933	3	11	2	9	0	33.75 N	118.08 W	C	15	0.0	5.0
1933	3	11	2	10	0	33.75 N	118.08 W	C	15	0.0	4.6
1933	3	11	2	11	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	2	16	0	33.75 N	118.08 W	C	15	0.0	4.8
1933	3	11	2	17	0	33.60 N	118.00 W	E	32	0.0	4.5
1933	3	11	2	22	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	2	27	0	33.75 N	118.08 W	C	15	0.0	4.6
1933	3	11	2	30	0	33.75 N	118.08 W	C	15	0.0	5.1
1933	3	11	2	31	0	33.60 N	118.00 W	E	32	0.0	4.4
1933	3	11	2	52	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	2	57	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	2	58	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	2	59	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	3	5	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	3	9	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	3	11	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	3	23	0	33.75 N	118.08 W	C	15	0.0	5.0
1933	3	11	3	36	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	3	39	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	3	47	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	4	36	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	4	39	0	33.75 N	118.08 W	C	15	0.0	4.9
1933	3	11	4	40	0	33.75 N	118.08 W	C	15	0.0	4.7
1933	3	11	5	10	22	33.70 N	118.07 W	C	19	0.0	5.1
1933	3	11	5	13	0	33.75 N	118.08 W	C	15	0.0	4.7

NOTE: Q IS A FACTOR RELATING THE QUALITY OF EPICENTRAL DETERMINATION

- A = SPECIALLY INVESTIGATED
- B = EPICENTER PROBABLY WITHIN 5 KM, ORIGIN TIME TO NEAREST SECOND
- C = EPICENTER PROBABLY WITHIN 15 KM, ORIGIN TIME TO A FEW SECONDS
- D = EPICENTER NOT KNOWN WITHIN 15 KM, ROUGH LOCATION
- E = EPICENTER ROUGHLY LOCATED, ACCURACY LESS THAN "D"
- P = PRELIMINARY

TABLE C-1
(Sheet 2 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1933	3	11	5	15	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	5	18	4	33.57 N	117.98 W	C	36	0.0	5.2
1933	3	11	5	21	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	5	24	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	5	53	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	5	55	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	5	11	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	5	18	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	6	29	0	33.85 N	118.27 W	C	6	0.0	4.4
1933	3	11	6	35	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	6	58	3	33.68 N	118.05 W	C	22	0.0	5.5
1933	3	11	7	51	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	8	59	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	8	8	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	8	32	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	11	8	37	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	8	54	57	33.70 N	118.07 W	C	15	0.0	4.0
1933	3	11	9	10	0	33.75 N	118.08 W	C	15	0.0	5.1
1933	3	11	9	11	0	33.75 N	118.08 W	C	15	0.0	5.1
1933	3	11	9	26	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	10	25	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	10	45	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	0	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	4	0	33.75 N	118.13 W	C	11	0.0	4.0
1933	3	11	11	29	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	38	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	41	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	47	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	12	50	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	12	50	0	33.68 N	118.05 W	C	22	0.0	4.4
1933	3	11	13	50	0	33.73 N	118.10 W	C	15	0.0	4.4
1933	3	11	13	57	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	14	25	0	33.85 N	118.27 W	C	6	0.0	5.0
1933	3	11	14	47	0	33.73 N	118.10 W	C	15	0.0	4.4
1933	3	11	14	57	0	33.88 N	118.32 W	C	11	0.0	4.9
1933	3	11	15	9	0	33.73 N	118.10 W	C	15	0.0	4.4
1933	3	11	15	47	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	16	53	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	19	44	0	33.75 N	118.08 W	C	15	0.0	4.8
1933	3	11	19	56	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	22	0	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	22	31	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	22	32	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	22	32	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	22	40	0	33.75 N	118.08 W	C	15	0.0	4.4

TABLE C-1
(Sheet 3 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1933	3	11	23	5	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	0	27	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	12	0	34	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	4	48	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	5	46	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	12	6	1	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	6	16	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	7	40	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	8	35	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	15	2	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	16	51	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	17	38	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	12	18	25	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	12	21	28	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	12	23	54	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	13	3	43	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	13	4	32	0	33.75 N	118.08 W	C	15	0.0	4.7
1933	3	13	6	17	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	13	13	18	28	33.75 N	118.08 W	C	15	0.0	5.3
1933	3	13	15	32	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	13	19	29	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	14	0	36	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	14	12	19	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	14	19	1	50	33.62 N	118.02 W	C	20	0.0	5.1
1933	3	14	22	42	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	15	2	8	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	15	4	32	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	15	5	40	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	15	11	13	32	33.62 N	118.02 W	C	20	0.0	4.0
1933	3	16	14	56	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	16	15	29	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	16	15	30	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	17	16	51	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	18	20	52	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	19	21	23	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	20	13	58	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	21	3	26	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	23	8	40	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	23	18	31	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	25	13	46	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	30	12	25	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	31	10	49	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	4	1	6	42	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	4	2	8	0	0	33.75 N	118.08 W	C	15	0.0	4.0

TABLE C-1
(Sheet 4 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1933	4	2	15	36	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	5	16	20	58	55	33.75 N	118.17 W	C	9	0.0	4.0
1933	8	4	4	17	48	33.75 N	118.18 W	C	9	0.0	4.0
1933	10	2	9	10	18	33.78 N	118.13 W	A	9	0.0	5.4
1933	10	2	13	26	1	33.62 N	118.02 W	C	29	0.0	4.0
1933	10	25	7	0	46	33.95 N	118.13 W	C	17	0.0	4.0
1933	11	13	21	28	0	33.87 N	118.20 W	C	6	0.0	4.0
1933	11	20	10	32	0	33.78 N	118.13 W	B	9	0.0	4.0
1934	1	9	14	10	0	34.10 N	117.68 W	A	59	0.0	4.0
1934	1	18	2	14	0	34.10 N	117.68 W	A	59	0.0	4.5
1934	1	20	21	17	0	33.62 N	118.12 W	B	24	0.0	4.0
1934	4	17	18	33	0	33.57 N	117.98 W	C	36	0.0	4.0
1934	10	17	9	38	0	33.63 N	118.40 W	B	27	0.0	4.0
1934	11	16	21	26	0	33.75 N	118.00 W	B	22	0.0	4.0
1935	6	19	11	17	0	33.72 N	117.52 W	B	66	0.0	4.0
1935	7	13	10	54	17	34.20 N	117.90 W	A	52	0.0	4.0
1935	9	3	6	47	0	34.03 N	117.32 W	B	87	0.0	4.7
1935	12	25	17	15	0	33.60 N	118.02 W	B	31	0.0	4.5
1936	2	23	22	20	43	34.13 N	117.34 W	A	89	0.0	4.0
1936	2	26	9	33	28	34.14 N	117.34 W	A	89	0.0	4.0
1936	8	22	5	21	0	33.77 N	117.82 W	B	37	0.0	4.0
1936	10	29	22	35	36	34.38 N	118.62 W	C	72	0.0	4.0
1937	1	15	18	35	47	33.56 N	118.06 W	B	32	0.0	4.0
1937	3	19	1	23	38	34.11 N	117.43 W	A	80	0.0	4.0
1937	7	7	11	12	0	33.57 N	117.98 W	B	36	0.0	4.0
1937	9	1	13	48	8	34.21 N	117.53 W	A	77	0.0	4.0
1937	9	16	35	34	34	34.18 N	117.55 W	A	74	0.0	4.5
1937	9	13	22	14	40	33.04 N	118.73 W	C	49	0.0	4.0
1938	5	21	9	44	0	33.62 N	118.03 W	B	28	0.0	4.0
1938	5	31	8	34	55	33.70 N	117.51 W	B	67	0.0	5.0
1938	7	5	18	6	56	33.68 N	117.55 W	A	64	0.0	4.5
1938	8	6	22	0	56	33.72 N	117.51 W	B	67	0.0	4.0
1938	8	31	3	18	14	33.76 N	118.25 W	A	7	0.0	4.0
1938	11	29	19	21	16	33.90 N	118.43 W	A	21	0.0	4.0
1938	12	7	3	38	0	34.00 N	118.42 W	B	27	0.0	4.0
1938	12	27	10	9	29	34.13 N	117.52 W	B	73	0.0	4.0
1939	4	3	2	50	45	34.04 N	117.23 W	A	95	0.0	4.0
1939	11	4	21	41	0	33.77 N	118.12 W	B	11	0.0	4.0
1939	11	7	18	52	8	34.00 N	117.28 W	A	89	0.0	4.0
1939	12	27	19	28	49	35.78 N	118.20 W	A	5	0.0	4.7
1940	1	13	7	49	7	33.78 N	118.13 W	B	9	0.0	4.0
1940	2	8	16	56	17	33.70 N	118.07 W	B	19	0.0	4.0
1940	2	11	19	24	10	33.98 N	118.30 W	B	19	0.0	4.0
1940	4	18	18	43	44	34.03 N	117.35 W	A	84	0.0	4.4

TABLE C-1
(Sheet 5 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1940	6	5	8	27	27	33.83 N	117.40 W	B	76	0.0	4.0
1940	7	20	4	1	13	33.70 N	118.07 W	B	19	0.0	4.0
1940	10	11	5	57	12	33.77 N	118.45 W	A	22	0.0	4.7
1940	10	12	0	24	0	33.78 N	118.42 W	B	19	0.0	4.0
1940	10	14	20	51	11	33.78 N	118.42 W	B	19	0.0	4.0
1940	11	1	7	25	3	33.78 N	118.42 W	B	19	0.0	4.0
1940	11	1	20	0	46	33.63 N	118.20 W	B	21	0.0	4.0
1940	11	2	2	58	26	33.78 N	118.42 W	B	19	0.0	4.0
1941	1	30	1	34	47	33.97 N	118.05 W	A	23	0.0	4.1
1941	3	22	8	22	40	33.52 N	118.10 W	B	35	0.0	4.0
1941	3	25	23	43	41	34.22 N	117.47 W	B	82	0.0	4.0
1941	4	11	1	20	24	33.95 N	117.58 W	B	61	0.0	4.0
1941	10	22	6	57	19	33.82 N	118.22 W	A	0	0.0	4.0
1941	11	14	8	41	36	33.78 N	118.25 W	A	5	0.0	5.4
1942	4	16	7	28	33	33.37 N	118.15 W	C	50	0.0	4.0
1943	10	24	0	29	21	33.93 N	117.37 W	C	80	0.0	4.0
1944	6	19	0	3	33	33.87 N	118.22 W	B	6	0.0	4.5
1944	6	19	3	6	7	33.87 N	118.22 W	C	6	0.0	4.4
1946	2	24	6	7	52	34.40 N	117.80 W	C	75	0.0	4.1
1946	6	1	11	6	31	34.42 N	118.83 W	C	87	0.0	4.1
1948	3	1	8	12	13	34.17 N	117.53 W	B	75	0.0	4.7
1948	4	16	22	26	24	34.02 N	118.97 W	B	73	0.0	4.7
1948	10	3	2	46	28	34.18 N	117.58 W	A	72	0.0	4.0
1950	1	11	21	41	35	33.94 N	118.20 W	A	13	0.0	4.1
1951	9	22	8	22	39	34.12 N	117.34 W	A	88	0.0	4.3
1952	2	10	13	50	55	33.58 N	119.18 W	C	93	0.0	4.0
1952	2	17	12	36	58	34.00 N	117.27 W	A	90	0.0	4.5
1952	8	23	10	9	7	34.52 N	118.20 W	A	78	0.0	5.0
1954	10	26	16	22	26	33.73 N	117.47 W	B	70	0.0	4.1
1955	5	15	17	3	26	34.12 N	117.48 W	A	76	0.0	4.0
1955	5	29	16	43	35	33.99 N	119.06 W	B	80	0.0	4.1
1956	1	3	0	25	49	33.72 N	117.50 W	B	68	0.0	4.7
1956	2	7	2	16	57	34.53 N	118.64 W	B	88	0.0	4.2
1956	2	7	3	16	39	34.59 N	118.61 W	A	93	0.0	4.6
1956	3	25	3	32	2	33.60 N	119.10 W	A	85	0.0	4.2
1957	3	18	18	56	28	34.12 N	119.22 W	B	98	0.0	4.7
1960	6	28	20	0	48	34.12 N	117.47 W	A	77	0.0	4.1
1961	10	4	2	21	32	33.85 N	117.75 W	B	44	0.0	4.1
1961	10	20	19	49	51	33.65 N	117.99 W	B	28	0.0	4.3
1961	10	20	20	7	14	33.66 N	117.98 W	B	28	0.0	4.0
1961	10	20	21	42	41	33.67 N	117.98 W	B	28	0.0	4.0
1961	10	20	22	35	34	33.67 N	118.01 W	B	26	0.0	4.1
1961	11	20	8	53	35	33.68 N	117.99 W	B	26	0.0	4.0
1962	4	27	9	12	32	33.74 N	117.19 W	B	96	0.0	4.1

TABLE C-1
(Sheet 6 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1963	9	14	3	51	16	33.54 N	118.34 W	B	33	0.0	4.2
1964	8	30	22	57	37	34.27 N	118.44 W	B	54	0.0	4.0
1965	1	8	8	4	18	34.14 N	117.52 W	B	74	0.0	4.4
1965	4	15	20	8	33	34.13 N	117.43 W	B	81	0.0	4.5
1965	7	16	7	46	22	34.48 N	118.52 W	B	78	0.0	4.0
1967	1	8	7	37	30	33.63 N	118.47 W	B	31	0.0	4.0
1967	1	8	7	38	5	33.66 N	118.41 W	C	25	0.0	4.0
1967	6	15	4	58	6	34.00 N	117.97 W	B	31	0.0	4.1
1969	2	28	4	56	12	34.57 N	118.11 W	A	84	0.0	4.3
1969	5	5	16	2	10	34.30 N	117.57 W	B	80	0.0	4.4
1969	10	24	20	26	43	33.34 N	119.10 W	B	97	0.0	4.7
1969	10	27	13	16	2	33.55 N	117.81 W	B	48	0.0	4.5
1969	10	31	10	39	29	33.43 N	119.10 W	B	92	0.0	4.8
1970	9	12	14	10	11	34.27 N	117.52 W	A	82	0.0	4.1
1970	9	12	14	30	53	34.27 N	117.54 W	A	80	0.0	5.4
1970	9	13	4	47	49	34.28 N	117.55 W	A	80	0.0	4.4
1971	2	9	14	0	42	34.41 N	118.40 W	B	68	0.0	6.4
1971	2	9	14	1	8	34.41 N	118.40 W	D	68	0.0	5.8
1971	2	9	14	1	33	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	1	40	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	1	50	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	1	54	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	1	59	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	2	3	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	2	30	34.41 N	118.40 W	D	68	0.0	4.3
1971	2	9	14	2	31	34.41 N	118.40 W	D	68	0.0	4.7
1971	2	9	14	2	44	34.41 N	118.40 W	D	68	0.0	5.8
1971	2	9	14	3	25	34.41 N	118.40 W	D	68	0.0	4.4
1971	2	9	14	3	46	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	7	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	34	34.41 N	118.40 W	C	68	0.0	4.2
1971	2	9	14	4	39	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	44	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	46	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	4	46	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	5	41	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	5	50	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	7	10	34.41 N	118.40 W	D	68	0.0	4.0
1971	2	9	14	7	30	34.41 N	118.40 W	D	68	0.0	4.0
1971	2	9	14	7	45	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	8	4	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	8	7	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	8	38	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	8	53	34.41 N	118.40 W	D	68	0.0	4.6
1971	2	9	14	10	21	34.36 N	118.31 W	B	60	0.0	4.7

TABLE C-1
(Sheet 7 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1971	2	9	14	10	28	34.41 N	118.40 W	D	68	0.0	5.3
1971		9	14	16	13	34.34 N	118.33 W	C	59	0.0	4.1
1971	2	9	14	19	50	34.36 N	118.41 W	B	62	0.0	4.0
1971	2	9	14	34	36	34.34 N	118.64 W	C	70	0.0	4.9
1971	2	9	14	39	18	34.39 N	118.36 W	C	65	0.0	4.0
1971	2	9	14	40	17	34.43 N	118.40 W	C	70	0.0	4.1
1971	2	9	14	43	47	34.31 N	118.45 W	B	58	0.0	5.2
1971	2	9	15	58	21	34.33 N	118.33 W	B	57	0.0	4.8
1971	2	9	16	19	26	34.46 N	118.43 W	B	74	0.0	4.2
1971	2	10	3	12	12	34.37 N	118.30 W	B	61	0.0	4.0
1971	2	10	5	6	36	34.41 N	118.33 W	A	66	0.0	4.3
1971	2	10	5	18	7	34.43 N	118.41 W	A	70	0.0	4.5
1971	2	10	11	31	35	34.38 N	118.45 W	A	66	0.0	4.2
1971	2	10	13	49	54	34.40 N	118.42 W	A	67	0.0	4.3
1971	2	10	14	35	27	34.36 N	118.49 W	A	65	0.0	4.2
1971	2	10	17	38	55	34.40 N	118.37 W	A	66	0.0	4.2
1971	2	10	18	54	42	34.45 N	118.44 W	A	73	0.0	4.2
1971	2	21	5	50	53	34.40 N	118.44 W	A	67	0.0	4.7
1971	2	21	7	15	12	34.39 N	118.43 W	A	66	0.0	4.5
1971	3	7	1	33	41	34.35 N	118.46 W	A	63	0.0	4.5
1971	3	25	22	54	10	34.36 N	118.47 W	A	64	0.0	4.2
1971	3	30	8	54	43	34.30 N	118.46 W	A	58	0.0	4.1
1971	3	31	14	52	23	34.29 N	118.51 W	A	59	0.0	4.6
1971	4	1	15	3	4	34.43 N	118.41 W	A	70	0.0	4.1
1971	4	2	5	40	25	34.28 N	118.53 W	A	59	0.0	4.0
1971	4	15	11	14	32	34.26 N	118.58 W	B	59	0.0	4.2
1971	4	25	14	48	7	34.37 N	118.31 W	B	62	0.0	4.0
1971	4	21	16	1	8	34.27 N	118.53 W	B	58	0.0	4.0
1971	6	22	10	41	19	33.75 N	117.48 W	B	69	0.0	4.2
1973	2	21	14	45	57	34.06 N	119.03 W	B	80	0.0	5.9
1974	3	9	0	54	32	34.40 N	118.47 W	C	68	0.0	4.7
1974	8	14	14	45	55	34.43 N	118.37 W	A	69	0.0	4.2
1976	1	1	17	20	13	33.96 N	117.89 W	A	34	0.0	4.2
1976	4	8	15	21	38	34.35 N	118.66 W	A	72	0.0	4.6
1977	8	12	2	19	26	34.38 N	118.46 W	B	66	0.0	4.5
1977	9	24	21	28	24	34.46 N	118.41 W	C	73	0.0	4.2
1978	5	23	9	16	51	33.91 N	119.17 W	C	89	0.0	4.0
1979	1	1	23	14	39	33.94 N	118.68 W	B	45	0.0	5.0
1979	10	17	20	52	37	33.93 N	118.67 W	C	43	0.0	4.2
1979	10	19	12	22	38	34.21 N	117.53 W	B	77	0.0	4.1
1981	9	4	15	50	50	33.67 N	119.11 W	C	84	0.0	5.3
1981	10	23	17	28	17	33.63 N	119.02 W	C	77	0.0	4.6
1981	10	23	19	15	52	33.64 N	119.06 W	C	80	0.0	4.6

TABLE C-1
(Sheet 8 of 15)

***** SEARCH OF EARTHQUAKE DATA FILE 1 *****

SITE: ADE-82284 SOUTHERN PACIFIC TRANSPORTATION COMPANY

COORDINATES OF SITE	33.82 N	118.22 W
DISTANCE PER DEGREE	110.9 KM-N	92.7 KM-W
MAGNITUDE LIMITS	4.0 - 8.5	
TEMPORAL LIMITS	1932 - 1981	
SEARCH RADIUS (KM)	100	
NUMBER OF YEARS OF DATA	50	
NUMBER OF EARTHQUAKES IN FILE	2789	
NUMBER OF EARTHQUAKES IN AREA	291	

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
(Sheet 9 of 15)

LIST OF HISTORIC EARTHQUAKES OF MAGNITUDE 6.0 OR
GREATER WITHIN 100 KM OF THE SITE
(RICHTER DATA 1906-1931)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1910	5	15	15	47	0	33.70 N	117.40 W	D	77	0.0	6.0
1923	7	23	7	30	26	34.00 N	117.25 W	D	92	0.0	6.3

TABLE C-1
(Sheet 10 of 15)

***** SEARCH OF EARTHQUAKE DATA FILE 2 *****

SITE: ADE-82284 SOUTHERN PACIFIC TRANSPORTATION COMPANY

COORDINATES OF SITE	33.82 N	118.22 W
DISTANCE PER DEGREE	110.9 KM-N	92.7 KM-W
MAGNITUDE LIMITS	6.0 - 8.5	
TEMPORAL LIMITS	1906 - 1931	
SEARCH RADIUS (KM)	100	
NUMBER OF YEARS OF DATA	26	
NUMBER OF EARTHQUAKES IN FILE	35	
NUMBER OF EARTHQUAKES IN AREA	2	

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
(Sheet 11 of 15)

LIST OF HISTORIC EARTHQUAKES OF MAGNITUDE 7.0 OR
GREATER WITHIN 100 KM OF THE SITE
(NOAA/CDMG DATA 1812-1905)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1890	2	9	4	6	0	34.00 N	117.50 W	D	70	0.0	7.0

TABLE C-1
(Sheet 12 of 15)

***** SEARCH OF EARTHQUAKE DATA FILE 3 *****

SITE: ADE-82284 SOUTHERN PACIFIC TRANSPORTATION COMPANY

COORDINATES OF SITE	33.82 N	118.22 W
DISTANCE PER DEGREE	110.9 KM-N	92.7 KM-W
MAGNITUDE LIMITS	7.0 - 8.5	
TEMPORAL LIMITS	1812 - 1905	
SEARCH RADIUS (KM)	100	
NUMBER OF YEARS OF DATA	94	
NUMBER OF EARTHQUAKES IN FILE	9	
NUMBER OF EARTHQUAKES IN AREA	1	

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
(Sheet 13 of 15)

***** SUMMARY OF EARTHQUAKE SEARCH *****

NUMBER OF HISTORIC EARTHQUAKES WITHIN 100 KM RADIUS OF SITE

MAGNITUDE RANGE	NUMBER
4.0 - 4.5	203
4.5 - 5.0	63
5.0 - 5.5	18
5.5 - 6.0	5
6.0 - 6.5	4
6.5 - 7.0	0
7.0 - 7.5	1
7.5 - 8.0	0
8.0 - 8.5	0

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
 (Sheet 14 of 15)

***** COMPUTATION OF RECURRENCE CURVE *****
 LOG N = A - BM

BIN	MAGNITUDE	RANGE	NO/YR (N)
1	4.00	4.00 - 8.50	5.84
2	4.50	4.50 - 8.50	1.78
3	5.00	5.00 - 8.50	.519
4	5.50	5.50 - 8.50	.159
5	6.00	6.00 - 8.50	.585E-01
6	6.50	6.50 - 8.50	.588E-02 NU
7	7.00	7.00 - 8.50	.588E-02 NU
8	7.50	7.50 - 8.50	.0
9	8.00	8.00 - 8.50	.0

A = 1.132 B = 0.5600 (NORMALIZED)
 A = 4.788 B = 1.0090 SIGMA = .343E-01

***** LEROY CRANDALL AND ASSOCIATES *****
 LOS ANGELES

TABLE C-1
(Sheet 15 of 15)

***** COMPUTATION OF DESIGN MAGNITUDE *****
CONSTANT AREA

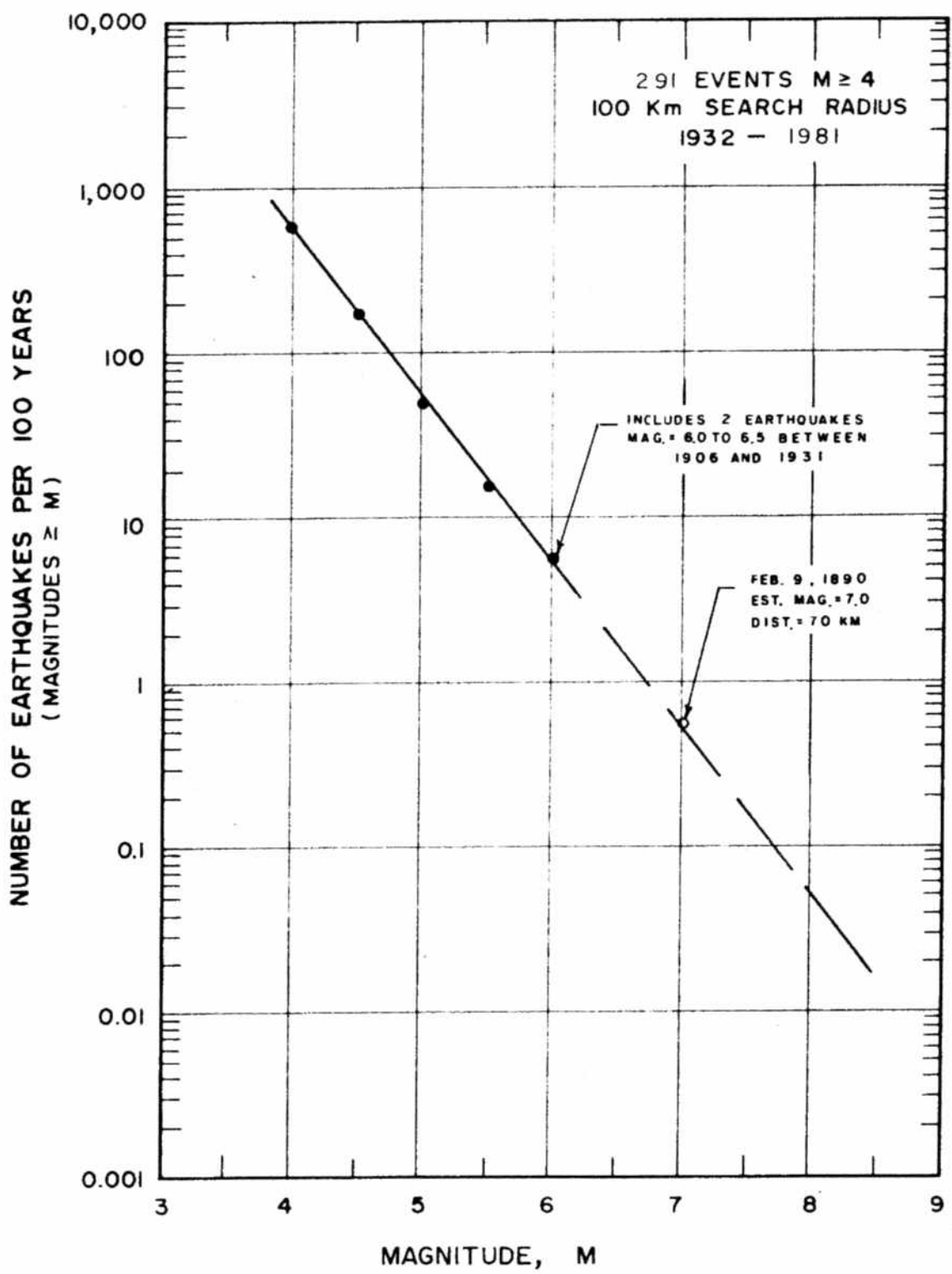
TABLE OF DESIGN MAGNITUDES

RISK	RETURN PERIOD (YEARS)				DESIGN MAGNITUDE				
	25	50	75	DESIGN LIFE (YEARS) 100	DESIGN LIFE (YEARS)				
					25	50	75	100	
0.01 ..	2487	4974	7462	9949	7.96	8.15	8.24	8.29	
0.05 ..	487	974	1462	1949	7.37	7.64	7.79	7.88	
0.10 ..	237	474	711	949	7.08	7.36	7.52	7.63	
0.20 ..	112	224	336	448	6.76	7.06	7.22	7.34	
0.30 ..	70	140	210	280	6.57	6.86	7.03	7.15	
0.50 ..	36	72	108	144	6.28	6.58	6.75	6.87	
0.70 ..	20	41	62	83	6.05	6.34	6.52	6.64	
0.90 ..	10	21	32	43	5.77	6.06	6.24	6.36	

MMIN = 4.00 MMAX = 8.50
MU = 5.61 BETA = 2.325

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

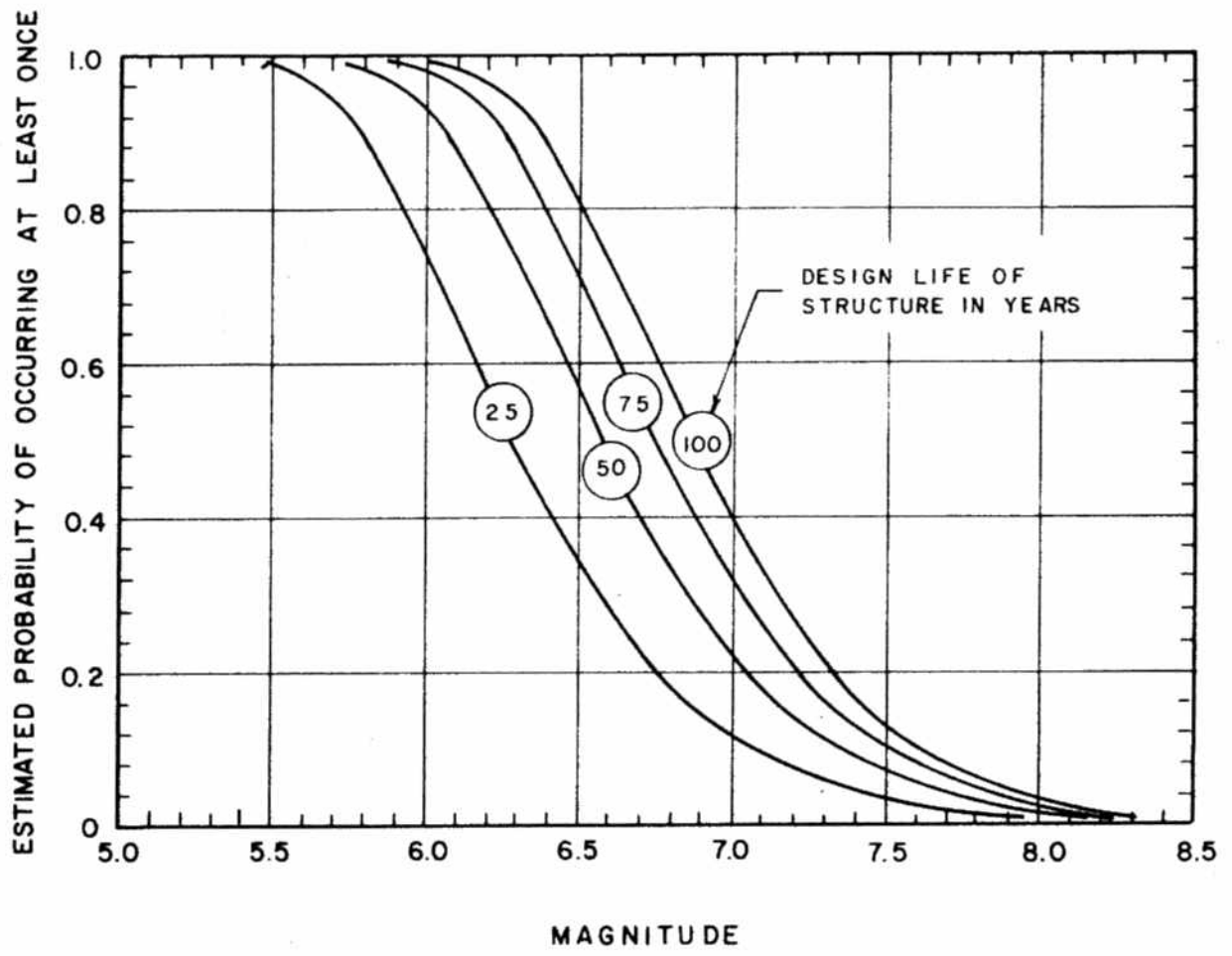
JOB D-82210 DATE 8/23/82 DR. JOHN O.E. W.P. CHKO



RECURRENCE CURVE

○ REPRESENTS SINGLE EVENT, AND THEREFORE HAS BEEN DISCOUNTED IN PREDICTION.

JOB D-82210 DATE 8/23/82 DR. JOHN O.E. W.P. CHKD. LL



ESTIMATED PROBABILITY OF EARTHQUAKE OCCURRENCE

CITY OF LOS ANGELES

CALIFORNIA

COMMISSIONERS

TOSHIKAZU TERASAWA

PRESIDENT

CHEL GULLIVER DUNNE

VICE PRESIDENT

HITCHELL G. GREEN

MARCIA MARCUS

PHILLIP VACA



TOM BRADLEY
MAYOR

DEPARTMENT OF
BUILDING AND SAFETY
402 CITY HALL
LOS ANGELES CALIF 90012

JACK M. FRATT
GENERAL MANAGER

October 26, 1983

City of Los Angeles - Harbor Department
P. O. Box 151
San Pedro, CA 90733

RECEIVED	
LeRoy Crandall and Associates	
NOV - 4 1983	
ADE-82284	
File:	
JK <input type="checkbox"/>	GAB <input type="checkbox"/>
RC <input type="checkbox"/>	<input type="checkbox"/>

* PG #
COPY TO RW III

TRACT: Harbor Department Property
LOT:
LOCATION: 2401 EAST SEPULVEDA BOULEVARD

Geological and Soil Engineering Report No. ADE-82284, dated August 10, 1983, prepared by LeRoy Crandall and Associates.

The above report concerning a proposed intermodal container transfer facility and rail access facilities has been reviewed by the Grading Division of the Department of Building and Safety.

The report is acceptable provided the following conditions are complied with during site development:

1. A grading permit shall be obtained.
2. The geologist and soils engineer shall review and approve the detailed plans, prior to issuance of any permits.
3. Existing fill shall not be used for support of footings, floor slabs or proposed fill.
4. Both the geologist and the soils engineer shall inspect and approve all fill and subdrain placement areas prior to placing fill. Both consultants shall include in their final reports a certification of the adequacy of the foundation material to support the fill without undue settlement and/or consolidation.
5. All recommendations of the report which are in addition to or more restrictive than those contained herein shall be incorporated into the plans.

6. Prior to the placing of compacted fill, a representative of the consulting Foundation Engineer shall inspect and approve the bottom excavations. He shall post a notice on the job site for the City Grading Inspector and the Contractor stating that the soil inspected meets the conditions of the report, but that no fill shall be placed until the City Grading Inspector has also inspected and approved the bottom excavations. A written certification to this effect shall be filed with the Department upon completion of the work. The fill shall be placed under the inspection and approval of the Foundation Engineer. A compaction report shall be submitted to the Department upon completion of the compaction.
7. All man-made fill shall be compacted to a minimum of 90 per cent relative compaction as required by Code Section 91.3006(d).
8. Compacted fill shall extend beyond the footings a minimum distance equal to the depth of the fill below the footings.
9. If import soils are used, no footings shall be poured until the Foundation Engineer has submitted a compaction report containing in-place shear test data and settlement data, to the Department, and obtained approval.
10. If the actual foundation design loads do not conform to the foundation loads assumed in the report, the Foundation Engineer shall submit a supplementary report containing specific design recommendations for the heavier loads to the Department for review and approval prior to issuance of a permit.
11. The applicant is advised that the approval of this report does not waive the requirements for excavations contained in the State Construction Safety Orders enforced by the State Division of Industrial Safety.
12. All friction pile drilling and installation shall be performed under the continuous inspection and approval of the Foundation Engineer.
13. Pile and/or caisson foundation ties are required by Code Section 91.2305(k)7. Exceptions and modification to this requirement are provided in Rule of General Application 662.

2401 E. Sepulveda Blvd.
10/26/83

14. Prior to the pouring of concrete, a representative of the consulting Foundation Engineer shall inspect and approve the footing excavations. He shall post a notice on the job site for the City Building Inspector and the Contractor stating that the work so inspected meets the conditions of the report, but that no concrete shall be poured until the City Building Inspector has also inspected and approved the footing excavations. A written certification to this effect shall be filed with the Department upon completion of the work.
15. The site period (Ts) has been reviewed and approved by the Grading Division.

JOHN D. COLVIN
Chief of Grading Division

Theodore D. Nickerson
THEODORE D. NICKERSON
Engineering Geologist

Armando J. Flores
ARMANDO J. FLORES
Civil Engineering Assist III

RG/TDN/AJF
485-2160

GR71025A:95

cc: LeRoy Crandall & Assoc.
SP District Office

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

May 23, 1984

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. ADE-82284)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Appendix B, Soils Data
Specification No. 2192
Proposed Intermodal Container Transfer
Facility (ICTF) and
Rail Access Facilities
223rd Street and San Diego Freeway
Los Angeles, California

As requested, we have prepared Appendix B, Soils Data, consisting of those portions of our geotechnical report pertinent to Specification No. 2192 for the subject project. Our report was submitted on August 10, 1983.

The Appendix contains a description of the soil conditions and also our recommendations for grading and subgrade preparation. We will be pleased to work with you and your staff to provide supplementary recommendations as the design and construction of the project proceed.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

by

Robert Chieruzzi

Robert Chieruzzi, R.C.E. 13001
Project Engineer

by

LeRoy Crandall

LeRoy Crandall, R.C.E. 6157
President

LC-RC/pa
Enclosures:
Original Text and
One Set of Reproducible Plates

SPECIFICATION NO. 2192

APPENDIX B - SOIL DATA

APPLICABLE PORTIONS OF
REPORT OF GEOTECHNICAL INVESTIGATION
PART I
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
AND RAIL ACCESS FACILITIES
223RD STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY
(LC&A JOB NO. ADE-82284)

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SCOPE

This Appendix presents those results of Part I of the geotechnical investigation report dated August 10, 1983 (LC&A Job No. ADE-82284) for the subject project pertinent to the specifications for the project.

The recommendations contained herein are based on the results of our field explorations and laboratory tests and the engineering analyses based thereon. The results of the field explorations and laboratory tests are presented in the addendum to this Appendix.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for Southern Pacific Transportation Company and their design consultants to be used solely in the design of the proposed facilities. The report has not been prepared for use by other parties, and may not contain sufficient information for purposes of other parties or other uses.

SUBSURFACE CONDITIONS

EXPLORATIONS

The subsurface conditions at the site were explored by drilling a total of 81 borings. Logs of the borings are presented in the addendum.

SOILS

Existing fill soils were encountered in a majority of the borings. The depth of existing fill is indicated opposite each boring on

Plate 1.1, Existing Soil Conditions, Depth of Fill. As shown on Plate 1.1, the greatest concentration of fill soils was encountered in the southerly and north central portions of the site where the depth of fill ranges from 5 to 9 feet and 3 to 4½ feet, respectively, below the existing grade. Elsewhere, the depth of fill varies from zero to about two feet. Deeper fill may occur between boring locations. The fill soils consist primarily of silty sand and sandy silt, with varying amounts of gravel and cobbles. Sandy clay was encountered in Boring 68. Only nominal amounts of debris were observed in the fill. The firmness of the fill soils is quite variable across the site, varying from moderately loose to firm.

Although the sources of the fill materials are not known, it is suspected that at least some of the fill materials were imported, especially those materials in the areas of the deeper fill. In areas of shallow fill, the materials possibly came primarily from within the site. Based on the fill materials encountered in the field explorations, there is no evidence that the rubbish landfill of the old Alameda Street dump extended easterly into the ICTF site.

The natural soils beneath the site consist of silty sand, sandy silt, clayey silt, and sand. These soils are moderately soft to moderately firm at present moisture contents and would become weaker and more compressible at increased moisture contents, adversely affecting pavement performance. The effect of increased moisture content is especially indicated by the consolidation curves in the addendum on

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Plates A-4.1, A-4.3, and A-4.16, where the compressibility is shown to increase significantly subsequent to the addition of water.

For purposes of evaluating the firmness of the soils, both firm and natural, within the upper six feet, the site was divided into seven sections as shown on Plates 1.2 through 1.4, Existing Soil Conditions Percent Compaction. For each section, the percent compaction was determined for three increments of depth: 0 to two feet, two to four feet, and four to six feet. The results of this analysis are summarized in Table 1, and are also presented in plan on Plates 1.2 through 1.4.

Table 1. Summary of Compaction Values
for Soil Depths 0 to 6 Feet

Section	Percent Compaction*					
	Depth: 0-2'		Depth: 2-4'		Depth: 4-6'	
	Range	Average	Range	Average	Range	Average
1	74-90	79	59-76	69	69-84	75
2	63-82	75	69-81	75	70-81	77
3	74-98	90	71-95	82	68-100	81
4	74-96	84	74-78	76	64-87	77
5	76-95	84	69-91	76	69-88	79
6	82-95	87	68-85	80	74-88	78
7	79-98	89	73-95	83	74-94	83
Average		84		77		79

*Percent compaction based on dry densities of undisturbed samples and maximum dry densities obtainable by ASTM Designation D1557-70 method of compaction.

The results shown in Table 1 and on Plates 1.2 through 1.4 are based on approximately 175 determinations of the percent compaction values of the soils within the upper six feet. The percent compaction values were based on dry densities of relatively undisturbed ring

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in Table 2, the average CBR values are presented for three major soil types found at the site and for three levels of percent compaction. The results indicate very clearly that the CBR is very dependent on the percent compaction or more directly the density of the soil. As previously stated, the average compaction of the soils within the upper six feet is about 80 percent. For the in-situ density of these soils, the average CBR values for all soil types would be very low. By increasing the average compaction from 80 percent to 90 percent, the corresponding increases in the average CBR values would range from about 100 percent for the clayey soils to about 500 percent for the silty sand soils.

Table 2. Summary of Average CBR Values

<u>Soil Type</u>	<u>Number of Tests</u>	<u>Average CBR (%)</u>		
		<u>80% Compaction</u>	<u>90% Compaction</u>	<u>95% Compaction</u>
Silty Sand	7	3	18	35
Sandy Silt	8	4	15	27
Clayey Silt and Silty Clay	2	2	4	6

WATER

Water was encountered in only two bucket borings (Borings 41 and 43) at depths of about 40 feet below the existing grade, corresponding to about Elevation -22. At the rail access facility site, immediately north of the ICTF site, water was measured in a rotary wash boring (Boring 5) at a depth of about 45 feet, corresponding to about Elevation -21. This relatively deep water level beneath the site should not be a factor that will adversely affect pavement performance. However, the water level may limit the depth of drilled piles that may be utilized.

GASES

In several of the borings (Borings 12 through 15), a petroleum odor was encountered within the upper five feet of fill soils; none was encountered in the underlying natural soils. Gas measurements performed in Borings 32 through 39 revealed zero accumulation of gas after periods of 15 minutes to 12 hours during which time the borings were covered. It is possible that gas may be encountered between boring locations, since this portion of the site is immediately adjacent to the Watson Land Company parcel that was formerly the Alameda Street Dump. Reportedly, gas is currently being generated as a result of the decomposition of waste contained in the dump.

RECOMMENDATIONS

GENERAL

The existing fill soils are not uniformly well compacted and are not considered suitable for crane runway, rail trackage, building foundations, floor slabs, or paving support. The natural soils beneath the site are generally only moderately soft to moderately firm at present moisture content and would become weaker and more compressible when wet. As discussed in more detail under "GRADING", the existing fill soils and upper natural soils should be excavated and replaced as properly compacted fill, and any required additional fill should be properly compacted.

GRADING

General

For a balanced earthwork operation, cuts and fills up to about three feet will be required. In addition, all existing fill soils and the upper natural soils to a certain depth should be excavated and replaced as properly compacted fill.

As previously discussed, the firmness of the upper soils is quite variable both laterally and vertically. The percent compaction of the soils within the upper six feet varies from a low of 59% to a high of 100%, with the average being about 80%. At their present condition, the upper soils (both fill and natural) are not capable of providing the level of support normally expected for paving, crane runways, rail trackage, building foundations, floor slabs and miscellaneous other design elements planned at the ICTF site. Because of their relatively low and non-uniform compaction, the soils are compressible and will settle non-uniformly under imposed loads; the compressibility will become significantly increased if the soils are subjected to increased moisture content. In addition, at their present low average compaction, the soils are capable of only developing relatively low CBR values, resulting in the need of relatively thick pavement sections to provide the level of support normally expected of pavements under many repetitions of heavy loads.

To improve the supporting capacity of the subgrade soils, we recommend that the level of their compaction be increased by overexcavation and replacement with properly compacted fill. The depth of

overexcavation will be determined by the specific pavement structural section, loading environment, and engineering properties of the subgrade soils.

Subgrade Preparation

Subgrade preparation consists of providing a required minimum thickness of properly compacted subgrade beneath the structural element by a combination of overexcavation and replacement as properly compacted fill and in-place compaction.

The lower portion of the required compaction may be obtained by in-place compaction with heavily loaded equipment. For the on-site silty sand and sandy silt soils, it may be possible with appropriate equipment to achieve an effective depth of in-place compaction greater than eight inches that is normally considered as the maximum thickness of a loose lift in compacting to achieve 95% compaction. However, the contractor should demonstrate in a test section his capability to achieve greater effective depths of compaction with the equipment he plans to utilize.

All existing vegetation should be stripped, and the site should be cleared of all obstructions including any surface debris. The cleared materials should be removed from the site. After clearing the site and excavating as required, the site should be carefully inspected and any remaining fill soils or disturbed natural soils should be excavated.

After excavating, the exposed natural soils should be scarified to the planned depth of in-place compaction, moistened as necessary to

bring the moisture to within 2 percent of optimum moisture content, and rolled with heavy compaction equipment. The entire depth of in-place compaction should be compacted to at least 90% of the maximum density obtainable by the ASTM Designation D1557-70 method of compaction.

After completion of the in-place compaction, all required fill should be placed in loose lifts not more than eight inches in thickness and compacted to at least 95%. It is recommended that the moisture content of the soils at the time of compaction vary no more than 2% below or above optimum moisture content.

The on-site soils, except for any clay soils and for any organic matter or debris within the existing fills, may be used in required fills. The excavation operations should be planned so as to obtain a blending of the silty sands and the sandy silts. This blending would result in more uniform subgrade characteristics across the site. Any required imported fill should consist of relatively non-expansive and predominantly granular soils such as a silty sand. The expansion index of the import material should be less than 35, and no more than 50% of the material should pass a No. 200 sieve. Imported material should contain sufficient fines (binder) so as to produce a compacted fill which will not rut under construction traffic and which will be stable in shallow trenches.

In computing fill quantities, a shrinkage of about 15% may be expected when excavating and compacting the on-site soils to 90%. That is, it will require about 1.15 cubic yards of excavation to make one

cubic yard of fill. If the soils are compacted to 95%, a shrinkage value of 20% should be anticipated.

The on-site clay soils may be used in the lower portions of deep fills and in landscape areas.

The excavation of the upper soils and the compaction of all required fill should be observed and tested by our firm. Imported fill materials should be approved prior to importing.

UTILITY PIPE BEDDING AND BACKFILL

Where bedding is required for utility lines, the on-site sands may be used. However, based on the results of sand equivalent tests presented on Plate A-7 in the addendum, the on-site silty sands and silts would not be acceptable as bedding material.

The on-site sands and silty sands may be used as trench backfill. We recommend that all trench backfill be placed in layers and compacted to at least 90% of the maximum density obtainable by the ASTM Designation D1557-70 method of compaction. Where granular soils occur at the bottom of the trench, the lower portion of the backfill could be placed by flooding and jetting. At least the upper two or three feet of backfill should be placed in layers and compacted with mechanical or vibratory compaction equipment. Proper compaction of the backfill will be required to provide support for paving. Precautions should be taken in the compaction of the backfill to avoid damage to the pipes.

ADDENDUM TO APPENDIX B

EXPLORATIONS

The site was explored by drilling 81 borings at the locations shown on Plate 1.1. Most of the borings were drilled to depths of 5 to 45 feet below the existing grade using 17-, 20-, and 24-inch-diameter bucket-type drilling equipment. Boring 42 was drilled to a depth of 80 feet using 5-inch-diameter rotary wash-type equipment. Borings 78, 79, and 80 were drilled using hand drilling equipment. Caving and raveling of the boring walls occurred during drilling of the bucket borings in approximately one half of the borings, as indicated on the boring logs. A pipe approximately 12 inches in diameter was encountered in Boring 12 at a depth of eight feet. Drilling mud was used with the rotary wash equipment to prevent caving.

Upon the completion of Boring 42, a 2-inch-diameter PVC pipe was installed in the boring, and pea gravel backfill was placed around the outside of the pipe.

The soils encountered were logged by our field technician, and undisturbed samples were obtained for laboratory inspection and testing. The logs of the borings are presented on Plates A-1.1 through A-1.81; the depths at which undisturbed samples were obtained are indicated to the left of the boring logs. The energy required to drive the sampler twelve inches is indicated on the logs. The soils are classified in accordance with the Unified Soil Classification System described on Plate A-2.

LABORATORY TESTS

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs.

Direct shear tests were performed on selected undisturbed samples to determine the strength of the soils. The samples were tested at field and increased moisture contents and at various surcharge pressures. The yield-point values determined from the direct shear tests are presented on Plates A-3.1 and A-3.2, Direct Shear Test Data.

Confined consolidation tests were performed on 31 undisturbed samples to determine the compressibility of the soils. Water was added to 27 of the samples during the tests to illustrate the effect of moisture on the compressibility. The results of the tests are presented on Plates A-4.1 through A-4.16, Consolidation Test Data.

To determine the particle size distribution and confirm the field classification of the soils, mechanical analyses were performed on 14 samples. The results of the mechanical analyses are presented on Plates A-5.1 through A-5.8, Particle Size Distribution.

The optimum moisture content and maximum dry density of the soils were determined by performing compaction tests on 17 samples. The tests were performed in accordance with the ASTM Designation D1557-70 method of compaction. After completion of the compaction tests, California Bearing Ratio tests were performed on the samples in accordance with the ASTM Designation D1883-73 method. The results of the tests are

presented on Plates A-6.1 through A-6.6, Compaction and C.B.R. Test Data. To six of the samples, 6% (dry weight) cement was added and compacted to form soil-cement specimens. After a curing period of seven days, California Bearing Ratio tests were performed in accordance with the ASTM Designation D1883-73 method. The results of the tests are presented on Plates A-6.7 and A-6.8.

To determine the suitability of the on-site materials for back-fill and bedding, sand equivalent determinations were made on four samples. The results of the tests are presented on Plate A-7, Sand Equivalent Test Data.

-oOo-

July 9, 1984

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

MACTEC ENGINEERING AND CONSULTING, INC.

Port of Los Angeles
P.O. Box 151
San Pedro, California 90733

(Our Job No. A-82284)

Attention: Mr. E. L. Gorman
Chief Harbor Engineer

Gentlemen:

Documentation re Presence of
Toxic Substances and Hazardous Materials
Proposed Intermodal Container Transfer
Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

We were requested by Mr. A. Goodwin with the Port of Los Angeles to provide documentation of the presence, if any, of toxic substances and hazardous materials at the site of the subject ICTF site. We performed a geotechnical investigation at the subject site and submitted a report on August 10, 1983.

As part of the geotechnical investigation, the site was explored by drilling 81 borings to depths of 5 to 45 feet below the existing grade using 17-, 20-, and 24-inch-diameter bucket-type drilling equipment. Based on the visual inspection of the soils encountered during the drilling, neither toxic substances nor hazardous materials were observed. Chemical testing was not within the contracted scope of services.

Gas measurements, which were performed in seven borings, indicated zero accumulation of gas after periods of 15 minutes to 12 hours during which the borings were covered. There is the possibility that

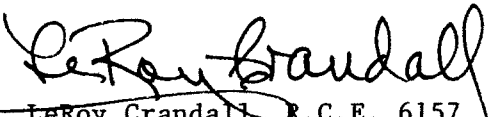
gas may be encountered between boring locations, especially adjacent to the Watson Land Company parcel that was formerly the Alameda Street Dump.

We trust the above information will be sufficient for your current needs.

Yours very truly,

LeROY CRANDALL AND ASSOCIATES

by 
Robert Chieruzzi, R.C.E. 13001
Project Engineer

by 
LeRoy Crandall, R.C.E. 6157
President

LC-RC/tk-P7
(6 copies submitted)

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February 1, 1985

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. ADE-82284)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Allowable Lateral Bearing of Soils
For Design of Light Pole Foundations
Proposed Intermodal Container Transfer
Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

This letter confirms our discussion with Mr. C. Williams of Williams Engineering regarding the allowable lateral bearing of the soils that may be used for the design of light pole foundations planned at the ICTF site. Our report of geotechnical investigation for the subject project was submitted on August 10, 1983 (our Job No. ADE-82284).

We were informed by Mr. Williams that light poles are planned at various locations within the subject site. The light poles will range in height up to about 80 feet. Conventional drilled cast-in-place concrete piers are planned to provide foundation support for the light poles. The lateral loads may be resisted by the passive resistance of the soils. The resistance may be determined by using an acceptable pole formula such as the one in the City of Los Angeles Building Code. The lateral bearing value of natural soils or properly compacted fill against isolated pier foundations may be taken as 500 pounds per cubic foot.

Yours very truly,

LeROY CRANDALL AND ASSOCIATES

by



Robert Chieruzzi, R.C.E. 13001
Project Engineer

RC/L1
(6 copies submitted)

cc: (3) Williams Engineering

Part II - Interim Report No. 1 for Proposed ICTF and Rail
Access Facilities (September 13, 1982)

INTERIM REPORT OF GEOTECHNICAL INVESTIGATION
PART II
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
AND RAIL ACCESS FACILITIES
223rd STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY
(OUR JOB NO. ADE-82210)

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

September 13, 1982

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. ADE-82210)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Our "Interim Report of Geotechnical Investigation, Part II, Proposed Intermodal Container Transfer Facility (ICTF) and Rail Access Facilities, 223rd Street and San Diego Freeway, Los Angeles, California, for the Southern Pacific Transportation Company" is herewith submitted. A comprehensive report containing more detailed recommendations will be submitted at a later date after more definitive information becomes available regarding various elements of the proposed project.

The scope of the investigation was planned in collaboration with various personnel of Southern Pacific Transportation Company.

With respect to geologic and seismic hazards, the site is considered as safe as any within the general area. Based on the geologic findings, no faults are known to exist within the site; accordingly, the possibility of surface rupture of the site due to faulting is remote. Although the site could be subject to violent ground shaking in the event of a major earthquake, this hazard is common to Southern California and the effects of the shaking can be minimized by proper structural design and proper construction.

Existing fill soils, 1 to 26 feet in thickness, were encountered in seven of the nine exploration borings. The natural soils beneath the site consist of moderately firm silts, silty sands, and sands to depths of some 25 to 27 feet below the existing grade, below which the soils are generally firm.

The existing fill soils and natural deposits may be excavated with conventional earth-moving equipment. Where the necessary space is available for sloped excavations, temporary unsurcharged excavations may be sloped back without shoring.

The soil and geologic conditions are described in the report, and preliminary recommendations are presented for foundation design of the bridge, the retaining walls and the pumping station, and for excavating. Also presented are the results of seismic studies to establish seismic design criteria for bridge design. Design recommendations for the other elements of the proposed project will be provided as more definitive design information becomes available.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

by *Robert Chieruzzi*
Robert Chieruzzi, R.C.E. 13001
Project Engineer

by *Glenn A. Brown*
Glenn A. Brown, C.E.G. 3
Director of Geological Services

by *LeRoy Crandall*
LeRoy Crandall, R.C.E. 6157
President

LC-RC-GAB/kg
(6 copies submitted)

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MACTEC ENGINEERING AND CONSULTING, INC.

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INTERIM REPORT OF GEOTECHNICAL INVESTIGATION

PART II

PROPOSED INTERMODAL CONTAINER

TRANSFER FACILITY (ICTF)

AND RAIL ACCESS FACILITIES

223rd STREET AND SAN DIEGO FREEWAY

LOS ANGELES, CALIFORNIA

FOR THE

SOUTHERN CALIFORNIA TRANSPORTATION COMPANY

SCOPE

This interim report presents the preliminary results of Part II of our geotechnical investigation for the subject project. Part II covers the rail access facilities that will extend from the Southern Pacific Dolores Yard to the northerly limits of the Intermodal Container Transfer Facility (ICTF) site. Part I of the geotechnical investigation, which covers supplementary work to be performed within the ICTF site, has not yet been authorized.

The proposed rail access facilities and the locations of exploration borings are shown on Plate 1, Site Plan, Rail Access Facilities. Plate 1 will be updated as more definitive information becomes available regarding the alignment.

This investigation was authorized to evaluate the geotechnical conditions of the site with regard to their possible effects on the proposed rail access facilities. We are to provide design information on the following:

- o design of feasible foundation types for all planned structures.
- o capacities and sizes of piles, piers, or caissons with associated settlements.
- o allowable bearing pressures for spread footings with associated settlements.
- o parameters for design of piles for horizontal loadings and deflections.
- o seismic design criteria for the Alameda Street bridge in accordance with CALTRANS criteria.
- o earthwork procedures, including excavation, compaction, and backfilling.

- o data for shoring design.
- o allowable temporary and permanent slopes.
- o methods of handling any ground water during construction.
- o data for design of pumping station, including water levels and permeability data.
- o lateral earth pressures on walls.
- o feasibility of reinforced earth for retaining walls.
- o bedding requirements for relocated utilities.

This interim report presents information on the soil and geologic conditions at the site and preliminary recommendations for foundation design for the bridge, the retaining walls and the pumphouse. Also presented are the results of seismic studies to establish seismic design criteria for bridge design. Design recommendations for the other elements of the proposed facilities will be provided as more definitive design information becomes available. The results of the field explorations and laboratory tests are presented in the attached Appendix.

PROJECT DESCRIPTION

The proposed rail access to the ICTF site, which is presented on Plate 1, will be along an alignment that extends southerly from the existing Southern Pacific Dolores Yard to the ICTF northerly limits. The line will cross Alameda Street via a new bridge and pass beneath the San Diego Freeway through a space in the bridge structure previously provided for this purpose and then extend underneath 223rd Street and the ramp to the south. This access route will require the following construction elements:

1. Alameda Street depression and retaining walls along both sides of the depression.
2. Bridge across the Alameda Street depression.
3. Underpass (tunnel) structures beneath 223rd Street and ramp.
4. Relocation of existing storm drain and other utility and oil lines.
5. Trackage along entire alignment.

Based on current plans, the proposed Alameda Street depression will be approximately 1,500 feet in length. The approximate elevations at the north end, low point, and south end of the depression profile are 26.8, 3.5 and 24.7 feet, respectively.

A steel plate girder railroad bridge, which is planned to span across the depression, will be approximately 125 feet long and 36 feet wide. In addition to the two end supports, an intermediate pier is planned at the low point of the depression. The top of rail will be established at approximately Elevation 25.3. Load information has not been established at this time.

Two underpasses are planned: one beneath existing 223rd Street and one beneath a proposed on-off ramp. Details regarding the underpasses have not been finalized.

SITE CONDITIONS

The proposed alignment of the rail access facilities traverses a portion of the Southern Pacific Dolores Yard, existing Alameda Street and beneath the San Diego Freeway, 223rd Street and a ramp. Numerous utility lines are traversed by the proposed alignment, some of which will require relocation.

SOIL CONDITIONSAlameda Street Depression

Based on Borings 1 through 8, which were drilled along existing Alameda Street, existing fill soils were encountered in six of the eight borings to depths of 1 to 4½ feet. The fill consists primarily of crushed rock and sand base, silty sand and sandy silt. It is anticipated that the fill was placed during the grading of Alameda Street. The fill was found to vary from moderately firm to firm.

The natural soils beneath the site consist of silts, silty sand and sands. The soils were found to be only moderately firm at present moisture contents and will become weaker and more compressible at increased moisture contents. Below depths of some 25 to 27 feet below the existing grade, the soils are generally firm.

In the six borings which were drilled with bucket-type drilling equipment to depths of 40 to 51 feet, water seepage was encountered in only Boring 7 at depths of 30½ and 40½ feet. The amount of seepage was slight; no water was observed at the bottom of the 49-foot boring ten minutes after the drilling was completed.

In one of the three rotary wash borings, Boring 5, a two-inch PVC pipe was installed to a depth of 75 feet and backfilled with gravel to permit water level measurements. Fifteen days after completion of drilling, the water level was measured at a depth of 45½ feet, corresponding to Elevation -20.9. Additional water level measurements are planned.

223rd Street and the Ramp Underpass

In Boring 9, which was drilled at the top of the embankment supporting 223rd Street, existing fill soils were encountered to a depth of 26 feet. The fill soils consist primarily of mixtures of silt and silty sand; considerable amounts of crushed asphaltic paving and concrete were encountered within the upper several feet. The fill soils are generally firm throughout.

The underlying natural soils consist predominantly of silts, silty sand and sand, with a lesser amount of clay. The natural soils are firm. A petroleum odor was detected at a depth of approximately 35 feet.

Water was not encountered within the 51-foot deep boring which was drilled with bucket-type drilling equipment.

Boring 10, which was initially planned at the site of the proposed ramp underpass, was deferred until the site is cleared of storage vehicles. It will be drilled when the Part I explorations are performed.

GEOLOGYGENERAL

The proposed rail access facility site is in the Dominguez Gap area of the Los Angeles River plain. The site is about one half mile east of the Dominguez Channel and about one mile west of the Los Angeles River Channel. The Los Angeles River plain rises gently northward from San Pedro Bay and represents the present day stage of backfilling of an ancestral river channel. Signal Hill, an uplifted area along the

Newport-Inglewood Fault Zone, is located about three miles east of the site. The site is located about 4.5 miles north of Long Beach Harbor at an elevation of about 25 feet above sea level (U.S.G.S. Datum).

Plate 2, Regional Geology, shows the site in relation to regional geologic features. Plate 3, Local Geology, shows the geology and topography in the vicinity of the site. Plate 4, Regional Seismicity, indicates the locations of major faults and earthquake epicenters in Southern California.

GEOLOGIC MATERIALS

The site is underlain by varying amounts of artificial fill as previously described. Beneath the fill are about 100 feet of Holocene age river deposits consisting of silty sand, silt and sand. Beneath the river deposits are about 250 feet of alluvial deposits of the upper Pleistocene Lakewood Formation consisting of interbedded sand, silt and gravel.

The lower Pleistocene San Pedro Formation underlies the upper Pleistocene deposits and extends to a depth of about 1,100 feet below the site. Tertiary sedimentary rocks of the Pico, Repetto, and Puente formations, respectively, underlie the San Pedro Formation. These Tertiary rocks extend to a depth of about 14,000 feet beneath the site where they rest on the Catalina Schist. The Catalina Schist is considered to be the basement rock of the area.

GROUND WATER

The site is in Section 15, Township 4S, Range 13W in the Central Hydrologic Subarea of the Coastal Plain of Los Angeles County.

Water level measurements at Los Angeles County Flood Control Well No. 876X, located about 800 feet north of the site, indicate that the water surface elevation was about 69 feet below sea level on April 22, 1982, corresponding to a depth of about 94 feet beneath the site. As previously stated, water level was measured in Boring 5 at 46½ feet below the surface 15 days after drilling. In our opinion, the ground water encountered beneath the site represents perched water rather than the regional ground water table.

GEOLOGIC HAZARDS

The geologic hazards at the site are essentially limited to those caused by earthquakes. The major cause of damage from earthquakes is the result of violent shaking from earthquake waves; damage due to actual displacement or fault movement beneath a structure is much less frequent. The violent shaking would occur not only immediately adjacent to the earthquake epicenter, but within areas for many miles in all directions.

Faults

The numerous faults in Southern California include active, potentially active and inactive faults. Detailed information concerning the faults in the area is presented in Tables B-1, B-2 and B-3 in Appendix B. No faults or fault associated features were observed on or

adjacent to the site during our field reconnaissance. The Seismic Safety Plan of the City of Los Angeles (1974), and the Seismic Safety Element of the City of Long Beach (1975) were reviewed as part of our literature analyses.

The site is not within a City of Los Angeles Special Studies Zone, nor within an Alquist-Priolo Special Studies Zone. In our opinion, there is very little probability of surface rupture due to faulting occurring beneath the site.

The active fault nearest the site is the Cherry Hill Fault of the Newport-Inglewood Fault Zone located about 1.5 miles northeast of the site. An Alquist-Priolo Special Studies Zone has been established along the Newport-Inglewood Fault Zone. Other nearby branches of the Newport-Inglewood Fault include the Avalon-Compton and Reservoir Hill Faults, located 3.4 miles northwest and 4.8 miles east-southeast of the site, respectively. Other more distant faults of the Newport-Inglewood Fault Zone include the Potrero and Inglewood Faults, located 9.4 and 9.9 miles northwest of the site.

The active San Fernando Fault Zone is located 34 miles to the north and the major San Andreas Fault is located about 49 miles to the north-northeast.

The potentially active fault nearest the site is the Richfield Fault (low potential), located about 0.8 miles south-southwest of the site at its nearest point. The Richfield Fault crosses the southern part of the proposed Intermodal Container Transfer Facility site at a

point about 1.1 miles south of the southern end of the rail access facility site. This fault appears to offset materials older than middle Pleistocene. The upper 300 feet of materials do not appear to be structurally displaced (LACFCD, 1962).

Other potentially active faults in the area include the Palos Verdes Fault, located 4.8 miles southwest of the site and the Charnock, Norwalk and Overland Faults, located 12, 11.5 and 16 miles from the site.

Seismicity

The epicenters of earthquakes with magnitudes equal to or greater than 4.0 within a radius of 100 kilometers of the site are shown in Table C-1 in Appendix C. Other pertinent information regarding these earthquakes is also shown in Table C-1. The earthquake recurrence curve based on that information is presented on Plate C-1, Recurrence Curve.

The maximum credible earthquake is defined as the maximum earthquake that appears capable of occurring under the presently known tectonic framework. Tables B-1 and B-2 in Appendix B list the maximum credible earthquakes for faults in the Southern California area.

The location of the site in relation to known active faults indicates that the immediate area would not be exposed to greater than normal seismic risk for the Los Angeles Coastal Plain.

Stability

The Wilmington Oil Field Subsidence Area, a major zone of subsidence due to petroleum extraction, is located south of the site; however, subsidence is not known to have occurred at the site. Repressurization of the Wilmington Oil Field, which started in 1959, has substantially arrested the subsidence.

The property is located on relatively flat lying ground with no slope stability problems and no potential for lurching (movement at right angles to a steep slope during strong ground shaking). Additionally, the property is not known to be on or in the path of any existing or potential landslide.

Flooding, Tsunamis and Seiches

The site is not within a designated flood prone area. Dominguez Channel and the Los Angeles River have been channelized for flood control.

As the site is not within a coastal area, the risk of damage from earthquake induced sea waves called tsunamis need not be considered.

The site is not located downslope of any large bodies of water that would adversely affect the site in the event of earthquake induced failure or seiches (oscillations in a body of water due to earthquake shaking).

RECOMMENDATIONSGENERAL

The following recommendations are presented for use in preliminary foundation design of the bridge, retaining walls, and pumping station. Also presented are recommendations for excavating and for seismic design criteria for bridge design. Supplementary analyses and recommendations will be necessary as more definitive information regarding the various elements become available.

The existing fill soils along the proposed Alameda Street depression are not suitable for foundation support of the bridge and retaining walls. The underlying natural soils are only moderately firm to depths of about 25 to 27 feet below the existing grade. Deeper soils are generally firm. Since relatively heavy bridge loads are anticipated, the upper soils are not considered suitable for support of the proposed bridge on spread footings because of settlement considerations. However, the use of spread footings should be reviewed once the loads are known. To provide support for the proposed bridge with minimum settlement, driven friction piling may be used. The shallow water level, which would make the installation of conventional drilled cast-in-place concrete piling difficult, would limit the length of the drilled piling. For preliminary design, design capacities for driven friction piling are presented. The retaining walls along the sides of the depression may be supported on continuous footings. However, for the higher wall segments along the deeper portion of the depression, driven piling or possibly short drilled piling may be considered.

BRIDGE STRUCTUREDriven Piling

The downward and upward capacities of 12- and 14-inch square prestressed concrete friction piles are presented on Plate 5, Driven Pile Capacities. Dead plus live load capacities are shown; a one-third increase may be used when considering wind or seismic loads. The pile capacities presented on Plate 5 are based on the strength of the soils; the compressive and tensile strength of the pile section itself should be checked to verify the structural capacity of the piles.

Piles in groups should be spaced at least $2\frac{1}{2}$ diameters on centers but in no event less than three feet on centers. If the piles are so spaced, no reduction in the downward capacity of the piles due to group action need be considered in design.

The settlement of the proposed bridge structure, supported on driven piling, will depend on the magnitude of the loads imposed, but should be within tolerable limits. Settlement analyses will be performed at such time that definitive load information becomes available.

Seismic Design Data

We have been informed that the proposed bridge will be designed in accordance with the latest State of California, Department of Transportation, Seismic Bridge Design Criteria, dated May 1982. The seismic criteria are based on the consideration of the following factors: the distance of the site to active faults, the occurrence of a maximum credible earthquake, the seismic response of the soils at the site, and

the dynamic response characteristics of the bridge structure. The combined effects of these factors result in elastic response spectra for a maximum credible earthquake. The selection of the appropriate spectra requires geotechnical input consisting of the peak expected acceleration of the bedrock or "rock-like" material at the site and the depth of the overlying alluvium. These geotechnical input data, together with the input data required of the structural engineer, are used to determine the earthquake design force.

The peak "rock" acceleration is postulated as a result of a maximum credible earthquake having a magnitude 7.0 on the Newport-Inglewood Fault, which is located approximately 1½ miles from the site at its closest point. For this event, the estimated peak rock acceleration is 0.7g.

Based on the geologic investigation of the site, the depth of the alluvium beneath the site may be taken as greater than 150 feet.

RETAINING WALLS

The height of excavation to be retained by walls planned along both sides of the depression will vary from zero at the top to about 25 feet at the low point of the depression. We understand that it is desirable to consider retaining structures other than conventional cantilevered reinforced concrete walls, such as reinforced earth. Recommendations presented below are for cantilevered reinforced concrete walls; recommendations for other types of retaining structures will be provided at a later date, if still desired.

As previously stated, the fill soils are not suitable for foundation support, and the natural soils along the proposed depression to depths of some 25 to 27 feet below existing grade are only moderately firm at present moisture content and will become weaker and more compressible at increased moisture contents. If the existing fill soils are excavated and replaced as properly compacted fill, continuous wall footings established either in compacted fill or the natural soils may be used for support of the walls. For preliminary design, the wall footings may be designed to impose a maximum pressure of 2,000 pounds per square foot for a footing depth of at least two feet below the lowest adjacent grade. Along the lower portion of the depression, footings extending below a depth of about 27 feet below the existing grade, corresponding approximately to Elevation -2, may be designed to impose a higher pressure of about 4,000 pounds per square foot. A one-third increase in these bearing values may be used for wind or seismic loads. These bearing values are contingent upon the results of settlement analyses which need to be performed. Should the settlements be greater than can be tolerated, the higher wall segments may be supported on driven friction piling based on the capacities presented on Plate 5, Alternately, short drilled cast-in-place friction piling may be considered.

Lateral loads may be resisted by soil friction and by the passive resistance of the soils. A coefficient of friction of 0.4 may be used between footings and the supporting soils. The passive resistance of

the natural soils or properly compacted backfill may be assumed to be equal to the pressure developed by a fluid with a density of 250 pounds per cubic foot. A one-third increase in the passive value may be used for wind or seismic loads. The frictional resistance and the passive resistance of the soils may be combined without reduction in determining the total lateral resistance.

For design of retaining walls, where the surface of the backfill is level, it may be assumed that the soils will impose a pressure equal to that developed by a fluid with a density of 30 pounds per cubic foot. Lateral surcharge pressures due to any adjacent loads or traffic should also be included.

PUMPING STATION

Although details of the pumping station planned at the lower portion of the depression are not known yet, it is anticipated that the station will be supported on a concrete mat-type foundation and that the loads will be relatively light. If this is the case, for preliminary design a mat foundation established at Elevation -2 or deeper may be designed to impose a soil pressure of 4,000 pounds per square foot. A one-third increase in the bearing value may be used for wind or seismic loads.

EXCAVATION AND SLOPES

Excavation ranging up to about 25 feet deep will be required to achieve the desired profile along the proposed depression. Where sufficient space is available, temporary unsurcharged embankments may be

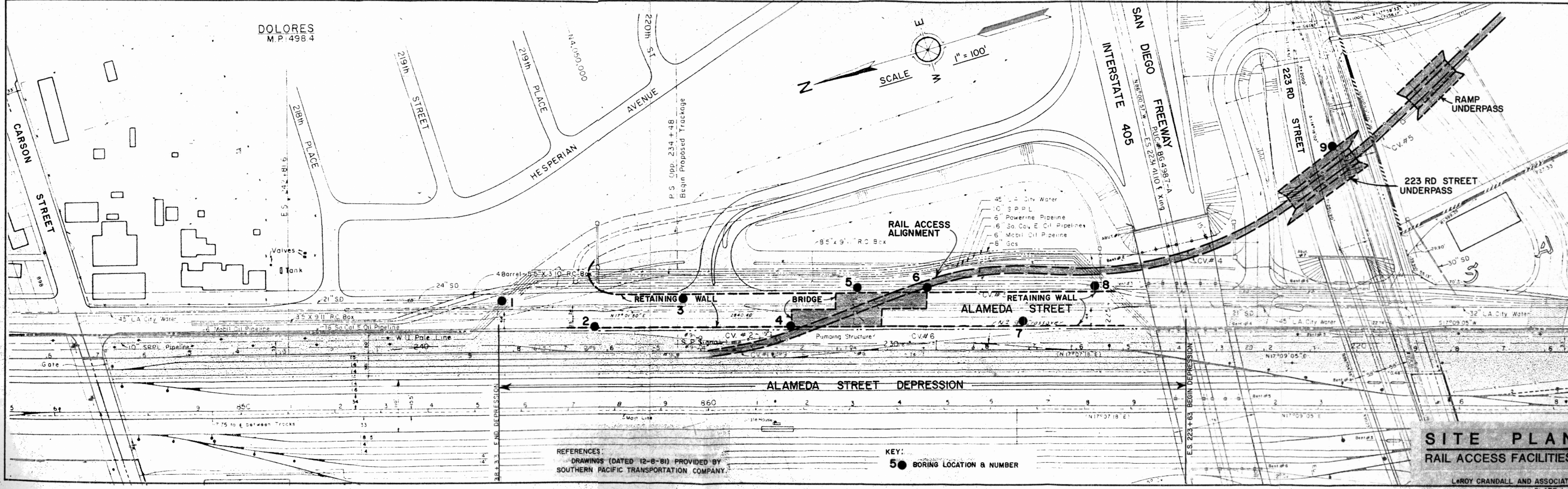
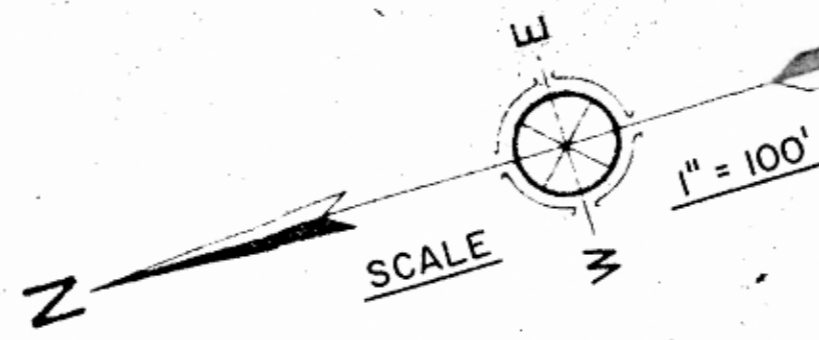
sloped back without shoring. Where available space is limited, shoring will be required. Temporary unsurcharged embankments may be cut at 1:1 or flatter. All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1970, and the Construction Safety Act should be met.

Where slopes embankments are used, the tops of the slopes should be barricaded to prevent heavy vehicles and heavy storage loads within five feet of the tops of the slopes. If the temporary construction embankments are to be maintained during the rainy season, berms are suggested along the tops of the slopes where necessary to prevent runoff water from entering the excavation and eroding the slope faces. The soils exposed in the cut slopes should be observed during excavation by our personnel so that modifications of the slopes can be made if variations in the soil conditions occur.

SHORING

Where there is not sufficient space for sloped embankments, full height shoring or a combination of sloped excavation and shoring should be used. We would be pleased to provide recommendations for shoring, if desired.

DOLORIS
M.P. 498.4



REFERENCES:
DRAWINGS (DATED 12-8-81) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

KEY:
5 ● BORING LOCATION & NUMBER

SITE PLAN RAIL ACCESS FACILITIES

LeROY CRANDALL AND ASSOCIATES
PLATE I

JOB ADE-8220 DATE 8-27-62 DR M.G. SG. CHKD BY



LEGEND

- - - - - FAULT (DASHED WHERE APPROXIMATELY LOCATED, U-UP THROWN SIDE, D-DOWN THROWN SIDE)
 - - - - - CONCEALED FAULT
 - - - - - ANTICLINE (DASHED WHERE APPROXIMATELY LOCATED)
 - - - - - SYNCLINE (DASHED WHERE APPROXIMATELY LOCATED)
 - - - - - CONTACT (DASHED WHERE APPROXIMATELY LOCATED)
 ● AS WELLS USED IN PREPARATION OF GEOLOGIC SECTIONS
 - - - - - LINE LOCATION OF GEOLOGIC SECTIONS SHOWN ON PLATES AA THROUGH LL
 0 2 4 SCALE IN MILES

LEGEND

SEDIMENTARY ROCKS

RECENT
 Oa1 ALLUVIUM
 Oa2 ACTIVE DUNE SAND
 Oa3 WHITE OR GREY-SH. SALT, SORTER SAND
UPPER PLEISTOCENE
 O1w OLDER DUNE SAND
 O1w LAYWOOD FORMATION (INCLUDES TERRACE DEPOSITS, PALOS VERDES SAND, AND UNNAMED UPPER PLEISTOCENE DEPOSITS)
LOWER PLEISTOCENE
 O1p SAN PEDRO FORMATION (INCLUDES "LA HABRA CONGLOMERATE" AND PART OF "SAUGUS FORMATION")
 O1p-1c UNDIFFERENTIATED SAN PEDRO FORMATION AND/OR PICO FORMATION
 O1p-1c PICO FORMATION
PLIOCENE
 Pp1 PICO FORMATION
 Pp2 REPETTO FORMATION
MIOCENE
 M1 (SANTA MONICA MOUNTAINS) MODELO FORMATION
 M1 (SANTA MONICA MOUNTAINS) TORANGA FORMATION
 M2 (PALOS VERDES HILLS) MIDDLE MIocene FORMATION
 M3 (SANTA MONICA MOUNTAINS) PUENTE FORMATION
OLIGOCENE/PALEOCENE
 O1c VAQUEROS AND SESPE FORMATIONS
Eocene
 E1c WARTHEE FORMATION
PALEOCENE/UPPER
 E-1c UNDIVIDED WARTHEE AND CHICO FORMATIONS
 E3 CHICO FORMATION

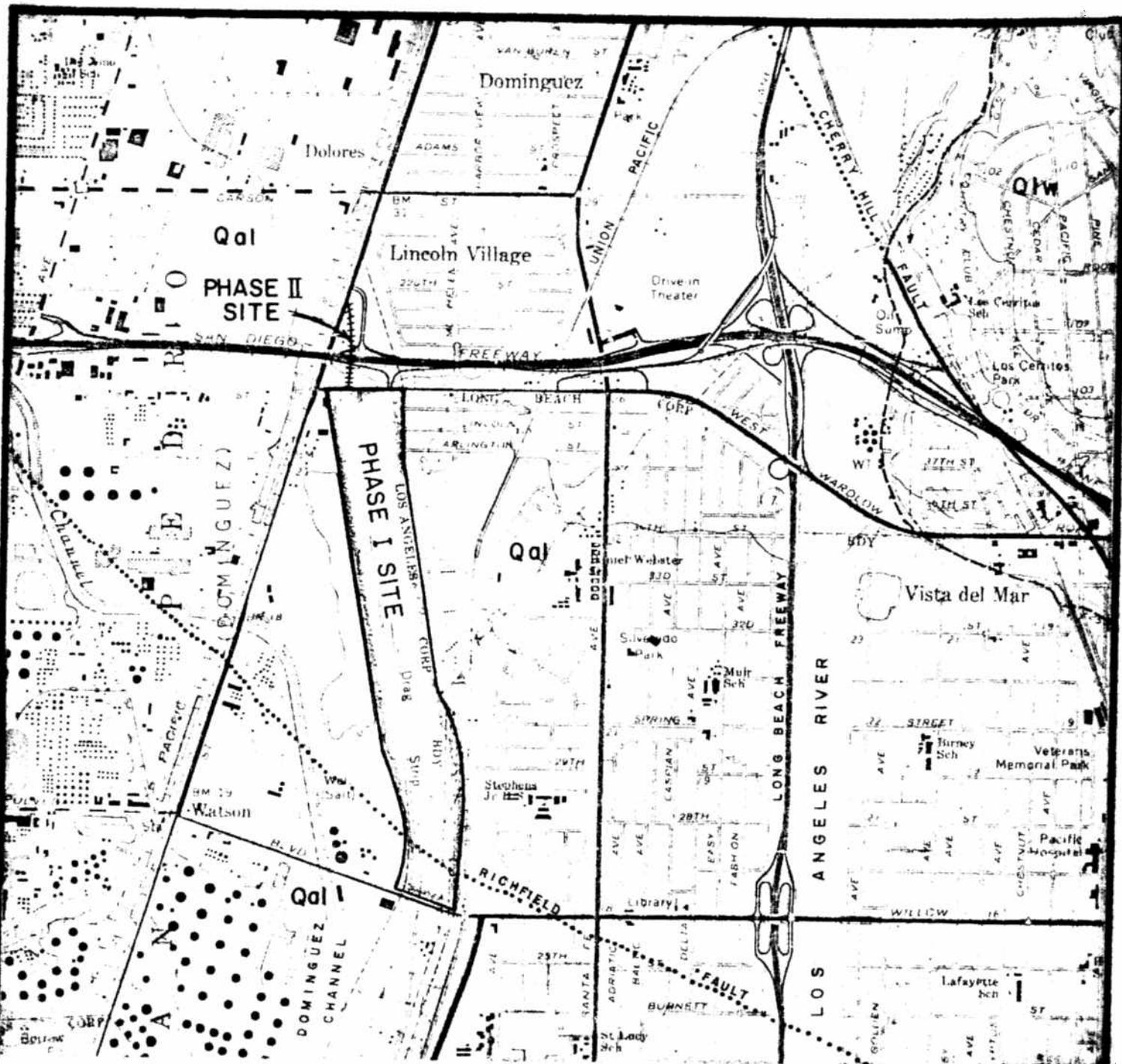
IGNEOUS AND METAMORPHIC ROCKS

MIOCENE
 M1c MIDDLE MIOCENE VOLCANIC ROCKS
UPPER
 U1 (SANTA MONICA MOUNTAINS) INTRUSIVES OF GRANITE AND BRADBORNE
 U2 (PALOS VERDES HILLS) LATE-MIOCENE COMPARED WITH FRANCISCAN FORMATION OF THE COAST RANGES (VARIOUS TYPES OF SCYTHIAN ROCKS)
 U3 SANTA MONICA SLATE

BASE MAP REFERENCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, BULLETIN 104, 1961. MODIFIED ACCORDING TO C.D.M.G. GEOLOGIC MAP OF CALIFORNIA, LONG BEACH SHEET, 1962 AND LOS ANGELES SHEET, 1969.

REGIONAL GEOLOGY

LEROY CRANDALL AND ASSOCIATES



EXPLANATION

- Qal HOLOCENE ALLUVIUM
- Qlw PLEISTOCENE LAKEWOOD FORMATION
- GEOLOGIC CONTACT
- ... FAULT, DOTTED WHERE CONCEALED



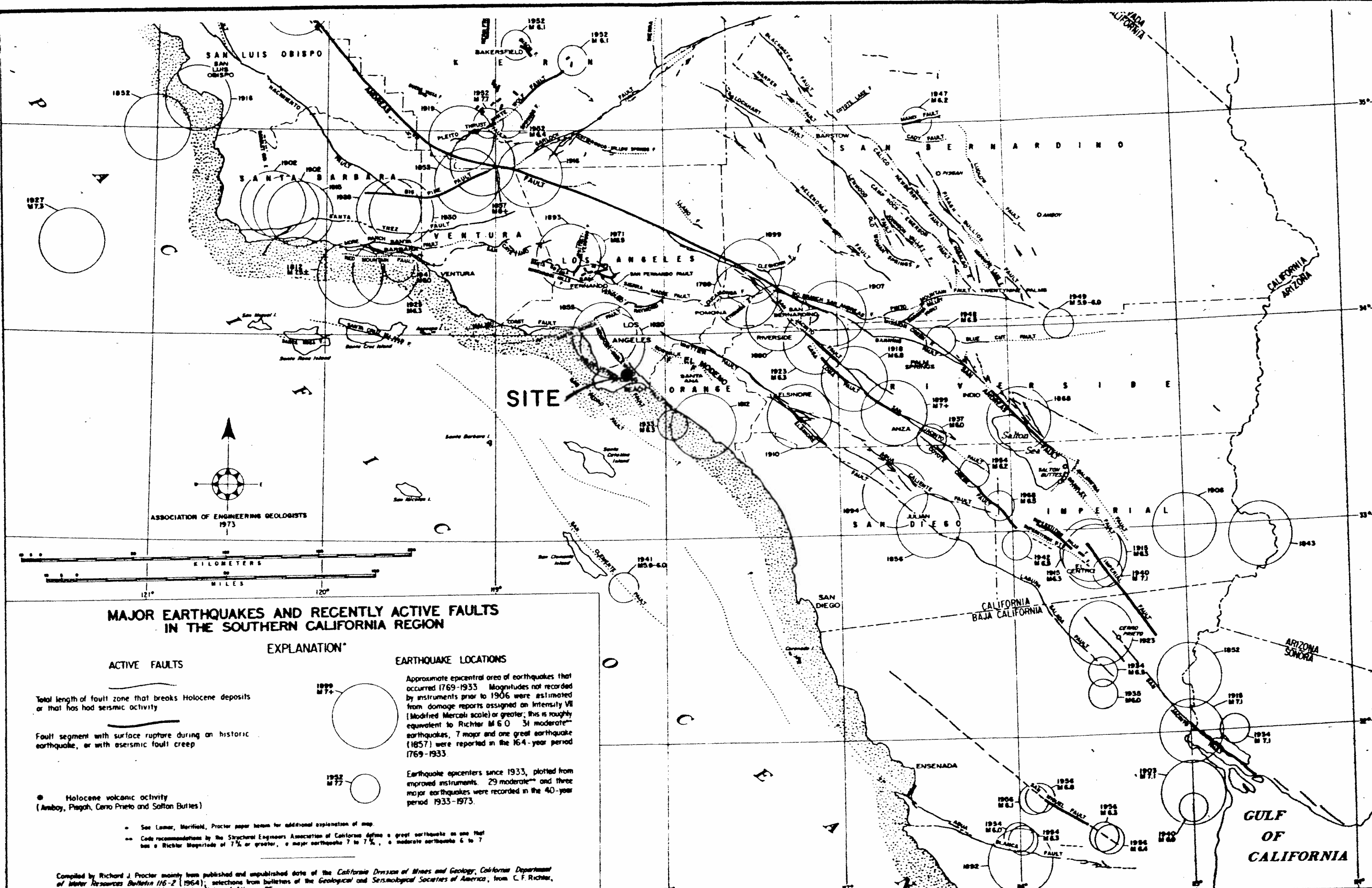
REFERENCE: BASE MAP USGS LONG BEACH 7.5' QUADRANGLE, 1972
 GEOLOGY ADAPTED FROM LACFCD, 1962, USGS. WATER SUPPLY PAPER 1109, 1956 AND ALGUIST PRIOLO ZONE MAP. LONG BEACH QUADRANGLE, 1976

LOCAL GEOLOGY

SCALE 1" = 2000'

LeROY CRANDALL AND ASSOCIATES

JOB NO. 8278 DATE 8-22-62 DF G. C.



MAJOR EARTHQUAKES AND RECENTLY ACTIVE FAULTS IN THE SOUTHERN CALIFORNIA REGION

EXPLANATION*

ACTIVE FAULTS

— Total length of fault zone that breaks Holocene deposits or that has had seismic activity

— Fault segment with surface rupture during an historic earthquake, or with aseismic fault creep

● Holocene volcanic activity (Amboy, Pinnac, Cerro Prieto and Salton Buttes)

EARTHQUAKE LOCATIONS

○ Approximate epicentral area of earthquakes that occurred 1769-1933. Magnitudes not recorded by instruments prior to 1906 were estimated from damage reports assigned an Intensity VII (Modified Mercalli scale) or greater; this is roughly equivalent to Richter M 6.0. 31 moderate earthquakes, 7 major and one great earthquake (1857) were reported in the 164-year period 1769-1933.

○ Earthquake epicenters since 1933, plotted from improved instruments. 29 moderate and three major earthquakes were recorded in the 40-year period 1933-1973.

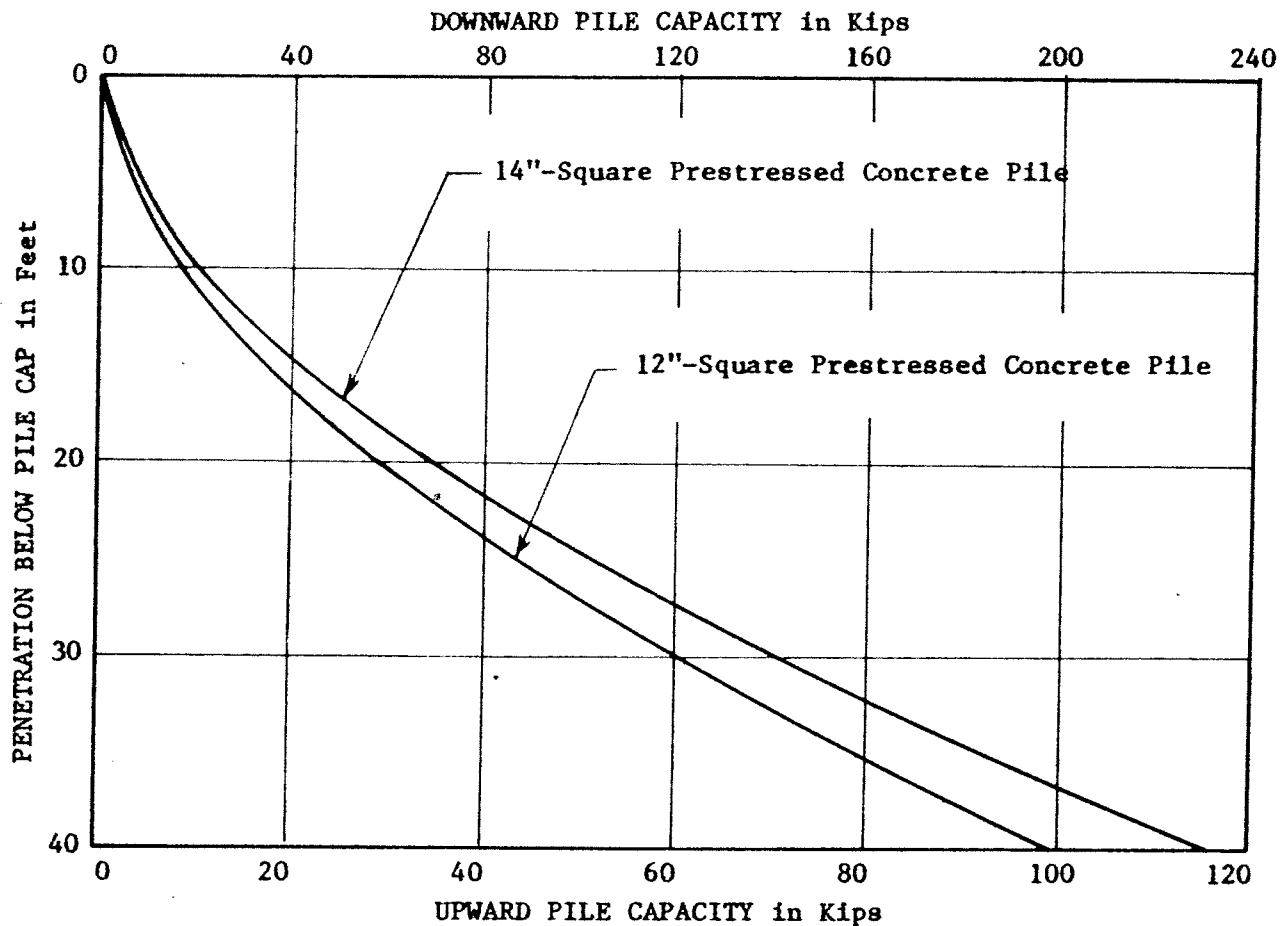
* See Lamar, Merrifield, Procter paper herein for additional explanation of map.

** Code recommendations by the Structural Engineers Association of California define a great earthquake as one that has a Richter Magnitude of 7 1/2 or greater, a major earthquake 7 to 7 1/4, a moderate earthquake 6 to 7.

Compiled by Richard J. Procter mainly from published and unpublished data of the California Division of Mines and Geology, California Department of Water Resources Bulletin 116-2 (1964); selections from bulletins of the Geological and Seismological Societies of America; from C.F. Richter, Elementary Seismology (1958); and the National Atlas, p. 86.

