INFORMATION HANDOUT

For Contract No. 12-0H0344
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MATERIALS INFORMATION

Aerially Deposited Lead Site Investigation Report

AERIALLY DEPOSITED LEAD SITE INVESTIGATION
ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA
TASK ORDER NO. 12-0H0341-12
EA NO. 0H0341, CONTRACT NO. 12A1340

PREPARED FOR:
State of California
Department of Transportation
District 12, Environmental Engineering
3347 Michelson Drive, Suite 100
Irvine, California 92612-8894

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
475 Goddard, Suite 200
Irvine, California 92618

September 28, 2012
Project No. 208449012

September 28, 2012
Project No. 208449012

Mr. David Yaghoubi
State of California Department of Transportation
District 12, Environmental Engineering
3347 Michelson Drive, Suite 100
Irvine, California 92612-8894

Subject: Aerially Deposited Lead Site Investigation
Route 73 between Post Mile 25.7 and Post Mile 28.0
Newport Beach to Costa Mesa, California
Task Order No. 12-0H0341-12
EA No. 0H0341
Contract No. 12A1340

Dear Mr. Yaghoubi:

In accordance with the State of California Department of Transportation Contract No. 12A1340, Task Order No. 12-0H0341-12, Ninyo & Moore has conducted an aerially deposited lead investigation on State Route 73 in the cities of Newport Beach and Costa Mesa.

The following report documents our methodologies, findings, conclusions, and recommendations.

We appreciate the opportunity to be of service to you on this project.

Sincerely,
NINYO & MOORE

Patrick Cullip
Senior Staff Engineer

Michael S. Cushner, CAC
Project Environmental Scientist

Walter R. Crone, PG
Principal Environmental Geologist

PJC/MSC/NA/WRC/lr

Distribution: (8) Addressee (5 bound copies; 1 unbound copy; 1 CD; 1 via e-mail)

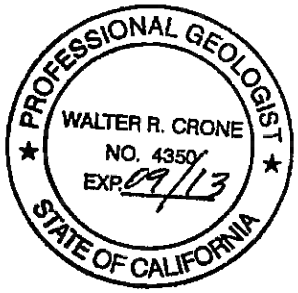
AERIALLY DEPOSITED LEAD INVESTIGATION REPORT

Task Order No. 12-0H0341-12
E.A. 0H0341

This report was prepared by the staff of Ninyo & Moore Geotechnical and Environmental Sciences Consultants under the supervision of the Engineer and/or Geologist whose signature appears hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.

Walter R. Crone, PG
Principal Environmental Geologist



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EXECUTIVE SUMMARY

The State of California Department of Transportation (Caltrans) authorized Ninyo & Moore to conduct an aerially deposited lead site investigation along Route 73 from Post Mile (PM) 25.7 to PM 28.0 in the cities of Newport Beach and Costa Mesa, California (Figure 1). Work was conducted in general accordance with the Caltrans Contract No. 12A1340, Task Order No. 12-0H0341-12, dated August 15, 2012.

It is our understanding that Caltrans proposes to perform improvements including grinding and grooving Portland cement concrete, cold plane asphalt/concrete, Americans with Disabilities Act ramp improvements, and replacing metal beam guard rails at various locations throughout the site. This investigation was performed to evaluate the presence of lead in soil resulting from the combustion during the age of leaded fuel from nearby traffic. Data collected during this investigation were used to develop recommendations for the potential reuse or disposal of soil excavated from the site and to inform Caltrans of potential health and safety issues concerning the presence of lead in soil for workers at the site during construction activities.

Ninyo & Moore collected 28 soil samples from 12 borings at the site (borings B1 through B12). One sample contained a total lead concentration greater than 50 milligrams per kilogram (mg/kg) and less than 1,000 mg/kg and was subsequently analyzed for soluble lead in accordance with the Waste Extraction Test (WET) using citric acid. The result of the soluble lead by WET-citric was below 5.0 milligrams per liter (mg/l), which is the Soluble Threshold Limit Concentration for California hazardous waste (Title 22 California Code of Regulations, Section 66261.24). Three samples were analyzed for pH. The pH levels ranged from 8.9 to 9.3.

Our recommendations for soil reuse on the site are based on the guidelines set forth by the Department of Toxic Substances Control (DTSC) Lead Variance issued to Caltrans on June 30, 2009 (DTSC Variance). Laboratory analytical results for lead were compared to the guidelines of the DTSC Variance for potential reuse of the soil as fill within the Caltrans right-of-way.

Our recommendations for off-site disposal were based on the comparison of lead concentrations in soil samples to the California Health and Safety Code thresholds and Title 40 Code of Federal Regulations 261.24 thresholds.

Based on the analytical results, the on-site reuse and the off-site disposal recommendations are summarized below.

Recommendations for Soil for Reuse by Caltrans

- Scenario A: The soil in the surface layer (surface to 0.5 feet below ground surface [bgs]) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layers combined (surface to 1.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

Recommendations for Soil to be Disposed Off Site

If Caltrans elects to dispose the soil off site, the following restrictions apply:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layer combined (surface to 1.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on

total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

1. INTRODUCTION

The State of California Department of Transportation (Caltrans) authorized Ninyo & Moore to conduct an aerially deposited lead (ADL) site investigation along Route 73 from Post Mile (PM) 25.7 to PM 28.0 in the cities of Newport Beach and Costa Mesa, California (Figure 1). Work was conducted in general accordance with Caltrans Contract No. 12A1340, Task Order No. 12-0H0341-12 (TO 12), dated August 15, 2012.

1.1. Project Description and Objective

It is our understanding that Caltrans is planning the following improvements along Route 73 in the cities of Newport Beach and Costa Mesa. The project proposes to perform improvements including grinding and grooving Portland cement concrete, cold plane asphalt/concrete, Americans with Disabilities Act ramp improvements, and replacing metal beam guard rails at various locations throughout the site. This report has been prepared by Ninyo & Moore to document the results of a study to evaluate the presence of ADL along the unpaved shoulder areas of the site. Twelve borings were hand augered for this task order.

1.2. Scope of Work

Ninyo & Moore performed the tasks described in the following sections.

1.2.1. Prefield Activities

Prefield activities included:

- Preparing a site specific health and safety plan (HSP).
- Marking boring locations at the site.
- Notifying Underground Service Alert (USA) that Ninyo & Moore would be advancing soil borings in the area (USA ticket numbers A22440734, A22440741, A22440747, A22440753, A22440762, A22440773, A22440779, A22440785, and A22440816).
- Preparing a project schedule and coordinating work with subcontractors.

1.2.2. Soil Sampling

Soil sampling was conducted on September 6, 2012. Soil boring at 12 locations (B1 through B12) was conducted for this task order as shown on Figure 2. One boring at each sampling location was advanced and sampled using a hand auger. Four soil samples were attempted for collection from depths of surface to ½, 1½, 3, and 4 feet below ground surface (bgs) at boring locations B1, B2, B3, B6, B7, B8, and B12. One soil sample was attempted for collection from depth of surface to ½ feet bgs at boring locations B4, B5, B9, B10, and B11. The actual depths sampled are presented on Table 1.

1.2.3. Laboratory Analysis

Ninyo & Moore submitted the soil samples under chain-of-custody (COC) protocol to Pat-Chem Laboratories of Moorpark, California; a laboratory certified by the State of California Department of Health Services Environmental Laboratory Accreditation Program.

1.2.4. Global Positioning System Surveying

Approximate latitude and longitude (North American Datum 83) of sampling locations were recorded with a handheld global positioning system (GPS) unit (GeoXT, Trimble). The latitude and longitude data for each boring are presented on Table 1.

1.2.5. Report Preparation

This report was prepared in general accordance Caltrans Contract No. 12A1340 and TO 12 dated August 15, 2012.

1.3. Previous Site Investigations

Ninyo & Moore has not performed previous investigations at this site. In addition, Caltrans has not notified Ninyo & Moore of previous investigations performed at the site.

2. BACKGROUND

Caltrans obtained a variance (V09 HQSCD006) from the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), on June 30, 2009 (DTSC Variance).

The DTSC Variance allows for conditional reuse of lead-impacted soil within the Caltrans right-of-way (ROW). Background information regarding the source of ADL and the reuse or disposal of lead-impacted soil is discussed in the following sections.

2.1. Aerially Deposited Lead in Soil

Analyses for lead in soil along highways throughout the state of California have revealed that lead is commonly present along the shoulders of the highways as a result of automobile exhaust containing lead from the combustion of leaded gasoline. Elevated concentrations of lead are commonly found in the upper 2 feet of soil. Lead concentrations in soil are dependent on many variables; but in general, are a function of the age of the highway and the volume of traffic using the highway.

2.2. Hazardous Waste Classification Criteria

Soil that exceeds the following limitations may be classified as hazardous waste with respect to lead concentrations:

- The soil contains 1,000 milligrams per kilogram (mg/kg) or more total lead, exceeding the Total Threshold Limit Concentration (TTLC) for California hazardous waste (Title 22 California Code of Regulations [CCR], Section 66261.24);
- The soil contains 5.0 milligrams per liter (mg/l) or more citric acid-extractable lead, exceeding the Soluble Threshold Limit Concentration (STLC) for California hazardous waste (Title 22 CCR, Section 66261.24);
- The soil contains 5.0 mg/l or more leachable lead using the Toxicity Characteristic Leaching Procedure (TCLP), exceeding the maximum concentration for the toxicity characteristic of the Resource, Conservation, and Recovery Act (RCRA; Title 40 Code of Federal Regulations [CFR] 261.24); or
- The soil pH is less than or equal to 2.0 or greater than or equal to 12.5, which exceeds the limits for the corrosivity characteristic of RCRA hazardous waste (40 CFR 261.22) and California hazardous waste (Title 22 CCR, Section 66261.22).

2.3. DTSC Variance

In accordance with the DTSC Variance, soil that is subject to the guidelines presented below may be reused within the Caltrans ROW. A chart presenting the different ADL soil type classifications is included in Appendix A.

2.3.1. Reuse – Condition 1

Soil containing less than 1.5 mg/l extractable lead by the Waste Extraction Test (WET) using de-ionized water as the extractant (WET-DI) and less than or equal to 1,411 mg/kg total lead (United States Environmental Protection Agency [EPA] Method 6010B) may be used as fill in the Caltrans ROW provided the soil is placed a minimum of 5 feet above the maximum level of the water table and covered with at least 1 foot of non-hazardous soil.

2.3.2. Reuse – Condition 2

Soil containing greater than or equal to 1.5 mg/l, but less than 150 mg/l, extractable lead by WET-DI method, or more than 1,411 mg/kg total lead but less than 3,397 mg/kg total lead, may be used as fill in the Caltrans ROW provided the soil is placed a minimum of 5 feet above the maximum level of the water table and protected from infiltration by a paved structure that will be maintained by Caltrans.

2.3.3. Reuse – Condition 3

Lead-contaminated soil with a pH less than 5.5 but greater than 5.0 shall only be used as fill material under the paved portion of the roadway. Lead-contaminated soil with a pH at or less than 5.0 shall be managed as a hazardous waste.

2.4. Criteria for Disposal of Soil Not Intended for Reuse On Site

If Caltrans elects to dispose soil within the Caltrans ROW that has been excavated during construction activities, the soil may be classified either as hazardous waste or non-hazardous waste. The distinction is based on the total and soluble lead concentrations compared to the TTLC and STLC criteria. As mentioned in Section 2.2, the TTLC for total lead is 1,000 mg/kg and the STLC for citric acid extractable lead is 5.0 mg/l. Waste containing lead concentrations in excess of or equal to those listed must be disposed at a Class I hazardous waste disposal facility pursuant to State of California regulations.

3. INVESTIGATION METHODS

The investigation activities are described in the following subsections and were conducted in general accordance with the TO that was approved by Caltrans prior to beginning the field activities.

3.1. HSP

A site-specific HSP dated September 5, 2012, was prepared by Ninyo & Moore and submitted to Caltrans for approval prior to commencing field work.

3.2. Utility Clearance

The boring locations were described to USA during the notification at least 2 working days prior to conducting the soil sampling. USA marked the member utilities known to be in the vicinity of the boring locations.

3.3. Hand-Auger Sampling

The field work was conducted on September 6, 2012. The boring locations were approved by the Caltrans TO Manager and are shown on the attached Figure 2. Four samples were attempted for collection from borings B1, B2, B3, B6, B7, B8, and B12 at depths of surface to ½, 1½, 3, and 4 feet bgs. One soil sample was attempted for collection from borings B4, B5, B9, B10, and B11 at a depth of surface to ½ feet bgs. The depths reached for each boring are presented on Table 1.

Samples were placed into new, 4-ounce, glass jars; capped with Teflon-coated plastic lids; labeled; placed in a resealable plastic bag; and stored in a cooler. The sampling equipment was decontaminated between each boring. Soil samples were transferred under COC protocol to Pat-Chem Laboratories within 24 hours of collection. In accordance with the TO, soil sample homogenization was performed in the laboratory.

Hand augering was conducted by Ninyo & Moore personnel.

3.4. Investigation-Derived Wastes

Soil cuttings generated by hand-auger drilling were returned to their corresponding bore-holes after collection of soil samples. Decontamination water was transported to Ninyo & Moore's Irvine office and placed in a drum pending chemical characterization. Based on the analytical result of the decontamination water sample, the decontamination water was subsequently disposed in the sanitary sewer.

3.5. Laboratory Analyses

Once the samples were received by Pat-Chem Laboratories the samples were separately homogenized and analyzed for the following.

- Twenty-eight soil samples were analyzed for total lead using EPA Method 6010B.
- Three soil samples were analyzed for pH using EPA Method 9045.
- One decontamination water sample was analyzed for total lead using EPA Method 6010B.

4. ANALYTICAL RESULTS

The results of this investigation are described in the following subsections. The analytical results of lead and pH are summarized in Table 1 and Figures 3 and 4. Laboratory reports and COC records are included in Appendix B.

4.1. Total Lead

Twenty-eight soil samples were analyzed for total lead. The maximum total lead concentration was 99 mg/kg. The minimum total lead concentration was less than the laboratory practical quantitation limit (PQL) of 1.0 mg/kg.

The decontamination water sample contained 0.02 mg/l of lead.

4.2. Soluble Lead – Citric Acid

One of the 28 samples contained total lead at a concentration of greater than 50 mg/kg and was subsequently analyzed for soluble lead by WET-citric. The soluble lead concentration was 4.9 mg/l.

4.3. Soluble Lead – Deionized Water

None of the samples were analyzed for soluble lead using the WET-DI.

4.4. Soluble Lead – TCLP

None of the samples were analyzed for soluble lead by the TCLP.

4.5. pH

Three of the samples collected were analyzed for pH. The maximum pH level was 9.3 and the minimum pH level was 8.9.

5. STATISTICAL EVALUATION

Based on the data reported (Table 1) for the site, the sample with a total lead concentration in excess of 50 mg/kg did not contain a soluble lead concentration equal to or in excess of 5.0 mg/l. Therefore, additional testing was not performed and statistical analyses were not performed.

In order to evaluate four of the possible soil excavation depth scenarios, the following depth combinations were evaluated:

- **Scenario A** – surface soil (0 to ½ foot) and underlying subsurface soil (½ foot to 4 feet)
- **Scenario B** – the upper 1½ feet (0 to 1½ feet) and the underlying subsurface soil (1½ to 4 feet)
- **Scenario C** – the upper 3 feet (0 to 3 feet) and the underlying subsurface soil (3 to 4 feet)
- **Scenario D** – the entire 4-foot soil column

6. CONCLUSIONS

The analyses of the data indicate that the surface layers tend to have the highest concentrations of total lead, followed by the 1 ½ -, 3 -, and 4-foot layers. Assuming the soil has not been disturbed since construction of the routes in the site vicinities, concentrations of total lead would be expected to decrease with depth.

7. RECOMMENDATIONS

Based on the findings of this study, recommendations are summarized on block diagrams in Appendix C and discussed below.

7.1. Recommendations for Soil for Reuse by Caltrans

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layers combined (surface to 1.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

7.2. Recommendations for Soil to be Disposed Off Site

If Caltrans elects to dispose the soil off site, the following restrictions apply.

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layer combined (surface to 1.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

8. HEALTH EFFECTS OF LEAD

Concentrations of lead in soil at the site represent a potential threat to the health of site workers performing earthwork activities.

Lead in its element form is a heavy, ductile, soft, gray metal. The permissible exposure limit for lead is 0.05 milligrams per cubic meter (mg/m^3) in air based on an eight-hour time-weighted average. The immediately dangerous to life and health exposure limit is 100 mg/m^3 as established by the National Institute of Occupational Safety and Health. Exposure may produce several symptoms including weakness, eye irritation, facial pallor, pale eyes, lassitude, insomnia, anemia, tremors, malnutrition, constipation, paralysis of the wrists and ankles, abdominal pain, colic, nephropathy, encephalopathy, gingival lead line, hypertension, anorexia, and weight loss. Target organs are the central nervous system, kidneys, eyes, blood, gingival tissue, and the gastrointestinal tract.

Because of the potential hazard from exposure to lead-contaminated soil, a lead HSP should be prepared by a Certified Industrial Hygienist (CIH). In addition, all site workers (earthwork) should have completed a training program meeting the requirements of 29 CFR 1910.120 and 8 CCR 1532.1. The plan developed by the CIH should include a hazard analysis, dust control measures, air monitoring, signage, work practices, emergency response plans, personal protective equipment, decontamination, and documentation.