REGIONAL SEISMICITY

LoROY CRANDALL AND ASSOCIATES



NOTES:

- (1) The indicated values refer to the total of dead plus live loads; a one-third increase may be used when considering wind or seismic loads.
- (2) Piles in groups should be spaced a minimum of $2\frac{1}{2}$ diameters on centers, and should be drilled and filled alternately with the concrete permitted to set at least 8 hours before drilling an adjacent hole.
- (3) The indicated values are based on the strength of the soils; the actual pile capacities may be limited to lesser values by the strength of the piles.

DRIVEN PILE CAPACITIES

APPENDIX A
EXPLORATIONS

The soil conditions beneath the site were explored by drilling nine borings at the locations shown on Plate 1. Six of the borings (1, 2, 3, 7, 8, and 9) were drilled to depths of 39 to 51 feet below the existing grade using 18-inch-diameter bucket-type drilling equipment. Three borings (4, 5, and 6) were drilled to a depth of about 75 feet using 5-inch-diameter rotary wash-type drilling equipment with drilling mud to prevent caving.

Upon the completion of Boring 5, a 2-inch-diameter PVC pipe was installed in the boring, and pea gravel backfill was placed around the outside of the pipe. Periodic measurements of the ground water level will be made in this boring.

The soils encountered were logged by our field technician, and undisturbed samples were obtained for laboratory inspection and testing. The logs of the borings are presented on Plates A-1.1 through A-1.9; the depths at which undisturbed samples were obtained are indicated to the left of the boring logs. The energy required to drive the sampler twelve inches is indicated on the logs. The Unified Soil Classification System is described on Plate A-2.

LABORATORY TESTS

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs.

Direct shear tests were performed on selected undisturbed samples to determine the strength of the soils. The samples were tested at field and increased moisture contents and at various surcharge pressures. The yield-point values determined from the direct shear tests are presented on Plate A-3, Direct Shear Test Data.

Confined consolidation tests were performed on 11 undisturbed samples to determine the compressibility of the soils. The samples were tested at field moisture content. Water was added to two of the samples to illustrate the effect of moisture on compressibility. The results of the tests are presented on Plates A-4.1 through A-4.6, Consolidation Test Data.

The optimum moisture content and maximum dry density of the upper soils were determined by performing compaction tests on three samples obtained from Borings 2, 3, and 7. The samples were tested in accordance with the ASTM Designation D1557-70 method of compaction. After completion of the compaction test, a California Bearing Ratio test was performed on the sample in accordance with the ASTM Designation D1883-73 method. The results of the tests are presented on Plate A-5, Compaction and C.B.R. Test Data.

To determine the grain size distribution and to confirm the field classification of the soils encountered, combined hydrometer and sieve analyses were performed on four representative samples. The results of the analyses are presented on Plates A-6.1 and A-6.2, Particle Size Distribution.

BORING 1

DATE DRILLED: August 23, 1982

EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 24.8

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft-kips/ft.)	SAMPLE LOC.	DESCRIPTION
							SM	3" Asphaltic Paving - 2" Crushed Rock and Sand Base
							ML	8" Concrete Paving
		17.8	98	< 1			ML	FILL - SILTY SAND - fine, brown
								FILL - SILT - few gravel, dark greyish-brown
20	5						SP	SANDY SILT - dark greyish-brown
		6.4	90	3				SAND - fine, light brownish-grey
							ML	SANDY SILT - greyish-brown
15	10	18.9	92	2				
		20.4	94	3				
							SM	SILTY SAND - fine, greyish-brown
10	15	13.8	87	2				
		32.9	87	< 1			ML	CLAYEY SILT - brownish-grey
5	20	29.7	83	< 1				Layer of Silty Sand
0	25	26.0	101	2			SM	SILTY SAND - fine, greyish-brown
-5	30						ML	CLAYEY SILT - grey
							ML	SANDY SILT - greyish-brown
-10	35	18.9	98	6				Layers of Silty Sand
-15	40	30.6	94	7				

NOTE: Water not encountered. No caving.

LOG OF BORING

Form 123
 DATE 07 24 82
 DR. JOHN E.
 W.P.
 f B
 CHRD

BORING 2

DATE DRILLED: August 20, 1982
EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 24.8

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips/ft)	SAMPLE LOC.	DESCRIPTION
24.8	0					SM	2" Asphaltic Paving
24.8	0					ML	7" Concrete Paving
20	5	17.1	81	< 1			FILL - SILTY SAND - fine, light brown SANDY SILT - grey and brown
15	10	5.6	83	2		SM	SILTY SAND - fine, light brown and grey Brown and grey
10	15	14.4	89	2		ML	SANDY SILT - brown and grey
5	20	38.5	82	< 1		ML	CLAYEY SILT - dark greyish-brown Very Clayey
0	25	32.7	89	< 1			Layer of Sandy Silt
-5	30	23.7	103	< 1		ML	SANDY SILT - grey and brown
-10	35	15.1	93	8		SM	SILTY SAND - fine, grey and brown
-15	40	22.5	102	3		ML	SANDY SILT - grey and brown
		28.8	94	6			

NOTE: Water not encountered. No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 3

DATE DRILLED: August 19, 1982
 EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 24.9

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
24.9	0						SM	2" Asphaltic Paving - 2" Crushed Rock and Sand Base
							ML	8" Concrete Paving
	5	12.2	88	<1				FILL - SILTY SAND - fine, grey FILL - SANDY SILT - light greyish-brown
20	5						SP	SAND - fine, light greyish-brown
		4.0	93	5				
15	10	24.0	91	<1			ML	SANDY SILT - greyish-brown
		24.4	91	2				
10	15	16.2	104	3			SM	SILTY SAND - fine, light brown and grey Layer of Silt
		29.6	90	<1			ML	CLAYEY SILT - greyish-brown
5	20							Layer of Silty Sand
		33.2	89	2				
0	25						ML	SANDY SILT - grey and brown

(CONTINUED ON FOLLOWING PLATE)

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.3a

BORING 3 (CONTINUED)

DATE DRILLED: August 19, 1982

EQUIPMENT USED: 18"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
		18.4	111	5		SM
						SP
-5	30					ML
						ML
-10	35	25.3	97	6		ML
-15	40	28.3	91	5		
-20	45	21.1	107	8		ML
						SM
						ML
-25	50	21.5	106	8		
-30	55					

SILTY SAND - fine, grey and brown

SAND - fine, light grey and brown

CLAYEY SILT - grey

SANDY SILT - greyish-brown

Petroleum odor

CLAYEY SILT - petroleum odor, grey and brown

SILTY SAND - fine, petroleum odor, grey and brown

SANDY SILT - petroleum odor, dark grey

NOTE: Water not encountered. No caving.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 4

DATE DRILLED: August 18, 1982
EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-lbs/ft)	SAMPLE LOC
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ELEVATION 24.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

							SM	2" Asphaltic Paving - 8" Concrete Paving
							ML	FILL - SILTY SAND - well graded, brown
								SANDY SILT - greyish-brown
20	5		19.7	90	2		SM	SILTY SAND - fine, greyish-brown
							SP	SAND - fine, light grey and brown
			7.9	90	3			
15	10		22.1	95	2		ML	SANDY SILT - greyish-brown
								Thin layers of Clay
			33.8	87	2			
10	15		15.0	87	3		SM	SILTY SAND - fine, light brown and grey
							ML	CLAYEY SILT - very Clayey, greyish-brown
			33.6	88	2			
5	20		39.1	80	2		ML	SANDY SILT - greyish-brown
0	25		23.6	103	2		SP	SAND - fine, grey
			10.4	103	8		ML	CLAYEY SILT - grey
-5	30	10						
							SM	SILTY SAND - fine, very Silty, grey and brown
-10	35		25.4	97	6			
-15	40	23						

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.4a

JOB A-62210 DATE 8/23/82 DR JOHN E. W.P. CRD fm

Form 123

BORING 4 (CONTINUED)

DATE DRILLED: August 18, 1982

EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lb _s /cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
-20	45	21	28.2	95	7		ML
-25	50		26.7	98	4		ML
-30	55		31.7	92	4		SM
-35	60	27					SP
-40	65		22.8	106	16		
-45	70		24.1	104	19		
-50	75		21.2	106	19		

SANDY SILT - grey and brown

CLAYEY SILT - grey

SILTY SAND - fine, grey

SAND - fine, grey

NOTE: Drilling mud used in drilling process.
Water level not established.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 5

DATE DRILLED: August 17, 1982

EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST	MOISTURE	DRY DENSITY	DRIVE ENERGY	SAMPLE LOC.
			(% of dry wt)	(lbs./cu ft.)	(ft. x lbs./ft.)		

ELEVATION 24.6

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

							SM	FILL - SILTY SAND and SILT - few gravel, light brown
							SP	SAND - fine, light brown
		17.1	101	3			ML	CLAYEY SILT - streaks of alkali, greyish-brown
20	5						SP	SAND - fine, grey
		5.8	94	3				
		4.8	88	2			ML	CLAYEY SILT - greyish-brown
15	10							
		27.6	85	1			SM	SILTY SAND - fine, grey
10	15							
		11.9	91	3				
		8.6	95	2				Layers of Silt
5	20						ML	SANDY SILT - greyish-brown
		17.1	92	3				
		20.1	106	3			SM	SILTY SAND - fine, greyish-brown
0	25							
		17.6	111	6				
-5	30						ML	SANDY SILT - greyish-brown
		29.8	91	3				
-10	35							
		27.8	92	4				
-15	40							

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

BORING 5 (CONTINUED)

DATE DRILLED: August 17, 1982

EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lb _s /cu. ft.)	DRIVE ENERGY (ft. - kips / ft.)	SAMPLE LOC.
		32.0	90	6		
-20	45	21.3	101	7		ML
						SP
						ML
-25	50	25.5	99	4		
-30	55	34.8	88	4		
-35	60	33.2	89	4		
						SM
						SP
-40	65	20.9	107	13		
-45	70	22.8	104	13		
-50	75	19.0	111	19		
-55	80					

CLAYEY SILT - greyish-brown

SAND - fine, grey

SANDY SILT - dark grey

Lenses of Clay

SILTY SAND - fine, grey

SAND - fine, grey

NOTE: Drilling mud used in drilling process. Installed 2" PVC pipe to 75', bottom 20' perforated. Water level measured at 45½' on 9-1-82.

LOG OF BORING

BORING 6

DATE DRILLED: August 16, 1982
 EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION 24.4

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-kips/ft)	SAMPLE LOC	DESCRIPTION
24.4	0					ML	SANDY SILT - greyish-brown
	5	23.7	91	3		SP	SAND - fine, light grey
	10	8.8	91	6		ML	SANDY SILT - greyish-brown
	15	25.4	91	2		SP	SAND - fine, light grey
	20	3.9	106	7		ML	CLAYEY SILT - very Clayey, greyish-brown
	25	33.7	85	2		ML	SANDY SILT - some Clay, greyish-brown
	30	28.8	90	3		ML	SANDY SILT - some Clay, greyish-brown
	35	24.3	96	3		SM	SILTY SAND - fine, greyish-brown
	40	26.9	98	6		SM	SILTY SAND - fine, grey Thin layer of gravel
	31						
	35	27.0	95	3		ML	CLAYEY SILT - grey
	40	23.8	103	5		SM	SILTY SAND - fine, grey Thin layer of gravel

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

JOB A-82210 DATE 8/23/82 DR JOHN W.E. 3 1/4 W.P. fm CHKD

BORING 6 (CONTINUED)

DATE DRILLED: August 16, 1982
 EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

		33.1	89	5		ML
-20	45	25.1	100	5		
-25	50	24.8	102	6		SM
-30	55	30.4	91	5		ML
-35	60	29.8	95	6		ML
-40	65	25.0	102	14		SP
-45	70	19.4	112	14		
-50	75	21.1	107	14		

CLAYEY SILT - grey

SILTY SAND - fine, greyish-brown

CLAYEY SILT - grey

SANDY SILT - greyish-brown

SAND - fine, grey

NOTE: Drilling mud used in drilling process.
 Water level not established.

LOG OF BORING

BORING 7

DATE DRILLED: August 20, 1982

EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 23.7

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft x lbs/ft)	SAMPLE LOC.	DESCRIPTION
23.7	0	27.9	95	< 1		ML	SANDY SILT - grey and brown
20	5	35.8	79	< 1		SM ML	2" Asphaltic Paving 8" Concrete Paving FILL - SILTY SAND - fine, brown SANDY SILT - grey and brown
15	10	29.7	93	< 1		ML ML	SANDY SILT - grey and brown SANDY SILT - grey and brown
10	15	12.8	98	5		SM	SILTY SAND - fine, light brown
5	20	40.5	81	< 1		ML	CLAYEY SILT - grey and brown
0	25	27.9	95	< 1		ML	SANDY SILT - grey and brown

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.7a

BORING 7 (CONTINUED)

DATE DRILLED: August 20, 1982
EQUIPMENT USED: 18"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
-5	30	30.5	90	6		SM
-10	35	25.8	99	3		ML
-15	40	26.3	95	10		ML SM
-20	45	35.3	86	4		ML
-25	50	33.4	91	6		

Layer of Clayey Silt

SILTY SAND - fine, grey

CLAYEY SILT - grey

SANDY SILT - grey and brown

SILTY SAND - fine, light grey and brown

SANDY SILT - grey and brown

Layer of Clayey Silt

NOTE: Slight water seepage encountered at 30½' and 40½'. No water at bottom of hole 10 minutes after completion of drilling. No caving.

LOG OF BORING

JOB A-02110 DATE 8/2/82 W.P. CRKD

BORING 8

DATE DRILLED: August 19, 1982
EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 23.3

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
23.3	0					ML
20	3.3	23.6	79	2		ML
15	8.3	30.5	79	2		SM
10	13.3	11.5	92	3		ML
5	18.3	33.1	85	< 1		ML
0	23.3	10.9	86	3		SM
-5	28.3	18.6	95	2		ML
-10	33.3	33.8	88	2		ML
-15	38.3	18.0	112	3		SM
-20	43.3	35.2	87	2		CL
-25	48.3	15.0	100	8		SM
-30	53.3					SM
-35	58.3					SM
-40	63.3	33.5	90	6		ML

SANDY SILT - greyish-brown

SILTY SAND - fine, light grey and brown

Lenses of Sandy Silt

CLAYEY SILT - greyish-brown

SILTY SAND - fine, brown and grey

CLAYEY SILT - greyish-brown

Layer of Sandy Silt

SANDY SILT - greyish-brown

SILTY SAND - fine, greyish-brown

SILTY CLAY - grey

SILTY SAND - fine, greyish-brown

CLAYEY SILT - greyish-brown

NOTE: Water not encountered. No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

FORM 100 A-1.8 DATE 07/23/82 BY JOHN D.E. W.P. CRD

BORING 9

DATE DRILLED: August 23, 1982

EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION 47.6

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD PEN TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft)	DRIVE ENERGY (ft. x lbs./ft)	SAMPLE LOC.
45		13.2	116	8		SM
	5					
40		10.5	126	11		ML SM
	10					
35		19.8	109	3		
	15					
30		20.4	108	10		
	20					
25		15.2	119	10		
	25					ML
20		14.2	93	6		ML
	30					SM

5" Asphaltic Paving
 FILL - SILTY SAND and DEBRIS - fine, large amount of crushed asphaltic paving and concrete, grey

FILL - SILTY SAND - fine, brown
 Piece of pipe

FILL - SILT and SILTY SAND - brown

Mottled brown and grey

Lenses of Clay

FILL - SANDY SILT - some Clay, few pieces of asphaltic paving, grey

SANDY SILT - brownish-grey

SILTY SAND - fine, brownish-grey

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

JOB A-02210 DATE 8/27/82 DR JOHN M.E. W.P.E. CKD

BORING 9 (CONTINUED)

DATE DRILLED: August 23, 1982
 EQUIPMENT USED: 18"-Diameter Bucket

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
15			14.1	88	10		
35			28.0	81	6		
10							CL
40			18.3	107	9		SM
5							SP
45			26.8	96	4		ML
0			24.6	95	8		SM
50							SP
-5			3.2	100	14		
55							

Layer of Clayey Silt
 Petroleum odor

SILTY CLAY - dark brownish-grey

SILTY SAND - fine, brownish-grey

SAND - fine, grey

CLAYEY SILT - brownish-grey

SILTY SAND - fine, grey

SAND - fine, grey

NOTE: Water not encountered. No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

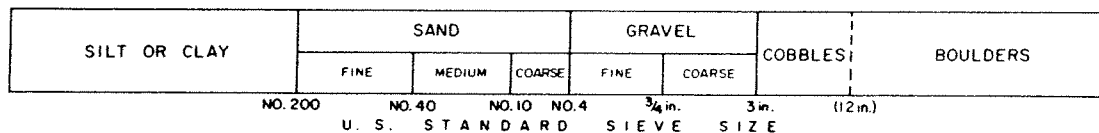
LOG OF BORING

A-1010 DAT 24 W.P. JOHN E. B. D

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES			
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.			
		GRAVELS WITH FINES (Appreciable amt. of fines)	GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.			
			GM	Silty gravels, gravel-sand-silt mixtures.			
			GC	Clayey gravels, gravel-sand-clay mixtures.			
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.			
			SP	Poorly graded sands or gravelly sands, little or no fines.			
		SANDS WITH FINES (Appreciable amt. of fines)	SM	Silty sands, sand-silt mixtures.			
			SC	Clayey sands, sand-clay mixtures.			
			FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
				SILTS AND CLAYS (Liquid limit GREATER than 50)		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
OL	Organic silts and organic silty clays of low plasticity.						
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.						
SILTS AND CLAYS (Liquid limit GREATER than 50)		CH		Inorganic clays of high plasticity, fat clays.			
		OH		Organic clays of medium to high plasticity, organic silts.			
		HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils.		

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

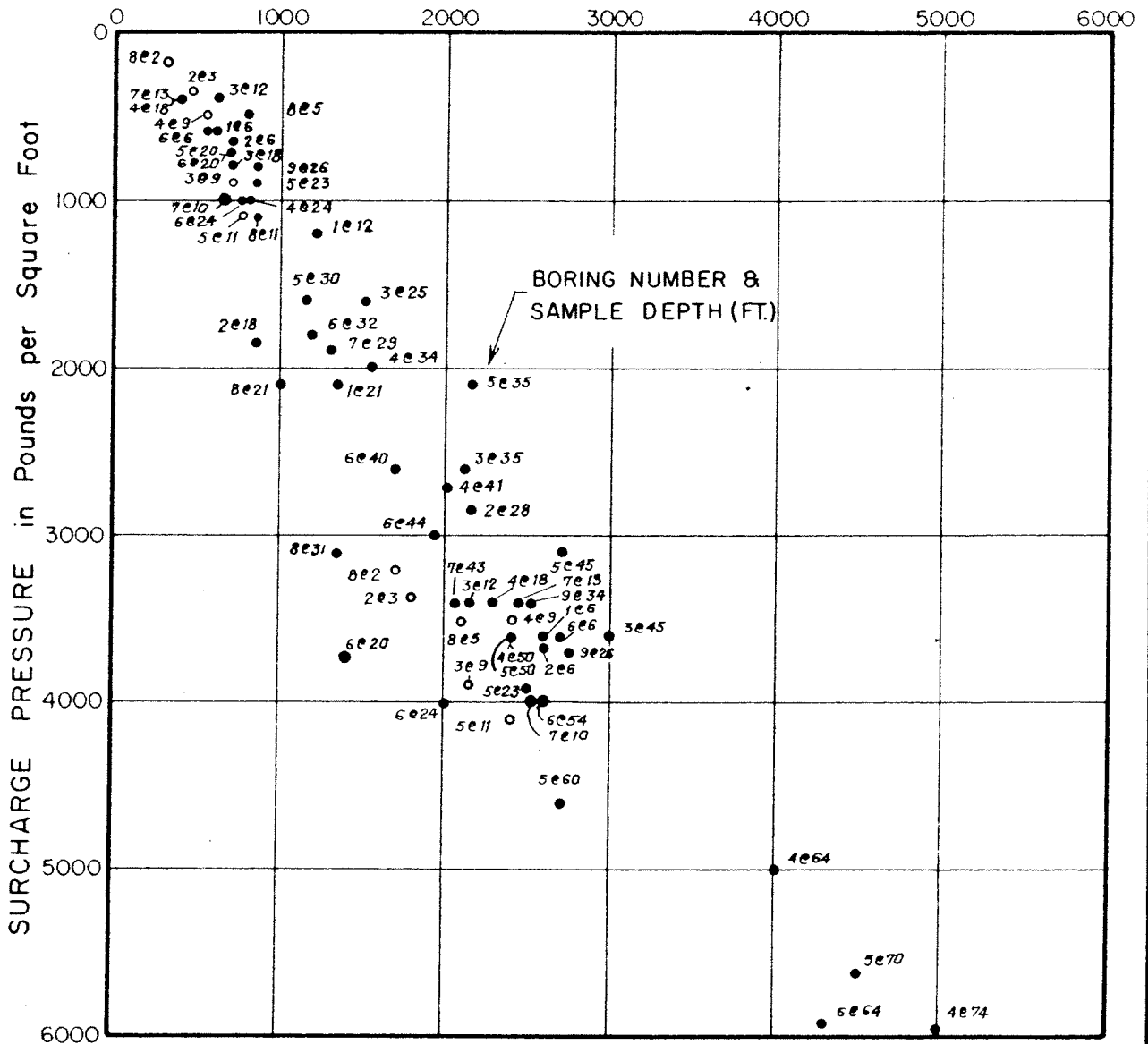


UNIFIED SOIL CLASSIFICATION SYSTEM

Reference:
The Unified Soil Classification System, Corps of Engineers, U. S. Army Technical Memorandum No. 3-357, Vol. I, March, 1953. (Revised April, 1960)

LEROY CRANDALL AND ASSOCIATES

SHEAR STRENGTH in Pounds per Square Foot

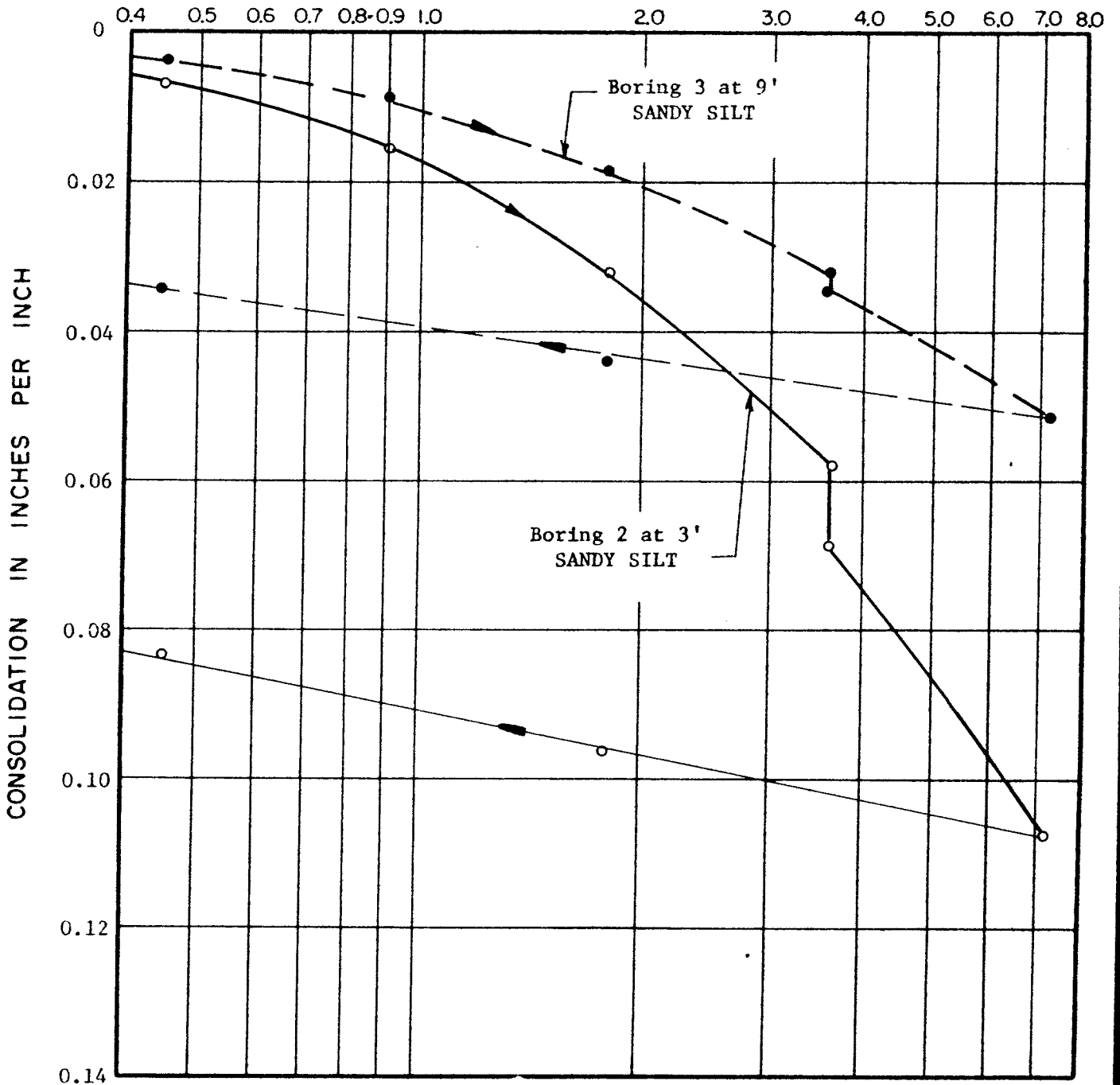


KEY:

- Test at field moisture content
- Test at increased moisture content

DIRECT SHEAR TEST DATA

LOAD IN KIPS PER SQUARE FOOT

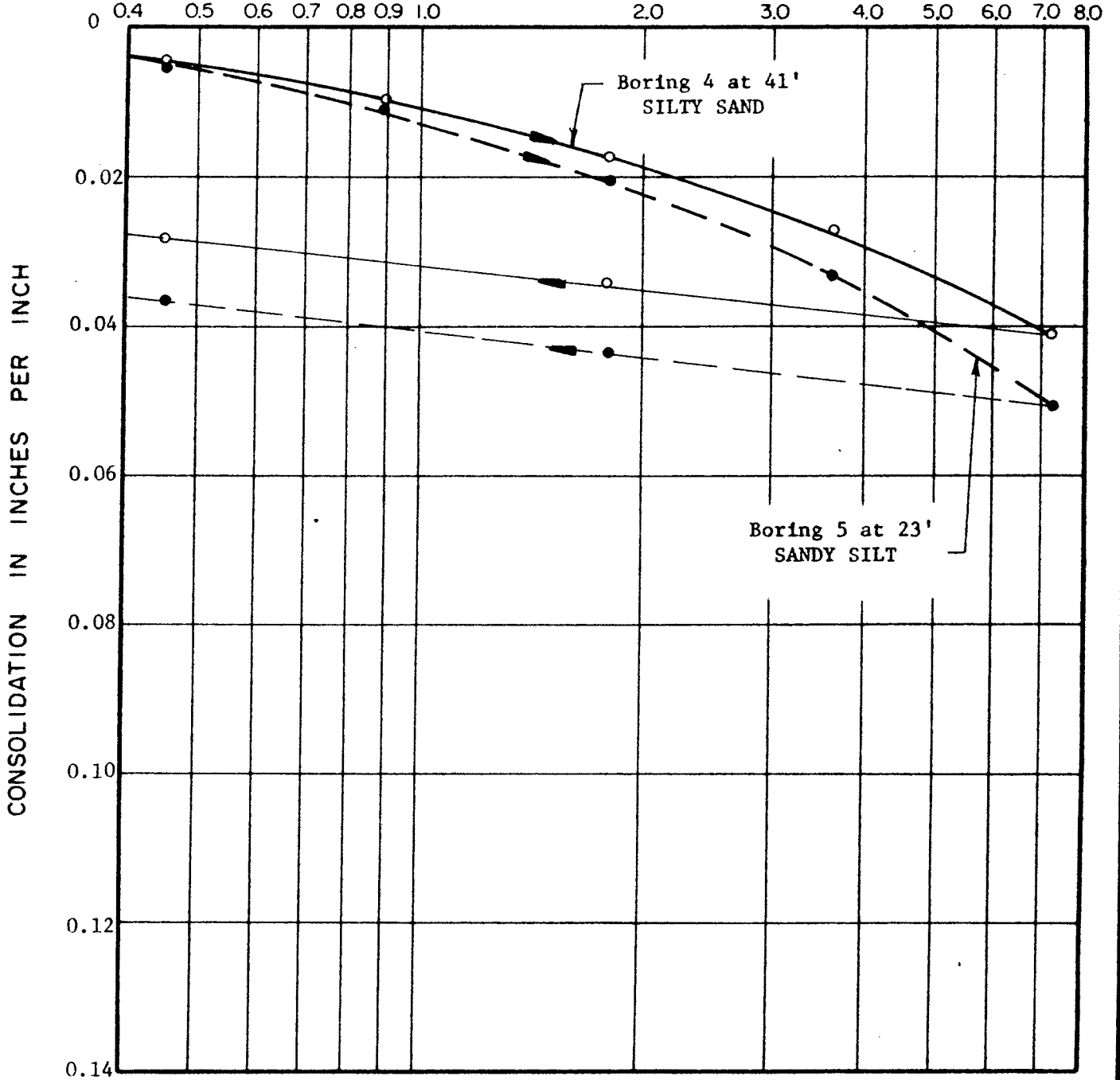


NOTE: Water added to samples after consolidation under a load of 3.6 kips per square foot.

CONSOLIDATION TEST DATA

JOB A-82210 DATE 9/1/82 DR. JOHN W.P. CHKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Samples tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.2

CHKD

fm

DM

W.P.

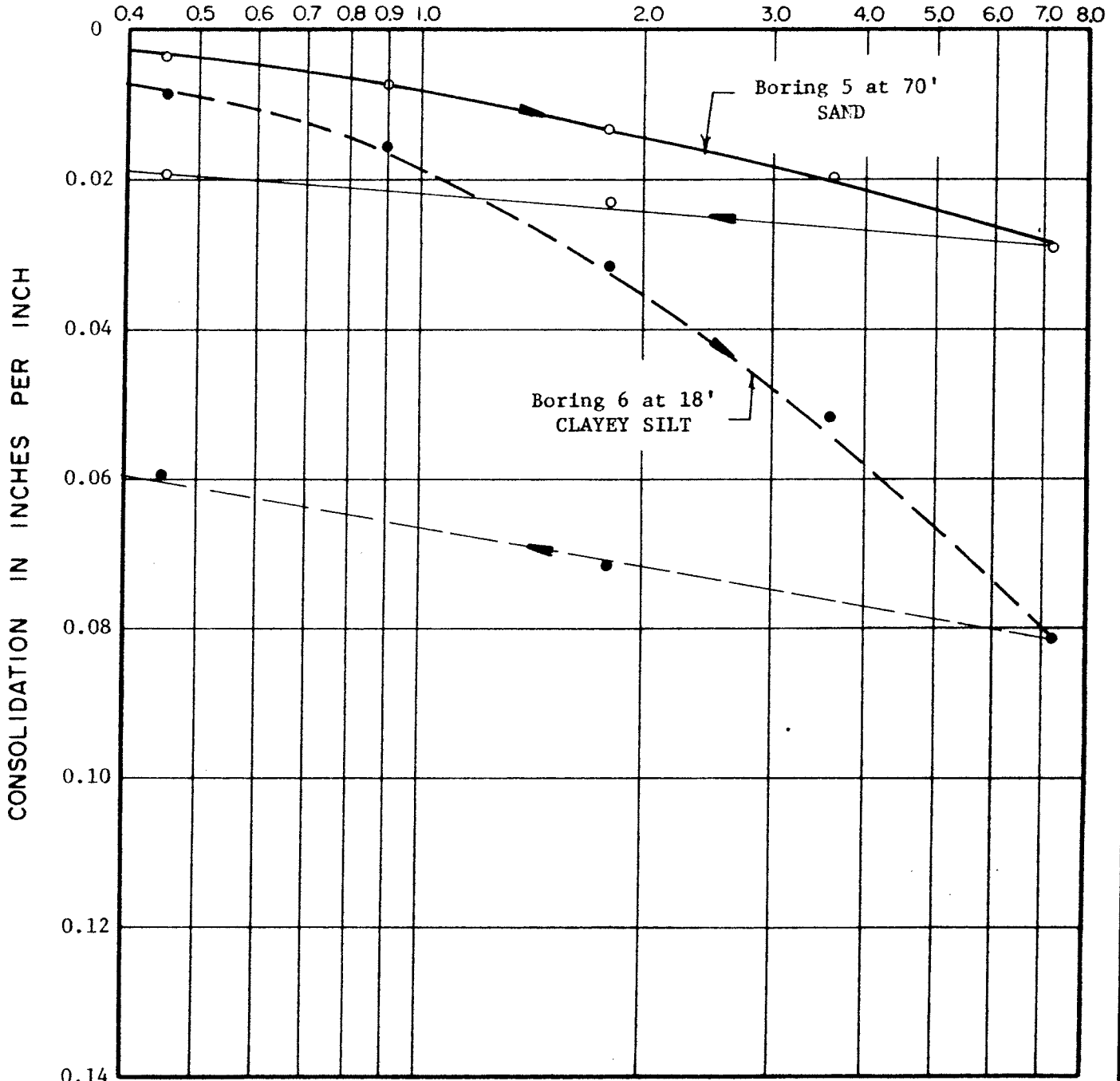
DR. JOHN

DATE

9/1/82

JOB A-82210

LOAD IN KIPS PER SQUARE FOOT



NOTE: Samples tested at field moisture content.

CONSOLIDATION TEST DATA

CHKD

1m

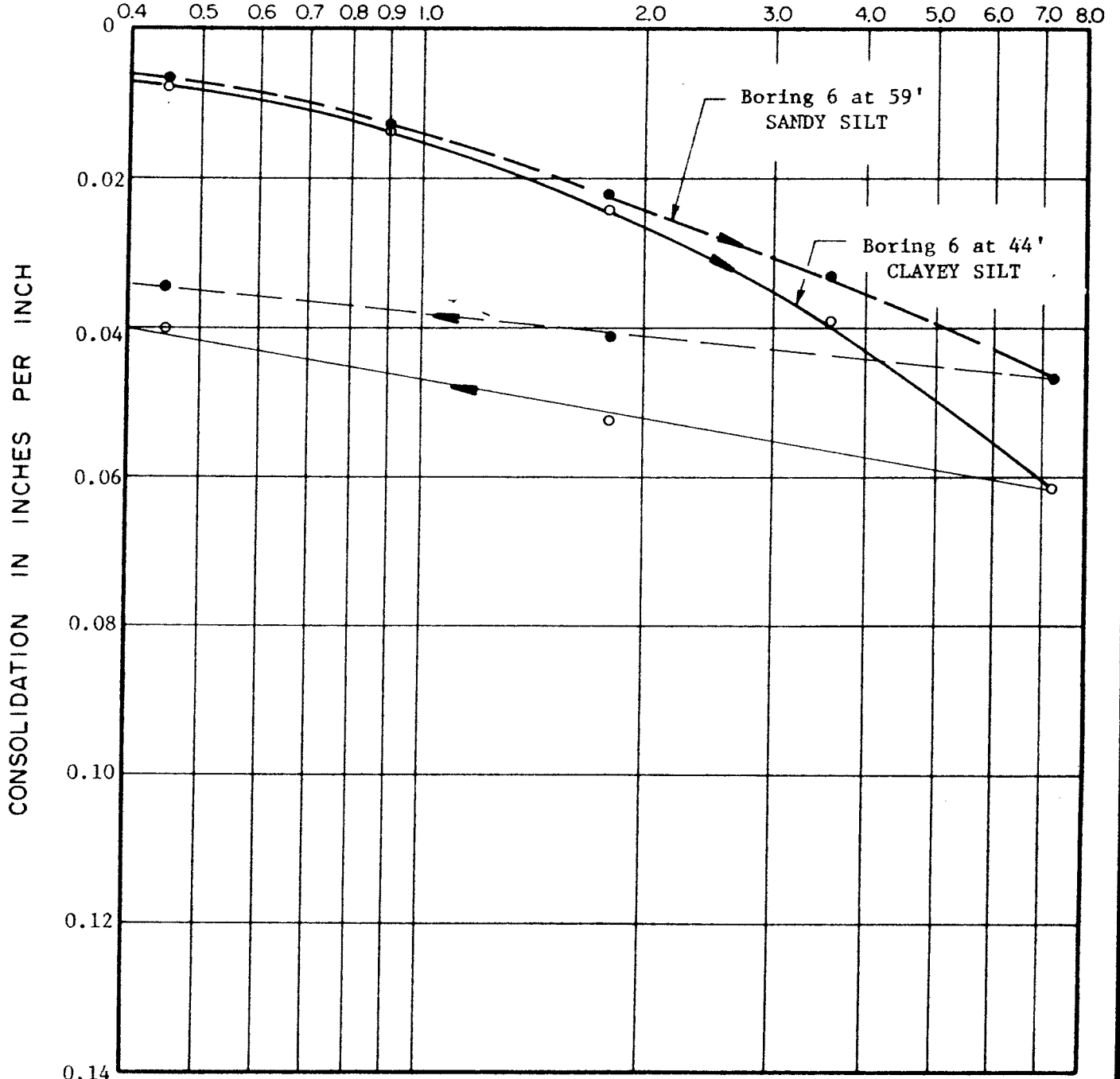
W.P.

DR. JOHN

DATE 9/1/82

JOB A-82210

LOAD IN KIPS PER SQUARE FOOT



NOTE: Samples tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.4

CHKD

f.m.

W.P.

DM

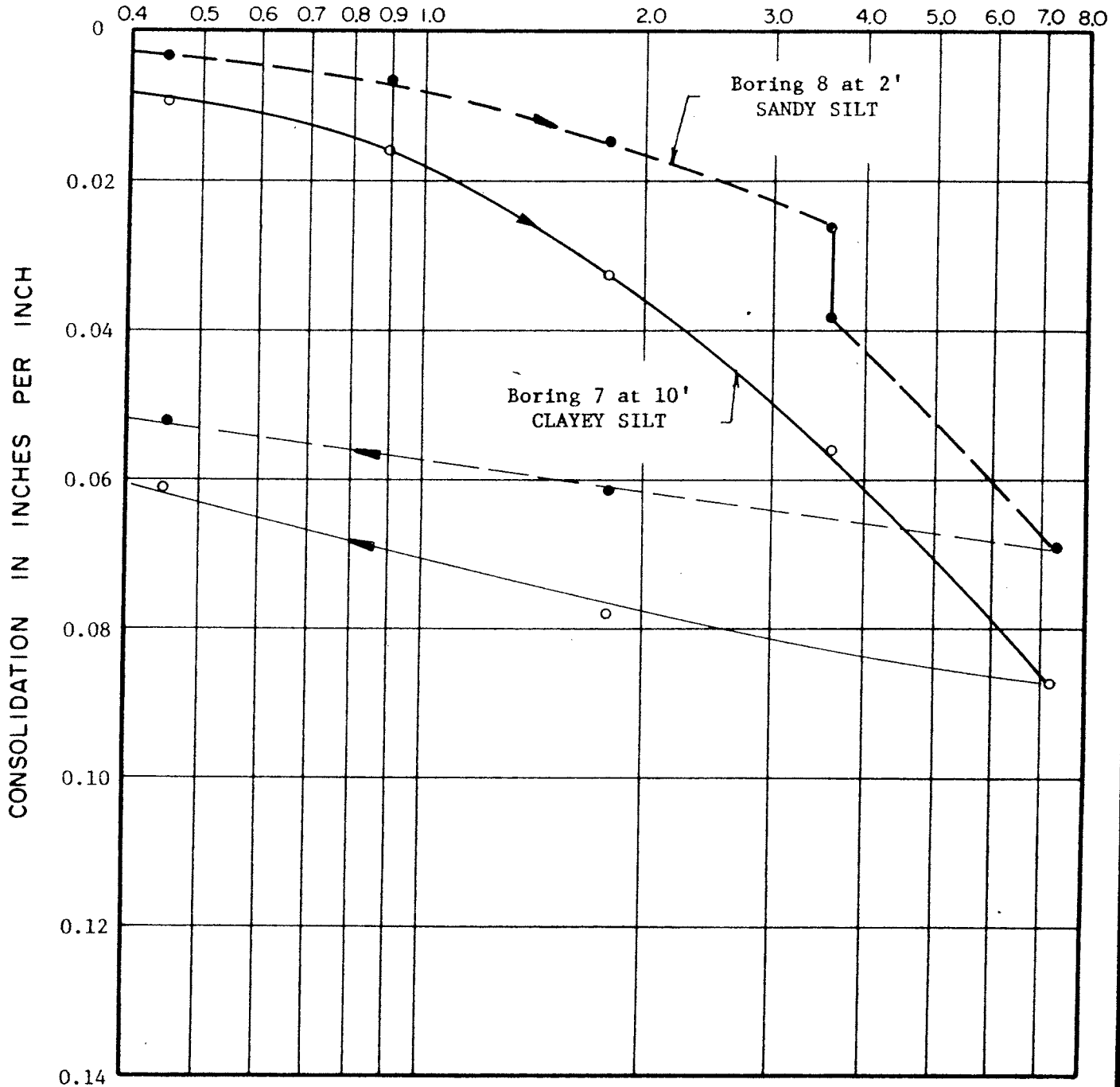
DR. JOHN

DATE

9/1/82

JOB A-82210

LOAD IN KIPS PER SQUARE FOOT



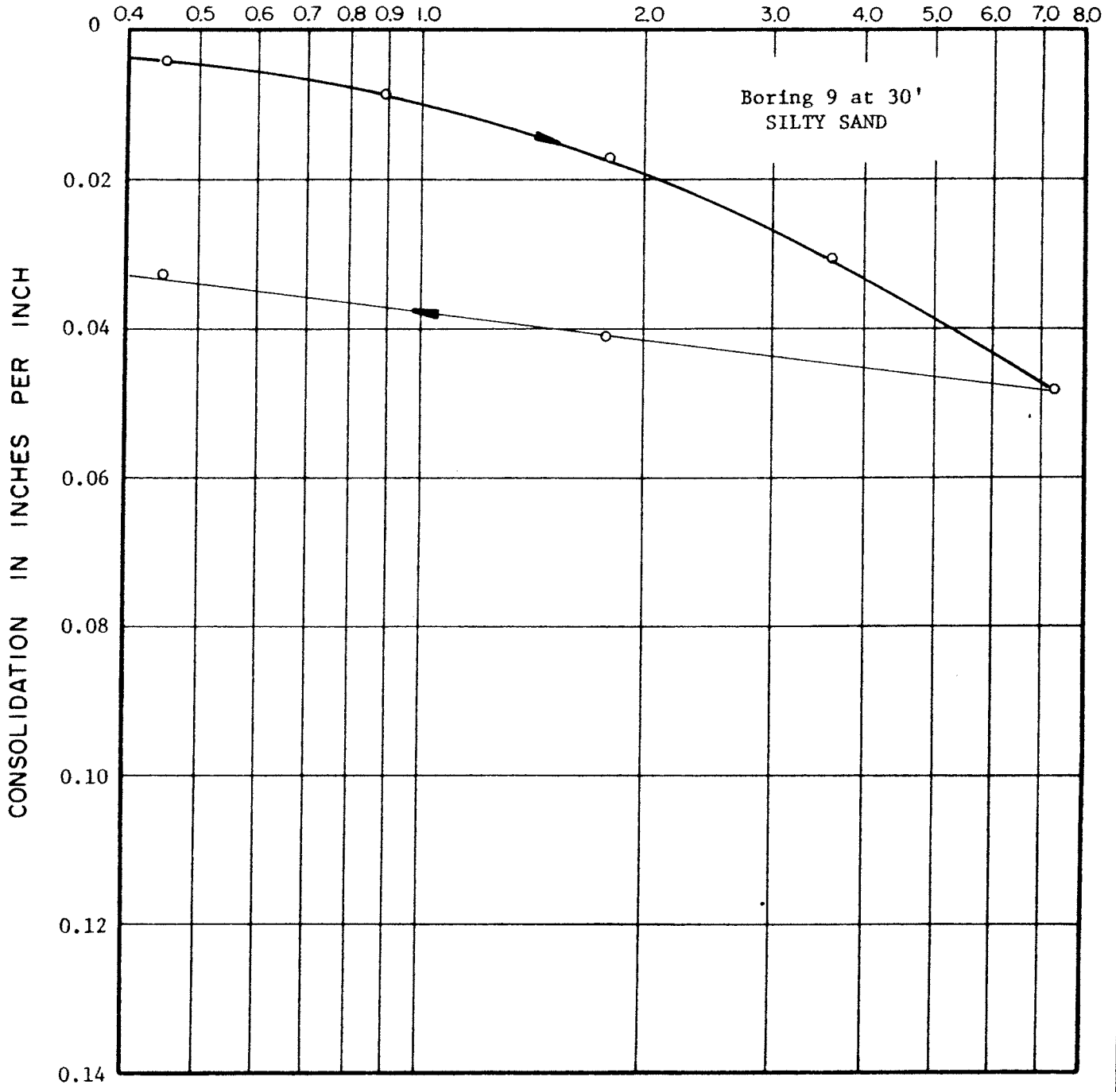
NOTE: Water added to sample from Boring 8 after consolidation under a load of 3.6 kips per square foot. The other sample tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

JOB A-82210 DATE 9/1/82 DR. JOHN S. W.P. CHKD

LOAD IN KIPS PER SQUARE FOOT



NOTE: Sample tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

PLATE A-4.6

JOB A-82210
DATE 9/1/82
DR. JOHN
DM L/W.P. fm
CHKD

BORING NUMBER AND SAMPLE DEPTH: 2 at 2' to 5' 3 at 14' to 18' 7 at 17' to 22'

SOIL TYPE: SANDY SILT SILTY SAND CLAYEY SILT

MAXIMUM DRY DENSITY * : 117 121 116
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 15 12 15
(% OF DRY WT.)

EXPANSION (%) : 2.9 0.4 4.8
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

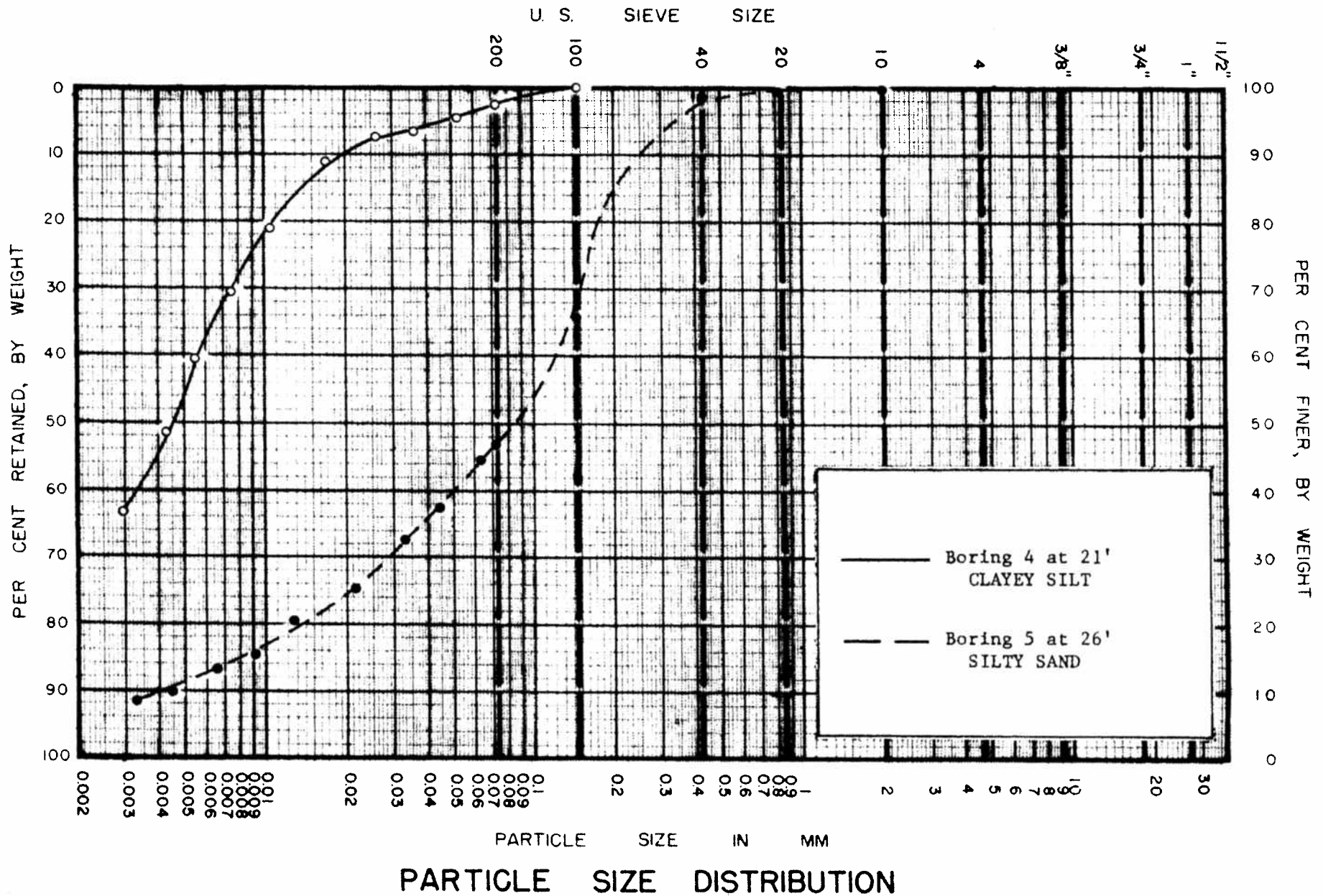
AT 90% COMPACTION :	7	18	2
AT 95% COMPACTION :	13	32	4

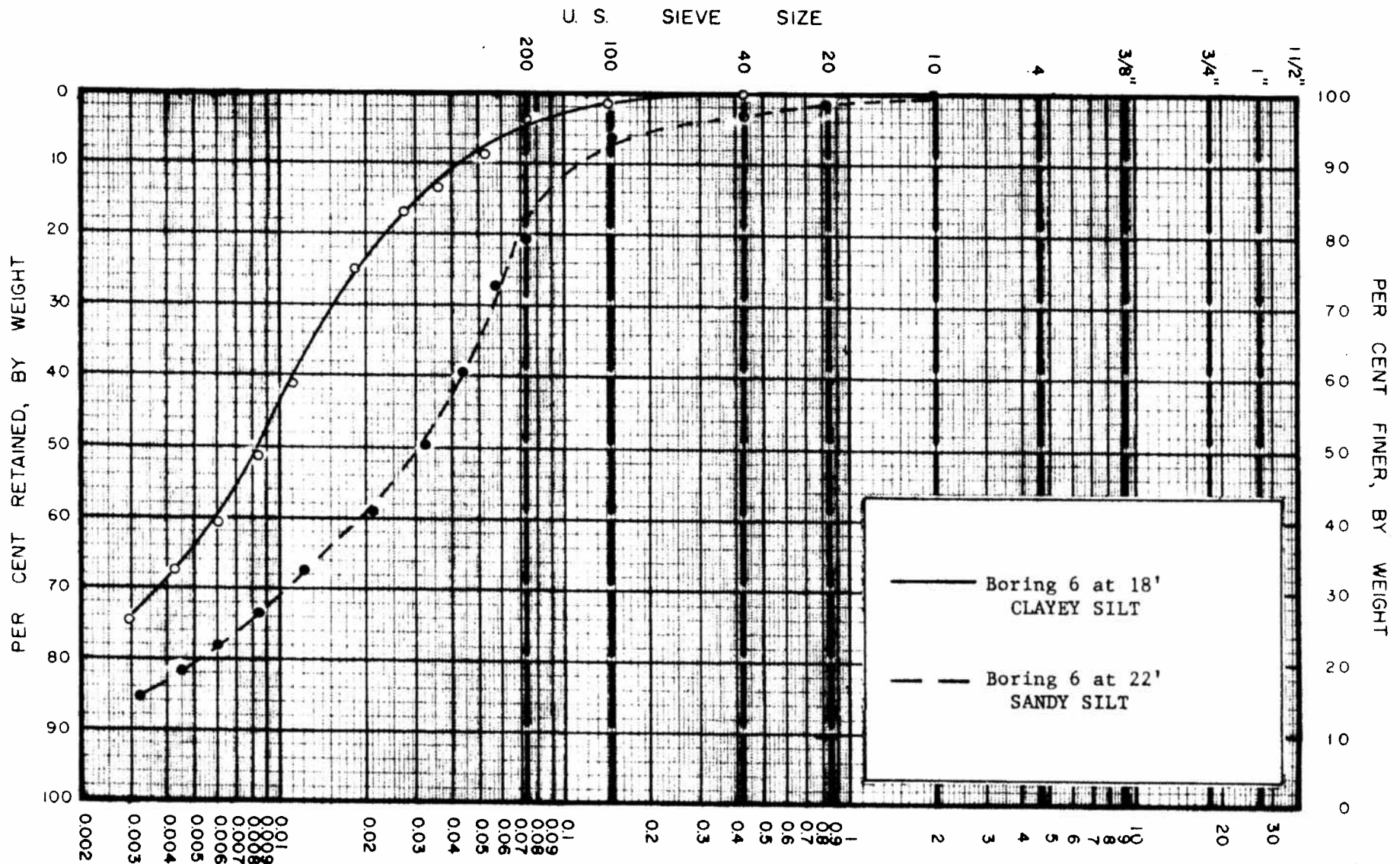
* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

JOB A-82210 DATE 9/7/82 DR. C DM W.P. FM CHKD





PARTICLE SIZE DISTRIBUTION

LERROY CRANDALL AND ASSOCIATES
PLATE A-6.2

APPENDIX B
GEOLOGIC AND SEISMIC DATA

GENERAL

The geologic-seismic studies included a field reconnaissance on and adjacent to the site, as well as office analysis of published and unpublished literature pertinent to the study area. The Seismic Safety Plan for the City of Los Angeles, 1974, and the Seismic Safety Element of the City of Long Beach, 1975, were reviewed as part of our literature analysis.

This Appendix presents additional background information regarding faults, seismicity, and ground shaking.

FAULTS

The numerous faults in Southern California include active, potentially active, and inactive faults. The criteria for these major groups, as established by the Association of Engineering Geologists, 1973, are presented in Table B-1. Table B-2 presents a listing of active faults in Southern California with the distance in miles between the site and the nearest point on the fault, and the maximum credible earthquake for the fault. Table B-3 provides a similar listing for potentially active faults. No faults or fault associated features were observed on the site during the field reconnaissance.

TABLE B-1

CRITERIA FOR CLASSIFICATION OF FAULTS WITH
REGARD TO SEISMIC ACTIVITY

(From Association of Engineering Geologists,
Geology and Earthquake Hazards, 1973)

A. Active Faults: (See Table B-2)

These faults are those which have shown historical activity. This category includes such faults as the San Andreas, San Jacinto, and Newport-Inglewood.

B. Potentially Active Faults: (See Table B-3)

These faults are those, based on available data, along which no known historical ground surface ruptures or earthquakes have occurred. These faults, however, show strong indications of geologically recent activity. Potentially active faults can be placed in two subgroups that are based on the boldness or sharpness of their topographic features and the estimates related to recency of activity. These subgroups are:

1. Subgroup One - High Potential

- a. Offsets affecting the Holocene deposits (age less than 10 - 11,000 years).
- b. A ground water barrier or anomaly occurring along the fault within the Holocene deposits.
- c. Earthquake epicenters (generally from small earthquakes occurring close to the fault).
- d. Strong geomorphic expression of fault origin features (e.g. faceted spurs, offset ridges or stream valleys or similar features, especially where Holocene topography appears to have been modified).

2. Subgroup Two - Low Potential

This subgroup is the same as 1-a, b, or d above, with the exception that the indications of fault movement can be only determined in Pleistocene deposits (less than 1,000,000 years ago).

C. Inactive Faults:

These faults are without recognized Holocene or Pleistocene offset or activity.

TABLE B-2
 MAJOR NAMED FAULTS CONSIDERED TO BE ACTIVE (a)
 IN SOUTHERN CALIFORNIA

Fault (in alphabetical order)	Date of Latest Major Activity	Maximum Credible Earthquake	Distance From Site (Miles)	Direction From Site
Big Pine	1852	7.5 (b)	82	NW
Coyote Creek	1968	7.2 (c)	105	ESE
Elsinore	1910	7.5 (b)	32	E
Garlock	(d)	7.75(b)	78	NNW
Malibu Coast	1973	7.0 (c)	22	NW
Manix	1947	6.25(b)	125	NE
More Ranch	(d)	7.5 (b)	97	WNW
Newport-Inglewood	1933	7.0 (b)	1.5	NE
San Andreas Zone	1857	8.25(b)	49	NNE
San Fernando Zone	1971	6.5 (b)	34	N
San Jacinto Zone	1968	7.5 (b)	46	NE
Superstition Hills	1951	7.0 (b)	145	ESE
White Wolf	1952	7.75(b)	95	NNW
Whittier	1929 (?)	7.1 (c)	16	NE

- (a) Historic movement (1769 - present).
 (b) Greensfelder, C.D.M.G. Map Sheet 23, 1974.
 (c) Mark (1977) Length-Magnitude relationship.
 (d) Intermittent creep.

TABLE B-3

MAJOR NAMED FAULTS CONSIDERED TO BE POTENTIALLY ACTIVE (a)
IN SOUTHERN CALIFORNIA

Fault (in alphabetical order)	Maximum Credible Earthquake	Distance From Site (miles)	Direction From Site
Calico-Newberry	7.25(b)	109	NE
Charnock	6.6 (c)	12	NW
*Chino	6.7 (c)	31	ENE
Cucamonga	6.5 (b)	38	ENE
*Duarte	6.3 (c)	27	NE
Helendale	7.5 (b)	82	NE
Northridge Hills	6.5 (b)	32	NNW
Norwalk	6.4 (c)	11.5	ENE
Oakridge	7.5 (b)	49	NW
*Overland	6.2 (c)	16	NW
Ozena	7.3 (c)	86	NW
Palos Verdes	7.0 (b)	4.8	SW
Pinto Mountain	7.5 (b)	87	E
Raymond	6.6 (c)	21	N
*Richfield	6.2 (c)	0.8	SSW
San Cayetano	6.75(c)	49	NW
*San Gabriel	7.5 (c)	31	NE
*San Jose	6.5 (c)	25	ENE
Santa Cruz Island	7.2 (c)	70	W
Santa Monica-Hollywood	6.8 (c)	22	NNW
Santa Susana	6.5 (b)	38	NNW
Santa Ynez	7.5 (b)	65	NNW
Sierra Madre	7.5 (b)	26	NE
Sierra Nevada	8.25(b)	102	N
*Verdugo	6.8 (c)	24	N

- (a) Pleistocene deposits disrupted.
 (b) Greensfelder, C.D.M.G. Map Sheet 23, 1974.
 (c) Mark (1977) Length-Magnitude relationship.
 * Low Potential per A.E.G. definition.

Active Faults

The active fault closest to the site is the Cherry Hill branch of the Newport-Inglewood Fault Zone. The Cherry Hill Fault is located approximately 1.5 miles northeast of the site. Although the Cherry Hill Fault is not known to displace Holocene materials, numerous earthquake epicenters plot along the trace of this fault, indicating activity at depth.

The Avalon-Compton Fault of the Newport-Inglewood Fault System is located about 3.4 miles northwest of the site. This fault does not appear to have structurally affected upper Pleistocene and Holocene deposits. Water well logs and other subsurface data indicate that the Gage aquifer within the Lakewood Formation, estimated to be about 300,000 years old, does not appear to be structurally affected by movement on the Avalon-Compton Fault. However, numerous earthquake epicenters indicate activity at depth. The locations of several other branches of the Newport-Inglewood Fault Zone are shown on Plate 2.

Potentially Active Faults

The potentially active fault nearest the site is the Richfield Fault, located about 0.8 mile south of the site. This fault is considered to have a low potential for activity because Holocene and upper Pleistocene materials appear to be undisturbed by the fault.

The potentially active Palos Verdes Fault is located about 4.8 miles southwest of the site. The Palos Verdes Fault is a reverse type fault with schist basement rocks being displaced in excess of 3,000 feet on the upthrown southern side of the fault (Yerkes et al, 1965).

Other nearby potentially active faults include the Charnock, Norwalk and Overland Faults, located 12 miles northwest, 11.5 miles east-northeast and 16 miles northwest of the site, respectively.

GROUND SHAKING

Movements on any of the above described active and potentially active faults could cause ground shaking at the site. The relationship between the duration of strong shaking and magnitude of an earthquake has been investigated by Bolt (1973). Strong shaking may be defined as that period of time when the acceleration of the ground, due to seismic waves, is in excess of 0.05g.

TABLE B-4
BRACKETED DURATION AS A FUNCTION OF MAGNITUDE AND DISTANCE TO SOURCE
(after Bolt, 1973)

Distance to Source (km)	Bracketed Duration (seconds)						
	Magnitude						
	5.5	6.0	6.5	7.0	7.5	8.0	8.5
10	8	12	19	26	31	34	35
25	4	9	15	24	28	30	32
50	2	3	10	22	26	28	29
75	1	1	5	10	14	16	17
100	0	0	1	4	5	6	7
125	0	0	1	2	2	3	3
150	0	0	0	1	2	2	3
175	0	0	0	0	1	2	2
200	0	0	0	0	0	1	2

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APPENDIX CSEISMICITY

The seismicity of the region surrounding the site was determined from a computer search of a magnetic tape catalog of earthquakes. The catalog of earthquakes included those compiled by the California Institute of Technology for the period from 1932 to 1981 and those earthquakes for the period 1812 to 1931 compiled by Richter and the U.S. National Oceanic and Atmospheric Administration (NOAA). The computer printout of the earthquakes is presented as Table C-1 and follows the text of this appendix. The search indicates that 291 earthquakes of Richter magnitude 4.0 and greater have occurred within 100 kilometers (62 miles) of the site during the period from 1932 to 1981.

The epicenter of the March 11, 1933 Long Beach earthquake, magnitude 6.3, was located approximately 20 miles southeast of the site. This earthquake, although of only moderate magnitude, ranks as one of the major disasters in Southern California. The majority of the damage was suffered by structures which are now considered substandard construction and/or were located on filled or saturated ground.

The epicenter of the February 9, 1971, San Fernando earthquake of magnitude 6.4, was about 47 miles north of the site. Surface rupture occurred on the Sylmar and Tujunga Faults, which are segments of the San Fernando Fault.

The information listed for each earthquake found in Table C-1, includes date and time in Greenwich Civil Time (GCT), location of the epicenter in latitude and longitude, quality of epicentral determination (Q), depth in kilometers, and magnitude. Where a depth of 0.0 is given, the solution was based on an assumed 16-kilometer focal depth. The letter code for the quality factor is presented on the first page of the table.

The computer analyses were utilized to develop an earthquake recurrence curve which is presented on Plate C-1, Recurrence Curve. The recurrence curve was developed on the basis of the seismicity of an area having a radius of 100 kilometers. The application of the Poisson probability law to the resulting recurrence curve, as shown on Plate C-2, Estimated Probability of Earthquake Occurrence, provides an estimate of the probability of earthquake activity that may affect the site.

TABLE C-1
(Sheet 1 of 15)

LIST OF HISTORIC EARTHQUAKES OF MAGNITUDE 4.0 OR
GREATER WITHIN 100 KM OF THE SITE
(CAL TECH DATA 1932-1981)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1932	11	1	4	45	0	34.00 N	117.25 W	E	92	0.0	4.0
1933	3	11	1	54	8	33.62 N	117.97 W	A	32	0.0	6.3
1933	3	11	2	4	0	33.75 N	118.08 W	C	15	0.0	4.9
1933	3	11	2	5	0	33.75 N	118.08 W	C	15	0.0	4.3
1933	3	11	2	9	0	33.75 N	118.08 W	C	15	0.0	5.0
1933	3	11	2	10	0	33.75 N	118.08 W	C	15	0.0	4.6
1933	3	11	2	11	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	2	16	0	33.75 N	118.08 W	C	15	0.0	4.8
1933	3	11	2	17	0	33.60 N	118.00 W	E	32	0.0	4.5
1933	3	11	2	22	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	2	27	0	33.75 N	118.08 W	C	15	0.0	4.6
1933	3	11	2	30	0	33.75 N	118.08 W	C	15	0.0	5.1
1933	3	11	2	31	0	33.60 N	118.00 W	E	32	0.0	4.4
1933	3	11	2	52	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	2	57	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	2	58	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	2	59	0	33.75 N	118.08 W	C	15	0.0	4.6
1933	3	11	3	5	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	3	9	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	3	11	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	3	23	0	33.75 N	118.08 W	C	15	0.0	5.0
1933	3	11	3	36	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	3	39	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	3	47	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	4	36	0	33.75 N	118.08 W	C	15	0.0	4.6
1933	3	11	4	39	0	33.75 N	118.08 W	C	15	0.0	4.9
1933	3	11	4	40	0	33.75 N	118.08 W	C	15	0.0	4.7
1933	3	11	5	10	22	33.70 N	118.07 W	C	19	0.0	5.1
1933	3	11	5	13	0	33.75 N	118.08 W	C	15	0.0	4.7

NOTE: Q IS A FACTOR RELATING THE QUALITY OF EPICENTRAL DETERMINATION

- A = SPECIALLY INVESTIGATED
- B = EPICENTER PROBABLY WITHIN 5 KM, ORIGIN TIME TO NEAREST SECOND
- C = EPICENTER PROBABLY WITHIN 15 KM, ORIGIN TIME TO A FEW SECONDS
- D = EPICENTER NOT KNOWN WITHIN 15 KM, ROUGH LOCATION
- E = EPICENTER ROUGHLY LOCATED, ACCURACY LESS THAN "D"
- P = PRELIMINARY

TABLE C-1
(Sheet 2 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1933	3	11	5	15	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	5	18	4	33.57 N	117.98 W	C	36	0.0	5.2
1933	3	11	5	21	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	5	24	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	5	53	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	5	55	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	6	11	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	6	18	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	6	29	0	33.85 N	118.27 W	C	6	0.0	4.4
1933	3	11	6	35	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	6	58	3	33.68 N	118.05 W	C	22	0.0	5.5
1933	3	11	7	51	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	7	59	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	8	8	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	11	8	32	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	8	37	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	8	54	57	33.70 N	118.07 W	C	15	0.0	5.1
1933	3	11	9	10	0	33.75 N	118.08 W	C	15	0.0	5.1
1933	3	11	9	11	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	9	26	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	10	25	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	10	45	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	0	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	4	0	33.75 N	118.13 W	C	11	0.0	4.6
1933	3	11	11	29	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	38	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	11	41	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	11	47	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	12	50	0	33.68 N	118.05 W	C	22	0.0	4.4
1933	3	11	13	50	0	33.73 N	118.10 W	C	15	0.0	4.4
1933	3	11	13	57	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	14	25	0	33.85 N	118.27 W	C	6	0.0	5.0
1933	3	11	14	47	0	33.73 N	118.10 W	C	15	0.0	4.4
1933	3	11	14	57	0	33.88 N	118.32 W	C	11	0.0	4.9
1933	3	11	15	9	0	33.73 N	118.10 W	C	15	0.0	4.4
1933	3	11	15	47	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	16	53	0	33.75 N	118.08 W	C	15	0.0	4.8
1933	3	11	19	44	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	11	19	56	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	11	22	0	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	22	31	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	22	32	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	11	22	40	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	11	22	40	0	33.75 N	118.08 W	C	15	0.0	4.4

TABLE C-1
(Sheet 3 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1933	3	11	23	5	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	0	27	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	12	0	34	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	4	48	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	5	46	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	12	6	1	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	6	16	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	7	40	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	8	35	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	15	2	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	12	16	51	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	12	17	38	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	12	18	25	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	12	21	28	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	12	23	54	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	13	3	43	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	13	4	32	0	33.75 N	118.08 W	C	15	0.0	4.7
1933	3	13	6	17	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	13	13	18	28	33.75 N	118.08 W	C	15	0.0	5.3
1933	3	13	15	32	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	13	19	29	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	14	0	36	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	14	12	19	0	33.75 N	118.08 W	C	15	0.0	4.5
1933	3	14	19	1	50	33.62 N	118.02 W	C	29	0.0	5.1
1933	3	14	22	42	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	15	2	8	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	15	4	32	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	15	5	40	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	15	11	13	32	33.62 N	118.02 W	C	29	0.0	4.9
1933	3	16	14	56	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	3	16	15	29	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	16	15	30	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	16	15	30	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	16	15	30	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	17	16	51	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	18	20	52	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	19	21	23	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	3	20	13	58	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	21	3	26	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	23	8	40	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	23	18	31	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	25	13	46	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	3	30	12	25	0	33.75 N	118.08 W	C	15	0.0	4.4
1933	3	31	10	49	0	33.75 N	118.08 W	C	15	0.0	4.1
1933	4	1	6	42	0	33.75 N	118.08 W	C	15	0.0	4.2
1933	4	2	8	0	0	33.75 N	118.08 W	C	15	0.0	4.0

TABLE C-1
(Sheet 4 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1933	4	2	15	36	0	33.75 N	118.08 W	C	15	0.0	4.0
1933	5	16	20	58	55	33.75 N	118.17 W	C	9	0.0	4.0
1933	8	4	4	17	48	33.75 N	118.18 W	C	9	0.0	4.0
1933	10	2	9	10	18	33.78 N	118.13 W	A	9	0.0	5.4
1933	10	2	13	26	1	33.62 N	118.02 W	C	29	0.0	4.0
1933	10	25	7	0	46	33.95 N	118.13 W	C	17	0.0	4.3
1933	11	13	21	28	0	33.87 N	118.20 W	C	6	0.0	4.0
1933	11	20	10	32	0	33.78 N	118.13 W	B	9	0.0	4.0
1934	1	9	14	10	0	34.10 N	117.68 W	A	59	0.0	4.5
1934	1	18	2	14	0	34.10 N	117.68 W	A	59	0.0	4.0
1934	1	20	21	17	0	33.62 N	118.12 W	B	24	0.0	4.5
1934	4	17	18	33	0	33.57 N	117.98 W	C	36	0.0	4.0
1934	10	17	9	38	0	33.63 N	118.40 W	B	27	0.0	4.0
1934	11	16	21	26	0	33.75 N	118.00 W	B	22	0.0	4.0
1935	6	19	11	17	0	33.72 N	117.52 W	B	66	0.0	4.0
1935	7	13	10	54	17	34.20 N	117.90 W	A	52	0.0	4.7
1935	9	3	6	47	0	34.03 N	117.32 W	B	87	0.0	4.5
1935	12	25	17	15	0	33.60 N	118.02 W	B	31	0.0	4.5
1936	2	23	22	20	43	34.13 N	117.34 W	A	89	0.0	4.5
1936	2	26	9	33	28	34.14 N	117.34 W	A	89	0.0	4.0
1936	8	22	5	21	0	33.77 N	117.82 W	B	37	0.0	4.0
1936	10	29	22	35	36	34.38 N	118.62 W	C	72	0.0	4.0
1937	1	15	18	35	47	33.56 N	118.06 W	B	32	0.0	4.0
1937	3	19	1	23	38	34.11 N	117.43 W	A	80	0.0	4.0
1937	7	7	11	12	0	33.57 N	117.98 W	B	36	0.0	4.0
1937	9	1	13	48	8	34.21 N	117.53 W	A	77	0.0	4.5
1937	9	1	16	35	34	34.18 N	117.55 W	A	74	0.0	4.5
1937	9	13	22	14	40	33.04 N	118.73 W	C	99	0.0	4.0
1938	5	21	9	44	0	33.62 N	118.03 W	B	28	0.0	4.0
1938	5	31	8	34	55	33.70 N	117.51 W	B	67	0.0	5.5
1938	7	5	18	6	56	33.68 N	117.55 W	A	64	0.0	4.5
1938	8	6	22	0	56	33.72 N	117.51 W	B	67	0.0	4.0
1938	8	31	3	18	14	33.76 N	118.25 W	A	7	0.0	4.5
1938	11	29	19	21	16	33.90 N	118.43 W	A	21	0.0	4.0
1938	12	7	3	38	0	34.00 N	118.42 W	B	27	0.0	4.0
1938	12	27	10	9	29	34.13 N	117.52 W	B	73	0.0	4.0
1939	4	3	2	50	45	34.04 N	117.23 W	A	95	0.0	4.0
1939	11	4	21	41	0	33.77 N	118.12 W	B	11	0.0	4.0
1939	11	7	18	52	8	34.00 N	117.28 W	A	89	0.0	4.7
1939	12	27	19	28	49	33.78 N	118.20 W	A	5	0.0	4.7
1940	1	13	7	49	7	33.78 N	118.13 W	B	9	0.0	4.0
1940	2	8	16	56	17	33.70 N	118.07 W	B	19	0.0	4.0
1940	2	11	19	24	10	33.98 N	118.30 W	B	19	0.0	4.0
1940	4	18	18	43	44	34.03 N	117.35 W	A	84	0.0	4.4

TABLE C-1
(Sheet 5 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1940	6	5	8	27	27	33.83 N	117.40 W	B	76	0.0	4.0
1940	7	20	4	1	13	33.70 N	118.07 W	B	19	0.0	4.0
1940	10	11	5	57	12	33.77 N	118.45 W	A	22	0.0	4.7
1940	10	12	0	24	0	33.78 N	118.42 W	B	19	0.0	4.0
1940	10	14	20	51	11	33.78 N	118.42 W	B	19	0.0	4.0
1940	11	1	7	25	3	33.78 N	118.42 W	B	19	0.0	4.0
1940	11	1	20	0	46	33.63 N	118.20 W	B	21	0.0	4.0
1940	11	2	2	58	26	33.78 N	118.42 W	B	19	0.0	4.0
1941	1	30	1	34	47	33.97 N	118.05 W	A	23	0.0	4.1
1941	3	22	8	22	40	33.52 N	118.10 W	B	35	0.0	4.0
1941	3	25	23	43	41	34.22 N	117.47 W	B	82	0.0	4.0
1941	4	11	1	20	24	33.95 N	117.58 W	B	61	0.0	4.0
1941	10	22	6	57	19	33.82 N	118.22 W	A	0	0.0	4.9
1941	11	14	8	41	36	33.78 N	118.25 W	A	5	0.0	5.4
1942	4	16	7	28	33	33.37 N	118.15 W	C	50	0.0	4.0
1943	10	24	0	29	21	33.93 N	117.37 W	C	80	0.0	4.0
1944	6	19	0	3	33	33.87 N	118.22 W	B	6	0.0	4.5
1944	6	19	3	6	7	33.87 N	118.22 W	C	6	0.0	4.4
1946	2	24	6	7	52	34.40 N	117.80 W	C	75	0.0	4.1
1946	6	1	11	6	31	34.42 N	118.83 W	C	87	0.0	4.1
1948	3	1	8	12	13	34.17 N	117.53 W	B	75	0.0	4.7
1948	4	16	22	26	24	34.02 N	118.97 W	B	73	0.0	4.7
1948	10	3	2	46	28	34.18 N	117.58 W	A	72	0.0	4.0
1950	1	11	21	41	35	33.94 N	118.20 W	A	13	0.0	4.1
1951	9	22	8	22	39	34.12 N	117.34 W	A	88	0.0	4.3
1952	2	10	13	50	55	33.58 N	119.18 W	C	93	0.0	4.0
1952	2	17	12	36	58	34.00 N	117.27 W	A	90	0.0	4.5
1952	8	23	10	9	7	34.52 N	118.20 W	A	78	0.0	5.0
1954	10	26	16	22	26	33.73 N	117.47 W	B	70	0.0	4.1
1955	5	15	17	3	26	34.12 N	117.48 W	A	76	0.0	4.0
1955	5	29	16	43	35	33.99 N	119.06 W	B	80	0.0	4.1
1956	1	3	0	25	49	33.72 N	117.50 W	B	68	0.0	4.7
1956	2	7	2	16	57	34.53 N	118.64 W	B	88	0.0	4.2
1956	2	7	3	16	39	34.59 N	118.61 W	A	93	0.0	4.6
1956	3	25	3	32	2	33.60 N	119.10 W	A	85	0.0	4.2
1957	3	18	18	56	28	34.12 N	119.22 W	B	98	0.0	4.7
1960	6	28	20	0	48	34.12 N	117.47 W	A	77	0.0	4.1
1961	10	4	2	21	32	33.85 N	117.75 W	B	44	0.0	4.1
1961	10	20	19	49	51	33.65 N	117.99 W	B	28	0.0	4.3
1961	10	20	20	7	14	33.66 N	117.98 W	B	28	0.0	4.0
1961	10	20	21	42	41	33.67 N	117.98 W	B	28	0.0	4.0
1961	10	20	22	35	34	33.67 N	118.01 W	B	26	0.0	4.1
1961	11	20	8	53	35	33.68 N	117.99 W	B	26	0.0	4.0
1962	4	27	9	12	32	33.74 N	117.19 W	B	96	0.0	4.1

TABLE C-1
(Sheet 6 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1963	9	14	3	51	16	33.54 N	118.34 W	B	33	0.0	4.2
1964	8	30	22	57	37	34.27 N	118.44 W	B	54	0.0	4.0
1965	1	1	8	4	18	34.14 N	117.52 W	B	74	0.0	4.4
1965	4	15	20	8	33	34.13 N	117.43 W	B	81	0.0	4.5
1965	7	16	7	46	22	34.48 N	118.52 W	B	78	0.0	4.0
1967	1	8	7	37	30	33.63 N	118.47 W	B	31	0.0	4.0
1967	1	8	7	38	5	33.66 N	118.41 W	C	25	0.0	4.0
1967	6	15	4	58	6	34.00 N	117.97 W	B	31	0.0	4.1
1969	2	28	4	56	12	34.57 N	118.11 W	B	84	0.0	4.3
1969	5	5	16	2	10	34.30 N	117.57 W	A	80	0.0	4.4
1969	10	24	20	26	43	33.34 N	119.10 W	B	97	0.0	4.7
1969	10	27	13	16	2	33.55 N	117.81 W	B	48	0.0	4.5
1969	10	31	10	39	29	33.43 N	119.10 W	B	92	0.0	4.8
1970	9	12	14	10	11	34.27 N	117.52 W	A	82	0.0	4.1
1970	9	12	14	30	53	34.27 N	117.54 W	A	80	0.0	5.4
1970	9	13	4	47	49	34.28 N	117.55 W	A	80	0.0	4.4
1971	2	9	14	0	42	34.41 N	118.40 W	B	68	0.0	6.4
1971	2	9	14	1	8	34.41 N	118.40 W	D	68	0.0	5.8
1971	2	9	14	1	33	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	1	40	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	1	50	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	1	54	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	1	59	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	2	3	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	2	30	34.41 N	118.40 W	D	68	0.0	4.3
1971	2	9	14	2	31	34.41 N	118.40 W	D	68	0.0	4.7
1971	2	9	14	2	44	34.41 N	118.40 W	D	68	0.0	5.8
1971	2	9	14	3	25	34.41 N	118.40 W	D	68	0.0	4.4
1971	2	9	14	3	46	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	7	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	34	34.41 N	118.40 W	C	68	0.0	4.2
1971	2	9	14	4	39	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	44	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	4	46	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	5	41	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	5	50	34.41 N	118.40 W	D	68	0.0	4.1
1971	2	9	14	7	10	34.41 N	118.40 W	D	68	0.0	4.0
1971	2	9	14	7	30	34.41 N	118.40 W	D	68	0.0	4.0
1971	2	9	14	7	45	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	8	4	34.41 N	118.40 W	D	68	0.0	4.0
1971	2	9	14	8	7	34.41 N	118.40 W	D	68	0.0	4.2
1971	2	9	14	8	38	34.41 N	118.40 W	D	68	0.0	4.5
1971	2	9	14	8	53	34.41 N	118.40 W	D	68	0.0	4.6
1971	2	9	14	10	21	34.36 N	118.31 W	B	60	0.0	4.7

TABLE C-1
(Sheet 7 of 15)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1971	2	9	14	10	28	34.41 N	118.40 W	D	68	0.0	5.3
1971	2	9	14	16	13	34.34 N	118.33 W	C	59	0.0	4.1
1971	2	9	14	19	50	34.36 N	118.41 W	B	62	0.0	4.0
1971	2	9	14	34	36	34.34 N	118.64 W	C	70	0.0	4.9
1971	2	9	14	39	18	34.39 N	118.36 W	C	65	0.0	4.0
1971	2	9	14	40	17	34.43 N	118.40 W	C	70	0.0	4.1
1971	2	9	14	43	47	34.31 N	118.45 W	B	58	0.0	5.2
1971	2	9	15	58	21	34.33 N	118.33 W	B	57	0.0	4.8
1971	2	9	16	19	26	34.46 N	118.43 W	B	74	0.0	4.2
1971	2	10	3	12	12	34.37 N	118.30 W	B	61	0.0	4.0
1971	2	10	5	6	36	34.41 N	118.33 W	A	66	0.0	4.3
1971	2	10	5	18	7	34.43 N	118.41 W	A	70	0.0	4.5
1971	2	10	11	31	35	34.38 N	118.45 W	A	66	0.0	4.2
1971	2	10	13	49	54	34.40 N	118.42 W	A	67	0.0	4.3
1971	2	10	14	35	27	34.36 N	118.49 W	A	65	0.0	4.2
1971	2	10	17	38	55	34.40 N	118.37 W	A	66	0.0	4.2
1971	2	10	18	54	42	34.45 N	118.44 W	A	73	0.0	4.2
1971	2	21	5	50	53	34.40 N	118.44 W	A	67	0.0	4.7
1971	2	21	7	15	12	34.39 N	118.43 W	A	66	0.0	4.5
1971	3	7	1	33	41	34.35 N	118.46 W	A	63	0.0	4.5
1971	3	25	22	54	10	34.36 N	118.47 W	A	64	0.0	4.2
1971	3	30	8	54	43	34.30 N	118.46 W	A	58	0.0	4.1
1971	3	31	14	52	23	34.29 N	118.51 W	A	59	0.0	4.6
1971	4	1	15	3	4	34.43 N	118.41 W	A	70	0.0	4.1
1971	4	2	5	40	25	34.28 N	118.53 W	A	59	0.0	4.0
1971	4	15	11	14	32	34.26 N	118.58 W	B	59	0.0	4.2
1971	4	25	14	48	7	34.37 N	118.31 W	B	62	0.0	4.0
1971	6	21	16	1	8	34.27 N	118.53 W	B	58	0.0	4.0
1971	6	22	10	41	19	33.75 N	117.48 W	B	69	0.0	4.2
1973	2	21	14	45	57	34.06 N	119.03 W	B	80	0.0	5.9
1974	3	9	0	54	32	34.40 N	118.47 W	C	68	0.0	4.7
1974	8	14	14	45	55	34.43 N	118.37 W	A	69	0.0	4.2
1976	1	1	17	20	13	33.96 N	117.89 W	A	34	0.0	4.2
1976	4	8	15	21	38	34.35 N	118.66 W	A	72	0.0	4.6
1977	8	12	2	19	26	34.38 N	118.46 W	B	66	0.0	4.5
1977	9	24	21	28	24	34.46 N	118.41 W	C	73	0.0	4.2
1978	5	23	9	16	51	33.91 N	119.17 W	C	89	0.0	4.0
1979	1	1	23	14	39	33.94 N	118.68 W	B	45	0.0	5.0
1979	10	17	20	52	37	33.93 N	118.67 W	C	43	0.0	4.2
1979	10	19	12	22	38	34.21 N	117.53 W	B	77	0.0	4.1
1981	9	4	15	50	50	33.67 N	119.11 W	C	84	0.0	5.3
1981	10	23	17	28	17	33.63 N	119.02 W	C	77	0.0	4.6
1981	10	23	19	15	52	33.64 N	119.06 W	C	80	0.0	4.6

TABLE C-1
(Sheet 8 of 15)

***** SEARCH OF EARTHQUAKE DATA FILE 1 *****

SITE: ADE-82210 SOUTHERN PACIFIC TRANSPORTATION COMPANY

COORDINATES OF SITE	33.82 N	118.22 W
DISTANCE PER DEGREE	110.9 KM-N	92.7 KM-W
MAGNITUDE LIMITS	4.0 - 8.5	
TEMPORAL LIMITS	1932 - 1981	
SEARCH RADIUS (KM)	100	
NUMBER OF YEARS OF DATA	50	
NUMBER OF EARTHQUAKES IN FILE	2789	
NUMBER OF EARTHQUAKES IN AREA	291	

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
(Sheet 9 of 15)

LIST OF HISTORIC EARTHQUAKES OF MAGNITUDE 6.0 OR
GREATER WITHIN 100 KM OF THE SITE
(RICHTER DATA 1906-1931)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1910	5	15	15	47	0	33.70 N	117.40 W	D	77	0.0	6.0
1923	7	23	7	30	26	34.00 N	117.25 W	D	92	0.0	6.3

TABLE C-1
(Sheet 10 of 15)

***** SEARCH OF EARTHQUAKE DATA FILE 2 *****

SITE: ADE-82210 SOUTHERN PACIFIC TRANSPORTATION COMPANY

COORDINATES OF SITE	33.82 N	118.22 W
DISTANCE PER DEGREE	110.9 KM-N	92.7 KM-W
MAGNITUDE LIMITS	6.0 - 8.5	
TEMPORAL LIMITS	1906 - 1931	
SEARCH RADIUS (KM)	100	
NUMBER OF YEARS OF DATA	26	
NUMBER OF EARTHQUAKES IN FILE	35	
NUMBER OF EARTHQUAKES IN AREA	2	

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
(Sheet 11 of 15)

LIST OF HISTORIC EARTHQUAKES OF MAGNITUDE 7.0 OR
GREATER WITHIN 100 KM OF THE SITE
(NOAA/COMG DATA 1812-1905)

YEAR	MONTH	DAY	HR	MIN	SEC	LATITUDE	LONGITUDE	Q	DISTANCE	DEPTH	MAGNITUDE
1890	2	9	4	6	0	34.00 N	117.50 W	D	70	0.0	7.0

TABLE C-1
(Sheet 12 of 15)

***** SEARCH OF EARTHQUAKE DATA FILE 3 *****

SITE: ADE-82210 SOUTHERN PACIFIC TRANSPORTATION COMPANY

COORDINATES OF SITE	33.82 N	118.22 W
DISTANCE PER DEGREE	110.9 KM-N	92.7 KM-W
MAGNITUDE LIMITS	7.0 - 8.5	
TEMPORAL LIMITS	1812 - 1905	
SEARCH RADIUS (KM)	100	
NUMBER OF YEARS OF DATA	94	
NUMBER OF EARTHQUAKES IN FILE	9	
NUMBER OF EARTHQUAKES IN AREA	1	

***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

TABLE C-1
(Sheet 13 of 15)

* * * * * S U M M A R Y O F E A R T H Q U A K E S E A R C H * * * * *

* * *

NUMBER OF HISTORIC EARTHQUAKES WITHIN 100 KM RADIUS OF SITE

MAGNITUDE RANGE	NUMBER
4.0 - 4.5	203
4.5 - 5.0	63
5.0 - 5.5	18
5.5 - 6.0	5
6.0 - 6.5	4
6.5 - 7.0	0
7.0 - 7.5	1
7.5 - 8.0	0
8.0 - 8.5	0

* * *

* * * * * L E R O Y C R A N D A L L A N D A S S O C I A T E S * * * * *
L O S A N G E L E S

TABLE C-1
 (Sheet 14 of 15)

***** COMPUTATION OF RECURRENCE CURVE *****
 LOG N = A - B M

BIN	MAGNITUDE	RANGE	NO/YR (N)
1	4.00	4.00 - 8.50	5.84
2	4.50	4.50 - 8.50	1.78
3	5.00	5.00 - 8.50	.519
4	5.50	5.50 - 8.50	.159
5	6.00	6.00 - 8.50	.585E-01
6	6.50	6.50 - 8.50	.588E-02 NU
7	7.00	7.00 - 8.50	.588E-02 NU
8	7.50	7.50 - 8.50	.0
9	8.00	8.00 - 8.50	.0

A = 1.132 B = 0.5600 (NORMALIZED)
 A = 4.788 B = 1.0096 SIGMA = .343E-01

***** LEROY CRANDALL AND ASSOCIATES *****
 LOS ANGELES

TABLE C-1
(Sheet 15 of 15)

***** COMPUTATION OF DESIGN MAGNITUDE *****
CONSTANT AREA

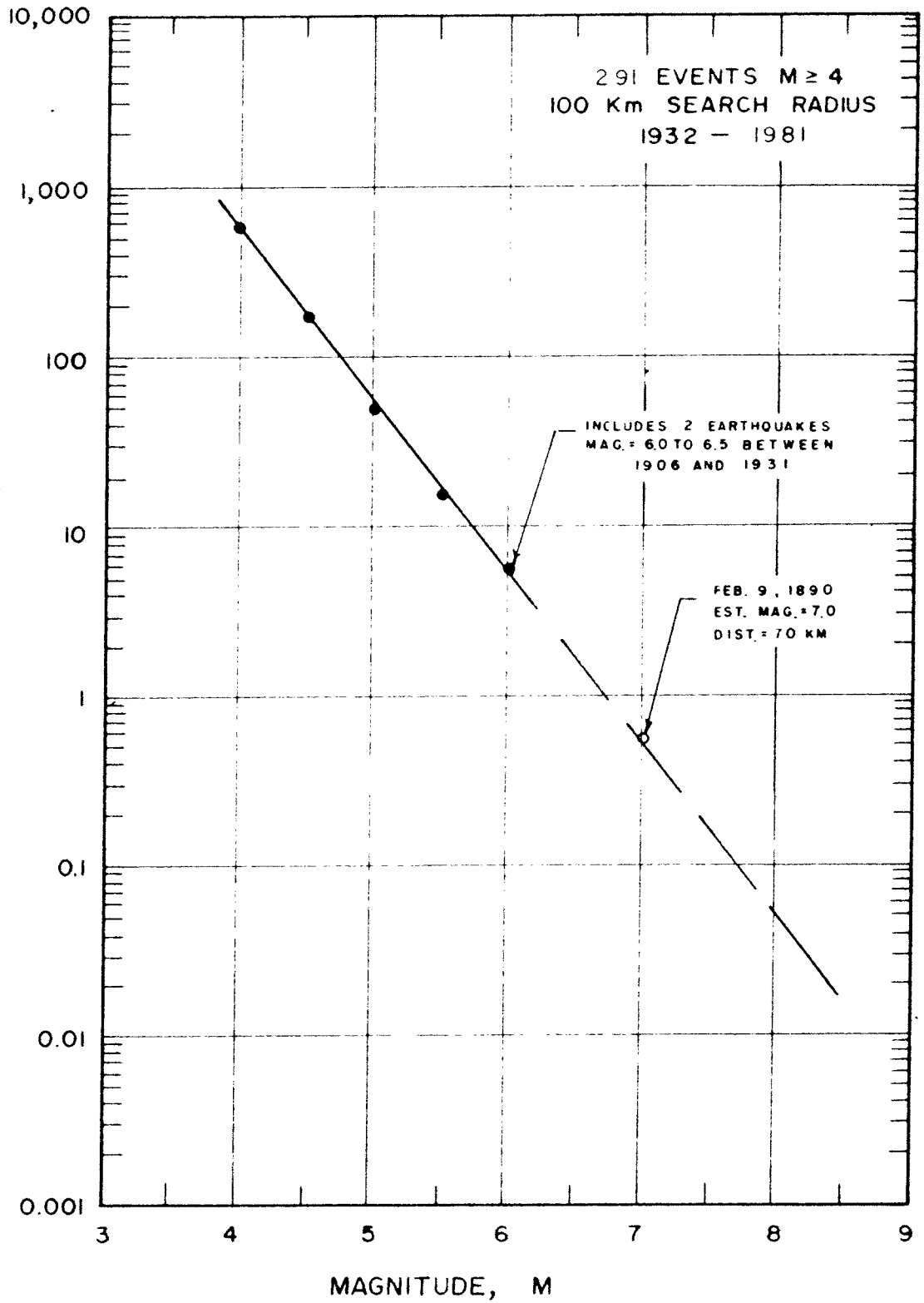
TABLE OF DESIGN MAGNITUDES

RISK	RETURN PERIOD (YEARS)				DESIGN MAGNITUDE				
	25	50	75	DESIGN LIFE (YEARS) 100	DESIGN LIFE (YEARS)				
					25	50	75	100	
0.01 ..	2487	4974	7462	9949 ..	7.96	8.15	8.24	8.29	
0.05 ..	487	974	1462	1949 ..	7.37	7.64	7.79	7.88	
0.10 ..	237	474	711	949 ..	7.08	7.36	7.52	7.63	
0.20 ..	112	224	336	448 ..	6.76	7.06	7.22	7.34	
0.30 ..	70	140	210	280 ..	6.57	6.86	7.03	7.15	
0.50 ..	36	72	108	144 ..	6.28	6.58	6.75	6.87	
0.70 ..	20	41	62	83 ..	6.05	6.34	6.52	6.64	
0.90 ..	10	21	32	43 ..	5.77	6.06	6.24	6.36	

M MIN = 4.00 M MAX = 8.50
M U = 5.61 B E T A = 2.325

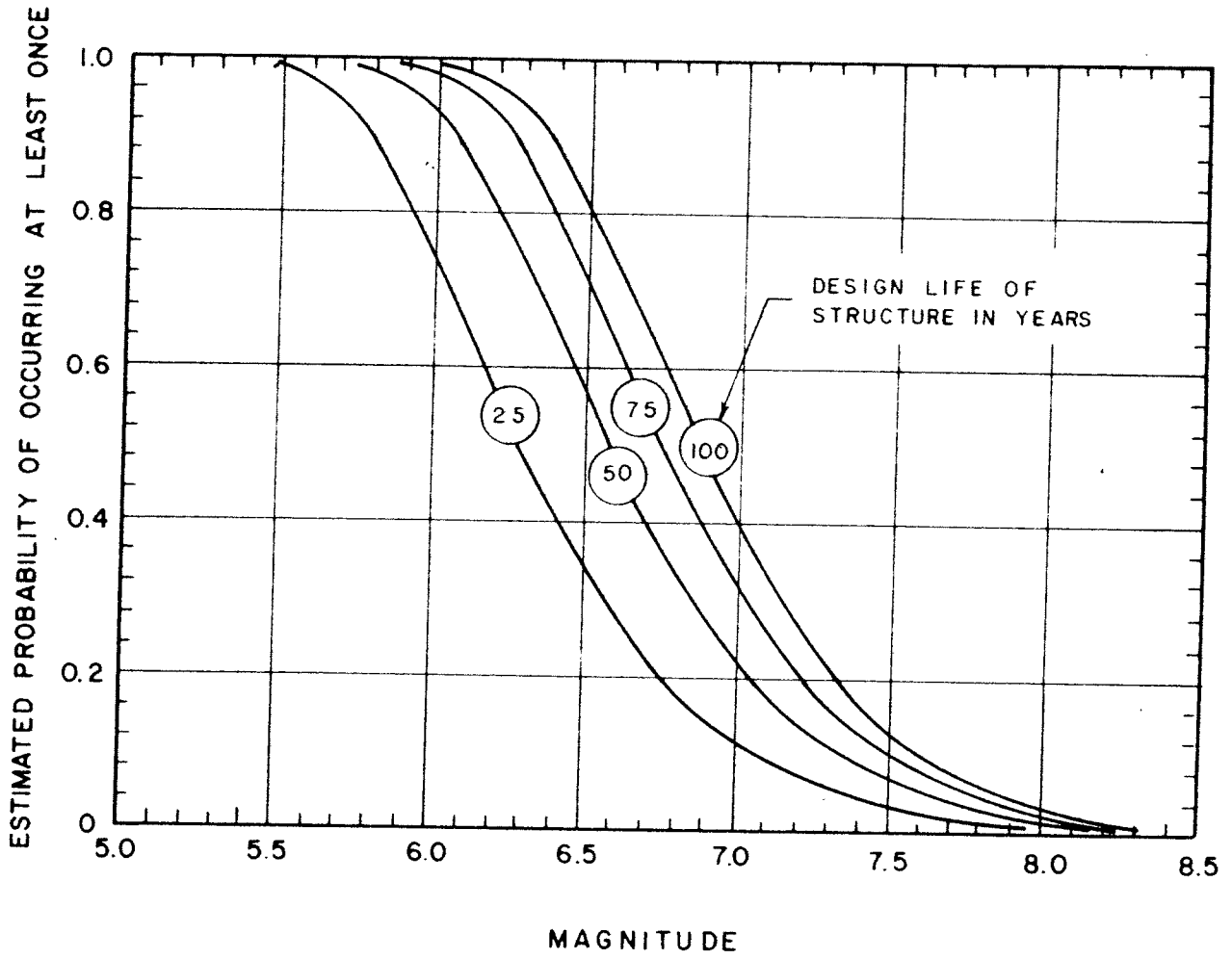
***** LEROY CRANDALL AND ASSOCIATES *****
LOS ANGELES

NUMBER OF EARTHQUAKES PER 100 YEARS
(MAGNITUDES $\geq M$)



RECURRENT CURVE

○ REPRESENTS SINGLE EVENT, AND THEREFORE
HAS BEEN DISCOUNTED IN PREDICTION.