9. LIMITATIONS

The services outlined in this report have been conducted in a manner generally consistent with current regulatory guidelines. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Ninyo & Moore's opinions are based on an analysis of observed conditions and on information obtained from third parties. It is likely that variations in soil conditions may exist.

The samples collected and chemically analyzed and the observations made are believed to be representative of the general area evaluated; however, conditions can vary significantly between sampling locations. The interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and measure the concentration of selected chemical or physical constituents in samples collected from the site. The analyses have been conducted by an independent laboratory certified by the State of California to conduct such analyses. Ninyo & Moore has no involvement in, or control over, such analyses and has no means of confirming the accuracy of laboratory results. Ninyo & Moore, therefore, disclaims any responsibility for inaccuracy in such laboratory results.

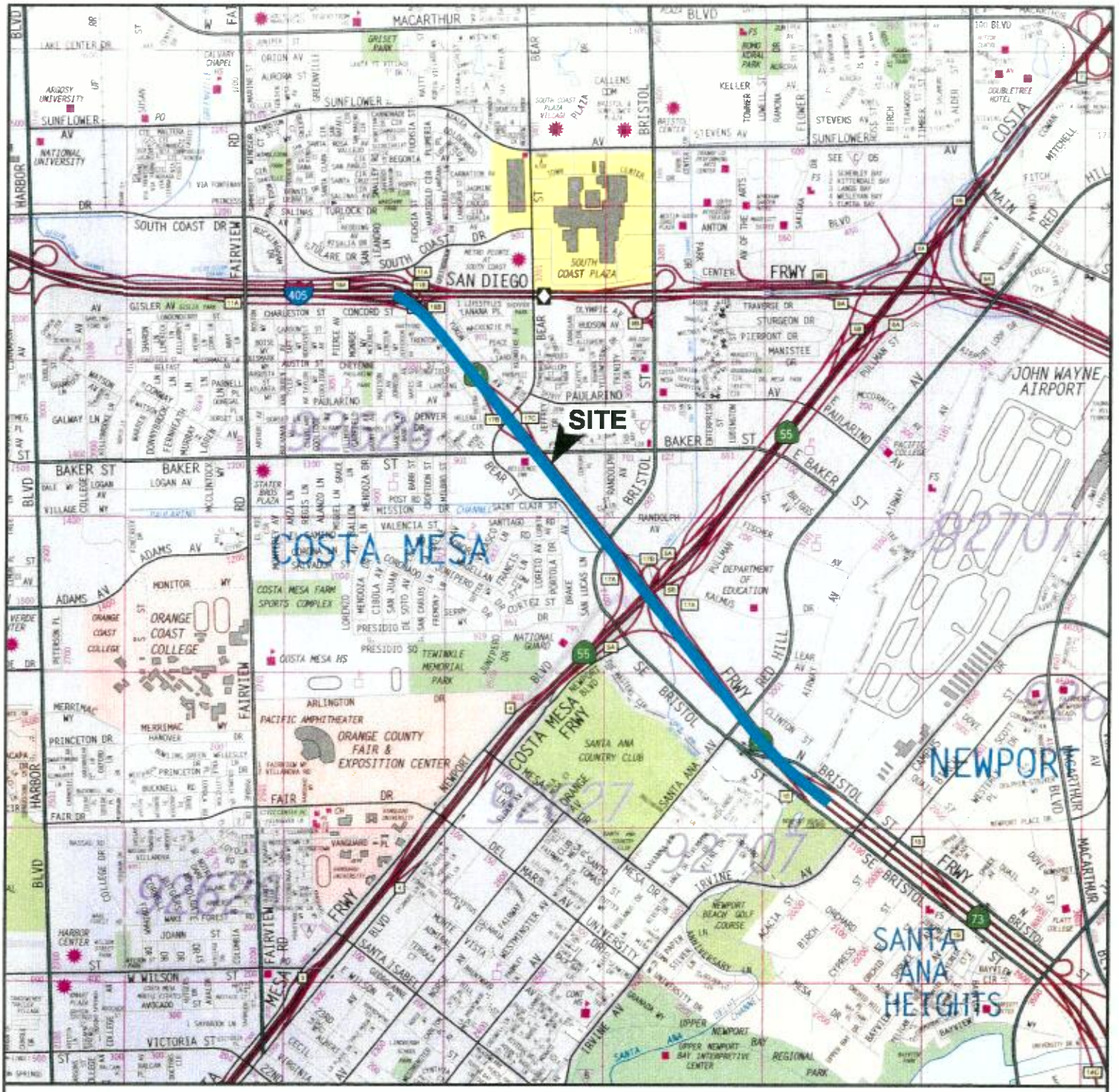
This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader wants any additional information, or has questions regarding content, interpretations presented, or completeness of this document. Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

For individuals with sensory disabilities, this document is available in alternate formats upon request. For any questions regarding this document, please call or write David Yaghoubi, Environmental Engineering, 3347 Michelson Drive, Suite 100, Irvine, California 92612-1692. Phone Number (949) 756-7828.

TABLE 1 – SOIL ANALYTICAL RESULTS – AERIALLY DEPOSITED LEAD, pH, AND GPS COORDINATES

Sample	Sample Depth (feet bgs)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH	Latitude	Longitude
B1-0.5	0.5	9/6/2012	3.2	--	--	--	--	33.663990893	-117.876799460
B1-1.5	1.5	9/6/2012	ND<1.0	--	--	--	--		
B1-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--		
B1-4.0	4.0	9/6/2012	ND<1.0	--	--	--	--		
B2-0.5	0.5	9/6/2012	7.2	--	--	--	--	33.666306207	-117.879601199
B2-1.5	1.5	9/6/2012	ND<1.0	--	--	--	9.3		
B2-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--		
B2-4.0	4.0	9/6/2012	ND<1.0	--	--	--	--		
B3-0.5	0.5	9/6/2012	3.4	--	--	--	--	33.668334288	-117.881355537
B3-1.5	1.5	9/6/2012	ND<1.0	--	--	--	--		
B3-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--		
B4-0.5	0.5	9/6/2012	28	--	--	--	--	33.682033119	-117.893017976
B5-0.5	0.5	9/6/2012	29	--	--	--	--	33.682240825	-117.893268485
B6-0.5	0.5	9/6/2012	4.4	--	--	--	8.9	33.686994826	-117.899641942
B7-0.5	0.5	9/6/2012	1.8	--	--	--	--	33.686644532	-117.898660248
B7-1.5	1.5	9/6/2012	3.6	--	--	--	--		
B7-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--		
B7-4.0	4.0	9/6/2012	ND<1.0	--	--	--	--		
B8-0.5	0.5	9/6/2012	2.8	--	--	--	--	33.686024803	-117.897769216
B8-1.5	1.5	9/6/2012	2.2	--	--	--	--		
B8-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--		
B8-4.0	4.0	9/6/2012	25	--	--	--	9.0		
B9-0.5	0.5	9/6/2012	99	4.9	--	--	--	33.681438427	-117.894167635
B10-0.5	0.5	9/6/2012	4.7	--	--	--	--	33.681285415	-117.893883252
B11-0.5	0.5	9/6/2012	7.0	--	--	--	--	33.681091334	-117.893972545
B12-0.5	0.5	9/6/2012	7.8	--	--	--	--	33.665785457	-117.880111076
B12-1.5	1.5	9/6/2012	2.5	--	--	--	--		
B12-3.0	3.0	9/6/2012	2.5	--	--	--	--		
Maximum			99	4.9	NA	NA	9.3		
Average			8.6	4.9	NA	NA	9.1		
Minimum			ND<1.0	4.9	NA	NA	8.9		
Regulatory Limits			1411[1]	5[2]	1.5[3]	5[4]	5[5]		
Decontamination Water (mg/l)									
DW-1	NA	9/6/2012	0.02	--	--	--	--	NA	NA

Notes:
1 – Limit specified in addendum to Variance issued by the Department of Toxic Substances Control (DTSC) to Caltrans
2 – Soluble Threshold Limit Concentration for California Hazardous Waste (California Code of Regulations [CCR] Title 22, Section 66261.24)
3 – Limit Specified by DTSC Variance
4 – Maximum concentration for the TCLP of Resource, Conservation, and Recovery Act (RCRA) hazardous waste (40 Code of Federal Regulations, Section 261.24)
5 – Minimum value specified by DTSC variance
bgs – below ground surface
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
NA – not applicable
TCLP – soluble lead by the Toxicity Characteristic Leaching Procedure
TTLC – total lead for comparison to the Total Threshold Limit Concentration
WET – Waste Extraction Test
WET-citric – soluble lead by WET using citric acid for comparison to the Soluble Threshold Limit Concentration
WET-DI – soluble lead by WET using deionized water for comparison to the Soluble Threshold Limit Concentration
-- – not analyzed



REFERENCE: 2007 THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

N

APPROXIMATE SCALE

0 2,400 4,800

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
208449012	9/12

SITE LOCATION

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE 1

REFERENCE: GOOGLE EARTH AERIAL PHOTO, 2012.