ESTIMATED PROBABILITY
OF EARTHQUAKE OCCURRENCE

D-10 DATE 10/2/72 W.P. CHKD.

Part II - Interim Report No. 2 for Proposed ICTF and Rail
Access Facilities (revised September 13, 1983)

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INTERIM REPORT NO. 2
GEOTECHNICAL INVESTIGATION
PART II
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
AND RAIL ACCESS FACILITIES
223RD STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY
(OUR JOB NO. ADE-82210)

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

June 30, 1986

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. ADE-82210)

Attention: Mr. Dave Kemmer

Gentlemen:

Review of Indicator Piles Data
Proposed Alameda Street Underpass
Alameda Street and San Diego Freeway
Los Angeles, California
for the Southern California Transportation Company

As requested by Mr. Kemmer, we have reviewed the indicator piles data recorded by Mr. Kemmer and submitted to our office. The three indicator piles were driven by Foundation Constructors utilizing a D-30 diesel hammer which has a piston weight of 6,615 pounds. We previously performed a geotechnical investigation for the project and submitted our recommendations in a report dated September 13, 1983.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this letter.


Based upon additional information provided by Mr. Kemmer, the piles, which were driven on June 23rd and 24th, are designated as the west abutment, center pier and east abutment piles. The top-of-pile elevation is approximately 0.0. The west indicator pile was driven to tip elevation -54, the center indicator pile was driven to tip elevation -43 and the east indicator pile was driven to tip elevation -45.


The driving of the indicator piles was observed by Mr. Kemmer who also recorded the driving resistance. In general, driving resistance was quite low above tip elevation -38, at which point the driving resistance began to gradually increase until it became moderately firm at tip elevation -41.

Although the driving resistance is still low at a tip elevation of -40', it is our opinion that the "set" of the pile will be adequate for the design load of 140 kips. We would therefore recommend that the piles be designed to penetrate to elevation -40. Since set-up data was not obtained during the indicator pile program, it is our recommendation that the initial piles be re-started during production pile driving and the driving resistance per inch be recorded for at least the first three (3) inches of restart. We will be pleased to review that data.

Yours very truly,

LeROY CRANDALL AND ASSOCIATES

by 
Fred H. Sakurai
Field Supervisor

by 
Robert Chieruzzi, R.C.E. 13001
Vice President

A4/ak
(2 copies submitted)

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September 13, 1983

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. ADE-82210)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Our "Interim Report No. 2, Geotechnical Investigation, Part II, Proposed Intermodal Container Transfer Facility (ICTF) and Rail Access Facilities, 223rd Street and San Diego Freeway, Los Angeles, California, for the Southern Pacific Transportation Company" is herewith submitted.

Our initial interim report of September 13, 1982 described the soil and geologic conditions at the site and presented preliminary recommendations for foundation design of the bridge, retaining walls and pumping station, and for excavating. As planning and design progressed since submittal of that report, a number of revisions in the project have developed. This report summarizes those changes and presents our design recommendations for various elements of the proposed rail access facilities as currently planned. Our recommendations have been discussed with personnel of your Company.

Please contact us if you have any questions. We will be pleased to provide additional design recommendations as more definitive design information becomes available.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

by *Robert Chieruzzi*
Robert Chieruzzi, R.C.E. 13001
Project Engineer

by *LeRoy Crandall*
LeRoy Crandall, R.C.E. 6157
President

LC-RC/pa
(6 copies submitted)

INTERIM REPORT NO. 2
GEOTECHNICAL INVESTIGATION
PART II
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
AND RAIL ACCESS FACILITIES
223RD STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY

SCOPE

This report presents design recommendations for various elements of the proposed rail access facilities as currently planned. Our first interim report, which was dated September 13, 1982, described the soil and geologic conditions at the site and presented preliminary recommendations for foundation design of the bridge, retaining walls and pumping station, and for excavating. Various changes have occurred since submittal of that report. This report summarizes those changes and presents our recommendations for design of those elements that are affected.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities.

No other warranty, expressed or implied, is made as to the professional advice included in this report.

REVISED PROJECT DESCRIPTION

The revised alignment of Alameda Street is shown on Plate 1, Site Plan. The new centerline is approximately 20 feet west of the existing centerline and will coincide with the centerline of Bent No. 4 of the San Diego Freeway. The proposed Alameda Street depression will be approximately 1,700 feet long between Stations 219+00 and 236+00. The approximate elevations at the north end, the low point, and the south end of the depression profile are 25.3, 6.2, and 23.5, respectively. The maximum depth of excavation will be on the order of 20 feet, which will occur at about Station 228+00.

The retaining walls that were initially planned along both sides of the depression have been deleted. Permanent slopes are now planned which will vary in height up to approximately 18 feet.

The planned excavation will extend up to about 10 feet below an existing pile cap of Bent No. 4 of the San Diego Freeway. We were informed that appropriate measures need to be taken to insure the supporting capacity of those existing piles which will be partially exposed.

The proposed railroad bridge across the Alameda Street depression was relocated as shown on Plate 1. The proposed steel plate girder bridge will be approximately 225 feet long and 37 feet wide, supported

at the abutments and center pier. The east abutment is in close proximity to an existing Los Angeles County Flood Control reinforced concrete box storm drain. Because of the revised Alameda Street alignment, relocation of this drain will not be required as initially planned.

The underpass structure beneath existing 223rd Street will be some 96 feet long, 40 feet wide, and 30 feet high. It will be necessary to maintain traffic flow during construction. The proposed ramp connecting 223rd Street with Alameda Street has been relocated westerly of the initial location. As a result, the underpass beneath the ramp was deleted.

ALAMEDA STREET DEPRESSION

Excavation ranging up to approximately 20 feet deep will be required for the Alameda Street depression. No exceptional difficulties due to soil conditions are anticipated in excavating at the site. Conventional earth-moving equipment may be used. Measures should be taken to protect Bent No. 4 of the San Diego Freeway, as discussed in a subsequent section.

Unsurcharged permanent slopes may be constructed at $1\frac{1}{2}:1$ (horizontal to vertical). Slopes in those areas where surcharge pressures due to adjacent railroad loading may occur should be reviewed. The tops of slopes should be barricaded to keep heavy vehicles and heavy storage loads at least five feet from the tops of the slopes. Berms are suggested along the tops of the slopes where necessary to prevent runoff water from flowing over the slopes and possibly eroding the slope faces.

The soils exposed in the cut slopes should be observed by our personnel so that corrective measures can be made if variations in the soil conditions occur. The slopes should be planted as soon as possible following excavation.

We understand that retaining walls may be used in some areas in combination with sloped excavation. Retaining walls may be supported on continuous spread footings established on properly compacted fill. The natural soils should be excavated as necessary to permit the placing of at least two feet of compacted fill beneath the footings. Such footings may be designed to impose a maximum soil pressure of 2,000 pounds per square foot for a footing depth of at least two feet below the adjacent grade.

Lateral loads may be resisted by soil friction and by the passive resistance of the soils. A coefficient of friction of 0.4 may be used between footings and the supporting soils. The passive resistance of properly compacted fill against footings may be assumed to be equal to the pressure developed by a fluid with a density of 250 pounds per cubic foot. A one-third increase in the passive value may be used for wind or seismic loads. The frictional resistance and the passive resistance of the soils may be combined without reduction in determining the total lateral resistance.

Lateral earth pressures on the retaining walls for various combinations of heights of sloped excavation at $1\frac{1}{2}:1$ (horizontal to vertical) and wall heights are presented on the following page.

<u>Combined Height, H_t (Ft.)</u>	<u>Height of Wall, H_w (Ft.)</u>	<u>Height of Slope, H_s (Ft.)</u>	<u>Equivalent Fluid Unit Weight (pcf)</u>
18	6	12	50
18	9	9	50
18	12	6	50
18	15	3	40
18	18	0	30
12	4	8	50
12	6	6	50
12	9	3	45
12	0	12	30

Lateral surcharge pressures due to any adjacent loads or traffic should also be included.

All required fill should be placed in loose lifts not more than eight inches in thickness and compacted to at least 90% of the maximum density obtainable by the ASTM Designation D1557-70 method of compaction.

PROTECTION OF SAN DIEGO FREEWAY BENT NO 4

Excavation for the Alameda Street depression will extend up to about ten feet below the bottom of an existing pile cap of Bent No. 4 of the San Diego Freeway. We were informed that the design of the piles did not consider possible lowering of Alameda Street; consequently, it is necessary to insure that the supporting capacity of the piles is maintained.

Based on drawings that were provided us, the pile group has six piles, and the pile cap is 7 by 9 feet in plan. The elevation of the bottom of the pile cap is 19.02 feet. The protection scheme currently being considered consists of constructing a pair of parallel braced

walls to prevent loss of soil adjacent to the piles. The walls will be about 11 feet apart, extending two feet beyond the pile cap on each side.

It was suggested that construction of the walls could consist of drilled cast-in-place reinforced concrete piles with cross-ties to confine the soil adjacent to the foundation piles. The drilled piles should overlap so as to form a continuous wall. All of the drilled piles and the top tie should be installed prior to excavating; additional ties, if required, should be installed as the excavation progresses.

This scheme should be reviewed when more detailed information regarding the design of the existing piles becomes available.

RAILROAD BRIDGE

The location of the bridge has been revised since submittal of our September 13, 1982 interim report. As shown on Plate 1, the prior borings do not provide good coverage for the new bridge site. We recommend that at least one additional boring be drilled at the revised bridge location near the west abutment.

Based on Boring 7, the soils are only moderately firm to a depth of about 27 feet; the deeper soils are generally firm. The bridge will cross Alameda Street depression at its lowest elevation, which is some 18 feet below the existing grade. The soils at the excavated level will not provide adequate support for the abutments and the center pier on spread footings.

For support for the bridge, driven friction piling may be the most feasible foundation type. The capacities presented on Plate 5 of our prior report may be used for preliminary design; these values should be verified after completion of the supplementary boring. In our opinion, the use of drilled cast-in-place piling is precluded because of the shallow water level which would limit the pile lengths to less than 25 feet. However, this foundation scheme should be reviewed as more definitive information on the loads becomes available.

Lateral loads may be resisted by the piles. It may be assumed that the soils adjacent to a concrete pile at least 20 feet long having a butt width of 12 inches can resist horizontal loads imposed at the top of the pile up to 8,000 pounds. The lateral resistance of other sizes of piles may be assumed to be proportional to the width of the pile.

In calculating the maximum bending moment in a pile, the lateral load imposed at the top of the pile may be multiplied by an assumed moment arm of five feet. For design, it may be assumed that the maximum bending moment will occur at or near the top of the pile and that the bending moment will decrease to zero at a depth of 18 feet below the pile cap. The lateral capacity and reduction in the bending moment are based in part on the assumption that any required backfill adjacent to the pile caps and grade beams will be properly compacted.

A coefficient of friction of 0.4 may be used between the pile caps and the supporting soils. The passive resistance of the natural soils or properly compacted fill against pile caps and grade beams may

be assumed to be equal to the pressure developed by a fluid with a density of 250 pounds per cubic foot. A one-third increase in the quoted passive value may be used for wind or seismic loads.

All piles should be driven to the predetermined design lengths as previously presented, except as may be modified on the basis of the driving criteria defined on Plate 2, Pile Driving Criteria. These criteria should be used only as a guide. Prior to ordering the production piles, we suggest that indicator piles be driven to evaluate the driving resistance. The indicator piling may be actual foundation piling driven in their final position. The driving criteria can be modified as needed based on the results of these indicator piles, and any necessary adjustments can be made to the design lengths. The installation of the piles should be observed by our firm so that modifications in the driving criteria and the pile lengths can be made as required.

For the design of the abutments and wing walls, with level backfill, the lateral earth pressure may be assumed to be equal to that developed by a fluid with a density of 30 pounds per cubic foot. An equivalent fluid pressure of 250 pounds per cubic foot may be used for the passive earth pressure. The effects of surcharge loadings due to railroad loading should also be considered.

For purposes of determining dynamic earth pressures on the proposed retaining walls due to earthquakes, the recommended sustained ground acceleration is 0.20g.

Based on the widely accepted Monobe-Okabe method of analysis as discussed by Seed and Whitman*, the dynamic increment of lateral pressure on the walls has an inverted triangular distribution, with the maximum pressure at the top of the wall. The computed maximum pressure is equal to $12H$ in pounds per square foot, where H is the height of the wall in feet.

Based on drawings provided us, the bottom of the pile cap for the east abutment will be only $1\frac{1}{2}$ feet from and 7 feet below the bottom of an existing reinforced concrete box storm drain. The excavation for the abutment pile cap will result in loss of lateral support for the box structure unless underpinning or shoring is installed to provide the necessary support. The shoring may consist of conventional soldier pile and lagging system. The use of sheetpiling may also be considered.

*Seed, H.B. and R.V. Whitman, "Design of Earth Retaining Structures for Dynamic Loads", ASCE Specialty Conference on Lateral Stresses in the Ground and Design of Earth Retaining Structures, 1970.

223RD STREET UNDERPASS

The underpass beneath 223rd Street will provide railroad access to the facility. The underpass will be some 96 feet long, 40 feet wide, and 30 feet deep.

Traffic is to be maintained during construction. It is currently planned to use a drilled cast-in-place concrete pile retaining wall along each side of the underpass.

It is anticipated that the excavation may be performed in the following sequential operations:

1. Close one-half of 223rd Street and maintain two-way traffic in the other half.
2. Install drilled cast-in-place piles along one side and along the center of the underpass.
3. Excavate to sufficient depth to permit installation of temporary decking and lateral bracing and to permit excavation equipment to operate beneath decking.
4. Open the decked half of 223rd Street to two-way traffic and repeat construction sequence in the other half.
5. Install lateral bracing as excavation progresses in both sections of the underpass.

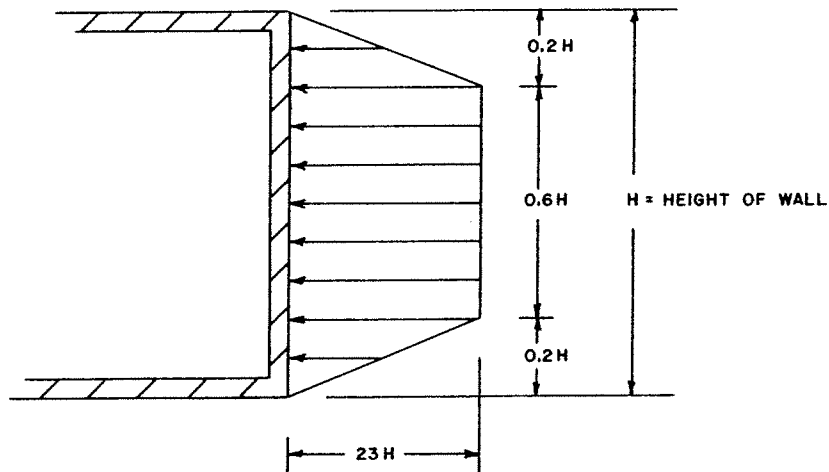
A reinforced concrete gunite wall will be constructed between the piles.

Based on Boring 9, which was drilled with 18-inch-diameter bucket-type drilling equipment, the soils consist of compacted fill to a

depth of about 26 feet. The fill consists primarily of silty sand and silt, with varying amounts of debris within the upper five feet. The underlying natural soils consist of silt, silty sand, sand and clay to a depth of 50 feet. Caving of the boring walls did not occur during drilling.

If the conditions in Boring 9 are typical, it is anticipated that drilling can be performed without serious caving; the use of casing is not expected.

For the design of the sidewalls, we recommend the use of a trapezoidal distribution of earth pressure. The recommended pressure distribution, for the case where the retained surface is level, is illustrated below, with the maximum pressure equal to $23H$.



In addition to the recommended earth pressure, the upper ten feet of wall should be designed to resist a uniform lateral pressure of 100 pounds per square foot, acting as a result of an assumed 300 pounds per square foot surcharge behind the walls due to traffic.

The dynamic increment of lateral pressure due to earthquakes may be assumed to have an inverted triangular distribution, with the maximum pressure at the top of the wall. The computed maximum pressure is equal to $12H$ in pounds per square foot, where H is the height of the wall in feet.

If the clear spacing between soldier piles does not exceed two feet, it is expected that lagging will not be required, unless pockets of clean sand are encountered.

For design purposes, it may be assumed that the drilled piles will develop an average friction value of 400 pounds per square foot. The passive value of the soils may be assumed to be 400 pounds per cubic foot. A coefficient of friction of 0.4 may be used between the bottom slab and the underlying soils.

Precautions should be taken during the installation of the piling to minimize caving. Closely spaced piles should be drilled and filled alternately, with the concrete permitted to set at least eight hours before drilling an adjacent hole. Pile excavations should be filled with concrete as soon after drilling and inspection as possible; the holes should not be left open overnight. The concrete should be placed with special equipment so that the concrete is not allowed to

fall freely more than five feet and to prevent concrete from striking the walls of the excavations and possibly causing caving. The installation of the piling should be observed by personnel of our firm.

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Part II - Interim Report No. 3 for Proposed ICTF and Rail
Access Facilities (February 29, 1984)

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MACTEC ENGINEERING AND CONSULTING, INC.

INTERIM REPORT NO. 3
GEOTECHNICAL INVESTIGATION
PART II
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
AND RAIL ACCESS FACILITIES
223RD STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY
(OUR JOB NO. A-82210-B)

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MACTEC ENGINEERING AND CONSULTING, INC.

February 29, 1984

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. A-82210-B)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Our "Interim Report No. 3, Geotechnical Investigation, Part II, Proposed Intermodal Container Transfer Facility (ICTF) and Rail Access Facilities, 223rd Street and San Diego Freeway, Los Angeles, California, for the Southern Pacific Transportation Company" is herewith submitted.

This report covers the services outlined in our scope of services letters dated December 7, 1983 and January 11, 1984 pertaining to the proposed railroad bridge, Bent No. 4 of the San Diego Freeway, and an existing MWD water line. The recommendations presented herein supplement those presented in our prior interim reports dated September 13, 1982, and September 13, 1983.

The results of our supplementary studies are presented in the report. Please contact us if you have any questions. We will be pleased to provide additional design recommendations as the project proceeds.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

by *Robert Chieruzzi*
Robert Chieruzzi, R.C.E. 13001
Project Engineer

by *LeRoy Crandall*
LeRoy Crandall, R.C.E. 6157
President

LC-RC/pa
(6 copies submitted)

INTERIM REPORT NO. 3
GEOTECHNICAL INVESTIGATION
PART II
PROPOSED INTERMODAL CONTAINER
TRANSFER FACILITY (ICTF)
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223RD STREET AND SAN DIEGO FREEWAY
LOS ANGELES, CALIFORNIA
FOR THE
SOUTHERN PACIFIC TRANSPORTATION COMPANY

SCOPE

This report presents design recommendations for certain elements of the proposed rail access facilities as covered in our scope of services letters dated December 7, 1983 and January 11, 1984. The recommendations presented herein supplement those presented in our prior interim reports dated September 13, 1982 and September 13, 1983. Specifically, we were to perform additional explorations and to provide: (1) confirmation of prior recommendations for the proposed railroad bridge, (2) recommendations for protection of Bent No. 4 of the San Diego Freeway, and (3) evaluation of the effect of embankment placement over an existing 37-inch-diameter water line.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities.

No other warranty, expressed or implied, is made as to the professional advice included in this report.

EXPLORATIONS

Three supplementary borings (Borings 11, 12, and 13) were drilled at the locations shown on Plate 1, Site Plan. Boring 11, which was 75 feet deep, was located near the revised location of the west abutment of the railroad bridge. Boring 12, which was 30 feet deep, was located adjacent to the northerly end of Bent No. 4 of the San Diego Freeway. Boring 13, which was 30½ feet deep, was located in the vicinity of the existing water line. The borings were drilled using 5-inch-diameter rotary wash-type drilling equipment.

The soils encountered were logged by our field technician, and undisturbed samples were obtained for laboratory inspection and testing. The logs of the borings are presented on Plates 2-A through 2-D; the depths at which undisturbed samples were obtained are indicated to the left of the boring logs. The energy required to drive the sampler twelve inches is indicated on the logs. The soils are classified in accordance with the Unified Soil Classification System described on Plate 3.

LABORATORY TESTS

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs.

Direct shear tests were performed on selected undisturbed samples to determine the strength of the soils. The samples were tested at

field moisture contents and at various surcharge pressures. The yield-point values determined from the direct shear tests are presented on Plate 4, Direct Shear Test Data.

Confined consolidation tests were performed on five undisturbed samples to determine the compressibility of the soils. The samples were tested at field moisture content. The results of the tests are presented on Plates 5-A through 5-C, Consolidation Test Data.

RAILROAD BRIDGE

The supplementary boring (Boring 11) was drilled near the revised location of the west bridge abutment to confirm the applicability of the pile capacities presented in our interim report of September 13, 1982. The bridge was relocated subsequent to the initial investigation and submittal of the report.

Boring 11 indicated that the soils encountered are similar to those encountered in the prior borings in the vicinity of the proposed bridge. Accordingly, the prior recommendations for pile capacities are still applicable.

PROTECTION OF SAN DIEGO FREEWAY BENT NO. 4

The following recommendations supplement the recommendations presented in Interim Report No. 2, dated September 13, 1983.

We were informed that the eight pile groups comprising the foundations supporting the existing Bent No. 4 of the San Diego Freeway will be exposed by the lowering of Alameda Street to depths of about three to nine feet beneath the top of the pile caps. Each pile group

consists of six piles whose lengths are reportedly on the order of 35 feet. According to Mr. P. Warriner with CALTRANS, the piles consist of Raymond step-tapered piles whose design pile capacity is 45 tons. Each pile cap is 7 feet by 9 feet in plan and 3.3 feet thick.

The basic requirement stated by CALTRANS in their December 14, 1983 letter is that the bent should be protected so as to retain its current load carrying capacity, both vertically and laterally. They indicated that this could possibly be achieved by using careful excavation procedures which would retain sufficient soil adjacent to the piles. According to Mr. R. Sanders, the base shear for each pile cap is calculated to be equal to 32 kips and 12 kips, respectively, in the transverse and longitudinal directions relative to the freeway.

Based on prior discussions, the proposed protection scheme will consist of driving sheetpiling along the sides of the pile caps prior to excavating. The sheetpiling will be tied together at the top by cross bracing so as to minimize lateral movement of the soil surrounding the piles. The required lateral capacity will be provided by installation of drilled piles directly adjacent to the 7-foot-wide sides of the pile caps. The drilled piles will be rigidly connected to the pile caps so as to provide the required lateral resistance in any direction. A permanent concrete wall is planned along the perimeter of the pile caps.

Boring 12, which was drilled adjacent to the north end of Bent No. 4, encountered silts and clays to the proposed excavated grade.

Prior to excavating below the tops of the pile caps, the sheetpiling should be driven along the sides of the pile cap adjacent to the excavation. Because of the cohesive characteristics of the soils, it is our opinion that the sheetpiling may be omitted where the exposed depth of piles is less than about three feet. However, this should be confirmed in the field during construction.

For design of sheet piling, a uniform lateral pressure of $35H$ in pounds per square foot may be used, where H is the height of the retained soil.

Lateral loads on the sheet piling may be resisted by the passive resistance of the soils. The passive resistance of the natural soils below the bottom of the excavation may be assumed to be equal to the pressure developed by a fluid with a density of 250 pounds per cubic foot.

If the soil surrounding the existing piles is protected and retained as discussed above, the downward capacity of the piles should not be diminished.

For design of drilled piles, it may be assumed that a 24-inch-diameter pile, at least 20 feet long, will have a lateral capacity of 15,000 pounds. The lateral resistance of other sizes of piles may be assumed to be proportional to the diameter of the pile. If the piles are spaced at least $2\frac{1}{2}$ diameters apart, no reduction in lateral capacity need be considered.

In calculating the maximum bending moment in a pile, the lateral load imposed at the top of the pile may be multiplied by an assumed moment arm of five feet. For design, it may be assumed that the maximum bending moment will occur at or near the bottom of the excavation and that the bending moment will decrease to zero at a depth of 18 feet below the ground line. The lateral capacity and reduction in the bending moment are based in part on the assumption that any required backfill adjacent to the piles will be properly compacted.

37-INCH-DIAMETER MWD WATER LINE

The construction of the proposed ramp from 223rd Street to Alameda Street, to be located just east of Alameda Street, will require the placement of compacted fill to a height of some 30 feet. This ramp will be constructed directly over an existing 37-inch-diameter MWD water line, which reportedly consists of transite pipe. More detailed information regarding the precise location, depth and age of the water line is not available at this time.

Boring 13 was drilled to determine the characteristics of the soils over which the ramp embankment will be constructed. Below two feet of existing fill soils, natural deposits of silts, clays, and silty sand were encountered. The upper soils to a depth of about 15 feet are only moderately firm; the deeper soils are generally firm.

Settlement analyses indicate that the placement of the 30 feet of compacted fill over the subject water line will result in consolidation of the underlying soils and corresponding settlement of the pipe on

the order of one foot. For this magnitude of settlement, it is our opinion that the existing water line should either be relocated or protection should be provided. Recommendations for protection measures can be provided, if desired.

-oOo-

The following Plates are attached and complete this report:

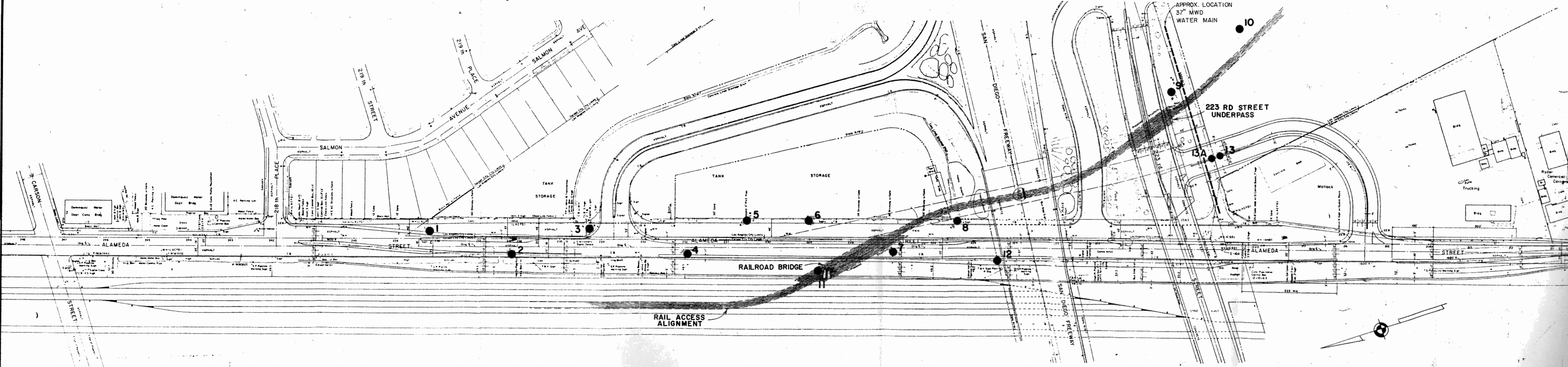
Plate 1 ----- Site Plan

Plates 2-A through 2-D -- Log of Boring

Plate 3 ----- Unified Soil Classification System

Plate 4 ----- Direct Shear Test Data

Plates 5-A through 5-C -- Consolidation Test Data



APPROX. LOCATION
37" MWD
WATER MAIN

223 RD STREET
UNDERPASS

RAILROAD BRIDGE

RAIL ACCESS
ALIGNMENT

REFERENCE:
PRELIMINARY PLAN (UNDATED) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

KEY:
● BORING LOCATION
BORING NUMBER

SITE PLAN
SCALE 1" = 100'

REVISED 2 / 20 / 85 : ADDED BORING 13A, MWD WATER MAIN

LeROY CRANDALL AND ASSOCIATES

PLATE 1

BORING II

DATE DRILLED: January 9, 1984

EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
24.6						ML CL
20	5	32.2	81	<1		ML
15	10	16.2	92	2		ML
10	15	28.9	89	2		ML
5	20	26.4	100	3		CL
0	25	28.6	95	1		ML
-5	30	23.9	103	2		SM
-10	35	27.2	95	6		CL
-15	40	23.8	105	2		CL

ELEVATION 24.6

FILL - SILT and CLAY - some gravel, grey and brown

CLAYEY SILT - greyish-brown

SANDY SILT - grey

Some Clay

SILTY CLAY - grey

CLAYEY SILT - grey

SILTY SAND - fine, grey

SILTY CLAY - grey

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

JOB # B2 CIV B DATE 1/9/84 DR. BOYIN

BORING II (CONTINUED)

DATE DRILLED: January 9, 1984
 EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-lbs./ft.)	SAMPLE LOC.
			24.9	98	6	ML
-20	45					
			30.3	95	4	
-25	50					
			29.2	95	4	CL
-30	55					
			33.9	90	4	
-35	60					ML
			29.7	95	6	
-40	65					SM
			29.4	94	8	
-45	70					SP
			27.2	98	17	
-50	75					CL
			32.3	91	4	
-55	80					

SANDY SILT - grey

Some Clay

SILTY CLAY - grey

SANDY SILT - grey

SILTY SAND - fine, grey

SAND - fine, grey

SILTY CLAY - grey

NOTE: Drilling mud used in drilling process. Water level not established.

LOG OF BORING

Form 123 JOB# 82210-8 DATE 7/10/84 DR. WIN M.P. 20 CHRD

BORING 12

DATE DRILLED: January 9, 1984
 EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
23.6						ML
	20	22.6	88	1		
	15	28.7	83	1		
	10	26.2	91	1		
	5	33.7	85	1		ML
	0	34.6	86	1		CL
	-5	26.3	96	3		SM
	-10	30.1	95	1		CL
	-15	34.9	88	3		
	-20	24.8	102	3		

ELEVATION 23.6

CLAYEY SILT - greyish-brown

Some Sand

SANDY SILT - grey

SILTY CLAY - dark grey

SILTY SAND - fine, greyish-brown

SILTY CLAY - dark grey

Greyish-brown

NOTE: Drilling mud used in drilling process.
 Water level not established.

LOG OF BORING

BORING 13

DATE DRILLED: January 10, 1984

EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION 23.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
23.5	0					SP	FILL - SAND - fine, some gravel, grey and brown
20	3	19.3	107	3		ML	CLAYEY SILT - greyish-brown
15	8	25.9	88	1		ML	SANDY SILT - greyish-brown
10	13	24.8	87	2			Very Sandy
5	18	31.7	85	2			
0	23	37.8	83	1		CL	SILTY CLAY - dark greyish-brown
-5	28	19.2	95	5		SM	SILTY SAND - fine, light grey
-10	33	23.9	103	4		CL	SILTY CLAY - grey
-15	38	18.9	103	7		ML	SANDY SILT - brown
-20	43	11.4	98	6			

NOTE: Drilling mud used in drilling process. Water level not established.

LOG OF BORING

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES	
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.	
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.	
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM	Silty gravels, gravel-sand-silt mixtures.	
			GC	Clayey gravels, gravel-sand-clay mixtures.	
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.	
			SP	Poorly graded sands or gravelly sands, little or no fines.	
		SANDS WITH FINES (Appreciable amt. of fines)	SM	Silty sands, sand-silt mixtures.	
			SC	Clayey sands, sand-clay mixtures.	
			SILTS AND CLAYS (Liquid limit LESS than 50)		
SILTS AND CLAYS (Liquid limit GREATER than 50)					
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)			OL	Organic silts and organic silty clays of low plasticity.	
			MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	
			CH	Inorganic clays of high plasticity, fat clays.	
HIGHLY ORGANIC SOILS			OH	Organic clays of medium to high plasticity, organic silts.	
			Pt	Peat and other highly organic soils.	

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

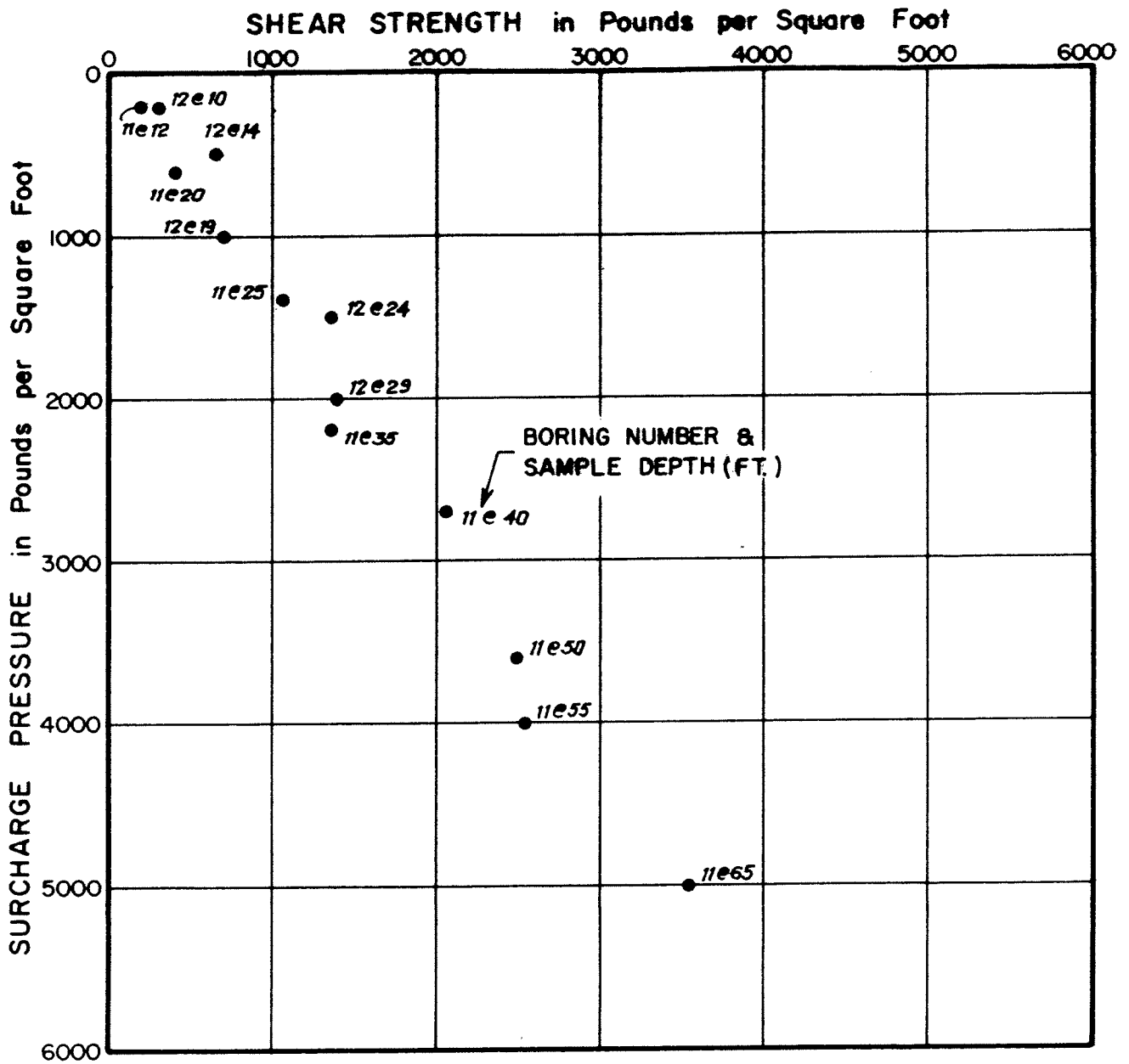
PARTICLE SIZE LIMITS

SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		
	NO. 200	NO. 40	NO. 10	NO. 4	3/8 in.	3 in.	(12 in.)
	U. S. STANDARD SIEVE SIZE						

UNIFIED SOIL CLASSIFICATION SYSTEM

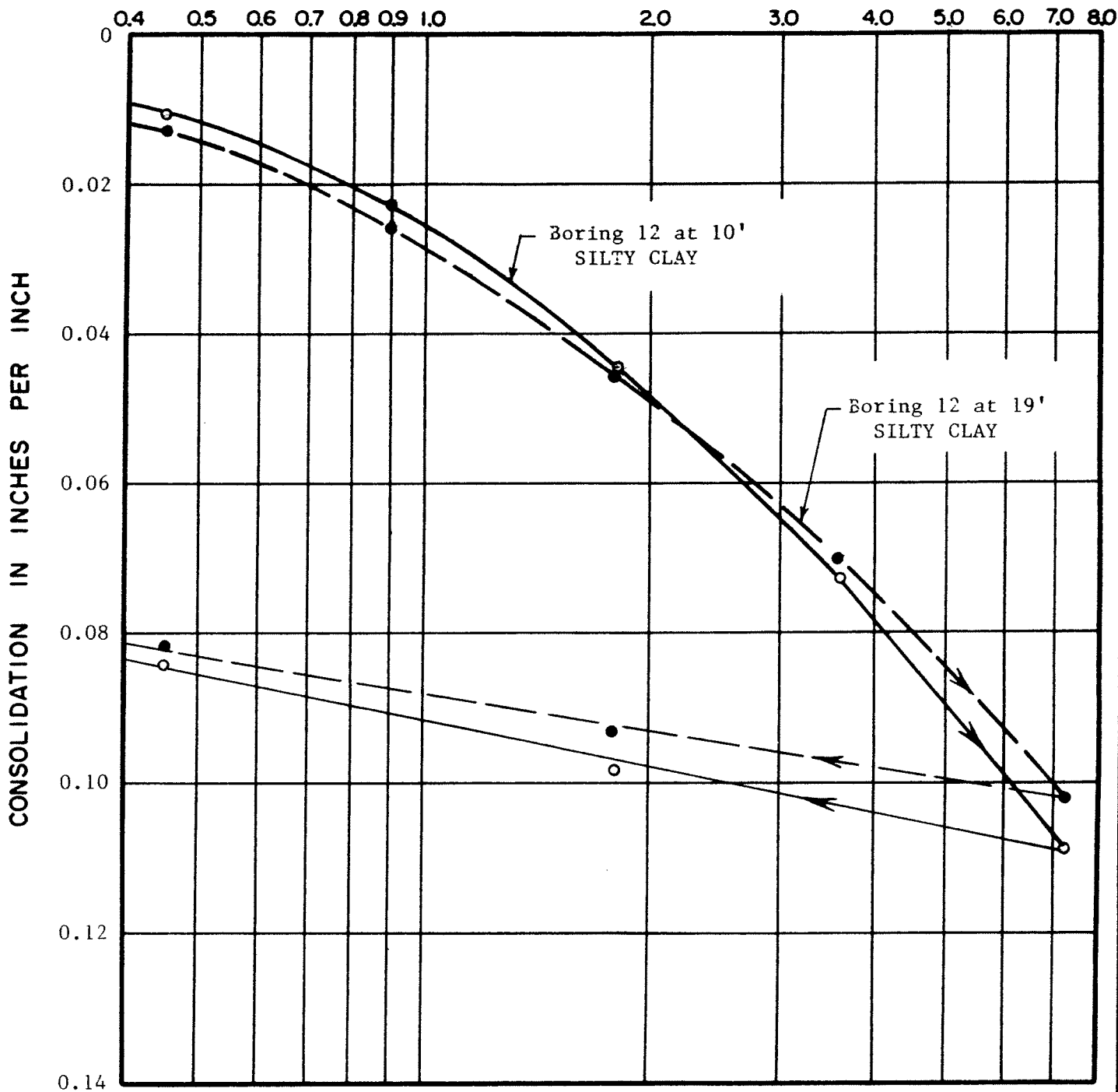
Reference:
The Unified Soil Classification System, Corps of Engineers, U. S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953. (Revised April, 1960)

JOB A-8229-B DAT - 17
M
O
M
CHK



DIRECT SHEAR TEST DATA

LOAD IN KIPS PER SQUARE FOOT

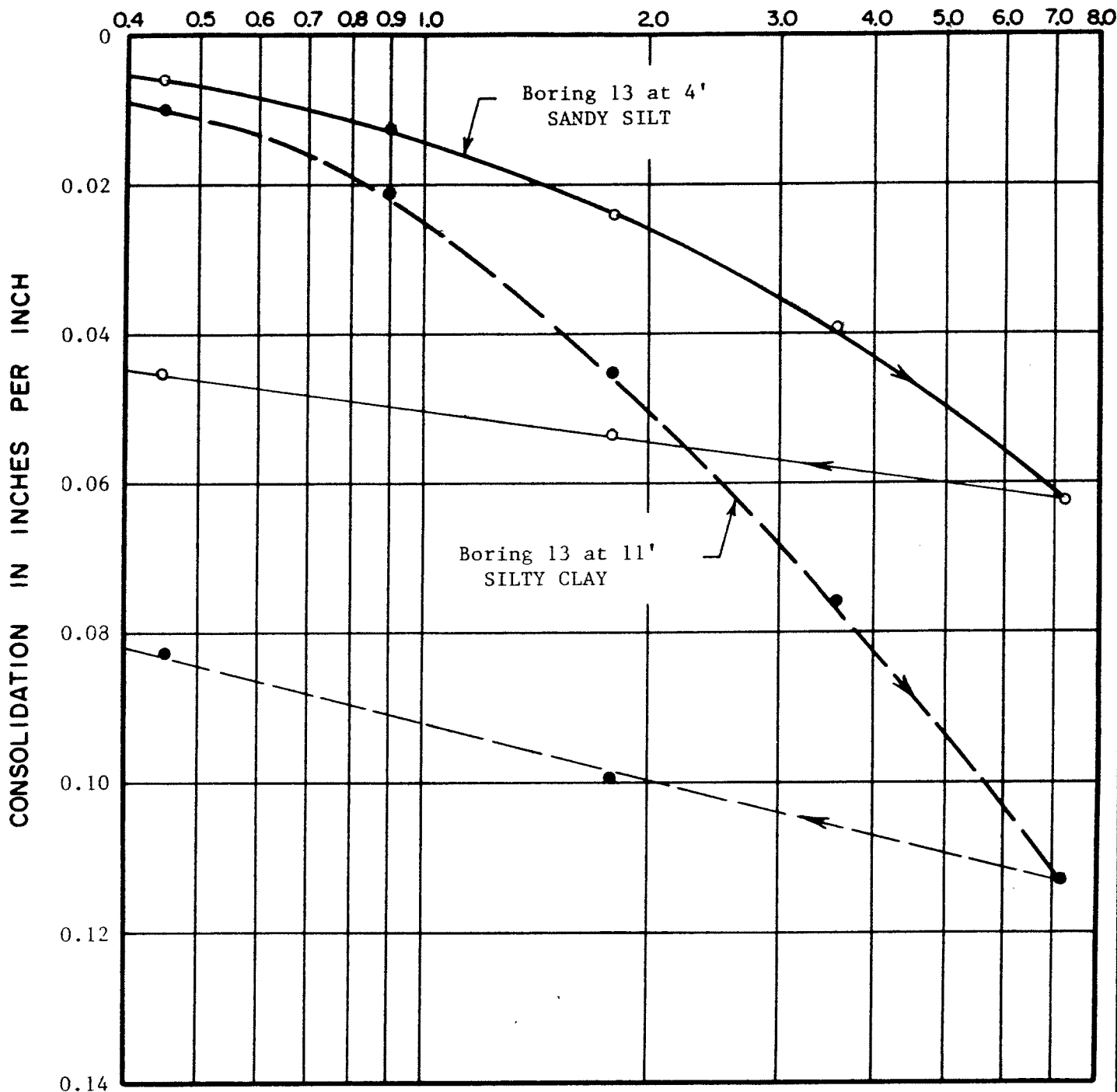


NOTE: Samples tested at field moisture content.

CONSOLIDATION TEST DATA

FORM 116
JOB A-82210-B
DATE 7-7-64
DR. M.G.
W.P.
CHKD
PA

LOAD IN KIPS PER SQUARE FOOT

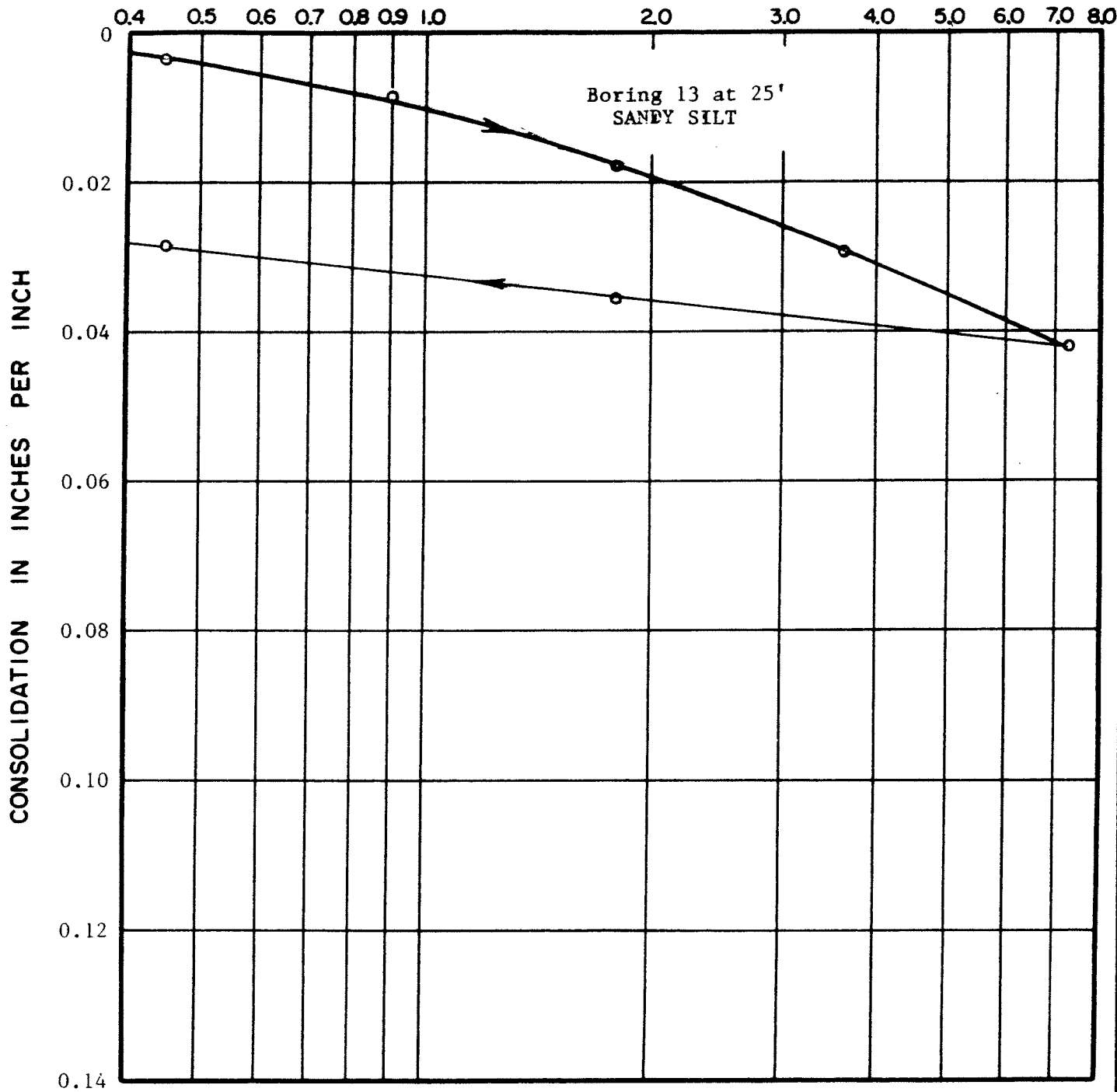


NOTE: Samples tested at field moisture content.

CONSOLIDATION TEST DATA

FORM 116
JOB A-62210-B
DATE 7-17-84
DR. G.
W.P.
CARD

LOAD IN KIPS PER SQUARE FOOT



Boring 13 at 25'
SANDY SILT

NOTE: Sample tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

FORM 116
JOB A-8227D-B
DATE 7-8
DR. G.
M.P.
K
CHKD

Foundation Design Recommendations for Proposed Multi-Plate
Arch Utility Corridor
(January 30 and February 21, 1985)

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

January 30, 1985

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. A-82210-B)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Foundation Design Recommendations
Multi-Plate Arch Utility Corridor Beneath
Proposed 223rd Street Ramp
Rail Access Facilities for the
Intermodal Container Transfer Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

This letter summarizes foundation design recommendations previously presented verbally to Mr. Robert Abbott of your staff regarding the subject utility corridor.

We were informed that the construction of the ramp connecting 223rd Street with Alameda Street will require the placement of a fill embankment that will traverse existing buried utility lines, one of which is a 37-inch diameter water main of the Metropolitan Water District of Southern California (MWD). The fill embankment, which will be some 27 feet high above the existing grade over the buried utility lines, will impose surcharge pressures that will cause excessive settlement of the existing utility lines. To protect the utility lines from such settlement, a multi-plate arch is proposed to support the fill embankment where it traverses the utility lines. The multi-plate arch will have a span of 24 feet and will transfer the embankment load to continuous grade beams along the ends of the arch. The grade beams will be supported on drilled cast-in-place reinforced concrete piles. The downward load on the grade beams is on the order of 43.5 kips per lineal foot.

The downward capacity of a 24-inch diameter drilled pile is presented below as a function of the penetration below the grade beam.

<u>Penetration Below Grade Beam (Ft.)</u>	<u>Downward Capacity (Kips)</u>
10	18.3
15	35.9
20	59.0
25	87.4
30	121.3
35	160.0
40	205.0

The above capacities are based on the strength of the soils; the compressive and tensile strength of the pile sections should be checked to verify the structural capacity.

Piles in groups should be spaced at least $2\frac{1}{2}$ diameters on centers. If the piles are so spaced, no reduction in the downward capacities of the piles need be considered due to group action.

The embankment load on the arch may be assumed as 120 pounds per cubic foot.

Yours very truly,

LeROY CRANDALL AND ASSOCIATES

by *Robert Chieruzzi*

Robert Chieruzzi, R.C.E. 13001
Project Engineer

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RC/ge-L1
(6 copies submitted)

cc: Metropolitan Water District
of Southern California
Attn: Mr. J. Gallanes

ENGINEERING AND CONSULTING, INC.

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

February 21, 1985

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. A-82210-B)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Supplementary Foundation Design Recommendations
Requested by Metropolitan Water District
Multi-Plate Arch Utility Corridor Beneath
Proposed 223rd Street Ramp
Rail Access Facilities for the
Intermodal Container Transfer Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

SCOPE

This letter presents supplementary foundation design recommendations for the proposed multi-plate arch utility corridor beneath the proposed 223rd Street ramp. We previously presented foundation design recommendations for the subject utility corridor in our letter dated January 30, 1985.

The supplementary recommendations were requested by Mr. J. Gallanes with the Metropolitan Water District of Southern California (MWD), during a discussion that Mr. R. Chieruzzi of our firm had with Mr. Gallanes at the request of Mr. M. Christensen of Southern Pacific Transportation Company (SPTC).

As stated in our January 30th letter, the construction of the ramp connecting 223rd Street with Alameda Street will require the placement of a fill embankment that will traverse existing buried utility lines, one of which is a 37-inch diameter water main belonging to MWD. The fill embankment will be some 27 feet high above the existing grade. The invert of the water main is about 11 feet below the existing grade. To protect the utility lines from excessive surcharge and to reduce settlement, a multi-plate arch is proposed to support the fill embankment above the utility lines. The multi-plate arch, which will have a span of 24 feet and a length of 155, feet will transfer the embankment load to continuous grade beams along the springline of the arch. The grade beams will be supported on 24-inch diameter, 40-foot-deep drilled cast-in-place reinforced concrete piles. The downward load on the grade beams will be on the order of 43.2 kips per lineal foot. Two rows of piles are planned for each grade beam. The piles are staggered such that the nearest adjacent piles are spaced at least $2\frac{1}{2}$ diameters on centers. Perpendicular to the longitudinal axis of the arch, the clear distance between the piles is two feet.

The information in this letter represents professional opinions that have been developed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this letter.

ITEMS REQUESTED BY MWD AND SPTC

MWD noted that the 40-foot-deep drilled piling planned for the support of the multi-plate arch will extend below the maximum depth to which the nearest boring, Boring 13, had been drilled. Because of concern that softer soils may possibly be present below the tip of the piles, resulting in excessive settlement of the arch, MWD requested that an additional boring be drilled that would extend to at least 20 feet below the level of the pile tips.

MWD requested that we review the soil-structure interaction that will develop between the pile supported arch and the adjacent soils on either side. Of specific concern is the settlement of the fill embankment on either side of the arch relative to the pile-supported arch and the corresponding effect on the existing 37-inch diameter water main.

We were advised by MWD that there may be a need to excavate beneath the arch for possible repairs to existing utility lines. It is anticipated that the excavation may possibly expose the piles to a depth of six to eight feet beneath the existing grade. We were requested to estimate the loss of pile capacity that will result if such an excavation becomes necessary.

In addition to the above items, we were requested by Mr. Christensen to estimate the settlement of the water main due to the loading imposed by the proposed access tracks east of the proposed 223rd Street ramp. The top of the rail will be placed about two feet above the existing grade and some 13 feet above the invert of the water main. We were advised to assume Cooper E 80 train loading in our analyses.

FIELD EXPLORATIONS

Boring 13-A was drilled to a depth of 65 feet below the existing ground surface to Elevation -41.5, some 22 feet below the proposed pile tip at Elevation -19.5. The locations of Boring 13-A and the prior nearby borings are shown on Plate 1, Site Plan.

The soils encountered were logged by our field technician, and undisturbed samples were obtained for laboratory inspection and testing. The log of Boring 13-A is presented on Plates 2.1 and 2.2; the depth at which undisturbed samples were obtained are indicated to the left of the boring log. The energy required to drive the sampler twelve inches is indicated on the log. The Unified Soil Classification System is described on Plate 3.

LABORATORY TESTS

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring log.

Confined consolidation tests were performed on three undisturbed samples to determine the compressibility of the soils below the planned pile tips. The samples were tested at field moisture content. The results of the tests are presented on Plates 4.1 and 4.2, Consolidation Test Data.

SOIL CONDITIONS

Below two feet of existing fill soils, natural deposits of silts, clays, and silty sand were encountered. The upper soils to a depth of about 25 feet are only moderately firm; the deeper soils are generally firm. Below the proposed pile tip elevation, the soils consist of firm sands and moderately firm to firm clay.

RECOMMENDATIONS

Pile Capacities

As previously recommended in our letter dated January 30, 1985, the downward capacity of a 24-inch-diameter drilled cast-in-place reinforced concrete pile is 205 kips for a penetration of 40 feet below the grade beam. If the piles are spaced at least $2\frac{1}{2}$ diameters on centers, no reduction in the downward capacity of the piles need be considered due to group action.

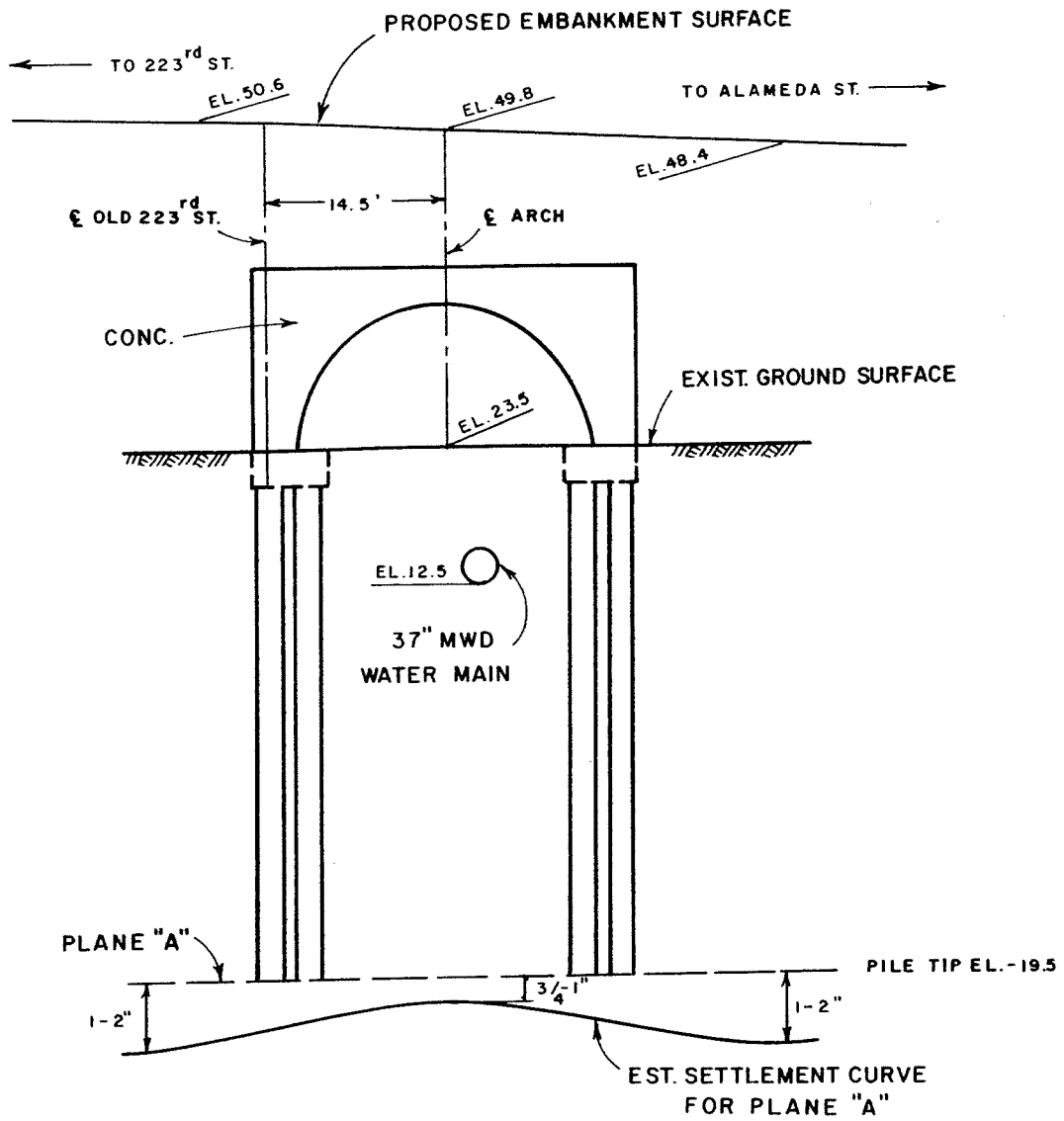
Settlement

The placement of the proposed embankment will result in settlement of the existing ground surface on either side of the arch on the order of 9 to 12 inches. The majority of this settlement is due to the consolidation of the more compressible soils which are found in the upper 25 feet. This settlement will cause downdrag forces to develop on the adjacent piles. For design, we recommend that a downdrag load of 30 kips be added to the design load of each pile.

If the metal arch is supported as planned, it is estimated that the settlement of the piles due to the structural loading will be on the order of one-fourth inch. However, because of downdrag forces developed by areal settlement effects as explained above, the total settlement of the piles may approach one inch.

The settlement of the soils and piles along Plane "A", which is a horizontal plane at the level of the pile tips (Elev. -19.5), is estimated as shown in the sketch on the following page. The settlement curve shown is for points beneath the center of the embankment. Similar curves for sections parallel to and away from the embankment centerline will indicate lesser settlement values. The estimated settlement of Plane "A" directly beneath the water main is indicated as $3/4$ to 1 inch. Although it is expected that the settlement of the water main would be somewhat less than this amount, it is difficult to arrive at a more precise estimate. The extent to which the water main and the surrounding soil block between the drilled piling will move relative to Plane "A" is not certain. The most conservative approach, which was assumed herein, is that the entire system moves together as a unit. In other words, the settlement of the water main would be similar to that indicated by the settlement curve for Plane "A".

The settlement of the water main would be the greatest beneath the center of the embankment and would decrease in both directions away from the embankment centerline. It is estimated that the differential settlement of the water main will be on the order of one-fourth inch or less over a distance of 25 feet.



SKETCH
(NO SCALE)

Effect of Excavation Adjacent to Piling

If the interior piles (piles nearest the interior of the arch) are exposed during future excavations that may be necessary to perform repairs to utility lines, the loss in downward capacity will be less

than 10 kips per pile for an excavation extending to some eight feet below the ground surface. This loss in capacity may be compensated by extending the piles an additional foot. Because of arching effects, the soils between the exposed piles are expected to stay relatively intact. However, some localized raveling may occur if the excavation remains open for an extended period of time.

Settlement of Water Main Beneath Access Tracks

The results of settlement analyses indicate that the settlement of the existing water main due to the anticipated rail loading of the access tracks previously described will be less than one-quarter inch. The rail loading includes an assumed impact load equal to 75% of the Cooper E 80 axle loads.

Yours very truly,

LeROY CRANDALL AND ASSOCIATES

by

Robert Chieruzzi

Robert Chieruzzi, R.C.E. 13001
Project Engineer

by

LeRoy Crandall

LeRoy Crandall, R.C.E. 6157
President

LC-RC/B3

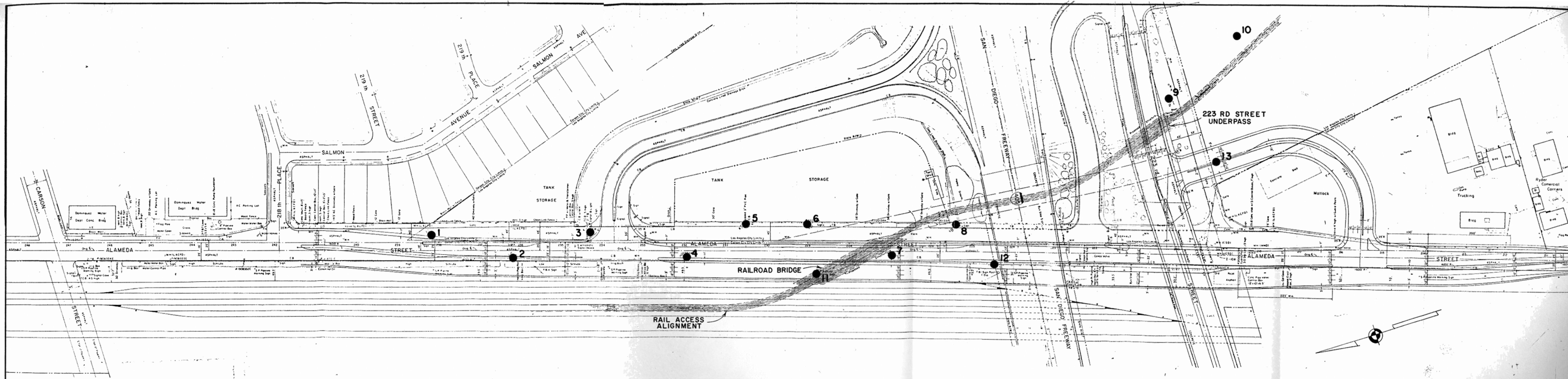
Attachments (6)

(6 copies submitted)

- cc: (1) Southern Pacific Transportation
Attn: Mr. Michael Christensen
(1) Metropolitan Water District
of Southern California
Attn: Mr. J. Gallanes

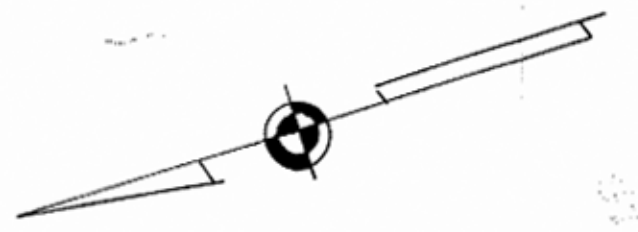
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MACTEC ENGINEERING AND CONSULTING, INC.



REFERENCE:
 PRELIMINARY PLAN (UNDATED) PROVIDED BY
 SOUTHERN PACIFIC TRANSPORTATION COMPANY.

KEY:
 ● BORING LOCATION
 └ BORING NUMBER



SITE PLAN
 SCALE 1" = 100'

REVISED 2 / 29 / 84

LeROY CRANDALL AND ASSOCIATES

PLATE I

BORING 13-A

DATE DRILLED: February 9, 1985

EQUIPMENT USED: 5"-Diameter Rotary Wash

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
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ELEVATION 23.5

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST	MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.	DESCRIPTION
23.5	0						SP	FILL - SAND - fine, some gravel, grey and brown
	5	19.3	107	3			ML	CLAYEY SILT - greyish-brown
	10	25.9	88	1			ML	SANDY SILT - greyish-brown
	15	24.8	87	2				
	20	31.7	85	2				
	25	37.8	83	1			CL	SILTY CLAY - dark greyish-brown
	30	19.2	95	5			SM	SILTY SAND - fine, light grey
	35						CL	SILTY CLAY - grey
	40	23.9	103	4			ML	SANDY SILT - brown
	45						CL	SILTY CLAY - grey
	50	24.3	99	15			ML	SANDY SILT - very Sandy, grey
	55						SP	SAND - fine, grey
	60	8.2	97	16				
	65						SM	SILTY SAND - fine, grey
	70	14.7	87	9				
	75							
	80	34.8	80	19				Thin lenses of Peat

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

BORING 13-A (CONTINUED)

DATE DRILLED: February 9, 1985

EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft.-kips/ft.)	SAMPLE LOC.
-20	45	23.0	100	17		SP SAND - fine, grey
-25	50	19.2	102	23		
-30	55	42.2	81	5		CL SILTY CLAY - grey
-35	60	27.4	97	17		SP SAND - fine, grey
-40	65	29.9	97	26		

NOTE: Drilling mud used in drilling process. Water level not established.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

MAJOR DIVISIONS		GROUP SYMBOLS	TYPICAL NAMES		
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW Well graded gravels, gravel-sand mixtures, little or no fines.		
			GP Poorly graded gravels or gravel-sand mixtures, little or no fines.		
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM Silty gravels, gravel-sand-silt mixtures.		
			GC Clayey gravels, gravel-sand-clay mixtures.		
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW Well graded sands, gravelly sands, little or no fines.		
			SP Poorly graded sands or gravelly sands, little or no fines.		
		SANDS WITH FINES (Appreciable amt. of fines)	SM Silty sands, sand-silt mixtures.		
			SC Clayey sands, sand-clay mixtures.		
			FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)	ML Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
					CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
OL Organic silts and organic silty clays of low plasticity.					
SILTS AND CLAYS (Liquid limit GREATER than 50)	MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.				
	CH Inorganic clays of high plasticity, fat clays.				
	OH Organic clays of medium to high plasticity, organic silts.				
	HIGHLY ORGANIC SOILS	Pt Peat and other highly organic soils.			

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

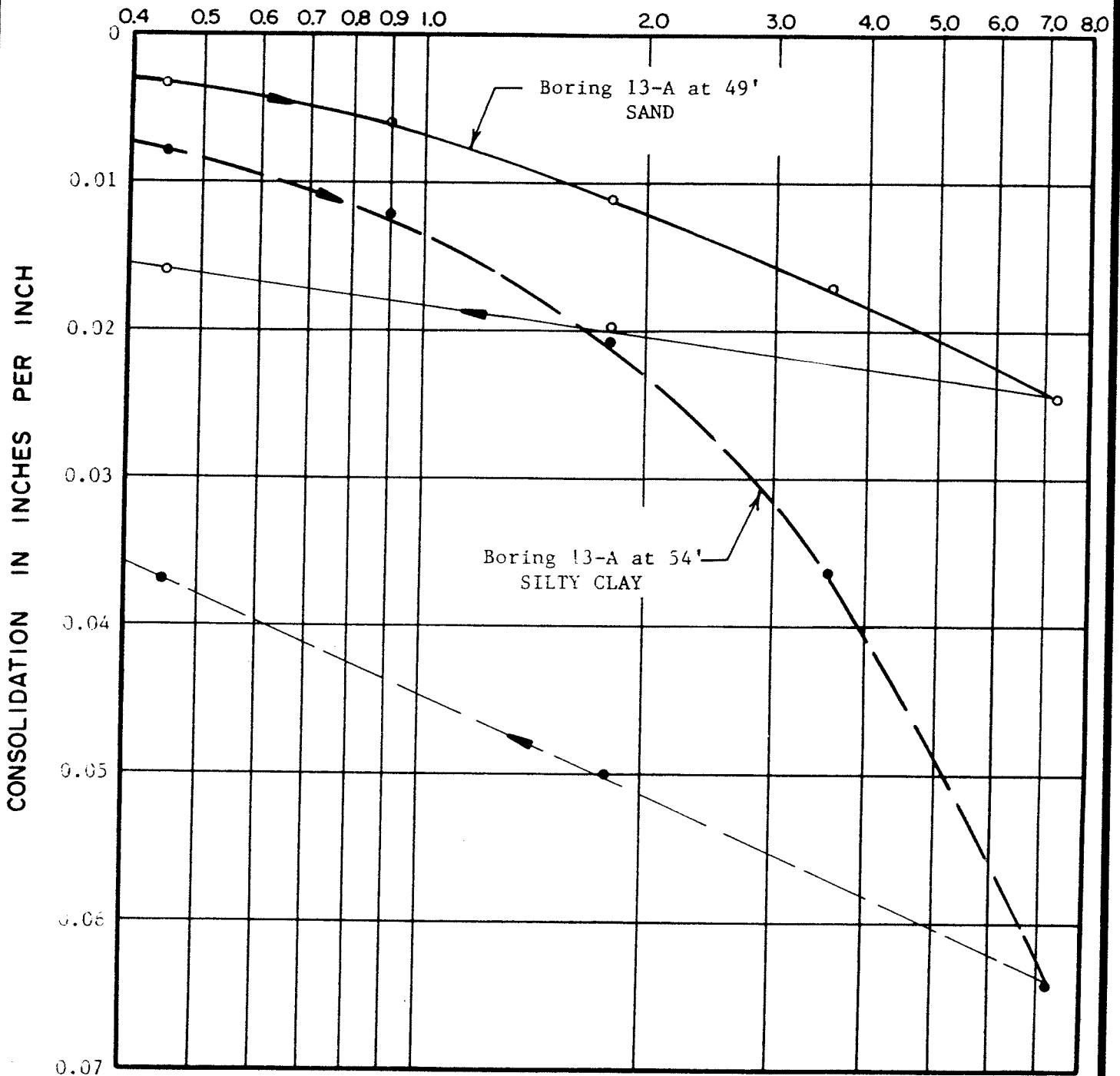
SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		
	NO. 200	NO. 40	NO. 10	NO. 4	3/8 in.	3 in.	(12 in.)
	U. S. STANDARD SIEVE SIZE						

UNIFIED SOIL CLASSIFICATION SYSTEM

Reference:
The Unified Soil Classification System, Corps of Engineers, U. S. Army Technical Memorandum No 3-357, Vol. 1, March, 1953. (Revised April, 1960)

LEROY CRANDALL & ASSOCIATES

LOAD IN KIPS PER SQUARE FOOT

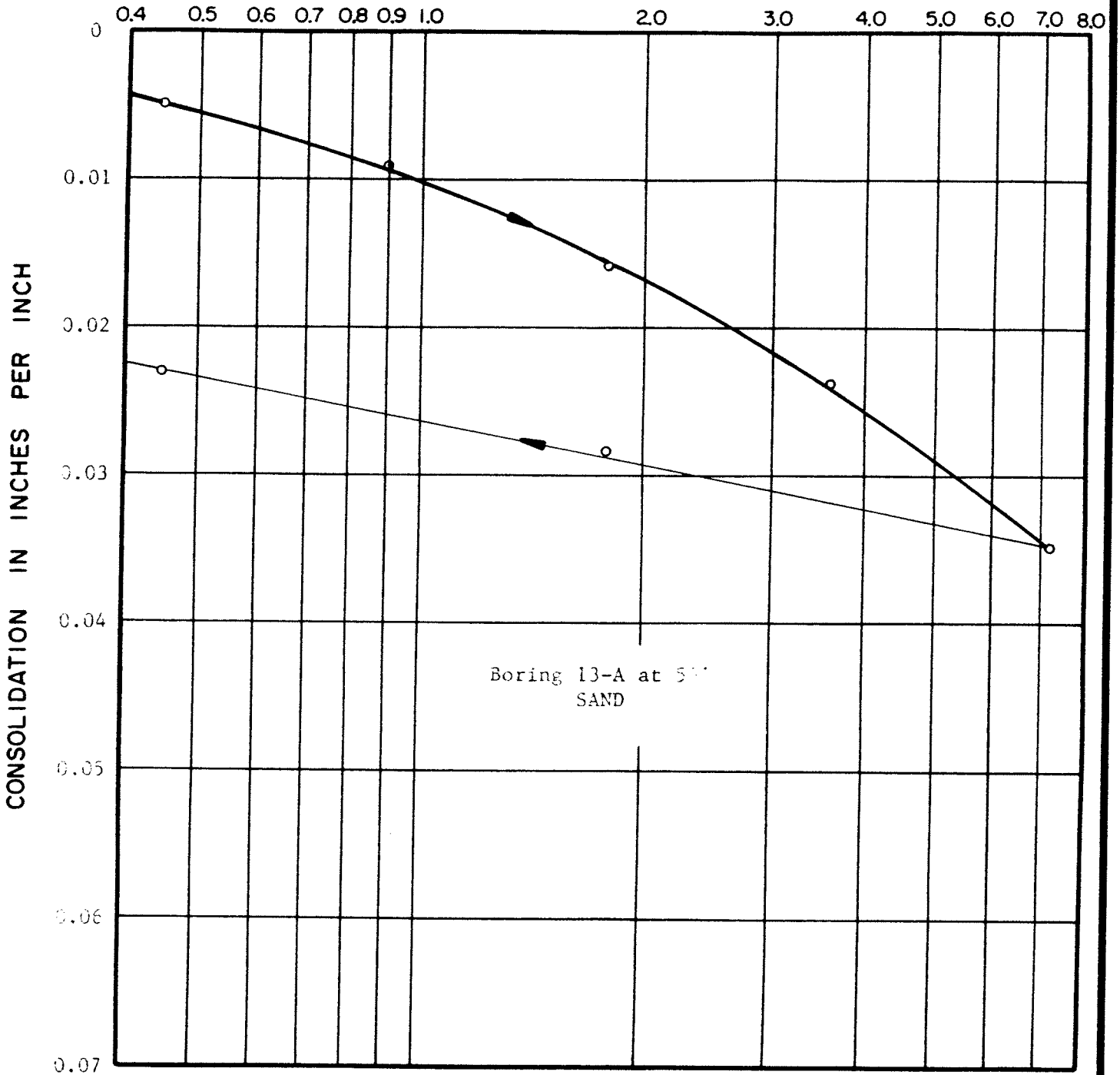


NOTE: Samples tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

LOAD IN KIPS PER SQUARE FOOT



Boring 13-A at 5'
SAND

NOTE: Sample tested at field moisture content.

CONSOLIDATION TEST DATA

LeROY CRANDALL AND ASSOCIATES

Results of First Set of Soil-Cement Core Compression Tests –
ICTF (February 18, 1985)

February 18, 1985

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job Nos. A-82284-B
and B-84242)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Results of Supplementary Tests
Intermodal Container Transfer Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

SCOPE

This report presents the results of supplementary tests
were requested in your letter dated December 12, 1984.

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

February 18, 1985

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job Nos. A-82284-B
and B-84242)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Results of Supplementary Tests
Intermodal Container Transfer Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

SCOPE

This report presents the results of supplementary tests that were requested in your letter dated December 12, 1984.

We were requested to perform the following tests:

1. C.B.R. and "R" value tests on five to seven samples of representative on-site soils to evaluate the relationship between the results of the two different tests.
2. Soil-cement tests to determine the minimum cement content required to be mixed with the on-site soils to produce a stabilized subbase. It was recommended that five to ten representative on-site soils be tested at cement contents of 5, 7, 9, and 11 percent.

SOILS DESCRIPTION

A total of five on-site soil samples were obtained for laboratory testing by our representative at the site, Mr. R. Ensinger. Three large bags of each sample were thoroughly mixed to obtain a uniform sample prior to testing. The locations and descriptions of the samples are presented on the following page.

<u>Sample Location</u>		<u>Soil Type</u>	<u>Percent Passing No. 200 Sieve</u>
<u>Station</u>	<u>Grid</u>		
31+00	7.75	Silty Sand	15
47+00	7.80	Silty Sand	39
53+00	9.00	Silt	89
53+50	8.50	Silty Sand	26
53+50	9.50	Clayey Silt	98

To determine the particle size distribution and confirm the field classification of the soils, mechanical analyses were performed on each of the five samples. The results of the mechanical analyses are presented on Plates 1.1 through 1.3, Particle Size Distribution.

C.B.R. AND "R" VALUE TESTS

The optimum moisture content and maximum dry density of the soils were determined by performing compaction tests on the five samples. The tests were performed in accordance with the ASTM Designation D1557-70 method of compaction. After completion of the compaction tests, California Bearing Ratio tests were performed on the samples in accordance with the ASTM Designation D1883-73 method. The results of the tests are presented on Plates 2.1 through 2.2, Compaction and C.B.R. Test Data.

The "R" Value tests were performed by Smith-Emery Company on the five samples. The tests were performed in accordance with the State of California Department of Transportation Test 301. The results of the tests are presented on Plates 3.1 through 3.5, "R" Value Test Data.

The results of the C.B.R. and "R" Value tests are summarized in the following table.

<u>Sample Location</u>		<u>Soil Type</u>	<u>C.B.R.</u>		<u>"R" Value</u>
<u>Station</u>	<u>Grid</u>		<u>90% Compaction</u>	<u>95% Compaction</u>	
31+00	7.75	Silty Sand	29	55	69
47+00	7.80	Silty Sand	19	39	64
53+00	9.00	Silt	7	11	55
53+50	8.50	Silty Sand	14	24	70
53+50	9.50	Clayey Silt	4	7	23

The above test results indicate that the "R" value for the clayey silt soils is less than the "R" value of 40 that was used for pavement design. Based on the above C.B.R. values, the silt sample has a C.B.R. value less than the C.B.R. of 15 that was used as a basis for arriving at the design "R" value.

SOIL CEMENT TESTS

To determine the minimum cement content required to be mixed with each of the five samples to produce a stabilized subbase, the following laboratory tests were performed.

Compaction tests were performed to determine the maximum dry density and optimum moisture content of each of the soil-cement mixtures. Since the addition of small quantities of cement has little effect on the maximum dry density, the compaction tests were performed on soil-cement mixtures with only 7% cement (by dry weight). For a given soil, the maximum dry density obtained for 7% cement content was used for all other cement contents as well.

Based on discussions with Mr. Gene Wirkus with the Portland Cement Association, the compaction tests were performed utilizing the ASTM 1557-70 method of compaction. The results of the compaction tests are presented on Plates 4.1 and 4.2, Compaction Test Data.

Soil-cement cores for unconfined compression tests were prepared for each of the five samples with cement contents of 5, 7, 9, and 11 percent (by dry weight). The cores were 2 5/8 inches in diameter and 6 inches high. The cores were compacted to compaction values varying from 90% to 98%. The cores were then allowed to cure for seven days. The curing process consisted of wrapping the cores with soaked paper towels and placing the cores inside of plastic bags for the seven-day curing period.

Upon completion of the seven-day curing period, the cores were subjected to unconfined compression tests. The results of the compression tests are presented on Plates 5.1 through 5.5, Compression Test Data.

Based on the minimum seven-day compressive strengths recommended by Portland Cement Association for soil-cement mixtures containing material retained on the No. 4 sieve, the minimum cement contents for the five soil samples are as follows.

Sample Location Station	Grid	Soil Type	Minimum Required Compressive Strength (PSI)	Minimum Required Cement Content (%)
31+00	7.75	Silty Sand	270	7
47+00	7.80	Silty Sand	290	11
53+00	9.00	Silt	200*	11
53+50	8.50	Silty Sand	290	11
53+50	9.50	Clayey Silt	200*	11


* These values are the minimum values indicated on the PCA nomograph, and the validity of these values are questionable since the percent soil retained on the No. 4 sieve is nil.

A second set of identical cores, which were prepared at the same time as the first cores, is available for compression testing upon completion of a longer curing period. The results of those tests will indicate the effects of a longer curing period on the compressive strength.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

by 
Robert Chieruzzi, R.C.E. 13001
Project Engineer

by 
Russell C. Weber, R.C.E. 8954
Senior Vice President

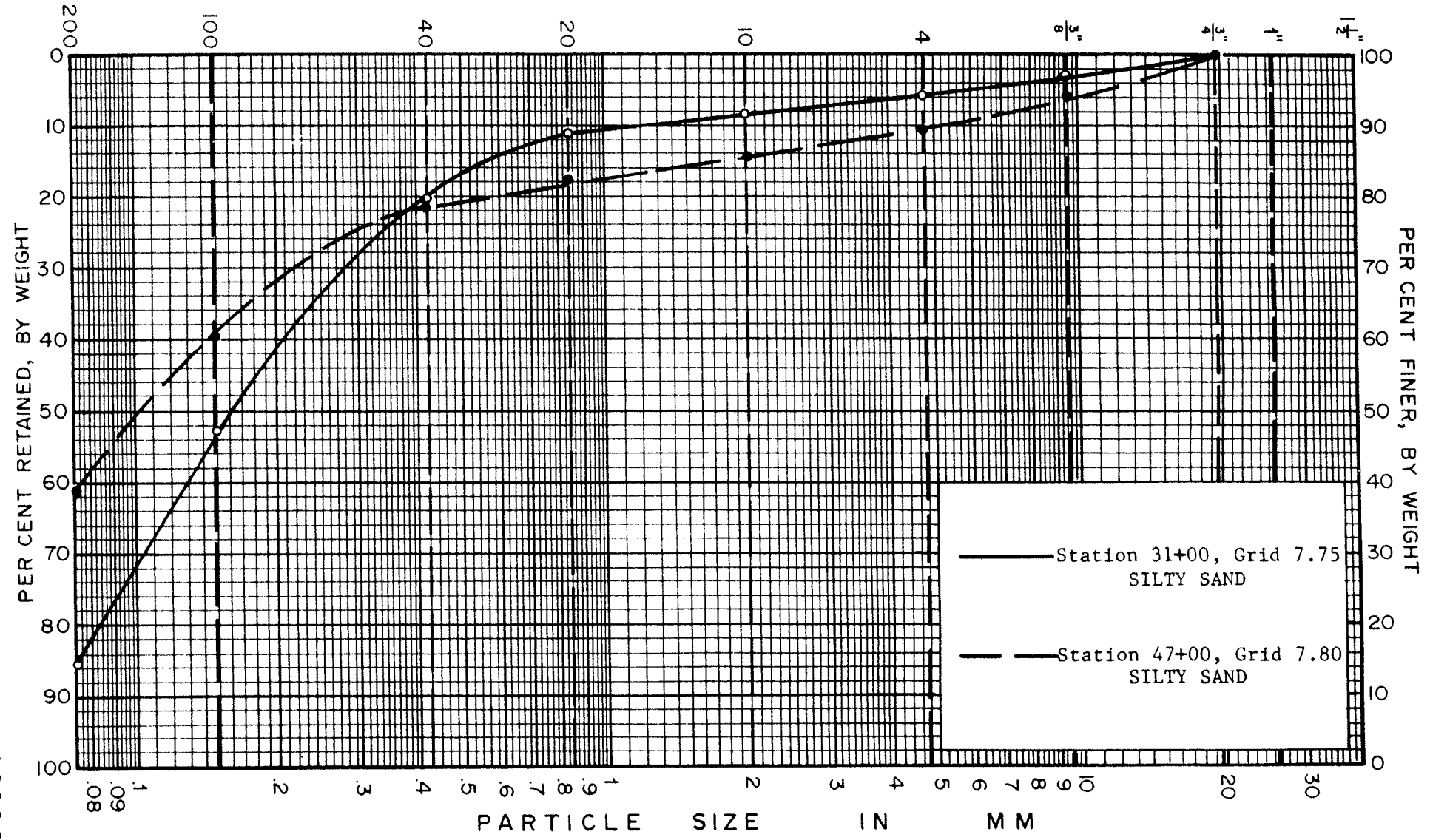
RW-RC/L1
Attachments (17)
(6 copies submitted)

cc: (1) Southern Pacific Transportation
Company
Attn: Mr. M. Christensen

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

MACTEC ENGINEERING AND CONSULTING, INC.

U. S. SIEVE SIZE

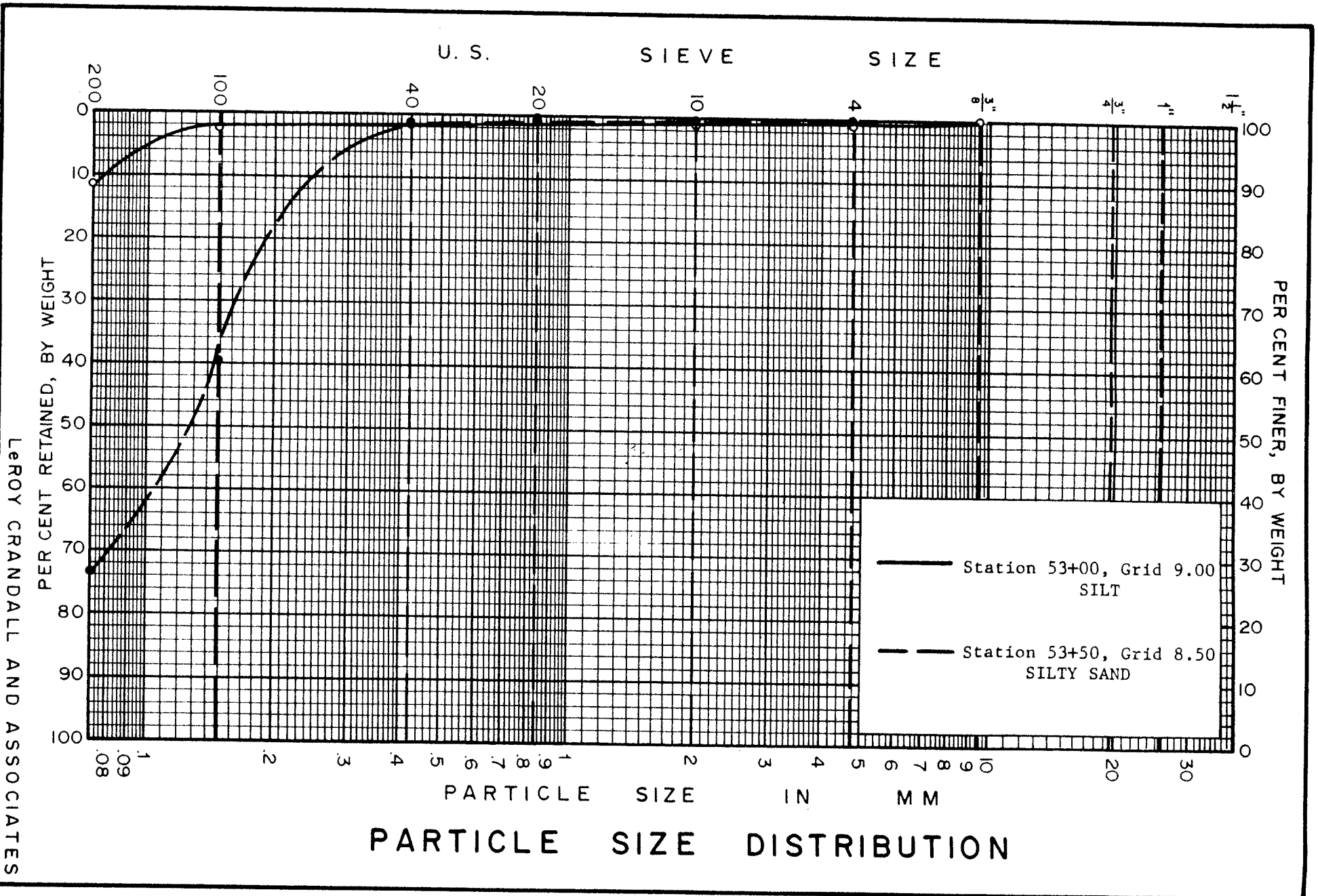


Station 31+00, Grid 7.75
SILTY SAND

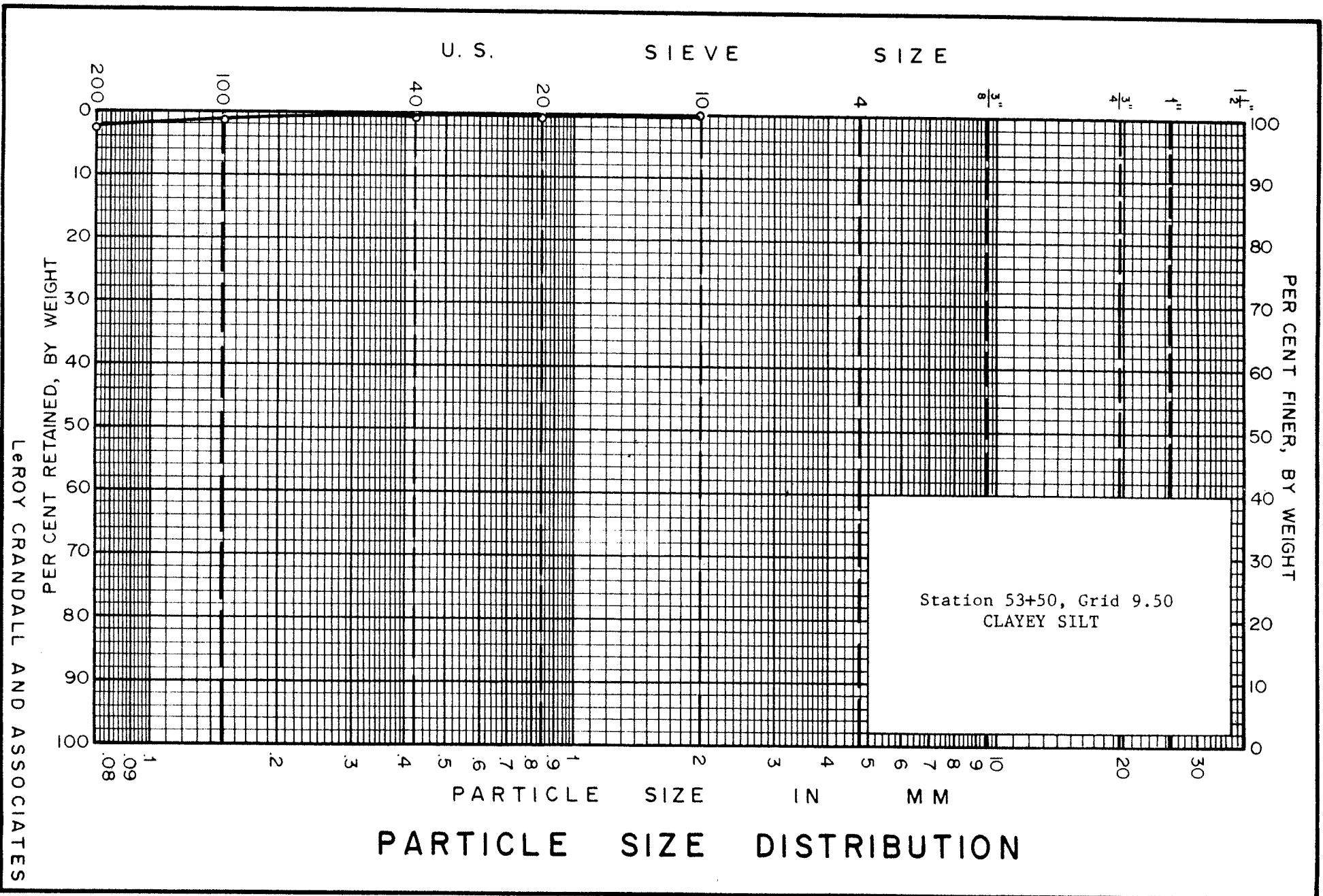
Station 47+00, Grid 7.80
SILTY SAND

PARTICLE SIZE DISTRIBUTION

LEROY CRANDALL AND ASSOCIATES
PLATE 1.1



LEROY CRANDALL AND ASSOCIATES
PLATE 1.2



Station 53+50, Grid 9.50
CLAYEY SILT

PARTICLE SIZE DISTRIBUTION

LeROY CRANDALL AND ASSOCIATES
PLATE 1.3

SAMPLE LOCATION: Station 31+00 Station 47+00 Station 53+00
Grid 7.75 Grid 7.80 Grid 9.00

SOIL TYPE: SILTY SAND SILTY SAND SILT

MAXIMUM DRY DENSITY * : 126 122 107
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 10 10 17
(% OF DRY WT.)