N

SCALE IN FEET

0 1,800 3,600

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND	
B12	BORING

Ninyo & Moore

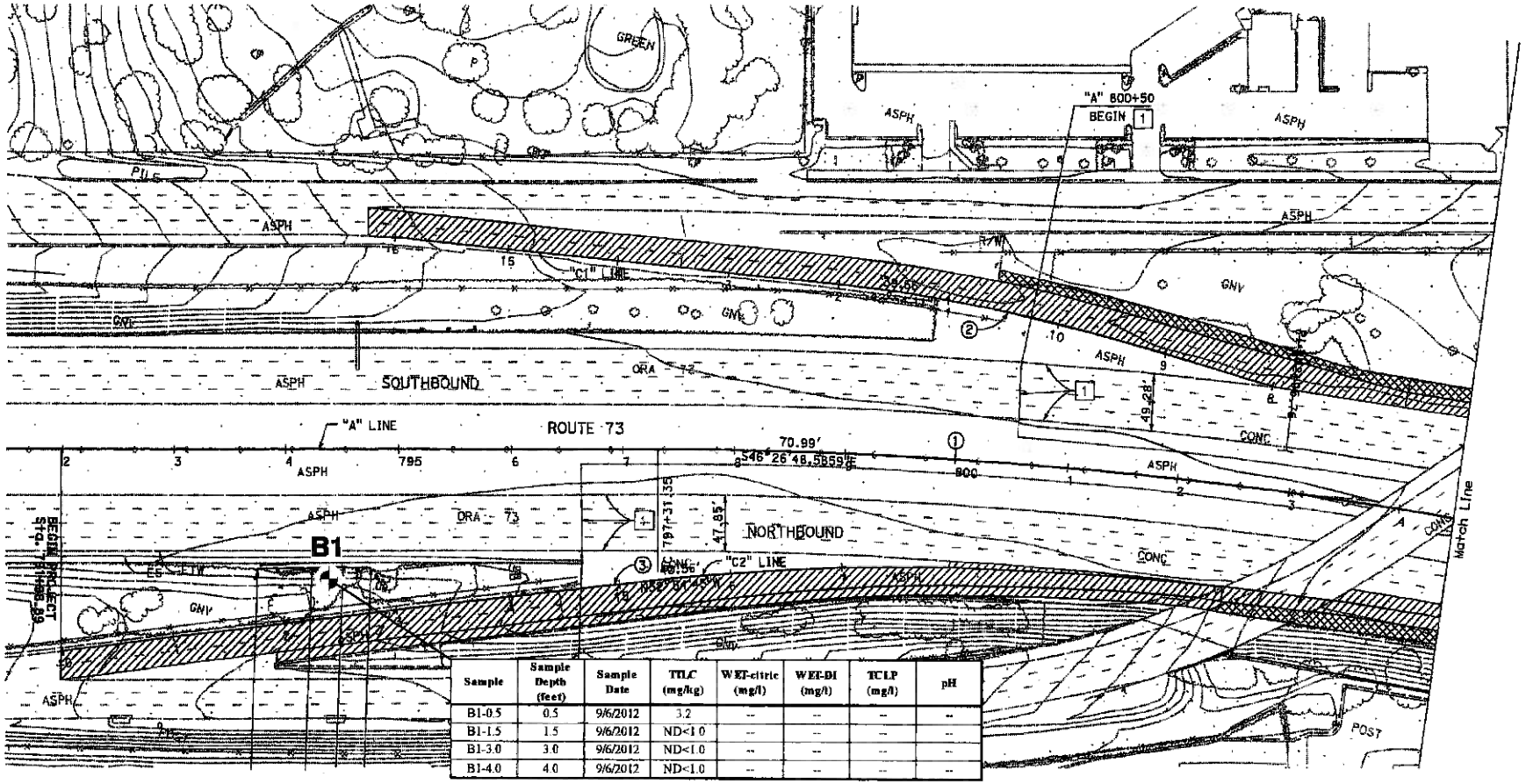
PROJECT NO.	DATE
208449012	9/12

BORING LOCATIONS

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

2



Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B1-0.5	0.5	9/6/2012	3.2	--	--	--	--
B1-1.5	1.5	9/6/2012	ND<1.0	--	--	--	--
B1-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--
B1-4.0	4.0	9/6/2012	ND<1.0	--	--	--	--

REFERENCE: CALTRANS, 2012.

LEGEND

B1	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/l	milligrams per liter	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure
WET	Waste Extraction Test	TTLC	Total Lead for comparison to the Total Threshold Limit Concentration

N

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

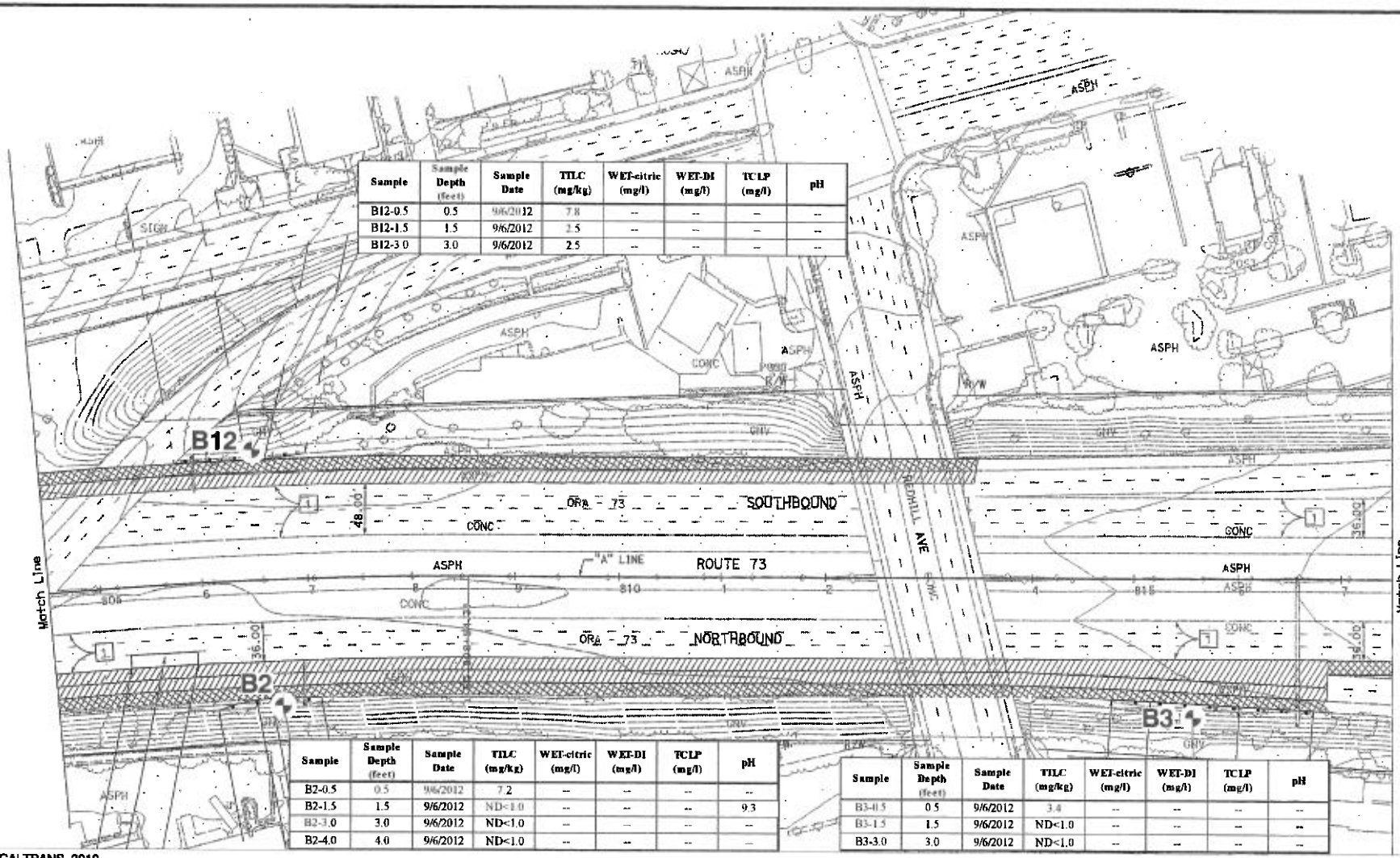
PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

3



Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B12-0.5	0.5	9/6/2012	7.8	--	--	--	--
B12-1.5	1.5	9/6/2012	2.5	--	--	--	--
B12-3.0	3.0	9/6/2012	2.5	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B2-0.5	0.5	9/6/2012	7.2	--	--	--	--
B2-1.5	1.5	9/6/2012	ND<1.0	--	--	--	9.3
B2-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--
B2-4.0	4.0	9/6/2012	ND<1.0	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B3-0.5	0.5	9/6/2012	3.4	--	--	--	--
B3-1.5	1.5	9/6/2012	ND<1.0	--	--	--	--
B3-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--

REFERENCE: CALTRANS, 2012.

LEGEND

B12	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/l	milligrams per liter	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure
WET	Waste Extraction Test	TTLC	Total Lead for comparison to the Total Threshold Limit Concentration

N

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
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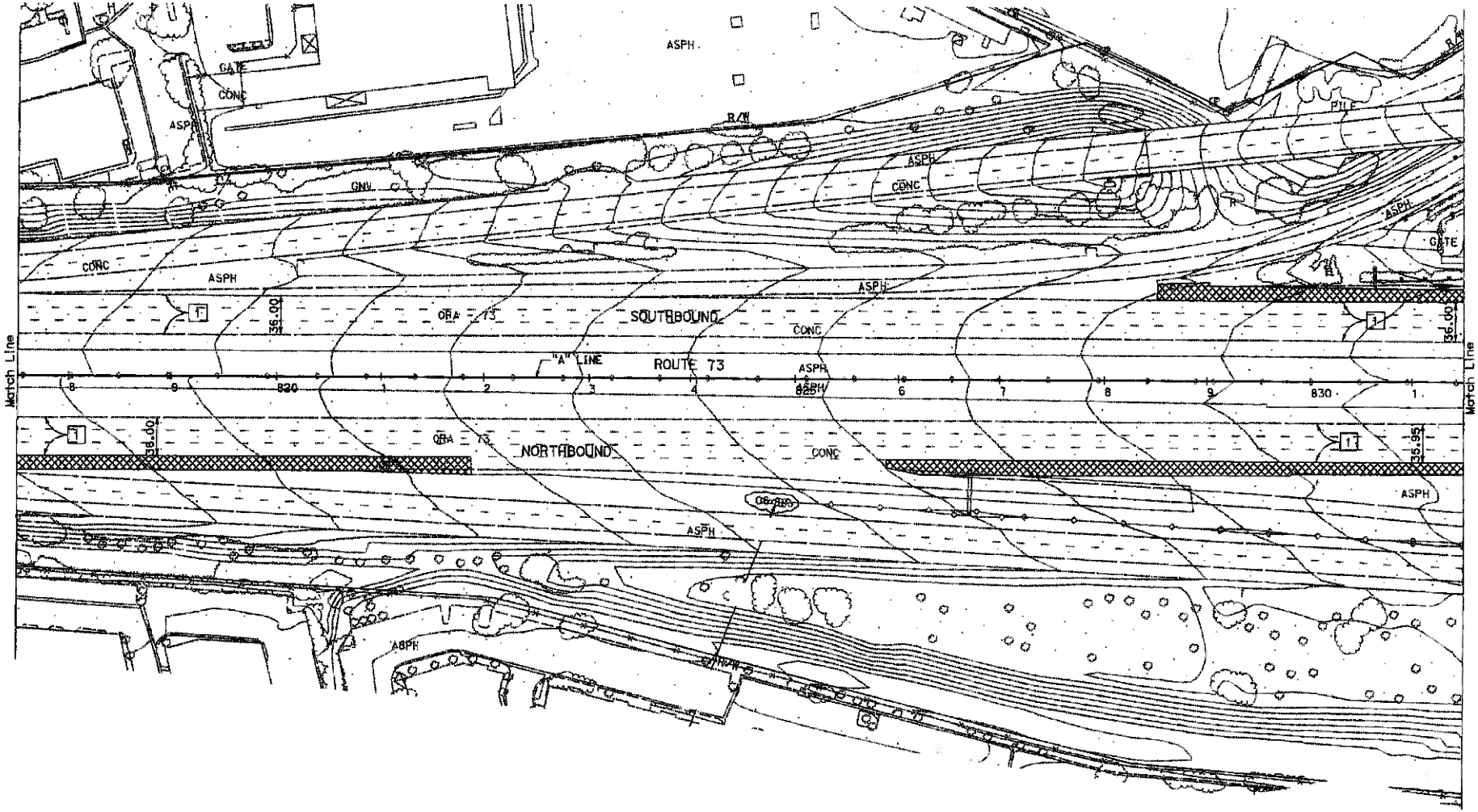
BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

4



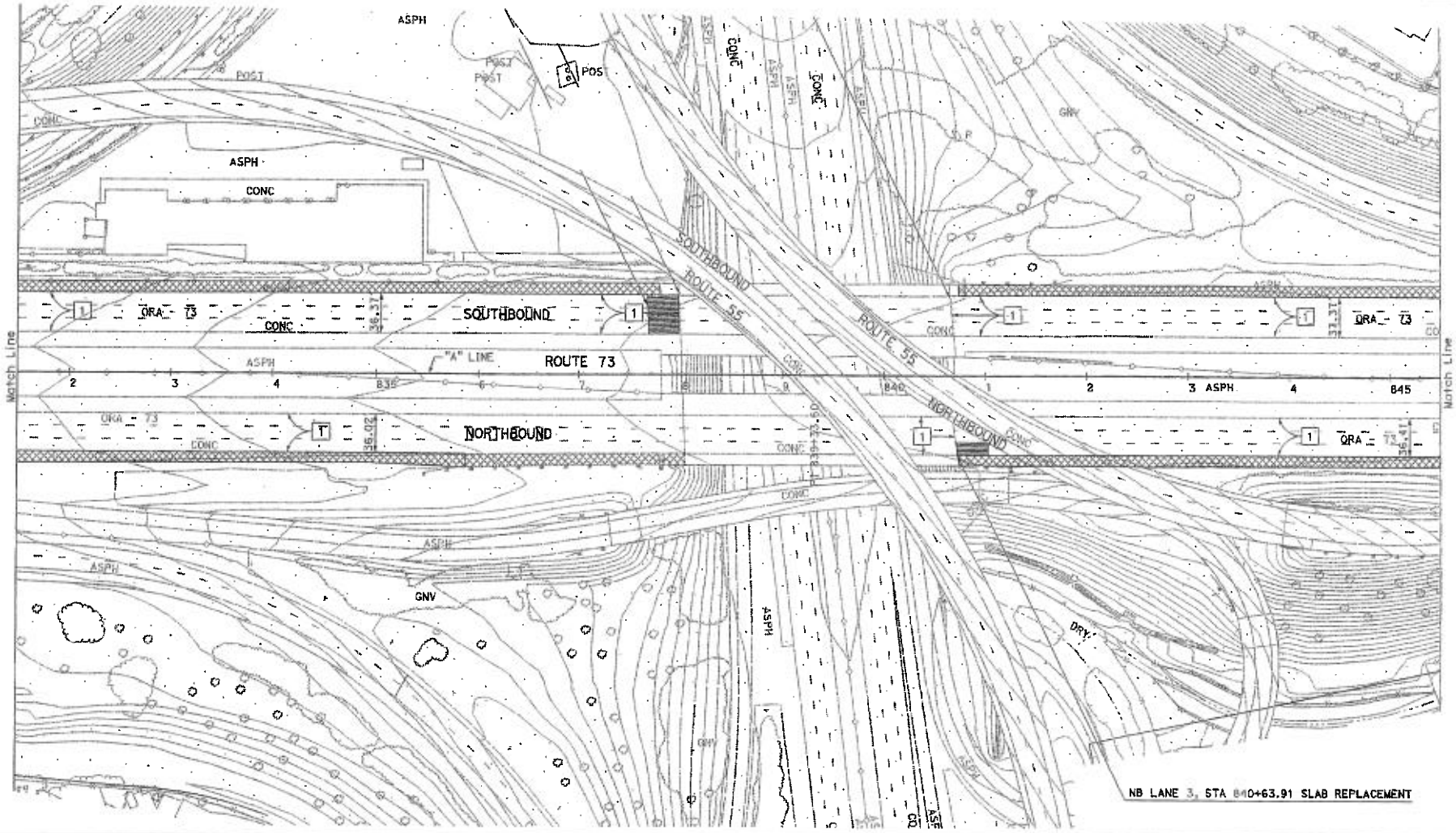
REFERENCE: CALTRANS, 2012.

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		BORING DATA	FIGURE
PROJECT NO.	DATE	ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0 NEWPORT BEACH TO COSTA MESA, CALIFORNIA	5
208449012	9/12		



REFERENCE: CALTRANS, 2012.