EXPANSION (%) : 0.1 0.3 2.4
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION : 29 19 7

AT 95% COMPACTION : 55 39 11

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

CHKD

DR

W.P.

DATE

O.F.

DR

DATE

DATE

DATE

JOB

SAMPLE LOCATION: Station 53+50 Grid 8.50 Station 53+50 Grid 9.50

SOIL TYPE: SILTY SAND CLAYEY SILT

MAXIMUM DRY DENSITY * : 111 110
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 14 18
(% OF DRY WT.)

EXPANSION (%) : 0.3 4.8
(FROM OPTIMUM TO SATURATED
MOISTURE CONTENT)

C. B. R. **
(% OF STANDARD)

AT 90% COMPACTION : 14 4
AT 95% COMPACTION : 24 7

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA



SMITH-EMERY COMPANY *An Independent Commercial Testing Laboratory Established 1910*

File No. 8030
Lab No. 85-063

Date Received January 23, 1985
Date of Report January 29, 1985

Project YOUR PROJECT NO. A82284-B Type Mat'l. _____

Charge Le Roy Crandall & Associates

Boring No. Sta.:31+00 Grid 7.75 T.I. 4.0 Assumed Gf 1.0 Assumed

<u>"R" VALUE DETERMINATION</u>				REMARKS:			
Dry Weight <u>1096.0</u>							
Mold	4	5	6	As Received			
Water Added (+)	40	30	20	Size	Wt.	%Ret'd.	%Passing
Net Wet Wt.	1240	1230	1220	1 1/2			
% Water	13.1	12.2	11.3	1			
Gage Pressure	23	23	23	3/4			
Gage Pressure (Corr)	350	350	350	1/2			
Exudation Pressure	155	230	400	3/8			
Height	2.49	2.51	2.47	4			
Mold Gross Wt.	3164	3189	3167	Total Dry Wt.			
Mold Tare	2093	2106	2096	As Used*	Corr. %Pass	Corr. %Ret	Gm
Mold Net Wet Wt.	1071	1083	1071	1 1/2			
Defl. by Exp. Press.	0	0	0	1			
G.E. by Exp. Press.	0	0	0	3/4			
Stab. @ 90 PSI (1000)	28	17	15	3/8			
Stab. @ 160 PSI (2000)	52	34	30	4			
Turns Displacement	4.89	4.54	4.36	Total Dry Wt.			
R-Value (Uncorrected)	51	67	71	Size	Wt.	% Ret.	% Pass.
R-Value (Corrected)	51	67	71	8			
G.E. by Stab.	0.63	0.42	0.37	16			
G.E. by Expan.	0	0	0	30			
Mold Net Dry Wt.	947	965	962	50			
Dry Density	115.2	116.5	118.0	100			
-Value by Exudation Pressure	69			200			
R-Value by Expansion Pressure	-0-			Dry Wt. #4			
R-Value @ Equilibrium	69			*For R-Value Batching When 10% Rock			
				(Note - Unless otherwise instructed, sample will be discarded after 10-days storage)			
				By: <u>Exud.</u> Exp.			

"R" VALUE TEST DATA

"R" VALUE DETERMINATION

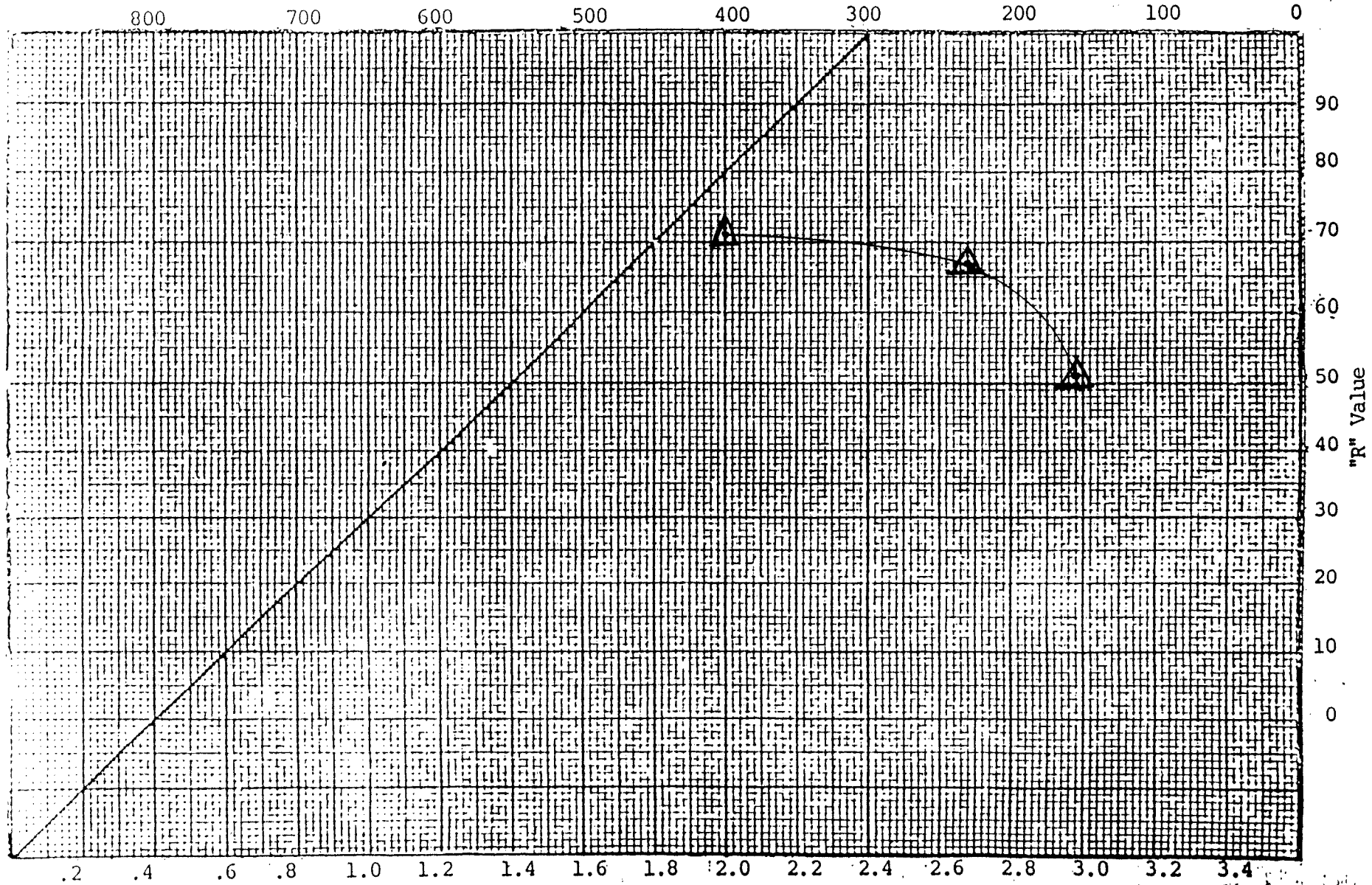
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Cover thickness by Stab. Req. vs.
Exudation Pressure

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Cover thickness by Stab. Req. vs.
Cover thickness by Expansion Pressure

Exudation Pressure (psi)



Cover thickness (ft) Expansion Pressure Requirements



SMITH-EMERY COMPANY *An Independent Commercial Testing Laboratory Established 1910*

File No. 8030
 Lab No. 85-063

Date Received January 23, 1985
 Date of Report January 29, 1985

Project YOUR PROJECT NO. A82284-B Type Mat'l. _____

Charge Le Roy Crandall & Associates

Boring No. Sta.:47+00 Grid 7.80 T.I. 4.0 Assumed Gf 1.0 Assumed

<u>"R" VALUE DETERMINATION</u>				REMARKS:			
Dry Weight <u>1110.5</u>							
Mold	1	2	3	As Received			
Water Added (+)	50	30	40	Size	Wt.	%Ret'd.	%Passing
Net Wet Wt.	1250	1230	1240	1 1/2			
% Water	12.6	10.8	11.7	1			
Gage Pressure	18.5	23	23	3/4			
Gage Pressure (Corr)	290	350	350	1/2			
Exudation Pressure	145	770	350	3/8			
Height	2.51	2.52	2.57	4			
Mold Gross Wt.	3165	3150	3171	Total Dry Wt.			
Mold Tare	2102	2088	2092	As Used*	Corr. %Pass	Corr. %Ret	Gm
Mold Net Wet Wt.	1063	1062	1079	1 1/2			
Defl. by Exp. Press.	0	18	15	1			
G.E. by Exp. Press.	0	0.60	0.50	3/4			
Stab. @ 90 PSI (1000)	28	17	19	3/8			
Stab. @ 160 PSI (2000)	51	31	35	4			
Turns Displacement	5.20	4.51	4.72	Total Dry Wt.			
R-Value (Uncorrected)	50	69	65	Size	Wt.	% Ret.	% Pass.
R-Value (Corrected)	50	69	66	8			
G.E. by Stab.	0.64	0.40	0.44	16			
G.E. by Expan.	0	0.60	0.50	30			
Mold Net Dry Wt.	944	958.5	966.0	50			
Dry Density	114.0	115.2	113.9	100			
-Value by Exudation Pressure	65			200			
R-Value by Expansion Pressure	64			Dry Wt. #4			
R-Value @ Equilibrium	64			*For R-Value Batching When 10% Rock			
				(Note - Unless otherwise instructed, sample will be discarded after 10-days storage)			
				By: Exud. <u>Exp.</u>			

"R" VALUE TEST DATA

"R" VALUE DETERMINATION

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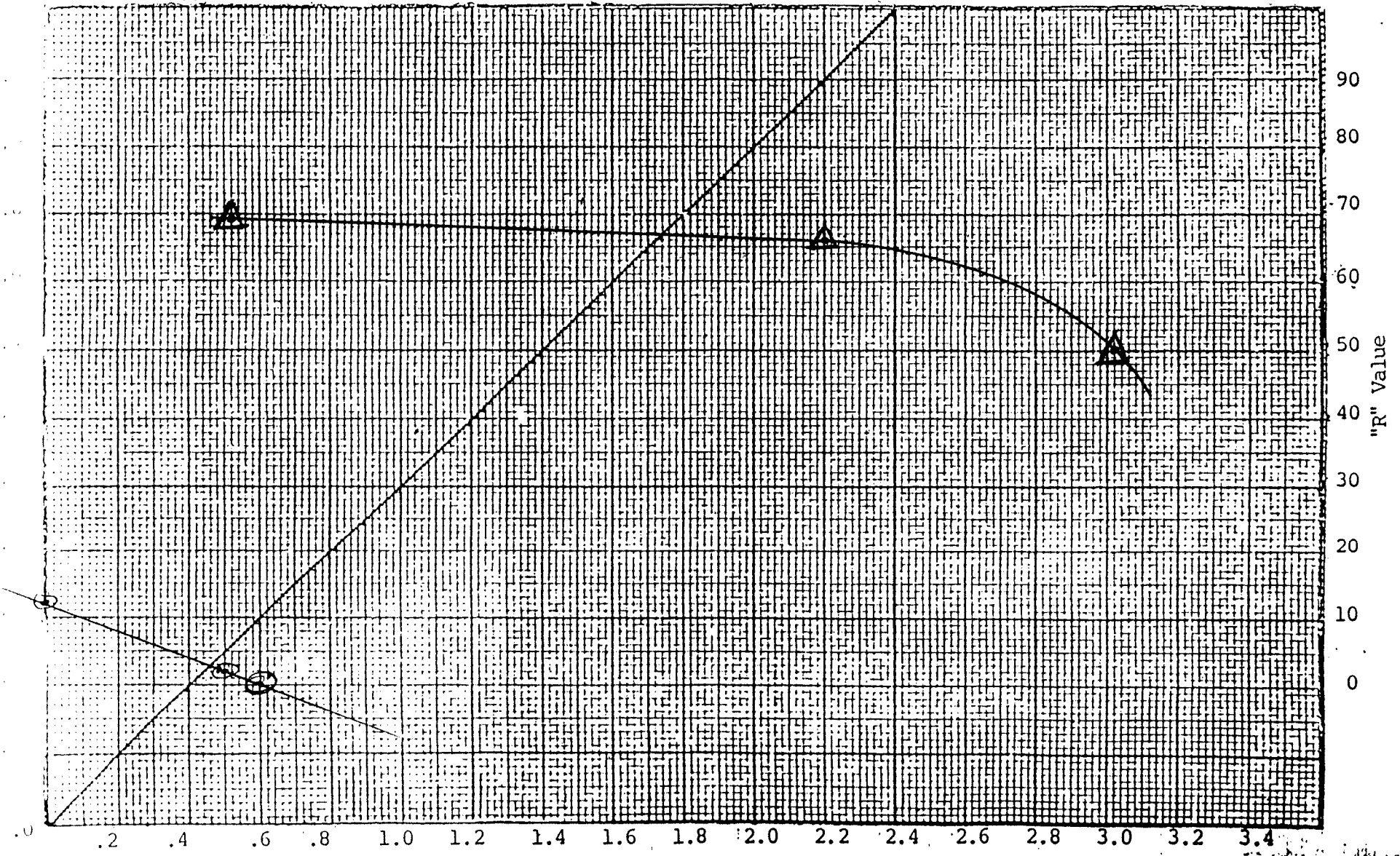
Cover thickness by Stab. Req. vs. Exudation Pressure

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Cover thickness by Stab. Req. vs. Cover thickness by Expansion Pressure

Exudation Pressure (psi)

800 700 600 500 400 300 200 100 0



Cover thickness (ft) Expansion Pressure Requirements



SMITH-EMERY COMPANY *An Independent Commercial Testing Laboratory Established 1910*

File No. 8030
 Lab No. 85-075C

Date Received January 25, 1985
 Date of Report February 4, 1985

Project YOUR PROJECT NO. A82284-B Type Mat'l. _____

Charge Le Roy Crandall & Associates

Boring No. Sta: 53 + 00 Grid 9.00 T.I. 4.0 Assumed Gf 1.0 Assumed

<u>"R" VALUE DETERMINATION</u>				<u>REMARKS:</u>					
Dry Weight <u>1147.0</u>									
Mold	10	11	12	As Received					
Water Added (+)	180	160	170	Size	Wt.	%Ret'd.	%Passing		
Net Wet Wt.	1380	1360	1370	1 1/2					
% Water	20.3	18.6	19.4	1					
Gage Pressure	23	23	23	3/4					
Gage Pressure (Corr)	350	350	350	1/2					
Exudation Pressure	110	430	240	3/8					
Height	2.56	2.43	2.54	4					
Mold Gross Wt.	3112.0	3050.0	3101.0	Total Dry Wt.					
Mold Tare	2099	2096	2099	As Used*	Corr. %Pass	Corr. %Ret	Gm		
Mold Net Wet Wt.	1013.0	954	1002	1 1/2					
Defl. by Exp. Press.	21	45	40	1					
G.E. by Exp. Press.	0.70	1.50	1.33	3/4					
Stab. @ 90 PSI (1000)	19	13	14	3/8					
Stab. @ 160 PSI (2000)	38	27	29	4					
Turns Displacement	6.08	5.25	5.95	Total Dry Wt.					
R-Value (Uncorrected)	56	70	65	Size	Wt.	% Ret.	% Pass.	X % Pass.4	Total %Pass
R-Value (Corrected)	57	68	65	8					
G.E. by Stab.	0.55	0.41	0.45	16					
G.E. by Expan.	0.70	1.50	1.33	30					
Mold Net Dry Wt.	842	804	839	50					
Dry Density	99.7	100.3	100.1	100					
R-Value by Exudation Pressure	66			200					
R-Value by Expansion Pressure	55			Dry Wt. #4					
R-Value @ Equilibrium	55			*For R-Value Batching When 10% Rock					
				(Note - Unless otherwise instructed, sample will be discarded after 10-days storage)					
				By: Exud. Exp.					

"R" VALUE TEST DATA

"R" VALUE DETERMINATION

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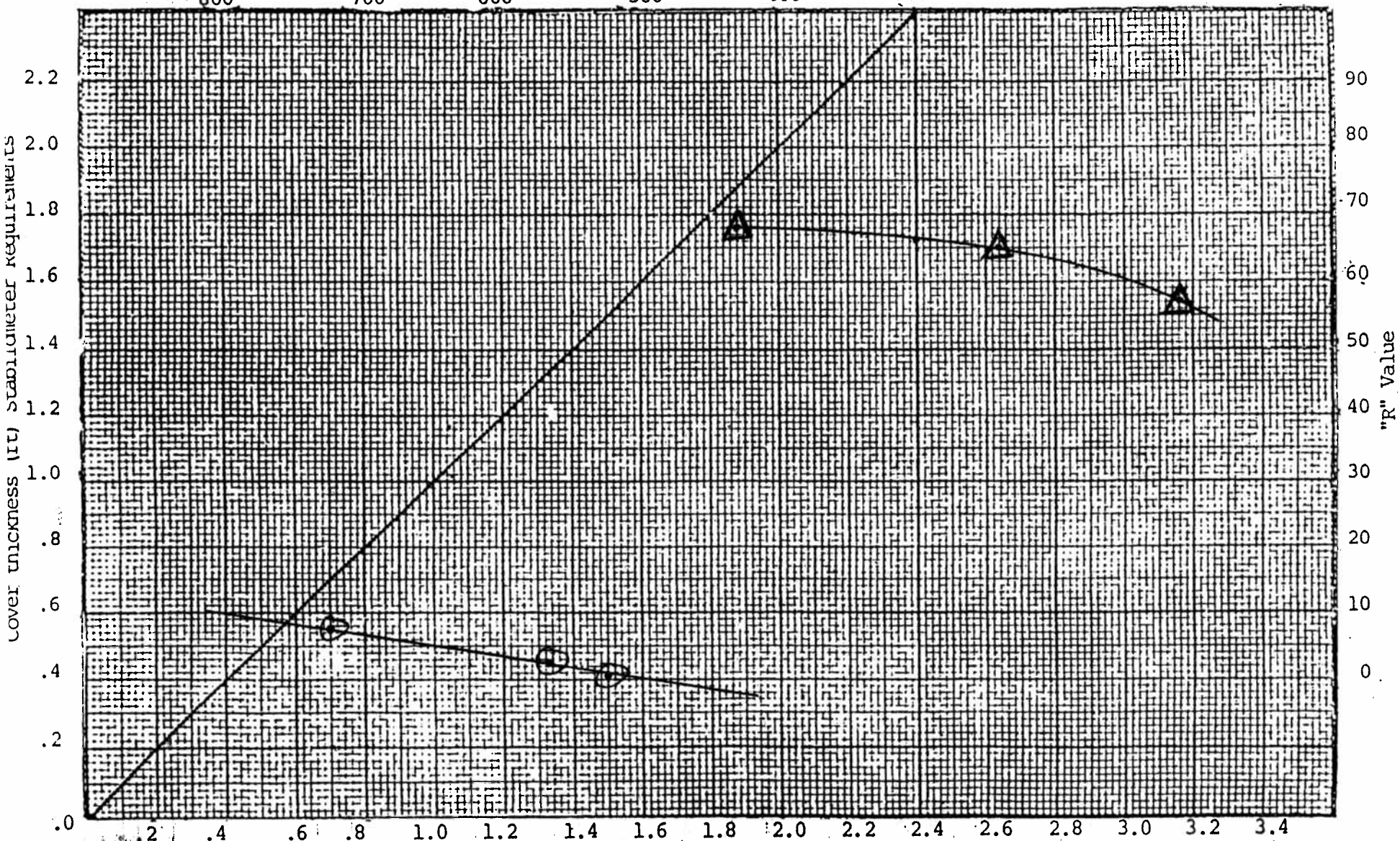
Cover thickness by Stab. Req. vs. Exudation Pressure

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Cover thickness by Stab. Req. vs. Cover thickness by Expansion Pressure

Exudation Pressure (psi)

800 700 600 500 400 300 200 100 0



Cover thickness (ft) Expansion Pressure Requirements

'R' Value



SMITH-EMERY COMPANY *An Independent Commercial Testing Laboratory Established 1910*

File No. 8030
 Lab No. 85-075B

Date Received January 25, 1985
 Date of Report February 4, 1985

Project YOUR PROJECT NO. A82284-B Type Mat'l. _____

Charge Le Roy Crandall & Associates

Boring No. Sta: 53 + 50 Grid 8.50 T.I. 4.0 Assumed Gf 1.0 Assumed

<u>"R" VALUE DETERMINATION</u>				<u>REMARKS:</u>					
Dry Weight <u>1132.5</u>									
Mold	7	8	9	As Received					
				Size	Wt.	%Ret'd.	%Passing		
Water Added (+)	80	100	110	1 1/2					
Net Wet Wt.	1280	1300	1310	1					
% Water	13.0	14.8	15.7	3/4					
Gage Pressure	23	23	23	1/2					
Gage Pressure (Corr)	350	350	350	3/8					
Exudation Pressure	555	310	120	4					
Height	2.45	2.69	2.58	Total Dry Wt.					
				As Used*	Corr. %Pass	Corr. %Ret	Gm		
Mold Gross Wt.	3075	3173	3126	1 1/2					
Mold Tare	2100	2095	2092	1					
Mold Net Wet Wt.	975	1078	1034	3/4					
Defl. by Exp. Press.	0	0	0	3/8					
G.E. by Exp. Press.	0	0	0	4					
Stab. @ 90 PSI (1000)	16	17	18	Total Dry Wt.					
Stab. @ 160 PSI (2000)	28	33	34	Size	Wt.	% Ret.	% Pass.	X % Pass.4	Total %Pass
Turns Displacement	4.36	4.62	4.75	8					
R-Value (Uncorrected)	72	67	66	16					
R-Value (Corrected)	72	70	67	30					
G.E. by Stab.	0.36	0.38	0.42	50					
G.E. by Expan.	0	0	0	100					
Mold Net Dry Wt.	863	939	894	200					
Dry Density	106.7	105.8	105.0	Dry Wt. #4					
R-Value by Exudation Pressure	70				*For R-Value Batching When 10% Rock				
R-Value by Expansion Pressure	0				(Note - Unless otherwise instructed, sample will be discarded after 10-days storage)				
R-Value @ Equilibrium	70	By: <u>Exud</u> Exp.							

"R" VALUE TEST DATA

"R" VALUE DETERMINATION

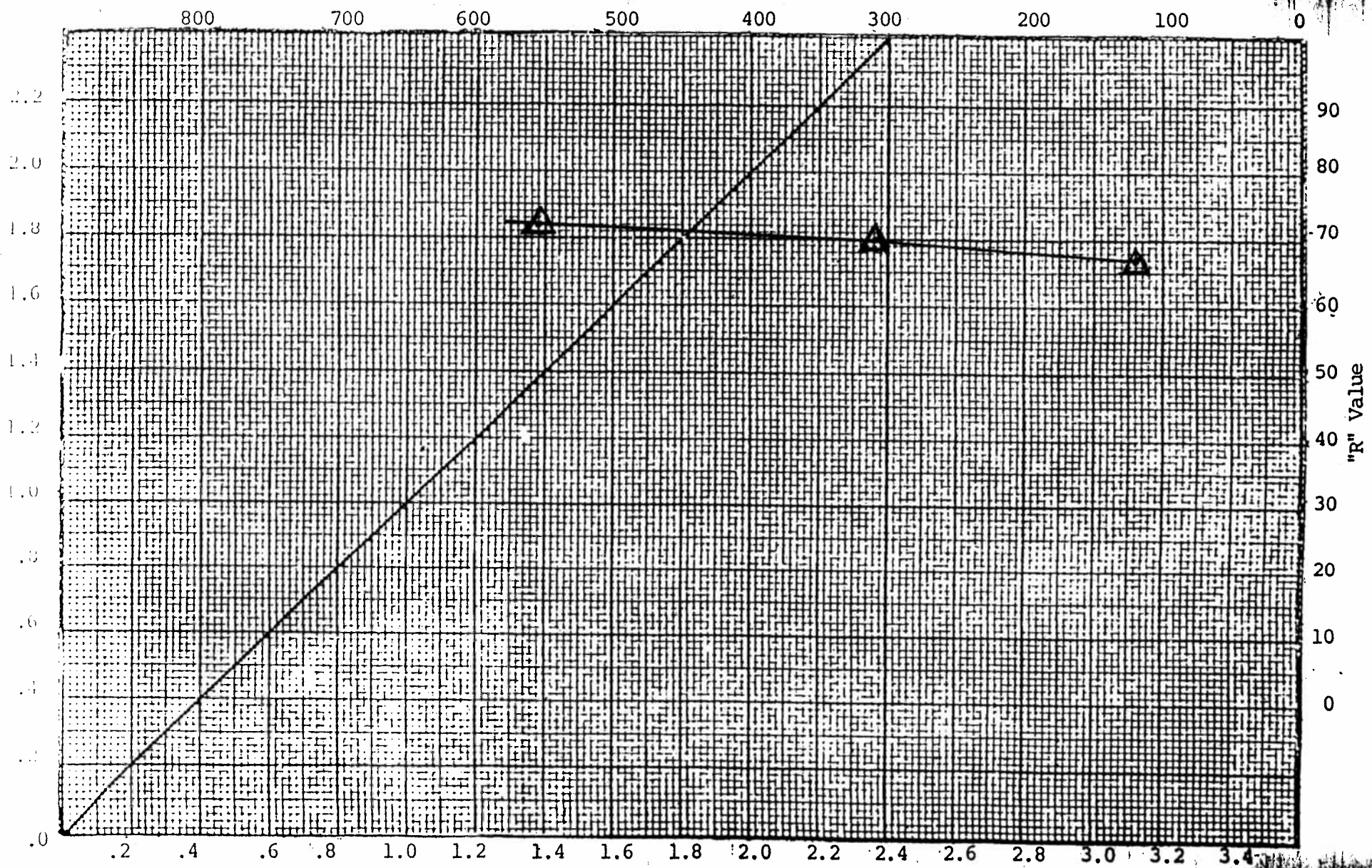
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Cover thickness by Stab. Req. vs. Exudation Pressure

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Cover thickness by Stab. Req. vs. Cover thickness by Expansion Pressure

Exudation Pressure (psi)



Cover thickness (ft) Expansion Pressure Requirements



SMITH-EMERY COMPANY *An Independent Commercial Testing Laboratory Established 1910*

File No. 8030
Lab No. 85-075A

Date Received January 25, 1985
Date of Report February 4, 1985

Project YOUR PROJECT NO. A82284-B Type Mat'l. _____

Charge Le Roy Crandall & Associates

Boring No. Sta: 53 + 50 Grid 9.50 T.I. 4.0 Assumed Gf 1.0 Assumed

<u>"R" VALUE DETERMINATION</u>				<u>REMARKS:</u>			
Dry Weight <u>960.5</u>							
Mold	4	5	6	As Received			
Water Added (+)	0	-33	-45	Size	Wt.	%Ret'd.	%Passing
Net Wet Wt.	1200.0	1167	1155	1 1/2			
% Water	24.9	21.5	20.2	1			
Gage Pressure	11	20	20	3/4			
Gage Pressure (Corr)	165	310	310	1/2			
Exudation Pressure	130	300	745	3/8			
Height	2.47	2.47	2.42	4			
Mold Gross Wt.	3072	2102	3080	Total Dry Wt.			
Mold Tare	2093	2106	2096	As Used*	Corr. %Pass	Corr. %Ret	Gm
Mold Net Wet Wt.	979	996	984	1 1/2			
Defl. by Exp. Press.	32	66	69	1			
G.E. by Exp. Press.	1.07	2.20	2.30	3/4			
Stab. @ 90 PSI (1000)	38	24	22	3/8			
Stab. @ 160 PSI (2000)	98	64	56	4			
Turns Displacement	4.98	4.92	4.87	Total Dry Wt.			
R-Value (Uncorrected)	24	43	48	Size	Wt.	% Ret.	% Pass.
R-Value (Corrected)	24	43	45	8			
G.E. by Stab.	0.97	0.73	0.70	16			
G.E. by Expan.	1.07	2.20	2.30	30			
Mold Net Dry Wt.	784	820	819	50			
Dry Density	96.2	100.6	102.5	100			
R-Value by Exudation Pressure	43			200			
R-Value by Expansion Pressure	23			Dry Wt. #4			
R-Value @ Equilibrium	23			*For R-Value Batching When 10% Rock			
				(Note - Unless otherwise instructed, sample will be discarded after 10-days storage)			
				By: Exud. <u>Exp.</u>			

"R" VALUE TEST DATA

"R" VALUE DETERMINATION

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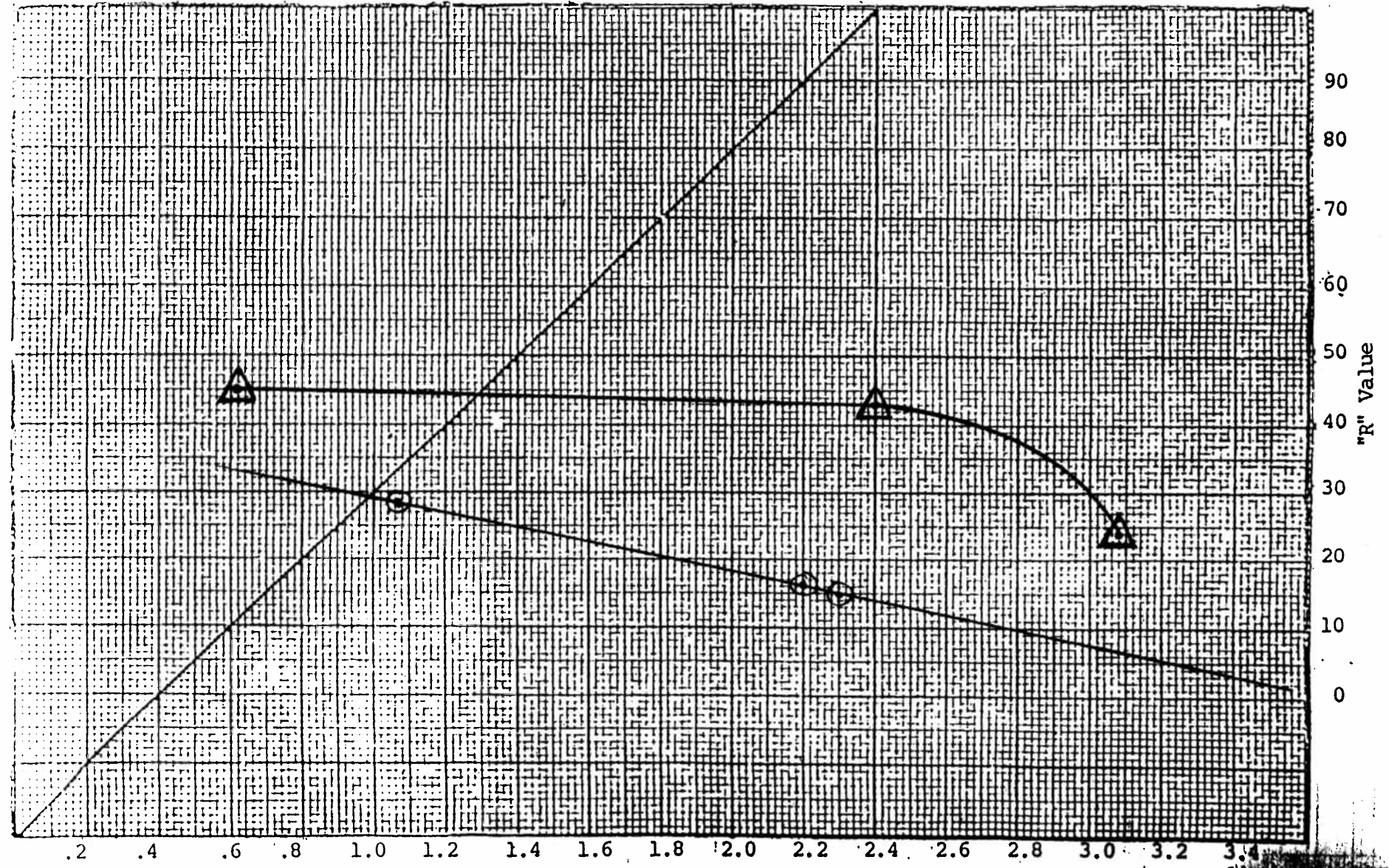
Cover thickness by Stab. Req. vs. Exudation Pressure

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Cover thickness by Stab. Req. vs. Cover thickness by Expansion Pressure

Exudation Pressure (psi)

800 700 600 500 400 300 200 100 0



Cover thickness (ft) Expansion Pressure Requirements

SAMPLE LOCATION:	STATION 31+00 GRID 7.75	STATION 47+00 GRID 7.80	STATION 53+00 GRID 9.00
SOIL TYPE:	SILTY SAND	SILTY SAND	SILT
MAXIMUM DRY DENSITY*: (LBS./CU. FT.)	126	121	105
OPTIMUM MOISTURE CONTENT*: (% OF DRY WT.)	10	10	17

* TEST METHOD: ASTM DESIGNATION D1557-70.

* * 7% CEMENT BY WEIGHT ADDED TO SAMPLE.

COMPACTION TEST DATA

SAMPLE LOCATION :	STATION 53+50 GRID 8.50	STATION 53+50 GRID 9.50
SOIL TYPE:	SILTY SAND	CLAYEY SILT
MAXIMUM DRY DENSITY *: (LBS./CU. FT.)	113	109
OPTIMUM MOISTURE CONTENT*: (% OF DRY WT.)	14	17

*TEST METHOD: ASTM DESIGNATION D1557-70.

* * 7% CEMENT BY WEIGHT ADDED TO SAMPLE.

COMPACTION TEST DATA

SAMPLE LOCATION: Station 31+00, Grid 7.75

SOIL TYPE: SILTY SAND

CURING TIME: 7 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	210
5	95	210
7	90	280
7	95	300
9	90	320
9	95	390
11	90	380
11	95	430

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 47+00, Grid 7.80

SOIL TYPE: SILTY SAND

CURING TIME: 7 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	130
5	90	190
7	90	130
7	95	230
9	90	200
9	96	220
11	90	230
11	95	300

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 53+00, Grid 9.00

SOIL TYPE: SILT

CURING TIME: 7 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	70
5	95	110
7	90	120
7	96	140
9	90	140
9	95	160
11	90	180
11	95	200

*ASTM D1557-70 Method of Compaction.
Actual compaction values within one
percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 53+50, Grid 8.50

SOIL TYPE: SILTY SAND

CURING TIME: 7 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	60
5	95	90
7	90	90
7	96	140
9	90	160
9	97	220
11	90	210
11	98	290

*ASTM D1557-70 Method of Compaction.
Actual compaction values within one
percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 53+50, Grid 9.50

SOIL TYPE: CLAYEY SILT

CURING TIME: 7 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	170
5	95	180
7	90	150
7	95	230
9	90	170
9	95	220
11	90	190
11	97	240

*ASTM D1557-70 Method of Compaction.
Actual compaction values within one
percent of values shown above.

COMPRESSION TEST DATA

Results of Second Set of Soil-Cement Core Compression
Tests – ICTF (March 4, 1985)

THIS REPORT IS OUTDATED AND MAY NOT REFLECT CURRENT SITE CONDITIONS, AND CURRENT STATE OF THE PRACTICE. THE ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS SHOULD BE THOROUGHLY REVIEWED AND UPDATED BY A QUALIFIED GEOTECHNICAL CONSULTANT. USE OF THIS REPORT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY TO

March 4, 1985

MACTEC ENGINEERING AND CONSULTING, INC.

Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

(Our Job No. A-82284-B)

Attention: Mr. J. F. Lynch, Jr.
Engineer, Design and Construction

Gentlemen:

Results of Compression Tests
Second Set of Soil-Cement Cores
Intermodal Container Transfer Facility (ICTF)
223rd Street and San Diego Freeway
Los Angeles, California

This report presents the results of the compression tests performed on the second set of soil-cement cores. We previously presented the results of the compression tests performed on the first set of soil-cement cores in our report dated February 18, 1985.

The first set of soil-cement cores were tested after a normal curing period of seven days. The second set of soil-cement cores were allowed to cure for 17 days to determine the effects of a longer curing period on the compressive strength.

Soil-cement cores for unconfined compression tests were prepared for each of the five samples with cement contents of 5, 7, 9, and 11 percent (by dry weight). The cores were 2-5/8 inches in diameter and 6 inches high. The cores were compacted to compaction values varying from 90% to 98%. The cores were then allowed to cure for 17 days. The curing process consisted of wrapping the cores with soaked paper towels and placing the cores inside of plastic bags for the 17-day curing period.


Upon completion of the 17-day curing period, the cores were subjected to unconfined compression tests. The results of the compression tests are presented on Plates 6.1 through 6.5, Compression Test Data.

Although the unconfined compressive strengths increased (except for two cores) because of the longer curing period, there appears to be no justification for revising the minimum required cement contents that were presented in our February 18 report for the different soil samples.

Respectfully submitted,

LeROY CRANDALL AND ASSOCIATES

by 
Robert Chieruzzi, R.C.E. 13001
Project Engineer

by 
Russell C. Weber, R.C.E. 8954
Senior Vice President

RW-RC/L2
Attachments (5)
(6 copies submitted)

cc: (1) Southern Pacific Transportation
Company
Attn: Mr. M. Christensen
(1) B-84242 File

THIS REPORT IS OUTDATED AND MAY NOT
REFLECT CURRENT SITE CONDITIONS, AND
CURRENT STATE OF THE PRACTICE. THE
ANALYSIS, CONCLUSIONS AND RECOM-
MENDATIONS SHOULD BE THOROUGHLY
REVIEWED AND UPDATED BY A QUALIFIED
GEOTECHNICAL CONSULTANT. USE OF THIS
REPORT SHALL BE AT THE USER'S SOLE RISK
WITHOUT LIABILITY TO

MACTEC ENGINEERING AND CONSULTING, INC.

SAMPLE LOCATION: Station 31+00, Grid 7.75

SOIL TYPE: SILTY SAND

CURING TIME: 17 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	240
5	95	220
7	90	340
7	95	370
9	91	450
9	95	330
11	90	350
11	97	520

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 47+00, Grid 7.80

SOIL TYPE: SILTY SAND

CURING TIME: 17 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	150
5	95	220
7	90	200
7	96	260
9	92	260
9	97	340
11	92	240
11	97	340

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 53+00, Grid 9.00

SOIL TYPE: SILT

CURING TIME: 17 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	91	100
5	96	120
7	91	170
7	95	180
9	90	190
9	96	230
11	91	230
11	95	270

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 53+50, Grid 8.50

SOIL TYPE: SILTY SAND

CURING TIME: 17 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	91	80
5	96	110
7	91	150
7	97	180
9	92	210
9	97	290
11	91	280
11	97	400

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

SAMPLE LOCATION: Station 53+50, Grid 9.50

SOIL TYPE: CLAYEY SILT

CURING TIME: 17 days

<u>CEMENT CONTENT (% BY WEIGHT)</u>	<u>PERCENT COMPACTION*</u>	<u>UNCONFINED COMPRESSIVE STRENGTH (PSI)</u>
5	90	170
5	94	190
7	90	220
7	95	270
9	90	190
9	96	230
11	91	230
11	98	310

*ASTM D1557-70 Method of Compaction.

Actual compaction values within one percent of values shown above.

COMPRESSION TEST DATA

Union Pacific Railroad

Application for Development Project Approval

Intermodal Container Transfer Facility (ICTF) Modernization Project

Section II

EDR Phase I Site Assessment Data
for
22632 South Alameda Street, Carson, CA
(the Desser Property)

Radius Map



EDR® Environmental
Data Resources Inc

The EDR Radius Map with GeoCheck®

**UPRR - Dresser Property
22632 South Alameda Street
Carson, CA 90810**

Inquiry Number: 2048315.2s

October 09, 2007

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

22632 SOUTH ALAMEDA STREET
CARSON, CA 90810

COORDINATES

Latitude (North): 33.820100 - 33° 49' 12.4"
Longitude (West): 118.230100 - 118° 13' 48.4"
Universal Transverse Mercator: Zone 11
UTM X (Meters): 386158.1
UTM Y (Meters): 3742695.8
Elevation: 27 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 33118-G2 LONG BEACH, CA
Most Recent Revision: 1964

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 6 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
ALLCO AUTO WRECKING 22632 ALAMEDA CARSON, CA 90745	RCRA-SQG FINDS LOS ANGELES CO. HMS	CAD072293996
HARDWICK DISPOSAL PIT #44 22632 S ALAMEDA ST CARSON, CA 90810	FINDS	110013960204

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL..... National Priority List

EXECUTIVE SUMMARY

Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
DOD	Department of Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
ICIS	Integrated Compliance Information System
LUCIS	Land Use Control Information System
RADINFO	Radiation Information Database
LIENS 2	CERCLA Lien Information
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SCH	School Property Evaluation Program
CA WDS	Waste Discharge System
AOCONCERN	San Gabriel Valley Areas of Concern
LIENS	Environmental Liens Listing
CHMIRS	California Hazardous Material Incident Report System
LA Co. Site Mitigation	Site Mitigation List
CLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
CDL	Clandestine Drug Labs
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
HAULERS	Registered Waste Tire Haulers Listing

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land

EDR PROPRIETARY RECORDS

Manufactured Gas Plants ...	EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations	EDR Proprietary Historic Gas Stations

EXECUTIVE SUMMARY

EDR Historical Cleaners..... EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 04/23/2007 has revealed that there is 1 CERCLIS site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>ALAMEDA ST SAN LDFL</i>	<i>22700 S ALAMEDA ST</i>	<i>1/8 - 1/4SSW</i>	<i>D11</i>	<i>19</i>

CERCLIS-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERC-NFRAP list, as provided by EDR, and dated 06/21/2007 has revealed that there are 2 CERC-NFRAP sites within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>JOHNS-MANVILLE SALES CORP DEL</i>	<i>2430 E 223RD</i>	<i>1/4 - 1/2N</i>	<i>G34</i>	<i>60</i>
<i>TEXACO USA DIV TEXACO INC</i>	<i>23208</i>	<i>1/4 - 1/2S</i>	<i>47</i>	<i>87</i>

EXECUTIVE SUMMARY

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 06/26/2007 has revealed that there are 5 CORRACTS sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
BP WEST COAST PRODUCTS-CARSON	1801 E SEPULVEDA BLVD	1/2 - 1 SSW	N59	159
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
TEXACO USA DIV TEXACO INC	23208	1/4 - 1/2 S	47	87
STAUFFER CHEM CO	2112 E 223RD ST	1/2 - 1 WNW	48	90
MONSANTO CHEM CO	2100 E 223RD ST	1/2 - 1 WNW	L51	116
NIKLOR CHEMICAL CO INC	2060 E 220TH ST	1/2 - 1 NW	M53	123

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 06/13/2006 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
TEXACO USA DIV TEXACO INC	23208	1/4 - 1/2 S	47	87

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 06/13/2006 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
BRITE-SOL CLEANING	22422 S ALAMEDA	1/8 - 1/4 NNE	E22	38

EXECUTIVE SUMMARY

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/13/2006 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
ALLCO RECYCLING INC	22620 ALAMEDA	0 - 1/8 N	A3	7
PORT TERMINAL TRANSPORT	22440 S ALAMEDA	1/8 - 1/4NNE	E17	32

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 FUDS site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
WILMINGTON CLA & HOLD YD		1/2 - 1 SSE	49	105

STATE AND LOCAL RECORDS

HIST CAL-SITES: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

A review of the HIST Cal-Sites list, as provided by EDR, and dated 08/08/2005 has revealed that there are 3 HIST Cal-Sites sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MANVILLE CORPORATION	2420 EAST 223RD STREET	1/4 - 1/2N	F31	51
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
STAUFFER CHEM CO	2112 E 223RD ST	1/2 - 1 WNW	48	90
MONSANTO CHEMICAL COMPANY/ C/O	2100 E 223RD ST	1/2 - 1 WNW	L50	107

EXECUTIVE SUMMARY

BEP: Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there is 1 CA BOND EXP. PLAN site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MANVILLE CORPORATION	2420 EAST 223RD STREET	1/4 - 1/2 N	F31	51

TOXIC PITS: The Toxic Pits Cleanup Act Sites database identifies sites suspected of containing hazardous substances where cleanup has not yet been completed. The data come from the State Water Resources Control Board.

A review of the Toxic Pits list, as provided by EDR, and dated 07/01/1995 has revealed that there is 1 Toxic Pits site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
GATX, CARSON TERMINAL Closure Date: 08/01/91	2000 EAST SEPULVEDA BLV	1/2 - 1 S	57	129

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, and dated 09/10/2007 has revealed that there are 2 SWF/LF sites within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
HARDWICK'S DISPOSAL PIT	22620 S. ALAMEDA ST.	0 - 1/8 SSW	B6	10
ALAMEDA STREET LANDFILL	22700 SO ALAMEDA ST	1/8 - 1/4 SSW	D10	17

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there are 6 WMUDS/SWAT sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
WATSON LAND COMPANY NO. 1	22400 SOUTH ALAMEDA	1/8 - 1/4 NNE	E27	46
JOHNS-MANVILLE-CARSON	22401 SOUTH ALAMEDA	1/8 - 1/4 NNE	28	47
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
HARDWICK DISPOSAL PIT NO. 44	22620 SOUTH ALAMEDA STR	0 - 1/8 SSW	B5	9
ALAMEDA STREET	22700 SOUTH ALAMEDA STR	1/8 - 1/4 SSW	D12	20
CASSIDY & CRISMAN-CARSON	22700 SOUTH ALAMEDA	1/8 - 1/4 SSW	D13	22
MANVILLE PLANT SITE	2400 E. 223RD STREET	1/4 - 1/2 NNW	G33	59

EXECUTIVE SUMMARY

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, and dated 04/01/2001 has revealed that there are 6 Cortese sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
STATE SALVAGE	22500 ALAMEDA ST S	0 - 1/8 NNE	C7	12
COMMERCIAL CARRIERS INC	22440 ALAMEDA ST S	1/8 - 1/4NNE	E14	23
MATLACK INC	22422 ALAMEDA	1/8 - 1/4NNE	E18	32
MANVILLE PLANT	2420 223RD ST E	1/4 - 1/2 N	F32	56
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
CARSON REDEVELOPMENT AGEN	2233 223RD	1/4 - 1/2NW	J41	79
CORMIER CHEVROLET	2201 E 223	1/4 - 1/2 NW	K46	84

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 07/09/2007 has revealed that there are 2 SWRCY sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
CARSON AUTO INC	22606 S ALAMEDA ST	0 - 1/8 NNE	A4	8
STATE SALVAGE INC.	22500 S ALAMEDA ST	0 - 1/8 NNE	C9	16

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 07/10/2007 has revealed that there are 8 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
STATE SALVAGE Facility Status: Case Closed	22500 ALAMEDA ST S	0 - 1/8 NNE	C7	12
COMMERCIAL CARRIERS INC Facility Status: Case Closed	22440 ALAMEDA ST S	1/8 - 1/4NNE	E14	23
MATLACK INC Facility Status: Case Closed	22422 ALAMEDA BLVD S	1/4 - 1/2NNE	29	48
VENTURA TRANSFER COMPANY Facility Status: Leak being confirmed	2418 EAST 223RD STREET	1/4 - 1/2 N	F30	50
MANVILLE PLANT Facility Status: Case Closed	2420 223RD ST E	1/4 - 1/2 N	F32	56
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
CARSON REDEVELOPMENT AGENCY Facility Status: Case Closed	2233 223RD ST E	1/4 - 1/2 NW	J42	80

EXECUTIVE SUMMARY

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
COMIER CHEVROLET Facility Status: Leak being confirmed	2201 EAST 223RD STREET	1/4 - 1/2NW	K44	82
CORMIER CHEVROLET Facility Status: Case Closed	2201 E 223	1/4 - 1/2NW	K46	84

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
COMMERCIAL CARRIERS INC	22440 ALAMEDA ST S	1/8 - 1/4NNE	E14	23
MATLACK INC	22422 S ALAMEDA BLVD	1/8 - 1/4NNE	E21	38

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 08/03/2007 has revealed that there are 7 SLIC sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
Not reported Facility Status: Case Closed	S ALAMEDA ST / EAST 2	1/4 - 1/2NNE	37	74

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
CITY OF CARSON - ARCO	2384 223RD	1/4 - 1/2NNW	H35	61
Not reported Facility Status: Pollution Characterization	2384 E. 223RD ST.	1/4 - 1/2NNW	H36	62
CITY OF CARSON - SWAN PROPERTY	2254 223RD	1/4 - 1/2NW	I39	79
CITY OF CARSON - SWAN PROPERTY Facility Status: Pollution Characterization	2254 E. 223RD ST	1/4 - 1/2NW	I40	79
CORMIER CHEVROLET Facility Status: Case Closed	2201 E. 223RD ST	1/4 - 1/2NW	K45	84
CORMIER CHEVROLET	2201 E 223	1/4 - 1/2NW	K46	84

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 07/10/2007 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
PAUL TRUCKING COMPANY	22440 S ALAMEDA ST	1/8 - 1/4NNE	E16	31
MATLACK TRUCKING	22422 S ALAMEDA ST	1/8 - 1/4NNE	E23	39

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
STATE SALVAGE INC.	22500 S ALAMEDA ST	0 - 1/8 NNE	C9	16
COMMERCIAL CARRIERS, INC.	22440 S ALAMEDA ST	1/8 - 1/4 NNE	E15	29
MATLACK, INC. (BRITE-SOL)	22422 S ALAMEDA ST	1/8 - 1/4 NNE	E20	33
MATLACK, INC	22422 S ALAMEDA ST	1/8 - 1/4 NNE	E26	43

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the AST list, as provided by EDR, and dated 05/01/2007 has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
HERTZ EQUIPMENT RENTAL 9269-00	22422 SOUTH ALAMEDA STR	1/8 - 1/4 NNE	E19	32

SWEEPS: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 5 SWEEPS UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
STATE SALVAGE INC	22500 S ALAMEDA ST	0 - 1/8 NNE	C8	14
COMMERCIAL CARRIERS INC	22440 ALAMEDA ST S	1/8 - 1/4 NNE	E14	23
MATLACK, INC. (BRITE-SOL)	22422 S ALAMEDA ST	1/8 - 1/4 NNE	E20	33
MATLACK INC	22422 S ALAMEDA	1/8 - 1/4 NNE	E24	39
MATLACK INC	22422 S ALAMEDA BLVD	1/8 - 1/4 NNE	E25	42

NOTIFY 65: Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resources Control Board's Proposition 65 database.

A review of the Notify 65 list, as provided by EDR, and dated 10/21/1993 has revealed that there are 2 Notify 65 sites within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
TEXACO	232000 S. ALAMEDA	1/4 - 1/2 SSW	43	82
223RD ST./DOMINGUEZ CHANNEL		1/2 - 1 WNW	55	128

EXECUTIVE SUMMARY

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 07/02/2007 has revealed that there are 2 DEED sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MANVILLE CORPORATION	2420 EAST 223RD STREET	1/4 - 1/2 N	F31	51
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
COONS TRUST PROPERTY	2254 E. 223RD STREET	1/4 - 1/2 NW	I38	76

VCP: Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 08/28/2007 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
COONS TRUST PROPERTY	2254 E. 223RD STREET	1/4 - 1/2 NW	I38	76

RESPONSE: Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

A review of the RESPONSE list, as provided by EDR, and dated 08/28/2007 has revealed that there are 3 RESPONSE sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MANVILLE CORPORATION	2420 EAST 223RD STREET	1/4 - 1/2 N	F31	51
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
STAUFFER CHEM CO	2112 E 223RD ST	1/2 - 1 WNW 48		90
MONSANTO CHEMICAL COMPANY/ C/O	2100 E 223RD ST	1/2 - 1 WNW L50		107

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 08/28/2007 has revealed that there are 9 ENVIROSTOR sites within approximately 1 mile of the target property.

EXECUTIVE SUMMARY

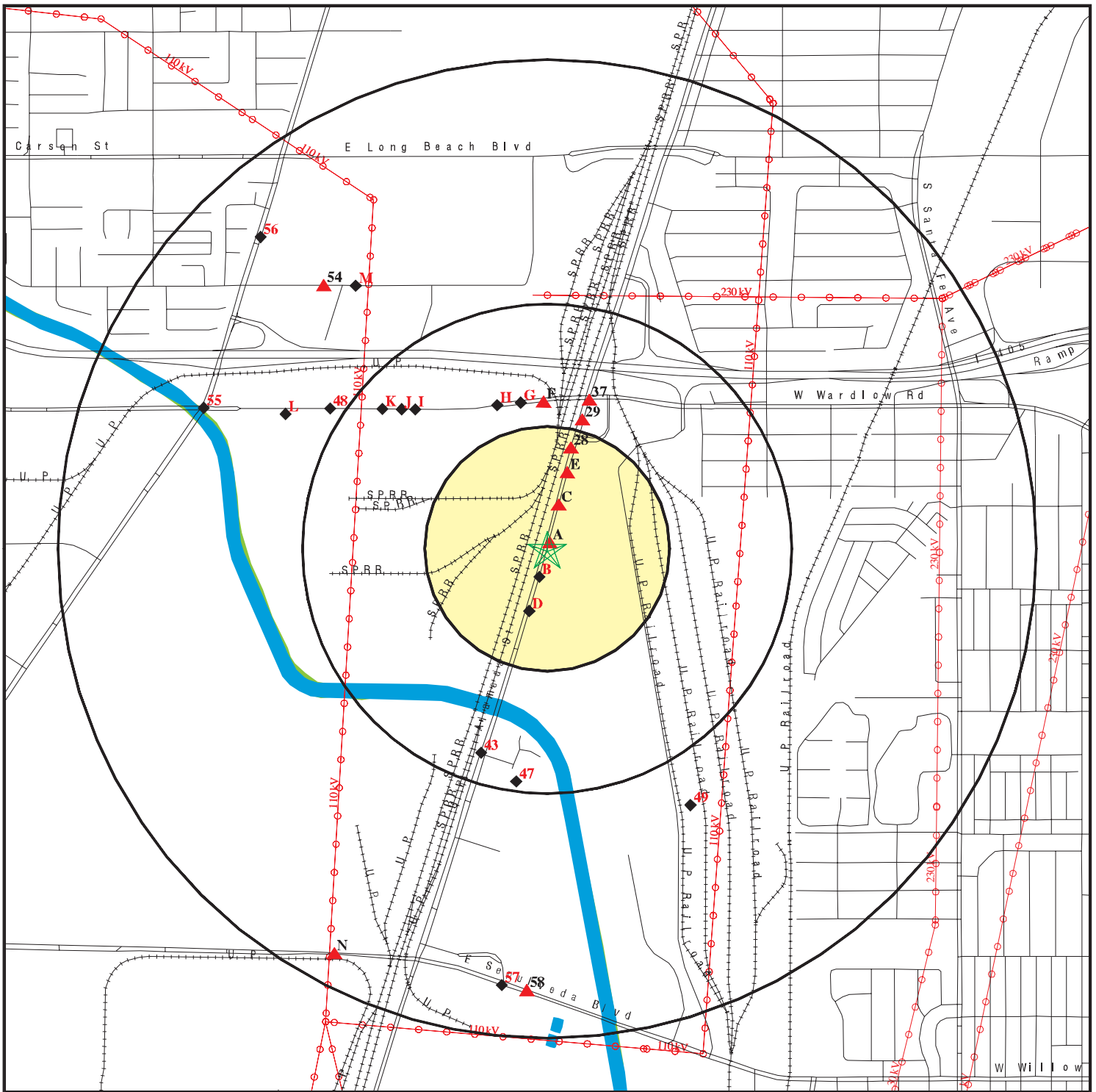
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
MANVILLE CORPORATION Facility Status: Certified / Operation & Maintenance	2420 EAST 223RD STREET	1/4 - 1/2 N	F31	51
CLEAN STEEL INC. Facility Status: Refer: 1248 Local Agency	2061 E. 220TH STREET	1/2 - 1 NW	54	127
WATSON CARBON & CHEMICAL COMPA Facility Status: Refer: Other Agency	2021 EAST SEPULVEDA BOU	1/2 - 1 S	58	158
Not reported Facility Status: Refer: RCRA	1801 EAST SEPULVEDA	1/2 - 1 SSW	N60	177
<u>Lower Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
COONS TRUST PROPERTY Facility Status: Certified / Operation & Maintenance	2254 E. 223RD STREET	1/4 - 1/2 NW	I38	76
STAUFFER CHEM CO Facility Status: Active	2112 E 223RD ST	1/2 - 1 WNW	48	90
MONSANTO CHEMICAL COMPANY/ C/O Facility Status: Active	2100 E 223RD ST	1/2 - 1 WNW	L50	107
NIKLOR CHEM CO INC Facility Status: Refer: 1248 Local Agency	2060 E. 220TH ST.	1/2 - 1 NW	M52	122
ALPERT & ALPERT IRON & METAL Facility Status: Refer: 1248 Local Agency	21930 S. WILMINGTON AVE	1/2 - 1 NW	56	128

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
STAR CLEANERS	RCRA-SQG, FINDS, CLEANERS
WILMINGTON AVE CARSON CRUDE STATION	CHMIRS, SLIC
1X MCKESSON DRUG CO	HAZNET, LUST, CHMIRS
MOEN FOAM CO	CERC-NFRAP
TCL DUMP	CERC-NFRAP
SOIL MGMT METHOD INC	CERC-NFRAP
BECKMAN LUMBER SERVICE, INC.	CERC-NFRAP
LA CO SANITATION DIST 1, LF #1 & #3	SWF/LF
DOMINGUEZ GOLF COURSE & ADJACENT PROPERTY	VCP, ENVIROSTOR
ALAMEDA STREET-VERNON	WMUDS/SWAT
MURPHY INDUSTRIAL COATINGS INC	RCRA-SQG, FINDS, HAZNET
GATX TERMINALS CORP - CARSON TERMINAL	FINDS
CITY OF CARSON - STADEL PROPERTY	SLIC
ACTA SOUTH - PARCEL SE-351	SLIC
ACTA SOUTH - PARCEL SE-352/353	SLIC
ACTA SOUTH - PARCEL SE-351	SLIC
ACTA SOUTH - PARCEL SE-352/353	SLIC
ACTA SOUTH - PARCEL SE-349	SLIC
ACTA SOUTH - PARCEL SE-362	SLIC
ACTA SOUTH - PARCEL SE-358	SLIC
SHELL PIPELINE LEAK - COLONY HOLDINGS	SLIC
ACTA SOUTH - PARCEL SE-334	SLIC
ACTA SOUTH - PARCEL SE-334	SLIC
ACTA SOUTH - PARCEL SE-362	SLIC
ACTA SOUTH - DEL AMO BLVD GRADE SEPARATION	SLIC
DOMINGUEZ ENERGY REYES LEASE - AREA H	SLIC
DOMINGUEZ ENERY REYES LEASE - AREA D	SLIC
TED HAMMETT (CARSON)	ENVIROSTOR

OVERVIEW MAP - 2048315.2s



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Manufactured Gas Plants

■ National Priority List Sites

■ Dept. Defense Sites

■ Indian Reservations BIA

⚡ Power transmission lines

⚡ Oil & Gas pipelines

■ 100-year flood zone

■ 500-year flood zone

■ National Wetland Inventory

■ Areas of Concern

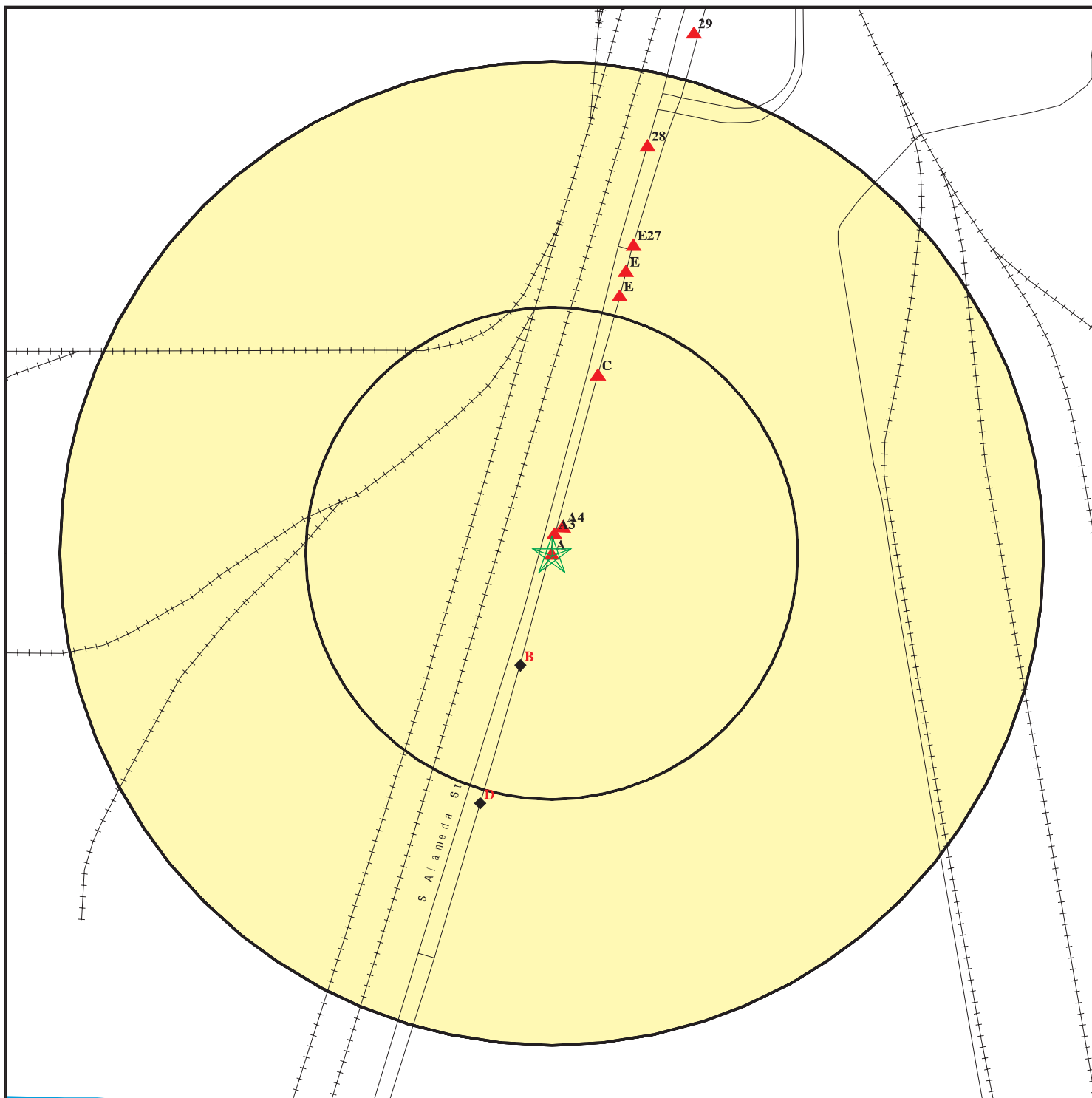
0 1/4 1/2 1 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: UPRR - Dresser Property
 ADDRESS: 22632 South Alameda Street
 Carson CA 90810
 LAT/LONG: 33.8201 / 118.2301

CLIENT: HDR Engineering Inc.
 CONTACT: Chuck Cleeves
 INQUIRY #: 2048315.2s
 DATE: October 09, 2007 4:30 pm

DETAIL MAP - 2048315.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: UPRR - Dresser Property
 ADDRESS: 22632 South Alameda Street
 Carson CA 90810
 LAT/LONG: 33.8201 / 118.2301

CLIENT: HDR Engineering Inc.
 CONTACT: Chuck Cleeves
 INQUIRY #: 2048315.2s
 DATE: October 09, 2007 4:30 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL RECORDS</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	1	0	NR	NR	1
CERC-NFRAP		0.500	0	0	2	NR	NR	2
CORRACTS		1.000	0	0	1	4	NR	5
RCRA TSD		0.500	0	0	1	NR	NR	1
RCRA Lg. Quan. Gen.		0.250	0	1	NR	NR	NR	1
RCRA Sm. Quan. Gen.	X	0.250	1	1	NR	NR	NR	2
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	1	NR	1
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
<u>STATE AND LOCAL RECORDS</u>								
Hist Cal-Sites		1.000	0	0	1	2	NR	3
CA Bond Exp. Plan		1.000	0	0	1	0	NR	1
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	1	NR	1
State Landfill		0.500	1	1	0	NR	NR	2
CA WDS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	1	4	1	NR	NR	6
Cortese		0.500	1	2	3	NR	NR	6

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SWRCY		0.500	2	0	0	NR	NR	2
LUST		0.500	1	1	6	NR	NR	8
CA FID UST		0.250	0	2	NR	NR	NR	2
SLIC		0.500	0	0	7	NR	NR	7
AOCONCERN		1.000	0	0	0	0	NR	0
UST		0.250	0	2	NR	NR	NR	2
HIST UST		0.250	1	3	NR	NR	NR	4
AST		0.250	0	1	NR	NR	NR	1
LIENS		TP	NR	NR	NR	NR	NR	0
SWEEPS UST		0.250	1	4	NR	NR	NR	5
CHMIRS		TP	NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	1	1	NR	2
LA Co. Site Mitigation		TP	NR	NR	NR	NR	NR	0
DEED		0.500	0	0	2	NR	NR	2
VCP		0.500	0	0	1	NR	NR	1
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
Los Angeles Co. HMS	X	TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RESPONSE		1.000	0	0	1	2	NR	3
HAZNET		TP	NR	NR	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
ENVIROSTOR		1.000	0	0	2	7	NR	9
HAULERS		TP	NR	NR	NR	NR	NR	0
<u>TRIBAL RECORDS</u>								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
<u>EDR PROPRIETARY RECORDS</u>								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0
EDR Historical Auto Stations		0.250	0	0	NR	NR	NR	0
EDR Historical Cleaners		0.250	0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

A1 **ALLCO AUTO WRECKING**
Target **22632 ALAMEDA**
Property **CARSON, CA 90745**

RCRA-SQG **1000175219**
FINDS **CAD072293996**
LOS ANGELES CO. HMS

Site 1 of 4 in cluster A

Actual:
27 ft.

RCRAInfo:
 Owner: PAUL SOWARDS
 (415) 555-1212
 EPA ID: CAD072293996
 Contact: ENVIRONMENTAL MANAGER
 (213) 830-6200

 Classification: Small Quantity Generator
 TSDF Activities: Not reported

 Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

LOS ANGELES CO. HMS:

Region: LA
 Facility Id: 021996-030992
 Facility Status: OPEN
 Area: 22
 Permit Number: Not reported
 Permit Status: Not reported
 Facility Type: Not reported

A2 **HARDWICK DISPOSAL PIT #44**
Target **22632 S ALAMEDA ST**
Property **CARSON, CA 90810**

FINDS **1006835242**
110013960204

Site 2 of 4 in cluster A

Actual:
27 ft.

FINDS:
 Other Pertinent Environmental Activity Identified at Site

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

A3
North
< 1/8
55 ft.

ALLCO RECYCLING INC
22620 ALAMEDA
LONG BEACH, CA 90810

RCRA-SQG
FINDS
HAZNET
LOS ANGELES CO. HMS

1000818717
CAD983646266

Site 3 of 4 in cluster A

Relative:
Equal

RCRAInfo:

Owner: ALLCO RECYCLING INC
 (310) 835-0104

Actual:
27 ft.

EPA ID: CAD983646266

Contact: JAMES WALTON
 (310) 835-0104

Classification: Small Quantity Generator
 TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid: CAD983646266
 Contact: JAMES WALTEN
 Telephone: 3108350104
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 22620 S ALAMEDA ST
 Mailing City,St,Zip: CARSON, CA 908101907
 Gen County: Los Angeles
 TSD EPA ID: Not reported
 TSD County: Los Angeles
 Waste Category: Unspecified aqueous solution
 Disposal Method: Recycler
 Tons: 7.92
 Facility County: Not reported

Gepaid: CAD983646266
 Contact: ALLCO RECYCLING INC
 Telephone: 3108350104
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 22620 S ALAMEDA ST
 Mailing City,St,Zip: CARSON, CA 908101907
 Gen County: Los Angeles
 TSD EPA ID: CAT000613893
 TSD County: Los Angeles
 Waste Category: Aqueous solution with less than 10% total organic residues
 Disposal Method: Transfer Station

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

ALLCO RECYCLING INC (Continued)

EDR ID Number
 EPA ID Number

1000818717

Tons: 0.6462
 Facility County: Los Angeles

LOS ANGELES CO. HMS:
 Region: LA
 Facility Id: 023332-032583
 Facility Status: OPEN
 Area: 22
 Permit Number: Not reported
 Permit Status: Not reported
 Facility Type: Not reported

**A4
 NNE
 < 1/8
 78 ft.**

**CARSON AUTO INC
 22606 S ALAMEDA ST
 CARSON, CA 90810**

**LOS ANGELES CO. HMS
 SWRCY
 CA WDS**

**U003056775
 N/A**

Site 4 of 4 in cluster A

**Relative:
 Equal**

LOS ANGELES CO. HMS:
 Region: LA
 Facility Id: 000342-I00344
 Facility Status: Permit
 Area: 22
 Permit Number: CGI014674
 Permit Status: Permit
 Facility Type: IS6

**Actual:
 27 ft.**

SWRCY:
 Certification Status: O
 Facility Phone Number: (310) 835-7291
 Date facility became certified: 04/19/07
 Date facility began operating: 04/25/07
 Date facility ceased operating: Still operating
 Whether The Facility Is Grandfathered: Not reported
 Convenience Zone Where Facility Located: 0
 Convenience Zone Where Facility Located 2: 0
 Convenience Zone Where Facility Located 3: 0
 Convenience Zone Where Facility Located 4: 0
 Convenience Zone Where Facility Located 5: 0
 Convenience Zone Where Facility Located 6: 0
 Convenience Zone Where Facility Located 7: 0
 Aluminum Beverage Containers Redeemed: AL
 Glass Beverage Containers Redeemed: GL
 Plastic Beverage Containers Redeemed: PL
 Other mat beverage containers redeemed: Not reported
 Refillable Beverage Containers Redeemed: Not reported

CA WDS:

Facility ID: 4 19I014674
 Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
 Facility Status: Active - Any facility with a continuous or seasonal discharge that is

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

CARSON AUTO INC (Continued)

U003056775

NPDES Number: under Waste Discharge Requirements.
 CAS000001 The 1st 2 characters designate the state. The remaining 7
 are assigned by the Regional Board

Subregion: 4

Facility Telephone: 3108357291

Facility Contact: DENNIS OSBORNE

Agency Name: CARSON AUTO INC

Agency Address: 22606 S Alameda St

Agency City,St,Zip: Carson 908101996

Agency Contact: DENNIS OSBORNE

Agency Telephone: 3108357291

Agency Type: Private

SIC Code: 0

SIC Code 2: Not reported

Primary Waste: Not reported

Primary Waste Type: Not reported

Secondary Waste: Not reported

Secondary Waste Type: Not reported

Design Flow: 0

Baseline Flow: 0

Reclamation: Not reported

POTW: Not reported

Treat To Water: Minor Threat to Water Quality. A violation of a regional board order
 should cause a relatively minor impairment of beneficial uses compared
 to a major or minor threat. Not: All nurds without a TTWQ will be
 considered a minor threat to water quality unless coded at a higher
 Level. A Zero (0) may be used to code those NURDS that are found to
 represent no threat to water quality.

Complexity: Category C - Facilities having no waste treatment systems, such as
 cooling water dischargers or thosewho must comply through best
 management practices, facilities with passive waste treatment and
 disposal systems, such as septic systems with subsurface disposal, or
 dischargers having waste storage systems with land disposal such as
 dairy waste ponds.

B5
SSW
 < 1/8
 312 ft.

HARDWICK DISPOSAL PIT NO. 44
22620 SOUTH ALAMEDA STREET
CARSON, CA

WMUDS/SWAT S104156315
N/A

Site 1 of 2 in cluster B

Relative:
Lower

WMUDS/SWAT:

Edit Date: Not reported

Complexity: Not reported

Primary Waste: Not reported

Primary Waste Type: Not reported

Secondary Waste: Not reported

Secondary Waste Type: Not reported

Base Meridian: Not reported

NPID: Not reported

Tonnage: 0

Regional Board ID: Not reported

Municipal Solid Waste: False

Superorder: False

Open To Public: False

Waste List: False

Agency Type: Not reported

Agency Name: HARDWICK

Actual:
 26 ft.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

HARDWICK DISPOSAL PIT NO. 44 (Continued)

S104156315

Agency Department: Not reported
 Agency Address: 3801 WESTON PLACE
 Agency City,St,Zip: LONG BEACH 90807
 Agency Contact: Not reported
 Agency Telephone: Not reported
 Land Owner Name: DRESSER, NETTIE CO. EXEC.
 Land Owner Address: P.O. BOX 01736
 Land Owner City,St,Zip: LOS ANGELES, CA 90001
 Land Owner Contact: Not reported
 Land Owner Phone: Not reported
 Region: 4
 Facility Type: Not reported
 Facility Description: Not reported
 Facility Telephone: Not reported
 SWAT Facility Name: Not reported
 Primary SIC: Not reported
 Secondary SIC: Not reported
 Comments: Not reported
 Last Facility Editors: Not reported
 Waste Discharge System: False
 Solid Waste Assessment Test Program: True
 Toxic Pits Cleanup Act Program: False
 Resource Conservation Recovery Act: False
 Department of Defence: False
 Solid Waste Assessment Test Program: HARDWICK
 Threat to Water Quality: Not reported
 Sub Chapter 15: False
 Regional Board Project Officer: DJP
 Number of WMUDS at Facility: 1
 Section Range: Not reported
 RCRA Facility: Not reported
 Waste Discharge Requirements: Not reported
 Self-Monitoring Rept. Frequency: Not reported
 Waste Discharge System ID: 4 190040NUR
 Solid Waste Information ID: Not reported

B6
SSW
 < 1/8
 312 ft.

HARDWICK'S DISPOSAL PIT
22620 S. ALAMEDA ST.
LONG BEACH, CA

SWF/LF S103587979
N/A

Site 2 of 2 in cluster B

Relative:
Lower

LF:

Actual:
26 ft.

Region: STATE
 Facility ID: 19-AQ-0015
 Facility Telephone: Not reported
 Facility Telephone 2: Not reported
 Lat/Long: 33.81667 / -118.22778
 Land Owner: Not reported
 Owner Name: Super Service Center & Other Companies
 Owner Telephone: Not reported
 Owner Address: Not reported
 Owner Address2: 22522 Alameda St.
 Owner City,St,Zip: Carson, CA
 Operator: Not reported
 Operator Phone: Not reported
 Operator Address: Not reported
 Operator Address2: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

HARDWICK'S DISPOSAL PIT (Continued)

EDR ID Number
EPA ID Number

Database(s)

Site

S103587979

Operator City,St,Zip: Not reported
Operator's Status: Closed
Permit Date: Not reported
Permit Status: Not reported
Permitted Acreage: \$0.00
Activity: Solid Waste Disposal Site
Regulation Status: Permitted
Land Use: Not reported
Landuse Name: Urban,Commercial
GIS Source: Map
Category: Disposal
Unit Number: 01
Inspection Frequency: Annual
Accepted Waste: Not reported
Year Opened: Not reported
Year Closed: Not reported
Closure Date: Not reported
Closure Type: Not reported
Closure Approve: Not reported
Disposal Acreage: \$0.00
Status: Not reported
Swisnumber: 19-AQ-0015
Aka: Not reported
Type Of Waste: Not reported
Disposal Area: Not reported
SWFP Date: Not reported
WDR Number: Not reported
Dates Operation: Not reported
Dt Of Field Units: Not reported
Surface Condition: Not reported
Landfill Gas: Not reported
Leachate: Not reported
Emrgncy Response: Not reported
Lea Date: Not reported
Restrictions: Not reported
Fill Area: Not reported
Type Of Refuse: Not reported
Avg Depth Of Fill: Not reported
Addtl Expansion Area: Not reported
Site Size: Not reported
Site Type: Not reported
Site Description: Not reported
Reassess Site: Not reported
Location: Not reported
Parcel Num: Not reported
Issue & Observations: Not reported
Other Observations: Not reported
Date: Not reported
Address: Not reported
Prep By: Not reported
DOHS Number: Not reported
CUP Number: Not reported
CIWMB: Not reported
Program Type: Not reported
Public Notice: Not reported
PERMTIER: Not reported
Recommendations: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

HARDWICK'S DISPOSAL PIT (Continued)

S103587979

Othr Recommendation: Not reported
 Sig. Change Since Last Visit: Not reported
 Priority For Site Assessment: Not reported
 Permitted Throughput with Units: 0
 Actual Throughput with Units: Not reported
 Permitted Capacity with Units: 0
 Remaining Capacity: 0
 Remaining Capacity with Units: Not reported
 Last Waste Tire Inspection Count: Not reported
 Last Waste Tire Inspection Date: Not reported
 Original Waste Tire Count: Not reported
 Original Waste Tire Count Date: Not reported
 Explanation: Not reported
 No Further Action: Not reported
 Issues & Observations: Not reported

**C7
 NNE
 < 1/8
 496 ft.**

**STATE SALVAGE
 22500 ALAMEDA ST S
 CARSON, CA 90810**

**LUST U002284746
 Cortese N/A**

Site 1 of 3 in cluster C

**Relative:
 Higher**

LUST:

**Actual:
 28 ft.**

Region: STATE
 Case Type: Soil only
 Cross Street: Not reported
 Enf Type: Not reported
 Funding: Federal
 How Discovered: Not reported
 How Stopped: Not reported
 Leak Cause: Not reported
 Leak Source: Not reported
 Global Id: T0603703845
 Stop Date: Not reported
 Confirm Leak: 1990-03-09 00:00:00
 Workplan: Not reported
 Prelim Assess: Not reported
 Pollution Char: 1991-02-26 00:00:00
 Remed Plan: Not reported
 Remed Action: Not reported
 Monitoring: Not reported
 Close Date: 1991-07-03 00:00:00
 Discover Date: Not reported
 Enforcement Dt: Not reported
 Release Date: 1990-03-09 00:00:00
 Review Date: 1993-10-14 00:00:00
 Enter Date: 1990-03-05 00:00:00
 MTBE Date: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Max MTBE GW ppb: Not reported
 Max MTBE Soil ppb: Not reported
 County: 19
 Org Name: Not reported
 Reg Board: Los Angeles Region
 Status: Case Closed
 Chemical: Diesel
 Contact Person: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

STATE SALVAGE (Continued)

EDR ID Number
EPA ID Number

Database(s)

Site

U002284746

Responsible Party: STATE SALVAGE
RP Address: 22500 S ALAMEDA ST, CARSON, CA 90810
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: YR
Staff Initials: JA
Lead Agency: Local Agency
Local Agency: 19000
Hydr Basin #: SAN FERNANDO VALLEY
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: I-11754
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:

Region: 4
Staff: UNK
County: Los Angeles
Local Agency: 19000
Lead Agency: Local Agency
Case Type: Soil
Status: Case Closed
Substance: Diesel
Cross Street: Not reported
Global ID: T0603703845
Enforcement Type: Not reported
Date Leak Discovered: Not reported
Date Leak Record Entered: 3/5/1990
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Not reported
Date Leak Stopped: Not reported
Date Confirmation Began: 3/9/1990
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Approx. Dist To Production Well (ft): 2132.6575610240254452616652726
Abatement Method Used at the Site: Not reported
Source of Cleanup Funding: F
Date Leak First Reported: 3/9/1990
Preliminary Site Assessment Workplan Submitted: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

STATE SALVAGE (Continued)

EDR ID Number
 EPA ID Number

Database(s)

U002284746

Preliminary Site Assessment Began: Not reported
 Pollution Characterization Began: 2/26/1991
 Remediation Plan Submitted: Not reported
 Remedial Action Underway: Not reported
 Post Remedial Action Monitoring Began: Not reported
 Date the Case was Closed: 7/3/1991
 Date Case Last Changed on Database: 10/14/1993
 Enforcement Action Date: Not reported
 Historical Max MTBE Date: Not reported
 Hist Max MTBE Conc in Groundwater: Not reported
 Hist Max MTBE Conc in Soil: Not reported
 Significant Interim Remedial Action Taken: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Organization: Not reported
 Regional Board: 04
 Owner Contact: Not reported
 Responsible Party: STATE SALVAGE
 RP Address: 22500 S ALAMEDA ST, CARSON, CA 90810
 Program: LUST
 Lat/Long: 33.8219273 / -1
 Local Agency Staff: Not reported
 Beneficial Use: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Suspended: Not reported
 Local Case No: Not reported
 Substance Quantity: Not reported
 Assigned Name: Not reported
 W Global ID: Not reported
 Summary: Not reported

Cortese:
 Region: CORTESE
 Facility Addr2: 22500 ALAMEDA ST S

C8 STATE SALVAGE INC
NNE 22500 S ALAMEDA ST
 < 1/8 LONG BEACH, CA 90810
 496 ft.

EMI S106840048
 SWEEPS UST N/A

Site 2 of 3 in cluster C

Relative:
 Higher

EMI:
 Year: 1990
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 12858
 Air District Name: SC
 SIC Code: 3341
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 0
 Reactive Organic Gases Tons/Yr: 0
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 1
 SOX - Oxides of Sulphur Tons/Yr: 0

Actual:
 28 ft.

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

STATE SALVAGE INC (Continued)

EDR ID Number
EPA ID Number

Database(s)

S106840048

Particulate Matter Tons/Yr: 3
Part. Matter 10 Micrometers & Smlr Tons/Yr: 2

Year: 1995
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 12858
Air District Name: SC
SIC Code: 3341
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 1
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 2
Part. Matter 10 Micrometers & Smlr Tons/Yr: 1

SWEEPS UST:

Status: Not reported
Comp Number: 11754
Number: Not reported
Board Of Equalization: 44-009473
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-011754-000001
Actv Date: Not reported
Capacity: 10000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: 1

Status: A
Comp Number: 11754
Number: 1
Board Of Equalization: 44-009473
Ref Date: 11-30-89
Act Date: 11-30-89
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-011754-000002
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: 1

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

C9
NNE
 < 1/8
 496 ft.

STATE SALVAGE INC.
22500 S ALAMEDA ST
CARSON, CA 91316

HIST UST **U001567256**
SWRCY **N/A**

Site 3 of 3 in cluster C

Relative:
Higher

HIST UST:

Actual:
 28 ft.

Region: STATE
 Facility ID: 00000050551
 Tank Num: 001
 Container Num: (1)
 Year Installed: Not reported
 Tank Capacity: 00010000
 Facility Type: Other
 Other Type: RECYCLING ALUM. CANS
 Total Tanks: 0002
 Tank Used for: PRODUCT
 Type of Fuel: DIESEL
 Tank Construction: Not reported
 Leak Detection: Stock Inventor
 Contact Name: Not reported
 Telephone: 2137757035
 Owner Name: HILLARD LEWINSON
 Owner Address: 5401 ZELZAH AVE.
 Owner City,St,Zip: ENCINO, CA 91316

Region: STATE
 Facility ID: 00000050551
 Tank Num: 002
 Container Num: (2)
 Year Installed: 1972
 Tank Capacity: 00005000
 Facility Type: Other
 Other Type: RECYCLING ALUM. CANS
 Total Tanks: 0002
 Tank Used for: PRODUCT
 Type of Fuel: UNLEADED
 Tank Construction: Not reported
 Leak Detection: Stock Inventor
 Contact Name: Not reported
 Telephone: 2137757035
 Owner Name: HILLARD LEWINSON
 Owner Address: 5401 ZELZAH AVE.
 Owner City,St,Zip: ENCINO, CA 91316

SWRCY:

Certification Status: R
 Facility Phone Number: (213) 775-7035
 Date facility became certified: 10/19/88
 Date facility began operating: 03/01/72
 Date facility ceased operating: 03/02/92
 Whether The Facility Is Grandfathered: Not reported
 Convenience Zone Where Facility Located: 0
 Convenience Zone Where Facility Located 2: 0
 Convenience Zone Where Facility Located 3: 0
 Convenience Zone Where Facility Located 4: 0
 Convenience Zone Where Facility Located 5: 0
 Convenience Zone Where Facility Located 6: 0
 Convenience Zone Where Facility Located 7: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

STATE SALVAGE INC. (Continued)

U001567256

Aluminum Beverage Containers Redeemed: AL
 Glass Beverage Containers Redeemed: GL
 Plastic Beverage Containers Redeemed: PL
 Other mat beverage containers redeemed: Not reported
 Refillable Beverage Containers Redeemed: Not reported

Certification Status: R
 Facility Phone Number: (310) 835-9109
 Date facility became certified: 02/20/92
 Date facility began operating: 03/02/92
 Date facility ceased operating: 12/01/95
 Whether The Facility Is Grandfathered: Not reported
 Convenience Zone Where Facility Located: 0
 Convenience Zone Where Facility Located 2: 0
 Convenience Zone Where Facility Located 3: 0
 Convenience Zone Where Facility Located 4: 0
 Convenience Zone Where Facility Located 5: 0
 Convenience Zone Where Facility Located 6: 0
 Convenience Zone Where Facility Located 7: 0
 Aluminum Beverage Containers Redeemed: AL
 Glass Beverage Containers Redeemed: GL
 Plastic Beverage Containers Redeemed: PL
 Other mat beverage containers redeemed: Not reported
 Refillable Beverage Containers Redeemed: Not reported

Certification Status: O
 Facility Phone Number: (310) 835-9109
 Date facility became certified: 11/24/95
 Date facility began operating: 12/01/95
 Date facility ceased operating: Still operating
 Whether The Facility Is Grandfathered: Not reported
 Convenience Zone Where Facility Located: 0
 Convenience Zone Where Facility Located 2: 0
 Convenience Zone Where Facility Located 3: 0
 Convenience Zone Where Facility Located 4: 0
 Convenience Zone Where Facility Located 5: 0
 Convenience Zone Where Facility Located 6: 0
 Convenience Zone Where Facility Located 7: 0
 Aluminum Beverage Containers Redeemed: AL
 Glass Beverage Containers Redeemed: GL
 Plastic Beverage Containers Redeemed: PL
 Other mat beverage containers redeemed: Not reported
 Refillable Beverage Containers Redeemed: Not reported

D10
SSW
1/8-1/4
697 ft.

ALAMEDA STREET LANDFILL
22700 SO ALAMEDA ST
CARSON, CA

SWF/LF S102360893
N/A

Site 1 of 4 in cluster D

Relative:
Lower

LF:
 Region: STATE
 Facility ID: 19-AQ-0013
 Facility Telephone: Not reported
 Facility Telephone 2: Not reported
 Lat/Long: 33.81667 / -118.22778
 Land Owner: Not reported
 Owner Name: Watson Land Company

Actual:
22 ft.

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

ALAMEDA STREET LANDFILL (Continued)

S102360893

Owner Telephone: 3107753486
Owner Address: Not reported
Owner Address2: 22010 So Wilmington Ave Ste 400
Owner City,St,Zip: Carson, CA 90745
Operator: Not reported
Operator Phone: Not reported
Operator Address: Not reported
Operator Address2: Not reported
Operator City,St,Zip: Not reported
Operator's Status: Closed
Permit Date: Not reported
Permit Status: Not reported
Permitted Acreage: \$0.00
Activity: Solid Waste Disposal Site
Regulation Status: Unpermitted
Land Use: Not reported
Landuse Name: Industrial,Commercial
GIS Source: Map
Category: Disposal
Unit Number: 01
Inspection Frequency: Annual
Accepted Waste: Not reported
Year Opened: Not reported
Year Closed: Not reported
Closure Date: Not reported
Closure Type: Not reported
Closure Approve: Not reported
Disposal Acreage: \$0.00
Status: Not reported
Swisnumber: 19-AQ-0013
Aka: Not reported
Type Of Waste: Not reported
Disposal Area: Not reported
SWFP Date: Not reported
WDR Number: Not reported
Dates Operation: Not reported
Dt Of Field Units: Not reported
Surface Condition: Not reported
Landfill Gas: Not reported
Leachate: Not reported
Emrgncy Response: Not reported
Lea Date: Not reported
Restrictions: Not reported
Fill Area: Not reported
Type Of Refuse: Not reported
Avg Depth Of Fill: Not reported
Addtl Expansion Area: Not reported
Site Size: Not reported
Site Type: Not reported
Site Description: Not reported
Reassess Site: Not reported
Location: Not reported
Parcel Num: Not reported
Issue & Observations: Not reported
Other Observations: Not reported
Date: Not reported
Address: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

ALAMEDA STREET LANDFILL (Continued)

S102360893

Prep By: Not reported
DOHS Number: Not reported
CUP Number: Not reported
CIWMB: Not reported
Program Type: Not reported
Public Notice: Not reported
PERMTIER: Not reported
Recommendations: Not reported
Othr Recommendation: Not reported
Sig. Change Since Last Visit: Not reported
Priority For Site Assessment: Not reported
Permitted Throughput with Units: Not reported
Actual Throughput with Units: Not reported
Permitted Capacity with Units: Not reported
Remaining Capacity: Not reported
Remaining Capacity with Units: Not reported
Last Waste Tire Inspection Count: Not reported
Last Waste Tire Inspection Date: Not reported
Original Waste Tire Count: Not reported
Original Waste Tire Count Date: Not reported
Explanation: Not reported
No Further Action: Not reported
Issues & Observations: Not reported

D11
SSW
1/8-1/4
697 ft.

ALAMEDA ST SAN LDFL
22700 S ALAMEDA ST
CARSON, CA 90810

CERCLIS 1000297229
FINDS CAD980636393

Site 2 of 4 in cluster D

Relative:
Lower

CERCLIS:
Site ID: 0901806
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: ESI Ongoing

Actual:
22 ft.