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

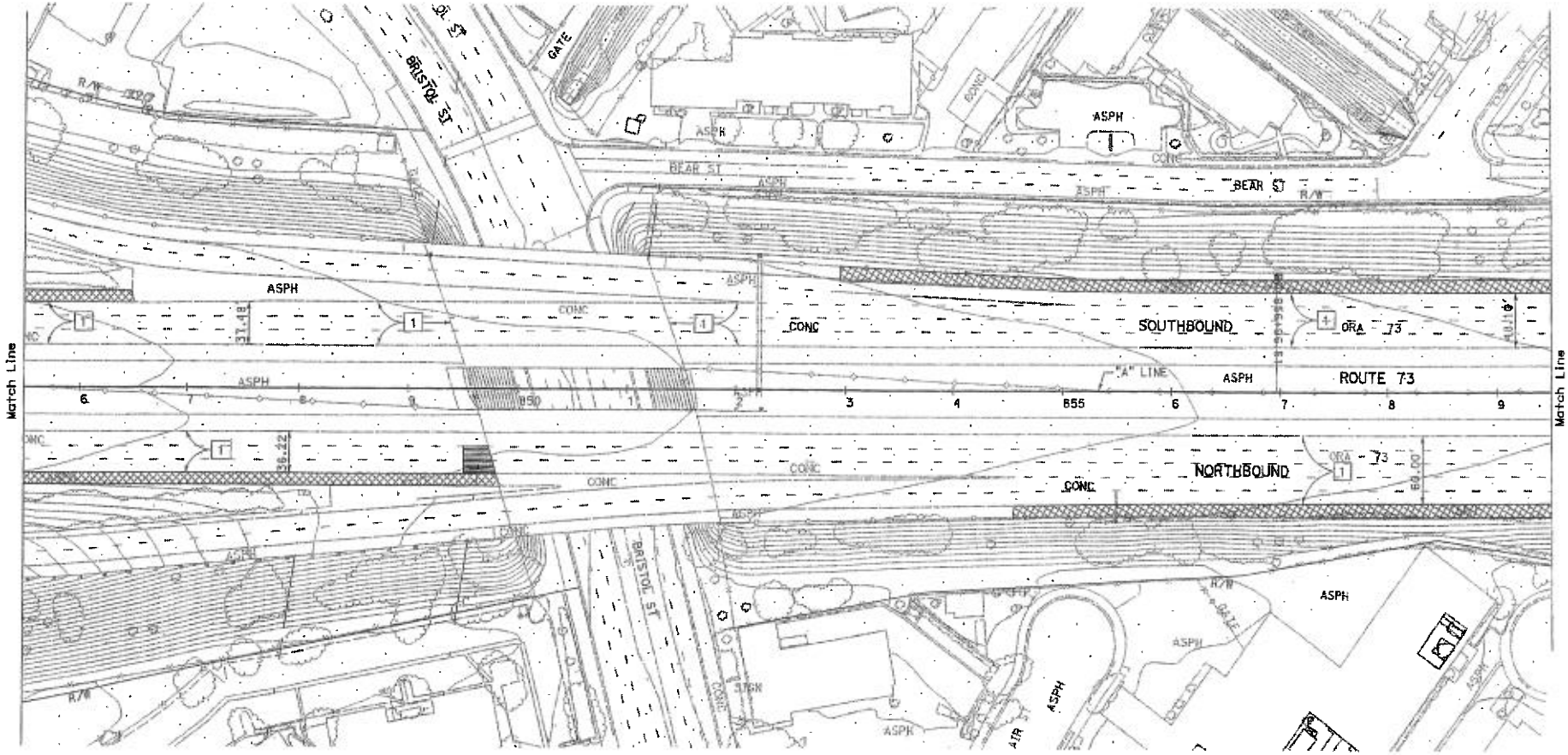
PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

6



REFERENCE: CALTRANS, 2012.

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

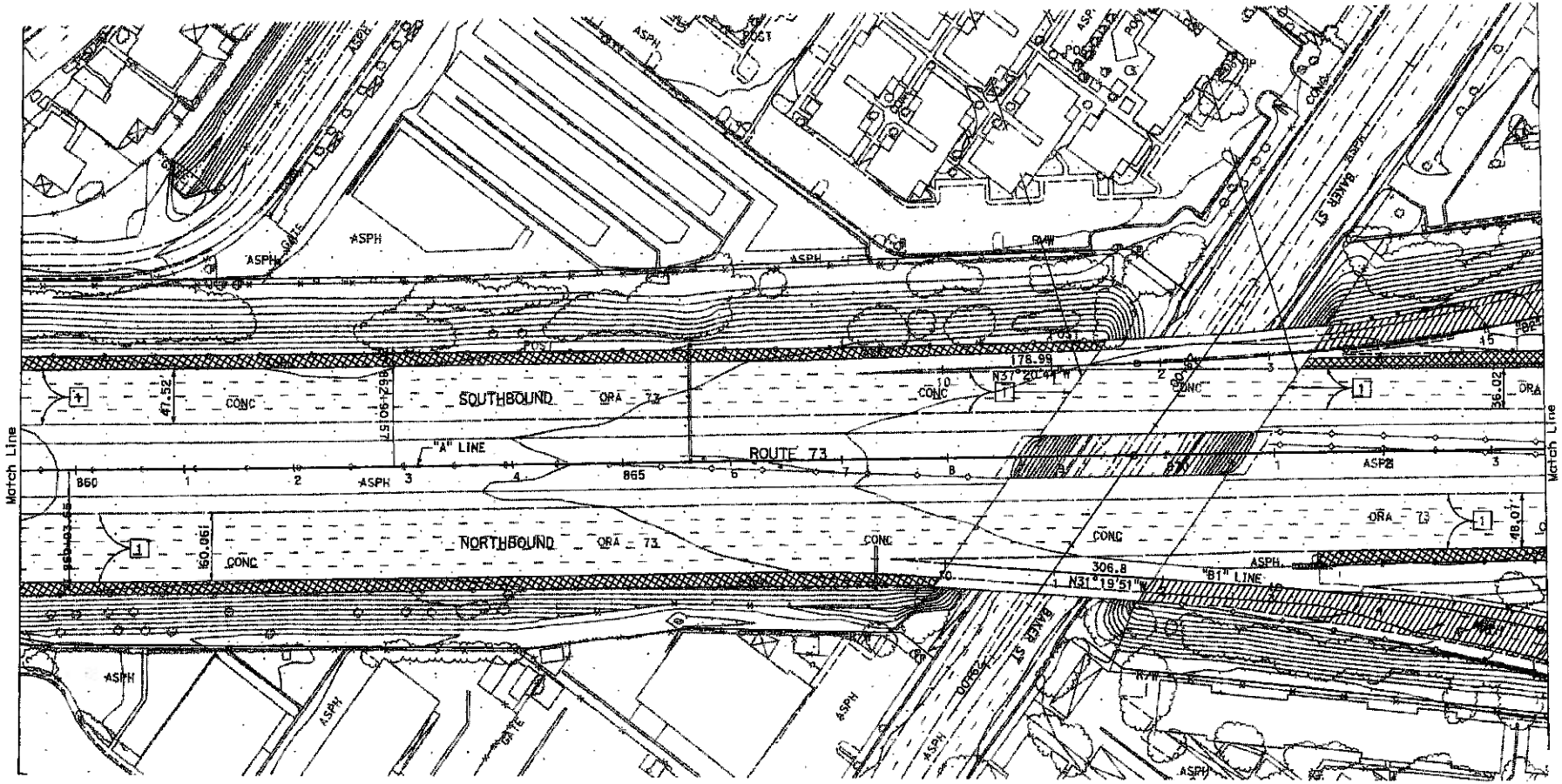
PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

7



REFERENCE: CALTRANS, 2012.

N

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

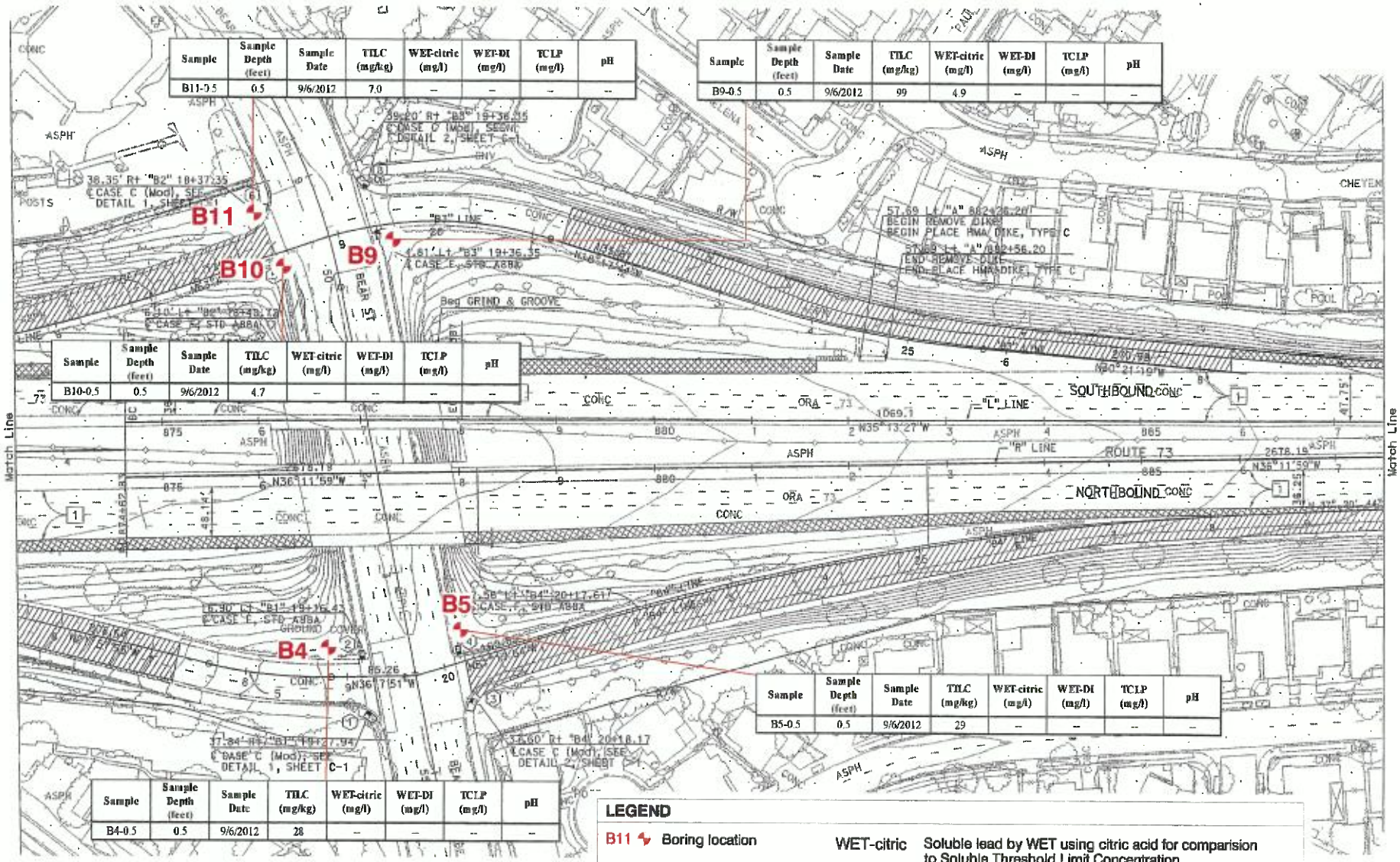
PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

8



Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B11-0.5	0.5	9/6/2012	7.0	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B9-0.5	0.5	9/6/2012	99	4.9	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B10-0.5	0.5	9/6/2012	4.7	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B5-0.5	0.5	9/6/2012	29	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B4-0.5	0.5	9/6/2012	28	--	--	--	--

REFERENCE: CALTRANS, 2012.

LEGEND

B11	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/l	milligrams per liter	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure
WET	Waste Extraction Test	TTLC	Total Lead for comparison to the Total Threshold Limit Concentration

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

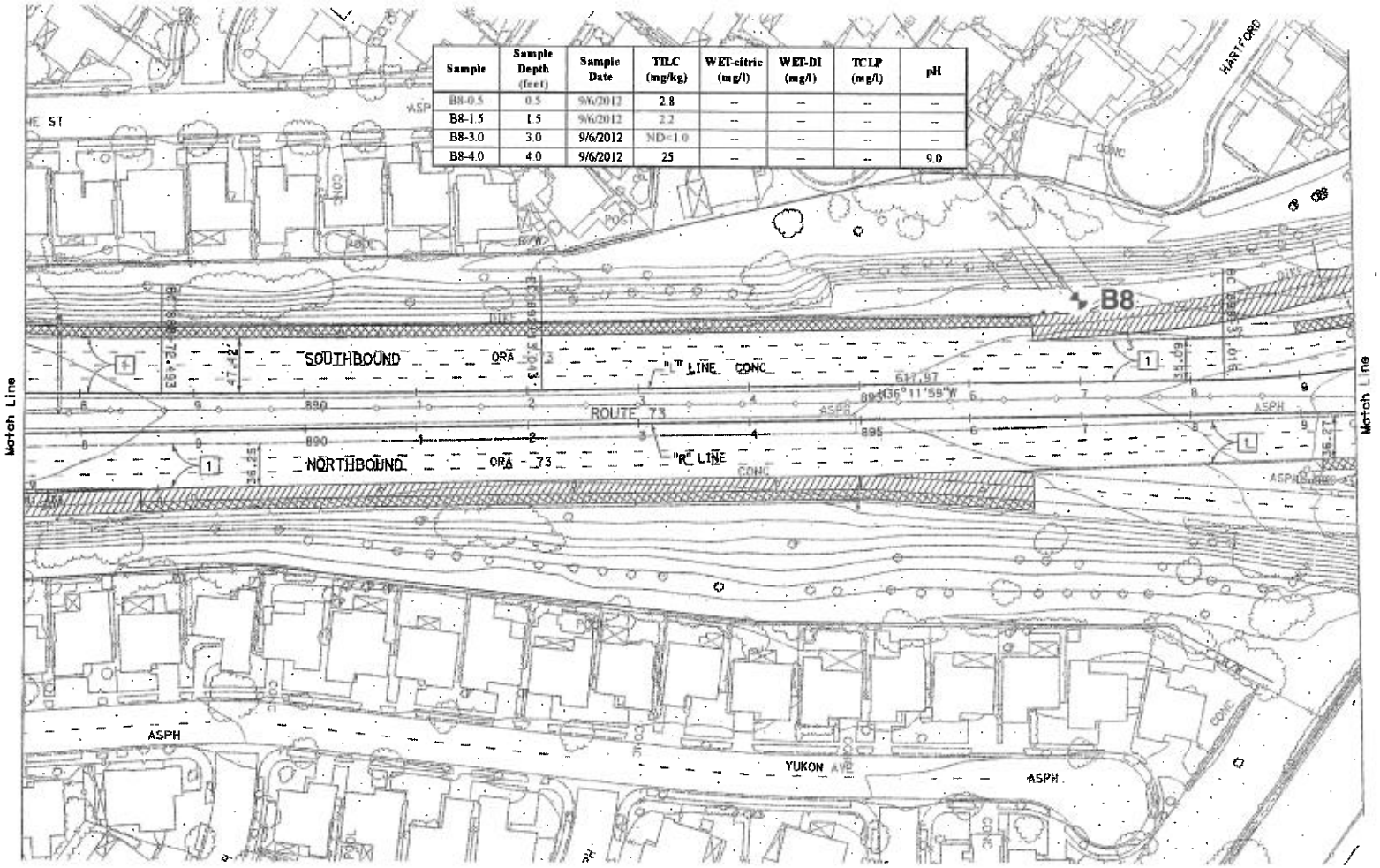
Ninyo & Moore

PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE 9



Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B8-0.5	0.5	9/6/2012	2.8	--	--	--	--
B8-1.5	1.5	9/6/2012	2.2	--	--	--	--
B8-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--
B8-4.0	4.0	9/6/2012	25	--	--	--	9.0

LEGEND

B8	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/l	milligrams per liter	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure
WET	Waste Extraction Test	TTLC	Total Lead for comparison to the Total Threshold Limit Concentration

REFERENCE: CALTRANS, 2012.