CERCLIS Site Contact Name(s):

Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

Contact Name: Dawn Richmond
Contact Tel: (415) 972-3097
Contact Title: Site Assessment Manager (SAM)

Contact Name: Dan McMIndes
Contact Tel: (415) 972-3401
Contact Title: Site Assessment Manager (SAM)

CERCLIS Site Alias Name(s):

Alias Name: ALAMEDA ST DUMP
Alias Address: ALAMEDA ST N OF WINCHESTER
CARSON, CA 90810

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

ALAMEDA ST SAN LDFL (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000297229

Alias Name: ALAMEDA ST PUBLIC DUMP
 Alias Address: 22700 ALAMEDA ST
 CARSON, CA 90810
 Site Description: new esi per 8/03 mtg with jj

CERCLIS Assessment History:

Action: DISCOVERY
 Date Started: Not reported
 Date Completed: 11/01/1979
 Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
 Date Started: Not reported
 Date Completed: 11/01/1984
 Priority Level: Low

Action: PRELIMINARY ASSESSMENT
 Date Started: Not reported
 Date Completed: 12/21/1988
 Priority Level: Low

Action: SITE INSPECTION
 Date Started: Not reported
 Date Completed: 07/06/1991
 Priority Level: High

Action: SITE REASSESSMENT
 Date Started: Not reported
 Date Completed: 06/27/2001
 Priority Level: High

FINDS:

Other Pertinent Environmental Activity Identified at Site

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

**D12
 SSW
 1/8-1/4
 697 ft.**

**ALAMEDA STREET
 22700 SOUTH ALAMEDA STREET
 CARSON, CA**

**WMUDS/SWAT S104156307
 N/A**

**Relative:
 Lower**

Site 3 of 4 in cluster D

WMUDS/SWAT:
 Edit Date: Not reported
 Complexity: Not reported
 Primary Waste: Not reported
 Primary Waste Type: Not reported

**Actual:
 22 ft.**

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

ALAMEDA STREET (Continued)

S104156307

Secondary Waste: Not reported
Secondary Waste Type: Not reported
Base Meridian: Not reported
NPID: Not reported
Tonnage: 0
Regional Board ID: Not reported
Municipal Solid Waste: False
Superorder: False
Open To Public: False
Waste List: False
Agency Type: Not reported
Agency Name: ALAMEDA STREET
Agency Department: Not reported
Agency Address: 2900 SOUTH ALAMEDA
Agency City,St,Zip: CARSON
Agency Contact: Not reported
Agency Telephone: Not reported
Land Owner Name: DRESSER, NETTIE CO. EXEC.
Land Owner Address: P.O. BOX 01736
Land Owner City,St,Zip: LOS ANGELES, CA 90001
Land Owner Contact: Not reported
Land Owner Phone: Not reported
Region: 4
Facility Type: Not reported
Facility Description: Not reported
Facility Telephone: Not reported
SWAT Facility Name: Not reported
Primary SIC: Not reported
Secondary SIC: Not reported
Comments: Not reported
Last Facility Editors: Not reported
Waste Discharge System: False
Solid Waste Assessment Test Program: True
Toxic Pits Cleanup Act Program: False
Resource Conservation Recovery Act: False
Department of Defence: False
Solid Waste Assessment Test Program: ALAMEDA STREET
Threat to Water Quality: Not reported
Sub Chapter 15: False
Regional Board Project Officer: R_N
Number of WMUDS at Facility: 1
Section Range: Not reported
RCRA Facility: Not reported
Waste Discharge Requirements: Not reported
Self-Monitoring Rept. Frequency: Not reported
Waste Discharge System ID: 4 190017NUR
Solid Waste Information ID: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

D13 **CASSIDY & CRISMAN-CARSON**
SSW **22700 SOUTH ALAMEDA**
1/8-1/4 **CARSON, CA**
697 ft.

WMUDS/SWAT **S104156337**
N/A

Site 4 of 4 in cluster D

Relative:
Lower

WMUDS/SWAT:

Actual:
22 ft.

Edit Date:	Not reported
Complexity:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Not reported
Agency Name:	CASSIDY & CRISMAN
Agency Department:	Not reported
Agency Address:	Not reported
Agency City,St,Zip:	Not reported
Agency Contact:	Not reported
Agency Telephone:	Not reported
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	CA
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	4
Facility Type:	Not reported
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	Not reported
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	CASSIDY & CRISMAN
Threat to Water Quality:	Not reported
Sub Chapter 15:	False
Regional Board Project Officer:	LT
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	4 190175NUR
Solid Waste Information ID:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

E14 **COMMERCIAL CARRIERS INC**
NNE **22440 ALAMEDA ST S**
1/8-1/4 **CARSON, CA 90810**
716 ft.

Site 1 of 14 in cluster E

HAZNET **S101582906**
LUST **N/A**
Cortese
CA FID UST
LOS ANGELES CO. HMS
CA WDS
SWEEPS UST

Relative:
Higher

Actual:
28 ft.

HAZNET:
 Gepaid: CAD981656184
 Contact: Not reported
 Telephone: 0000000000
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: PO BOX 138
 Mailing City,St,Zip: LONG BEACH, CA 908010000
 Gen County: Los Angeles
 TSD EPA ID: CAT080013352
 TSD County: Los Angeles
 Waste Category: Unspecified aqueous solution
 Disposal Method: Recycler
 Tons: .7923
 Facility County: Los Angeles

LUST:
 Region: STATE
 Case Type: Soil only
 Cross Street: 223RD
 Enf Type: Not reported
 Funding: Not reported
 How Discovered: Not reported
 How Stopped: Not reported
 Leak Cause: Not reported
 Leak Source: Not reported
 Global Id: T0603704930
 Stop Date: Not reported
 Confirm Leak: Not reported
 Workplan: Not reported
 Prelim Assess: Not reported
 Pollution Char: 1988-09-08 00:00:00
 Remed Plan: Not reported
 Remed Action: Not reported
 Monitoring: Not reported
 Close Date: 1989-05-30 00:00:00
 Discover Date: 1988-08-12 00:00:00
 Enforcement Dt: Not reported
 Release Date: 1988-09-08 00:00:00
 Review Date: 1989-05-30 00:00:00
 Enter Date: 1988-09-08 00:00:00
 MTBE Date: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Max MTBE GW ppb: Not reported
 Max MTBE Soil ppb: Not reported
 County: 19
 Org Name: Not reported
 Reg Board: Los Angeles Region
 Status: Case Closed
 Chemical: Diesel

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

COMMERCIAL CARRIERS INC (Continued)

S101582906

Contact Person: Not reported
Responsible Party: COMMERCIAL CARRIERS INC.
RP Address: P.O. BOX 138
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: YR
Staff Initials: JA
Lead Agency: Local Agency
Local Agency: 19000
Hydr Basin #: SAN FERNANDO VALLEY
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: R-10360
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: 6 UGTS WERE REMOVED... FUEL ISLAND REMOVED, DISCOVERED LOOSES PIPING AND SOIL
CONTAMINATION, ALSO DISCOVERED KEROSENE CONTAMINATION
OLD CASE #090888-01

LUST:

Region: 4
Staff: UNK
County: Los Angeles
Local Agency: 19000
Lead Agency: Local Agency
Case Type: Soil
Status: Case Closed
Substance: Diesel
Cross Street: 223RD
Global ID: T0603704930
Enforcement Type: Not reported
Date Leak Discovered: 8/12/1988
Date Leak Record Entered: 9/8/1988
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Not reported
Date Leak Stopped: Not reported
Date Confirmation Began: Not reported
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Approx. Dist To Production Well (ft): 2063.5177749148143506532585908
Abatement Method Used at the Site: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

COMMERCIAL CARRIERS INC (Continued)

S101582906

Source of Cleanup Funding: Not reported
Date Leak First Reported: 9/8/1988
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: 9/8/1988
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 5/30/1989
Date Case Last Changed on Database: 5/30/1989
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Regional Board: 04
Owner Contact: Not reported
Responsible Party: COMMERCIAL CARRIERS INC.
RP Address: P.O. BOX 138
Program: LUST
Lat/Long: 33.8224833 / -1
Local Agency Staff: Not reported
Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Local Case No: Not reported
Substance Quantity: Not reported
Assigned Name: Not reported
W Global ID: Not reported
Summary: 6 UGTS WERE REMOVED... FUEL ISLAND REMOVED, DISCOVERED LOOSES PIPING
AND SOIL CONTAMINATION, ALSO DISCOVERED KEROSENE CONTAMINATION
OLD CASE #090888-01

Cortese:
Region: CORTESE
Facility Addr2: 22440 ALAMEDA ST S

CA FID UST:
Facility ID: 19001812
Regulated By: UTNKA
Regulated ID: 00033979
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 8180000000
Mail To: Not reported
Mailing Address: BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: CARSON
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

COMMERCIAL CARRIERS INC (Continued)

S101582906

EPA ID: Not reported
Comments: Not reported
Status: Active

LOS ANGELES CO. HMS:

Region: LA
Facility Id: 010441-037038
Facility Status: Closed
Area: 22
Permit Number: 000337079
Permit Status: Closed
Facility Type: T0

Region: LA
Facility Id: 010441-010360
Facility Status: Removed
Area: 22
Permit Number: 00002056T
Permit Status: Removed
Facility Type: T0

Region: LA
Facility Id: 010441-047345
Facility Status: Permit
Area: 22
Permit Number: CGI016897
Permit Status: Permit
Facility Type: IS6

Region: LA
Facility Id: 010441-030393
Facility Status: OPEN
Area: 22
Permit Number: Not reported
Permit Status: Not reported
Facility Type: Not reported

CA WDS:

Facility ID: 4 19I016897
Facility Type: Other - Does not fall into the category of Municipal/Domestic,
Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status: Active - Any facility with a continuous or seasonal discharge that is
under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7
are assigned by the Regional Board
Subregion: 4
Facility Telephone: Not reported
Facility Contact: Marcusmo
Agency Name: MARCUS TRUCKING CO.
Agency Address: Not reported
Agency City,St,Zip: 0
Agency Contact: Not reported
Agency Telephone: Not reported
Agency Type: Private
SIC Code: 4213
SIC Code 2: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number
Database(s)

COMMERCIAL CARRIERS INC (Continued)

S101582906

Primary Waste: Stormwater Runoff
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: No reclamation requirements associated with this facility.
POTW: The facility is not a POTW.
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

SWEEPS UST:

Status: A
Comp Number: 10360
Number: 9
Board Of Equalization: 44-008824
Ref Date: 06-30-89
Act Date: Not reported
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-010360-000001
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: 6

Status: A
Comp Number: 10360
Number: 9
Board Of Equalization: 44-008824
Ref Date: 06-30-89
Act Date: Not reported
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-010360-000002
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

COMMERCIAL CARRIERS INC (Continued)

S101582906

Number Of Tanks: Not reported

Status: A
Comp Number: 10360
Number: 9
Board Of Equalization: 44-008824
Ref Date: 06-30-89
Act Date: Not reported
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-010360-000003
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 10360
Number: 9
Board Of Equalization: 44-008824
Ref Date: 06-30-89
Act Date: Not reported
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-010360-000004
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 10360
Number: 9
Board Of Equalization: 44-008824
Ref Date: 06-30-89
Act Date: Not reported
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-010360-000005
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 10360
Number: 9
Board Of Equalization: 44-008824

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

COMMERCIAL CARRIERS INC (Continued)

S101582906

Ref Date: 06-30-89
Act Date: Not reported
Created Date: 06-30-89
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-000-010360-000006
Actv Date: 06-30-89
Capacity: Not reported
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

**E15
NNE
1/8-1/4
716 ft.**

**COMMERCIAL CARRIERS, INC.
22440 S ALAMEDA ST
CARSON, CA 90801**

**HIST UST U001565819
N/A**

Site 2 of 14 in cluster E

**Relative:
Higher**

HIST UST:
Region: STATE
Facility ID: 00000033979
Tank Num: 001
Container Num: 1WHS
Year Installed: Not reported
Tank Capacity: 00000500
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

**Actual:
28 ft.**

Region: STATE
Facility ID: 00000033979
Tank Num: 002
Container Num: 2WHL
Year Installed: Not reported
Tank Capacity: 00000500
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EPA ID Number
EDR ID Number

COMMERCIAL CARRIERS, INC. (Continued)

U001565819

Region: STATE
Facility ID: 00000033979
Tank Num: 003
Container Num: 3D21
Year Installed: Not reported
Tank Capacity: 00010000
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

Region: STATE
Facility ID: 00000033979
Tank Num: 004
Container Num: 4D22
Year Installed: 1970
Tank Capacity: 00010000
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

Region: STATE
Facility ID: 00000033979
Tank Num: 005
Container Num: 5D23
Year Installed: 1970
Tank Capacity: 00010000
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

COMMERCIAL CARRIERS, INC. (Continued)

U001565819

Region: STATE
Facility ID: 00000033979
Tank Num: 006
Container Num: 6GU
Year Installed: 1970
Tank Capacity: 00002000
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

Region: STATE
Facility ID: 00000033979
Tank Num: 007
Container Num: 7WO
Year Installed: Not reported
Tank Capacity: 00000500
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: None
Contact Name: LOYD E. SHOCKLEY, MAINT. SUPT.
Telephone: 2138357300
Owner Name: COMMERCIAL CARRIERS, INC. AUTO
Owner Address: 22440 S. ALAMEDA ST
Owner City,St,Zip: LONG BEACH, CA 90801

E16 PAUL TRUCKING COMPANY
NNE 22440 S ALAMEDA ST
1/8-1/4 LONG BEACH, CA 90810
716 ft.

UST U004049461
N/A

**Relative:
Higher**

Site 3 of 14 in cluster E

UST:
Region: STATE
Local Agency: Long Beach, Los Angeles County
Facility ID: 25906

**Actual:
28 ft.**

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

E17 **PORT TERMINAL TRANSPORT**
NNE **22440 S ALAMEDA**
1/8-1/4 **CARSON, CA 90810**
716 ft.

RCRA-SQG **1000840819**
FINDS **CAD981656184**

Site 4 of 14 in cluster E

Relative:
Higher

RCRAInfo:
 Owner: RYDER SYSTEMS INC
 (310) 835-7300
 EPA ID: CAD981656184
 Contact: MARTY BOOTS
 (310) 835-7300

 Classification: Small Quantity Generator
 TSDF Activities: Not reported

 Violation Status: No violations found

Actual:
28 ft.

FINDS:

Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

E18 **MATLACK INC**
NNE **22422 ALAMEDA**
1/8-1/4 **LONG BEACH, CA 90810**
784 ft.

Cortese **S105024518**
 N/A

Site 5 of 14 in cluster E

Relative:
Higher

Cortese:
 Region: CORTESE
 Facility Addr2: Not reported

Actual:
28 ft.

E19 **HERTZ EQUIPMENT RENTAL 9269-00 CASON SERVICE PUMP**
NNE **22422 SOUTH ALAMEDA STREET**
1/8-1/4 **CARSON, CA**
784 ft.

AST **A100271629**
 N/A

Site 6 of 14 in cluster E

Relative:
Higher

AST:
 Owner: THE HERTZ CORPORATION
 Total Gallons: 6850

Actual:
28 ft.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

E20 **MATLACK, INC. (BRITE-SOL)**
NNE **22422 S ALAMEDA ST**
1/8-1/4 **LONG BEACH, CA 90810**
784 ft.

HIST UST **U001566244**
SWEEPS UST **N/A**

Site 7 of 14 in cluster E

Relative:
Higher

HIST UST:

Actual:
28 ft.

Region: STATE
 Facility ID: 00000008100
 Tank Num: 001
 Container Num: 11
 Year Installed: 1945
 Tank Capacity: 00006900
 Facility Type: Other
 Other Type: TERMINAL
 Total Tanks: 0008
 Tank Used for: PRODUCT
 Type of Fuel: DIESEL
 Tank Construction: 1/4 inches
 Leak Detection: Stock Inventor
 Contact Name: MIKE WELSON (TERMINAL MGR)
 Telephone: 2138342558
 Owner Name: MATLACK, INC
 Owner Address: 10 W. BALTIMORE AVE
 Owner City,St,Zip: LANSLOWNE, PA 19050

Region: STATE
 Facility ID: 00000008100
 Tank Num: 002
 Container Num: 12
 Year Installed: 1945
 Tank Capacity: 00006900
 Facility Type: Other
 Other Type: TERMINAL
 Total Tanks: 0008
 Tank Used for: PRODUCT
 Type of Fuel: DIESEL
 Tank Construction: 1/4 inches
 Leak Detection: Stock Inventor
 Contact Name: MIKE WELSON (TERMINAL MGR)
 Telephone: 2138342558
 Owner Name: MATLACK, INC
 Owner Address: 10 W. BALTIMORE AVE
 Owner City,St,Zip: LANSLOWNE, PA 19050

Region: STATE
 Facility ID: 00000008100
 Tank Num: 003
 Container Num: 13
 Year Installed: 1953
 Tank Capacity: 00008116
 Facility Type: Other
 Other Type: TERMINAL
 Total Tanks: 0008
 Tank Used for: PRODUCT
 Type of Fuel: DIESEL
 Tank Construction: 1/4 inches
 Leak Detection: Stock Inventor
 Contact Name: MIKE WELSON (TERMINAL MGR)

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MATLACK, INC. (BRITE-SOL) (Continued)

U001566244

Telephone: 2138342558
Owner Name: MATLACK, INC
Owner Address: 10 W. BALTIMORE AVE
Owner City,St,Zip: LANSDOWNE, PA 19050

Region: STATE
Facility ID: 00000008100
Tank Num: 004
Container Num: 14
Year Installed: 1945
Tank Capacity: 00000600
Facility Type: Other
Other Type: TERMINAL
Total Tanks: 0008
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: 1/4 inches
Leak Detection: Visual
Contact Name: MIKE WELSON (TERMINAL MGR)
Telephone: 2138342558
Owner Name: MATLACK, INC
Owner Address: 10 W. BALTIMORE AVE
Owner City,St,Zip: LANSDOWNE, PA 19050

Region: STATE
Facility ID: 00000008100
Tank Num: 005
Container Num: 15
Year Installed: 1979
Tank Capacity: 00010000
Facility Type: Other
Other Type: TERMINAL
Total Tanks: 0008
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 1/4 inches
Leak Detection: Visual
Contact Name: MIKE WELSON (TERMINAL MGR)
Telephone: 2138342558
Owner Name: MATLACK, INC
Owner Address: 10 W. BALTIMORE AVE
Owner City,St,Zip: LANSDOWNE, PA 19050

Region: STATE
Facility ID: 00000008100
Tank Num: 006
Container Num: 16
Year Installed: 1979
Tank Capacity: 00010000
Facility Type: Other
Other Type: TERMINAL
Total Tanks: 0008
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 1/4 inches
Leak Detection: Visual
Contact Name: MIKE WELSON (TERMINAL MGR)

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MATLACK, INC. (BRITE-SOL) (Continued)

U001566244

Telephone: 2138342558
Owner Name: MATLACK, INC
Owner Address: 10 W. BALTIMORE AVE
Owner City,St,Zip: LANSDOWNE, PA 19050

Region: STATE
Facility ID: 00000008100
Tank Num: 007
Container Num: 17
Year Installed: 1945
Tank Capacity: 00002350
Facility Type: Other
Other Type: TERMINAL
Total Tanks: 0008
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual
Contact Name: MIKE WELSON (TERMINAL MGR)
Telephone: 2138342558
Owner Name: MATLACK, INC
Owner Address: 10 W. BALTIMORE AVE
Owner City,St,Zip: LANSDOWNE, PA 19050

Region: STATE
Facility ID: 00000008100
Tank Num: 008
Container Num: 18
Year Installed: 1945
Tank Capacity: 00002350
Facility Type: Other
Other Type: TERMINAL
Total Tanks: 0008
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual
Contact Name: MIKE WELSON (TERMINAL MGR)
Telephone: 2138342558
Owner Name: MATLACK, INC
Owner Address: 10 W. BALTIMORE AVE
Owner City,St,Zip: LANSDOWNE, PA 19050

SWEEPS UST:

Status: A
Comp Number: 8100
Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 11
Swrcb Tank Id: 19-060-008100-000001
Actv Date: 07-01-85
Capacity: 6900
Tank Use: M.V. FUEL

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

MATLACK, INC. (BRITE-SOL) (Continued)

EDR ID Number
EPA ID Number

Database(s)

U001566244

Stg: P
Content: DIESEL
Number Of Tanks: 7

Status: A
Comp Number: 8100
Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 12
Swrcb Tank Id: 19-060-008100-000002
Actv Date: 07-01-85
Capacity: 6900
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 8100
Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 13
Swrcb Tank Id: 19-060-008100-000003
Actv Date: 07-01-85
Capacity: 8116
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 8100
Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 14
Swrcb Tank Id: 19-060-008100-000004
Actv Date: 07-01-85
Capacity: 600
Tank Use: OIL
Stg: W
Content: WASTE OIL
Number Of Tanks: Not reported

Status: A
Comp Number: 8100

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MATLACK, INC. (BRITE-SOL) (Continued)

U001566244

Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 15
Swrcb Tank Id: 19-060-008100-000005
Actv Date: 07-01-85
Capacity: 10000
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 8100
Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 16
Swrcb Tank Id: 19-060-008100-000006
Actv Date: 07-01-85
Capacity: 10000
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 8100
Number: 9
Board Of Equalization: 44-013382
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 17
Swrcb Tank Id: 19-060-008100-000007
Actv Date: 07-01-85
Capacity: 2350
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

E21 **MATLACK INC**
NNE **22422 S ALAMEDA BLVD**
1/8-1/4 **LONG BEACH, CA 90810**
784 ft.

CA FID UST **S101629368**
 N/A

Site 8 of 14 in cluster E

Relative:
Higher

CA FID UST:
 Facility ID: 19000683
 Regulated By: UTNKA
 Regulated ID: 00008100
 Cortese Code: Not reported
 SIC Code: Not reported
 Facility Phone: 2138342558
 Mail To: Not reported
 Mailing Address: 22422 S ALAMEDA BLVD
 Mailing Address 2: Not reported
 Mailing City,St,Zip: CARSON 90810
 Contact: Not reported
 Contact Phone: Not reported
 DUNS Number: Not reported
 NPDES Number: Not reported
 EPA ID: Not reported
 Comments: Not reported
 Status: Active

Actual:
28 ft.

Facility ID: 19000683
 Regulated By: UTNKA
 Regulated ID: 00067287
 Cortese Code: Not reported
 SIC Code: Not reported
 Facility Phone: 2137753301
 Mail To: Not reported
 Mailing Address: 22422 S ALAMEDA
 Mailing Address 2: Not reported
 Mailing City,St,Zip: LONG BEACH 90810
 Contact: Not reported
 Contact Phone: Not reported
 DUNS Number: Not reported
 NPDES Number: Not reported
 EPA ID: Not reported
 Comments: Not reported
 Status: Active

E22 **BRITE-SOL CLEANING**
NNE **22422 S ALAMEDA**
1/8-1/4 **LONG BEACH, CA 90810**
784 ft.

FINDS **1000397795**
RCRA-LQG **CAD000625459**

Site 9 of 14 in cluster E

Relative:
Higher

FINDS:
 Other Pertinent Environmental Activity Identified at Site

Actual:
28 ft.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

BRITE-SOL CLEANING (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000397795

RCRAInfo:
 Owner: NOT REQUIRED
 (415) 555-1212
 EPA ID: CAD000625459
 Contact: Not reported
 Classification: Large Quantity Generator
 TSDF Activities: Not reported
 Violation Status: No violations found

**E23
 NNE
 1/8-1/4
 784 ft.**

**MATLACK TRUCKING
 22422 S ALAMEDA ST
 LONG BEACH, CA 90810**

**UST U004049080
 N/A**

Site 10 of 14 in cluster E

**Relative:
 Higher**

UST:
 Region: STATE
 Local Agency: Long Beach, Los Angeles County
 Facility ID: 124

**Actual:
 28 ft.**

**E24
 NNE
 1/8-1/4
 784 ft.**

**MATLACK INC
 22422 S ALAMEDA
 LONG BEACH, CA 90810**

**HAZNET S103953325
 SWEEPS UST N/A**

Site 11 of 14 in cluster E

**Relative:
 Higher**

HAZNET:
 Gepaid: CAD000625459
 Contact: MATLACK INC
 Telephone: 8006285225
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 22422 S ALAMEDA ST
 Mailing City,St,Zip: LONG BEACH, CA 908101946
 Gen County: Los Angeles
 TSD EPA ID: AZ9834818134
 TSD County: 0
 Waste Category: Other organic solids
 Disposal Method: Disposal, Land Fill
 Tons: 33.712
 Facility County: Los Angeles

Gepaid: CAD000625459
 Contact: MATLACK INC
 Telephone: 8006285225
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 22422 S ALAMEDA ST
 Mailing City,St,Zip: LONG BEACH, CA 908101946
 Gen County: Los Angeles
 TSD EPA ID: AZ9834818134
 TSD County: 0
 Waste Category: Other organic solids
 Disposal Method: Recycler

**Actual:
 28 ft.**

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

MATLACK INC (Continued)

S103953325

Tons: 33.712
Facility County: Los Angeles

Gepaid: CAD000625459
Contact: MATLACK INC
Telephone: 8006285225
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 22422 S ALAMEDA ST
Mailing City,St,Zip: LONG BEACH, CA 908101946
Gen County: Los Angeles
TSD EPA ID: AZD983481813
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Disposal, Land Fill
Tons: 97.7648
Facility County: Los Angeles

Gepaid: CAD000625459
Contact: MATLACK INC
Telephone: 8006285225
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 22422 S ALAMEDA ST
Mailing City,St,Zip: LONG BEACH, CA 908101946
Gen County: Los Angeles
TSD EPA ID: CAD099452708
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 4.1908
Facility County: Los Angeles

Gepaid: CAD000625459
Contact: MATLACK INC
Telephone: 8006285225
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 22422 S ALAMEDA ST
Mailing City,St,Zip: LONG BEACH, CA 908101946
Gen County: Los Angeles
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 0.3
Facility County: Los Angeles

[Click this hyperlink](#) while viewing on your computer to access 27 additional CA_HAZNET: record(s) in the EDR Site Report.

SWEEPS UST:

Status: A
Comp Number: 67287
Number: 9
Board Of Equalization: 44-013678
Ref Date: 07-01-85

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

MATLACK INC (Continued)

EDR ID Number
EPA ID Number

Database(s)

S103953325

Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 4
Swrcb Tank Id: 19-060-067287-000004
Actv Date: 07-01-85
Capacity: 500
Tank Use: OIL
Stg: W
Content: WASTE OIL
Number Of Tanks: Not reported

Status: A
Comp Number: 67287
Number: 9
Board Of Equalization: 44-013678
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 5
Swrcb Tank Id: 19-060-067287-000005
Actv Date: 07-01-85
Capacity: 5000
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 67287
Number: 9
Board Of Equalization: 44-013678
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 6
Swrcb Tank Id: 19-060-067287-000006
Actv Date: 07-01-85
Capacity: 5000
Tank Use: UNKNOWN
Stg: W
Content: Not reported
Number Of Tanks: Not reported

Status: A
Comp Number: 67287
Number: 9
Board Of Equalization: 44-013678
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 1
Swrcb Tank Id: 19-060-067287-000001
Actv Date: 07-01-85

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MATLACK INC (Continued)

EDR ID Number
 EPA ID Number

Database(s)

S103953325

Capacity: 6900
 Tank Use: M.V. FUEL
 Stg: P
 Content: DIESEL
 Number Of Tanks: 6

Status: A
 Comp Number: 67287
 Number: 9
 Board Of Equalization: 44-013678
 Ref Date: 07-01-85
 Act Date: Not reported
 Created Date: 02-29-88
 Tank Status: A
 Owner Tank Id: 2
 Swrcb Tank Id: 19-060-067287-000002
 Actv Date: 07-01-85
 Capacity: 6900
 Tank Use: M.V. FUEL
 Stg: P
 Content: DIESEL
 Number Of Tanks: Not reported

Status: A
 Comp Number: 67287
 Number: 9
 Board Of Equalization: 44-013678
 Ref Date: 07-01-85
 Act Date: Not reported
 Created Date: 02-29-88
 Tank Status: A
 Owner Tank Id: 3
 Swrcb Tank Id: 19-060-067287-000003
 Actv Date: 07-01-85
 Capacity: 8000
 Tank Use: M.V. FUEL
 Stg: P
 Content: DIESEL
 Number Of Tanks: Not reported

**E25
 NNE
 1/8-1/4
 784 ft.**

**MATLACK INC
 22422 S ALAMEDA BLVD
 CARSON, CA 90810**

**SWEEPS UST S106929212
 N/A**

Site 12 of 14 in cluster E

**Relative:
 Higher**

SWEEPS UST:
 Status: A
 Comp Number: 124
 Number: 1
 Board Of Equalization: 44-007383
 Ref Date: 03-28-91
 Act Date: 03-28-91
 Created Date: 06-30-89
 Tank Status: A
 Owner Tank Id: 1
 Swrcb Tank Id: 19-000-000124-000001
 Actv Date: 03-28-91

**Actual:
 28 ft.**

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MATLACK INC (Continued)

EDR ID Number
 EPA ID Number

Database(s)

S106929212

Capacity: 10000
 Tank Use: M.V. FUEL
 Stg: P
 Content: REG UNLEADED
 Number Of Tanks: 2

Status: A
 Comp Number: 124
 Number: 1
 Board Of Equalization: 44-007383
 Ref Date: 03-28-91
 Act Date: 03-28-91
 Created Date: 06-30-89
 Tank Status: A
 Owner Tank Id: 2
 Swrcb Tank Id: 19-000-000124-000002
 Actv Date: 03-28-91
 Capacity: 10000
 Tank Use: M.V. FUEL
 Stg: P
 Content: DIESEL
 Number Of Tanks: Not reported

E26
NNE
1/8-1/4
784 ft.

MATLACK, INC
22422 S ALAMEDA ST
LONG BEACH, CA 90810

HIST UST **U001566243**
N/A

Site 13 of 14 in cluster E

Relative:
Higher

Actual:
28 ft.

HIST UST:
 Region: STATE
 Facility ID: 00000067287
 Tank Num: 001
 Container Num: 1
 Year Installed: Not reported
 Tank Capacity: 00006900
 Facility Type: Other
 Other Type: TRUCKING
 Total Tanks: 0007
 Tank Used for: WASTE
 Type of Fuel: 4
 Tank Construction: Unkown inches
 Leak Detection: Stock Inventor
 Contact Name: MIKE CANDELARIA
 Telephone: 2137753301
 Owner Name: MATLACK, INC. WESTERN DIVISIO
 Owner Address: 1450B ENEA CIRCLE, SUITE
 Owner City,St,Zip: CONCORD, CA 94520

Region: STATE
 Facility ID: 00000067287
 Tank Num: 002
 Container Num: 2
 Year Installed: Not reported
 Tank Capacity: 00006900
 Facility Type: Other
 Other Type: TRUCKING
 Total Tanks: 0007

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

MATLACK, INC (Continued)

EDR ID Number
EPA ID Number

Database(s)

U001566243

Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: MIKE CANDELARIA
Telephone: 2137753301
Owner Name: MATLACK, INC. WESTERN DIVISIO
Owner Address: 1450B ENEA CIRCLE, SUITE
Owner City,St,Zip: CONCORD, CA 94520

Region: STATE

Facility ID: 00000067287

Tank Num: 003

Container Num: 3

Year Installed: Not reported

Tank Capacity: 00008000

Facility Type: Other

Other Type: TRUCKING

Total Tanks: 0007

Tank Used for: PRODUCT

Type of Fuel: DIESEL

Tank Construction: Not reported

Leak Detection: Stock Inventor

Contact Name: MIKE CANDELARIA

Telephone: 2137753301

Owner Name: MATLACK, INC. WESTERN DIVISIO

Owner Address: 1450B ENEA CIRCLE, SUITE

Owner City,St,Zip: CONCORD, CA 94520

Region: STATE

Facility ID: 00000067287

Tank Num: 004

Container Num: 4

Year Installed: Not reported

Tank Capacity: 00000500

Facility Type: Other

Other Type: TRUCKING

Total Tanks: 0007

Tank Used for: WASTE

Type of Fuel: WASTE OIL

Tank Construction: Not reported

Leak Detection: None

Contact Name: MIKE CANDELARIA

Telephone: 2137753301

Owner Name: MATLACK, INC. WESTERN DIVISIO

Owner Address: 1450B ENEA CIRCLE, SUITE

Owner City,St,Zip: CONCORD, CA 94520

Region: STATE

Facility ID: 00000067287

Tank Num: 005

Container Num: 5

Year Installed: Not reported

Tank Capacity: 00005000

Facility Type: Other

Other Type: TRUCKING

Total Tanks: 0007

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

MATLACK, INC (Continued)

U001566243

Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None
Contact Name: MIKE CANDELARIA
Telephone: 2137753301
Owner Name: MATLACK, INC. WESTERN DIVISIO
Owner Address: 1450B ENEA CIRCLE, SUITE
Owner City,St,Zip: CONCORD, CA 94520

Region: STATE
Facility ID: 00000067287
Tank Num: 006
Container Num: 6
Year Installed: Not reported
Tank Capacity: 00005000
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007

Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None
Contact Name: MIKE CANDELARIA
Telephone: 2137753301
Owner Name: MATLACK, INC. WESTERN DIVISIO
Owner Address: 1450B ENEA CIRCLE, SUITE
Owner City,St,Zip: CONCORD, CA 94520

Region: STATE
Facility ID: 00000067287
Tank Num: 007
Container Num: 7
Year Installed: Not reported
Tank Capacity: 00001200
Facility Type: Other
Other Type: TRUCKING
Total Tanks: 0007

Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: None
Contact Name: MIKE CANDELARIA
Telephone: 2137753301
Owner Name: MATLACK, INC. WESTERN DIVISIO
Owner Address: 1450B ENEA CIRCLE, SUITE
Owner City,St,Zip: CONCORD, CA 94520

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

E27 **WATSON LAND COMPANY NO. 1**
NNE **22400 SOUTH ALAMEDA**
1/8-1/4 **CARSON, CA**
858 ft.

WMUDS/SWAT **S104156383**
N/A

Site 14 of 14 in cluster E

Relative:
Higher

WMUDS/SWAT:

Actual:
28 ft.

Edit Date:	Not reported
Complexity:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Not reported
Agency Name:	WATSONLAND COMPANY
Agency Department:	Not reported
Agency Address:	Not reported
Agency City,St,Zip:	Not reported
Agency Contact:	Not reported
Agency Telephone:	Not reported
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	CA
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	4
Facility Type:	Not reported
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	Not reported
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	WATSONLAND COMPANY
Threat to Water Quality:	Not reported
Sub Chapter 15:	False
Regional Board Project Officer:	Not reported
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	4 190455NUR
Solid Waste Information ID:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

28
NNE
1/8-1/4
1125 ft.

JOHNS-MANVILLE-CARSON
22401 SOUTH ALAMEDA
CARSON, CA

WMUDS/SWAT

S104156317
N/A

Relative:
Higher

WMUDS/SWAT:

Actual:
28 ft.

Edit Date: 19950206
 Complexity: Not reported
 Primary Waste: Not reported
 Primary Waste Type: Not reported
 Secondary Waste: Not reported
 Secondary Waste Type: Not reported
 Base Meridian: Not reported
 NPID: Not reported
 Tonnage: 0
 Regional Board ID: 53-163
 Municipal Solid Waste: False
 Superorder: False
 Open To Public: False
 Waste List: False
 Agency Type: Not reported
 Agency Name: MANVILLE SALES CORPORATION
 Agency Department: MANAGER OF FACILITIES RESTORAT
 Agency Address: P.O. BOX 5108
 Agency City,St,Zip: DENVER 80217
 Agency Contact: MARVIN CLUMPUS
 Agency Telephone: 3039782790
 Land Owner Name: Not reported
 Land Owner Address: Not reported
 Land Owner City,St,Zip: CA
 Land Owner Contact: Not reported
 Land Owner Phone: Not reported
 Region: 4
 Facility Type: Not reported
 Facility Description: Not reported
 Facility Telephone: Not reported
 SWAT Facility Name: Not reported
 Primary SIC: Not reported
 Secondary SIC: Not reported
 Comments: RCVD: 227,000 TONS
 Last Facility Editors: CDCCDCCDC
 Waste Discharge System: False
 Solid Waste Assessment Test Program: True
 Toxic Pits Cleanup Act Program: False
 Resource Conservation Recovery Act: False
 Department of Defence: False
 Solid Waste Assessment Test Program: MANVILLE SALES CORPORATION
 Threat to Water Quality: Not reported
 Sub Chapter 15: False
 Regional Board Project Officer: DJP
 Number of WMUDS at Facility: 1
 Section Range: Not reported
 RCRA Facility: Not reported
 Waste Discharge Requirements: Not reported
 Self-Monitoring Rept. Frequency: Not reported
 Waste Discharge System ID: 4 190058NUR
 Solid Waste Information ID: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

29 **MATLACK INC**
NNE **22422 ALAMEDA BLVD S**
1/4-1/2 **CARSON, CA 90810**
1449 ft.

LUST **S104406546**
N/A

Relative:
Higher

LUST:

Actual:
28 ft.

Region: STATE
 Case Type: Soil only
 Cross Street: 223RD ST
 Enf Type: Not reported
 Funding: Not reported
 How Discovered: Tank Closure
 How Stopped: Not reported
 Leak Cause: UNK
 Leak Source: UNK
 Global Id: T0603702673
 Stop Date: 1991-02-07 00:00:00
 Confirm Leak: Not reported
 Workplan: Not reported
 Prelim Assess: 1991-08-01 00:00:00
 Pollution Char: Not reported
 Remed Plan: Not reported
 Remed Action: 1991-01-29 00:00:00
 Monitoring: 1994-12-22 00:00:00
 Close Date: 1996-06-26 00:00:00
 Discover Date: 1991-02-07 00:00:00
 Enforcement Dt: Not reported
 Release Date: 1991-08-01 00:00:00
 Review Date: 2001-02-05 00:00:00
 Enter Date: 1991-08-24 00:00:00
 MTBE Date: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Max MTBE GW ppb: Not reported
 Max MTBE Soil ppb: Not reported
 County: 19
 Org Name: Not reported
 Reg Board: Los Angeles Region
 Status: Case Closed
 Chemical: Diesel
 Contact Person: Not reported
 Responsible Party: MATLACK INC.
 RP Address: ONE ROLLINS PLAZA, P.O. BOX 8789, WILMINGTON, DE 19899 C
 Interim: Not reported
 Oversight Prgm: LUST
 MTBE Class: *
 MTBE Conc: 0
 MTBE Fuel: 0
 MTBE Tested: Not Required to be Tested.
 Staff: YR
 Staff Initials: JA
 Lead Agency: Regional Board
 Local Agency: 19000
 Hydr Basin #: SAN FERNANDO VALLEY
 Beneficial: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Work Suspended: Not reported
 Local Case #: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MATLACK INC (Continued)

S104406546

Case Number: I-00124
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Operator: MC KEE, JOHN J
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:

Region: 4
Staff: UNK
County: Los Angeles
Local Agency: 19000
Lead Agency: Regional Board
Case Type: Soil
Status: Case Closed
Substance: Diesel
Cross Street: 223RD ST
Global ID: T0603702673
Enforcement Type: Not reported
Date Leak Discovered: 2/7/1991
Date Leak Record Entered: 8/24/1991
How Leak Discovered: Tank Closure
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: UNK
Date Leak Stopped: 2/7/1991
Date Confirmation Began: Not reported
Operator: MC KEE, JOHN J
Water System: Not reported
Well Name: Not reported
Approx. Dist To Production Well (ft): 1995.7245293188522295456930427
Abatement Method Used at the Site: Excavate and Dispose
Source of Cleanup Funding: Excavate and Dispose
Date Leak First Reported: 8/1/1991
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 8/1/1991
Pollution Characterization Began: Not reported
Remediation Plan Submitted: Not reported
Remedial Action Underway: 1/29/1991
Post Remedial Action Monitoring Began: 12/22/1994
Date the Case was Closed: 6/26/1996
Date Case Last Changed on Database: 2/5/2001
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Regional Board: 04
Owner Contact: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MATLACK INC (Continued)

S104406546

Responsible Party: MATLACK INC.
 RP Address: ONE ROLLINS PLAZA, P.O. BOX 8789, WILMINGTON, DE 19899
 Program: LUST
 Lat/Long: 33.8228953 / -1
 Local Agency Staff: Not reported
 Beneficial Use: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Suspended: Not reported
 Local Case No: Not reported
 Substance Quantity: Not reported
 Assigned Name: Not reported
 W Global ID: Not reported
 Summary: Not reported

F30
North
1/4-1/2
1589 ft.

VENTURA TRANSFER COMPANY
2418 EAST 223RD STREET
LONG BEACH, CA 90810

LUST S107863292
N/A

Site 1 of 3 in cluster F

Relative:
Equal

LUST:
 Region: STATE
 Case Type: Undefined
 Cross Street: ALAMEDA STREET
 Enf Type: Not reported
 Funding: COSTRE
 How Discovered: UM
 How Stopped: Other Means
 Leak Cause: UNK
 Leak Source: D
 Global Id: T0603721950
 Stop Date: Not reported
 Confirm Leak: 2006-03-13 00:00:00
 Workplan: Not reported
 Prelim Assess: Not reported
 Pollution Char: Not reported
 Remed Plan: Not reported
 Remed Action: Not reported
 Monitoring: Not reported
 Close Date: Not reported
 Discover Date: 1998-11-24 00:00:00
 Enforcement Dt: Not reported
 Release Date: 2003-04-24 00:00:00
 Review Date: Not reported
 Enter Date: Not reported
 MTBE Date: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Max MTBE GW ppb: Not reported
 Max MTBE Soil ppb: Not reported
 County: 19
 Org Name: Not reported
 Reg Board: Los Angeles Region
 Status: Leak being confirmed
 Chemical: Diesel
 Contact Person: Not reported
 Responsible Party: STEVEN CLIFFORD

Actual:
27 ft.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

VENTURA TRANSFER COMPANY (Continued)

S107863292

RP Address: 2418 EAST 223RD STREET
 Interim: Not reported
 Oversight Prgm: LUST
 MTBE Class: *
 MTBE Conc: 0
 MTBE Fuel: 0
 MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
 Staff: YR
 Staff Initials: TS
 Lead Agency: Local Agency
 Local Agency: 19000
 Hydr Basin #: Not reported
 Beneficial: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Work Suspended: Not reported
 Local Case #: L#477372
 Case Number: Not reported
 Qty Leaked: Not reported
 Abate Method: Not reported
 Operator: Not reported
 Water System Name: Not reported
 Well Name: Not reported
 Distance To Lust: 0
 Waste Discharge Global ID: Not reported
 Waste Disch Assigned Name: Not reported
 Summary: Not reported

**F31
 North
 1/4-1/2
 1590 ft.**

**MANVILLE CORPORATION
 2420 EAST 223RD STREET
 CARSON, CA 90810**

**CA BOND EXP. PLAN
 RESPONSE
 DEED
 ENVIROSTOR
 HIST Cal-Sites**

**S100833315
 N/A**

Site 2 of 3 in cluster F

**Relative:
 Equal**

CA BOND EXP. PLAN:

**Actual:
 27 ft.**

Reponsible Party: RESPONSIBLE PARTY LEAD SITE CLEANUP WORKPLAN
 Project Revenue Source Company: Not reported
 Project Revenue Source Addr: Not reported
 Project Revenue Source City,St,Zip: Not reported
 Project Revenue Source Desc: The responsible party has paid for all remediation activities to date and is expected to continue. The RP provided DHS with \$50,000 advance funding for DHS' oversight and monitoring costs under the terms of the enforceable agreement signed in November, 1987. The \$50,000 in advance funds have been spent. DHS has budgeted \$50,000 for contractor assistance to DHS oversight/monitoring staff. DHS will recover 100 percent of direct costs plus staff costs related to the project.

Site Description: This 65-acre site was used from 1937 to 1982 to manufacture asbestos insulation products, cement and polyvinyl chloride pipe. The site is currently vacant but contains spilled and buried asbestos waste.

Hazardous Waste Desc: Numerous buried settling ponds and disposal pits which contain asbestos wastes exist throughout the site.

Threat To Public Health & Env: The primary threat is human exposure to a release of asbestos fibers. To preclude direct contact with the substances, the site is fenced and secured 24 hours a day.

Site Activity Status: Manville Corporation entered into an enforceable agreement with the Department in November, 1987 to conduct remedial investigation activities. A remedial investigation was conducted to define the nature and extent of contamination and to determine the type and extent of remedial measures necessary. A

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MANVILLE CORPORATION (Continued)

S100833315

feasibility study was approved July, 1988. A draft RAP is under review by DHS and is expected to be final by January, 1989.

RESPONSE:

Facility ID: 19320001
 Site Type: State Response
 Site Type Detail: State Response or NPL
 Acres: 16
 National Priorities List: NO
 Cleanup Oversight Agencies: SMBRP
 Lead Agency: SMBRP
 Lead Agency Description: Not reported
 Project Manager: SAFOUH SAYED
 Supervisor: Emad Yemut
 Division Branch: So Cal - Cypress
 Site Code: 300089
 Assembly: 55
 Senate: 28
 Special Program Status: Not reported
 Status: Certified / Operation & Maintenance
 Status Date: 1990-06-29 00:00:00
 Restricted Use: YES
 Funding: Responsible Party
 Latitude: 33.8242472222222
 Longitude: -118.234127777778
 Alias Name: 300089
 CAD060386596
 JOHNS-MANVILLE, CARSON
 19320001
 JOHNS-MANVILLE CORPORATION
 P41023
 Alias Type: Project Code (Site Code)
 EPA Identification Number
 PCode
 Envirostor ID Number
 Alternate Name
 Alternate Name
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: Certification of Remedial Action Plan (asbestos/underground storage tanks) by DHS. The Department and Manville Sales Corporation entered into a Consent Agreement on June 30, 1990 to restrict land use at Manville site. This deed was recorded in Los Angeles County Recorder on July 12, 1990. Amended deed restriction recorded 12/03/91. Facility identified via LA County Engineers files.
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Action Plan
 Completed Date: 1989-07-31 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Investigation / Feasibility Study
 Completed Date: 1989-05-31 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Certification
 Completed Date: 1990-06-29 00:00:00

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MANVILLE CORPORATION (Continued)

S100833315

Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Discovery
 Completed Date: 1981-02-15 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Deed Restriction / Land Use Covenant
 Completed Date: 1991-12-16 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Deed Restriction / Land Use Covenant
 Completed Date: 1990-07-12 00:00:00
 Confirmed: NONE SPECIFIED
 Confirmed Description: Not reported
 Future Area Name: PROJECT WIDE
 Future Sub Area Name: Not reported
 Future Document Type: Operations and Maintenance Plan
 Future Due Date: 2008
 Media Affected: SOIL
 Media Affected Desc: Soil
 Management Required: ASP, DAY, ELD, HOS, LUC, FEN, EX, NUSE, SCH, FOOD, RES, ASP, DAY, ELD, HOS, LUC, FEN, EX, M
 Management Required Desc: Asphalt cover not to be disturbed without approval
 Management Required Desc: Day care center prohibited
 Management Required Desc: Elder Care Center Prohibited
 Management Required Desc: Hospital use prohibited
 Management Required Desc: Land Use covenant
 Management Required Desc: Maintain Fencing to control access
 Management Required Desc: No Excavation or activities which disturb the soil at any depth without approval
 Management Required Desc: Notify prior to change in land use
 Management Required Desc: Public or private school for persons under 21 prohibited
 Management Required Desc: Raising of food prohibited
 Management Required Desc: Residence use prohibited
 Management Required Desc: Asphalt cover not to be disturbed without approval
 Management Required Desc: Day care center prohibited
 Management Required Desc: Elder Care Center Prohibited
 Management Required Desc: Hospital use prohibited
 Management Required Desc: Land Use covenant
 Management Required Desc: Maintain Fencing to control access
 Management Required Desc: No Excavation or activities which disturb the soil at any depth without approval
 Management Required Desc: Notify prior to change in land use
 Management Required Desc: Public or private school for persons under 21 prohibited
 Management Required Desc: Raising of food prohibited
 Management Required Desc: Residence use prohibited
 Potential: 40001
 Potential Description: Not reported
 Schedule Area Name: Not reported
 Schedule Sub Area Name: Not reported
 Schedule Document Type: Not reported
 Schedule Due Date: Not reported
 Schedule Revised Date: Not reported
 PastUse: UNKNOWN

DEED:
 Area: PROJECT WIDE
 Sub Area: Not reported
 Site Type: STATE RESPONSE
 Status: CERTIFIED / OPERATION & MAINTENANCE

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MANVILLE CORPORATION (Continued)

S100833315

Deed Date(s): 07/12/90

Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 12/16/91

ENVIROSTOR:

Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 16
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: SAFOUH SAYED
Supervisor: Emad Yemut
Division Branch: So Cal - Cypress
Facility ID: 19320001
Site Code: 300089
Assembly: 55
Senate: 28
Special Program: Not reported
Status: Certified / Operation & Maintenance
Status Date: 1990-06-29 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 33.8242472222222
Longitude: -118.234127777778
Alias Name: 300089
CAD060386596
JOHNS-MANVILLE, CARSON
19320001
JOHNS-MANVILLE CORPORATION
P41023
Alias Type: Project Code (Site Code)
EPA Identification Number
PCode
Envirostor ID Number
Alternate Name
Alternate Name
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Certification of Remedial Action Plan (asbestos/underground storage tanks) by DHS. The Department and Manville Sales Corporation entered into a Consent Agreement on June 30, 1990 to restrict land use at Manville site. This deed was recorded in Los Angeles County Recorder on July 12, 1990. Amended deed restriction recorded 12/03/91. Facility identified via LA County Engineers files.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 1989-07-31 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 1989-05-31 00:00:00

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MANVILLE CORPORATION (Continued)

S100833315

Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Certification
 Completed Date: 1990-06-29 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Discovery
 Completed Date: 1981-02-15 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Deed Restriction / Land Use Covenant
 Completed Date: 1991-12-16 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Deed Restriction / Land Use Covenant
 Completed Date: 1990-07-12 00:00:00
 Confirmed: NONE SPECIFIED
 Confirmed Description: Not reported
 Future Area Name: PROJECT WIDE
 Future Sub Area Name: Not reported
 Future Document Type: Operations and Maintenance Plan
 Future Due Date: 2008
 Media Affected: SOIL
 Media Affected Desc: Soil
 Management Required: ASP, DAY, ELD, HOS, LUC, FEN, EX, NUSE, SCH, FOOD, RES, ASP, DAY, ELD, HOS, LUC, FEN, EX, M
 Management Required Desc: Asphalt cover not to be disturbed without approval
 Management Required Desc: Day care center prohibited
 Management Required Desc: Elder Care Center Prohibited
 Management Required Desc: Hospital use prohibited
 Management Required Desc: Land Use covenant
 Management Required Desc: Maintain Fencing to control access
 Management Required Desc: No Excavation or activities which disturb the soil at any depth without approval
 Management Required Desc: Notify prior to change in land use
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 Management Required Desc: Raising of food prohibited
 Management Required Desc: Residence use prohibited
 Management Required Desc: Asphalt cover not to be disturbed without approval
 Management Required Desc: Day care center prohibited
 Management Required Desc: Elder Care Center Prohibited
 Management Required Desc: Hospital use prohibited
 Management Required Desc: Land Use covenant
 Management Required Desc: Maintain Fencing to control access
 Management Required Desc: No Excavation or activities which disturb the soil at any depth without approval
 Management Required Desc: Notify prior to change in land use
 Management Required Desc: Public or private school for persons under 21 prohibited
 Management Required Desc: Raising of food prohibited
 Management Required Desc: Residence use prohibited
 Potential: 40001
 Potential Description: Not reported
 Schedule Area Name: Not reported
 Schedule Sub Area Name: Not reported
 Schedule Document Type: Not reported
 Schedule Due Date: Not reported
 Schedule Revised Date: Not reported
 PastUse: UNKNOWN

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MANVILLE CORPORATION (Continued)

EDR ID Number
 EPA ID Number

Database(s)

S100833315

HISTORICAL CAL-SITES:

Facility ID: 19320001
 Region: 4
 Region Name: CYPRESS
 Branch: SB
 Branch Name: SO CAL - CYPRESS
 File Name: Not reported
 State Senate District: 06291990
 Status: COM - CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES
 IMPLEMENTED REMEDIATION CONTINUES
 Status Name: CERTIFIED / OPERATION & MAINTENANCE
 Lead Agency: DTSC
 Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
 Facility Type: RP
 Type Name: RESPONSIBLE PARTY
 NPL: Not Listed
 SIC Code: 32
 SIC Name: MANU - STONE, CLAY & GLASS PRODUCTS
 Access: Not reported
 Cortese: Not reported
 Hazardous Ranking Score: Not reported
 Date Site Hazard Ranked: Not reported
 Groundwater Contamination: Unknown
 Staff Member Responsible for Site: SSAYED
 Supervisor Responsible for Site: Not reported
 Region Water Control Board: Not reported
 Region Water Control Board Name: Not reported
 Lat/Long Direction: Not reported
 Lat/Long (dms): 0 0 0 / 0 0 0
 Lat/long Method: Not reported
 Lat/Long Description: Not reported
 State Assembly District Code: 55
 State Senate District Code: 28

[Click this hyperlink](#) while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

F32
North
1/4-1/2
1590 ft.

MANVILLE PLANT
2420 223RD ST E
CARSON, CA 90810

LUST **S104406548**
Cortese **N/A**

Site 3 of 3 in cluster F

Relative:
Equal

LUST:
 Region: STATE
 Case Type: Other ground water affected
 Cross Street: WILMINGTON AVE
 Enf Type: Not reported
 Funding: Federal
 How Discovered: Tank Closure
 How Stopped: Not reported
 Leak Cause: UNK
 Leak Source: UNK
 Global Id: T0603702687
 Stop Date: 1990-06-29 00:00:00
 Confirm Leak: Not reported
 Workplan: Not reported

Actual:
27 ft.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MANVILLE PLANT (Continued)

S104406548

Prelim Assess: 1990-05-25 00:00:00
 Pollution Char: 1990-06-15 00:00:00
 Remed Plan: Not reported
 Remed Action: Not reported
 Monitoring: Not reported
 Close Date: 1996-07-18 00:00:00
 Discover Date: 1990-06-29 00:00:00
 Enforcement Dt: Not reported
 Release Date: 1990-07-25 00:00:00
 Review Date: 1996-12-23 00:00:00
 Enter Date: 1990-09-26 00:00:00
 MTBE Date: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Max MTBE GW ppb: Not reported
 Max MTBE Soil ppb: Not reported
 County: 19
 Org Name: Not reported
 Reg Board: Los Angeles Region
 Status: Case Closed
 Chemical: Gasoline
 Contact Person: Not reported
 Responsible Party: MANVILLE SALES CORPORATION
 RP Address: P.O. BOX 5108 DENVER, COLORADO, 80217 D
 Interim: Not reported
 Oversight Prgm: LUST
 MTBE Class: *
 MTBE Conc: 0
 MTBE Fuel: 1
 MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
 Staff: YR
 Staff Initials: JA
 Lead Agency: Regional Board
 Local Agency: 19000
 Hydr Basin #: SAN FERNANDO VALLEY
 Beneficial: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Work Suspended: Not reported
 Local Case #: Not reported
 Case Number: I-00223
 Qty Leaked: Not reported
 Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
 Operator: CLUMPUS, MARVIN
 Water System Name: Not reported
 Well Name: Not reported
 Distance To Lust: 0
 Waste Discharge Global ID: Not reported
 Waste Disch Assigned Name: Not reported
 Summary: Not reported

LUST:

Region: 4
 Staff: UNK
 County: Los Angeles
 Local Agency: 19000

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MANVILLE PLANT (Continued)

EDR ID Number
 EPA ID Number

Database(s)

S104406548

Lead Agency:	Regional Board	
Case Type:	Groundwater	
Status:	Case Closed	
Substance:	Gasoline	
Cross Street:	WILMINGTON AVE	
Global ID:	T0603702687	
Enforcement Type:	Not reported	
Date Leak Discovered:	6/29/1990	
Date Leak Record Entered:	9/26/1990	
How Leak Discovered:	Tank Closure	
How Leak Stopped:	Not reported	
Cause of Leak:	UNK	
Leak Source:	UNK	
Date Leak Stopped:	6/29/1990	
Date Confirmation Began:	Not reported	
Operator:	CLUMPUS, MARVIN	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):	1148.4783970301480426412314408	
Abatement Method Used at the Site:	Excavate and Dispose	
Source of Cleanup Funding:	Excavate and Dispose	
Date Leak First Reported:	7/25/1990	
Preliminary Site Assessment Workplan Submitted:	Not reported	
Preliminary Site Assessment Began:	5/25/1990	
Pollution Characterization Began:	6/15/1990	
Remediation Plan Submitted:	Not reported	
Remedial Action Underway:	Not reported	
Post Remedial Action Monitoring Began:	Not reported	
Date the Case was Closed:	7/18/1996	
Date Case Last Changed on Database:	12/23/1996	
Enforcement Action Date:	Not reported	
Historical Max MTBE Date:	Not reported	
Hist Max MTBE Conc in Groundwater:	Not reported	
Hist Max MTBE Conc in Soil:	Not reported	
Significant Interim Remedial Action Taken:	Not reported	
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Regional Board:	04	
Owner Contact:	Not reported	
Responsible Party:	MANVILLE SALES CORPORATION	
RP Address:	P.O. BOX 5108 DENVER, COLORADO, 80217	
Program:	LUST	
Lat/Long:	33.8242963 / -1	
Local Agency Staff:	Not reported	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Local Case No:	Not reported	
Substance Quantity:	Not reported	
Assigned Name:	Not reported	
W Global ID:	Not reported	
Summary:	Not reported	

Cortese:
 Region: CORTESE

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MANVILLE PLANT (Continued)

EDR ID Number
 EPA ID Number

Facility Addr2: 2420 223RD ST E

S104406548

**G33
 NNW
 1/4-1/2
 1592 ft.**

**MANVILLE PLANT SITE
 2400 E. 223RD STREET
 CARSON ,CA, CA 90810**

**WMUDS/SWAT S104156409
 N/A**

Site 1 of 2 in cluster G

**Relative:
 Lower**

WMUDS/SWAT:

**Actual:
 26 ft.**

Edit Date: Not reported
 Complexity: Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
 Primary Waste: Solid Wastes
 Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
 Secondary Waste: Not reported
 Secondary Waste Type: Not reported
 Base Meridian: Not reported
 NPID: Not reported
 Tonnage: 0
 Regional Board ID: Not reported
 Municipal Solid Waste: False
 Superorder: False
 Open To Public: False
 Waste List: False
 Agency Type: Private
 Agency Name: 01 MANVILLE SALES CORP.
 Agency Department: Not reported
 Agency Address: P.O.BOX 5108
 Agency City,St,Zip: DENVER ,CO 80217
 Agency Contact: HUMAN RESOURCES
 Agency Telephone: 3039782330
 Land Owner Name: Not reported
 Land Owner Address: Not reported
 Land Owner City,St,Zip: Not reported
 Land Owner Contact: Not reported
 Land Owner Phone: Not reported
 Region: 4
 Facility Type: Solid Waste Site-Class III - Landfills for non hazardous solid wastes.
 Facility Description: Not reported
 Facility Telephone: 2135495330
 SWAT Facility Name: Not reported
 Primary SIC: 4953
 Secondary SIC: Not reported
 Comments: Not reported
 Last Facility Editors: Not reported
 Waste Discharge System: True
 Solid Waste Assessment Test Program: True
 Toxic Pits Cleanup Act Program: False
 Resource Conservation Recovery Act: False
 Department of Defence: False
 Solid Waste Assessment Test Program: Not reported
 Threat to Water Quality: Minor Threat to Water Quality. A violation of a regional board order

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MANVILLE PLANT SITE (Continued)

EDR ID Number
 EPA ID Number

Database(s)

S104156409

should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.

Sub Chapter 15:	True
Regional Board Project Officer:	RHN
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	No
Waste Discharge Requirements:	Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire.
Self-Monitoring Rept. Frequency:	Quarterly Submittal
Waste Discharge System ID:	4B192061002
Solid Waste Information ID:	Not reported

G34
North
1/4-1/2
1603 ft.

JOHNS-MANVILLE SALES CORP DEL
2430 E 223RD
LONG BEACH, CA 90810

RCRA-SQG 1000319391
FINDS CAD060386596
CERC-NFRAP

Site 2 of 2 in cluster G

Relative:
Lower

Actual:
26 ft.

RCRAInfo:
 Owner: NOT REQUIRED
 (415) 555-1212
 EPA ID: CAD060386596
 Contact: Not reported
 Classification: Small Quantity Generator
 TSDF Activities: Not reported
 Violation Status: Violations exist
 Regulation Violated: 262.10-12.A
 Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
 Date Violation Determined: 05/30/1984
 Actual Date Achieved Compliance: 12/03/1991
 Enforcement Action: WRITTEN INFORMAL
 Enforcement Action Date: 05/30/1984
 Penalty Type: Not reported

There are 1 violation record(s) reported at this site:

<u>Evaluation</u>	<u>Area of Violation</u>	<u>Date of Compliance</u>
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19911203

FINDS:

Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

JOHNS-MANVILLE SALES CORP DEL (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000319391

CERC-NFRAP:

Site ID: 0901475
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):

Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

Site Description: Not reported

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY
Date Started: Not reported
Date Completed: 12/01/1979
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 01/01/1984
Priority Level: Low

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 12/21/1988
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 03/22/1990
Priority Level: NFRAP (No Further Remedial Action Planned)

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 03/22/1990
Priority Level: Not reported

H35
NNW
1/4-1/2
1640 ft.

**CITY OF CARSON - ARCO
2384 223RD
CARSON, CA 90745**

**SLIC S105520913
N/A**

Site 1 of 2 in cluster H

Relative:
Lower

SLIC:
Region: 4
Facility Status: Site Assessment
SLIC: 0496C2
Substance: Not reported
Staff: SSH

Actual:
25 ft.

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

H36
 NNW
 1/4-1/2
 1640 ft.

2384 E. 223RD ST.
 CARSON, CA 90810

CHMIRS S105671565
 SLIC N/A

Site 2 of 2 in cluster H

Relative:
 Lower

CHMIRS:

Actual:
 25 ft.

OES Incident Number: 01-2256
 OES notification: 4/18/200107:00:34 AM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: No
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: Responsible Party
 Containment: Not reported
 What Happened: Not reported
 Type: Not reported
 Measure: Not reported
 Other: Not reported
 Date/Time: Not reported
 Year: 2001
 Agency: Arco Polypropylene
 Incident Date: 4/17/200112:00:00 AM
 Admin Agency: L. A. County Fire Prevention
 Amount: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

<p>Contained: Yes Site Type: Industrial Plant E Date: Not reported Substance: Nitrogen Dioxide Quantity Released: Not reported BBLS: 0 Cups: 0 CUFT: 0 Gallons: 0 Grams: 0 Pounds: 15 Liters: 0 Ounces: 0 Pints: 0 Quarts: 0 Sheen: 0 Tons: 0 Unknown: 0.000000 Description: Not reported Evacuations: 0 Number of Injuries: 0 Number of Fatalities: 0 Description:</p>	<p>An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.</p>
<p>OES Incident Number: 01-5411 OES notification: 9/23/200107:24:43 PM OES Date: Not reported OES Time: Not reported Incident Date: Not reported Date Completed: Not reported Property Use: Not reported Agency Id Number: Not reported Agency Incident Number: Not reported Time Notified: Not reported Time Completed: Not reported Surrounding Area: Not reported Estimated Temperature: Not reported Property Management: Not reported Special Studies 1: Not reported Special Studies 2: Not reported Special Studies 3: Not reported Special Studies 4: Not reported Special Studies 5: Not reported Special Studies 6: Not reported More Than Two Substances Involved?: Not reported Resp Agency Personel # Of Decontaminated: Not reported</p>	

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

Responding Agency Personnel # Of Injuries: Not reported
 Responding Agency Personnel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: No
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: Reporting Party
 Containment: Not reported
 What Happened: Not reported
 Type: Not reported
 Measure: Not reported
 Other: Not reported
 Date/Time: Not reported
 Year: 2001
 Agency: Arco Polypropylene
 Incident Date: 9/23/2001 12:00:00 AM
 Admin Agency: L. A. County Fire Prevention
 Amount: Not reported
 Contained: No
 Site Type: Industrial Plant
 E Date: Not reported
 Substance: Nitrogen Dioxide
 Quantity Released: Not reported
 BBLs: 0
 Cups: 0
 CUFT: 0
 Gallons: 0
 Grams: 0
 Pounds: 0
 Liters: 0
 Ounces: 0
 Pints: 0
 Quarts: 0
 Sheen: 0
 Tons: 0
 Unknown: 0.000000
 Description: Not reported
 Evacuations: 0
 Number of Injuries: 0
 Number of Fatalities: 0
 Description: An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

(Continued)

S105671565

and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.

OES Incident Number: 01-5685
OES notification: 10/8/200111:14:10 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: N/A
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 2001
Agency: Arco Polypropylene

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

(Continued)

S105671565

Incident Date:	10/8/200112:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	No
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	Nitrogen Dioxide
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0
Grams:	0
Pounds:	60
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0.000000
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	An emergency shut down due to shut down of feed from another plant.The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide.This release is a controlled flare.To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today.A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less.Planned unit shut down created this flaring.During the shut down of plant there was a release to the flare. This will continue for approximately ten hours.A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.
OES Incident Number:	01-5376
OES notification:	9/21/200108:43:13 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: No
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: Responsible Party
 Containment: Not reported
 What Happened: Not reported
 Type: Not reported
 Measure: Not reported
 Other: Not reported
 Date/Time: Not reported
 Year: 2001
 Agency: Arco Polypropylene
 Incident Date: 9/21/2001 12:00:00 AM
 Admin Agency: L. A. County Fire Prevention
 Amount: Not reported
 Contained: No
 Site Type: Industrial Plant
 E Date: Not reported
 Substance: Nitrogen Dioxide
 Quantity Released: Not reported
 BBLS: 0
 Cups: 0
 CUFT: 0
 Gallons: 0
 Grams: 0
 Pounds: 70
 Liters: 0
 Ounces: 0
 Pints: 0
 Quarts: 0
 Sheen: 0
 Tons: 0
 Unknown: 0.000000
 Description: Not reported
 Evacuations: 0
 Number of Injuries: 0
 Number of Fatalities: 0
 Description: An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor,

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.

OES Incident Number: 01-4514
 OES notification: 8/8/200107:09:20 AM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: No
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: N/A
 Containment: Not reported
 What Happened: Not reported
 Type: Not reported
 Measure: Not reported
 Other: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

<p>Date/Time: Not reported Year: 2001 Agency: Arco Poly Propylene Incident Date: 8/8/200112:00:00 AM Admin Agency: Not reported Amount: Not reported Contained: No Site Type: Industrial Plant E Date: Not reported Substance: Nitrogen Oxides Quantity Released: Not reported BBLS: 0 Cups: 0 CUFT: 0 Gallons: 0 Grams: 0 Pounds: 250 Liters: 0 Ounces: 0 Pints: 0 Quarts: 0 Sheen: 0 Tons: 0 Unknown: 0.000000 Description: Not reported Evacuations: 0 Number of Injuries: 0 Number of Fatalities: 0 Description:</p>	<p>An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.</p>
<p>OES Incident Number: 01-3069 OES notification: 5/27/200110:08:55 AM OES Date: Not reported OES Time: Not reported Incident Date: Not reported Date Completed: Not reported Property Use: Not reported Agency Id Number: Not reported Agency Incident Number: Not reported Time Notified: Not reported Time Completed: Not reported Surrounding Area: Not reported Estimated Temperature: Not reported Property Management: Not reported Special Studies 1: Not reported Special Studies 2: Not reported</p>	

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

(Continued)

S105671565

Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agency Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Reporting Party
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 2001
Agency: Arco
Incident Date: 5/26/2001 12:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported
Contained: Yes
Site Type: Refinery
E Date: Not reported
Substance: Nitrogen Oxide
Quantity Released: Not reported
BBLS: 0
Cups: 0
CUFT: 0
Gallons: 0
Grams: 0
Pounds: 200
Liters: 0
Ounces: 0
Pints: 0
Quarts: 0
Sheen: 0
Tons: 0
Unknown: 0.000000
Description: Not reported
Evacuations: 0
Number of Injuries: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

Number of Fatalities: 0
 Description: An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.

OES Incident Number: 02-0404
 OES notification: 1/22/200206:51:48 AM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: No
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: N/A
 Containment: Not reported
 What Happened: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2002
Agency:	Arco Polypropylene
Incident Date:	1/21/200212:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	No
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	Nitrogen Dioxide
Quantity Released:	Not reported
BBLs:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	200
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.
OES Incident Number:	02-3725
OES notification:	7/9/200212:55:13 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

(Continued)

S105671565

Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agency Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: N/A
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 2002
Agency: Arco Polypropylene LLC
Incident Date: 7/9/2002 12:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported
Contained: No
Site Type: Refinery
E Date: Not reported
Substance: Nitrogen Oxide
Quantity Released: Not reported
BBLS: 0
Cups: 0
CUFT: 0
Gallons: 0.000000
Grams: 0
Pounds: 55
Liters: 0
Ounces: 0
Pints: 0
Quarts: 0
Sheen: 0
Tons: 0
Unknown: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S105671565

Description: Not reported
 Evacuations: 0
 Number of Injuries: 0
 Number of Fatalities: 0
 Description: An emergency shut down due to shut down of feed from another plant. The release occurred during a controlled flaring following a plant shutdown with a reactor, venting to the safety flare where the burning creates nitrogen dioxide. This release is a controlled flare. To change filter, product is released to the flare which is creating the nitrogen dioxide. The flare is a controlled event and is expected to burn until 1600 hrs. today. A rapid plugging of the inlet filter on the compressor occurred, the filter was changed to prevent compressor failure. They bypassed to the flare while changing the filter. It should be contained in 2 hours or less. Planned unit shut down created this flaring. During the shut down of plant there was a release to the flare. This will continue for approximately ten hours. A planned shut down for maintenance caused this release. The flare will continue until about 1800 hours tonight.

SLIC:

Region: STATE
 Global Id: SLT43303301
 Assigned Name: SLIC SITE
 Lead Agency Contact: STEVEN HARIRI
 Lead Agency: LOS ANGELES RWQCB (REGION 4)
 Lead Agency Case Number: 0496C2
 Responsible Party: Not reported
 Recent Dtw: Not reported
 Substance Released: Not reported
Facility Status: Pollution Characterization

37
 NNE
 1/4-1/2
 1675 ft.

S ALAMEDA ST / EAST 223RD ST
 CARSON, CA

CHMIRS S105638225
 SLIC N/A

Relative:
 Higher

CHMIRS:
 OES Incident Number: 011046
 OES notification: Not reported
 OES Date: 11/26/1995
 OES Time: 11:10:12 AM
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agency Personnel # Of Decontaminated: Not reported

Actual:
 28 ft.

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

(Continued)

S105638225

Responding Agency Personnel # Of Injuries: Not reported
Responding Agency Personnel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: YES
Waterway: Not reported
Spill Site: Not reported
Cleanup By: la co health haz mat/priv cleanup co
Containment: Not reported
What Happened: Not reported
Type: PETROLEUM
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1995
Agency: la co fire
Incident Date: 2001 25Nov95
Admin Agency: Not reported
Amount: 75 gals 10 gals
Contained: NO
Site Type: RD
E Date: Not reported
Substance: diesel gas
Quantity Released: Not reported
BBLs: Not reported
Cups: Not reported
CUFT: Not reported
Gallons: Not reported
Grams: Not reported
Pounds: Not reported
Liters: Not reported
Ounces: Not reported
Pints: Not reported
Quarts: Not reported
Sheen: Not reported
Tons: Not reported
Unknown: Not reported
Description: a tanker-trailer rig overturned resulting in crash.
Evacuations: NO
Number of Injuries: NO
Number of Fatalities: NO
Description: Not reported

SLIC:

Region: STATE
Global Id: SL0603711571

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

(Continued)

S105638225

Assigned Name: SLICSITE
 Lead Agency Contact: SU HAN
 Lead Agency: LOS ANGELES RWQCB (REGION 4)
 Lead Agency Case Number: 0747G7
 Responsible Party: Not reported
 Recent Dtw: Not reported
 Substance Released: Not reported
Facility Status: Case Closed

**I38
 NW
 1/4-1/2
 2071 ft.**

**COONS TRUST PROPERTY
 2254 E. 223RD STREET
 CARSON, CA 90810**

**DEED S107616202
 VCP N/A
 ENVIROSTOR**

Site 1 of 3 in cluster I

**Relative:
 Lower**

DEED:
 Area: PROJECT WIDE
 Sub Area: Not reported
 Site Type: VOLUNTARY CLEANUP
 Status: CERTIFIED / OPERATION & MAINTENANCE
 Deed Date(s): 12/21/05

**Actual:
 23 ft.**

VCP:
 Facility ID: 70000172
 Site Type: Voluntary Cleanup
 Site Type Detail: Voluntary Cleanup
 Acres: 10
 National Priorities List: NO
 Cleanup Oversight Agencies: SMBRP
 Lead Agency: SMBRP
 Lead Agency Description: Not reported
 Project Manager: JACKIE SPISZMAN
 Supervisor: Greg Holmes
 Division Branch: So Cal - Cypress
 Site Code: 401261
 Assembly: 55
 Senate: 28
 Special Programs Code: Voluntary Cleanup Program
 Status: Certified / Operation & Maintenance
 Status Date: 2007-06-21 00:00:00
 Restricted Use: YES
 Funding: Responsible Party
 Lat/Long: 33.8242 / -118.2346
 Alias Name: 401261
 7315-007-901
 70000172
 Alias Type: Project Code (Site Code)
 Envirostor ID Number
 APN
 APN: 7315-007-901
 APN Description: Not reported
 Comments: Deed Restriction/Land use covenant was recorded. This is the final activity under the EOA.Land Use Restriction recorded with Los Angeles County on 12/21/2005.
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Environmental Oversight Agreement

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

COONS TRUST PROPERTY (Continued)

S107616202

Completed Date: 2005-02-14 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Deed Restriction / Land Use Covenant
Completed Date: 2005-12-21 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 2005-06-15 00:00:00
Confirmed: 30026,30028
Confirmed Description: 1,1,1-Trichloroethane (TCA)
Confirmed Description: Vinyl chloride
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: OTH, SOIL
Media Affected Desc: Other Groundwater affected (uses other than drinking water)
Media Affected Desc: Soil
Management Required: DAY, ELD, HOS, LUC, GW, NUSE, NDEV, NSUB, SCH, FOOD, RES
Management Required Desc: Day care center prohibited
Management Required Desc: Elder Care Center Prohibited
Management Required Desc: Hospital use prohibited
Management Required Desc: Land Use covenant
Management Required Desc: No groundwater extraction at any depth without approval
Management Required Desc: Notify prior to change in land use
Management Required Desc: Notify prior to development
Management Required Desc: Notify prior to subsurface work
Management Required Desc: Public or private school for persons under 21 prohibited
Management Required Desc: Raising of food prohibited
Management Required Desc: Residence use prohibited
Potential: 30026, 30028
Potential Description: 1,1,1-Trichloroethane (TCA)
Potential Description: Vinyl chloride
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: MANUFACTURING - CHEMICALS

ENVIROSTOR:

Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup
Acres: 10
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: JACKIE SPISZMAN
Supervisor: Greg Holmes
Division Branch: So Cal - Cypress
Facility ID: 70000172
Site Code: 401261
Assembly: 55
Senate: 28
Special Program: Voluntary Cleanup Program
Status: Certified / Operation & Maintenance

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

COONS TRUST PROPERTY (Continued)

S107616202

Status Date: 2007-06-21 00:00:00
 Restricted Use: YES
 Funding: Responsible Party
 Latitude: 33.8242
 Longitude: -118.2346
 Alias Name: 401261
 7315-007-901
 70000172
 Alias Type: Project Code (Site Code)
 Envirostor ID Number
 APN
 APN: 7315-007-901
 APN Description: Not reported
 Comments: Deed Restriction/Land use covenant was recorded. This is the final activity under the EOA.Land Use Restriction recorded with Los Angeles County on 12/21/2005.
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Environmental Oversight Agreement
 Completed Date: 2005-02-14 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Deed Restriction / Land Use Covenant
 Completed Date: 2005-12-21 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Preliminary Endangerment Assessment Report
 Completed Date: 2005-06-15 00:00:00
 Confirmed: 30026,30028
 Confirmed Description: 1,1,1-Trichloroethane (TCA)
 Confirmed Description: Vinyl chloride
 Future Area Name: Not reported
 Future Sub Area Name: Not reported
 Future Document Type: Not reported
 Future Due Date: Not reported
 Media Affected: OTH, SOIL
 Media Affected Desc: Other Groundwater affected (uses other than drinking water)
 Media Affected Desc: Soil
 Management Required: DAY, ELD, HOS, LUC, GW, NUSE, NDEV, NSUB, SCH, FOOD, RES
 Management Required Desc: Day care center prohibited
 Management Required Desc: Elder Care Center Prohibited
 Management Required Desc: Hospital use prohibited
 Management Required Desc: Land Use covenant
 Management Required Desc: No groundwater extraction at any depth without approval
 Management Required Desc: Notify prior to change in land use
 Management Required Desc: Notify prior to development
 Management Required Desc: Notify prior to subsurface work
 Management Required Desc: Public or private school for persons under 21 prohibited
 Management Required Desc: Raising of food prohibited
 Management Required Desc: Residence use prohibited
 Potential: 30026, 30028
 Potential Description: 1,1,1-Trichloroethane (TCA)
 Potential Description: Vinyl chloride
 Schedule Area Name: Not reported
 Schedule Sub Area Name: Not reported
 Schedule Document Type: Not reported
 Schedule Due Date: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

COONS TRUST PROPERTY (Continued)

EDR ID Number
EPA ID Number

Database(s)

Schedule Revised Date: Not reported
PastUse: MANUFACTURING - CHEMICALS

S107616202

**I39
NW
1/4-1/2
2071 ft.**

**CITY OF CARSON - SWAN PROPERTY
2254 223RD
CARSON, CA 90745**

**SLIC S105520911
N/A**

Site 2 of 3 in cluster I

**Relative:
Lower**

SLIC:
Region: 4
Facility Status: Site Assessment
SLIC: 0496C1
Substance: Not reported
Staff: SSH

**Actual:
23 ft.**

**I40
NW
1/4-1/2
2071 ft.**

**CITY OF CARSON - SWAN PROPERTY
2254 E. 223RD ST
CARSON, CA 90745**

**SLIC S106485586
N/A**

Site 3 of 3 in cluster I

**Relative:
Lower**

SLIC:
Region: STATE
Global Id: SLT43302300
Assigned Name: SLICSITE
Lead Agency Contact: STEVEN HARIRI
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number: 0496C1
Responsible Party: Not reported
Recent Dtw: Not reported
Substance Released: Not reported
Facility Status: Pollution Characterization

**Actual:
23 ft.**

**J41
NW
1/4-1/2
2175 ft.**

**CARSON REDEVELOPMENT AGEN
2233 223RD
LONG BEACH, CA 90810**

**Cortese S105024550
N/A**

Site 1 of 2 in cluster J

**Relative:
Lower**

Cortese:
Region: CORTESE
Facility Addr2: Not reported

**Actual:
23 ft.**

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

J42
NW
1/4-1/2
2175 ft.

CARSON REDEVELOPMENT AGENCY
2233 223RD ST E
CARSON, CA 90810

LOS ANGELES CO. HMS

LUST **S103317038**
N/A

Site 2 of 2 in cluster J

Relative:
Lower

LUST:

Actual:
23 ft.

Region: STATE
 Case Type: Soil only
 Cross Street: WILMINGTON AVE
 Enf Type: Not reported
 Funding: Not reported
 How Discovered: Tank Closure
 How Stopped: Not reported
 Leak Cause: UNK
 Leak Source: UNK
 Global Id: T0603705494
 Stop Date: 1997-12-09 00:00:00
 Confirm Leak: Not reported
 Workplan: Not reported
 Prelim Assess: Not reported
 Pollution Char: Not reported
 Remed Plan: Not reported
 Remed Action: Not reported
 Monitoring: Not reported
 Close Date: 1998-03-12 00:00:00
 Discover Date: 1998-02-18 00:00:00
 Enforcement Dt: Not reported
 Release Date: 1998-03-12 00:00:00
 Review Date: 1998-03-12 00:00:00
 Enter Date: 1998-03-19 00:00:00
 MTBE Date: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Max MTBE GW ppb: Not reported
 Max MTBE Soil ppb: Not reported
 County: 19
 Org Name: Not reported
 Reg Board: Los Angeles Region
 Status: Case Closed
 Chemical: Hydrocarbons
 Contact Person: Not reported
 Responsible Party: CITY OF CARSON
 RP Address: 701 E. CARSON ST., CARSON, CA 90745
 Interim: Not reported
 Oversight Prgm: LUST
 MTBE Class: *
 MTBE Conc: 0
 MTBE Fuel: 0
 MTBE Tested: Not Required to be Tested.
 Staff: YR
 Staff Initials: JA
 Lead Agency: Local Agency
 Local Agency: 19000
 Hydr Basin #: SAN FERNANDO VALLEY
 Beneficial: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Work Suspended: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

CARSON REDEVELOPMENT AGENCY (Continued)

S103317038

Local Case #: Not reported
 Case Number: R-25205
 Qty Leaked: Not reported
 Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site, Other
 Operator: ADOLFO REYES
 Water System Name: Not reported
 Well Name: Not reported
 Distance To Lust: 0
 Waste Discharge Global ID: Not reported
 Waste Disch Assigned Name: Not reported
 Summary: Not reported

LUST:

Region: 4
 Staff: UNK
 County: Los Angeles
 Local Agency: 19000
 Lead Agency: Local Agency
 Case Type: Soil
 Status: Case Closed
 Substance: Hydrocarbons
 Cross Street: WILMINGTON AVE
 Global ID: T0603705494
 Enforcement Type: Not reported
 Date Leak Discovered: 2/18/1998
 Date Leak Record Entered: 3/19/1998
 How Leak Discovered: Tank Closure
 How Leak Stopped: Not reported
 Cause of Leak: UNK
 Leak Source: UNK
 Date Leak Stopped: 12/9/1997
 Date Confirmation Began: Not reported
 Operator: ADOLFO REYES
 Water System: Not reported
 Well Name: Not reported
 Approx. Dist To Production Well (ft): 757.44081145757655142998880675
 Abatement Method Used at the Site: EDOT
 Source of Cleanup Funding: EDOT
 Date Leak First Reported: 3/12/1998
 Preliminary Site Assessment Workplan Submitted: Not reported
 Preliminary Site Assessment Began: Not reported
 Pollution Characterization Began: Not reported
 Remediation Plan Submitted: Not reported
 Remedial Action Underway: Not reported
 Post Remedial Action Monitoring Began: Not reported
 Date the Case was Closed: 3/12/1998
 Date Case Last Changed on Database: 3/12/1998
 Enforcement Action Date: Not reported
 Historical Max MTBE Date: Not reported
 Hist Max MTBE Conc in Groundwater: Not reported
 Hist Max MTBE Conc in Soil: Not reported
 Significant Interim Remedial Action Taken: Not reported
 GW Qualifier: Not reported
 Soil Qualifier: Not reported
 Organization: Not reported
 Regional Board: 04

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

CARSON REDEVELOPMENT AGENCY (Continued)

S103317038

Owner Contact: Not reported
 Responsible Party: CITY OF CARSON
 RP Address: 701 E. CARSON ST., CARSON, CA 90745
 Program: LUST
 Lat/Long: 33.8244093 / -1
 Local Agency Staff: Not reported
 Beneficial Use: Not reported
 Priority: Not reported
 Cleanup Fund Id: Not reported
 Suspended: Not reported
 Local Case No: Not reported
 Substance Quantity: Not reported
 Assigned Name: Not reported
 W Global ID: Not reported
 Summary: Not reported

LOS ANGELES CO. HMS:

Region: LA
 Facility Id: 008455-025205
 Facility Status: Removed
 Area: 22
 Permit Number: 000206621
 Permit Status: Removed
 Facility Type: T0

**43
 SSW
 1/4-1/2
 2312 ft.**

**TEXACO
 232000 S. ALAMEDA
 CARSON, CA**

**Notify 65 S100178415
 N/A**

**Relative:
 Lower**

Notify 65:
 Date Reported: Not reported
 Staff Initials: Not reported
 Board File Number: Not reported
 Facility Type: Not reported
 Discharge Date: Not reported
 Incident Description: Not reported

**Actual:
 23 ft.**

**K44
 NW
 1/4-1/2
 2330 ft.**

**COMIER CHEVROLET
 2201 EAST 223RD STREET
 CARSON, CA 90810**

**LUST S108086994
 N/A**

**Relative:
 Lower**

Site 1 of 3 in cluster K

LUST:
 Region: STATE
 Case Type: Undefined
 Cross Street: WILMINGTON
 Enf Type: Not reported
 Funding: COSTRE
 How Discovered: Tank Closure
 How Stopped: Close Tank
 Leak Cause: Not reported
 Leak Source: D,
 Global Id: T0603735939
 Stop Date: Not reported

**Actual:
 23 ft.**

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

COMIER CHEVROLET (Continued)

S108086994

Confirm Leak: 2006-10-05 00:00:00
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported
Discover Date: 2005-11-21 00:00:00
Enforcement Dt: Not reported
Release Date: 2006-01-10 00:00:00
Review Date: Not reported
Enter Date: Not reported
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 19
Org Name: Not reported
Reg Board: Los Angeles Region
Status: Leak being confirmed
Chemical: 12035,80
Contact Person: Not reported
Responsible Party: DAVID BOYD
RP Address: PO BOX 1468
Interim: Not reported
Oversight Prgm: LOCNL
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: YR
Staff Initials: MRR
Lead Agency: Local Agency
Local Agency: 19000
Hydr Basin #: Not reported
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: 005859-006073
Case Number: Not reported
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

K45
NW
 1/4-1/2
 2330 ft.

CORMIER CHEVROLET
2201 E. 223RD ST
LOS ANGELES, CA

SLIC **S106485640**
N/A

Site 2 of 3 in cluster K

Relative:
Lower

SLIC:

Actual:
23 ft.

Region: STATE
 Global Id: SLT43378376
 Assigned Name: SLICSITE
 Lead Agency Contact: SLIC - UNASSIGNED
 Lead Agency: LOS ANGELES RWQCB (REGION 4)
 Lead Agency Case Number: 0613
 Responsible Party: Not reported
 Recent Dtw: Not reported
 Substance Released: Not reported
Facility Status: Case Closed

K46
NW
 1/4-1/2
 2330 ft.

CORMIER CHEVROLET
2201 E 223
LONG BEACH, CA 90810

RCRA-SQG **1000299614**
LUST **CAD981970635**
Cortese
SLIC

Site 3 of 3 in cluster K

Relative:
Lower

RCRAInfo:

Actual:
23 ft.

Owner: LEN CORMIER
 (415) 555-1212
 EPA ID: CAD981970635
 Contact: ENVIRONMENTAL MANAGER
 (213) 830-5100

Classification: Small Quantity Generator
 TSDF Activities: Not reported

Violation Status: No violations found

LUST:

Region: STATE
 Case Type: Other ground water affected
 Cross Street: ALAMEDA
 Enf Type: Not reported
 Funding: Not reported
 How Discovered: Tank Closure
 How Stopped: Not reported
 Leak Cause: UNK
 Leak Source: Tank
 Global Id: T0603703163
 Stop Date: 1989-05-22 00:00:00
 Confirm Leak: Not reported
 Workplan: Not reported
 Prelim Assess: Not reported
 Pollution Char: 1995-03-09 00:00:00
 Remed Plan: 1996-04-12 00:00:00
 Remed Action: Not reported
 Monitoring: Not reported
 Close Date: 1997-03-19 00:00:00
 Discover Date: 1989-05-22 00:00:00
 Enforcement Dt: Not reported
 Release Date: 1987-11-24 00:00:00
 Review Date: 1997-01-30 00:00:00

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

CORMIER CHEVROLET (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000299614

Enter Date: 1988-01-27 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 19
Org Name: Not reported
Reg Board: Los Angeles Region
Status: Case Closed
Chemical: Oil and Grease Waste
Contact Person: Not reported
Responsible Party: CORMIER CHEVROLET
RP Address: P.O. BOX 1468, LONG BEACH, CA 90801-1468
Interim: Yes
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: YR
Staff Initials: JA
Lead Agency: Regional Board
Local Agency: 19000
Hydr Basin #: SAN FERNANDO VALLEY
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: I-06073
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Operator: JENKINS, RON E.
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: BECAUSE OF EXISTING CONTAMINATION, A MODIFIED MONITORING PLAN MUST BE SUBMITTED. OLD CASE #908100107
06/08/95 OM CASE ASSIGNED TO RI

LUST:

Region: 4
Staff: UNK
County: Los Angeles
Local Agency: 19000
Lead Agency: Regional Board
Case Type: Groundwater
Status: Case Closed
Substance: Oil and Grease Waste
Cross Street: ALAMEDA
Global ID: T0603703163
Enforcement Type: Not reported
Date Leak Discovered: 5/22/1989

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

CORMIER CHEVROLET (Continued)

1000299614

Date Leak Record Entered: 1/27/1988
How Leak Discovered: Tank Closure
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: Tank
Date Leak Stopped: 5/22/1989
Date Confirmation Began: Not reported
Operator: JENKINS, RON E.
Water System: Not reported
Well Name: Not reported
Approx. Dist To Production Well (ft): 836.1992291617579716800284786
Abatement Method Used at the Site: Excavate and Dispose
Source of Cleanup Funding: Excavate and Dispose
Date Leak First Reported: 11/24/1987
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: 3/9/1995
Remediation Plan Submitted: 4/12/1996
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Date the Case was Closed: 3/19/1997
Date Case Last Changed on Database: 1/30/1997
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Yes
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Regional Board: 04
Owner Contact: Not reported
Responsible Party: CORMIER CHEVROLET
RP Address: P.O. BOX 1468, LONG BEACH, CA 90801-1468
Program: LUST
Lat/Long: 33.8244093 / -1
Local Agency Staff: Not reported
Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Local Case No: Not reported
Substance Quantity: Not reported
Assigned Name: Not reported
W Global ID: Not reported
Summary: BECAUSE OF EXISTING CONTAMINATION, A MODIFIED MONITORING PLAN MUST BE SUBMITTED. OLD CASE #908100107
06/08/95 OM CASE ASSIGNED TO RI

Cortese:
Region: CORTESE
Facility Addr2: Not reported

SLIC:
Region: 4
Facility Status: No further action required

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

CORMIER CHEVROLET (Continued)

1000299614

SLIC: 0613
 Substance: TPH,
 Staff: Not reported

47
South
1/4-1/2
2532 ft.

TEXACO USA DIV TEXACO INC
23208
CARSON, CA 90745

FINDS 1000144765
RCRA-LQG 90810TXCRF23
TRIS
RCRA-TSDF
CORRACTS
CERC-NFRAP

Relative:
Lower

FINDS:
 Other Pertinent Environmental Activity Identified at Site

Actual:
23 ft.

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

California - Hazardous Waste Tracking System - Datamart

TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

PCS (Permit Compliance System) is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

TEXACO USA DIV TEXACO INC (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000144765

RCRAInfo Corrective Action Summary:

Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
Event Date: 03/25/1992
Event: Stabilization Measures Evaluation, This facility is not amenable to stabilization activity at the present time for reasons other than 1) it appears to be technically infeasible or inappropriate (NF) or 2) there is a lack of technical information (IN). Reasons for this conclusion may be the status of closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other administrative considerations.
Event Date: 03/25/1992
Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.
Event Date: 08/30/1991

RCRAInfo:

Owner: TEXACO U.S.A.
(213) 835-8261
EPA ID: CAT000646331
Contact: Not reported
Classification: Large Quantity Generator, TSDF
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 12/13/1988
Actual Date Achieved Compliance: 02/23/1989
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 01/05/1989
Penalty Type: Not reported
Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 04/13/1988
Actual Date Achieved Compliance: 05/07/1988
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 05/05/1988
Penalty Type: Not reported
Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 01/13/1988
Actual Date Achieved Compliance: 05/07/1988
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 02/24/1988
Penalty Type: Not reported
Regulation Violated: 264.140-150.H
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 12/30/1987
Actual Date Achieved Compliance: 02/10/1988
Enforcement Action: WRITTEN INFORMAL

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

TEXACO USA DIV TEXACO INC (Continued)

EDR ID Number
EPA ID Number

Database(s)

Site

1000144765

Enforcement Action Date: 01/04/1988
Penalty Type: Not reported

There are 4 violation record(s) reported at this site:

<u>Evaluation</u>	<u>Area of Violation</u>	<u>Date of Compliance</u>
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19890223
Other Evaluation	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19880507
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19880507
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19880210

CORRACTS:

EPA ID: CAT000646331
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 03/25/1992
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): 325188
All Other Basic Inorganic Chemical Manufacturing

EPA ID: CAT000646331
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 08/30/1991
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): 325188
All Other Basic Inorganic Chemical Manufacturing

CERC-NFRAP:

Site ID: 0900240
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: Deferred to RCRA

CERCLIS-NFRAP Site Contact Name(s):

Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

Site Description: Not reported

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/24/1990
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

TEXACO USA DIV TEXACO INC (Continued)

EDR ID Number
 EPA ID Number

Database(s)

Date Completed: 04/15/1991
 Priority Level: NFRAP (No Further Remedial Action Planned)

Action: SITE INSPECTION
 Date Started: Not reported
 Date Completed: 04/15/1991
 Priority Level: NFRAP (No Further Remedial Action Planned)

Action: PRELIMINARY ASSESSMENT
 Date Started: Not reported
 Date Completed: 09/06/1991
 Priority Level: Deferred to RCRA (Subtitle C)

Action: ARCHIVE SITE
 Date Started: Not reported
 Date Completed: 01/23/1996
 Priority Level: Not reported

1000144765

48
WNW
1/2-1
2788 ft.

STAUFFER CHEM CO
2112 E 223RD ST
CARSON, CA 90745

FINDS 1000424829
HAZNET CAD076941103
RCRA-LQG
RESPONSE
CORRACTS
CERC-NFRAP
HIST UST
ENVIROSTOR
HIST Cal-Sites

Relative:
Lower

Actual:
24 ft.

FINDS:

Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid: CAD076941103
 Contact: STAUFFER CHEMICAL COMPANY
 Telephone: 2032223000
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: PO BOX 1110
 Mailing City,St,Zip: LONG BEACH, CA 908011110
 Gen County: Los Angeles
 TSD EPA ID: CAT000646117
 TSD County: Kings
 Waste Category: Contaminated soil from site clean-ups
 Disposal Method: Disposal, Land Fill
 Tons: 33.7120
 Facility County: Los Angeles

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

STAUFFER CHEM CO (Continued)

1000424829

Gepaid: CAD076941103
Contact: STAUFFER CHEMICAL COMPANY
Telephone: 2032223000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 1110
Mailing City,St,Zip: LONG BEACH, CA 908011110
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Contaminated soil from site clean-ups
Disposal Method: Not reported
Tons: 33.7120
Facility County: Los Angeles

Gepaid: CAD076941103
Contact: STAUFFER CHEMICAL COMPANY
Telephone: 2032223000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 1110
Mailing City,St,Zip: LONG BEACH, CA 908011110
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: Recycler
Tons: 9.1740
Facility County: Los Angeles

Gepaid: CAD076941103
Contact: STAUFFER CHEMICAL COMPANY
Telephone: 2032223000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 1110
Mailing City,St,Zip: LONG BEACH, CA 908011110
Gen County: Los Angeles
TSD EPA ID: UTD981552177
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Treatment, Incineration
Tons: 3.2500
Facility County: Los Angeles

Gepaid: CAD076941103
Contact: STAUFFER CHEMICAL COMPANY
Telephone: 2032223000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 1110
Mailing City,St,Zip: LONG BEACH, CA 908011110
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Other

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000424829

Tons: .1500
Facility County: Los Angeles

[Click this hyperlink](#) while viewing on your computer to access
29 additional CA_HAZNET: record(s) in the EDR Site Report.

RCRAInfo Corrective Action Summary:

- Event: Current Human Exposures under Control, More information is needed to make a determination.
Event Date: 06/01/1998
- Event: Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.
Event Date: 06/01/1998
- Event: Corrective Measures Design Approved
Event Date: 12/31/1997
- Event: CMI Workplan Approved
Event Date: 12/31/1997
- Event: Date For Remedy Selection (CM Imposed)
Event Date: 06/25/1997
- Event: CMS Approved
Event Date: 01/30/1997
- Event: CMS Workplan Approved
Event Date: 01/30/1997
- Event: RFI Approved
Event Date: 07/16/1996
- Event: RFI Workplan Approved
Event Date: 03/01/1995
- Event: RFI Imposition
Event Date: 07/27/1994
- Event: CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date: 05/17/1994
- Event: Stabilization Measures Evaluation, This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
Event Date: 05/17/1994
- Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
Event Date: 04/20/1991
- Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.
Event Date: 07/31/1987

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000424829

RCRAInfo:

Owner: STAUFFER CHEMICAL COMPANY
 (203) 222-3000
 EPA ID: CAD076941103
 Contact: Not reported
 Classification: Large Quantity Generator
 TSDF Activities: Not reported

BIENNIAL REPORTS:

Last Biennial Reporting Year: 2005

Waste	Quantity (Lbs)
D028	33500.00

Violation Status: Violations exist

Regulation Violated:	270
Area of Violation:	TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	03/31/1987
Actual Date Achieved Compliance:	09/14/1987
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	04/01/1987
Penalty Type:	Not reported
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	05/28/1987
Penalty Type:	Not reported

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
Final Monetary Penalty	12/17/1991	300	STATE
Proposed Monetary Penalty	12/17/1991	300	STATE

There are 1 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Non-Financial Record Review	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19870914

AWP:

AWP Facility ID: 19280083
 Region Code: 4
 Region: CYPRESS
 SMBR Branch Code: SB
 SMBR Branch Unit: SO CAL - CYPRESS
 Site Name.: Not reported
 Current Status Date: 04251996
 Current Status: ANNUAL WORKPLAN - ACTIVE SITE
 Lead Agency Code: DTSC
 Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
 Facility Type: responsible party
 Awp Site Type: RESPONSIBLE PARTY
 NPL: Not Listed
 Tier Of AWP Site: Not reported
 Source Of Funding: Not reported
 Responsible Staff Member: JSPIZMA
 Supervisor Responsible: Not reported
 SIC Code: 28

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

STAUFFER CHEM CO (Continued)

1000424829

Facility SIC: MANU - CHEMICALS & ALLIED PRODUCTS
 RWQCB Code: LA
 RWQCB Associated With Site: LOS ANGELES
 Site Access Controlled: Not reported
 Site Listed HWS List: Not reported
 Hazard Ranking Score: Not reported
 Date Site Hazard Ranked: Not reported
 Groundwater Contamination: Not reported
 # Of Contamination Sources: 0
 Lat/Long: Not reported
 Lat/Long (dms): 0 0 0 / 0 0 0
 Lat/long Method: Not reported
 Description Of Entity: Not reported
 State Assembly Distt Code: 55
 State Senate District: 28

RESPONSE:

Facility ID: 19280083
 Site Type: State Response
 Site Type Detail: State Response or NPL
 Acres: 25
 National Priorities List: NO
 Cleanup Oversight Agencies: DTSC
 Lead Agency: DTSC
 Lead Agency Description: Not reported
 Project Manager: JACKIE SPISZMAN
 Supervisor: Greg Holmes
 Division Branch: So Cal - Cypress
 Site Code: 400264
 Assembly: 55
 Senate: 28
 Special Program Status: * Site Char & Assess Grant (CERCLA 104)
 Status: Active
 Status Date: 1996-04-25 00:00:00
 Restricted Use: NO
 Funding: Responsible Party
 Latitude: 33.8244611111111
 Longitude: -118.22875
 Alias Name: 19280083
 400264
 CAD076941103
 STAUFFER MANAGEMENT COMPANY (1987-CURREN
 AMERICAN CHEMICAL CORP (1959-1975)
 ASTRA ZENECA
 ATKEMIX 37 INC.
 CAD076941103
 Alias Type: Envirostor ID Number
 Project Code (Site Code)
 HWIS Identification Code
 EPA Identification Number
 Alternate Name
 Alternate Name
 Alternate Name
 Alternate Name
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: Soil remedial Design and Implementation Plans were approved by

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000424829

DTSC.DTSC reviewed and approved the revised Feasibility Study report. This completes the approval of the RI/FS for the soil operable unit.FACILITY IDENTIFIED LA COUNTY ENGINEER'S FILE #04706DTSC approved soil RAP and Negative Declaration. The selected alternative addresses the soil operable unit as an interim measure. The project includes vapor and liquid extraction with vapor and liquid treatment for soils. The interim cleanup number for 1,2, DCA is 20 ppm.

Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Amendment - Order/Agreement
 Completed Date: 1999-04-07 00:00:00
 Completed Area Name: Soil Operable Unit
 Completed Sub Area Name: Not reported
 Completed Document Type: CEQA - Initial Study/ Mitigated Neg. Dec.
 Completed Date: 1997-06-25 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Consent Order
 Completed Date: 1994-06-27 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Discovery
 Completed Date: 1981-03-16 00:00:00
 Completed Area Name: Soil Operable Unit
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Action Plan
 Completed Date: 1997-06-25 00:00:00
 Completed Area Name: Soil Operable Unit
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial: Operating Properly & Successfully
 Completed Date: 1999-02-18 00:00:00
 Completed Area Name: Soil Operable Unit
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Design
 Completed Date: 1997-12-31 00:00:00
 Completed Area Name: Soil Operable Unit
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Investigation / Feasibility Study
 Completed Date: 1997-01-30 00:00:00
 Confirmed: 30028,30193
 Confirmed Description: Vinyl chloride
 Confirmed Description: 1,2-Dichloroethane (EDC)
 Future Area Name: Groundwater Operable Unit
 Future Sub Area Name: Not reported
 Future Document Type: Remedial Design
 Future Due Date: 2009
 Future Area Name: Groundwater Operable Unit
 Future Sub Area Name: Not reported
 Future Document Type: Remedial Action Plan
 Future Due Date: 2009
 Future Area Name: Groundwater Operable Unit
 Future Sub Area Name: Not reported
 Future Document Type: Feasibility Study Report
 Future Due Date: 2008
 Future Area Name: Groundwater Operable Unit
 Future Sub Area Name: Not reported
 Future Document Type: Remedial Action Completion Report

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number
Database(s)

STAUFFER CHEM CO (Continued)

1000424829

Future Due Date: 2009
Future Area Name: Groundwater Operable Unit
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Plan
Future Due Date: 2010
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2010
Media Affected: OTH, SOIL
Media Affected Desc: Other Groundwater affected (uses other than drinking water)
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30028, 30193
Potential Description: Vinyl chloride
Potential Description: 1,2-Dichloroethane (EDC)
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: MANUFACTURING - CHEMICALS

CORRACTS:

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 01/30/1997
Action: CA350 - CMS Approved
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 01/30/1997
Action: CA300 - CMS Workplan Approved
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 03/01/1995
Action: CA150 - RFI Workplan Approved
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000424829

Actual Date: 04/20/1991
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 05/17/1994
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 05/17/1994
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/01/1998
Action: CA725IN - Current Human Exposures Under Control, More information is needed to make a determination
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/01/1998
Action: CA750NO - Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 06/25/1997
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000424829

All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 07/16/1996
Action: CA200 - RFI Approved
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 07/27/1994
Action: CA100 - RFI Imposition
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 07/31/1987
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 12/31/1997
Action: CA450 - Corrective Measures Design Approved
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

EPA ID: CAD076941103
EPA Region: 09
Area Name: SOILS
Actual Date: 12/31/1997
Action: CA500 - CMI Workplan Approved
NAICS Code(s): 325199 325199
All Other Basic Organic Chemical Manufacturing
All Other Basic Organic Chemical Manufacturing

CERC-NFRAP:
Site ID: 0901593
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
Contact Name: Matt Mitguard

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000424829

Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

Contact Name: Dan McMindes
Contact Tel: (415) 972-3401
Contact Title: Site Assessment Manager (SAM)

CERCLIS-NFRAP Site Alias Name(s):

Alias Name: AMERICAN CHEMICAL CORP (FKA)
Alias Address: Not reported
CA

Site Description: Not reported

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/01/1986
Priority Level: Not reported

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 09/01/1987
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: 08/01/1986
Date Completed: 09/01/1987
Priority Level: NFRAP (No Further Remedial Action Planned)

HIST UST:

Region: STATE
Facility ID: 00000003022
Tank Num: 001
Container Num: T-612
Year Installed: 1962
Tank Capacity: 00000500
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: None
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 002
Container Num: T-613

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

STAUFFER CHEM CO (Continued)

1000424829

Year Installed: 1974
Tank Capacity: 00002000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 003
Container Num: TANK FARM
Year Installed: 1965
Tank Capacity: 00325000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 16 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 004
Container Num: 1
Year Installed: 1959
Tank Capacity: 00000000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 10 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 005
Container Num: 2

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EPA ID Number
EDR ID Number

STAUFFER CHEM CO (Continued)

1000424829

Year Installed: 1959
Tank Capacity: 00024000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 10 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 006
Container Num: 5
Year Installed: 1964
Tank Capacity: 00014000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 15 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 007
Container Num: 4
Year Installed: 1962
Tank Capacity: 00021000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 12 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 008
Container Num: #3 SUMP

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EPA ID Number

EDR ID Number
EPA ID Number

STAUFFER CHEM CO (Continued)

1000424829

Year Installed: 1978
Tank Capacity: 00097000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 15 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 009
Container Num: 6
Year Installed: 1959
Tank Capacity: 00006000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 12 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

Region: STATE
Facility ID: 00000003022
Tank Num: 010
Container Num: 7
Year Installed: 1978
Tank Capacity: 00009000
Facility Type: Other
Other Type: PETROCHEMICAL
Total Tanks: 0010
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 6 inches
Leak Detection: Visual
Contact Name: W. F. STIEF
Telephone: 2138348571
Owner Name: STAUFFER CHEMICAL COMPANY
Owner Address: NYALA FARM ROAD
Owner City,St,Zip: WESTPORT, CT 06881

ENVIROSTOR:

Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 25

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

STAUFFER CHEM CO (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000424829

NPL: NO
 Regulatory Agencies: DTSC
 Lead Agency: DTSC
 Program Manager: JACKIE SPISZMAN
 Supervisor: Greg Holmes
 Division Branch: So Cal - Cypress
 Facility ID: 19280083
 Site Code: 400264
 Assembly: 55
 Senate: 28
 Special Program: * Site Char & Assess Grant (CERCLA 104)
 Status: Active
 Status Date: 1996-04-25 00:00:00
 Restricted Use: NO
 Funding: Responsible Party
 Latitude: 33.8244611111111
 Longitude: -118.22875
 Alias Name: 19280083
 400264
 CAD076941103
 STAUFFER MANAGEMENT COMPANY (1987-CURREN
 AMERICAN CHEMICAL CORP (1959-1975)
 ASTRA ZENECA
 ATKEMIX 37 INC.
 CAD076941103
 Alias Type: Envirostor ID Number
 Project Code (Site Code)
 HWIS Identification Code
 EPA Identification Number
 Alternate Name
 Alternate Name
 Alternate Name
 Alternate Name
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: Soil remedial Design and Implementation Plans were approved by
 DTSC.DTSC reviewed and approved the revised Feasibility Study report.
 This completes the approval of the RI/FS for the soil operable
 unit.FACILITY IDENTIFIED LA COUNTY ENGINEER'S FILE #04706DTSC approved
 soil RAP and Negative Declaration. The selected alternative
 addresses the soil operable unit as an interim measure. The project
 includes vapor and liquid extraction with vapor and liquid treatment
 for soils. The interim cleanup number for 1,2, DCA is 20 ppm.
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Amendment - Order/Agreement
 Completed Date: 1999-04-07 00:00:00
 Completed Area Name: Soil Operable Unit
 Completed Sub Area Name: Not reported
 Completed Document Type: CEQA - Initial Study/ Mitigated Neg. Dec.
 Completed Date: 1997-06-25 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Consent Order
 Completed Date: 1994-06-27 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

STAUFFER CHEM CO (Continued)

1000424829

Completed Document Type: Discovery
Completed Date: 1981-03-16 00:00:00
Completed Area Name: Soil Operable Unit
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 1997-06-25 00:00:00
Completed Area Name: Soil Operable Unit
Completed Sub Area Name: Not reported
Completed Document Type: Remedial: Operating Properly & Successfully
Completed Date: 1999-02-18 00:00:00
Completed Area Name: Soil Operable Unit
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Design
Completed Date: 1997-12-31 00:00:00
Completed Area Name: Soil Operable Unit
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 1997-01-30 00:00:00
Confirmed: 30028,30193
Confirmed Description: Vinyl chloride
Confirmed Description: 1,2-Dichloroethane (EDC)
Future Area Name: Groundwater Operable Unit
Future Sub Area Name: Not reported
Future Document Type: Remedial Design
Future Due Date: 2009
Future Area Name: Groundwater Operable Unit
Future Sub Area Name: Not reported
Future Document Type: Remedial Action Plan
Future Due Date: 2009
Future Area Name: Groundwater Operable Unit
Future Sub Area Name: Not reported
Future Document Type: Feasibility Study Report
Future Due Date: 2008
Future Area Name: Groundwater Operable Unit
Future Sub Area Name: Not reported
Future Document Type: Remedial Action Completion Report
Future Due Date: 2009
Future Area Name: Groundwater Operable Unit
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Plan
Future Due Date: 2010
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2010
Media Affected: OTH, SOIL
Media Affected Desc: Other Groundwater affected (uses other than drinking water)
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30028, 30193
Potential Description: Vinyl chloride
Potential Description: 1,2-Dichloroethane (EDC)
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

STAUFFER CHEM CO (Continued)

1000424829

Schedule Revised Date: Not reported
 PastUse: MANUFACTURING - CHEMICALS

HISTORICAL CAL-SITES:

Facility ID: 19280083
 Region: 4
 Region Name: CYPRESS
 Branch: SB
 Branch Name: SO CAL - CYPRESS
 File Name: Not reported
 State Senate District: 04251996
 Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
 Status Name: ANNUAL WORKPLAN - ACTIVE SITE
 Lead Agency: DTSC
 Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
 Facility Type: RP
 Type Name: RESPONSIBLE PARTY
 NPL: Not Listed
 SIC Code: 28
 SIC Name: MANU - CHEMICALS & ALLIED PRODUCTS
 Access: Not reported
 Cortese: Not reported
 Hazardous Ranking Score: Not reported
 Date Site Hazard Ranked: Not reported
 Groundwater Contamination: Not reported
 Staff Member Responsible for Site: JSPISZMA
 Supervisor Responsible for Site: Not reported
 Region Water Control Board: LA
 Region Water Control Board Name: LOS ANGELES
 Lat/Long Direction: Not reported
 Lat/Long (dms): 0 0 0 / 0 0 0
 Lat/long Method: Not reported
 Lat/Long Description: Not reported
 State Assembly District Code: 55
 State Senate District Code: 28

[Click this hyperlink](#) while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

49
SSE
1/2-1
3170 ft.

WILMINGTON CLA & HOLD YD
LOS ANGELES, CA

FUDS 1007212263
N/A

Relative:
Lower

FUDS:
 Federal Facility ID: CA9799F5690
 Facility Name: WILMINGTON CLA & HOLD YD
 City: LOS ANGELES
 State: CA
 EPA Region: 9
 County: Not reported
 Congressional District: 37
 US Army District: Los Angeles District (SPL)
 Fiscal Year: 2005
 Telephone: 213-452-3921
 NPL Status: Not reported
 RAB: Not reported

Actual:
26 ft.

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

WILMINGTON CLA & HOLD YD (Continued)

EDR ID Number
EPA ID Number

Database(s)

1007212263

Current Owner: CITY
CTC: 13.40
Current Prog: Not reported
Future Prog: Not reported
Latitude: 33.8125000
Longitude: -118.2250000

FUDS Description Details:

The site consisted of 274.57 acres, located 2401 E. Pacific Coast Highway in Wilmington, California. The property composing the Wilmington Class and Hold Yard was acquired by the U.S. Army during 1943 and 1944. Records indicate that 272.23 acres were leased from the City of Los Angeles (W2972-eng-755 and W04-193-eng-4356). Approximately 1.55 acres were leased from the Watson Land Company (W04-193-eng2652). Approximately 0.65 acres were acquired by permit and 0.142 acres were acquired by license from various private and public parties. Thus, a total of 274.57 acres were acquired by the Army for the Wilmington Class and Hold Yard. In the months of May and June 1946, 201.57 and 73 acres, respectively, of the Class and Hold Yard were declared surplus. On 1 July 1946 the land was transferred to the Veterans Administration. The City of Los Angeles currently owns 272.23 acres of the former Wilmington Class and Hold Yard. The property is currently being beneficially used for many purposes.

Business located on the property include shipping container platforms for loading and unloading container onto railroad cars (Intermodal Container and Transportation Facility), sulfur storage (California Sulfur Company), import and export operations (Import Dealers Service Corporation), warehouses (Port of Los Angeles, California Cartage Company, Inc.) and a refinery (Texaco).

FUDS History Details:

The site was used by the U.S. Army as a loading and storage area for military equipment awaiting shipment. Improvements to the site, all constructed in 1943 and 1944, included three warehouses, a railroad spur, sewer and water lines. The property, formerly known as Manuel Warehouse, is currently the site of the Cal Cartage, Inc., a container and freight station that stores and distributes goods that arrive at the Port of Los Angeles from U.S. and international destinations. Goods stored and distributed at the facility include bulk cotton, copper, and other miscellaneous items. Cal Cartage occupies approximately the same area as the former Manuel Warehouse, which encompassed 85 acres. The southern boundary of Cal Cartage is Pacific Coast Highway; the northern boundary is Sepulveda Boulevard; the western boundary is the Dominguez Channel and Union Pacific Railroad Line; and the eastern boundary is a Southern California Edison electrical tower transmission easement. Although Cal Cartage leases the Edison easement for storage, this easement is not part of the Wilmington Classification and Hold Yard or Manuel Warehouse site. There are three 200,000 square foot former DoD warehouses being beneficially used by Cal Cartage. These warehouses currently numbered 13, 16, and 17 (formerly numbers 1, 2, and 3 respectively) were constructed in 1943 for the DoD. The LA Ordnance Depot occupied warehouse No. 17. The warehouses are surrounded by roadways, rail lines, and other miscellaneous facilities associated with importing and exporting of goods from

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

WILMINGTON CLA & HOLD YD (Continued)

1007212263

the port. Some of the rail lines, constructed for DoD use, are being beneficially used. Large portions of the property are occupied by stored freight containers.

**L50
 WNW
 1/2-1
 3177 ft.**

**MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN
 2100 E 223RD ST
 CARSON, CA 90810**

Site 1 of 2 in cluster L

**HAZNET 1000376908
 RESPONSE N/A
 CA FID UST
 LOS ANGELES CO. HMS
 EMI
 SWEEPS UST
 ENVIROSTOR
 HIST Cal-Sites**

**Relative:
 Lower**

**Actual:
 23 ft.**

HAZNET:

Gepaid: CAL000276062
 Contact: BILL EVANS-SHOP FOREMAN
 Telephone: 3105185982
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 2100E 223RD ST
 Mailing City,St,Zip: CARSON, CA 908100000
 Gen County: Los Angeles
 TSD EPA ID: CAT080013352
 TSD County: Los Angeles
 Waste Category: Waste oil and mixed oil
 Disposal Method: Recycler
 Tons: 0.87
 Facility County: Los Angeles

Gepaid: CAL000276062
 Contact: BILL EVANS-SHOP FOREMAN
 Telephone: 3105185982
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 2100E 223RD ST
 Mailing City,St,Zip: CARSON, CA 908100000
 Gen County: Los Angeles
 TSD EPA ID: CAD009007626
 TSD County: Los Angeles
 Waste Category: Asbestos-containing waste
 Disposal Method: Not reported
 Tons: 0.42
 Facility County: Not reported

Gepaid: CAL000276062
 Contact: BILL EVANS-SHOP FOREMAN
 Telephone: 3105185982
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 2100E 223RD ST
 Mailing City,St,Zip: CARSON, CA 908100000
 Gen County: Los Angeles
 TSD EPA ID: CAD009007626
 TSD County: Los Angeles
 Waste Category: Asbestos-containing waste
 Disposal Method: Not reported
 Tons: 0.42
 Facility County: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Gepaid: CAD043555366
Contact: LARRY ADAMS
Telephone: 7149637624
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 8192 DEANVILLE DR
Mailing City,St,Zip: HUNTINGTON BEACH, CA 926460000
Gen County: Los Angeles
TSD EPA ID: UTD981552177
TSD County: Los Angeles
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Treatment, Incineration
Tons: 1.04
Facility County: Los Angeles

Gepaid: CAD043555366
Contact: LARRY ADAMS
Telephone: 7149637624
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 8192 DEANVILLE DR
Mailing City,St,Zip: HUNTINGTON BEACH, CA 926460000
Gen County: Los Angeles
TSD EPA ID: UTD981552177
TSD County: Los Angeles
Waste Category: Empty pesticide containers 30 gallons or more
Disposal Method: Treatment, Incineration
Tons: 0.9
Facility County: Los Angeles

[Click this hyperlink](#) while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

AWP:

AWP Facility ID: 19281200
Region Code: 4
Region: CYPRESS
SMBR Branch Code: SB
SMBR Branch Unit: SO CAL - CYPRESS
Site Name.: Not reported
Current Status Date: 04231996
Current Status: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: responsible party
Awp Site Type: RESPONSIBLE PARTY
NPL: Not Listed
Tier Of AWP Site: Not reported
Source Of Funding: F
Responsible Staff Member: RZABANEH
Supervisor Responsible: Not reported
SIC Code: 28
Facility SIC: MANU - CHEMICALS & ALLIED PRODUCTS
RWQCB Code: LA
RWQCB Associated With Site: LOS ANGELES
Site Access Controlled: Not reported
Site Listed HWS List: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Hazard Ranking Score: Not reported
 Date Site Hazard Ranked: Not reported
 Groundwater Contamination: Confirmed
 # Of Contamination Sources: 1
 Lat/Long: Not reported
 Lat/Long (dms): 0 0 0 / 0 0 0
 Lat/long Method: Not reported
 Description Of Entity: Not reported
 State Assembly Distt Code: 55
 State Senate District: 28

RESPONSE:

Facility ID: 19281200
 Site Type: State Response
 Site Type Detail: State Response or NPL
 Acres: 11
 National Priorities List: NO
 Cleanup Oversight Agencies: SMBRP
 Lead Agency: SMBRP
 Lead Agency Description: Not reported
 Project Manager: DANIEL ZOGAIB
 Supervisor: Emad Yemut
 Division Branch: So Cal - Cypress
 Site Code: 400266
 Assembly: 55
 Senate: 28
 Special Program Status: Not reported
 Status: Active
 Status Date: 1996-04-23 00:00:00
 Restricted Use: NO
 Funding: Responsible Party
 Latitude: 33.8242333333333
 Longitude: -118.239194444444
 Alias Name: 19281200

SOLUTIONIA
 P43054
 400266
 Alias Type: Envirostor ID Number
 Project Code (Site Code)
 PCode
 Alternate Name

APN: NONE SPECIFIED

APN Description: Not reported

Comments: Site Screening Done: RP in violation of DHS permit. RP prepared a Preliminary Assessment/Site Inspection report (submitted 09/88). Release of benzene and DCE to upper aquifer. Chemical dump site 1952-1965 not addressed. RP is negotiating with ICDTSC signed a Consent Order with the RPs. The CEQA documents (Negative Declaration) and the Remedial Action Plan are approved following a 30-day public comment period. The recommended alternative includes the following elements: institutional controls; monitoring; excavation, in-situ and Approval of Remedial Design Specifications document, with Addendum prepared by DTSC. I (other RP). ex-situ bio-treatment, soil vapor extraction and bioventing of deep soils and shallow soils; thermal/catalytic oxidation of soil vapor; vacuum enhanced LNAPL recovery with total fluids pumps; recovered LNAPL disposal by a certified waste recycler or a permitted hazardous waste TSDF;

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

groundwater remediation by air sparging within the SVE capture radius and plume of groundwater contamination; if necessary groundwater extraction and treatment with air stripping followed by GAC; and treated groundwater discharge to the sanitary sewer. Sparging would not be implemented until the LNAPL had been removed.

Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Removal Action Completion Report
 Completed Date: 1992-01-28 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Public Participation Plan / Community Relations Plan
 Completed Date: 1991-04-30 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Site Screening
 Completed Date: 1989-06-12 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Removal Action Completion Report
 Completed Date: 1999-01-11 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Action Plan
 Completed Date: 1995-04-14 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Investigation / Feasibility Study
 Completed Date: 1995-01-23 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Consent Order
 Completed Date: 1990-12-24 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Discovery
 Completed Date: 1989-02-09 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Cost Recovery Settlements/Decrees
 Completed Date: 1999-01-13 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Consent Order
 Completed Date: 1996-03-07 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: CEQA - Initial Study/ Neg. Declaration
 Completed Date: 1995-04-14 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Consent Order
 Completed Date: 1993-10-29 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Remedial Design
 Completed Date: 1997-03-28 00:00:00

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Confirmed: NONE SPECIFIED
Confirmed Description: Not reported
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Design
Future Due Date: 2009
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Action Plan
Future Due Date: 2008
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Feasibility Study Report
Future Due Date: 2007
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Action Completion Report
Future Due Date: 2010
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Report
Future Due Date: 2028
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Investigation Report
Future Due Date: 2007
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2010
Media Affected: OTH, SOIL
Media Affected Desc: Other Groundwater affected (uses other than drinking water)
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10003, 10009
Potential Description: * HALOGENATED SOLVENTS
Potential Description: * HYDROCARBON SOLVENTS
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: MANUFACTURING - CHEMICALS

CA FID UST:

Facility ID: 19029192
Regulated By: UTKI
Regulated ID: CAD043555
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2138304353
Mail To: Not reported
Mailing Address: 2100 E 223RD ST
Mailing Address 2: Not reported
Mailing City,St,Zip: CARSON 90810
Contact: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

LOS ANGELES CO. HMS:

Region: LA
Facility Id: 004987-005175
Facility Status: OPEN
Area: 22
Permit Number: Not reported
Permit Status: Not reported
Facility Type: Not reported

Region: LA
Facility Id: 004987-021487
Facility Status: OPEN
Area: 22
Permit Number: Not reported
Permit Status: Not reported
Facility Type: Not reported

EMI:

Year: 1987
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 800227
Air District Name: SC
SIC Code: 2841
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 58
Reactive Organic Gases Tons/Yr: 50
Carbon Monoxide Emissions Tons/Yr: 26
NOX - Oxides of Nitrogen Tons/Yr: 41
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 2
Part. Matter 10 Micrometers & Smllr Tons/Yr: 2

Year: 1990
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 800227
Air District Name: SC
SIC Code: 2841
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 155
Reactive Organic Gases Tons/Yr: 116
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 33
SOX - Oxides of Sulphur Tons/Yr: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Particulate Matter Tons/Yr: 2
 Part. Matter 10 Micrometers & Smlr Tons/Yr: 2

SWEEPS UST:

Status: Not reported
 Comp Number: 5175
 Number: Not reported
 Board Of Equalization: Not reported
 Ref Date: Not reported
 Act Date: Not reported
 Created Date: Not reported
 Tank Status: Not reported
 Owner Tank Id: Not reported
 Swrcb Tank Id: 19-000-005175-000002
 Actv Date: Not reported
 Capacity: 2150
 Tank Use: EMPTY
 Stg: WASTE
 Content: Not reported
 Number Of Tanks: 1

ENVIROSTOR:

Site Type: State Response
 Site Type Detailed: State Response or NPL
 Acres: 11
 NPL: NO
 Regulatory Agencies: SMBRP
 Lead Agency: SMBRP
 Program Manager: DANIEL ZOGAIB
 Supervisor: Emad Yemut
 Division Branch: So Cal - Cypress
 Facility ID: 19281200
 Site Code: 400266
 Assembly: 55
 Senate: 28
 Special Program: Not reported
 Status: Active
 Status Date: 1996-04-23 00:00:00
 Restricted Use: NO
 Funding: Responsible Party
 Latitude: 33.8242333333333
 Longitude: -118.239194444444
 Alias Name: 19281200
 SOLUTIONIA
 P43054
 400266
 Alias Type: Envirostor ID Number
 Project Code (Site Code)
 PCode
 Alternate Name
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: Site Screening Done: RP in violation of DHS permit. RP prepared a Preliminary Assessment/Site Inspection report (submitted 09/88). Release of benzene and DCE to upper aquifer. Chemical dump site 1952-1965 not addressed. RP is negotiating with ICDTSC signed a

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Consent Order with the RPs. The CEQA documents (Negative Declaration) and the Remedial Action Plan are approved following a 30-day public comment period. The recommended alternative includes the following elements: institutional controls; monitoring; excavation, in-situ and Approval of Remedial Design Specifications document, with Addendum prepared by DTSC. I (other RP). ex-situ bio-treatment, soil vapor extraction and bioventing of deep soils and shallow soils; thermal/catalytic oxidation of soil vapor; vacuum enhanced LNAPL recovery with total fluids pumps; recovered LNAPL disposal by a certified waste recycler or a permitted hazardous waste TSDF; groundwater remediation by air sparging within the SVE capture radius and plume of groundwater contamination; if necessary groundwater extraction and treatment with air stripping followed by GAC; and treated groundwater discharge to the sanitary sewer. Sparging would not be implemented until the LNAPL had been removed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1992-01-28 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Participation Plan / Community Relations Plan
Completed Date: 1991-04-30 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 1989-06-12 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1999-01-11 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 1995-04-14 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 1995-01-23 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 1990-12-24 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Discovery
Completed Date: 1989-02-09 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Settlements/Decrees
Completed Date: 1999-01-13 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 1996-03-07 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Completed Document Type: CEQA - Initial Study/ Neg. Declaration
Completed Date: 1995-04-14 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 1993-10-29 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Design
Completed Date: 1997-03-28 00:00:00
Confirmed: NONE SPECIFIED
Confirmed Description: Not reported
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Design
Future Due Date: 2009
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Action Plan
Future Due Date: 2008
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Feasibility Study Report
Future Due Date: 2007
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Action Completion Report
Future Due Date: 2010
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Operations and Maintenance Report
Future Due Date: 2028
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Remedial Investigation Report
Future Due Date: 2007
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Certification
Future Due Date: 2010
Media Affected: OTH, SOIL
Media Affected Desc: Other Groundwater affected (uses other than drinking water)
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10003, 10009
Potential Description: * HALOGENATED SOLVENTS
Potential Description: * HYDROCARBON SOLVENTS
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: MANUFACTURING - CHEMICALS

HISTORICAL CAL-SITES:

Facility ID: 19281200

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

MONSANTO CHEMICAL COMPANY/ C/O LARRY ADAMS SUPERIN (Continued)

1000376908

Region: 4
 Region Name: CYPRESS
 Branch: SB
 Branch Name: SO CAL - CYPRESS
 File Name: Not reported
 State Senate District: 04231996
 Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
 Status Name: ANNUAL WORKPLAN - ACTIVE SITE
 Lead Agency: DTSC
 Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
 Facility Type: RP
 Type Name: RESPONSIBLE PARTY
 NPL: Not Listed
 SIC Code: 28
 SIC Name: MANU - CHEMICALS & ALLIED PRODUCTS
 Access: Not reported
 Cortese: Not reported
 Hazardous Ranking Score: Not reported
 Date Site Hazard Ranked: Not reported
 Groundwater Contamination: Confirmed
 Staff Member Responsible for Site: RZABANEH
 Supervisor Responsible for Site: Not reported
 Region Water Control Board: LA
 Region Water Control Board Name: LOS ANGELES
 Lat/Long Direction: Not reported
 Lat/Long (dms): 0 0 0 / 0 0 0
 Lat/long Method: Not reported
 Lat/Long Description: Not reported
 State Assembly District Code: 55
 State Senate District Code: 28

[Click this hyperlink](#) while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

L51
 WNW
 1/2-1
 3177 ft.

MONSANTO CHEM CO
2100 E 223RD ST
CARSON, CA 90745

FINDS 1000376909
RCRA-LQG CAD043555366
RCRA-TSDF
CORRACTS

Site 2 of 2 in cluster L

Relative:
Lower

FINDS:
 Other Pertinent Environmental Activity Identified at Site

Actual:
 23 ft.

California - Hazardous Waste Tracking System - Datamart

TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

MONSANTO CHEM CO (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000376909

RCRAInfo Corrective Action Summary:

- Event: Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.
Event Date: 06/08/1998
- Event: Current Human Exposures under Control, More information is needed to make a determination.
Event Date: 06/08/1998
- Event: Date For Remedy Selection (CM Imposed)
Event Date: 04/14/1995
- Event: CMS Approved
Event Date: 01/23/1995
- Event: RFI Approved
Event Date: 01/23/1995
- Event: Stabilization Measures Evaluation, This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
Event Date: 05/23/1994
- Event: Stabilization Construction Completed
Event Date: 10/31/1992
- Event: Stabilization Measures Evaluation, This facility is not amenable to stabilization activity because of a lack of technical data. An evaluation has been completed, but further data is necessary to determine stabilization measures, feasibility or appropriateness. This status should be changed when data becomes available.
Event Date: 07/27/1992
- Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.
Event Date: 07/27/1992
- Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.
Event Date: 05/26/1992
- Event: Stabilization Measures Implemented, Primary measure is exposure control by barrier and/or institutional control (e.g., capping, fencing, deed restrictions).
Event Date: 01/31/1992
- Event: Stabilization Measures Implemented, Primary measure is source removal and/or treatment (e.g., soil or waste excavation, in-situ soil treatment, off-site treatment).
Event Date: 01/31/1992
- Event: RFI Workplan Approved
Event Date: 09/23/1991
- Event: CMS Workplan Approved
Event Date: 02/07/1991

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

MONSANTO CHEM CO (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000376909

Event: RFI Imposition
 Event Date: 12/05/1990

RCRAInfo:

Owner: MONSANTO CO
 (314) 694-1000
 EPA ID: CAD043555366
 Contact: Not reported

Classification: Large Quantity Generator, TSD
 TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 262.10-12.A
 Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
 Date Violation Determined: 08/21/1992
 Actual Date Achieved Compliance: 09/22/1992

Regulation Violated: 262.50-60
 Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
 Date Violation Determined: 10/30/1989
 Actual Date Achieved Compliance: 10/24/1990

Enforcement Action: WRITTEN INFORMAL
 Enforcement Action Date: 12/12/1989
 Penalty Type: Not reported

Regulation Violated: 264.140-150.H
 Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
 Date Violation Determined: 10/03/1989
 Actual Date Achieved Compliance: 11/07/1989

Enforcement Action: WRITTEN INFORMAL
 Enforcement Action Date: 10/16/1989
 Penalty Type: Not reported

Regulation Violated: 262.50-60
 Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
 Date Violation Determined: 01/26/1987
 Actual Date Achieved Compliance: 10/30/1989

Enforcement Action: WRITTEN INFORMAL
 Enforcement Action Date: 10/16/1989
 Penalty Type: Not reported

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
Final Monetary Penalty	8/21/1992	1200	STATE
Proposed Monetary Penalty	8/21/1992	1200	STATE

There are 4 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19920922
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19901024
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19891107
Non-Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19891030

CORRACTS:

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MONSANTO CHEM CO (Continued)

1000376909

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 01/23/1995
Action: CA200 - RFI Approved
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 01/23/1995
Action: CA350 - CMS Approved
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 01/31/1992
Action: CA600SR - Stabilization Measures Implemented, Primary measure is source removal and/or treatment
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 01/31/1992
Action: CA600EC - Stabilization Measures Implemented, Primary measure is exposure control by barrier and/or institutional control
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 02/07/1991
Action: CA300 - CMS Workplan Approved
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/14/1995

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

MONSANTO CHEM CO (Continued)

1000376909

Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 05/23/1994
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 05/26/1992
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/08/1998
Action: CA725IN - Current Human Exposures Under Control, More information is needed to make a determination
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/08/1998
Action: CA750NO - Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected
NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 07/27/1992

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

MONSANTO CHEM CO (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000376909

Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority

NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366

EPA Region: 09

Area Name: ENTIRE FACILITY

Actual Date: 07/27/1992

Action: CA225IN - Stabilization Measures Evaluation, This facility is not, amenable to stabilization activity because of, a lack of technical data. An evaluation has been completed, but further data is necessary to determine stabilization measures, feasibility or appropriateness.

This status should be changed when data becomes available

NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366

EPA Region: 09

Area Name: ENTIRE FACILITY

Actual Date: 09/23/1991

Action: CA150 - RFI Workplan Approved

NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366

EPA Region: 09

Area Name: ENTIRE FACILITY

Actual Date: 10/31/1992

Action: CA650 - Stabilization Construction Completed

NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

EPA ID: CAD043555366

EPA Region: 09

Area Name: ENTIRE FACILITY

Actual Date: 12/05/1990

Action: CA100 - RFI Imposition

NAICS Code(s): 325611 325612 32511
Soap and Other Detergent Manufacturing
Polish and Other Sanitation Good Manufacturing
Petrochemical Manufacturing

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

M52
NW
1/2-1
3508 ft.

NIKLOR CHEM CO INC
2060 E. 220TH ST.
CARSON, CA 90745

EMI S106665613
ENVIROSTOR N/A

Site 1 of 2 in cluster M

Relative:
Lower

EMI:

Actual:
26 ft.

Year: 1990
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 14191
 Air District Name: SC
 SIC Code: 2879
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 1
 Reactive Organic Gases Tons/Yr: 1
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

ENVIROSTOR:

Site Type: Evaluation
 Site Type Detailed: Evaluation
 Acres: Not reported
 NPL: NO
 Regulatory Agencies: NONE SPECIFIED
 Lead Agency: NONE SPECIFIED
 Program Manager: Not reported
 Supervisor: Referred - Not Assigned
 Division Branch: So Cal - Cypress
 Facility ID: 19281226
 Site Code: Not reported
 Assembly: 55
 Senate: 28
 Special Program: Not reported
 Status: Refer: 1248 Local Agency
 Status Date: 2004-05-27 00:00:00
 Restricted Use: NO
 Funding: Not Applicable
 Latitude: 0
 Longitude: 0
 Alias Name: 19281226
 Alias Type: Envirostor ID Number
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: Not reported
 Completed Area Name: Not reported
 Completed Sub Area Name: Not reported
 Completed Document Type: Not reported
 Completed Date: Not reported
 Confirmed: NONE SPECIFIED
 Confirmed Description: Not reported
 Future Area Name: Not reported
 Future Sub Area Name: Not reported
 Future Document Type: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

NIKLOR CHEM CO INC (Continued)

EDR ID Number
 EPA ID Number

S106665613

Future Due Date: Not reported
 Media Affected: NONE SPECIFIED
 Media Affected Desc: Not reported
 Management Required: NONE SPECIFIED
 Management Required Desc: Not reported
 Potential: NONE SPECIFIED
 Potential Description: Not reported
 Schedule Area Name: Not reported
 Schedule Sub Area Name: Not reported
 Schedule Document Type: Not reported
 Schedule Due Date: Not reported
 Schedule Revised Date: Not reported
 PastUse: NONE SPECIFIED

**M53
 NW
 1/2-1
 3508 ft.**

**NIKLOR CHEMICAL CO INC
 2060 E 220TH ST
 LONG BEACH, CA 90810**

**RCRA-SQG 1000290751
 FINDS CAD008392052
 HAZNET
 RCRA-TSDF
 CORRACTS
 CERC-NFRAP**

**Relative:
 Lower**

Site 2 of 2 in cluster M

**Actual:
 26 ft.**

RCRAInfo Corrective Action Summary:

Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
 Event Date: 07/16/1991

RCRAInfo:

Owner: NIKLOR CHEMICAL CO INC.
 (213) 830-2253
 EPA ID: CAD008392052
 Contact: Not reported

Classification: TSD
 TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 264.140-150.H
 Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
 Date Violation Determined: 04/25/1989
 Actual Date Achieved Compliance: 04/25/1989

Enforcement Action: FINAL 3008(A) COMPLIANCE ORDER
 Enforcement Action Date: 11/01/1988
 Penalty Type: Final Monetary Penalty

Regulation Violated: 270
 Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
 Date Violation Determined: 02/22/1988
 Actual Date Achieved Compliance: 03/03/1988

Enforcement Action: WRITTEN INFORMAL
 Enforcement Action Date: 03/02/1988
 Penalty Type: Not reported

Regulation Violated: 264.140-150.H
 Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
 Date Violation Determined: 02/08/1988
 Actual Date Achieved Compliance: 03/03/1988

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

NIKLOR CHEMICAL CO INC (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000290751

Enforcement Action Date: 06/06/1988
 Penalty Type: Proposed Monetary Penalty

There are 3 violation record(s) reported at this site:

<u>Evaluation</u>	<u>Area of Violation</u>	<u>Date of Compliance</u>
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19890425
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19880303
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19880303

FINDS:

Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid: CAD008392052
 Contact: NIKLOR CHEMICAL CO INC.
 Telephone: 3108302253
 Facility Addr2: Not reported
 Mailing Name: Not reported
 Mailing Address: 2060 E 220TH ST
 Mailing City,St,Zip: LONG BEACH, CA 908101695
 Gen County: Los Angeles
 TSD EPA ID: CAD008252405
 TSD County: Los Angeles
 Waste Category: Unspecified solvent mixture Waste
 Disposal Method: Recycler
 Tons: .1334
 Facility County: Los Angeles

Gepaid: CAD008392052
 Contact: STEPHEN N WILHELM
 Telephone: 6618242494

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

NIKLOR CHEMICAL CO INC (Continued)

1000290751

Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1667 PURDY AVE
Mailing City,St,Zip: MOJAVE, CA 935010000
Gen County: Los Angeles
TSD EPA ID: CAD980675276
TSD County: Kern
Waste Category: Other inorganic solid waste
Disposal Method: Treatment, Tank
Tons: 5.89
Facility County: Not reported

Gepaid: CAD008392052
Contact: NIKLOR CHEMICAL CO INC.
Telephone: 3108302253
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2060 E 220TH ST
Mailing City,St,Zip: LONG BEACH, CA 908101695
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Recycler
Tons: .1334
Facility County: Los Angeles

Gepaid: CAD008392052
Contact: NIKLOR CHEMICAL CO INC.
Telephone: 3108302253
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2060 E 220TH ST
Mailing City,St,Zip: LONG BEACH, CA 908101695
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: Recycler
Tons: 8.3400
Facility County: Los Angeles

Gepaid: CAD008392052
Contact: NIKLOR CHEMICAL CO INC.
Telephone: 3108302253
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2060 E 220TH ST
Mailing City,St,Zip: LONG BEACH, CA 908101695
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Recycler
Tons: .0667
Facility County: Los Angeles

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

NIKLOR CHEMICAL CO INC (Continued)

1000290751

[Click this hyperlink](#) while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

CORRACTS:

EPA ID: CAD008392052
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 07/16/1991
Action: CA075LO - CA Prioritization, Facility or area was assigned a low
corrective action priority
NAICS Code(s): 32532
Pesticide and Other Agricultural Chemical Manufacturing

CERC-NFRAP:

Site ID: 0900308
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: Site Reassessment Start Needed

CERCLIS-NFRAP Site Contact Name(s):

Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

Site Description: Not reported

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/24/1990
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 07/16/1991
Priority Level: Deferred to RCRA (Subtitle C)

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 01/23/1996
Priority Level: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

54
NW
1/2-1
3729 ft.

CLEAN STEEL INC.
2061 E. 220TH STREET
CARSON, CA 90810

ENVIROSTOR

S107736138
N/A

Relative:
Equal

ENVIROSTOR:

Actual:
27 ft.

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	LA CNTY FIRE DEPT. (BILLING AND UST), LOS ANGELES COUNTY
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Greg Holmes
Division Branch:	So Cal - Cypress
Facility ID:	70000130
Site Code:	Not reported
Assembly:	55
Senate:	28
Special Program:	Not reported
Status:	Refer: 1248 Local Agency
Status Date:	2005-09-07 00:00:00
Restricted Use:	NO
Funding:	Not Applicable
Latitude:	0
Longitude:	0
Alias Name:	70000130
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potential Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
 EPA ID Number

55 **223RD ST./DOMINGUEZ CHANNEL**
WNW
1/2-1 **CARSON, CA**
4006 ft.

Notify 65 **S100178696**
N/A

Relative: Notify 65:
Lower Date Reported: Not reported
 Staff Initials: Not reported
Actual: Board File Number: Not reported
19 ft. Facility Type: Not reported
 Discharge Date: Not reported
 Incident Description: Not reported

56 **ALPERT & ALPERT IRON & METAL**
NW **21930 S. WILMINGTON AVE.**
1/2-1 **CARSON, CA 90810**
4569 ft.

ENVIROSTOR **S106797600**
N/A

Relative: ENVIROSTOR:
Lower Site Type: Evaluation
 Site Type Detailed: Evaluation
Actual: Acres: Not reported
25 ft. NPL: NO
 Regulatory Agencies: NONE SPECIFIED
 Lead Agency: NONE SPECIFIED
 Program Manager: Not reported
 Supervisor: Referred - Not Assigned
 Division Branch: So Cal - Cypress
 Facility ID: 19990052
 Site Code: Not reported
 Assembly: 55
 Senate: 28
 Special Program: Not reported
 Status: Refer: 1248 Local Agency
 Status Date: 2004-01-15 00:00:00
 Restricted Use: NO
 Funding: Not Applicable
 Latitude: 0
 Longitude: 0
 Alias Name: 19990052
 Alias Type: Envirostor ID Number
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: Not reported
 Completed Area Name: Not reported
 Completed Sub Area Name: Not reported
 Completed Document Type: Not reported
 Completed Date: Not reported
 Confirmed: NONE SPECIFIED
 Confirmed Description: Not reported
 Future Area Name: Not reported
 Future Sub Area Name: Not reported
 Future Document Type: Not reported
 Future Due Date: Not reported
 Media Affected: NONE SPECIFIED
 Media Affected Desc: Not reported
 Management Required: NONE SPECIFIED
 Management Required Desc: Not reported
 Potential: NONE SPECIFIED
 Potential Description: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

ALPERT & ALPERT IRON & METAL (Continued)

S106797600

Schedule Area Name: Not reported
 Schedule Sub Area Name: Not reported
 Schedule Document Type: Not reported
 Schedule Due Date: Not reported
 Schedule Revised Date: Not reported
 PastUse: NONE SPECIFIED

57
South
1/2-1
4730 ft.

GATX, CARSON TERMINAL
2000 EAST SEPULVEDA BLVD.
CARSON, CA 90810

CHMIRS S100925072
Toxic Pits N/A

Relative:
Lower

CHMIRS:
 OES Incident Number: 98-2081
 OES notification: 5/4/199807:45:11 AM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: No
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: Reporting Party
 Containment: Not reported
 What Happened: Not reported
 Type: Not reported
 Measure: Not reported

Actual:
20 ft.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

<p>Other: Not reported Date/Time: Not reported Year: 1998 Agency: GATX Corp Incident Date: 5/4/199812:00:00 AM Admin Agency: L. A. County Fire Prevention Amount: Not reported Contained: Yes Site Type: Refinery,Other E Date: Not reported Substance: Crude Oil Quantity Released: Not reported BBLs: 20 Cups: 0 CUFT: 0 Gallons: 0.000000 Grams: 0 Pounds: 0 Liters: 0 Ounces: 0 Pints: 0 Quarts: 0 Sheen: 0 Tons: 0 Unknown: 0 Description: Not reported Evacuations: 0 Number of Injuries: 0 Number of Fatalities: 0 Description:</p>	<p>Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failed on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.</p>
<p>OES Incident Number: 98-4220 OES notification: 9/15/199801:35:41 PM OES Date: Not reported OES Time: Not reported Incident Date: Not reported Date Completed: Not reported</p>	

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1998
Agency:	GATX
Incident Date:	9/15/1998 12:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	Crude Oil
Quantity Released:	Not reported
BBLs:	35
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	Kinder Morgan
Incident Date:	2/2/2003 12:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Refinery
E Date:	Not reported
Substance:	Gasoline H2O mix
Quantity Released:	Not reported
BBLs:	0
Cups:	0
CUFT:	0
Gallons:	35
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failed on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 03-5654
 OES notification: 10/31/2003 08:52:02 PM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agency Personnel # Of Decontaminated: Not reported
 Responding Agency Personnel # Of Injuries: Not reported
 Responding Agency Personnel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: Not reported
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: Contractor
 Containment: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

OES Time: 09:39:07 PM
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: YES
Waterway: Not reported
Spill Site: Not reported
Cleanup By: GATX
Containment: Not reported
What Happened: Not reported
Type: PETROLEUM
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1994
Agency: GATX
Incident Date: 1/16/94 1900
Admin Agency: Not reported
Amount: 15 BBLS
Contained: NO
Site Type: OTHER
E Date: Not reported
Substance: crude
Quantity Released: Not reported
BBLS: Not reported
Cups: Not reported
CUFT: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	LINE OVERPRESSURIZED RELIEF VALVE OVER FILLED SUMP IN FUEL STORAGE AREA.
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failer on pump caused crude to fall to soil, contained in earthen berm; vactor cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.
OES Incident Number:	99-1061
OES notification:	3/7/199905:49:39 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

More Than Two Substances Involved?: Not reported
Resp Agency Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Reporting Party and contractor
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1999
Agency: GATX Terminals
Incident Date: 3/7/1999 12:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported
Contained: Yes
Site Type: Other
E Date: Not reported
Substance: transmix
Quantity Released: Not reported
BBLs: 0
Cups: 0
CUFT: 0
Gallons: 0
Grams: 0
Pounds: 0
Liters: 0
Ounces: 0
Pints: 0
Quarts: 0
Sheen: 0
Tons: 0
Unknown: 0
Description: Not reported
Evacuations: 0
Number of Injuries: 0
Number of Fatalities: 0
Description: Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failer on pump caused crude to fall to soil, contained in earthen berm; vactor cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 670
OES notification: Not reported
OES Date: 2/5/1994
OES Time: 01:22:10 PM
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agency Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: YES

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

<p>Waterway: Spill Site: Cleanup By: Containment: What Happened: Type: Measure: Other: Date/Time: Year: Agency: Incident Date: Admin Agency: Amount: Contained: Site Type: E Date: Substance: Quantity Released: BBLs: Cups: CUFT: Gallons: Grams: Pounds: Liters: Ounces: Pints: Quarts: Sheen: Tons: Unknown: Description: Evacuations: Number of Injuries: Number of Fatalities: Description:</p>	<p>Not reported Not reported gatex to clean up Not reported Not reported PETROLEUM Not reported Not reported Not reported 1994 gatex 0750 5 feb 94 Not reported 175 bbl NO OTHER Not reported crude Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported Not reported pipe line leak in terminal area, all material in secondary containment. NO NO NO Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised</p>
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Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

possibly a vacuum truck spilled jet fuel.

OES Incident Number: 4980
OES notification: Not reported
OES Date: 11/1/1994
OES Time: 09:13:35 AM
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: YES
Waterway: Not reported
Spill Site: Not reported
Cleanup By: gatx
Containment: Not reported
What Happened: Not reported
Type: PETROLEUM
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1994
Agency: gatx
Incident Date: 1800/31oct94
Admin Agency: Not reported
Amount: max of 10 bbls
Contained: NO
Site Type: OTHER
E Date: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

EDR ID Number
EPA ID Number
Database(s)

GATX, CARSON TERMINAL (Continued)

S100925072

Substance: diesel fuel
Quantity Released: Not reported
BBLS: Not reported
Cups: Not reported
CUFT: Not reported
Gallons: Not reported
Grams: Not reported
Pounds: Not reported
Liters: Not reported
Ounces: Not reported
Pints: Not reported
Quarts: Not reported
Sheen: Not reported
Tons: Not reported
Unknown: Not reported
Description: tranfer line gasket failed -spill went to containment area
Evacuatuions: NO
Number of Injuries: NO
Number of Fatalities: NO
Description: Release is contained to the terminal. Caused by a tank overflow.Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel.Valve left open on water draw vault, caused release of gasoline and water mix.Unknown size pipeline leaked and left a puddle of crude 20' x 60'.Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing.Unknown amout covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting.Gasket failer on pump caused crude to fall to soil, contained in earthen berm; vactor cleanup underway.Released due to a blown gasket on a line.Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up.An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week.While doing a tank draw, a water draw look box overflowed.Sump overflowed. Investigation in processOccurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak.Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 99-4330
OES notification: 10/11/199904:19:06 PM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: Yes
Waterway: storm drain
Spill Site: Not reported
Cleanup By: Contractor
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1999
Agency: GATX Terminals Corp
Incident Date: 10/11/1999 12:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported
Contained: Unknown
Site Type: Oil Field
E Date: Not reported
Substance: Crude Oil
Quantity Released: Not reported
BBLS: 25
Cups: 0
CUFT: 0
Gallons: 0
Grams: 0
Pounds: 0
Liters: 0
Ounces: 0
Pints: 0
Quarts: 0
Sheen: 0
Tons: 0
Unknown: 0
Description: Not reported
Evacuations: 0
Number of Injuries: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Number of Fatalities: 0
 Description: Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 05-4134
 OES notification: 7/13/2005 10:17:58 AM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agency Personnel # Of Decontaminated: Not reported
 Responding Agency Personnel # Of Injuries: Not reported
 Responding Agency Personnel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Kinder Morgan
Incident Date:	7/13/200512:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Refinery
E Date:	Not reported
Substance:	gasoline
Quantity Released:	Not reported
BBLS:	1
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Release is contained to the terminal. Caused by a tank overflow.Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel.Valve left open on water draw vault, caused release of gasoline and water mix.Unknown size pipeline leaked and left a puddle of crude 20' x 60'.Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing.Unknown amout covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting.Gasket failer on pump caused crude to fall to soil, contained in earthen berm; vactor cleanup underway.Released due to a blown gasket on a line.Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up.An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week.While doing a tank draw, a water draw look box overflowed.Sump overflowed.

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 05-6308
OES notification: 11/1/200508:08:36 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Reporting Party
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 2005
Agency: Kinder Morgan
Incident Date: 11/1/200512:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

<p>Contained: Yes Site Type: Refinery E Date: Not reported Substance: Trans Mix (Diesel & Mix) Quantity Released: Not reported BBLS: 0 Cups: 0 CUFT: 0 Gallons: 0.000000 Grams: 0 Pounds: 0 Liters: 0 Ounces: 0 Pints: 0 Quarts: 0 Sheen: 0 Tons: 0 Unknown: 0 Description: Not reported Evacuations: 0 Number of Injuries: 0 Number of Fatalities: 0 Description:</p>	<p>Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.</p>
<p>OES Incident Number: 05-6630 OES notification: 11/16/200508:37:56 AM OES Date: Not reported OES Time: Not reported Incident Date: Not reported Date Completed: Not reported Property Use: Not reported Agency Id Number: Not reported Agency Incident Number: Not reported Time Notified: Not reported Time Completed: Not reported Surrounding Area: Not reported Estimated Temperature: Not reported</p>	

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Reporting Party
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 2005
Agency: Kinder Morgan
Incident Date: 11/16/2005 12:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported
Contained: Yes
Site Type: Other
E Date: Not reported
Substance: Crude Oil
Quantity Released: Not reported
BBLS: 0
Cups: 0
CUFT: 0
Gallons: 1
Grams: 0
Pounds: 0
Liters: 0
Ounces: 0
Pints: 0
Quarts: 0
Sheen: 0
Tons: 0
Unknown: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Description: Not reported
 Evacuations: 0
 Number of Injuries: 0
 Number of Fatalities: 0
 Description: Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 05-5674
 OES notification: 9/29/2005 11:38:28 PM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agency Personnel # Of Decontaminated: Not reported
 Responding Agency Personnel # Of Injuries: Not reported
 Responding Agency Personnel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 05-5072
OES notification: 8/30/2005 11:18:10 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Unknown
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 2005
Agency: Kinder Morgan

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Incident Date: 8/30/200512:00:00 AM
 Admin Agency: L. A. County Fire Prevention
 Amount: Not reported
 Contained: Yes
 Site Type: Other
 E Date: Not reported
 Substance: Threatened release
 Quantity Released: Not reported
 BBLS: 0
 Cups: 0
 CUFT: 0
 Gallons: 0.000000
 Grams: 0
 Pounds: 0
 Liters: 0
 Ounces: 0
 Pints: 0
 Quarts: 0
 Sheen: 0
 Tons: 0
 Unknown: 0
 Description: Not reported
 Evacuations: 0
 Number of Injuries: 0
 Number of Fatalities: 0

Description: Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 97-0958
 OES notification: 3/7/199708:01:48 PM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1997
Agency:	GATX Terminals Corp.
Incident Date:	3/6/1997 12:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	gasoline/water
Quantity Released:	Not reported
BBLs:	10
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

<p>Sheen: 0 Tons: 0 Unknown: 0 Description: Not reported Evacuations: 0 Number of Injuries: 0 Number of Fatalities: 0 Description:</p>	<p>Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.</p>
<p>OES Incident Number: 97-0989 OES notification: 3/10/1997 12:21:39 PM OES Date: Not reported OES Time: Not reported Incident Date: Not reported Date Completed: Not reported Property Use: Not reported Agency Id Number: Not reported Agency Incident Number: Not reported Time Notified: Not reported Time Completed: Not reported Surrounding Area: Not reported Estimated Temperature: Not reported Property Management: Not reported Special Studies 1: Not reported Special Studies 2: Not reported Special Studies 3: Not reported Special Studies 4: Not reported Special Studies 5: Not reported Special Studies 6: Not reported More Than Two Substances Involved?: Not reported Resp Agency Personnel # Of Decontaminated: Not reported Responding Agency Personnel # Of Injuries: Not reported Responding Agency Personnel # Of Fatalities: Not reported Others Number Of Decontaminated: Not reported Others Number Of Injuries: Not reported Others Number Of Fatalities: Not reported Vehicle Make/year: Not reported</p>	

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Reporting Party
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1997
Agency: Gatx Terminals
Incident Date: 3/1/1997 12:00:00 AM
Admin Agency: L. A. County Fire Prevention
Amount: Not reported
Contained: Yes
Site Type: Other
E Date: Not reported
Substance: Water
Quantity Released: Not reported
BBLS: 0
Cups: 0
CUFT: 0
Gallons: 110
Grams: 0
Pounds: 0
Liters: 0
Ounces: 0
Pints: 0
Quarts: 0
Sheen: 0
Tons: 0
Unknown: 0
Description: Not reported
Evacuations: 0
Number of Injuries: 0
Number of Fatalities: 0
Description: Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.

OES Incident Number: 97-4244
OES notification: 10/23/1997 05:45:59 PM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Contractor
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Date/Time:	Not reported
Year:	1997
Agency:	GATX Tank Storage Terminals Corp.
Incident Date:	10/17/1997 12:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	crude oil
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	55
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Release is contained to the terminal. Caused by a tank overflow. Pipeline release was on the western border of bulk storage and transfer facility and then flowed onto Alameda St then into 2 storm drains. Leads into the Dominguez Channel. Valve left open on water draw vault, caused release of gasoline and water mix. Unknown size pipeline leaked and left a puddle of crude 20' x 60'. Per caller an above ground tank was taken out of service and upon inspection a rivet at the bottom of the tank was found to have topside corrosion, The head was missing. Unknown amount covering a 15 by 20 ft. area. A vacuum truck backed into a pipe fitting and broke off the 1/2 inch pipe fitting. Gasket failure on pump caused crude to fall to soil, contained in earthen berm; vector cleanup underway. Released due to a blown gasket on a line. Substance was released during a drain-up of an internal line. Substance splashed out of the drain pan. Substance released covered an area 2Ft X 2Ft. Substance has been cleaned up. An above ground storage tank was being dewatered and a valve was left open. The valve has now been closed. the location is an above ground storage tank farm. Contamination was to soil only. Removal of the soil will begin next week. While doing a tank draw, a water draw look box overflowed. Sump overflowed. Investigation in process. Occurred at a Storage terminal which stores product for refineries. Possibly occurred due to corrosion leak from an underground line. Noticed crude on ground, began excavating and discovered leak. Caller advised possibly a vacuum truck spilled jet fuel.
Toxic Pits:	
Region:	04
Task #:	84021
Owner:	GATX TANK STORAGE TERMINALS
1/2 Mi Limit:	Y
Num. of Pits:	3
Cease Discharge Due:	06/01/90

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

GATX, CARSON TERMINAL (Continued)

S100925072

Cease Discharge Complete: / /
 Closure Due: 06/30/91
Closure Completed: 08/01/91
 Status: CLOSED
 Hydro Geological Assessment Report Due: / /
 Final Hydro Geological Assessment Review Completed: / /

58
South
1/2-1
4764 ft.

WATSON CARBON & CHEMICAL COMPANY
2021 EAST SEPULVEDA BOULEVARD
LONG BEACH, CA 90810

ENVIROSTOR S101480635
N/A

Relative:
Higher

ENVIROSTOR:

Actual:
29 ft.

Site Type: Historical
 Site Type Detailed: * Historical
 Acres: Not reported
 NPL: NO
 Regulatory Agencies: NONE SPECIFIED
 Lead Agency: NONE SPECIFIED
 Program Manager: Not reported
 Supervisor: Referred - Not Assigned
 Division Branch: So Cal - Cypress
 Facility ID: 19280751
 Site Code: Not reported
 Assembly: 55
 Senate: 28
 Special Program: * Site Char & Assess Grant (CERCLA 104)
 Status: Refer: Other Agency
 Status Date: 1985-06-30 00:00:00
 Restricted Use: NO
 Funding: Not reported
 Latitude: 33.8069444444444
 Longitude: -118.231666666667
 Alias Name: 19280751
 CAD067748285
 SUBSIDIARY OF HARVEY ALUMINUM
 INDUSTRIAL POLYCHEMICAL
 MARTIN MARIETTA INC
 ARCO REFINERY
 Alias Type: Envirostor ID Number
 EPA Identification Number
 Alternate Name
 Alternate Name
 Alternate Name
 Alternate Name
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: PRELIM ASSESS DONE CERCLA 104 FACILITY IDENTIFIED ID'D FROM PAC TEL
 BUS DIR 1971 NO CURRENT TELEPHONE LISTING
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Discovery
 Completed Date: 1982-08-03 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Preliminary Assessment Report
 Completed Date: 1985-06-30 00:00:00
 Confirmed: NONE SPECIFIED

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

WATSON CARBON & CHEMICAL COMPANY (Continued)

S101480635

Confirmed Description: Not reported
 Future Area Name: Not reported
 Future Sub Area Name: Not reported
 Future Document Type: Not reported
 Future Due Date: Not reported
 Media Affected: NONE SPECIFIED
 Media Affected Desc: Not reported
 Management Required: NONE SPECIFIED
 Management Required Desc: Not reported
 Potential: 10195
 Potential Description: * UNSPECIFIED AQUEOUS SOLUTION
 Schedule Area Name: Not reported
 Schedule Sub Area Name: Not reported
 Schedule Document Type: Not reported
 Schedule Due Date: Not reported
 Schedule Revised Date: Not reported
 PastUse: NONE SPECIFIED

N59
SSW
1/2-1
4927 ft.

BP WEST COAST PRODUCTS-CARSON REFINERY
1801 E SEPULVEDA BLVD
CARSON, CA 90749

Site 1 of 2 in cluster N

Relative:
Higher

Actual:
28 ft.

FINDS 1000840779
LUST 90749RCPRD18
CHMIRS
Cortese
RCRA-LQG
TRIS
RCRA-TSDF
UST
CORRACTS
CERC-NFRAP
LOS ANGELES CO. HMS
EMI

FINDS:

Other Pertinent Environmental Activity Identified at Site

Not reported

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

California - Hazardous Waste Tracking System - Datamart

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

these facilities release directly to air, water, land, or that are transported off-site.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and its Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

RACT/BACT/LAER Clearinghouse (RBLC) data base contains case-specific information on the 'Best Available' air pollution technologies that have been required to reduce the emission of air pollutants from stationary sources (e.g., power plants, steel mills, chemical plants, etc.). This information has been provided by State and local permitting agencies. The Clearinghouse also contains a regulation data base that summarizes EPA emission limits required in New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and Maximum Achievable Control Technology (MACT) standards.

PCS (Permit Compliance System) is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

LUST:

Region: STATE
Case Type: Other ground water affected
Cross Street: ALAMEDA
Enf Type: Not reported
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global Id: T0603705297

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: 1996-03-08 00:00:00
Remed Plan: Not reported
Remed Action: 1998-07-01 00:00:00
Monitoring: Not reported
Close Date: Not reported
Discover Date: Not reported
Enforcement Dt: Not reported
Release Date: 1987-01-04 00:00:00
Review Date: 1998-07-01 00:00:00
Enter Date: 1988-06-14 00:00:00
MTBE Date: 1965-01-01 00:00:00
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: 100000
Max MTBE Soil ppb: Not reported
County: 19
Org Name: Not reported
Reg Board: Los Angeles Region
Status: Remedial action (cleanup) Underway
Chemical: Diesel
Contact Person: Not reported
Responsible Party: ARCO PETROLEUM PRODUCTS
RP Address: 1801 E. SEPULVEDA BLVD., CARSON, CA 90749-6210
Interim: Yes
Oversight Prgm: Spills, Leaks, Investigations and Cleanup UST
MTBE Class: B
MTBE Conc: 1
MTBE Fuel: 0
MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: SLC
Staff Initials: JA
Lead Agency: Regional Board
Local Agency: 19000
Hydr Basin #: SAN FERNANDO VALLEY
Beneficial: Not reported
Priority: LOP/HIGH - KNOWN HEALTH/SAFETY/ENVIRONMENTAL IMPACT
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: R-20190
Qty Leaked: Not reported
Abate Method: Remove Free Product - remove floating product from water table
Operator: OLD CASE#907450116
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: **JIM ROSS GROUNDWATER SECTION REFER TO SLIC #224

LUST:

Region: 4
Staff: SLC

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

County:	Los Angeles	
Local Agency:	19000	
Lead Agency:	Regional Board	
Case Type:	Groundwater	
Status:	Remedial action (cleanup) Underway	
Substance:	Diesel	
Cross Street:	ALAMEDA	
Global ID:	T0603705297	
Enforcement Type:	Not reported	
Date Leak Discovered:	Not reported	
Date Leak Record Entered:	6/14/1988	
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	Not reported	
Leak Source:	Not reported	
Date Leak Stopped:	Not reported	
Date Confirmation Began:	Not reported	
Operator:	OLD CASE#907450116	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):	6590.661173892685524786911358	
Abatement Method Used at the Site:	Remove Free Product	
Source of Cleanup Funding:	Remove Free Product	
Date Leak First Reported:	1/4/1987	
Preliminary Site Assessment Workplan Submitted:	Not reported	
Preliminary Site Assessment Began:	Not reported	
Pollution Characterization Began:	3/8/1996	
Remediation Plan Submitted:	Not reported	
Remedial Action Underway:	7/1/1998	
Post Remedial Action Monitoring Began:	Not reported	
Date the Case was Closed:	Not reported	
Date Case Last Changed on Database:	7/1/1998	
Enforcement Action Date:	Not reported	
Historical Max MTBE Date:	1/1/1965	
Hist Max MTBE Conc in Groundwater:	100000	
Hist Max MTBE Conc in Soil:	Not reported	
Significant Interim Remedial Action Taken:	Yes	
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Regional Board:	04	
Owner Contact:	Not reported	
Responsible Party:	ARCO PETROLEUM PRODUCTS	
RP Address:	1801 E. SEPULVEDA BLVD., CARSON, CA 90749-6210	
Program:	SLIC	
Lat/Long:	33.8083346 / -1	
Local Agency Staff:	Not reported	
Beneficial Use:	Not reported	
Priority:	LOP/HIGH - KNOWN HEALTH/SAFETY/ENVIRONMENTAL IMPACT	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Local Case No:	Not reported	
Substance Quantity:	Not reported	
Assigned Name:	Not reported	
W Global ID:	Not reported	
Summary:	**JIM ROSS GROUNDWATER SECTION	REFER TO
	SLIC #224	

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

CHMIRS:
OES Incident Number: 99-3657
OES notification: 8/31/199912:21:09 PM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: No
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Reporting Party
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1999
Agency: ARCO
Incident Date: 8/31/199912:00:00 AM
Admin Agency: Not reported
Amount: Not reported
Contained: No
Site Type: Refinery
E Date: Not reported
Substance: S02

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Quantity Released:	Not reported
BBLs:	0
Cups:	0
CUFT:	0
Gallons:	0
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	2000
Number of Injuries:	0
Number of Fatalities:	0
Description:	Flame on incinerator was somehow extinguished. Release is ongoing.
OES Incident Number:	008466
OES notification:	Not reported
OES Date:	5/30/1995
OES Time:	10:02:46 AM
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Waterway Involved:	YES
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	none repairs made to equip
Containment:	Not reported
What Happened:	Not reported
Type:	CHEMICAL
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1995
Agency:	arco air compliance
Incident Date:	5/30/95 0611
Admin Agency:	Not reported
Amount:	9lbs(rls to atmosphere)
Contained:	NO
Site Type:	REF
E Date:	Not reported
Substance:	sulphur dioxide
Quantity Released:	Not reported
BBLs:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	aclaus anyalizer plugged.
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Flame on incinerator was somehow extinguished. Release is ongoing.
OES Incident Number:	009642
OES notification:	Not reported
OES Date:	8/19/1995
OES Time:	11:28:07 AM
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agency Personnel # Of Decontaminated:	Not reported
Responding Agency Personnel # Of Injuries:	Not reported
Responding Agency Personnel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	arco
Containment:	Not reported
What Happened:	Not reported
Type:	CHEMICAL
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1995
Agency:	arco
Incident Date:	1055 19aug95
Admin Agency:	Not reported
Amount:	unknown
Contained:	NO
Site Type:	OTHER
E Date:	Not reported
Substance:	udex-hydro carbon
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	flang that has separated, in the process of repair.
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	Flame on incinerator was somehow extinguished. Release is ongoing.

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000840779

Cortese:
 Region: CORTESE
 Facility Addr2: 1801 SEPULVEDA BLVD E

RCRAInfo Corrective Action Summary:

- Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.
 Event Date: 10/30/1997
- Event: Current Human Exposures under Control, More information is needed to make a determination.
 Event Date: 10/30/1997
- Event: Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.
 Event Date: 10/30/1997
- Event: Stabilization Measures Evaluation, This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
 Event Date: 10/20/1997
- Event: RFI Imposition
 Event Date: 08/20/1990
- Event: Stabilization Measures Implemented, Groundwater extraction and treatment (e.g., to achieve groundwater containment, to achieve MCL).
 Event Date: 02/25/1985

RCRAInfo:

Owner: ARCO PRODUCTS CO
 (213) 816-8100
 EPA ID: CAD077227049
 Contact: PATRICK L AVERY
 (213) 816-8100

Classification: Large Quantity Generator, TSDF
 TSDF Activities: Used oil refiner

BIENNIAL REPORTS:

Last Biennial Reporting Year: 2005

<u>Waste</u>	<u>Quantity (Lbs)</u>	<u>Waste</u>	<u>Quantity (Lbs)</u>
D001	14080.00	D002	50042.40
D008	255615.00	D009	3050.00
D018	222946.00	D026	2350.00
F002	25.00	F037	603259.00
F038	603259.00	F039	25.00
K171	1385720.00		

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Violation Status: Violations exist

Regulation Violated:	Not reported
Area of Violation:	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined:	11/13/2003
Actual Date Achieved Compliance:	02/23/2004
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	11/13/2003
Penalty Type:	Not reported
Regulation Violated:	Not reported
Area of Violation:	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined:	11/13/2003
Actual Date Achieved Compliance:	02/23/2004
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	11/13/2003
Penalty Type:	Not reported
Regulation Violated:	Not reported
Area of Violation:	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined:	03/04/2003
Actual Date Achieved Compliance:	02/23/2004
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	03/04/2003
Penalty Type:	Not reported
Regulation Violated:	Not reported
Area of Violation:	GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined:	02/20/2002
Actual Date Achieved Compliance:	03/06/2002
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	02/22/2002
Penalty Type:	Not reported
Regulation Violated:	262.50-60
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	03/27/1991
Actual Date Achieved Compliance:	12/20/1993
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	05/10/1991
Penalty Type:	Proposed Monetary Penalty
Enforcement Action:	INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date:	09/10/1991
Penalty Type:	Proposed Monetary Penalty
Regulation Violated:	264.110-120.G
Area of Violation:	TSD-CLOSURE/POST-CLOSURE REQUIREMENTS
Date Violation Determined:	03/27/1991
Actual Date Achieved Compliance:	12/20/1993
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	05/10/1991
Penalty Type:	Proposed Monetary Penalty
Enforcement Action:	INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date:	09/10/1991
Penalty Type:	Proposed Monetary Penalty
Regulation Violated:	263

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Area of Violation: TRANSPORTER-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/27/1991
Actual Date Achieved Compliance: 12/20/1993
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 05/10/1991
Penalty Type: Proposed Monetary Penalty
Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 09/10/1991
Penalty Type: Proposed Monetary Penalty
Regulation Violated: 263
Area of Violation: TRANSPORTER-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 05/04/1988
Actual Date Achieved Compliance: 06/21/1991
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 06/06/1988
Penalty Type: Not reported
Regulation Violated: 262.50-60
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 05/04/1988
Actual Date Achieved Compliance: 06/21/1991
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 06/06/1988
Penalty Type: Not reported
Regulation Violated: 264.110-120.G
Area of Violation: TSD-CLOSURE/POST-CLOSURE REQUIREMENTS
Date Violation Determined: 05/04/1988
Actual Date Achieved Compliance: 06/21/1991
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 06/06/1988
Penalty Type: Not reported
Regulation Violated: 264.140-150.H
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 05/04/1988
Actual Date Achieved Compliance: 06/21/1991
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 06/06/1988
Penalty Type: Not reported
Regulation Violated: 263
Area of Violation: TRANSPORTER-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 08/11/1987
Actual Date Achieved Compliance: 09/02/1987
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 08/20/1987
Penalty Type: Not reported
Regulation Violated: 262.50-60
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 08/11/1987
Actual Date Achieved Compliance: 09/02/1987
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 08/20/1987

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

EDR ID Number
 EPA ID Number

Database(s)

1000840779

Penalty Type:	Not reported
Regulation Violated:	262.10-12.A
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	03/14/1986
Actual Date Achieved Compliance:	08/05/1986
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	08/05/1986
Penalty Type:	Not reported
Regulation Violated:	262.10-12.A
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	01/29/1986
Actual Date Achieved Compliance:	03/14/1986
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	08/07/1985
Penalty Type:	Not reported
Regulation Violated:	262.10-12.A
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	09/25/1985
Actual Date Achieved Compliance:	12/27/1985
Regulation Violated:	262.10-12.A
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	08/07/1985
Actual Date Achieved Compliance:	09/13/1985
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	08/07/1985
Penalty Type:	Not reported
Regulation Violated:	262.10-12.A
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	04/18/1984
Actual Date Achieved Compliance:	06/21/1991

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
-----	-----	-----	-----
Final Monetary Penalty	9/10/1991	62000	STATE
Proposed Monetary Penalty	9/10/1991	137500	STATE

There are 18 violation record(s) reported at this site:

<u>Evaluation</u>	<u>Area of Violation</u>	<u>Date of Compliance</u>
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	20040223
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	20040223
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	20040223
Compliance Evaluation Inspection	GENERATOR-GENERAL REQUIREMENTS	20020306
Compliance Evaluation Inspection	TSD-CLOSURE/POST-CLOSURE REQUIREMENTS	19931220
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19931220
	TRANSPORTER-ALL REQUIREMENTS (OVERSIGHT)	19931220
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19910621
	TSD-CLOSURE/POST-CLOSURE REQUIREMENTS	19910621
	TRANSPORTER-ALL REQUIREMENTS (OVERSIGHT)	19910621
	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19910621
Compliance Evaluation Inspection	TRANSPORTER-ALL REQUIREMENTS (OVERSIGHT)	19870902
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19870902
Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19860805

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

EDR ID Number
 EPA ID Number

Database(s)

	1000840779
Other Evaluation	GENERATOR-ALL REQUIREMENTS (OVERSIGHT) 19860314
Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT) 19851227
Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT) 19850913
Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT) 19910621

UST:

Region: STATE
 Local Agency: 19000
 Facility ID: 020190

CORRACTS:

EPA ID: CAD077227049
 EPA Region: 09
 Area Name: ENTIRE FACILITY
 Actual Date: 02/25/1985
 Action: CA600GW - Stabilization Measures Implemented, Groundwater extraction and treatment
 NAICS Code(s): 32411
 Petroleum Refineries

EPA ID: CAD077227049
 EPA Region: 09
 Area Name: ENTIRE FACILITY
 Actual Date: 05/31/2007
 Action: CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
 NAICS Code(s): 32411
 Petroleum Refineries

EPA ID: CAD077227049
 EPA Region: 09
 Area Name: ENTIRE FACILITY
 Actual Date: 08/20/1990
 Action: CA100 - RFI Imposition
 NAICS Code(s): 32411
 Petroleum Refineries

EPA ID: CAD077227049
 EPA Region: 09
 Area Name: ENTIRE FACILITY
 Actual Date: 10/20/1997
 Action: CA225YE - Stabilization Measures Evaluation, This facility ,is amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
 NAICS Code(s): 32411
 Petroleum Refineries

EPA ID: CAD077227049
 EPA Region: 09
 Area Name: ENTIRE FACILITY
 Actual Date: 10/30/1997
 Action: CA750NO - Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

EDR ID Number
EPA ID Number

Database(s)

1000840779

NAICS Code(s): 32411
Petroleum Refineries

EPA ID: CAD077227049
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 10/30/1997
Action: CA725IN - Current Human Exposures Under Control, More information is needed to make a determination

NAICS Code(s): 32411
Petroleum Refineries

EPA ID: CAD077227049
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 10/30/1997
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority

NAICS Code(s): 32411
Petroleum Refineries

CERC-NFRAP:
Site ID: 0901601
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: ATLANTIC RICHFIELD CO
Alias Address: Not reported
CA
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 12/01/1979
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 05/01/1985
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 09/01/1987

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Priority Level: NFRAP (No Further Remedial Action Planned)

Action: ARCHIVE SITE
 Date Started: Not reported
 Date Completed: 11/21/1988
 Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
 Date Started: Not reported
 Date Completed: 11/21/1988
 Priority Level: NFRAP (No Further Remedial Action Planned)

LOS ANGELES CO. HMS:

Region: LA
 Facility Id: 000117-020190
 Facility Status: Closed
 Area: 22
 Permit Number: 000043083
 Permit Status: Closed
 Facility Type: T0

EMI:

Year: 1987
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 38655
 Air District Name: SC
 SIC Code: 5171
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 0
 Reactive Organic Gases Tons/Yr: 0
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 38655
 Air District Name: SC
 SIC Code: 5171
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 1
 Reactive Organic Gases Tons/Yr: 0
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Year: 1993
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 38655
Air District Name: SC
SIC Code: 5171
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smlr Tons/Yr: 0

Year: 1995
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 38655
Air District Name: SC
SIC Code: 5171
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smlr Tons/Yr: 0

Year: 1996
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 38655
Air District Name: SC
SIC Code: 5171
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smlr Tons/Yr: 0

Year: 1997
Carbon Monoxide Emissions Tons/Yr: 19
Air Basin: SC
Facility ID: 38655
Air District Name: SC
SIC Code: 4613

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 2
 Reactive Organic Gases Tons/Yr: 1
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smlr Tons/Yr: 0

Year: 1998
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 38655
 Air District Name: SC
 SIC Code: 4613
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 2
 Reactive Organic Gases Tons/Yr: 1
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smlr Tons/Yr: 0

Year: 1999
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 38655
 Air District Name: SC
 SIC Code: 4613
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 2
 Reactive Organic Gases Tons/Yr: 1
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smlr Tons/Yr: 0

Year: 2000
 Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 38655
 Air District Name: SC
 SIC Code: 4613
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Not reported
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 2
 Reactive Organic Gases Tons/Yr: 1
 Carbon Monoxide Emissions Tons/Yr: 0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smlr Tons/Yr:	0
Year:	2001
Carbon Monoxide Emissions Tons/Yr:	19
Air Basin:	SC
Facility ID:	38655
Air District Name:	SC
SIC Code:	4613
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smlr Tons/Yr:	0
Year:	2002
Carbon Monoxide Emissions Tons/Yr:	19
Air Basin:	SC
Facility ID:	38655
Air District Name:	SC
SIC Code:	5171
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	4
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smlr Tons/Yr:	0
Year:	2003
Carbon Monoxide Emissions Tons/Yr:	19
Air Basin:	SC
Facility ID:	38655
Air District Name:	SC
SIC Code:	5171
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	4
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smlr Tons/Yr:	0
Year:	2004

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BP WEST COAST PRODUCTS-CARSON REFINERY (Continued)

1000840779

Carbon Monoxide Emissions Tons/Yr: 19
 Air Basin: SC
 Facility ID: 38655
 Air District Name: SC
 SIC Code: 5171
 Air District Name: SOUTH COAST AQMD
 Community Health Air Pollution Info System: Y
 Consolidated Emission Reporting Rule: Not reported
 Total Organic Hydrocarbon Gases Tons/Yr: 4.39066
 Reactive Organic Gases Tons/Yr: 4.19
 Carbon Monoxide Emissions Tons/Yr: 0
 NOX - Oxides of Nitrogen Tons/Yr: 0
 SOX - Oxides of Sulphur Tons/Yr: 0
 Particulate Matter Tons/Yr: 0
 Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

**N60
 SSW
 1/2-1
 4927 ft.**

**1801 EAST SEPULVEDA
 CARSON, CA 90749**

**CHMIRS S101480683
 ENVIROSTOR N/A**

Site 2 of 2 in cluster N

**Relative:
 Higher**

CHMIRS:
 OES Incident Number: 03-3000
 OES notification: 6/12/200307:52:40 AM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported

**Actual:
 28 ft.**

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	BP West Coast Prod.
Incident Date:	4/7/2003 12:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Refinery
E Date:	Not reported
Substance:	NOX
Quantity Released:	Not reported
BBLs:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	55
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Shutting down hydro-cracking unit and sending gas to flair. A shut down at the #6 coker drum resulted in process gas releasing to the flare. The release is ongoing. Fire in refinery/unknown if any substances were released. Substance is being released to flare due to a valve on a compressor failing. **Historical event** Loss of De-NOX, caused release of NOX
OES Incident Number:	00-3843
OES notification:	8/25/2000 6:33:27 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agency Personnel # Of Decontaminated:	Not reported
Responding Agency Personnel # Of Injuries:	Not reported
Responding Agency Personnel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	n/a
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2000
Agency:	ARCO
Incident Date:	8/25/200012:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	No
Site Type:	Refinery
E Date:	Not reported
Substance:	Nitrogen oxide
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	15
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Shutting down hydro-cracking unit and sending gas to flair.A shut down at the #6 coker drum resulted in process gas releasing to the flare The release is ongoingFire in refinery/unknown if any substances were releasedSubstance is being released to flare due to a valve on a compressor failing.**Historical event** Loss of De-NOX, caused release of NOX
OES Incident Number:	05-1310
OES notification:	2/26/200508:09:24 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Date/Time:	Not reported
Year:	2005
Agency:	BP Carson Refinery
Incident Date:	2/26/200512:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Refinery
E Date:	Not reported
Substance:	Hydrogen
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Shutting down hydro-cracking unit and sending gas to flair.A shut down at the #6 coker drum resulted in process gas releasing to the flare The release is ongoingFire in refinery/unknown if any substances were releasedSubstance is being released to flare due to a valve on a compressor failing.**Historical event** Loss of De-NOX, caused release of NOX
OES Incident Number:	015069
OES notification:	Not reported
OES Date:	8/12/1996
OES Time:	06:48:44 AM
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agency Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Responding Agency Personnel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	NO
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	VAPOR
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1996
Agency:	arco
Incident Date:	1550 8/10/96
Admin Agency:	Not reported
Amount:	unspecified
Contained:	NO
Site Type:	REF
E Date:	Not reported
Substance:	hydrocarbons
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	power failure
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	Shutting down hydro-cracking unit and sending gas to flair. A shut down at the #6 coker drum resulted in process gas releasing to the flare. The release is ongoing. Fire in refinery/unknown if any substances were released. Substance is being released to flare due to a valve on a compressor failing. **Historical event** Loss of De-NOX, caused release of NOX

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

OES Incident Number: 01-3290
 OES notification: 6/7/200103:29:59 PM
 OES Date: Not reported
 OES Time: Not reported
 Incident Date: Not reported
Date Completed: Not reported
 Property Use: Not reported
 Agency Id Number: Not reported
 Agency Incident Number: Not reported
 Time Notified: Not reported
 Time Completed: Not reported
 Surrounding Area: Not reported
 Estimated Temperature: Not reported
 Property Management: Not reported
 Special Studies 1: Not reported
 Special Studies 2: Not reported
 Special Studies 3: Not reported
 Special Studies 4: Not reported
 Special Studies 5: Not reported
 Special Studies 6: Not reported
 More Than Two Substances Involved?: Not reported
 Resp Agncy Personel # Of Decontaminated: Not reported
 Responding Agency Personel # Of Injuries: Not reported
 Responding Agency Personel # Of Fatalities: Not reported
 Others Number Of Decontaminated: Not reported
 Others Number Of Injuries: Not reported
 Others Number Of Fatalities: Not reported
 Vehicle Make/year: Not reported
 Vehicle License Number: Not reported
 Vehicle State: Not reported
 Vehicle Id Number: Not reported
 CA/DOT/PUC/ICC Number: Not reported
 Company Name: Not reported
 Reporting Officer Name/ID: Not reported
 Report Date: Not reported
 Comments: Not reported
 Facility Telephone: Not reported
 Waterway Involved: Not reported
 Waterway: Not reported
 Spill Site: Not reported
 Cleanup By: N/A
 Containment: Not reported
 What Happened: Not reported
 Type: Not reported
 Measure: Not reported
 Other: Not reported
 Date/Time: Not reported
 Year: 2001
 Agency: ARCO
 Incident Date: 6/7/200112:00:00 AM
 Admin Agency: L. A. County Fire Prevention
 Amount: Not reported
 Contained: No
 Site Type: Refinery
 E Date: Not reported
 Substance: NOX
 Quantity Released: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

BBLs:	0
Cups:	0
CUFT:	0
Gallons:	0
Grams:	0
Pounds:	86
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0.000000
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Shutting down hydro-cracking unit and sending gas to flair.A shut down at the #6 coker drum resulted in process gas releasing to the flare The release is ongoingFire in refinery/unknown if any substances were releasedSubstance is being released to flare due to a valve on a compressor failing.**Historical event** Loss of De-NOX, caused release of NOX
OES Incident Number:	97-0582
OES notification:	2/9/199704:05:43 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	Not reported
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1997
Agency:	ARCO
Incident Date:	2/9/1997 12:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Unknown
Site Type:	Refinery
E Date:	Not reported
Substance:	Unknown
Quantity Released:	Not reported
BBLs:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Shutting down hydro-cracking unit and sending gas to flair. A shut down at the #6 coker drum resulted in process gas releasing to the flare. The release is ongoing. Fire in refinery/unknown if any substances were released. Substance is being released to flare due to a valve on a compressor failing. **Historical event** Loss of De-NOX, caused release of NOX

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	* MMONROY
Division Branch:	So Cal - Cypress
Facility ID:	19290015

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

(Continued)

S101480683

Site Code: 400006
 Assembly: 55
 Senate: 28
 Special Program: Not reported
 Status: Refer: RCRA
 Status Date: 1995-08-28 00:00:00
 Restricted Use: NO
 Funding: Not reported
 Latitude: 33.8080555555556
 Longitude: -118.236388888889
 Alias Name: BP WEST COAST PRODUCTS LLC
 CAD000628412
 CAD077227049
 WATSON REFINERY, ARCO PETROLEUM PRODUCTS
 19290015
 ATLANTIC RICHFIELD COMPANY
 FOUR CORNERS PIPELINE CO - CARSON
 400006
 Alias Type: HWIS Identification Code
 EPA Identification Number
 Project Code (Site Code)
 Envirostor ID Number
 Alternate Name
 Alternate Name
 Alternate Name
 Alternate Name
 APN: NONE SPECIFIED
 APN Description: Not reported
 Comments: FACILITY IDENTIFIED REVIEWED COUNTY ENG. RECORDSSITE SCREENING DONE
 FIT COMPLETED PA REASSESSMENT ON 10/5/88 AND RECOMMENDED NFA UNDER
 CERCLA, FACI- LITY IS RCRA REGULATED AND BEING HANDLED BY
 RWQCBDATABASE VALIDATION PROGRAM CONFIRMS NFA FOR DTSC.
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Site Screening
 Completed Date: 1995-03-06 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Site Screening
 Completed Date: 1989-05-19 00:00:00
 Completed Area Name: PROJECT WIDE
 Completed Sub Area Name: Not reported
 Completed Document Type: Discovery
 Completed Date: 1981-06-03 00:00:00
 Confirmed: NONE SPECIFIED
 Confirmed Description: Not reported
 Future Area Name: Not reported
 Future Sub Area Name: Not reported
 Future Document Type: Not reported
 Future Due Date: Not reported
 Media Affected: NONE SPECIFIED
 Media Affected Desc: Not reported
 Management Required: NONE SPECIFIED
 Management Required Desc: Not reported
 Potential: NONE SPECIFIED
 Potental Description: Not reported
 Schedule Area Name: Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

(Continued)

S101480683

Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: NONE SPECIFIED

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CARSON	S106387025	CITY OF CARSON - STADEL PROPERTY	643 223RD	90745	SLIC
CARSON	S106717752	ACTA SOUTH - PARCEL SE-351	S ALAMEDA ST	90810	SLIC
CARSON	S106487316	ACTA SOUTH - PARCEL SE-352/353	S. ALAMEDA ST.	90810	SLIC
CARSON	S105911484	ACTA SOUTH - PARCEL SE-351	ALAMEDA	90810	SLIC
CARSON	S105911480	ACTA SOUTH - PARCEL SE-352/353	ALAMEDA	90810	SLIC
CARSON	S105911479	ACTA SOUTH - PARCEL SE-349	ALAMEDA	90810	SLIC
CARSON	S105911485	ACTA SOUTH - PARCEL SE-362	ALAMEDA	90745	SLIC
CARSON	S105911481	ACTA SOUTH - PARCEL SE-358	ALAMEDA	90745	SLIC
CARSON	S103441404	ALAMEDA STREET-VERNON	2900 SOUTH ALAMEDA		WMUDS/SWAT
CARSON	1003878032	MOEN FOAM CO	16627 S AVALON BLVD	90745	CERC-NFRAP
CARSON	S106485944	SHELL PIPELINE LEAK - COLONY HOLDINGS	1211 CARSON AVE.	90810	SLIC
CARSON	S106483574	ACTA SOUTH - PARCEL SE-334	E. CARSON ST.	90810	SLIC
CARSON	S105911477	ACTA SOUTH - PARCEL SE-334	CARSON	90810	SLIC
CARSON	S106483599	ACTA SOUTH - PARCEL SE-362	NORTHWEST CORNER OF SOUTH ALAMEDA ST	90745	SLIC
CARSON	S106387098	ACTA SOUTH - DEL AMO BLVD GRADE SEPARATION	DEL AMO	90810	SLIC
CARSON	S106900227	LA CO SANITATION DIST 1, LF #1 & #3	18900 S. MONETA AVE		SWF/LF
CARSON	S101480710	TED HAMMETT (CARSON)	EAST OF ALAMEDA / NORTH OF SEPULVEDA	90745	ENVIROSTOR
CARSON	1000905386	STAR CLEANERS	22837 PACIFIC COAST HWY	90745	RCRA-SQG, FINDS, CLEANERS
CARSON	1009602468	GATX TERMINALS CORP - CARSON TERMINAL	2000 E SEPULVED		FINDS
CARSON	1003878479	TCL DUMP	TERMINAL ISL FWY & ANAHEIM ST	90810	CERC-NFRAP
CARSON	S108484751	DOMINGUEZ GOLF COURSE & ADJACENT PROPERT	THE PROPERTY IS GENERALLY BOUNDED BY THE DOMINGUEZ	90745	VCP, ENVIROSTOR
CARSON	S106916826	DOMINGUEZ ENERGY REYES LEASE - AREA H	VICTORIA ST.		SLIC
CARSON	S106386953	DOMINGUEZ ENERY REYES LEASE - AREA D	WILMINGTON		SLIC
CARSON	1003878476	SOIL MGMT METHOD INC	WILMINGTON AND LOMITA	90745	CERC-NFRAP
CARSON	S105647455		WILMINGTON AVE CARSON CRUDE STATION		CHMIRS, SLIC
LONG BEACH	1003879571	BECKMAN LUMBER SERVICE, INC.	19500 S. ALAMEDA	90745	CERC-NFRAP
LONG BEACH	1001075654	MURPHY INDUSTRIAL COATINGS INC	INTERSECTIONS OF HWY 1 103 110	90810	RCRA-SQG, FINDS, HAZNET
LOS ANGELES COUNTY	S105642458	1X MCKESSON DRUG CO	2		HAZNET, LUST, CHMIRS

EPA Waste Codes Addendum

Code	Description
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
D002	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
D008	LEAD
D009	MERCURY
D018	BENZENE
D026	CRESOL
D028	1,2-DICHLOROETHANE
F002	THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F037	PETROLEUM REFINERY PRIMARY OIL/WATER/SOLIDS SEPARATION SLUDGE-ANY SLUDGE GENERATED FROM THE GRAVITATIONAL SEPARATION OF OIL/WATER/SOLIDS DURING THE STORAGE OR TREATMENT OF PROCESS WASTEWATERS AND OILY COOLING WASTEWATERS FROM PETROLEUM REFINERIES. SUCH SLUDGES INCLUDE, BUT ARE NOT LIMITED TO, THOSE GENERATED IN: OIL/WATER/SOLIDS SEPARATORS; TANKS AND IMPOUNDMENTS; DITCHES AND OTHER CONVEYANCES; SUMPS; AND STORMWATER UNITS RECEIVING DRY WEATHER FLOW. SLUDGE GENERATED IN STORMWATER UNITS THAT DO NOT RECEIVE DRY WEATHER FLOW, SLUDGES GENERATED FROM NON-CONTACT ONCE-THROUGH COOLING WATERS SEGREGATED FOR TREATMENT FROM OTHER PROCESS OR OILY COOLING WATERS, SLUDGES GENERATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS AS DEFINED IN SECTION 261.31(B)(2) (INCLUDING SLUDGES GENERATED IN ONE OR MORE ADDITIONAL UNITS AFTER WASTEWATERS HAVE BEEN TREATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS) AND K051 WASTES ARE NOT INCLUDED IN THIS LISTING.
F038	PETROLEUM REFINERY SECONDARY (EMULSIFIED) OIL/WATER/SOLIDS SEPARATION SLUDGE-ANY SLUDGE AND/OR FLOAT GENERATED FROM THE PHYSICAL AND/OR CHEMICAL SEPARATION OF OIL/WATER/SOLIDS IN PROCESS WASTEWATERS AND OILY COOLING

EPA Waste Codes Addendum

Code	Description
	WASTEWATERS FROM PETROLEUM REFINERIES. SUCH WASTES INCLUDE, BUT ARE NOT LIMITED TO, ALL SLUDGES AND FLOATS GENERATED IN: INDUCED AIR FLOTATION (IAF) UNITS, TANKS AND IMPOUNDMENTS, AND ALL SLUDGES GENERATED IN DAF UNITS. SLUDGES GENERATED IN STORMWATER UNITS THAT DO NOT RECEIVE DRY WEATHER FLOW, SLUDGES GENERATED FROM NON-CONTACT ONCE-THROUGH COOLING WATERS SEGREGATED FOR TREATMENT FROM OTHER PROCESS OR OILY COOLING WATERS, SLUDGES AND FLOATS GENERATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS AS DEFINED IN SECTION 261.31(B)(2) (INCLUDING SLUDGES AND FLOATS GENERATED IN ONE OR MORE ADDITIONAL UNITS AFTER WASTEWATERS HAVE BEEN TREATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS) AND F037, K048, AND K051 WASTES ARE NOT INCLUDED IN THIS LISTING.
F039	LEACHATE (LIQUIDS THAT HAVE PERCOLATED THROUGH LAND DISPOSED WASTES) RESULTING FROM THE DISPOSAL OF MORE THAN ONE RESTRICTED WASTE CLASSIFIED AS HAZARDOUS UNDER SUBPART D OF THIS PART. (LEACHATE RESULTING FROM THE DISPOSAL OF ONE OR MORE OF THE FOLLOWING EPA HAZARDOUS WASTES AND NO OTHER HAZARDOUS WASTES RETAINS ITS EPA HAZARDOUS WASTES NUMBER(S): F020, F021, F022, F026, F027, AND/OR F028).
K171	SPENT HYDROTREATING CATALYST FROM PETROLEUM REFINING OPERATIONS, INCLUDING GUARD BEDS USED TO DESULFURIZE FEEDS TO OTHER CATALYTIC REACTORS (EXCLUDES INERT SUPPORT MEDIA)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/18/2007	Source: EPA
Date Data Arrived at EDR: 08/03/2007	Telephone: N/A
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 07/31/2007
Number of Days to Update: 26	Next Scheduled EDR Contact: 10/29/2007
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/20/2007	Source: EPA
Date Data Arrived at EDR: 05/03/2007	Telephone: N/A
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/31/2007
Number of Days to Update: 63	Next Scheduled EDR Contact: 10/29/2007
	Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/20/2007	Source: EPA
Date Data Arrived at EDR: 05/03/2007	Telephone: N/A
Date Made Active in Reports: 06/25/2007	Last EDR Contact: 08/29/2007
Number of Days to Update: 53	Next Scheduled EDR Contact: 10/29/2007
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/20/2007
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/23/2007	Source: EPA
Date Data Arrived at EDR: 06/20/2007	Telephone: 703-412-9810
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 09/19/2007
Number of Days to Update: 70	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/21/2007	Source: EPA
Date Data Arrived at EDR: 07/23/2007	Telephone: 703-412-9810
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 09/17/2007
Number of Days to Update: 37	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/26/2007	Source: EPA
Date Data Arrived at EDR: 08/08/2007	Telephone: 800-424-9346
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 09/04/2007
Number of Days to Update: 21	Next Scheduled EDR Contact: 12/03/2007
	Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/13/2006	Source: EPA
Date Data Arrived at EDR: 06/28/2006	Telephone: (415) 495-8895
Date Made Active in Reports: 08/23/2006	Last EDR Contact: 09/04/2007
Number of Days to Update: 56	Next Scheduled EDR Contact: 10/15/2007
	Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2006	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/24/2007	Telephone: 202-267-2180
Date Made Active in Reports: 03/12/2007	Last EDR Contact: 07/23/2007
Number of Days to Update: 47	Next Scheduled EDR Contact: 10/22/2007
	Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 07/02/2007	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 07/18/2007	Telephone: 202-366-4555
Date Made Active in Reports: 09/18/2007	Last EDR Contact: 07/18/2007
Number of Days to Update: 62	Next Scheduled EDR Contact: 10/15/2007
	Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 04/20/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/26/2007	Telephone: 703-603-8905
Date Made Active in Reports: 05/25/2007	Last EDR Contact: 10/01/2007
Number of Days to Update: 29	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 04/20/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/26/2007	Telephone: 703-603-8905
Date Made Active in Reports: 05/25/2007	Last EDR Contact: 10/01/2007
Number of Days to Update: 29	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 703-692-8801
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 08/09/2007
Number of Days to Update: 62	Next Scheduled EDR Contact: 11/05/2007
	Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2005	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 09/20/2006	Telephone: 202-528-4285
Date Made Active in Reports: 11/22/2006	Last EDR Contact: 10/01/2007
Number of Days to Update: 63	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients--States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/20/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/09/2007	Telephone: 202-566-2777
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 09/10/2007
Number of Days to Update: 51	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/13/2007	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 07/16/2007	Telephone: Varies
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 08/23/2007
Number of Days to Update: 44	Next Scheduled EDR Contact: 10/22/2007
	Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/08/2007	Source: EPA
Date Data Arrived at EDR: 07/03/2007	Telephone: 703-416-0223
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 10/01/2007
Number of Days to Update: 57	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 11/08/2006	Telephone: 505-845-0011
Date Made Active in Reports: 01/29/2007	Last EDR Contact: 09/19/2007
Number of Days to Update: 82	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2005	Source: EPA
Date Data Arrived at EDR: 04/27/2007	Telephone: 202-566-0250
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 09/18/2007
Number of Days to Update: 69	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002	Source: EPA
Date Data Arrived at EDR: 04/14/2006	Telephone: 202-260-5521
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 07/30/2007
Number of Days to Update: 46	Next Scheduled EDR Contact: 10/15/2007
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/06/2007	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 07/20/2007	Telephone: 202-566-1667
Date Made Active in Reports: 09/18/2007	Last EDR Contact: 09/17/2007
Number of Days to Update: 60	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act) A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 07/06/2007	Source: EPA
Date Data Arrived at EDR: 07/20/2007	Telephone: 202-566-1667
Date Made Active in Reports: 09/18/2007	Last EDR Contact: 09/17/2007
Number of Days to Update: 60	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2005	Source: EPA
Date Data Arrived at EDR: 03/13/2007	Telephone: 202-564-4203
Date Made Active in Reports: 04/27/2007	Last EDR Contact: 07/16/2007
Number of Days to Update: 45	Next Scheduled EDR Contact: 10/15/2007
	Data Release Frequency: Annually

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005	Source: Department of the Navy
Date Data Arrived at EDR: 12/11/2006	Telephone: 843-820-7326
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 09/12/2007
Number of Days to Update: 31	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 05/14/2007	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 05/30/2007	Telephone: 202-366-4595
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/29/2007
Number of Days to Update: 36	Next Scheduled EDR Contact: 11/26/2007
	Data Release Frequency: Varies

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 06/29/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/02/2007	Telephone: 202-564-5088
Date Made Active in Reports: 08/29/2007	Last EDR Contact: 06/22/2007
Number of Days to Update: 58	Next Scheduled EDR Contact: 07/16/2007
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 09/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 01/08/2007
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 3

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 10/02/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 08/01/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 08/01/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 04/12/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/24/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 56

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/09/2007
Date Data Arrived at EDR: 06/28/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/26/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/19/2007	Source: EPA
Date Data Arrived at EDR: 07/25/2007	Telephone: (415) 947-8000
Date Made Active in Reports: 09/18/2007	Last EDR Contact: 10/01/2007
Number of Days to Update: 55	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 08/31/2007
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/03/2007
	Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005	Source: EPA/NTIS
Date Data Arrived at EDR: 03/06/2007	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2007	Last EDR Contact: 09/12/2007
Number of Days to Update: 38	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Biennially

USGS WATER WELLS: National Water Information System (NWIS)

This database consists of well records in the United States. Available site descriptive information includes well location information (latitude and longitude, well depth, site use, water use, and aquifer).