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
208449012	9/12

BORING DATA

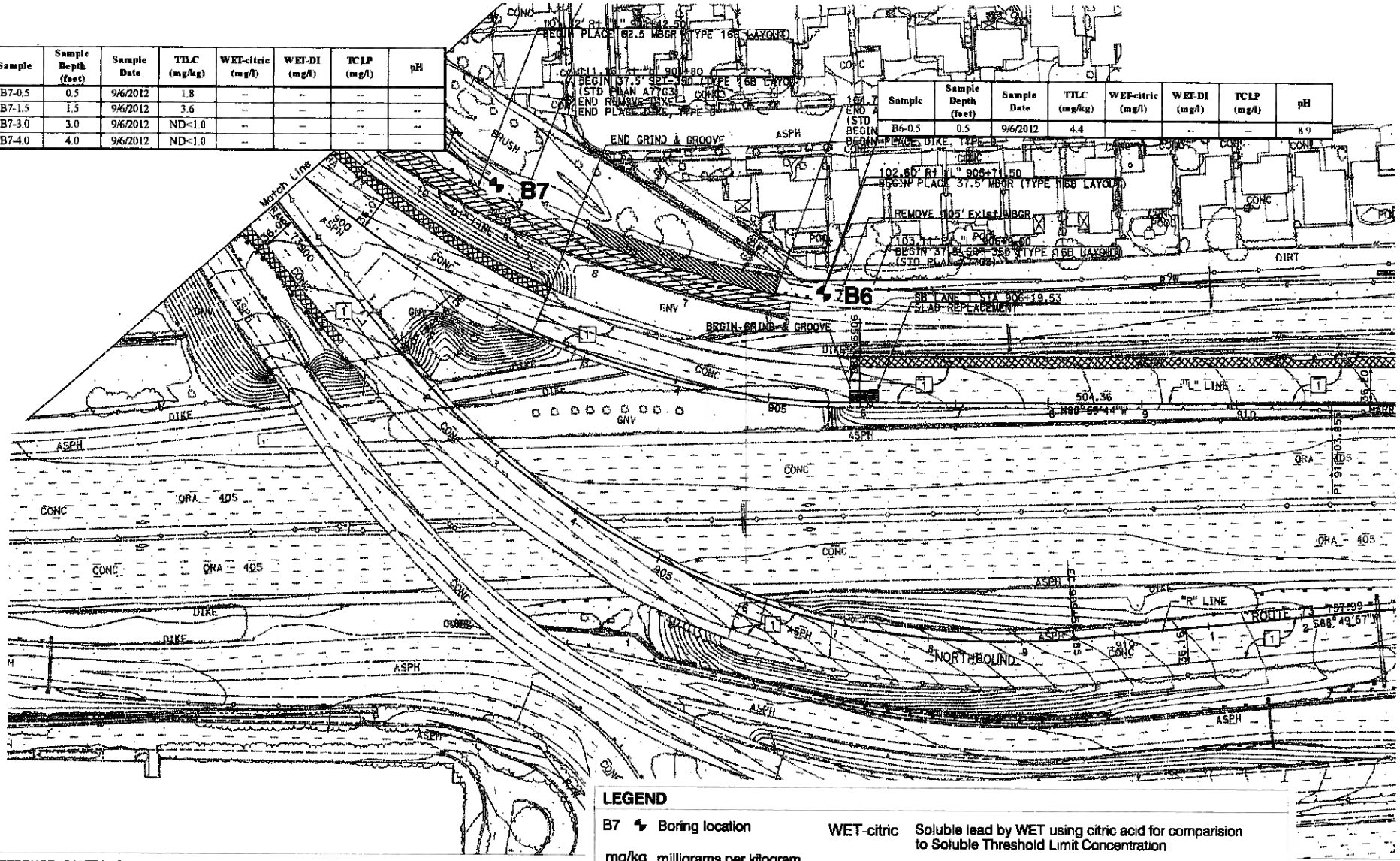
ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

10

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B7-0.5	0.5	9/6/2012	1.8	--	--	--	--
B7-1.5	1.5	9/6/2012	3.6	--	--	--	--
B7-3.0	3.0	9/6/2012	ND<1.0	--	--	--	--
B7-4.0	4.0	9/6/2012	ND<1.0	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B6-0.5	0.5	9/6/2012	4.4	--	--	--	8.9



REFERENCE: CALTRANS, 2012.

LEGEND

B7	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/l	milligrams per liter	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure
WET	Waste Extraction Test	TTLC	Total Lead for comparison to the Total Threshold Limit Concentration

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

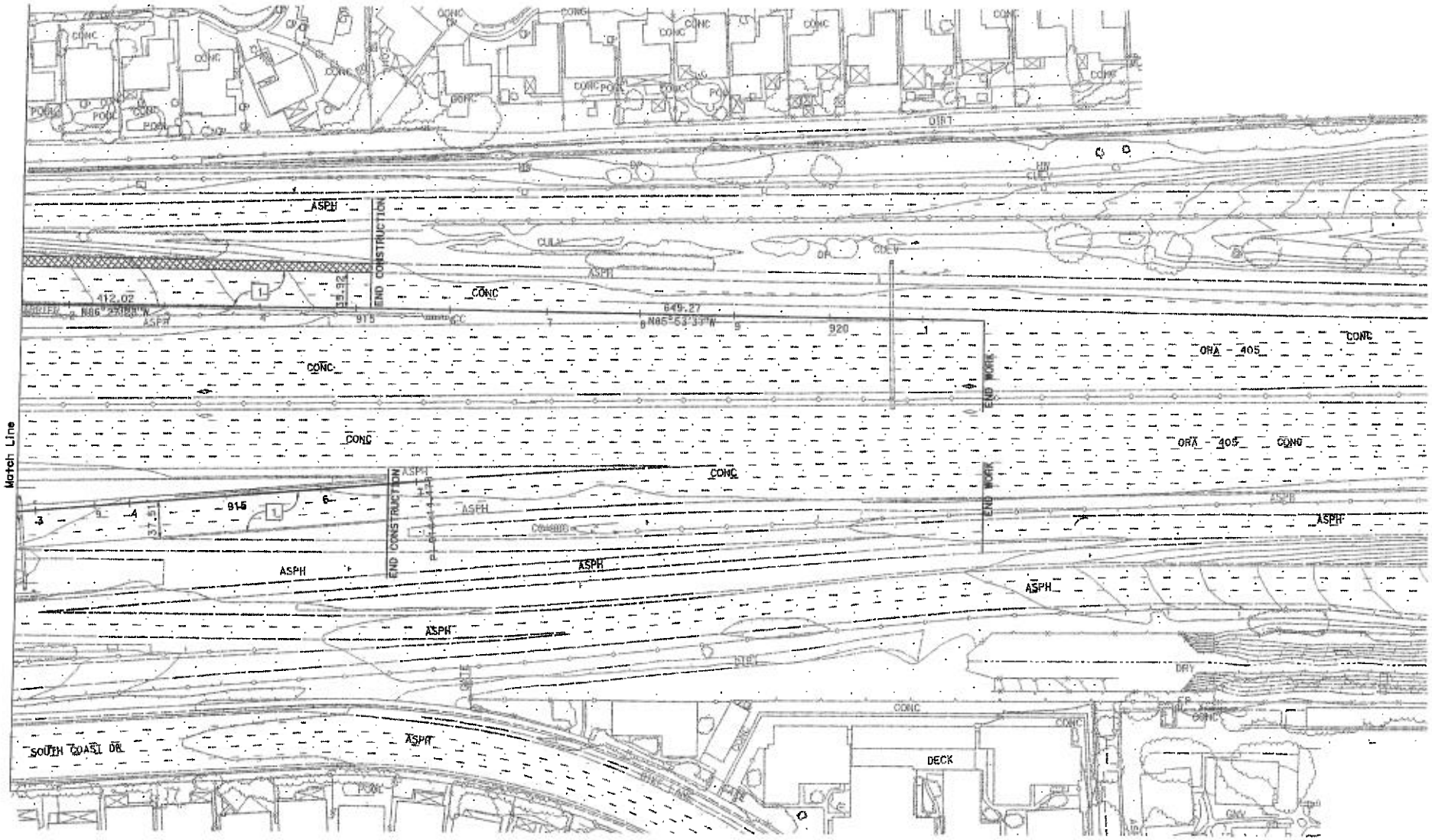
PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

11



REFERENCE: CALTRANS, 2012.

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
208449012	9/12

BORING DATA

ROUTE 73 BETWEEN POST MILE 25.7 AND POST MILE 28.0
NEWPORT BEACH TO COSTA MESA, CALIFORNIA

FIGURE

12

APPENDIX A

AERIALLY DEPOSITED LEAD SOIL MANAGEMENT CHART

AERIALLY DEPOSITED LEAD SOIL MANAGEMENT

SOLUBLE LEAD (mg/l)	TOTAL LEAD (mg/kg)	SOIL TYPE	HANDLING
CALIFORNIA TESTING			
STLC <5.0	TTLC <1000	X	Non-hazardous Waste. Notify and require Lead Compliance Plan for worker safety.
	1000 – 1411 and DI WET < 1.5 mg/l	Y1	Hazardous Waste. Variance applies – cover with minimum 1 foot of clean soil.*
	1411 – 3397 and DI WET < 150 mg/l	Y2	Hazardous Waste. Variance applies – cover with pavement structure. *
	1000 – 3397 but Surplus	Z2	Hazardous Waste - Surplus. Dispose at Class 1 disposal site.
	> 3397 or 1000 – 3397 & DI WET > 150 mg/l	Z2	Hazardous Waste – not reusable under Variance. Dispose at Class 1 disposal site.
STLC >5.0	TTLC < 1411 and DI WET < 1.5 mg/l	Y1	Hazardous Waste. Variance applies – cover with minimum of 1 foot of clean soil.*
	1411 – 3397 and DI WET < 150 mg/l	Y2	Hazardous Waste. Variance applies – cover with pavement structure.*
	< 3397 and DI WET < 150 mg/l but Surplus	Z2	Hazardous Waste - Surplus. Dispose at Class 1 disposal site.
	> 3397 or DI WET > 150 mg/l	Z2	Hazardous Waste – not reusable under Variance. Dispose at Class 1 disposal site.
FEDERAL TESTING			
TCLP > 5.0 mg/l	N/A	Z3	RCRA Hazardous Waste Dispose at Class 1 disposal site as a RCRA waste regardless of TTLC and STLC results.

*Note: For hazardous waste levels of lead - if pH is less than 5.5 soil must be placed under a pavement structure. If pH is less than 5.0 variance can not be used and the soil must be disposed as Z-2 material.

APPENDIX B

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 17-Sep-12 14:54
Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