Date of Government Version: 03/25/2005	Source: USGS
Date Data Arrived at EDR: 03/25/2005	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: 03/25/2005
Number of Days to Update: 0	Next Scheduled EDR Contact: N/A
	Data Release Frequency: N/A

PWS: Public Water System Data

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 02/24/2000	Source: EPA
Date Data Arrived at EDR: 04/27/2005	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: 08/20/2007
Number of Days to Update: 0	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: N/A

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 08/27/2007
Number of Days to Update: 21	Next Scheduled EDR Contact: 11/26/2007
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/12/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 16

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 05/29/2001
Date Made Active in Reports: 07/26/2001
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2007	Source: California Regional Water Quality Control Board Central Valley Region (5)
Date Data Arrived at EDR: 08/01/2007	Telephone: 916-464-4834
Date Made Active in Reports: 08/09/2007	Last EDR Contact: 10/03/2007
Number of Days to Update: 8	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004	Source: California Regional Water Quality Control Board Los Angeles Region (4)
Date Data Arrived at EDR: 09/07/2004	Telephone: 213-576-6710
Date Made Active in Reports: 10/12/2004	Last EDR Contact: 09/24/2007
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/24/2007
	Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003	Source: California Regional Water Quality Control Board Central Coast Region (3)
Date Data Arrived at EDR: 05/19/2003	Telephone: 805-542-4786
Date Made Active in Reports: 06/02/2003	Last EDR Contact: 08/13/2007
Number of Days to Update: 14	Next Scheduled EDR Contact: 11/12/2007
	Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004	Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Date Data Arrived at EDR: 10/20/2004	Telephone: 510-622-2433
Date Made Active in Reports: 11/19/2004	Last EDR Contact: 10/09/2007
Number of Days to Update: 30	Next Scheduled EDR Contact: 01/07/2008
	Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001	Source: California Regional Water Quality Control Board North Coast (1)
Date Data Arrived at EDR: 02/28/2001	Telephone: 707-570-3769
Date Made Active in Reports: 03/29/2001	Last EDR Contact: 08/20/2007
Number of Days to Update: 29	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 07/10/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 07/11/2007	Telephone: see region list
Date Made Active in Reports: 08/09/2007	Last EDR Contact: 07/11/2007
Number of Days to Update: 29	Next Scheduled EDR Contact: 10/08/2007
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/03/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 07/17/2007
Date Data Arrived at EDR: 07/18/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 22

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Annually

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/10/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 14

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/25/2007
Date Data Arrived at EDR: 06/26/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 29

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Varies

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 08/28/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

Registered Aboveground Storage Tanks.

Date of Government Version: 05/01/2007
Date Data Arrived at EDR: 05/01/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/23/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

NOTIFY 65: Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 07/02/2007
Date Data Arrived at EDR: 07/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/03/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 07/31/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 9

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 07/27/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 03/07/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/20/2006
Date Made Active in Reports: 01/03/2007
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/04/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/17/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 23

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 07/20/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Varies

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/17/2007
Date Data Arrived at EDR: 09/18/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 10

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 05/31/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 35

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 03/20/2007	Source: EPA Region 4
Date Data Arrived at EDR: 04/16/2007	Telephone: 404-562-8677
Date Made Active in Reports: 05/14/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 28	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006	Source: EPA Region 1
Date Data Arrived at EDR: 12/01/2006	Telephone: 617-918-1313
Date Made Active in Reports: 01/29/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 59	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/23/2007	Source: EPA Region 10
Date Data Arrived at EDR: 05/24/2007	Telephone: 206-553-2857
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 42	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 06/18/2007	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/18/2007	Telephone: 415-972-3372
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 17	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

Date of Government Version: 06/01/2007	Source: EPA Region 7
Date Data Arrived at EDR: 06/14/2007	Telephone: 913-551-7003
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 21	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

Date of Government Version: 06/06/2007	Source: EPA Region 6
Date Data Arrived at EDR: 06/07/2007	Telephone: 214-665-7591
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 28	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

Date of Government Version: 06/18/2007	Source: EPA Region 9
Date Data Arrived at EDR: 06/18/2007	Telephone: 415-972-3368
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 17	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R1: Underground Storage Tanks on Indian Land

A listing of underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006	Source: EPA, Region 1
Date Data Arrived at EDR: 12/01/2006	Telephone: 617-918-1313
Date Made Active in Reports: 01/29/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 59	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

Date of Government Version: 05/30/2007	Source: EPA Region 8
Date Data Arrived at EDR: 05/31/2007	Telephone: 303-312-6137
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 35	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

Date of Government Version: 03/20/2007	Source: EPA Region 4
Date Data Arrived at EDR: 04/16/2007	Telephone: 404-562-9424
Date Made Active in Reports: 05/14/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 28	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 05/23/2007	Source: EPA Region 10
Date Data Arrived at EDR: 05/24/2007	Telephone: 206-553-2857
Date Made Active in Reports: 07/05/2007	Last EDR Contact: 08/20/2007
Number of Days to Update: 42	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004	Source: EPA Region 5
Date Data Arrived at EDR: 12/29/2004	Telephone: 312-886-6136
Date Made Active in Reports: 02/04/2005	Last EDR Contact: 08/20/2007
Number of Days to Update: 37	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

FEDERAL RECORDS

COLLEGES: Integrated Postsecondary Education Data

The National Center for Education Statistics' primary database on integrated postsecondary education in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/12/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

PUBLIC SCHOOLS: Public Schools

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/13/2004
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education statistics
Telephone: 202-502-7300
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: N/A

PRIVATE SCHOOLS: Private Schools of the United States

The National Center for Education Statistics' primary database on private school locations in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/07/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

NURSING HOMES: Directory of Nursing Homes

Information on Medicare and Medicaid certified nursing homes in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/11/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: N/A
Telephone: 800-568-3282
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

MEDICAL CENTERS: Provider of Services Listing

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health & Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/01/1998
Date Data Arrived at EDR: 11/10/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
Last EDR Contact: 01/12/2007
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

HOSPITALS: AHA Hospital Guide

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/19/1994
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: American Hospital Association
Telephone: 800-242-2626
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 50

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 48

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 14

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 07/17/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 23

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 06/20/2007
Date Data Arrived at EDR: 06/21/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 05/31/2007
Date Data Arrived at EDR: 08/27/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 30

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 08/17/2007
Date Data Arrived at EDR: 09/24/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 4

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 08/17/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 09/20/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 05/14/2007
Date Data Arrived at EDR: 05/15/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 41

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 08/23/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/29/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 27

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 05/08/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 47

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 09/24/2007
Date Data Arrived at EDR: 09/25/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 3

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/24/2007
Date Data Arrived at EDR: 07/27/2007
Date Made Active in Reports: 09/07/2007
Number of Days to Update: 42

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 10

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 10

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 17

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 08/06/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 50

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 08/06/2007	Source: Health Services Agency
Date Data Arrived at EDR: 08/07/2007	Telephone: 951-358-5055
Date Made Active in Reports: 09/24/2007	Last EDR Contact: 07/16/2007
Number of Days to Update: 48	Next Scheduled EDR Contact: 10/15/2007
	Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Contaminated Sites

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/07/2007	Source: Sacramento County Environmental Management
Date Data Arrived at EDR: 08/08/2007	Telephone: 916-875-8406
Date Made Active in Reports: 09/26/2007	Last EDR Contact: 07/31/2007
Number of Days to Update: 49	Next Scheduled EDR Contact: 10/29/2007
	Data Release Frequency: Quarterly

ML - Regulatory Compliance Master List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/07/2007	Source: Sacramento County Environmental Management
Date Data Arrived at EDR: 08/08/2007	Telephone: 916-875-8406
Date Made Active in Reports: 09/26/2007	Last EDR Contact: 07/31/2007
Number of Days to Update: 49	Next Scheduled EDR Contact: 10/29/2007
	Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/27/2007	Source: San Bernardino County Fire Department Hazardous Materials Division
Date Data Arrived at EDR: 06/29/2007	Telephone: 909-387-3041
Date Made Active in Reports: 08/09/2007	Last EDR Contact: 09/04/2007
Number of Days to Update: 41	Next Scheduled EDR Contact: 12/03/2007
	Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005	Source: Hazardous Materials Management Division
Date Data Arrived at EDR: 05/18/2005	Telephone: 619-338-2268
Date Made Active in Reports: 06/16/2005	Last EDR Contact: 10/05/2007
Number of Days to Update: 29	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2006
Date Data Arrived at EDR: 01/03/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 06/27/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 20

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 10/03/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/07/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 21

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 09/07/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 17

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 08/21/2007
Date Data Arrived at EDR: 08/22/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 33

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/30/2007
Date Data Arrived at EDR: 07/30/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 10

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/10/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 30

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Varies

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 09/17/2007
Date Data Arrived at EDR: 09/17/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 11

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 6

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 52

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

SONOMA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/09/2007	Source: Department of Health Services
Date Data Arrived at EDR: 07/09/2007	Telephone: 707-565-6565
Date Made Active in Reports: 08/09/2007	Last EDR Contact: 07/09/2007
Number of Days to Update: 31	Next Scheduled EDR Contact: 10/22/2007
	Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007	Source: Sutter County Department of Agriculture
Date Data Arrived at EDR: 05/04/2007	Telephone: 530-822-7500
Date Made Active in Reports: 05/24/2007	Last EDR Contact: 10/01/2007
Number of Days to Update: 20	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/30/2007	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 06/22/2007	Telephone: 805-654-2813
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 09/12/2007
Number of Days to Update: 7	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2007	Source: Environmental Health Division
Date Data Arrived at EDR: 08/29/2007	Telephone: 805-654-2813
Date Made Active in Reports: 09/26/2007	Last EDR Contact: 08/21/2007
Number of Days to Update: 28	Next Scheduled EDR Contact: 11/19/2007
	Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/05/2007	Source: Environmental Health Division
Date Data Arrived at EDR: 06/21/2007	Telephone: 805-654-2813
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 09/12/2007
Number of Days to Update: 8	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 06/26/2007	Source: Environmental Health Division
Date Data Arrived at EDR: 07/27/2007	Telephone: 805-654-2813
Date Made Active in Reports: 09/07/2007	Last EDR Contact: 07/11/2007
Number of Days to Update: 42	Next Scheduled EDR Contact: 10/08/2007
	Data Release Frequency: Quarterly

YOLO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 07/30/2007	Source: Yolo County Department of Health
Date Data Arrived at EDR: 09/04/2007	Telephone: 530-666-8646
Date Made Active in Reports: 09/24/2007	Last EDR Contact: 07/30/2007
Number of Days to Update: 20	Next Scheduled EDR Contact: 10/15/2007
	Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005	Source: Department of Environmental Protection
Date Data Arrived at EDR: 06/15/2007	Telephone: 860-424-3375
Date Made Active in Reports: 08/20/2007	Last EDR Contact: 09/12/2007
Number of Days to Update: 66	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 04/01/2007	Source: Department of Environmental Protection
Date Data Arrived at EDR: 04/05/2007	Telephone: N/A
Date Made Active in Reports: 05/08/2007	Last EDR Contact: 10/02/2007
Number of Days to Update: 33	Next Scheduled EDR Contact: 12/31/2007
	Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/27/2007	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 08/30/2007	Telephone: 518-402-8651
Date Made Active in Reports: 09/21/2007	Last EDR Contact: 08/30/2007
Number of Days to Update: 22	Next Scheduled EDR Contact: 11/26/2007
	Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2006	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/23/2007	Telephone: N/A
Date Made Active in Reports: 09/27/2007	Last EDR Contact: 09/10/2007
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/10/2007
	Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 04/09/2007	Source: Department of Environmental Management
Date Data Arrived at EDR: 04/12/2007	Telephone: 401-222-2797
Date Made Active in Reports: 04/27/2007	Last EDR Contact: 09/17/2007
Number of Days to Update: 15	Next Scheduled EDR Contact: 12/17/2007
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2006

Date Data Arrived at EDR: 04/27/2007

Date Made Active in Reports: 06/08/2007

Number of Days to Update: 42

Source: Department of Natural Resources

Telephone: N/A

Last EDR Contact: 10/09/2007

Next Scheduled EDR Contact: 01/07/2008

Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation

Telephone: (800) 823-6277

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

UPRR - DRESSER PROPERTY
22632 SOUTH ALAMEDA STREET
CARSON, CA 90810

TARGET PROPERTY COORDINATES

Latitude (North):	33.82010 - 33° 49' 12.4"
Longitude (West):	118.2301 - 118° 13' 48.4"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	386158.1
UTM Y (Meters):	3742695.8
Elevation:	27 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	33118-G2 LONG BEACH, CA
Most Recent Revision:	1964

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

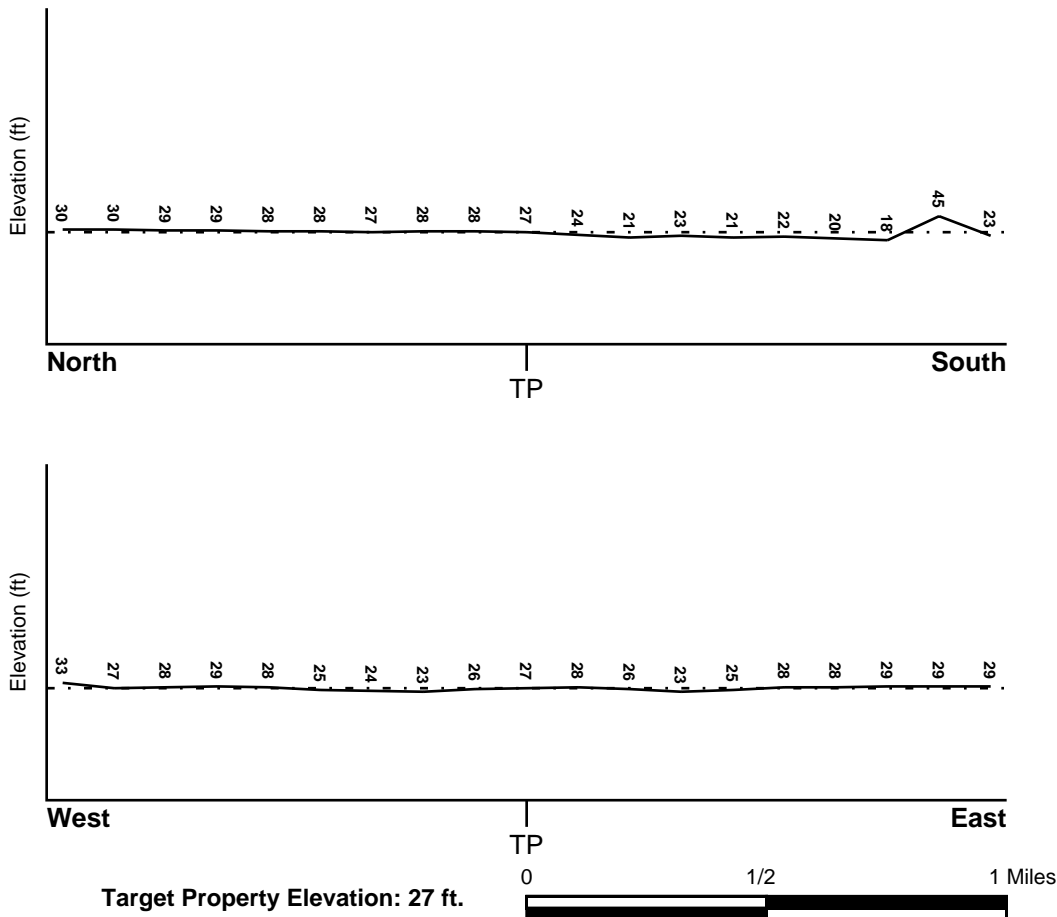
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood</u>
LOS ANGELES, CA	<u>Electronic Data</u>
	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0601070000A

Additional Panels in search area: 0601360010B
0601370105C

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic</u>
NORTH LONG BEACH (OE)	<u>Data Coverage</u>
	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Location Relative to TP:	0 - 1/8 Mile SSW
Site Name:	Alameda St San Ldf/Alameda St Dump
Site EPA ID Number:	CAD980636393
Surficial Aquifer Flow Dir.:	SW ON A REGIONAL BASIS.
Measured Depth to Water:	30 feet to 40 feet.
Hydraulic Connection:	The Gaspar, Gage, and Lynwood aquifers (surficial aquifers) are hydraulically connected. An aquitard separates the surficial aquifers and the underlying Silverado aquifer (lower aquifer), but aquifer interconnections exist within two miles of the site.
Sole Source Aquifer:	No information about a sole source aquifer is available
Data Quality:	Information based on site-specific subsurface investigations is documented in the CERCLIS investigation report(s)

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION</u> <u>FROM TP</u>	<u>GENERAL DIRECTION</u> <u>GROUNDWATER FLOW</u>
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* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
5	1/2 - 1 Mile WNW	NE
17	1/2 - 1 Mile WNW	Not Reported
22	1/2 - 1 Mile NW	SW

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Cenozoic
System: Quaternary
Series: Quaternary
Code: Q (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class: Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 10 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	6 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: loam
 clay
 silt loam
 loamy sand
 sandy loam
 fine sand
 clay loam
 gravelly - sandy loam
 coarse sand
 gravelly - sand
 sand

Surficial Soil Types: loam
 clay
 silt loam
 loamy sand
 sandy loam
 fine sand
 clay loam
 gravelly - sandy loam
 coarse sand
 gravelly - sand
 sand

Shallow Soil Types: fine sandy loam
 gravelly - loam
 sand
 silty clay

Deeper Soil Types: stratified
 clay loam
 silty clay loam
 gravelly - sandy loam
 coarse sand
 sand
 weathered bedrock
 very fine sandy loam

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	USGS3156852	1/4 - 1/2 Mile South
3	USGS3156888	1/4 - 1/2 Mile NW
4	USGS3156889	1/2 - 1 Mile NNW
A6	USGS3156850	1/2 - 1 Mile SSW
A7	USGS3156849	1/2 - 1 Mile SSW
10	USGS3156871	1/2 - 1 Mile West
B11	USGS3156859	1/2 - 1 Mile ESE
B12	USGS3156858	1/2 - 1 Mile ESE
B13	USGS3156860	1/2 - 1 Mile ESE
B14	USGS3156862	1/2 - 1 Mile ESE
B15	USGS3156861	1/2 - 1 Mile ESE
16	USGS3156851	1/2 - 1 Mile SW
C18	USGS3156895	1/2 - 1 Mile NNE
C19	USGS3156897	1/2 - 1 Mile NNE
D20	USGS3156904	1/2 - 1 Mile NNE
D21	USGS3156906	1/2 - 1 Mile NNE
23	USGS3156846	1/2 - 1 Mile SW
E25	USGS3156864	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

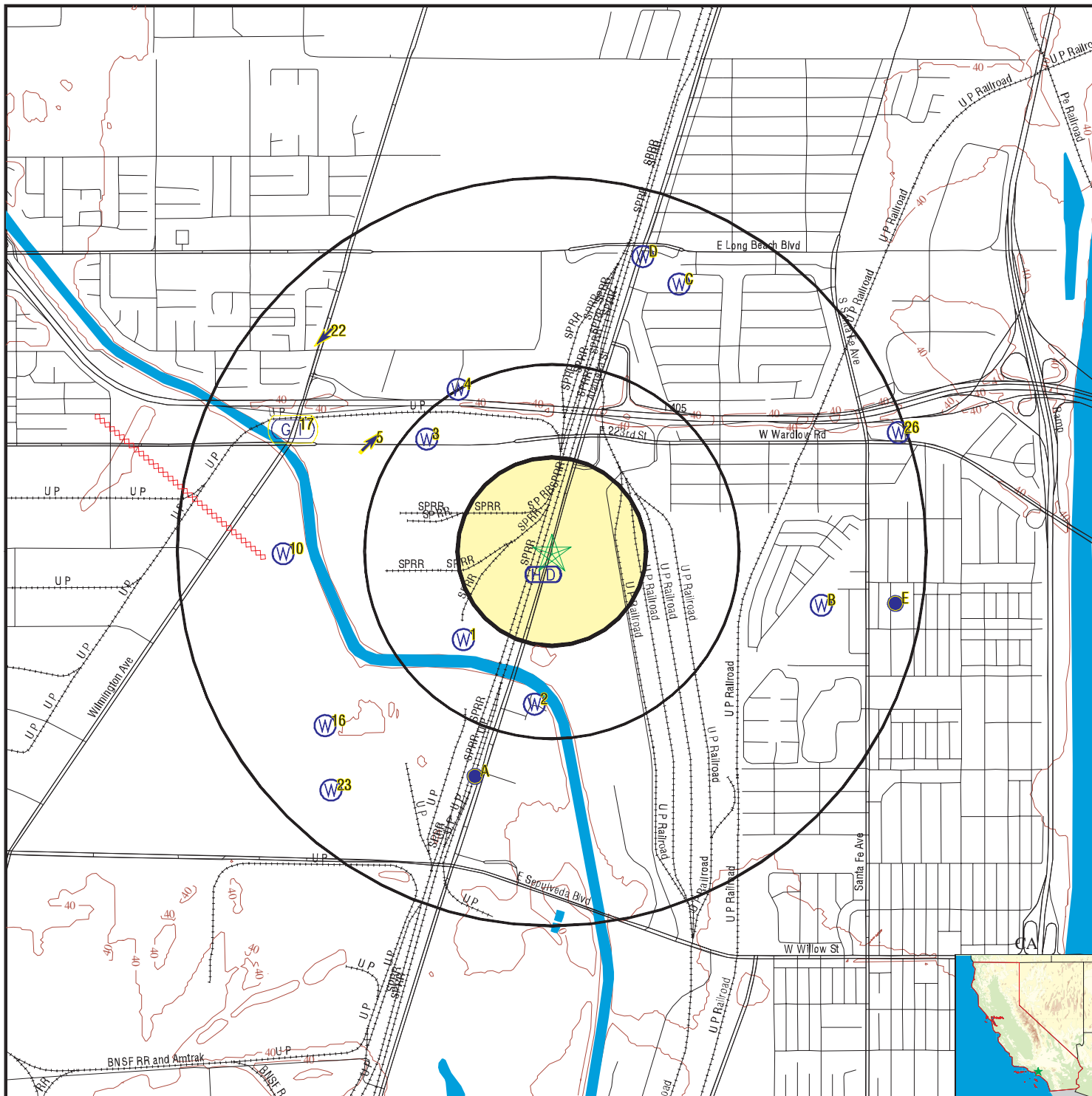
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	5351	1/4 - 1/2 Mile SW
A8	CADW10000005829	1/2 - 1 Mile SSW
A9	CADW10000005830	1/2 - 1 Mile SSW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
E24	CADW10000005852	1/2 - 1 Mile East
26	CADW10000005872	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 2048315.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: UPRR - Dresser Property
 ADDRESS: 22632 South Alameda Street
 Carson CA 90810
 LAT/LONG: 33.8201 / 118.2301

CLIENT: HDR Engineering Inc.
 CONTACT: Chuck Cleeves
 INQUIRY #: 2048315.2s
 DATE: October 09, 2007 4:30 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1		
SW	CA WELLS	5351
1/4 - 1/2 Mile		
Lower		

Water System Information:

Prime Station Code: 04S/13W-15F01 S	User ID:	4TH
FRDS Number: 1910033024	County:	Los Angeles
District Number: 07	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type: Well/Groundwater	Well Status:	Active Raw
Source Lat/Long: 334900.0 1181400.0	Precision:	1,000 Feet (10 Seconds)
Source Name: WELL 77		
System Number: 1910033		
System Name: DOMINGUEZ WATER CORP		
Organization That Operates System:		
P.O. BOX 9351		
LONG BEACH, CA 90810		
Pop Served: 100000	Connections:	32000
Area Served: Not Reported		
Sample Collected: 01/29/2002 00:00:00	Findings:	.4 PCI/L
Chemical: GROSS ALPHA COUNTING ERROR		
Sample Collected: 01/29/2002 00:00:00	Findings:	8.28
Chemical: PH, LABORATORY		
Sample Collected: 01/29/2002 00:00:00	Findings:	154 MG/L
Chemical: ALKALINITY (TOTAL) AS CaCO3		
Sample Collected: 01/29/2002 00:00:00	Findings:	263 MG/L
Chemical: TOTAL DISSOLVED SOLIDS		
Sample Collected: 04/10/2002 00:00:00	Findings:	.5 PCI/L
Chemical: GROSS ALPHA COUNTING ERROR		
Sample Collected: 09/12/2002 00:00:00	Findings:	.46 PCI/L
Chemical: GROSS ALPHA COUNTING ERROR		
Sample Collected: 10/07/2002 00:00:00	Findings:	.44 PCI/L
Chemical: GROSS ALPHA COUNTING ERROR		
Sample Collected: 04/17/2003 00:00:00	Findings:	120 UG/L
Chemical: BORON		
Sample Collected: 07/27/2004 00:00:00	Findings:	5 UNITS
Chemical: COLOR		
Sample Collected: 07/27/2004 00:00:00	Findings:	360 US
Chemical: SPECIFIC CONDUCTANCE		
Sample Collected: 07/27/2004 00:00:00	Findings:	8.4
Chemical: PH, LABORATORY		
Sample Collected: 07/27/2004 00:00:00	Findings:	160 MG/L
Chemical: ALKALINITY (TOTAL) AS CaCO3		
Sample Collected: 07/27/2004 00:00:00	Findings:	160 MG/L
Chemical: BICARBONATE ALKALINITY		
Sample Collected: 07/27/2004 00:00:00	Findings:	3 MG/L
Chemical: CARBONATE ALKALINITY		
Sample Collected: 07/27/2004 00:00:00	Findings:	76 MG/L
Chemical: HARDNESS (TOTAL) AS CaCO3		
Sample Collected: 07/27/2004 00:00:00	Findings:	22 MG/L
Chemical: CALCIUM		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	07/27/2004 00:00:00	Findings:	5.2 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	07/27/2004 00:00:00	Findings:	55 MG/L
Chemical:	SODIUM		
Sample Collected:	07/27/2004 00:00:00	Findings:	2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	07/27/2004 00:00:00	Findings:	22 MG/L
Chemical:	CHLORIDE		
Sample Collected:	07/27/2004 00:00:00	Findings:	.2 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	07/27/2004 00:00:00	Findings:	210 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	07/27/2004 00:00:00	Findings:	.97
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	08/25/2004 00:00:00	Findings:	2.04 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	08/25/2004 00:00:00	Findings:	3.01 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	08/25/2004 00:00:00	Findings:	5.92 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	01/25/2005 00:00:00	Findings:	7.9
Chemical:	PH, FIELD		
Sample Collected:	02/14/2005 00:00:00	Findings:	6.26 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	02/14/2005 00:00:00	Findings:	5.39 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	02/14/2005 00:00:00	Findings:	4.46 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	02/14/2005 00:00:00	Findings:	17.1 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	02/15/2005 00:00:00	Findings:	3.31 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	02/15/2005 00:00:00	Findings:	2.24 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	02/15/2005 00:00:00	Findings:	5.11 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	02/15/2005 00:00:00	Findings:	11 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	08/16/2005 00:00:00	Findings:	7.64 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	08/16/2005 00:00:00	Findings:	1.1 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	08/16/2005 00:00:00	Findings:	7.52 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	08/16/2005 00:00:00	Findings:	5.19 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	08/16/2005 00:00:00	Findings:	21.4 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	02/08/2006 00:00:00	Findings:	1.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	02/08/2006 00:00:00	Findings:	.43 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	02/22/2006 00:00:00	Findings:	6.82 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	02/22/2006 00:00:00	Findings:	6.62 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	02/22/2006 00:00:00	Findings:	5.02 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	02/22/2006 00:00:00	Findings:	19.3 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	05/10/2006 00:00:00	Findings:	1.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	08/03/2006 00:00:00	Findings:	1.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	08/24/2006 00:00:00	Findings:	9.24 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	08/24/2006 00:00:00	Findings:	1.34 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	08/24/2006 00:00:00	Findings:	8.98 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	08/24/2006 00:00:00	Findings:	6.28 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	08/24/2006 00:00:00	Findings:	25.8 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	10/31/2006 00:00:00	Findings:	1.03 MG/L
Chemical:	TOTAL ORGANIC CARBON (TOC)		
Sample Collected:	11/02/2006 00:00:00	Findings:	.94 MG/L
Chemical:	TOTAL ORGANIC CARBON (TOC)		
Sample Collected:	11/08/2006 00:00:00	Findings:	9 UNITS
Chemical:	COLOR		
Sample Collected:	11/08/2006 00:00:00	Findings:	.9 MG/L
Chemical:	TOTAL ORGANIC CARBON (TOC)		
Sample Collected:	11/13/2006 00:00:00	Findings:	.373 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	11/13/2006 00:00:00	Findings:	1.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	01/11/2007 00:00:00	Findings:	.94 MG/L
Chemical:	TOTAL ORGANIC CARBON (TOC)		
Sample Collected:	03/26/2007 00:00:00	Findings:	5 UNITS
Chemical:	COLOR		
Sample Collected:	03/26/2007 00:00:00	Findings:	350 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/26/2007 00:00:00	Findings:	8.4
Chemical:	PH, LABORATORY		
Sample Collected:	03/26/2007 00:00:00	Findings:	220 MG/L
Chemical:	ALKALINITY (TOTAL) AS CaCO3		
Sample Collected:	03/26/2007 00:00:00	Findings:	100 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	03/26/2007 00:00:00	Findings:	85 MG/L
Chemical:	CARBONATE ALKALINITY		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	03/26/2007 00:00:00	Findings:	75 MG/L
Chemical:	HARDNESS (TOTAL) AS CaCO3		
Sample Collected:	03/26/2007 00:00:00	Findings:	22 MG/L
Chemical:	CALCIUM		
Sample Collected:	03/26/2007 00:00:00	Findings:	4.8 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	03/26/2007 00:00:00	Findings:	50 MG/L
Chemical:	SODIUM		
Sample Collected:	03/26/2007 00:00:00	Findings:	2.5 MG/L
Chemical:	POTASSIUM		
Sample Collected:	03/26/2007 00:00:00	Findings:	21 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/26/2007 00:00:00	Findings:	.29 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	03/26/2007 00:00:00	Findings:	.052 MG/L
Chemical:	FOAMING AGENTS (MBAS)		
Sample Collected:	03/26/2007 00:00:00	Findings:	210 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03/26/2007 00:00:00	Findings:	1.1
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	07/06/2007 00:00:00	Findings:	1.12 MG/L
Chemical:	TOTAL ORGANIC CARBON (TOC)		

2

**South
1/4 - 1/2 Mile
Lower**

FED USGS USGS3156852

Agency cd:	USGS	Site no:	334851118134801
Site name:	004S013W22F002S		
Latitude:	334851		
Longitude:	1181348	Dec lat:	33.8141841
Dec lon:	-118.2309038	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	19		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Santa Monica Bay. California. Area = 575 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	194811
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	572	Hole depth:	700
Source of depth data:	other reported		
Project number:	9479335800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Peak flow data count: Not Reported
 Water quality data end date: Not Reported
 Ground water data begin date: Not Reported
 Ground water data count: Not Reported

Water quality data begin date: Not Reported
 Water quality data count: Not Reported
 Ground water data end date: Not Reported

Ground-water levels, Number of Measurements: 0

3
NW
1/4 - 1/2 Mile
Lower

FED USGS USGS3156888

Agency cd:	USGS	Site no:	334928118140601
Site name:	004S013W15E003S		
Latitude:	334928		
Longitude:	1181406	Dec lat:	33.82446175
Dec lon:	-118.23590413	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	SOUTH GATE	Map scale:	24000
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	Los Angeles. California. Area = 819 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	950	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	9479335800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

4
NNW
1/2 - 1 Mile
Higher

FED USGS USGS3156889

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency cd:	USGS	Site no:	334935118140401
Site name:	004S013W15F015S		
Latitude:	334935		
Longitude:	1181404	Dec lat:	33.82638889
Dec lon:	-118.23444444	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	25		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	1977
Date inventoried:	20000928	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	952	Hole depth:	Not Reported
Source of depth data:	owner		
Project number:	470657500		
Real time data flag:	Not Reported		
Daily flow data end date:	Not Reported		
Daily flow data begin date:	Not Reported		
Daily flow data count:	Not Reported		
Peak flow data begin date:	Not Reported		
Peak flow data end date:	Not Reported		
Peak flow data count:	Not Reported		
Water quality data begin date:	Not Reported		
Water quality data end date:	Not Reported		
Water quality data count:	Not Reported		
Ground water data begin date:	Not Reported		
Ground water data end date:	Not Reported		
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

5 WNW 1/2 - 1 Mile Lower	Site ID:	R-12498	
	Groundwater Flow:	NE	AQUIFLOW 69682
	Shallow Water Depth:	Not Reported	
	Deep Water Depth:	Not Reported	
	Average Water Depth:	28.6	
	Date:	08/1996	

A6 SSW 1/2 - 1 Mile Lower			FED USGS USGS3156850
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Agency cd:	USGS	Site no:	334841118140002
Site name:	004S013W22F006S		
Latitude:	334840.90		
Longitude:	1181359.60	Dec lat:	33.81136111
Dec lon:	-118.23322222	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude: 16.3
 Altitude method: Level or other surveying method
 Altitude accuracy: 0.1
 Altitude datum: National Geodetic Vertical Datum of 1929
 Hydrologic: Not Reported
 Topographic: Flat surface
 Site type: Ground-water other than Spring Date construction: 19690513
 Date inventoried: 19990309 Mean greenwich time offset: PST
 Local standard time flag: Y
 Type of ground water site: Single well, other than collector or Ranney type
 Aquifer Type: Not Reported
 Aquifer: Not Reported
 Well depth: 160 Hole depth: 353
 Source of depth data: owner
 Project number: 470651200
 Real time data flag: 0 Daily flow data begin date: 0000-00-00
 Daily flow data end date: 0000-00-00 Daily flow data count: 0
 Peak flow data begin date: 0000-00-00 Peak flow data end date: 0000-00-00
 Peak flow data count: 0 Water quality data begin date: 1999-03-09
 Water quality data end date: 1999-03-09 Water quality data count: 1
 Ground water data begin date: 1999-03-09 Ground water data end date: 1999-03-09
 Ground water data count: 1

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1999-03-09	37.68	

**A7
SSW
1/2 - 1 Mile
Lower**

FED USGS USGS3156849

Agency cd: USGS Site no: 334841118140001
 Site name: 004S013W22F005S
 Latitude: 334840.90
 Longitude: 1181359.60 Dec lat: 33.81136111
 Dec lon: -118.23322222 Coor meth: G
 Coor acc: 5 Latlong datum: NAD83
 Dec latlong datum: NAD83 District: 06
 State: 06 County: 037
 Country: US Land net: Not Reported
 Location map: LONG BEACH Map scale: 24000
 Altitude: 16.3
 Altitude method: Level or other surveying method
 Altitude accuracy: 0.1
 Altitude datum: National Geodetic Vertical Datum of 1929
 Hydrologic: Not Reported
 Topographic: Flat surface
 Site type: Ground-water other than Spring Date construction: 19690513
 Date inventoried: 19990309 Mean greenwich time offset: PST
 Local standard time flag: Y
 Type of ground water site: Single well, other than collector or Ranney type
 Aquifer Type: Not Reported
 Aquifer: Not Reported
 Well depth: 290 Hole depth: 353
 Source of depth data: owner
 Project number: 470651200
 Real time data flag: 0 Daily flow data begin date: 0000-00-00
 Daily flow data end date: 0000-00-00 Daily flow data count: 0
 Peak flow data begin date: 0000-00-00 Peak flow data end date: 0000-00-00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Peak flow data count: 0
 Water quality data end date: 1999-03-09
 Ground water data begin date: 1999-03-09
 Ground water data count: 1

Water quality data begin date: 1999-03-09
 Water quality data count: 1
 Ground water data end date: 1999-03-09

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
----- 1999-03-09	40.41	

**A8
SSW
1/2 - 1 Mile
Higher**

CA WELLS CADW1000005829

Longn: -118.2332
 Latn: 33.8114
 Stwellno: 04S13W22F005S
 Districtco: 3
 Wellusecod: Z
 Countycode: 19
 Gwcode: 401103
 Site id: CADW1000005829

**A9
SSW
1/2 - 1 Mile
Higher**

CA WELLS CADW1000005830

Longn: -118.2332
 Latn: 33.8114
 Stwellno: 04S13W22F006S
 Districtco: 3
 Wellusecod: Z
 Countycode: 19
 Gwcode: 401103
 Site id: CADW1000005830

**10
West
1/2 - 1 Mile
Higher**

FED USGS USGS3156871

Agency cd: USGS	Site no: 334912118143001
Site name: 004S013W16R002S	
Latitude: 334912	
Longitude: 1181430	Dec lat: 33.82001745
Dec lon: -118.242571	Coor meth: M
Coor accr: S	Latlong datum: NAD27
Dec latlong datum: NAD83	District: 06
State: 06	County: 037
Country: US	Land net: Not Reported
Location map: LONG BEACH	Map scale: 24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	Santa Monica Bay. California. Area = 575 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	9479335800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

**B11
ESE
1/2 - 1 Mile
Higher**

FED USGS USGS3156859

Agency cd:	USGS	Site no:	334904118130302
Site name:	004S013W23D004S		
Latitude:	334904.87		
Longitude:	1181303.30	Dec lat:	33.81801944
Dec lon:	-118.21758333	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	23		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	20000710
Date inventoried:	20000815	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	1017	Hole depth:	1404
Source of depth data:	reporting agency (generally USGS)		
Project number:	0470651222		
Real time data flag:	0		
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Peak flow data count: 0
 Water quality data end date: 2001-03-29
 Ground water data begin date: 2000-08-31
 Ground water data count: 14

Water quality data begin date: 2001-03-29
 Water quality data count: 1
 Ground water data end date: 2002-09-29

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2002-09-29	85.42		2002-07-31	83.98	
2002-06-26	86.59		2002-03-29	91.61	
2001-12-26	72.56		2001-11-14	74.22	
2001-09-25	75.08		2001-06-26	74.11	
2001-03-26	100.06		2001-03-07	72.10	
2001-01-23	73.21		2000-12-28	74.00	
2000-09-27	74.13		2000-08-31	74.44	

**B12
 ESE
 1/2 - 1 Mile
 Higher**

FED USGS USGS3156858

Agency cd:	USGS	Site no:	334904118130301
Site name:	004S013W23D003S		
Latitude:	334904.87		
Longitude:	1181303.30	Dec lat:	33.81801944
Dec lon:	-118.21758333	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	23		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	20000710
Date inventoried:	20000815	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	1390	Hole depth:	1404
Source of depth data:	reporting agency (generally USGS)		
Project number:	0470651222		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	2001-03-29
Water quality data end date:	2001-03-29	Water quality data count:	1
Ground water data begin date:	2000-08-31	Ground water data end date:	2002-09-29
Ground water data count:	14		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2002-09-29	70.26		2002-07-31	71.33	
2002-06-26	71.86		2002-03-29	69.40	
2001-12-26	72.56		2001-11-14	74.22	
2001-09-25	75.08		2001-06-26	74.11	
2001-03-26	72.22		2001-03-07	72.10	
2001-01-23	73.21		2000-12-28	74.00	
2000-09-27	74.13		2000-08-31	74.44	

**B13
ESE
1/2 - 1 Mile
Higher**

FED USGS USGS3156860

Agency cd:	USGS	Site no:	334904118130303
Site name:	004S013W23D005S		
Latitude:	334904.87		
Longitude:	1181303.30	Dec lat:	33.81801944
Dec lon:	-118.21758333	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	23		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	20000710
Date inventoried:	20000815	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	690	Hole depth:	1404
Source of depth data:	reporting agency (generally USGS)		
Project number:	0470651222		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	2001-03-28
Water quality data end date:	2001-03-28	Water quality data count:	1
Ground water data begin date:	2000-08-31	Ground water data end date:	2002-09-29
Ground water data count:	14		

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2002-09-29	85.38		2002-07-31	83.95	
2002-06-26	86.56		2002-03-29	91.57	
2001-12-26	83.22		2001-11-14	87.64	
2001-09-25	99.04		2001-06-26	99.02	
2001-03-26	99.91		2001-03-07	94.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2001-01-23	86.71		2000-12-28	90.49	
2000-09-27	96.69		2000-08-31	91.03	

**B14
ESE
1/2 - 1 Mile
Higher**

FED USGS USGS3156862

Agency cd:	USGS	Site no:	334904118130305
Site name:	004S013W23D007S		
Latitude:	334904.87		
Longitude:	1181303.30	Dec lat:	33.81801944
Dec lon:	-118.21758333	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	23		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	20000710
Date inventoried:	20000815	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	430	Hole depth:	1404
Source of depth data:	reporting agency (generally USGS)		
Project number:	0470651222		
Real time data flag:	0		
Daily flow data end date:	0000-00-00	Daily flow data begin date:	0000-00-00
Daily flow data count:	0		
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0		
Water quality data begin date:	2001-03-26	Water quality data begin date:	2001-03-26
Water quality data end date:	2001-03-26	Water quality data count:	1
Ground water data begin date:	2000-08-31	Ground water data end date:	2002-09-29
Ground water data count:	14		

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2002-09-29	37.13		2002-07-31	37.36	
2002-06-26	38.03		2002-03-29	37.53	
2001-12-26	37.40		2001-11-14	37.86	
2001-09-25	38.43		2001-06-26	38.00	
2001-03-26	37.60		2001-03-07	37.43	
2001-01-23	37.49		2000-12-28	37.79	
2000-09-27	37.39		2000-08-31	37.20	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B15
ESE
1/2 - 1 Mile
Higher

FED USGS USGS3156861

Agency cd:	USGS	Site no:	334904118130304
Site name:	004S013W23D006S		
Latitude:	334904.87		
Longitude:	1181303.30	Dec lat:	33.81801944
Dec lon:	-118.21758333	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	23		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Not Reported		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	20000710
Date inventoried:	20000815	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	550	Hole depth:	1404
Source of depth data:	reporting agency (generally USGS)		
Project number:	0470651222		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	2001-03-27
Water quality data end date:	2001-03-27	Water quality data count:	1
Ground water data begin date:	2000-08-31	Ground water data end date:	2002-09-29
Ground water data count:	14		

Ground-water levels, Number of Measurements: 14

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2002-09-29	85.54		2002-07-31	83.90	
2002-06-26	86.38		2002-03-29	91.55	
2001-12-26	83.11		2001-11-14	87.53	
2001-09-25	99.02		2001-06-26	99.02	
2001-03-26	93.68		2001-03-07	93.87	
2001-01-23	86.62		2000-12-28	90.41	
2000-09-27	96.39		2000-08-31	90.93	

16
SW
1/2 - 1 Mile
Lower

FED USGS USGS3156851

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency cd:	USGS	Site no:	334848118142301
Site name:	004S013W21H007S		
Latitude:	334848		
Longitude:	1181423	Dec lat:	33.81335088
Dec lon:	-118.24062639	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	SENES21T04SR13WS
Location map:	LONG BEACH	Map scale:	24000
Altitude:	21.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Santa Monica Bay. California. Area = 575 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19691020
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	745
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-10-02
Water quality data end date:	1980-10-02	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

17 WNW 1/2 - 1 Mile Lower	Site ID:	I-00047		
	Groundwater Flow:	Not Reported	AQUIFLOW	70441
	Shallow Water Depth:	43.5		
	Deep Water Depth:	44.0		
	Average Water Depth:	Not Reported		
	Date:	10/14/1987		

C18 NNE 1/2 - 1 Mile Higher			FED USGS	USGS3156895
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Agency cd:	USGS	Site no:	334949118132601
Site name:	004S013W15B005S		
Latitude:	334949		
Longitude:	1181326	Dec lat:	33.83029488
Dec lon:	-118.22479267	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	Santa Monica Bay. California. Area = 575 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	963	Hole depth:	975
Source of depth data:	Not Reported		
Project number:	9479335800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

**C19
NNE
1/2 - 1 Mile
Higher**

FED USGS USGS3156897

Agency cd:	USGS	Site no:	334950118132501
Site name:	004S013W15A011S		
Latitude:	334950.30		
Longitude:	1181324.92	Dec lat:	33.83063889
Dec lon:	-118.22358889	Coor meth:	G
Coor accr:	5	Latlong datum:	NAD83
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	27		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Santa Monica Bay. California. Area = 575 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19441001
Date inventoried:	19960911	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	1049	Hole depth:	1054
Source of depth data:	owner		
Project number:	Not Reported		
Real time data flag:	0		
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Peak flow data count: 0	Water quality data begin date: 1996-09-11
Water quality data end date: 2000-10-10	Water quality data count: 2
Ground water data begin date: 0000-00-00	Ground water data end date: 0000-00-00
Ground water data count: 0	

Ground-water levels, Number of Measurements: 0

D20
NNE
1/2 - 1 Mile
Higher

FED USGS USGS3156904

Agency cd: USGS	Site no: 334953118133201
Site name: 004S013W15A014S	
Latitude: 334953	
Longitude: 1181332	Dec lat: 33.83138889
Dec lon: -118.22555556	Coor meth: G
Coor accr: 5	Latlong datum: NAD83
Dec latlong datum: NAD83	District: 06
State: 06	County: 037
Country: US	Land net: Not Reported
Location map: LONG BEACH	Map scale: 24000
Altitude: 31	
Altitude method: Interpolated from topographic map	
Altitude accuracy: 2.5	
Altitude datum: National Geodetic Vertical Datum of 1929	
Hydrologic: Not Reported	
Topographic: Flat surface	
Site type: Ground-water other than Spring	Date construction: Not Reported
Date inventoried: 20000928	Mean greenwich time offset: PST
Local standard time flag: Y	
Type of ground water site: Single well, other than collector or Ranney type	
Aquifer Type: Not Reported	
Aquifer: Not Reported	
Well depth: 1020	Hole depth: Not Reported
Source of depth data: owner	
Project number: 470657500	
Real time data flag: 0	Daily flow data begin date: 0000-00-00
Daily flow data end date: 0000-00-00	Daily flow data count: 0
Peak flow data begin date: 0000-00-00	Peak flow data end date: 0000-00-00
Peak flow data count: 0	Water quality data begin date: 2000-10-10
Water quality data end date: 2000-10-10	Water quality data count: 1
Ground water data begin date: 0000-00-00	Ground water data end date: 0000-00-00
Ground water data count: 0	

Ground-water levels, Number of Measurements: 0

D21
NNE
1/2 - 1 Mile
Higher

FED USGS USGS3156906

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency cd:	USGS	Site no:	334954118133101
Site name:	004S013W15A006S		
Latitude:	334954		
Longitude:	1181331	Dec lat:	33.83168376
Dec lon:	-118.22618163	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	Los Angeles, California. Area = 819 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	1226	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	9479335800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

22 NW 1/2 - 1 Mile Lower	Site ID: I-10154		AQUIFLOW	70445
	Groundwater Flow: SW			
	Shallow Water Depth: Not Reported			
	Deep Water Depth: Not Reported			
	Average Water Depth: 40			
	Date: 03/26/1991			

23 SW 1/2 - 1 Mile Higher			FED USGS	USGS3156846
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Agency cd:	USGS	Site no:	334839118142201
Site name:	004S013W21J002S		
Latitude:	334839		
Longitude:	1181422	Dec lat:	33.81085092
Dec lon:	-118.24034857	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	Santa Monica Bay. California. Area = 575 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	800	Hole depth:	800
Source of depth data:	Not Reported		
Project number:	9479335800		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

**E24
East
1/2 - 1 Mile
Higher**

CA WELLS CADW1000005852

Longn:	-118.2137
Latn:	33.8181
Stwellno:	04S13W23B002S
Districtco:	3
Wellusecod:	Z
Countycode:	19
Gwcode:	401103
Site id:	CADW1000005852

**E25
East
1/2 - 1 Mile
Higher**

FED USGS USGS3156864

Agency cd:	USGS	Site no:	334905118124601
Site name:	004S013W23B002S		
Latitude:	334905		
Longitude:	1181246	Dec lat:	33.81807276
Dec lon:	-118.21368096	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	037
Country:	US	Land net:	Not Reported
Location map:	LONG BEACH	Map scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude: Not Reported
 Altitude method: Not Reported
 Altitude accuracy: Not Reported
 Altitude datum: Not Reported
 Hydrologic: Santa Monica Bay. California. Area = 575 sq.mi.
 Topographic: Not Reported
 Site type: Ground-water other than Spring Date construction: Not Reported
 Date inventoried: Not Reported Mean greenwich time offset: PST
 Local standard time flag: Y
 Type of ground water site: Single well, other than collector or Ranney type
 Aquifer Type: Not Reported
 Aquifer: Not Reported
 Well depth: 1068 Hole depth: 1068
 Source of depth data: Not Reported
 Project number: 9479335800
 Real time data flag: 0 Daily flow data begin date: 0000-00-00
 Daily flow data end date: 0000-00-00 Daily flow data count: 0
 Peak flow data begin date: 0000-00-00 Peak flow data end date: 0000-00-00
 Peak flow data count: 0 Water quality data begin date: 0000-00-00
 Water quality data end date: 0000-00-00 Water quality data count: 0
 Ground water data begin date: 1932-10-22 Ground water data end date: 1987-08-28
 Ground water data count: 1580

Ground-water levels, Number of Measurements: 1580

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1987-08-28	94.58		1987-07-24	97.08	
1987-06-23	95.48		1987-06-01	92.68	
1987-05-01	94.98		1987-04-03	94.88	
1987-02-27	93.09		1987-02-02	93.01	
1986-12-26	89.08		1986-12-01	92.48	
1986-10-27	94.78		1986-09-26	95.88	
1986-09-02	97.98		1986-07-25	98.58	
1986-07-07	99.58		1986-05-29	94.78	
1986-04-25	94.98		1986-04-01	93.38	
1986-03-03	91.38		1986-01-31	94.48	
1985-12-27	99.70		1985-11-22	95.40	
1985-10-25	97.48		1985-09-27	99.68	
1985-08-30	99.98		1985-07-26	98.88	
1985-06-28	99.68		1985-05-27	96.98	
1985-04-26	94.58		1985-03-29	90.48	
1985-03-01	89.58		1985-01-25	93.78	
1984-12-20	100.98		1984-11-20	100.38	
1984-10-22	103.08		1984-09-20	103.58	
1984-08-20	100.18		1984-07-23	101.60	
1984-06-20	100.28		1984-05-21	101.08	
1984-04-23	108.18		1984-03-26	107.4	
1984-02-24	103.10		1984-01-30	102.70	
1983-12-30	101.18		1983-11-23	102.38	
1983-09-29	105.38		1983-08-29	108.40	
1983-08-01	107.70		1983-07-01	106.68	
1983-06-28	102.88		1983-05-23	104.08	
1983-04-29	103.88		1983-03-29	100.48	
1983-03-05	100.50		1983-01-26	104.78	
1983-01-10	103.78		1982-12-03	103.88	
1982-11-02	106.08		1982-09-30	108.08	
1982-08-23	108.88		1982-07-13	107.78	
1982-06-08	109.48		1982-04-28	107.28	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1982-04-06	106.68		1982-02-24	108.98	
1982-01-25	107.78		1982-01-04	105.58	
1981-11-30	104.18		1981-10-29	110.78	
1981-09-23	108.98		1981-08-24	110.18	
1981-08-03	108.18		1981-06-22	106.58	
1981-05-21	107.68		1981-04-29	109.18	
1981-03-25	109.08		1981-03-03	108.18	
1981-01-20	110.18		1980-12-23	110.38	
1980-11-26	108.98		1980-10-21	109.38	
1980-09-23	117.08		1980-08-20	116.88	
1980-07-22	112.38		1980-06-20	105.98	
1980-05-20	107.18		1980-04-18	110.38	
1980-03-21	109.60		1980-02-25	109.18	
1980-01-21	111.38		1979-12-20	111.48	
1979-11-26	110.88		1979-09-27	112.38	
1979-08-24	114.38		1979-07-26	112.58	
1979-06-18	116.78		1979-05-18	110.98	
1979-04-25	111.78		1979-02-20	119.98	
1979-01-18	114.48		1978-12-21	121.08	
1978-11-28	116.68		1978-10-20	115.98	
1978-09-20	115.28		1978-08-23	118.18	
1978-07-19	117.18		1978-06-21	115.78	
1978-05-17	115.48		1978-04-26	115.08	
1978-03-22	114.08		1978-02-22	112.38	
1978-01-18	116.48		1977-12-28	117.58	
1977-11-16	122.28		1977-09-21	120.58	
1977-08-10	123.08		1977-07-13	124.58	
1977-06-08	122.08		1977-05-18	119.98	
1977-04-20	120.58		1977-03-15	115.98	
1977-02-16	117.38		1977-01-19	116.68	
1976-12-22	117.68		1976-11-17	118.23	
1976-10-20	129.38		1976-09-22	121.58	
1976-08-25	122.18		1976-07-21	122.68	
1976-06-23	122.58		1976-05-19	123.68	
1976-04-21	123.48		1976-03-17	122.58	
1976-02-18	121.28		1976-01-21	120.78	
1975-12-17	119.18		1975-11-19	121.68	
1975-10-22	124.08		1975-09-17	125.33	
1975-08-20	124.48		1975-07-29	124.58	
1975-06-18	118.08		1975-05-21	114.73	
1975-04-23	118.58		1975-03-25	114.38	
1975-03-19	115.63		1975-02-20	119.38	
1975-01-22	121.58		1974-12-18	122.78	
1974-11-20	123.88		1974-10-23	121.98	
1974-09-18	123.18		1974-08-21	124.78	
1974-07-19	123.48		1974-06-19	122.68	
1974-05-22	122.13		1974-04-19	119.68	
1974-03-20	116.28		1974-02-20	119.08	
1974-01-23	117.48		1973-12-19	122.18	
1973-11-21	121.98		1973-10-17	125.53	
1973-09-19	126.38		1973-08-22	129.03	
1973-07-18	128.48		1973-06-20	127.48	
1973-05-23	125.38		1973-04-25	123.58	
1973-03-21	120.28		1973-02-21	119.68	
1973-01-24	120.68		1972-12-21	121.48	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1972-11-22	121.03		1972-10-18	126.08	
1972-09-20	128.88		1972-08-23	130.93	
1972-07-21	127.28		1972-06-21	126.43	
1972-05-24	124.08		1972-04-26	123.28	
1972-03-22	121.78		1972-02-28	123.48	
1972-01-26	123.08		1971-12-29	122.28	
1971-11-17	122.78		1971-10-27	123.63	
1971-09-22	122.20		1971-08-25	128.03	
1971-07-21	125.88		1971-06-23	119.73	
1971-05-19	121.38		1971-04-21	121.23	
1971-03-24	119.83		1971-02-24	115.38	
1971-01-20	119.73		1970-12-28	116.33	
1970-11-23	117.28		1970-10-26	119.53	
1970-09-21	124.78		1970-08-24	123.48	
1970-07-27	125.58		1970-06-22	123.43	
1970-05-25	123.08		1970-04-20	122.53	
1970-03-23	120.23		1970-02-23	120.58	
1970-01-26	123.68		1969-12-22	123.08	
1969-11-24	123.38		1969-10-27	123.03	
1969-09-22	125.18		1969-08-25	124.18	
1969-07-28	126.13		1969-06-23	125.28	
1969-05-26	124.53		1969-04-21	119.88	
1969-03-24	119.73		1969-02-24	118.90	
1969-01-20	117.60		1968-12-16	119.90	
1968-11-25	117.00		1968-10-21	118.35	
1968-09-23	121.00		1968-08-19	124.90	
1968-07-22	125.25		1968-06-24	126.25	
1968-05-20	121.40		1968-04-22	119.65	
1968-03-25	115.15		1968-02-19	115.35	
1968-01-22	120.30		1967-12-26	120.80	
1967-11-27	119.85		1967-10-30	118.00	
1967-09-25	118.60		1967-08-28	121.90	
1967-07-24	119.70		1967-06-26	119.15	
1967-05-29	120.30		1967-04-24	120.53	
1967-03-27	119.10		1967-02-20	116.00	
1967-01-23	117.50		1966-12-26	118.10	
1966-11-28	116.80		1966-10-24	119.50	
1966-09-26	118.75		1966-08-22	118.80	
1966-07-25	118.76		1966-06-30	113.85	
1966-05-30	117.05		1966-04-25	118.87	
1966-03-28	117.70		1966-02-28	115.35	
1966-01-31	114.70		1965-12-27	114.57	
1965-11-29	117.70		1965-10-25	120.70	
1965-09-27	121.50		1965-08-30	124.75	
1965-07-27	122.70		1965-06-28	119.47	
1965-05-24	118.07		1965-04-26	116.40	
1965-03-29	116.05		1965-02-22	117.63	
1965-01-25	112.43		1964-12-30	109.56	
1964-11-30	111.09		1964-10-26	112.68	
1964-09-28	117.35		1964-08-31	118.23	
1964-07-27	120.05		1964-06-29	117.15	
1964-05-25	116.18		1964-04-27	110.47	
1964-03-30	108.55		1964-02-24	104.75	
1964-01-27	111.10		1963-12-30	113.10	
1963-11-25	111.37		1963-10-28	113.75	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1963-09-23	115.30		1963-08-26	116.98	
1963-07-29	115.02		1963-06-24	112.85	
1963-05-27	110.84		1963-04-29	110.82	
1963-03-25	112.88		1963-02-25	109.74	
1963-01-28	107.88		1962-12-24	111.75	
1962-11-26	113.75		1962-10-29	115.15	
1962-09-24	117.95		1962-08-27	119.05	
1962-07-30	118.25		1962-06-25	114.40	
1962-05-28	118.26		1962-04-23	117.60	
1962-03-26	111.68		1962-02-26	111.15	
1962-01-29	107.80		1961-12-25	112.82	
1961-11-27	115.15		1961-10-30	116.85	
1961-09-25	122.10		1961-08-28	122.14	
1961-07-31	121.70		1961-06-26	120.10	
1961-05-29	121.16		1961-04-24	119.35	
1961-03-27	114.97		1961-02-27	115.00	
1961-01-30	110.35		1961-01-23	112.64	
1961-01-16	112.74		1961-01-09	110.30	
1961-01-02	109.99		1960-12-26	109.88	
1960-12-19	108.90		1960-12-12	108.24	
1960-12-05	108.19		1960-11-28	106.94	
1960-11-21	107.80		1960-11-14	111.12	
1960-11-07	112.72		1960-10-31	114.32	
1960-10-24	113.70		1960-10-17	115.57	
1960-10-10	116.33		1960-10-03	116.95	
1960-09-26	117.70		1960-09-19	117.30	
1960-09-12	116.50		1960-09-05	115.64	
1960-08-29	116.49		1960-08-22	116.31	
1960-08-15	116.51		1960-08-08	116.80	
1960-08-01	116.97		1960-07-25	117.10	
1960-07-18	115.64		1960-07-11	114.47	
1960-07-04	114.80		1960-06-27	115.40	
1960-06-20	114.90		1960-06-13	115.25	
1960-06-06	114.65		1960-05-30	115.97	
1960-05-23	114.91		1960-05-16	112.74	
1960-05-09	111.92		1960-05-02	108.72	
1960-04-25	107.50		1960-04-18	107.18	
1960-04-11	106.85		1960-04-04	106.46	
1960-03-28	105.25		1960-03-21	105.73	
1960-03-14	105.80		1960-03-07	105.32	
1960-02-29	105.62		1960-02-22	107.68	
1960-02-15	102.94		1960-02-08	103.38	
1960-02-01	103.60		1960-01-25	104.10	
1960-01-11	107.47		1960-01-04	108.30	
1959-12-28	108.90		1959-12-21	111.70	
1959-12-14	111.20		1959-12-07	111.70	
1959-11-30	111.80		1959-11-23	111.05	
1959-11-16	111.37		1959-11-09	111.91	
1959-11-02	111.70		1959-10-26	112.40	
1959-10-19	113.25		1959-10-12	114.55	
1959-10-05	115.55		1959-09-28	117.00	
1959-09-21	117.82		1959-09-14	119.65	
1959-09-07	119.70		1959-08-31	119.42	
1959-08-24	120.25		1959-08-17	119.42	
1959-08-10	119.75		1959-08-03	119.44	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1959-07-27	116.00		1959-07-20	117.45	
1959-07-13	118.90		1959-07-06	116.55	
1959-06-29	116.05		1959-06-22	114.47	
1959-06-15	113.10		1959-06-08	112.60	
1959-06-01	111.85		1959-05-25	110.75	
1959-05-18	109.85		1959-05-11	109.25	
1959-05-04	107.90		1959-04-27	107.20	
1959-04-20	107.04		1959-04-13	106.55	
1959-04-06	105.90		1959-03-30	104.70	
1959-03-23	103.70		1959-03-16	99.20	
1959-03-09	99.25		1959-03-02	99.52	
1959-02-23	99.30		1959-02-16	99.80	
1959-02-09	101.20		1959-02-02	103.60	
1959-01-26	103.72		1959-01-19	104.90	
1959-01-12	104.55		1959-01-05	105.65	
1958-12-29	107.30		1958-12-22	109.85	
1958-12-15	111.35		1958-12-08	109.90	
1958-12-01	110.80		1958-11-24	113.40	
1958-11-17	113.45		1958-11-10	113.58	
1958-11-03	114.75		1958-10-27	112.25	
1958-10-20	115.53		1958-10-13	114.65	
1958-10-06	116.30		1958-09-29	115.30	
1958-09-22	115.85		1958-09-15	115.96	
1958-09-08	114.32		1958-09-01	114.70	
1958-08-25	115.05		1958-08-18	115.14	
1958-08-11	116.45		1958-08-04	116.95	
1958-07-28	116.25		1958-07-21	116.10	
1958-07-14	115.45		1958-07-07	114.65	
1958-06-30	116.50		1958-06-23	115.95	
1958-06-16	114.30		1958-06-09	113.03	
1958-06-02	110.62		1958-05-26	110.10	
1958-05-19	108.90		1958-05-12	109.55	
1958-05-02	111.47		1958-04-28	111.20	
1958-04-21	108.22		1958-04-14	105.43	
1958-04-07	104.73		1958-04-01	103.80	
1958-03-31	103.80		1958-03-24	103.43	
1958-03-17	102.55		1958-03-10	101.35	
1958-03-03	100.35		1958-02-24	99.95	
1958-02-17	100.00		1958-02-10	99.15	
1958-02-03	97.20		1958-01-27	98.40	
1958-01-20	99.93		1958-01-13	98.70	
1958-01-06	99.45		1957-12-30	99.37	
1957-12-23	99.96		1957-12-16	101.43	
1957-12-09	102.30		1957-12-02	103.58	
1957-11-25	105.60		1957-11-18	104.75	
1957-11-11	105.05		1957-11-04	107.85	
1957-10-28	109.40		1957-10-21	109.27	
1957-10-14	110.35		1957-10-07	113.22	
1957-09-30	115.10		1957-09-23	116.00	
1957-09-16	117.20		1957-09-09	118.00	
1957-09-02	117.99		1957-08-26	118.48	
1957-08-19	118.65		1957-08-12	115.60	
1957-08-05	115.05		1957-07-29	113.20	
1957-07-22	113.40		1957-07-15	113.45	
1957-07-08	112.90		1957-07-01	114.60	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1957-06-24	116.02		1957-06-17	111.60	
1957-06-10	110.50		1957-06-03	110.30	
1957-05-27	109.10		1957-05-20	106.85	
1957-05-13	105.40		1957-05-06	105.78	
1957-04-29	102.50		1957-04-22	101.85	
1957-04-15	103.70		1957-04-08	106.08	
1957-04-01	101.98		1957-03-25	100.85	
1957-03-18	100.10		1957-03-11	100.90	
1957-03-04	99.32		1957-02-25	101.65	
1957-02-18	101.42		1957-02-11	103.75	
1957-02-04	103.15		1957-01-28	102.35	
1957-01-21	101.20		1957-01-14	101.95	
1957-01-07	104.20		1956-12-31	106.85	
1956-12-24	107.45		1956-12-17	107.15	
1956-12-10	109.20		1956-12-03	110.92	
1956-11-26	112.85		1956-11-19	112.90	
1956-11-12	116.34		1956-11-05	112.87	
1956-10-29	113.80		1956-10-22	113.90	
1956-10-15	115.76		1956-10-08	114.90	
1956-10-01	116.95		1956-09-24	116.66	
1956-09-17	118.04		1956-09-10	118.37	
1956-09-03	118.02		1956-08-27	118.95	
1956-08-20	118.12		1956-08-13	116.45	
1956-08-06	116.25		1956-07-30	115.27	
1956-07-23	114.70		1956-07-16	114.60	
1956-07-09	114.70		1956-07-02	116.13	
1956-06-25	114.06		1956-06-18	115.80	
1956-06-11	112.14		1956-06-04	111.75	
1956-05-28	111.45		1956-05-21	110.40	
1956-05-14	107.59		1956-05-07	104.82	
1956-04-30	102.02		1956-04-23	102.65	
1956-04-16	103.12		1956-04-09	106.40	
1956-04-02	106.15		1956-03-26	105.67	
1956-03-19	104.47		1956-03-12	102.72	
1956-03-05	101.78		1956-02-27	102.85	
1956-02-20	102.67		1956-02-13	103.60	
1956-02-06	103.50		1956-01-30	104.80	
1956-01-23	106.43		1956-01-16	106.78	
1956-01-09	105.23		1956-01-02	106.48	
1955-12-26	106.87		1955-12-19	107.62	
1955-12-12	107.87		1955-12-05	108.60	
1955-11-28	107.36		1955-11-21	108.70	
1955-11-14	111.23		1955-11-07	112.55	
1955-10-31	112.22		1955-10-24	113.57	
1955-10-17	113.80		1955-10-10	113.20	
1955-10-03	112.00		1955-09-26	112.90	
1955-09-19	114.80		1955-09-12	116.68	
1955-09-05	116.93		1955-08-29	114.41	
1955-08-22	113.33		1955-08-15	115.80	
1955-08-08	115.32		1955-08-01	115.37	
1955-07-25	116.30		1955-07-18	116.46	
1955-07-11	116.43		1955-07-04	116.04	
1955-06-27	117.80		1955-06-20	116.25	
1955-06-13	117.97		1955-06-06	119.70	
1955-05-30	120.70		1955-05-23	124.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1955-05-16	119.85		1955-05-09	119.50	
1955-05-02	120.28		1955-04-25	120.15	
1955-04-18	126.74		1955-04-11	124.65	
1955-04-04	122.73		1955-03-28	123.97	
1955-03-21	122.09		1955-03-14	121.75	
1955-03-07	120.45		1955-02-28	120.53	
1955-02-21	120.12		1955-02-14	120.19	
1955-02-07	118.83		1955-01-31	119.05	
1955-01-24	117.60		1955-01-17	118.58	
1955-01-10	118.70		1955-01-03	120.25	
1954-12-27	120.70		1954-12-20	119.55	
1954-12-13	117.75		1954-12-06	118.38	
1954-11-29	120.43		1954-11-22	123.40	
1954-11-15	121.85		1954-11-08	124.72	
1954-11-01	125.00		1954-10-25	124.20	
1954-10-18	123.43		1954-10-11	121.50	
1954-10-04	120.72		1954-09-27	123.27	
1954-09-24	124.51		1954-09-13	126.30	
1954-09-06	127.12		1954-08-30	126.70	
1954-08-23	127.23		1954-08-16	125.78	
1954-08-09	124.80		1954-08-02	126.20	
1954-07-26	125.72		1954-07-19	126.75	
1954-07-12	126.54		1954-07-05	123.12	
1954-06-28	122.40		1954-06-21	123.76	
1954-06-14	124.28		1954-06-07	121.20	
1954-05-31	120.04		1954-05-24	119.17	
1954-05-17	118.73		1954-05-10	120.12	
1954-05-03	115.60		1954-04-26	114.04	
1954-04-19	113.57		1954-04-12	113.63	
1954-04-05	110.88		1954-03-29	111.15	
1954-03-22	109.28		1954-03-15	113.46	
1954-03-08	112.75		1954-03-01	113.08	
1954-02-22	113.58		1954-02-15	113.40	
1954-02-01	113.60		1954-01-25	112.80	
1954-01-18	114.12		1954-01-11	116.80	
1954-01-04	116.91		1953-12-28	117.66	
1953-12-21	119.25		1953-12-14	119.28	
1953-12-07	117.82		1953-11-30	118.53	
1953-11-23	117.45		1953-11-16	120.18	
1953-11-09	123.66		1953-11-02	125.63	
1953-10-26	125.50		1953-10-19	125.72	
1953-10-12	128.56		1953-10-05	126.84	
1953-09-28	125.40		1953-09-20	126.49	
1953-09-14	128.25		1953-09-07	127.25	
1953-08-31	127.94		1953-08-24	127.90	
1953-08-17	128.22		1953-08-10	129.08	
1953-08-03	130.10		1953-07-27	130.75	
1953-07-20	131.75		1953-07-13	130.33	
1953-07-06	127.92		1953-06-29	126.26	
1953-06-22	124.78		1953-06-15	125.63	
1953-06-08	125.98		1953-06-01	125.07	
1953-05-25	125.11		1953-05-18	124.15	
1953-05-12	124.38		1953-05-04	120.57	
1953-04-27	119.60		1953-04-20	121.53	
1953-04-13	119.90		1953-04-06	119.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1953-03-30	118.79		1953-03-24	118.67	
1953-03-16	118.78		1953-03-09	117.94	
1953-03-02	115.99		1953-02-23	117.84	
1953-02-16	116.05		1953-02-09	114.17	
1953-02-02	113.48		1953-01-27	111.45	
1953-01-20	131.75		1953-01-13	111.22	
1953-01-06	110.52		1952-12-30	110.93	
1952-12-23	112.73		1952-12-16	113.21	
1952-12-09	112.86		1952-12-02	112.82	
1952-11-24	114.10		1952-11-17	116.20	
1952-11-10	120.09		1952-11-03	119.23	
1952-10-28	119.74		1952-10-21	119.82	
1952-10-14	121.81		1952-10-07	121.35	
1952-09-30	123.52		1952-09-23	123.85	
1952-09-16	124.35		1952-09-10	125.89	
1952-09-02	124.07		1952-08-25	122.62	
1952-08-19	120.99		1952-08-12	120.30	
1952-08-05	120.50		1952-07-29	121.60	
1952-07-22	118.50		1952-07-15	116.85	
1952-07-08	116.92		1952-07-01	117.23	
1952-06-24	117.47		1952-06-17	116.39	
1952-06-10	113.70		1952-06-04	113.09	
1952-05-27	112.57		1952-05-20	111.95	
1952-05-13	109.56		1952-05-06	106.55	
1952-04-29	102.12		1952-04-22	103.98	
1952-04-15	104.32		1952-04-08	104.66	
1952-04-01	103.55		1952-03-25	102.28	
1952-03-18	101.25		1952-03-11	102.79	
1952-03-04	104.64		1952-02-26	105.00	
1952-02-19	103.80		1952-02-13	101.37	
1952-02-06	103.68		1952-01-29	103.20	
1952-01-22	102.80		1952-01-15	102.62	
1952-01-08	103.19		1952-01-02	104.20	
1951-12-18	104.72		1951-12-11	106.40	
1951-12-04	107.20		1951-11-27	109.63	
1951-11-20	113.43		1951-11-13	113.20	
1951-11-06	114.36		1951-10-30	112.88	
1951-10-23	114.13		1951-10-16	114.21	
1951-10-09	116.60		1951-10-02	114.76	
1951-09-25	113.03		1951-09-18	114.40	
1951-09-11	111.90		1951-09-04	114.07	
1951-08-28	113.90		1951-08-21	115.53	
1951-08-14	117.32		1951-08-07	117.09	
1951-07-31	116.38		1951-07-24	115.52	
1951-07-17	116.10		1951-07-10	116.20	
1951-07-03	113.65		1951-06-26	111.80	
1951-06-19	112.98		1951-06-12	113.02	
1951-06-05	112.18		1951-05-29	111.23	
1951-05-22	111.48		1951-05-15	109.80	
1951-05-08	108.64		1951-05-01	105.79	
1951-04-24	108.13		1951-04-17	105.59	
1951-04-10	104.00		1951-04-03	107.25	
1951-03-28	107.52		1951-03-27	107.07	
1951-03-20	105.53		1951-03-13	101.74	
1951-03-06	99.55		1951-02-27	101.05	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1951-02-20	102.02		1951-02-13	99.55	
1951-02-02	99.30		1951-01-30	98.55	
1951-01-23	99.63		1951-01-16	100.88	
1951-01-09	102.24		1951-01-02	101.20	
1950-12-27	101.41		1950-12-19	102.70	
1950-12-12	101.97		1950-12-05	100.72	
1950-12-01	99.72		1950-11-28	99.90	
1950-11-21	101.25		1950-11-14	105.95	
1950-11-07	103.33		1950-11-02	106.53	
1950-10-31	105.95		1950-10-24	106.99	
1950-10-17	108.32		1950-10-10	105.95	
1950-10-03	106.40		1950-09-25	106.57	
1950-09-18	105.73		1950-09-11	103.40	
1950-09-01	105.10		1950-08-29	104.60	
1950-08-21	106.90		1950-08-14	107.90	
1950-08-07	106.10		1950-08-01	104.30	
1950-07-28	107.98		1950-07-24	103.20	
1950-07-17	102.60		1950-07-10	105.80	
1950-07-03	103.73		1950-06-30	104.20	
1950-06-26	100.80		1950-06-19	99.30	
1950-06-12	98.90		1950-06-01	101.50	
1950-05-29	96.95		1950-05-22	96.30	
1950-05-15	95.80		1950-05-08	96.10	
1950-05-01	95.94		1950-04-24	94.20	
1950-04-17	95.00		1950-04-10	92.30	
1950-04-03	92.90		1950-03-20	90.20	
1950-03-13	92.30		1950-03-01	88.40	
1950-02-28	88.11		1950-02-20	89.20	
1950-02-02	91.90		1950-01-16	90.80	
1950-01-09	90.00		1950-01-03	90.20	
1949-12-27	91.00		1949-12-19	93.00	
1949-12-12	94.20		1949-11-30	95.60	
1949-11-21	97.50		1949-11-11	96.80	
1949-11-07	100.60		1949-10-28	100.53	
1949-10-24	99.90		1949-10-18	99.90	
1949-10-17	99.90		1949-10-10	100.30	
1949-10-03	102.80		1949-09-28	102.90	
1949-09-19	103.70		1949-09-12	102.30	
1949-08-31	105.40		1949-08-22	103.40	
1949-08-15	103.00		1949-08-08	104.10	
1949-07-29	104.10		1949-07-25	103.10	
1949-07-11	101.90		1949-07-01	102.90	
1949-06-30	107.00		1949-06-20	101.10	
1949-06-13	100.40		1949-06-06	100.50	
1949-05-31	99.70		1949-05-23	97.50	
1949-05-16	97.90		1949-05-09	97.90	
1949-05-02	96.00		1949-04-25	94.90	
1949-04-18	92.60		1949-03-31	86.50	
1949-03-21	86.50		1949-03-14	87.20	
1949-03-07	87.60		1949-02-28	88.10	
1949-02-21	88.20		1949-02-14	88.20	
1949-02-07	89.70		1949-01-31	88.70	
1949-01-24	88.40		1949-01-17	89.70	
1949-01-10	88.70		1949-01-03	91.90	
1948-12-20	90.70		1948-12-13	91.70	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1948-12-01	91.10		1948-11-22	90.60	
1948-11-15	91.20		1948-11-08	90.50	
1948-11-01	89.10		1948-10-25	86.70	
1948-10-18	97.90		1948-10-11	88.50	
1948-10-01	87.60		1948-09-20	87.60	
1948-09-13	91.80		1948-09-07	97.30	
1948-09-01	100.90		1948-08-23	101.20	
1948-08-16	97.80		1948-08-09	98.90	
1948-08-02	100.40		1948-07-26	99.30	
1948-07-19	98.80		1948-07-12	99.70	
1948-07-01	99.80		1948-06-21	97.90	
1948-06-14	96.20		1948-06-02	95.70	
1948-05-24	97.80		1948-05-17	96.50	
1948-05-10	94.20		1948-05-03	94.60	
1948-04-26	95.10		1948-04-19	94.90	
1948-04-12	90.60		1948-04-01	88.80	
1948-03-22	88.50		1948-03-15	88.70	
1948-03-08	89.30		1948-03-01	89.10	
1948-02-24	88.30		1948-02-16	86.70	
1948-02-09	86.00		1948-02-02	86.90	
1948-01-26	89.00		1948-01-19	92.70	
1948-01-12	87.50		1948-01-05	85.90	
1947-12-29	87.10		1947-12-22	85.40	
1947-12-15	87.20		1947-12-08	85.90	
1947-12-01	91.20		1947-11-24	90.20	
1947-11-17	91.20		1947-11-10	95.40	
1947-11-03	92.20		1947-10-27	94.80	
1947-10-20	93.80		1947-10-14	94.70	
1947-10-01	98.90		1947-09-22	98.70	
1947-09-15	98.50		1947-09-08	100.40	
1947-09-02	100.60		1947-08-25	100.20	
1947-08-18	100.80		1947-08-11	101.00	
1947-08-01	100.60		1947-07-21	98.40	
1947-07-14	98.40		1947-07-07	94.60	
1947-07-01	96.10		1947-06-23	96.60	
1947-06-17	94.80		1947-06-10	93.40	
1947-06-02	91.90		1947-05-26	92.10	
1947-05-19	100.40		1947-05-12	92.40	
1947-05-01	90.90		1947-04-21	91.90	
1947-04-14	91.70		1947-04-07	87.20	
1947-03-24	82.50		1947-03-17	83.60	
1947-03-10	82.30		1947-02-28	82.90	
1947-02-24	82.70		1947-02-17	82.70	
1947-02-10	81.70		1947-02-03	82.40	
1947-01-28	80.80		1947-01-20	79.80	
1947-01-13	79.50		1947-01-02	80.20	
1946-12-23	81.50		1946-12-16	81.70	
1946-12-09	82.70		1946-12-02	82.70	
1946-11-25	83.30		1946-11-18	86.90	
1946-11-12	84.70		1946-11-01	86.00	
1946-10-21	89.00		1946-10-14	93.20	
1946-10-07	92.00		1946-10-01	95.00	
1946-09-23	95.00		1946-09-09	97.50	
1946-09-03	98.40		1946-08-19	101.60	
1946-08-12	93.50		1946-08-01	97.70	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1946-07-26	94.90		1946-07-15	93.40	
1946-07-09	96.60		1946-07-01	93.10	
1946-06-24	92.20		1946-06-17	95.10	
1946-06-10	93.10		1946-06-01	90.40	
1946-05-20	86.60		1946-05-15	86.30	
1946-05-01	87.60		1946-04-22	83.70	
1946-04-15	82.50		1946-04-08	80.70	
1946-04-01	86.40		1946-03-23	86.60	
1946-03-18	88.60		1946-03-09	86.90	
1946-03-01	84.30		1946-02-19	84.00	
1946-02-11	80.90		1946-02-01	86.10	
1946-01-21	82.00		1946-01-14	80.10	
1946-01-07	80.50		1945-12-31	84.00	
1945-12-24	82.70		1945-12-07	86.10	
1945-12-01	86.60		1945-11-23	89.20	
1945-11-17	89.00		1945-11-08	90.50	
1945-11-01	90.70		1945-10-22	89.70	
1945-10-15	88.70		1945-10-06	91.80	
1945-10-01	93.60		1945-09-22	92.50	
1945-09-14	93.50		1945-09-08	93.50	
1945-08-31	92.20		1945-08-25	92.70	
1945-08-18	102.10		1945-08-11	102.00	
1945-08-01	97.70		1945-07-21	95.70	
1945-07-14	93.10		1945-07-07	93.20	
1945-06-30	93.10		1945-06-23	91.20	
1945-06-16	90.60		1945-06-09	88.70	
1945-06-01	90.40		1945-05-26	89.30	
1945-05-19	86.60		1945-05-12	89.60	
1945-05-01	86.70		1945-04-21	84.50	
1945-04-14	86.00		1945-04-07	85.90	
1945-04-02	85.40		1945-03-24	84.00	
1945-03-17	79.50		1945-03-10	84.10	
1945-03-01	84.30		1945-02-17	88.40	
1945-01-20	85.90		1945-01-13	87.50	
1945-01-06	86.10		1945-01-02	86.10	
1944-12-23	85.50		1944-12-16	85.60	
1944-12-09	87.10		1944-11-25	83.90	
1944-11-18	82.80		1944-11-10	83.30	
1944-11-01	86.10		1944-10-21	88.80	
1944-10-14	86.10		1944-10-07	85.40	
1944-10-02	87.90		1944-09-23	84.00	
1944-09-16	83.50		1944-09-08	86.20	
1944-09-01	87.40		1944-08-26	86.70	
1944-08-19	85.00		1944-08-12	83.40	
1944-07-31	80.70		1944-07-22	86.20	
1944-07-15	83.20		1944-07-08	87.10	
1944-07-01	87.60		1944-06-24	87.60	
1944-06-17	83.00		1944-06-10	86.00	
1944-05-31	84.10		1944-05-20	80.90	
1944-05-13	79.80		1944-05-06	78.10	
1944-04-29	77.60		1944-04-22	78.50	
1944-04-15	78.50		1944-04-08	76.50	
1944-04-01	76.30		1944-03-25	74.60	
1944-03-18	72.70		1944-03-11	72.90	
1944-03-01	71.50		1944-02-19	71.30	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1944-02-11	71.30		1944-01-31	71.00	
1944-01-22	68.90		1944-01-15	69.50	
1944-01-08	69.40		1943-12-31	69.60	
1943-12-24	73.50		1943-12-18	73.80	
1943-12-11	73.50		1943-12-01	74.00	
1943-11-20	80.10		1943-11-13	78.40	
1943-11-06	84.20		1943-10-29	82.10	
1943-10-23	84.70		1943-10-16	79.90	
1943-10-08	88.50		1943-10-01	87.90	
1943-09-25	87.70		1943-09-18	85.70	
1943-09-11	85.90		1943-09-01	81.50	
1943-08-21	80.10		1943-08-14	80.40	
1943-08-07	79.70		1943-08-01	79.10	
1943-07-24	78.50		1943-07-17	77.50	
1943-07-10	76.80		1943-06-30	78.10	
1943-06-19	76.50		1943-06-12	74.70	
1943-06-01	72.70		1943-05-22	73.90	
1943-05-15	72.30		1943-05-08	69.10	
1943-04-30	72.70		1943-04-24	67.00	
1943-04-17	65.20		1943-03-31	62.70	
1943-03-20	62.50		1943-03-13	62.30	
1943-03-06	61.70		1943-03-01	63.90	
1943-02-20	63.60		1943-02-13	62.40	
1943-01-29	62.50		1943-01-16	64.40	
1943-01-09	64.30		1942-12-21	65.10	
1942-12-12	64.80		1942-12-01	65.40	
1942-11-21	64.40		1942-11-07	64.90	
1942-11-02	64.90		1942-10-24	67.80	
1942-10-17	66.30		1942-10-10	66.90	
1942-09-30	66.50		1942-09-19	66.50	
1942-09-12	67.70		1942-09-01	68.10	
1942-08-22	69.90		1942-08-15	70.70	
1942-08-08	70.90		1942-08-01	69.60	
1942-07-25	69.90		1942-07-17	69.00	
1942-07-11	71.30		1942-07-01	68.20	
1942-06-21	67.50		1942-06-13	68.00	
1942-06-06	67.90		1942-06-01	67.00	
1942-05-23	65.80		1942-05-16	62.90	
1942-05-09	61.00		1942-05-01	59.20	
1942-04-25	57.90		1942-04-18	58.30	
1942-04-11	59.40		1942-03-31	63.70	
1942-03-21	57.90		1942-03-14	58.70	
1942-03-07	62.70		1942-02-28	58.00	
1942-02-21	61.10		1942-02-14	62.40	
1942-02-07	59.90		1942-01-24	59.70	
1942-01-17	59.90		1942-01-10	59.70	
1941-12-20	58.70		1941-12-13	59.90	
1941-11-15	67.00		1941-11-08	65.00	
1941-10-31	73.60		1941-10-25	74.70	
1941-10-18	75.70		1941-10-11	72.70	
1941-10-01	73.20		1941-09-20	69.70	
1941-09-13	76.90		1941-09-02	77.40	
1941-08-23	75.50		1941-08-09	68.40	
1941-08-01	65.30		1941-07-26	64.90	
1941-07-19	64.00		1941-07-12	68.90	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1941-07-07	67.60		1941-07-01	67.60	
1941-06-21	64.50		1941-06-14	63.20	
1941-06-07	69.40		1941-06-02	62.50	
1941-05-24	61.70		1941-05-17	62.70	
1941-05-10	60.70		1941-04-30	60.00	
1941-04-19	56.80		1941-04-12	55.40	
1941-03-31	56.40		1941-03-22	56.00	
1941-03-15	54.60		1941-03-08	54.80	
1941-02-28	54.40		1941-02-21	54.80	
1941-02-15	55.40		1941-02-08	56.50	
1941-01-31	56.30		1941-01-25	56.30	
1941-01-18	56.60		1941-01-11	57.20	
1941-01-02	57.60		1940-12-21	60.90	
1940-12-07	63.20		1940-12-02	62.30	
1940-11-23	64.20		1940-11-16	64.60	
1940-11-09	62.70		1940-11-01	63.20	
1940-10-26	66.30		1940-10-19	66.90	
1940-10-11	67.50		1940-10-01	68.90	
1940-09-21	68.10		1940-09-14	73.90	
1940-09-07	75.90		1940-08-30	77.70	
1940-08-24	75.30		1940-08-17	77.40	
1940-08-10	73.80		1940-08-01	71.70	
1940-07-20	72.30		1940-07-13	71.30	
1940-07-06	69.20		1940-07-01	71.40	
1940-06-22	72.30		1940-06-15	71.70	
1940-06-08	70.70		1940-05-31	69.80	
1940-05-24	66.00		1940-05-18	67.10	
1940-05-11	64.00		1940-05-01	60.50	
1940-04-20	61.20		1940-04-13	61.00	
1940-04-06	56.60		1940-04-01	57.70	
1940-03-23	59.90		1940-03-16	60.20	
1940-03-09	57.80		1940-03-01	55.70	
1940-02-23	56.10		1940-02-16	55.30	
1940-02-09	55.70		1940-01-30	56.50	
1940-01-19	56.80		1940-01-12	58.20	
1940-01-06	58.80		1940-01-02	59.40	
1939-12-23	63.20		1939-12-15	66.20	
1939-12-08	63.80		1939-12-01	64.60	
1939-11-25	63.90		1939-11-18	64.70	
1939-11-13	61.30		1939-11-01	63.40	
1939-10-21	62.70		1939-10-14	62.60	
1939-10-07	61.11		1939-09-30	64.10	
1939-09-23	69.00		1939-09-16	65.59	
1939-09-11	67.70		1939-09-01	72.40	
1939-08-26	71.80		1939-08-19	71.90	
1939-08-18	68.66		1939-08-12	72.70	
1939-08-05	72.00		1939-07-31	72.90	
1939-07-22	71.30		1939-07-15	68.40	
1939-07-08	66.12		1939-06-30	68.10	
1939-06-17	67.50		1939-06-10	67.10	
1939-06-09	65.68		1939-05-31	65.50	
1939-05-20	62.30		1939-05-13	62.40	
1939-05-09	60.99		1939-05-06	60.60	
1939-05-01	57.70		1939-04-22	57.50	
1939-04-15	57.60		1939-04-08	56.02	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1939-03-31	54.20		1939-03-25	54.40	
1939-03-18	54.40		1939-03-11	55.10	
1939-03-07	56.31		1939-03-01	55.70	
1939-02-20	53.50		1939-02-11	54.50	
1939-02-06	52.93		1939-01-31	53.00	
1939-01-21	53.90		1939-01-14	54.30	
1939-01-13	53.86		1939-01-07	54.40	
1938-12-31	54.50		1938-12-24	54.70	
1938-12-17	58.30		1938-12-10	59.59	
1938-12-01	59.30		1938-11-19	60.20	
1938-11-14	62.99		1938-11-12	59.70	
1938-11-05	60.90		1938-10-31	62.20	
1938-10-25	66.76		1938-10-22	63.70	
1938-10-15	65.60		1938-10-08	66.40	
1938-10-01	65.40		1938-09-26	63.94	
1938-09-24	64.30		1938-09-17	65.10	
1938-09-12	66.50		1938-08-31	65.10	
1938-08-22	64.30		1938-08-15	65.40	
1938-08-08	64.70		1938-08-03	64.91	
1938-08-01	64.00		1938-07-25	63.90	
1938-07-18	64.60		1938-07-11	63.08	
1938-06-30	63.70		1938-06-20	61.00	
1938-06-13	59.70		1938-06-07	60.08	
1938-06-01	58.70		1938-05-23	58.90	
1938-05-16	59.60		1938-05-09	58.50	
1938-05-06	57.60		1938-05-02	56.90	
1938-04-25	58.90		1938-04-18	59.20	
1938-04-11	59.40		1938-04-01	58.10	
1938-03-28	56.40		1938-03-14	54.70	
1938-03-07	53.60		1938-02-21	53.30	
1938-02-14	53.13		1938-02-07	53.10	
1938-02-02	53.36		1938-01-30	53.70	
1938-01-25	53.68		1938-01-24	53.80	
1938-01-17	55.00		1938-01-10	54.10	
1938-01-03	54.10		1937-12-27	54.80	
1937-12-20	55.70		1937-12-13	56.20	
1937-12-06	57.20		1937-11-30	57.80	
1937-11-22	58.70		1937-11-15	60.20	
1937-11-12	60.60		1937-11-08	62.50	
1937-11-01	61.80		1937-10-25	62.70	
1937-10-22	63.55		1937-10-18	64.00	
1937-10-11	64.20		1937-09-30	66.20	
1937-09-20	67.60		1937-09-14	68.83	
1937-09-13	69.20		1937-09-07	68.20	
1937-08-31	64.70		1937-08-23	67.50	
1937-08-20	67.84		1937-08-16	68.20	
1937-08-09	67.00		1937-08-02	67.00	
1937-07-26	67.20		1937-07-19	67.10	
1937-07-15	67.61		1937-07-01	66.60	
1937-06-21	65.70		1937-06-08	63.51	
1937-06-01	62.40		1937-05-17	63.53	
1937-05-01	61.50		1937-04-06	58.30	
1937-04-01	56.80		1937-03-16	57.09	
1937-02-08	56.64		1937-02-04	57.95	
1937-01-12	57.85		1937-01-02	58.20	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1936-12-12	62.97		1936-11-30	64.20	
1936-11-19	65.56		1936-11-02	61.03	
1936-10-13	66.89		1936-10-01	66.70	
1936-09-18	68.68		1936-08-31	69.00	
1936-08-30	68.95		1936-08-24	68.28	
1936-08-17	67.87		1936-08-14	68.29	
1936-07-28	69.88		1936-06-30	68.20	
1936-06-09	67.67		1936-06-01	65.87	
1936-05-15	65.96		1936-04-30	62.78	
1936-04-20	62.52		1936-04-02	61.87	
1936-03-20	60.85		1936-03-02	63.36	
1936-02-18	56.71		1936-01-13	59.73	
1935-12-16	62.16		1935-11-18	63.87	
1935-10-25	73.08		1935-10-21	71.95	
1935-10-14	71.20		1935-10-07	71.45	
1935-09-30	71.70		1935-09-23	73.95	
1935-09-17	72.66		1935-09-16	72.36	
1935-09-10	70.62		1935-09-03	72.03	
1935-08-19	72.17		1935-07-23	73.66	
1935-07-22	75.20		1935-07-01	71.81	
1935-06-14	71.48		1935-05-14	66.56	
1935-04-23	63.70		1935-04-16	62.22	
1935-03-22	62.25		1935-02-18	62.01	
1935-01-15	61.20		1934-12-15	65.22	
1934-11-07	67.47		1934-10-29	66.16	
1934-07-24	73.92		1934-07-20	74.82	
1934-07-14	73.98		1934-06-26	71.31	
1934-06-12	68.09		1934-05-18	73.39	
1934-04-21	67.66		1934-04-06	65.97	
1934-03-30	63.56		1934-03-23	62.22	
1934-03-20	61.96		1934-03-16	61.09	
1934-03-09	59.42		1934-03-02	57.89	
1934-02-23	59.44		1934-02-16	61.71	
1934-02-09	60.60		1934-02-02	61.06	
1934-01-26	60.63		1934-01-19	60.02	
1934-01-12	59.70		1933-01-21	62.18	
1933-01-18	63.07		1933-01-11	63.36	
1933-01-04	61.76		1932-12-28	62.10	
1932-12-21	61.95		1932-12-14	62.80	
1932-12-07	65.19		1932-11-30	65.97	
1932-11-23	66.69		1932-11-16	66.49	
1932-11-10	66.41		1932-11-02	65.48	
1932-10-26	65.54		1932-10-22	65.38	

26
ENE
1/2 - 1 Mile
Higher

CA WELLS CADW1000005872

Longn: -118.2131
 Latn: 33.8247
 Stwellno: 04S13W14L001S
 Districtco: 3
 Wellusecod: Z
 Countycode: 19
 Gwcode: 401103
 Site id: CADW1000005872

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
90810	7	0	0.00

Federal EPA Radon Zone for LOS ANGELES County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.
- : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
- : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOS ANGELES COUNTY, CA

Number of sites tested: 63

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.711 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.933 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

California Drinking Water Quality Database

Source: Department of Health Services

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations

Source: Department of Conservation

Telephone: 916-323-1779

RADON

State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

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City Directory Abstract



EDR® Environmental
Data Resources Inc

The EDR-City Directory
Abstract

UPRR - Dresser Property
22632 South Alameda Street
Carson, CA 90810

Inquiry Number: 2048315.6

Tuesday, October 09, 2007

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EDR City Directory Abstract

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Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

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SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2006. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

This report compiles information by geocoding the subject properties (that is, plotting the latitude and longitude for such subject properties and obtaining data concerning properties within 1/8th of a mile of the subject properties). There is no warranty or guarantee that geocoding will report or list all properties within the specified radius of the subject properties and any such warranty or guarantee is expressly disclaimed. Accordingly, some properties within the aforementioned radius and the information concerning those properties may not be referenced in this report.

Date EDR Searched Historical Sources: October 9, 2007

Target Property:

22632 South Alameda Street
Carson, CA 90810

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1920	Address Not Listed in Research Source	Los Angeles Directory Co.
1921	Address Not Listed in Research Source	Los Angeles Directory Co.
1923	Address Not Listed in Research Source	Los Angeles Directory Co.
1924	Address Not Listed in Research Source	Los Angeles Directory Co.
1925	Address Not Listed in Research Source	Los Angeles Directory Co.
1926	Address Not Listed in Research Source	Los Angeles Directory Co.
1927	Address Not Listed in Research Source	Kaasen Directory Company Publishers
1928	Address Not Listed in Research Source	Los Angeles Directory Co.
1929	Address Not Listed in Research Source	Los Angeles Directory Co.
1930	Address Not Listed in Research Source	Los Angeles Directory Co.
1931	Address Not Listed in Research Source	Los Angeles Directory Company Publishers
1932	Address Not Listed in Research Source	Los Angeles Directory Co.
1933	Address Not Listed in Research Source	Los Angeles Directory Co.
1934	Address Not Listed in Research Source	Los Angeles Directory Co.
1935	Address Not Listed in Research Source	Los Angeles Directory Co.
1936	Address Not Listed in Research Source	Los Angeles Directory Co.

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1937	Address Not Listed in Research Source	Los Angeles Directory Co.
1938	Address Not Listed in Research Source	Los Angeles Directory Company Publishers
1939	Address Not Listed in Research Source	Los Angeles Directory Co.
1940	Address Not Listed in Research Source	Los Angeles Directory Co.
1942	Address Not Listed in Research Source	Los Angeles Directory Co.
1944	Address Not Listed in Research Source	R. L. Polk & Co.
1945	Address Not Listed in Research Source	R. L. Polk & Co.
1946	Address Not Listed in Research Source	Los Angeles Directory Co.
1947	Address Not Listed in Research Source	Pacific Directory Co.
1948	Address Not Listed in Research Source	Los Angeles Directory Co.
1949	Address Not Listed in Research Source	Los Angeles Directory Co.
1950	Address Not Listed in Research Source	Pacific Telephone
1951	Address Not Listed in Research Source	Los Angeles Directory Co Publishers
1952	Address Not Listed in Research Source	Los Angeles Directory Co.
1954	Address Not Listed in Research Source	R. L. Polk & Co.
1955	Address Not Listed in Research Source	R. L. Polk & Co.
1956	Address Not Listed in Research Source	Pacific Telephone
1957	Address Not Listed in Research Source	Pacific Telephone
1958	Address Not Listed in Research Source	Pacific Telephone
1960	<u>**S ALAMEDA ST**</u> SQUIRES AUTO WRECKING (22632)	Pacific Telephone

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1961	Address Not Listed in Research Source	Luskey Brothers & Co
1962	Address Not Listed in Research Source	Pacific Telephone
1963	Address Not Listed in Research Source	Pacific Telephone
1964	<u>**S ALAMEDA ST**</u> A & J AUTO WRECKING (22632)	Pacific Telephone
1965	Address Not Listed in Research Source	GTE
1966	Address Not Listed in Research Source	Pacific Telephone
1967	Address Not Listed in Research Source	R. L. Polk & Co.
1969	Address Not Listed in Research Source	Pacific Telephone
1970	<u>**S ALAMEDA ST**</u> A & J AUTO WRECKING (22632) A & J AUTO WRECKING (22632)	R. L. Polk & Co.
1971	Address Not Listed in Research Source	B&G Publications
1972	Address Not Listed in Research Source	R. L. Polk & Co.
1975	<u>**S ALAMEDA ST**</u> ALLCO AUTO WRECKING (22632) ALLCO SCRAP METAL (22632)	Pacific Telephone
1976	<u>**S ALAMEDA AVE**</u> ALLCO AUTO WRECKING (22632)	R.L. Polk & co Publishers
1980	<u>**S ALAMEDA AVE**</u> ALLCO SCRAP METAL (22632) <u>**S ALAMEDA ST**</u> ALICO AUTO WRECKING (22632) ALLCO SCRAP METAL (22632)	Pacific Telephone Pacific Telephone
1981	<u>**S ALAMEDA**</u> ALLCO AUTO WRECKING CARSON (22632)	Pacific Telephone
1985	<u>**S ALAMEDA ST**</u> ALLCO AUTO WRECKING (22632)	Pacific Bell
1986	<u>**S ALAMEDA**</u> ALLCO AUTO WRECKING CARSON (22632)	Pacific Bell

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1990	<u>**ALAMEDA S**</u> ALLCO AUTO WRECKING (22632)	Pacific Bell
1991	<u>**S ALAMEDA ST**</u> ALLCO AUTO WRECKING (22632)	Pacific Bell
1995	<u>**S ALAMEDA ST**</u> ALICO AUTO WRECKING (22632)	Pacific Bell Telephone
	<u>**S ALAMEDA**</u> ALLCO AUTO WRECKING CARSON (22632)	Pacific Bell Telephone
	<u>**ALAMEDA S**</u> ALLCO AUTO WRECKING (22632)	Pacific Bell Telephone
1996	Address Not Listed in Research Source	GTE
1999	Address Not Listed in Research Source	Haines Company
2000	Address Not Listed in Research Source	Pacific Bell Telephone
2001	Address Not Listed in Research Source	Haines & Company, Inc.
2003	Address Not Listed in Research Source	Haines & Company
2004	Address Not Listed in Research Source	Haines Company
2006	Address Not Listed in Research Source	Haines Company

Adjoining Properties

SURROUNDING

Multiple Addresses
Carson, CA 90810

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1920	Address Not Listed in Research Source	Los Angeles Directory Co.
1921	Address Not Listed in Research Source	Los Angeles Directory Co.
1923	Address Not Listed in Research Source	Los Angeles Directory Co.
1924	Address Not Listed in Research Source	Los Angeles Directory Co.
1925	Address Not Listed in Research Source	Los Angeles Directory Co.

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1926	Address Not Listed in Research Source	Los Angeles Directory Co.
1927	Address Not Listed in Research Source	Kaasen Directory Company Publishers
1928	Address Not Listed in Research Source	Los Angeles Directory Co.
1929	Address Not Listed in Research Source	Los Angeles Directory Co.
1930	Address Not Listed in Research Source	Los Angeles Directory Co.
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1932	Address Not Listed in Research Source	Los Angeles Directory Co.
1933	Address Not Listed in Research Source	Los Angeles Directory Co.
1934	Address Not Listed in Research Source	Los Angeles Directory Co.
1935	Address Not Listed in Research Source	Los Angeles Directory Co.
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1937	Address Not Listed in Research Source	Los Angeles Directory Co.
1938	Address Not Listed in Research Source	Los Angeles Directory Company Publishers
1939	Address Not Listed in Research Source	Los Angeles Directory Co.
1940	Address Not Listed in Research Source	Los Angeles Directory Co.
1942	Address Not Listed in Research Source	Los Angeles Directory Co.
1944	Address Not Listed in Research Source	R. L. Polk & Co.
1945	Address Not Listed in Research Source	R. L. Polk & Co.
1946	Address Not Listed in Research Source	Los Angeles Directory Co.
1947	Address Not Listed in Research Source	Pacific Directory Co.

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1948	Address Not Listed in Research Source	Los Angeles Directory Co.
1949	Address Not Listed in Research Source	Los Angeles Directory Co.
1950	<u>**S ALAMEDA ST**</u> DULIEN STEEL PRODUCTS INC (22606) LOURENCO M C DAIRY (22620)	Pacific Telephone
1951	Address Not Listed in Research Source	Los Angeles Directory Co Publishers
1952	Address Not Listed in Research Source	Los Angeles Directory Co.
1954	<u>**S ALAMEDA ST**</u> BECKMAN BROS INC (22606) HARDWICKS DISPOSAL PITS (22706)	R. L. Polk & Co.
1955	Address Not Listed in Research Source	R. L. Polk & Co.
1956	Address Not Listed in Research Source	Pacific Telephone
1957	<u>**S ALAMEDA ST**</u> OWELL RAY OIL TRNSPTTS (22606) ARIZONA REFINING CO (22606) CHIPMAN TRUCK CO (22606) HARBOR TRUCK TERMINAL (22606)	Pacific Telephone
1958	Address Not Listed in Research Source	Pacific Telephone
1960	<u>**S ALAMEDA ST**</u> ARIZONA REFINING CO (22606) CHIPMAN TRUCK CO (22606) HARBOR TRUCK TERMINAL (22606) HOMEN M J TRKNG (22606) POWELL RAY OIL TRNSPTN (22606) TANKER SAMS (22606)	Pacific Telephone
1961	Address Not Listed in Research Source	Luskey Brothers & Co
1962	<u>**S ALAMEDA ST**</u> CHIPMAN TRUCK CO (22606)	Pacific Telephone
1963	Address Not Listed in Research Source	Pacific Telephone
1964	<u>**S ALAMEDA ST**</u>	Pacific Telephone

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1964	(continued) CARSON AUTO INC (22606)	
1965	Address Not Listed in Research Source	GTE
1966	Address Not Listed in Research Source	Pacific Telephone
1967	<u>**S ALAMEDA ST**</u> CARSON AUTO INC (22606)	R. L. Polk & Co.
1969	Address Not Listed in Research Source	Pacific Telephone
1970	<u>**S ALAMEDA ST**</u> ROD TRANSPORTATION (22500) SWEET TRUCKING CO (22500) CARSON AUTO INC (22606) J & J SALVAGE (22680)	R. L. Polk & Co.
1971	<u>**S ALAMEDA ST**</u> CARSON AUTO INC (22606)	B&G Publications
1972	Address Not Listed in Research Source	R. L. Polk & Co.
1975	<u>**S ALAMEDA ST**</u> CARSON AUTO INC (22606)	Pacific Telephone
1976	<u>**S ALAMEDA BLVD**</u> CARSON AUTO INC (22606)	R.L. Polk & co Publishers
1980	<u>**S ALAMEDA ST**</u> CARSON AUTO INC (22606) COMMON MARKET DISTRIBUTING CORP LONG BEACH (22700)	Pacific Telephone
1981	<u>**S ALAMEDA**</u> COMMON MARKET DISTRIBUTING CORP LONG BEACH (22700)	Pacific Telephone
1985	<u>**S ALAMEDA ST**</u> CARSON AUTO INC (22606) COMMON MARKET DISTRIBUTING CO (22700) COMMON MARKET DISTRIBUTING CORP (22700) ESPARZA TRUCKING (22700) SWIFT TRANSPORTATION CO INC (22700)	Pacific Bell
1986	<u>**S ALAMEDA**</u> STATE AUTO WRECKING CO CARSON (22500) CARSON AUTO INC LONG BEACH (22606) COMMON MARKET DISTRIBUTING CORP LONG BEACH (22700) ESPARZA TRUCKING LONG BEACH (22700)	Pacific Bell

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1986	(continued) SWIFT TRANSPORTATION CO INC CARSON (22700)	
1990	**ALAMEDA S** ALLCO SCRAP METAL RECYCLING (22606) CARSON AUTO INC (22606) AMERICAN STUDCO (22700) COMMON MARKET DISTRIBUTING CO (22700) COMMON MARKET DISTRIBUTING CORP (22700) M & F TRUCKING (22700)	Pacific Bell
1991	Address Not Listed in Research Source	Pacific Bell
1995	**S ALAMEDA** CARSON RECYCLING INC (22500) STATE AUTO WRECKING CO (22500) STATE SALVAGE (22500) CARSON AUTO INC LONG BEACH (22606) COMMON MARKET DISTRIBUTING CO LONG BEACH (22700) COMMON MARKET DISTRIBUTING CORP LONG BEACH (22700)	Pacific Bell Telephone
	S ALAMEDA ST ALLCO SCRAP METAL RECYCLING (22606) CARSON AUTO INC (22606) COMMON MARKET DISTRIBUTING CO (22700) COMMON MARKET DISTRIBUTING CORP (22700)	Pacific Bell Telephone
	S ALAMEDA CARSON AUTO INC LONG BEACH (22606) CARSON AUTO WREAKING LONG BEACH (22606) COMMON MARKET DISTRIBUTING CORP LONG BEACH (22700)	Pacific Bell Telephone
	ALAMEDA S ALLCO SCRAP METAL RECYCLING (22606) CARSON AUTO INC (22606) COMMON MARKET DISTRIBUTING CO (22700) COMMON MARKET DISTRIBUTING CORP (22700)	Pacific Bell Telephone
1996	Address Not Listed in Research Source	GTE
1999	Address Not Listed in Research Source	Haines Company
2000	Address Not Listed in Research Source	Pacific Bell Telephone
2001	Address Not Listed in Research Source	Haines & Company, Inc.

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2003	Address Not Listed in Research Source	Haines & Company
2004	Address Not Listed in Research Source	Haines Company
2006	Address Not Listed in Research Source	Haines Company

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Inquiry Number 2048315.3

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10/09/07

Site Name:

UPRR - Dresser Property
22632 South Alameda Street
Carson, CA 90810

Client Name:

HDR Engineering Inc.
8690 Balboa Avenue
San Diego, CA 92123



EDR® Environmental
Data Resources Inc

EDR Inquiry # 2048315.3

Contact: Chuck Cleeves

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Site Name: UPRR - Dresser Property
Address: 22632 South Alameda Street
City, State, Zip: Carson, CA 90810
Cross Street:
P.O. # Union Pacific
Project: UPRR - POLA
Certification # 0928-4DF2-8D7C



Sanborn® Library search results
Certification # 0928-4DF2-8D7C

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Total Maps: 0

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

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Union Pacific Railroad

Application for Development Project Approval

Intermodal Container Transfer Facility (ICTF) Modernization Project

Section III

HDR 2006 Preliminary Geotechnical Report and Feasibility Study for ICTF
(with November, 2007 non-technical revisions)

**Preliminary Geotechnical Report
Intermodal Container Transfer Facility Expansion
Feasibility Study
Union Pacific Railroad
Long Beach, California**

November 28, 2007

Submitted To:
HDR Engineering, Inc.
2121 North California Boulevard, Suite 475
Walnut Creek, California 94596

By:
Shannon & Wilson, Inc.
400 N 34th Street, Suite 100
Seattle, Washington 98103

21-1-20524-001

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- A Selected Borings and Laboratory Data From LeRoy Crandall and Associates Report
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**PRELIMINARY GEOTECHNICAL REPORT
INTERMODAL CONTAINER TRANSFER FACILITY EXPANSION
FEASIBILITY STUDY
UNION PACIFIC RAILROAD
LONG BEACH, CALIFORNIA**

1.0 INTRODUCTION

This preliminary report presents the results of our geotechnical feasibility study performed for proposed upgrades to the Union Pacific Railroad (UPRR) intermodal container transfer facility (ICTF) in Long Beach, California. This study was conducted using published information, observations we made during a visit to the site in May 2006, and portions of a geotechnical engineering report prepared for the existing transfer facility site by LeRoy Crandall and Associates in 1983. The findings and recommendations in this study are based on limited information and should be supplemented by additional subsurface and laboratory studies prior to final design and construction of the anticipated site improvements.

1.1 Authorization

The scope of services for this feasibility phase was outlined in our proposal to HDR Engineering, Inc. (HDR), dated March 10, 2006, and authorized in the Geotechnical Agreement between HDR and Shannon & Wilson on April 4, 2006.

1.2 Site Description

The ICTF was constructed in the mid-1980s and currently occupies approximately 235 acres. The site is located approximately four miles northeast of the Port Long Beach, as shown in Figure 1. The site generally is flat and is paved with hot-mix asphalt (HMA) and Portland cement concrete. The gantry cranes currently in service operate on rubber tires over Portland cement concrete craneways.

A closed or inactive landfill reportedly is present along the western boundary of the ICTF. The closed landfill surface is about 5 to 8 feet above the ICTF, with an approximate 2 Horizontal to 1 Vertical (2H:1V) slope between the two sites at most locations. We understand the landfill site

is being considered for use as a container storage area. The depth and type of fill at this property are not known.

Dominguez Channel is located west of the landfill property and is several miles upstream of the Port of Long Beach and San Pedro Bay.

1.3 Project Description

Two options are being considered by the design team. We understand that Option 1 would expand the ICTF to the east and west, including the development of approximately 60 acres of landfill on the west side and approximately 30 acres of land on the east side. Figure 2 shows the location of proposed Option 1 improvements and the existing ICTF layout. The area west of the existing facility would be used primarily for stacked container storage. The area to the east would be used for container truck chassis storage. For Option 1, areas to the east and west of the existing ICTF would be graded and paved to allow for expanded storage capacity at the ICTF.

We understand Option 2 consists of reconstructing the ICTF to accommodate rail-mounted cranes that will span multiple working tracks. Track gauge for the rail cranes would be at least 75 feet. This option will work within the existing ICTF; property acquisition is not anticipated. The location of the existing ICTF is presented in Figure 2.

We understand that two crane alternatives are being considered for Option 2, both of which will be supported by single rails located at each crane end. Service rails may also be installed to facilitate crane rail maintenance but will not be subjected to loads from crane operations. Plate or box girder and truss cross beam crane types are considered for this study. HDR estimates crane dead and live loads of 180 and 135 tons per bogie for the girder and cross beam crane types, respectively. Each end of the crane will have two bogies separated by a distance of approximately 60 feet (bogie center-to-center).

2.0 EXISTING SITE SUBSURFACE INFORMATION

The boring logs, laboratory data, and other information provided in the LeRoy Crandall and Associates report constitutes the entirety of site-specific subsurface information we found in the time and budget available for this feasibility study. No subsurface information for the land parcels located to the east or west of the existing ICTF was made available to us during this

feasibility study. Based on conversations with UPRR personnel during our visit to the site in May 2006, additional subsurface information may be available in parts of the landfill area. UPRR personnel described what we interpreted to be the installation of a horizontal directionally drilled (HDD) water line. Geotechnical studies are commonly employed to assist in the design and construction of HDD installations.

Selected portions of the LeRoy Crandall and Associates' geotechnical report are included as Appendix A. A site plan showing boring locations and selected boring logs is presented in Appendix A

3.0 GEOLOGY AND SUBSURFACE CONDITIONS

3.1 Local Geology

Existing geological mapping in the area indicates that the surficial geology of the project site consists of fluvial and alluvial fan sediment associated with the Los Angeles River. Mapping also shows that a river terrace remnant occurs near the site. We expect that the terrace sediments are older and denser than the fluvial sediments. Fluvial and terrace sediments are Quaternary in age; the sediments are less than approximately 18,000 years old (California Geologic Survey, 1998). The Los Angeles River is located approximately 1 mile east of the site and flows from the north to the south. The Dominquez channel trends north-northeast along the western boundary of the western land parcel.

3.2 Subsurface Soil Conditions

The report prepared by LeRoy Crandall and Associates indicates that the subsurface conditions at the site consist predominately of fill over native soil. The fill soil reported to be present across most of the site consists of 3 to 9 feet of silty sand and sandy silt. Fill at the site appears to consist partly of reworked, native soil and partly of imported fill. During construction of the existing ICTF, extensive re-excavation and compaction of previously placed fill and excavation and compaction of native soil was reportedly undertaken, although the extent and relative density of filled areas were not available for our review during the preparation of this report. Native soils consist of soft to stiff, sandy silt and loose to dense, silty sand and sand. Soft, clayey silt and dense, gravelly sand were occasionally described in the boring logs we reviewed. According to specifications for the existing ICTF, fill and native soils were specified to be compacted to at

least 90 percent of maximum dry density (ASTM International [ASTM] D 1557) in all areas and 90 to 95 percent in paved areas.

LeRoy Crandall and Associates conducted numerous California Bearing Ratio (CBR) tests on soils within 6 feet of the ground surface. Some of these tests included a study of the effect of the addition of 6 percent cement to soils in areas to be paved. Typical CBR values of 10 to 25 were measured for specimens of silty sand and sandy silt when compacted to 90 percent of maximum dry density (ASTM D 1557). Typical CBR values of 15 to 50 were measured when specimens were compacted to 95 percent of maximum dry density.

Direct shear test data from samples obtained using a Dames & Moore style sampler with rings indicate that the shear strength of the soil (ϕ) at the site is between about 29 and 35 degrees. According to the LeRoy Crandall and Associates' report, native and fill soil unit weights are typically 85 to 105 pounds per cubic foot (pcf), with values as low as 74 pcf and as high as 124 pcf. Although soil dry unit weight and moisture content is largely influenced by soil type, the LeRoy Crandall and Associates' report indicates that the soil unit weight within a particular soil type generally increases with depth.

An extensive surface runoff drainage system was reportedly constructed in the current ICTF.

The depth to groundwater in 1983 was between 40 and 45 feet (LeRoy Crandall and Associates, 1983). The depth to the groundwater table may have changed since 1983 due to installation of the ICTF drainage system and rapid growth and changes to drainage patterns in neighboring properties. The location of the groundwater table may be shallower under the western land parcel due to proximity with the Dominguez channel.

4.0 ENGINEERING STUDIES AND RECOMMENDATIONS

4.1 Earthquake Engineering

4.1.1 Seismic Design Considerations

Per our discussions with HDR in 2006, we understand that the City of Los Angeles Building Code will be employed for the design and construction of site improvements. When we performed this study in 2006, we understood that the Los Angeles code adopts the 2001 California Building Code and includes amendments specific to the City of Los Angeles. The

2001 California Building Code is based on the 1997 Uniform Building Code (UBC). After we have reviewed the current City of Los Angeles amendments to the California Building Code, we will modify our recommendations relevant to seismic design considerations as part of our final feasibility study.

Based on our interpretation of the LeRoy Crandall and Associates' boring logs and, in particular, a limited number of Standard Penetration Tests (SPTs), it is our opinion that the subsurface conditions at the site could be characterized as UBC Soil Profile Type S_C or S_D. The 1997 UBC indicates that the project site is located in Seismic Zone 4 (peak ground acceleration on rock of approximately 0.4g).

4.1.2 Earthquake-induced Geologic Hazards

Earthquake-induced geologic hazards that may affect a given site include liquefaction and associated effects (loss of shear strength, bearing capacity failures, loss of lateral support, ground oscillation, lateral spreading, etc.), settlement, landsliding, and ground surface fault rupture. In our opinion, the potential for each of these hazards at the site is low.

For liquefaction to occur, loose, saturated, granular soils must be present. Based on past groundwater data, saturated soil exists below depths greater than 40 to 45 feet below the ground surface. The site soil is relatively dense and should not be susceptible to liquefaction and associated effects (e.g., lateral spreading, ground oscillation, and bearing capacity failure). Significant differential settlement due to earthquakes is also unlikely due to the medium dense/medium stiff nature of the foundation soils.

Seismically induced landsliding at the site is unlikely because most of the site is flat. The slope between the ICTF and the landfill is low and not steep. Therefore, it should not be prone to landsliding.

The potential for ground surface fault rupture is also low. The nearest documented active structures on which ground surface rupture is expected to occur are the Newport-Inglewood-Rose Canyon Fault Complex (4 kilometers to the northeast) and the Palos Verdes Fault (7 kilometers to the southwest) (U.S. Geological Survey [USGS] website: <http://earthquake.usgs.gov/regional/qfaults/ca/lgb.html>). Both of these geological structures trend from the northwest to the southeast.

4.2 Earthwork and Pavement Recommendations

Until we have subsurface information regarding the depth and type of landfill material within the western land parcel, we cannot provide specific recommendations regarding bearing capacity and differential settlement. The depth and engineering properties of landfill material at the site will have a dominating effect upon the bearing capacity and settlement behavior.

The LeRoy Crandall and Associates' report provided CBR data for site soil samples compacted to between 90 and 95 percent of the modified Proctor (ASTM D 1557) maximum dry density. Based on these data, we recommend using a modulus of subgrade reaction value of 250 pounds per cubic inch (pci) for designing Portland cement concrete in the existing ICTF area. For the design of HMA pavement, a resilient modulus of subgrade soils of 15,000 and 20,000 pounds per square inch (psi) may be used for soils compacted to 90 and 95 percent of maximum dry density, respectively (ASTM D 1557).

In the eastern land parcel and in portions of the western parcel where landfill is not present, we anticipate the subsurface conditions would be similar. Provided the subgrade is prepared in a manner similar to what was specified for the original ICTF construction, we recommend using similar modulus values for planning purposes. These values should be confirmed prior to preparing construction contract documents.

4.3 Gantry Crane Rail Foundation Recommendations

We evaluated shallow and deep foundation alternatives for support of the rail-mounted gantry (RMG) crane and crane rail loads. We made these evaluations for two different loading conditions associated with the two crane types being considered. The crane bogie loads provided by HDR for the plate or box girder crane and for the truss cross beam are 180 and 135 tons per bogie, respectively. For both crane types, each of six wheels in a bogie was loaded evenly. For the plate or box girder crane, bogie wheels were spaced 4.5 feet apart (center-to-center). For the truss cross beam alternative, bogie wheel spacing was 3.3, 4.1, 3.3, 4.1, and 3.3 feet, (center-to-center)

4.3.1 Shallow Foundations

We understand shallow foundations would consist of 6-foot concrete ties supported in railroad ballast. Occasional, evenly spaced ties of a greater length could support an additional

rail to facilitate track maintenance using conventional equipment. This maintenance rail would not be subjected to loads greater than those loads associated with track maintenance activities, i.e., substantially less than the gantry crane loads.

We performed bearing capacity sensitivity analyses for the two crane alternatives using the range of soil strengths obtained in our file review. Because of the large spacing between bogies, it is our opinion that soil stress increases due to multiple bogies does not occur; i.e., soil stress increases under and in the vicinity of a bogie are due to the load imparted by that bogie only. For a design soil strength value of 28 degrees, our analyses indicate that a single rail supported on 6-foot-long ties would be suitable for either crane type, provided that 2 to 3 feet of existing subgrade were overexcavated and replaced with compacted ballast fill. To provide a factor-of-safety against bearing failure of approximately 3, we recommend overexcavation and replacement of 3 feet of existing subgrade for the box or plate girder crane alternative. For the truss cross beam crane alternative, we recommend overexcavation and replacement of 2 feet of existing subgrade in order to provide a factor-of-safety against bearing failure of approximately 3. Higher design soil strength values and lower factors of safety would reduce the amount of excavation and replacement of site soil with compacted ballast fill. These recommendations are shown in Figure 3.

The thickness of ballast and subballast required to provide support beneath the ties is a function of the wheel load, wheel diameter, track condition, track speed, type of tie, tie spacing, type of rail, condition of rail, and soil subgrade. Based on information provided by HDR on the wheel loads, wheel spacing, track speed, and rail type, and assuming a minimum ballast thickness of 12 inches, good track condition, and subgrade soil properties, we performed sensitivity analyses of subballast thickness to tie spacing. Our preliminary analyses indicate that subballast thicknesses for ties spaced 20 inches center-to-center should be 23 inches. For each 1-inch increase in spacing beyond 20 inches, the increase in subballast is approximately 1.3 inches. A summary of the results of our analysis is presented in Figure 4.

4.3.2 Deep Foundations

We evaluated one deep foundation type for this feasibility study. We anticipate that deep foundations will not be necessary to support the proposed gantry crane rails. In our opinion, 18- or 24-inch-diameter augercast piles (ACP) could be constructed at the site to provide 50- to 100-ton allowable capacity.

The following table provides the likely depths for 18- and 24-inch pile diameters and 50- and 100-ton allowable total capacities:

Load Per Pile	18-inch-diameter ACP Length	24-inch-diameter ACP Length
50 tons	35 feet	20 feet
100 tons	65 feet	45 feet

Our analysis assumed a factor-of-safety of 2.5 on skin friction and 50 percent mobilization of end-bearing. Mobilization of end-bearing resistance requires approximately ½ inch of settlement. Pile spacing will be, in part, a function of the structural design beam supporting the crane rail, which should be evaluated by a structural engineer. To avoid pile group load reduction factors, pile spacing should be at least three pile diameters.

4.3.3 Settlement

Settlement associated with the shallow foundation alternative should occur elastically or immediately when the load of the RMG is applied. We estimate total settlements would be on the order of ½ to 1 inch. We estimate settlement associated with the deep foundation alternative would be about ½ inch, which should occur during initial loading cycles. Subsequent elastic settlement under each pass of the gantry crane should be less than ¼ inch.

5.0 ADDITIONAL WORK

We recommend that additional exploration efforts be undertaken to characterize the subsurface conditions of the landfill area and the parcel to the east of the ICTF. For preliminary studies, we recommend that four borings be drilled in landfill portions of the western parcel to characterize the depth and type of landfill material. Depending on the subsurface conditions exposed in those borings, additional borings or test pits may be necessary to complete design. We recommend drilling two borings in the eastern parcel (proposed chassis storage area). Because the borings drilled for the LeRoy Crandall and Associates report included few SPTs, we recommend drilling two borings to verify our assumptions regarding soil density and the associated potential for earthquake-induced settlement and soil profile type. We anticipate that borings will be between 20 and 50 feet deep; total drilled footage would likely be 200 to 300 feet and would take approximately five days to accomplish.

6.0 LIMITATIONS

The analyses, conclusions, and recommendations contained in this report are based on a limited amount of information obtained during this feasibility phase. These data consist of published information, our visit to the site in May 2006, and the geotechnical report prepared by LeRoy Crandall and Associates. Since the preparation of the report by LeRoy Crandall and Associates, significant construction has taken place, which could affect subsurface conditions such as soil density and the groundwater table depth. Little information was available to us concerning the type and depth of landfill material in the reported landfill area. No new subsurface explorations were made for this report.

This study was prepared to evaluate the geotechnical feasibility of two options being considered for expansion of the ICTF. Recommendations provided in this report have been made to assist the design team in the recognition of practical considerations associated with these options and to assist in the generation of cost estimates for with these options. The recommendations provided herein are preliminary only and should not be used for final design or construction. Additional studies must be made in order to further characterize the subsurface and to evaluate assumptions made during the preparation of this preliminary study.

Within the limitations of the scope, schedule, and budget, the analyses, conclusions, and recommendations presented in this report were prepared in accordance with generally accepted professional geotechnical engineering principles and practices in this area at the time this report was prepared. We make no other warranty, either express or implied. Our conclusions and recommendations are based on our understanding of the project as described in this report and on available information, as described above.

This report was prepared for the exclusive use of HDR, UPRR, and other members of the project team. It should be made available to prospective contractors for information on factual data only and not as a warranty of subsurface conditions

The scope of this study did not include any environmental assessment or evaluation regarding the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater, or air, on, below, above, or around the site, nor did this study include an evaluation of the disposition of contaminated soil, water, or air, should it be encountered in the project site.

Shannon & Wilson has prepared a document entitled "Important Information About Your Geotechnical Report," which is included in Appendix B of this report. Please review this document for information describing the use and limitations of this report.

SHANNON & WILSON, INC.



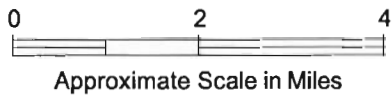
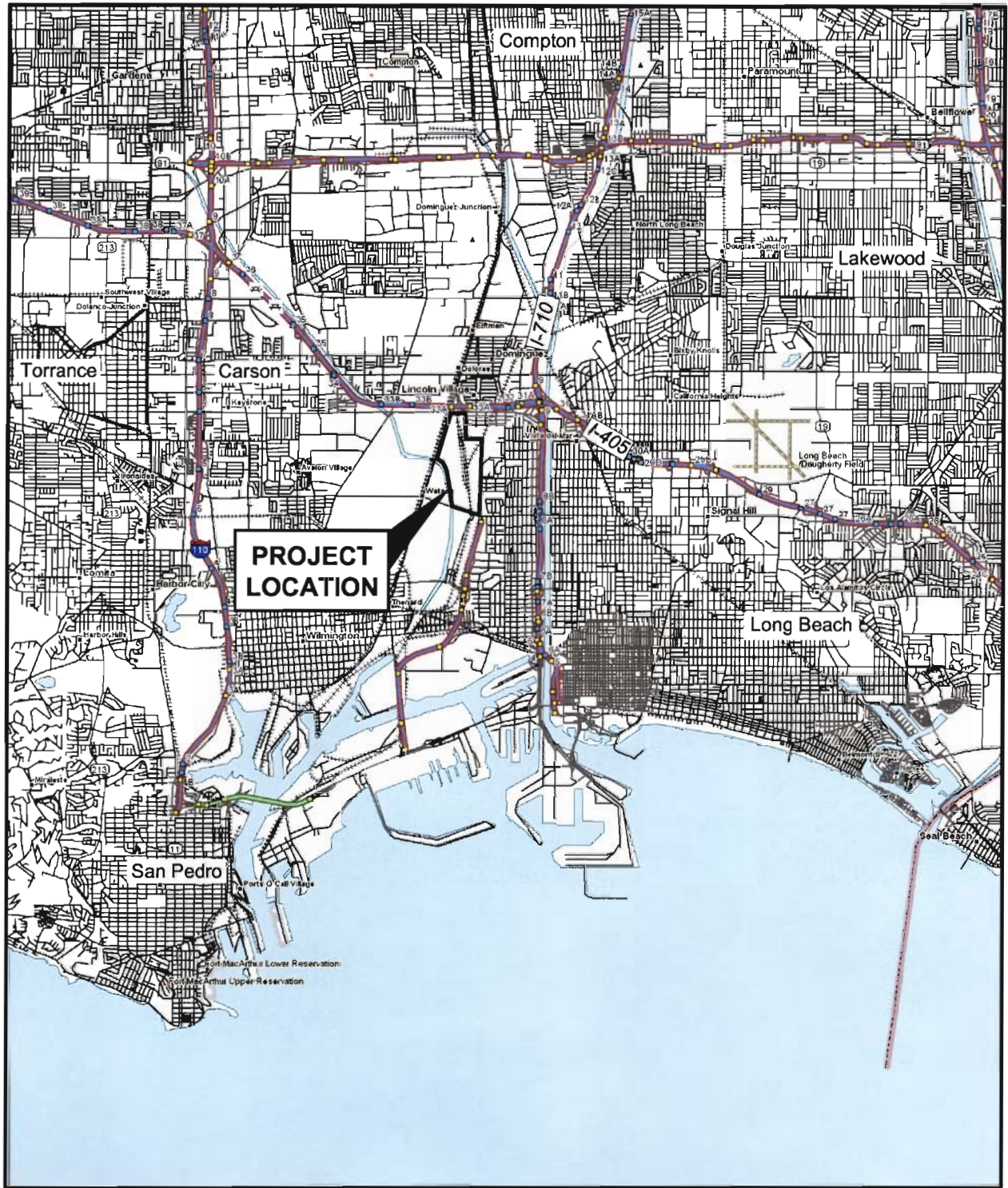
Christopher A. Robertson, P.E., G.E.
Vice President

CTM:CAR/ctm

7.0 REFERENCES

California Geologic Survey, 1998, Seismic hazard zone report for the Long Beach 7.5-minute Quadrangle, Los Angeles County, California: Seismic Hazard Zone Report 028.

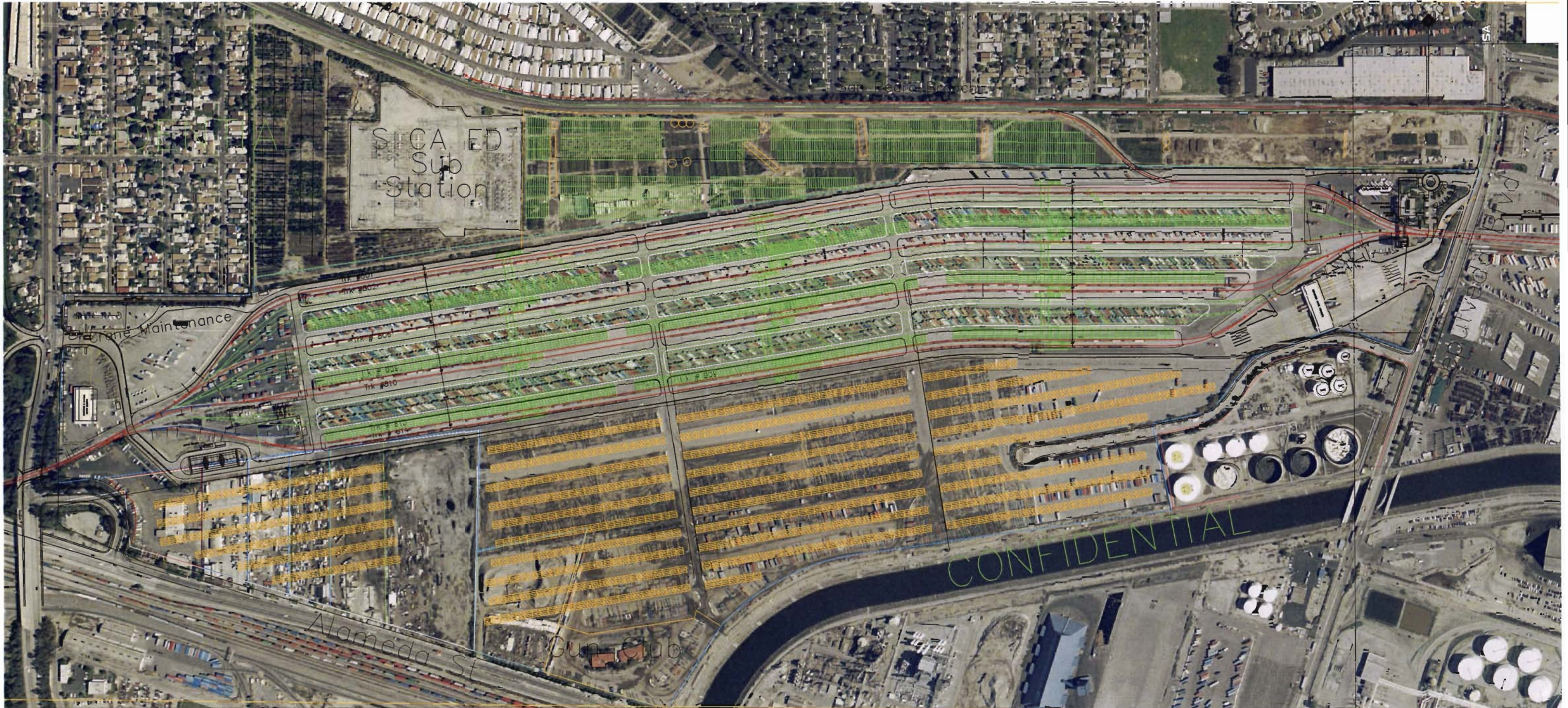
LeRoy Crandall and Associates, 1983, Geologic and Soil Engineering Report No. ADE-82284, August 10.



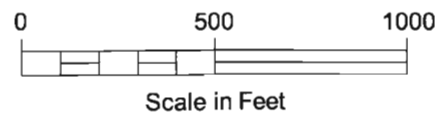
NOTE

Map adapted from Delorme Street Atlas USA © 2003.

UPRR Intermodal Container Transfer Facility Long Beach, California	
VICINITY MAP	
November 2007	21-1-20524-001
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG. 1



File: J:\21120524-001\21-1-20524-001 Fig 2.dwg Date: 11-28-2007 Author: SAC

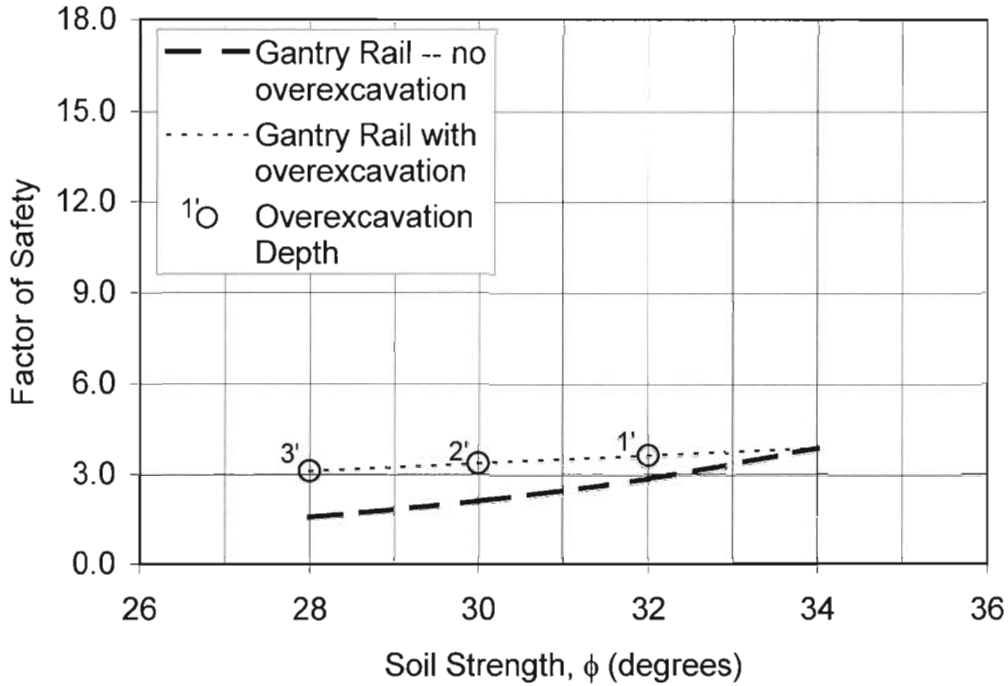


NOTE

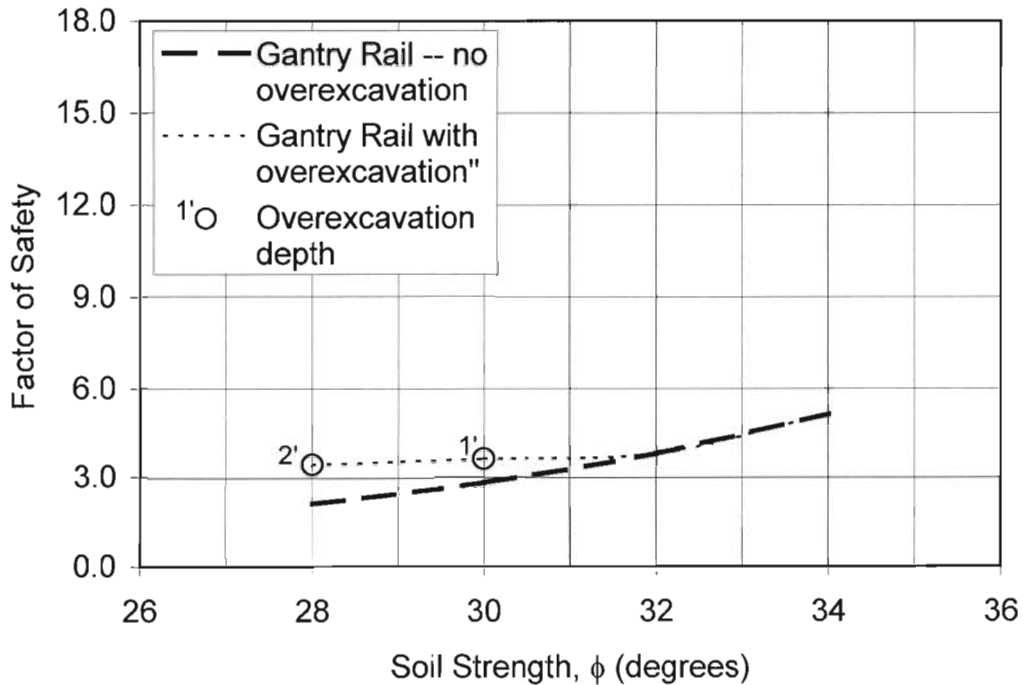
This figure is based on Microstation file, *ICTFopt2.dgn*, dated 2-16-06.

UPRR Intermodal Container Transfer Facility Long Beach, California	
SITE PLAN	
November 2007	21-1-20524-001
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG. 2

Alternative 1 - Plate or Box Girder Crane



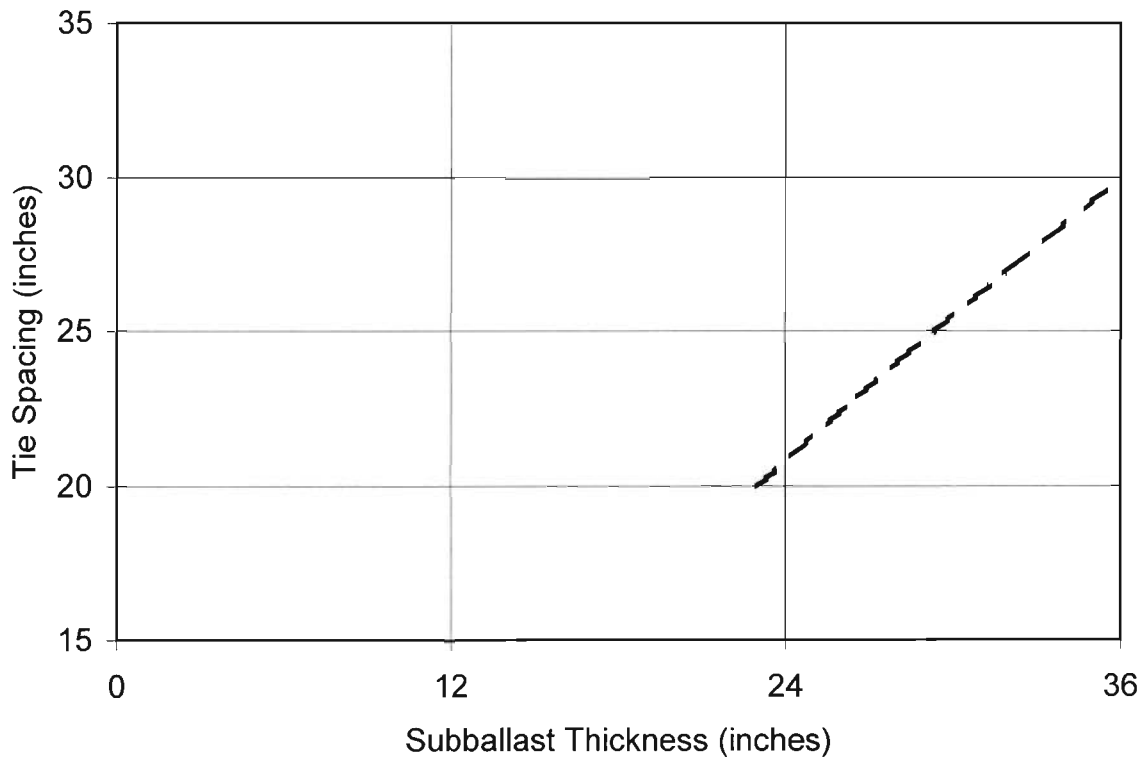
Alternative 2 - Truss Cross Beam



Notes:
Soil strength values based on results of direct shear tests included in LeRoy Crandall and Associates report

Union Pacific Railroad Intermodal Container Transfer Facility Long Beach, California	
FACTOR OF SAFETY VERSUS DESIGN SOIL STRENGTH	
November 2007	21-1-20524-001
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	FIG. 3

Subballast Thickness versus Tie Spacing



Union Pacific Railroad
Intermodal Container Transfer Facility
Long Beach, California

TIE SPACING VERSUS SUBBALLAST THICKNESS

November 2007

21-1-20524-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 4

APPENDIX A

**SELECTED BORINGS AND LABORATORY DATA FROM
LEROY CRANDALL AND ASSOCIATES REPORT**

APPENDIX A

**SELECTED BORINGS AND LABORATORY DATA FROM
LEROY CRANDALL AND ASSOCIATES REPORT**

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A-8	Log of Boring 59
A-9	Log of Boring 63
A-10	Log of Boring 67
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A-13 to A-20	California Bearing Ratio and Moisture-Density Relationship Test Data

APPENDIX A**SELECTED BORINGS AND LABORATORY DATA FROM
LEROY CRANDALL AND ASSOCIATES REPORT**

In 1983, LeRoy Crandall and Associates prepared a geotechnical report to assist in design and construction of the current intermodal container transfer facility (ICTF). Work performed by LeRoy Crandall and Associates included drilling 81 new exploratory borings from 1981 to 1982 and the review of several pre-existing borings drilled at the site by the Port of Los Angeles in 1974.

Most borings drilled by LeRoy Crandall and Associates were accomplished using 17-inch- to 24-inch-diameter bucket-type drilling equipment. Water or other drilling fluids were not used; i.e., drilling was accomplished "in the dry." Most borings were 15 to 25 feet deep. Boring 42 was drilled to a depth of 80 feet using rotary wash-type equipment. Standard penetration testing was performed in boring 42, but not in other borings. Three hand borings were drilled to depths of 4 to 6 feet. The location of borings performed by LeRoy Crandall and Associates and by the Port of Los Angeles are shown in Figures A-1 through A-3.

Logs of borings 41, 42, 59, 63, and 67 are included as Figures A-4 through A-10 in this appendix as representative borings of the site soils as they existed in 1983.

LeRoy Crandall and Associates conducted laboratory testing on soil samples recovered during drilling from 1982 to 1982. Laboratory tests conducted include water content determination, estimated in situ dry density, shear strength as determined from direct shear tests, California Bearing Ratio (CBR), and moisture-density relationships. Moisture-density relationships were established using the modified method (ASTM International [ASTM] D 1557).

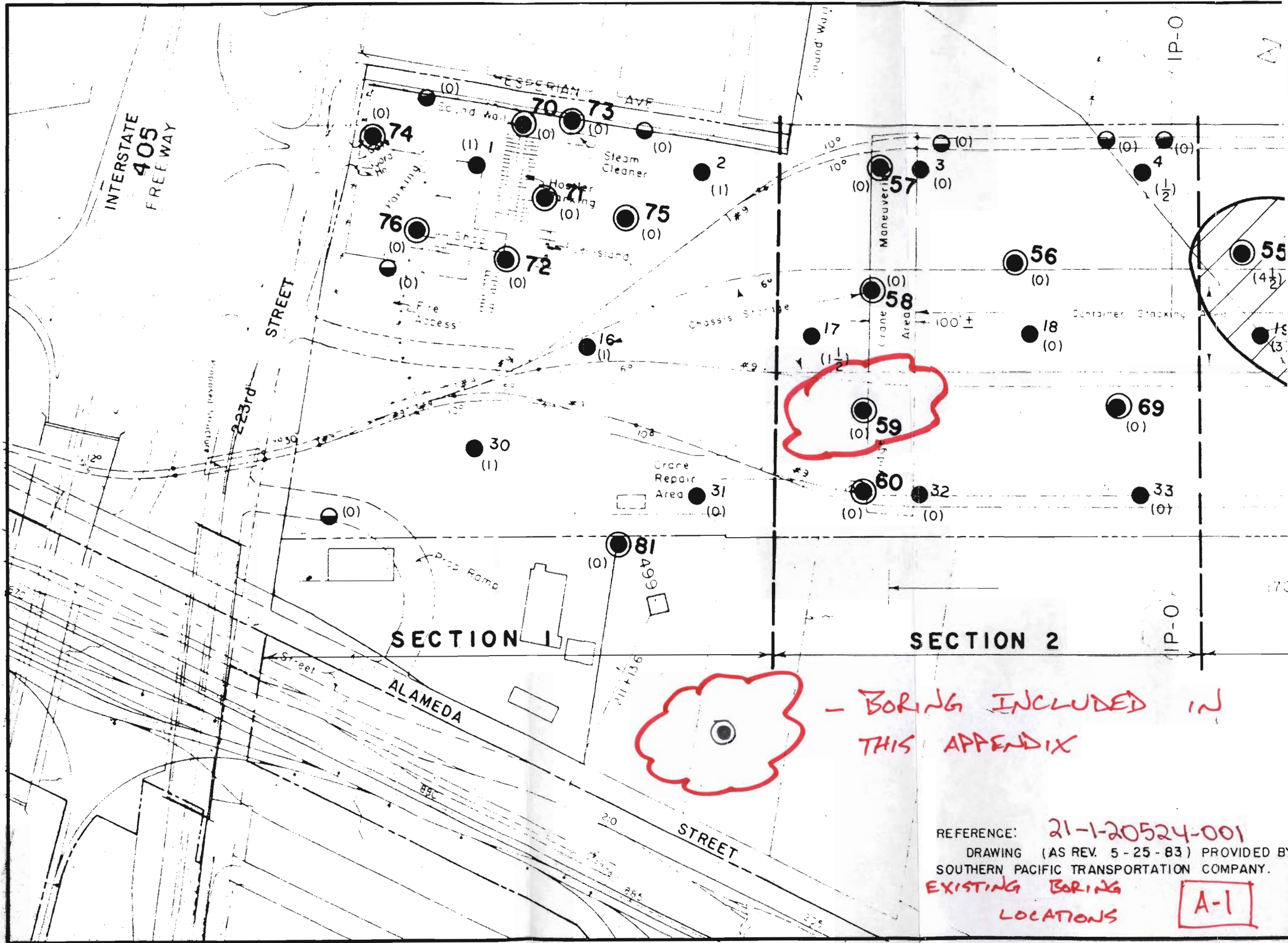
Water content information and estimated in situ density information is included in the logs of borings drilled in 1982 and 1982. Direct shear test information is included in Figures A-11 and A-12. CBR and moisture-density relationship data are included in Figures A-11 through A-20.

CHKD. RC

DRN. TODD/JOHN O.E.

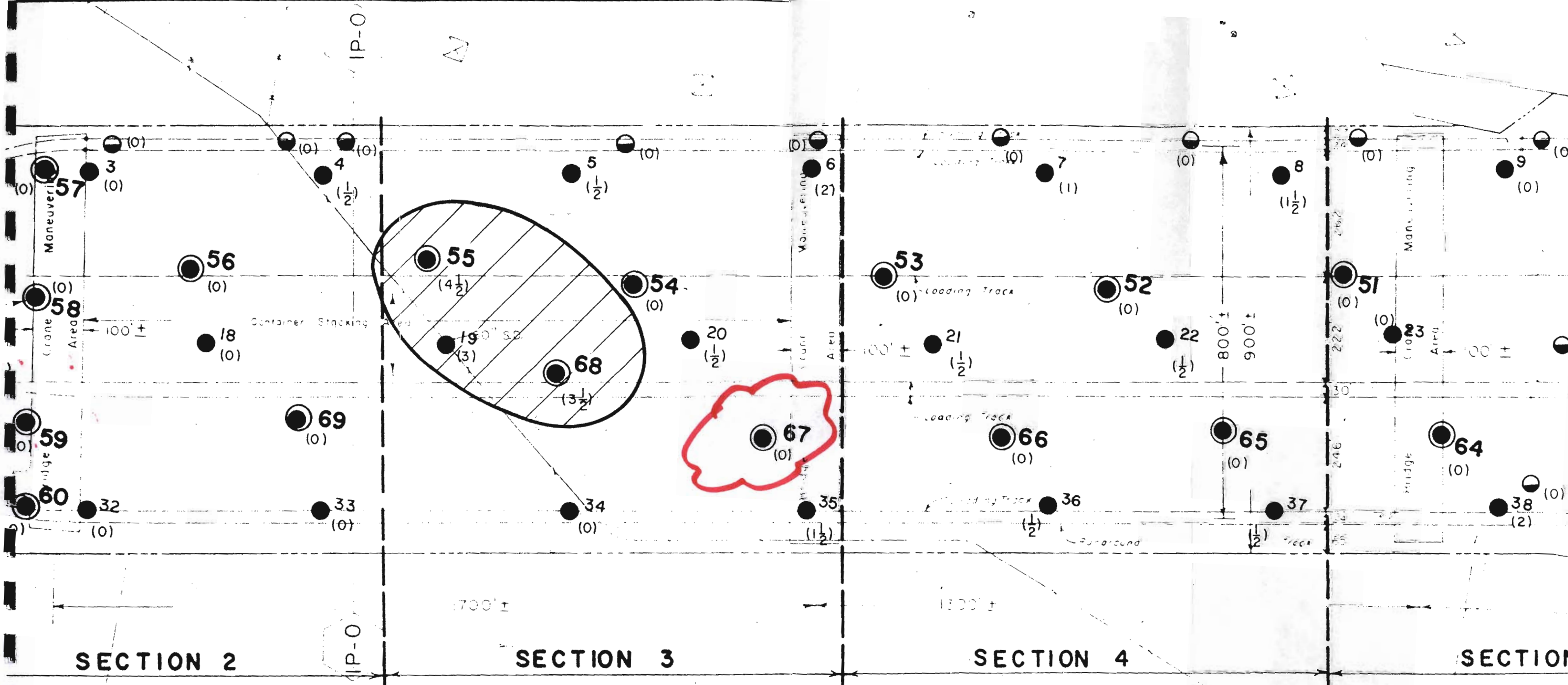
DATE 7-26-83

JOB A-82284



- BORING INCLUDED IN THIS APPENDIX

REFERENCE: 21-1-20524-001
 DRAWING (AS REV. 5-25-83) PROVIDED BY
 SOUTHERN PACIFIC TRANSPORTATION COMPANY.
 EXISTING BORING LOCATIONS A-1



REFERENCE:
DRAWING (AS REV. 5-25-83) PROVIDED BY
SOUTHERN PACIFIC TRANSPORTATION COMPANY.

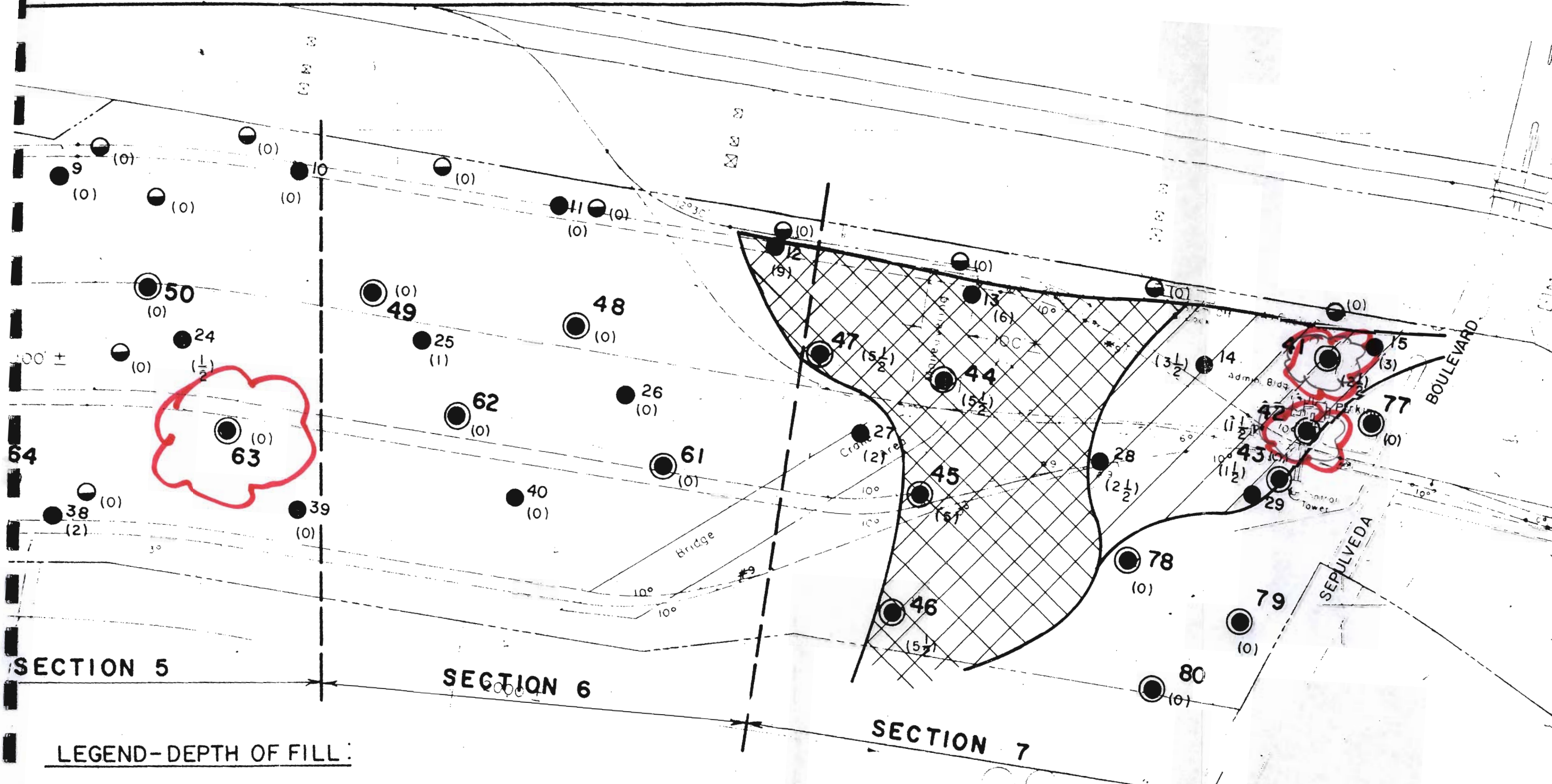
KEY:

- (2) DEPTH OF EXISTING FILL
- 81 ● CURRENT INVESTIGATION (A-82284)
- 40 ● PREVIOUS INVESTIGATION (A-81196)
- BORINGS BY THE PORT OF LOS ANGELES 1974
- └ BORING LOCATION
- └ BORING NUMBER




LEGEND

- ▭
- ▨
- ▩

21-1-20524-001
EXISTING BORING
LOCATIONS
A-2



LEGEND-DEPTH OF FILL:

-  0' - 2'
-  2' - 5'
-  5' - 9'



SCALE 1" = 200'

EXISTING SOIL CONDITIONS

DEPTH OF FILL
 EXISTING BORING
 LOCATIONS

A-3

21-1-20524-001 LeROY CRANDALL AND ASSOCIATES

123 JOE 322 E I / 8 DR N F M.P.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING 41

DATE DRILLED: December 21, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu ft)	DRIVE ENERGY (ft-lbs/ft)	SAMPLE LOC	DESCRIPTION
		6.6	112	6		SM	1" Oil Surface FILL - SILTY SAND - fine, light brown
15		11.2	88	3		SM	SILTY SAND - fine, light brown
	5	9.4	101	2			
		15.3	91	3		ML	SANDY SILT - light grey
10		15.0	95	5			
	15	15.7	102	5		SM	SILTY SAND - fine, brown
0							
	20	6.1	100	8		SP	SAND - fine, light brown
-5							
25		7.7	102	6			

ELEVATION 19.4

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

21-1-20524-001
 Boring A-4

BORING 41 (CONTINUED)

DATE DRILLED: December 21, 1982
 EQUIPMENT USED: 17"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft.)	DEPTH (ft.)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt.)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft - kips / ft.)	SAMPLE LOC
-10	30	29.7	88	5		ML
-15	35	22.5	87	6		
-20	40	37.9	86	4		ML
-25	45	19.4	104	6		SP

SANDY SILT - light grey

CLAYEY SILT - light grey

SAND - fine, grey

NOTE: Water seepage encountered at 43'.
 Water level measured at 40½' 10 minutes after completion of drilling.
 Caving and sloughing below 42'.

JOB A-82484 DATE 1/1/83 DR. J. J. W.P. 33 CHKD

LOG OF BORING

21-1-20524-008
BORING A-5

LeROY CRANDALL AND ASSOCIATES

PLATE A-1.4

BORING 42

DATE DRILLED: December 20, 1982

EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD PEN TEST MOISTURE (% of Dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-lbs/ft)	SAMPLE LOC
15.5			19.0	96	2	SM SP ML SM
15	5		6.3	95	3	
10			5.3	99	5	SP
10	10		3.0	94	4	
5			5.7	98	5	
15	15					
0			6.0	94	5	
20	20					
-5			8.8	103	6	
25	25					
-10			5.8	96	6	
30	30					
-15		88				
35	35		14.2	104	8	
-20						
40	40					

ELEVATION 13.5

1/2" Oil Surface
 FILL - SILTY SAND and SAND - fine, pieces asphalt, shells and gravel, grey and brown
 SANDY SILT - greyish-brown
 SILTY SAND - fine, greyish-brown

SAND - fine, light grey

Layer of Silty Sand

Few gravel

(CONTINUED ON FOLLOWING PLATE)

LOG OF BORING

21-1-20521-001
 BORING A-6

LeROY CRANDALL AND ASSOCIATES

DATE DRILLED: December 20, 1982

EQUIPMENT USED: 5"-Diameter Rotary Wash

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD. PEN. TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs./cu. ft.)	DRIVE ENERGY (ft-kips/ft.)	SAMPLE LOC
	40					ML
-25						SP
	45	23.3	96	6		
-30						
	50	89				CL
-35						
	55	21.3	106	6		SP
-40						
	60	22.3	104	20		
-45						
	65	19.8	110	20		ML
-50						
	70	25.8	100	9		ML
-55						
	75	24.6	103	7		SM
-60						
	80	17.5	116	8		

SANDY SILT - dark grey

SAND - fine grey

Lenses of Silt

SILTY CLAY - grey

SAND - fine, grey

NOTE: Drilling mud used in drilling process. Water level not established. Installed 2" PVC pipe to 79'. Annular space outside of pipe backfilled with gravel.

GWT DATA?

SANDY SILT - grey and brown

CLAYEY SILT - grey and brown

SILTY SAND - fine, few gravel, grey

LOG OF BORING

21-1-20524-001
Boring A-7

LeROY CRANDALL AND ASSOCIATES

BORING 59

DATE DRILLED: December 16, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION (ft)	DEPTH (ft)	"N" VALUE STD PEN TEST	MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-lbs/ft)	SAMPLE LOC
20		16.6	88	1		ML
		28.9	79	1		
5		17.0	81	2		
15		34.1	80	2		
10		23.6	100	2		
10		14.5	100	5		SM
15						
5						ML
20		38.7	86	2		

ELEVATION 21.4

SANDY SILT - large amount of Sand, brown
 Less Sand, some alkali, dark grey
 Light grey

SILTY SAND - fine, light grey and brown

SANDY SILT - light grey and brown

NOTE: Water not encountered.
 No caving.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

21-1-20524-001
 Boring A-8

LeROY CRANDALL AND ASSOCIATES

JOL 82... DATE 1.../8... DR... W.P. 88

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	"N" VALUE	STD PEN TEST MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-lbs/ft)	SAMPLE LOC.
19.2	0					ML
	5	11.8	84	<1		
	5	18.3	101	2		
	10	26.0	90	2		
	10	7.9	95	3		SM
	15	16.7	93	3		
	15	11.8	96	5		
	20	8.8	89	<1		SM

BORING 63
 DATE DRILLED: December 20, 1982
 EQUIPMENT USED: 24"-Diameter Bucket

ELEVATION 19.2

SANDY SILT - large amount of Sand, light brown

SILTY SAND - fine, light brown

Large amount of Silt

CLAYEY SILT - traces of organic matter, light grey

SILTY SAND - fine, light grey and brown

NOTE: Water not encountered.
 No caving.

LOG OF BORING

21-1-20524-001
BORING A-9

BORING 67

DATE DRILLED December 3, 1982
EQUIPMENT USED 20"-Diameter Bucket

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

ELEVATION (ft)	DEPTH (ft)	W N VALUE	MOISTURE (% of dry wt)	DRY DENSITY (lbs/cu ft)	DRIVE ENERGY (ft-lbs/blow)	SAMPLE
20		9.9	102	3		
		8.7	89	2		
5		24.2	92	2		
15		25.8	86	2		
10		22.7	92	3		
15		11.9	96	8		
5						
20		10.9	87	5		

ELEVATION 21.1

SM SILTY SAND - fine, light grey

Siltier

ML SANDY SILT - grey

Large amount of Sand

SM SILTY SAND - fine, large amount of Silt, light grey

NOTE: Water not encountered. No caving.

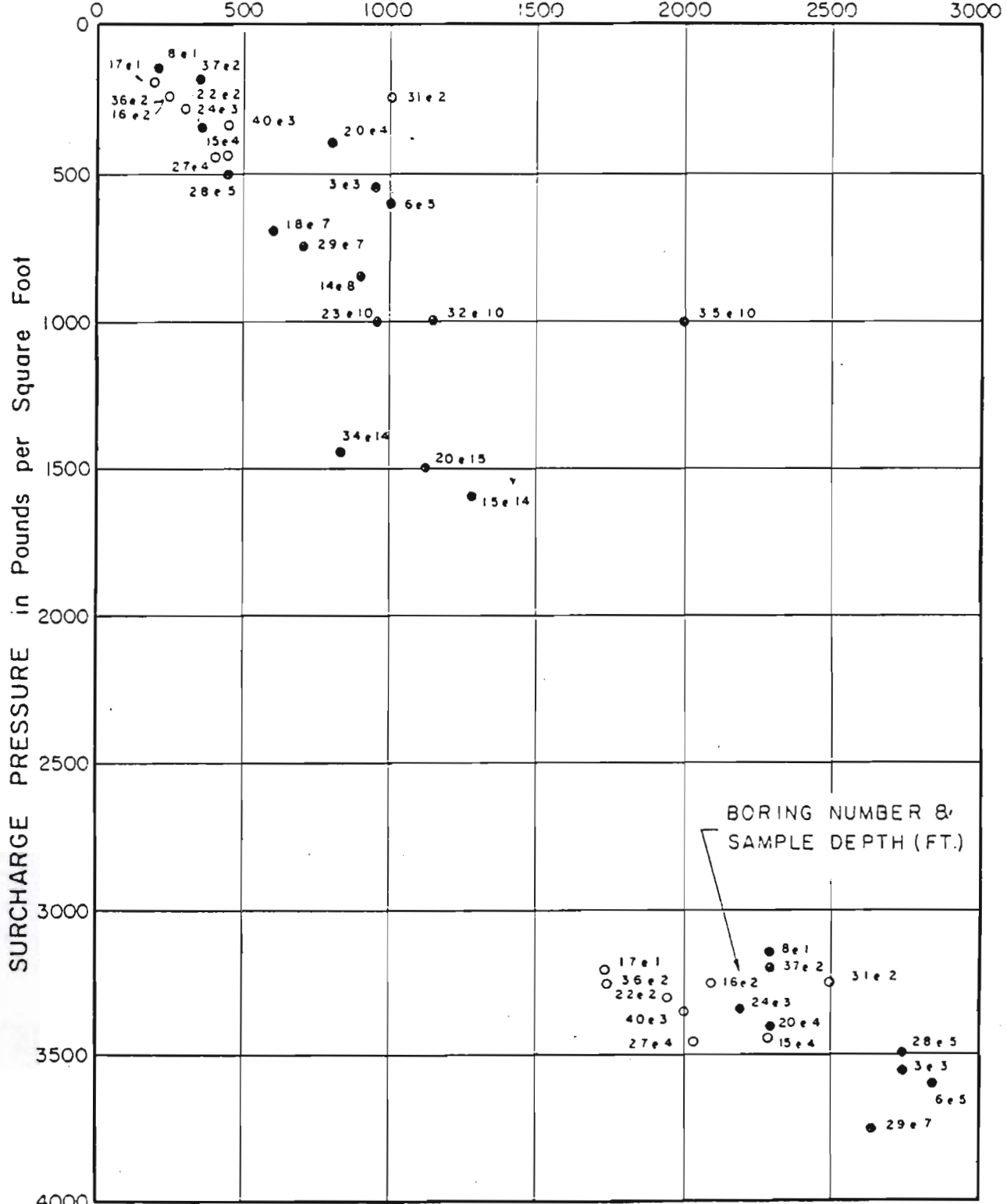
LOG OF BORING

21-1-20524-001
BORING A-10

LeROY CRANDALL AND ASSOCIATES

PLATE A-1

SHEAR STRENGTH in Pounds per Square Foot



KEY:
 ● Tests at field moisture content
 ○ Tests at increased moisture content

BORING NUMBER &
 SAMPLE DEPTH (FT.)

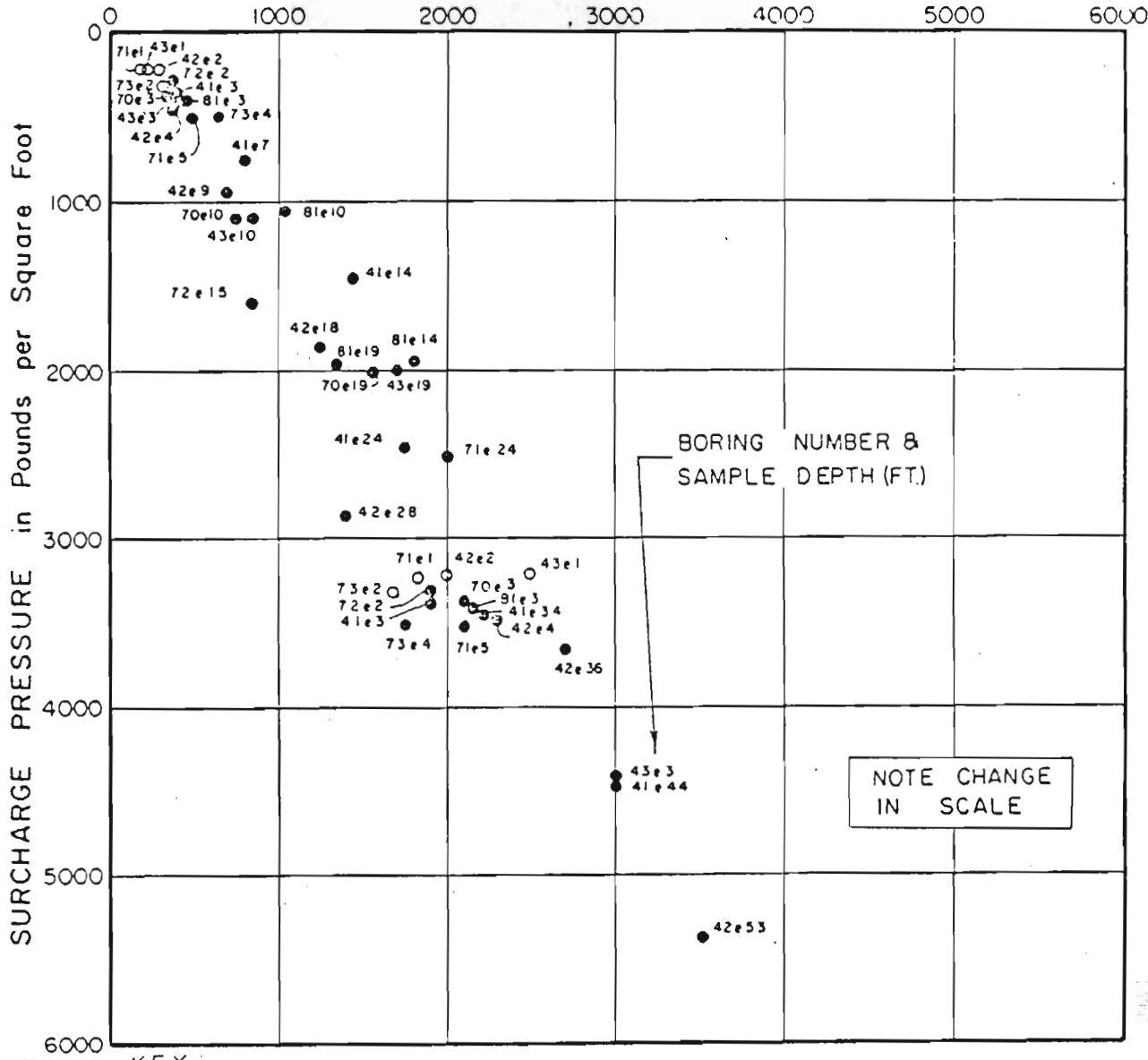
DIRECT SHEAR TEST DATA

21-1-20524-00
 STRENGTH
 DATA A-11

LERCY CRANDALL & ASSOCIATES

JOB A-11196 DATE 6/5/96 JC... CF... CH...

SHEAR STRENGTH in Pounds per Square Foot



KEY:
 ● Tests at field moisture content
 ○ Tests at increased moisture content

NOTE CHANGE IN SCALE

DIRECT SHEAR TEST DATA 21-1-20524-001

STRENGTH DATA A-12

LEROY CRANDALL & ASSOCIATES

PLATE A-3.2

CHKL

O.L.

JOHN

DATE 12/30

100

JOB A-81190 DATE 9/2/81 DR. E. DN I / W.P. IMI CHKO

BORING NUMBER AND SAMPLE DEPTH:	4 at ½' to 3'	15 at 0' to 1½'	22 at 1½' to 3'
SOIL TYPE:	SILTY SAND	FILL-SILTY SAND	SANDY SILT
MAXIMUM DRY DENSITY * : (LBS./CU. FT.)	118	121	116
OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.)	12	11	14
EXPANSION (%) : (FROM OPTIMUM TO SATURATED MOISTURE CONTENT)	0.6	0.2	2.4
C. B. R. ** (% OF STANDARD)			
AT 90% COMPACTION :	18	25	16
AT 95% COMPACTION :	33	55	26

* TEST METHOD: ASTM DESIGNATION D1557-70.
 ** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001
 CBR DATA A-13

JOB A-82284 DATE 4/12/83 DR. MS. W.P. ng CHKO

BORING NUMBER AND SAMPLE DEPTH:	28 at 2½' to 4'	30 at 1' to 3'	44 at 1' to 4'
SOIL TYPE:	SANDY SILT	CLAYEY SILT	FILL - SILTY SAND
MAXIMUM DRY DENSITY * : (LBS./CU. FT.)	122	106	119
OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.)	12	17	12
EXPANSION (%) : (FROM OPTIMUM TO SATURATED MOISTURE CONTENT)	2.4	4.6	0.2
C. B. R. ** (% OF STANDARD)			
AT 90% COMPACTION :	12	5	12
AT 95% COMPACTION :	24	9	24

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001
CBR DATA A-14

JOB A-82284 DATE 1/21/83 DR. E. DN // W.P. KB CHKD

BORING NUMBER AND SAMPLE DEPTH: 48 at 0' to 3' 51 at 0' to 3' 53 at 0' to 3'

SOIL TYPE: SILTY SAND SILTY SAND SILTY SAND

MAXIMUM DRY DENSITY * : 114 114 111 (LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 14 14 17 (% OF DRY WT.)

EXPANSION (%) : 0.2 0.4 1.8 (FROM OPTIMUM TO SATURATED MOISTURE CONTENT)

C. B. R. ** (% OF STANDARD) AT 90% COMPACTION: 21 19 10 AT 95% COMPACTION: 34 50 16

* TEST METHOD: ASTM DESIGNATION D1557-70. ** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001 CBR DATA A-15

JOB A-82284 DATE 1/21/83 DR. W.P. KG. CHKD.

BORING NUMBER AND SAMPLE DEPTH: 59 at 0' to 3' 61 at 3½' to 6' 63 at 0' to 2½'

SOIL TYPE: SANDY SILT SANDY SILT SANDY SILT

MAXIMUM DRY DENSITY * : 115 112 111
(LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 14 16 16
(% OF DRY WT.)

EXPANSION (%) : 0.5 2.9 0.7
(FROM OPTIMUM TO SATURATED MOISTURE CONTENT)

C. B. R. ** (% OF STANDARD)
 AT 90% COMPACTION : 24 11 12
 AT 95% COMPACTION : 42 18 24

* TEST METHOD: ASTM DESIGNATION D1557-70.
 ** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001
 CBR DATA A-16

JOB A-82284 DATE 1/21/83 DR. E. DM/W.P. kg CHKO

BORING NUMBER AND SAMPLE DEPTH: 68 at 0' to 2½' 69 at 0' to 2½' 74 at 0' to 2'

SOIL TYPE: FILL - SANDY CLAY SANDY SILT SANDY SILT

MAXIMUM DRY DENSITY * : (LBS./CU. FT.) 129 112 116

OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.) 10 15 14

EXPANSION (%): (FROM OPTIMUM TO SATURATED MOISTURE CONTENT) 4.6 0.4 1.5

C. B. R. ** (% OF STANDARD) AT 90% COMPACTION: 2 15 10 AT 95% COMPACTION: 3 30 20

* TEST METHOD: ASTM DESIGNATION D1557-70. ** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001 CBR DATA A-17

BORING NUMBER AND SAMPLE DEPTH: 75 at 0' to 3' 80 at 0' to 2'

SOIL TYPE: SILTY SAND SANDY SILT

MAXIMUM DRY DENSITY * : (LBS./CU. FT.) 117 118

OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.) 13 12

EXPANSION (%) : (FROM OPTIMUM TO SATURATED MOISTURE CONTENT) 0.7 1.7

C. B. R. ** (% OF STANDARD)
AT 90% COMPACTION : 22 14
AT 95% COMPACTION : 41 34

* TEST METHOD: ASTM DESIGNATION D1557-70.
** TEST METHOD: ASTM DESIGNATION D1883-73.

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001
| CBR DATA A-18 |

JOB A-82284 DATE 4/12/83 DR. DM WP NG CHKD

BORING NUMBER AND SAMPLE DEPTH:	48 at 0 to 3'	53 at 0 to 3'	63 at 0 to 2½'
SOIL TYPE:	SILTY SAND	SILTY SAND	SANDY SILT
MAXIMUM DRY DENSITY * : (LBS./CU. FT.)	114	117	111
OPTIMUM MOISTURE CONTENT * : (% OF DRY WT.)	14	17	16
EXPANSION (%) : (FROM OPTIMUM TO SATURATED MOISTURE CONTENT)	0	0	0
C. B. R. ** (% OF STANDARD)			
AT 90% COMPACTION :	> 80	> 80	> 80
AT 95% COMPACTION :	> 80	> 80	> 80

* TEST METHOD: ASTM DESIGNATION D1557-70.

** TEST METHOD: ASTM DESIGNATION D1883-73.

*** SAMPLES COMPACTED AT OPTIMUM MOISTURE CONTENT PLUS 2%.
6% CEMENT ADDED, 7 DAYS CURING

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001
CBR DATA A-19.

JOB A-82284 DATE 2/21/83 DR. E. D. W. NG MKD

BORING NUMBER AND SAMPLE DEPTH: 69 at 0 to 2½' 74 at 0 to 2' 80 at 0 to 2

SOIL TYPE: SANDY SILT SANDY SILT SANDY SILT

MAXIMUM DRY DENSITY * : 112 116 118 (LBS./CU. FT.)

OPTIMUM MOISTURE CONTENT * : 15 14 12 (% OF DRY WT.)

EXPANSION (%): 0 0 0.1 (FROM OPTIMUM TO SATURATED MOISTURE CONTENT)

C. B. R. ** (% OF STANDARD)

AT 90% COMPACTION: > 80 > 80 > 80
AT 95% COMPACTION: > 80 > 80 > 80

* TEST METHOD: ASTM DESIGNATION D1557-70.
** TEST METHOD: ASTM DESIGNATION D1883-73.
*** SAMPLES COMPACTED AT OPTIMUM MOISTURE CONTENT PLUS 2%.
6% CEMENT ADDED, 7 DAYS CURING

COMPACTION AND C. B. R. TEST DATA

21-1-20524-001
CIBR DATA A-20

APPENDIX B
IMPORTANT INFORMATION ABOUT
YOUR GEOTECHNICAL REPORT



Date: November 28, 2007
To: HDR Engineering, Inc.
Walnut Creek, California

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland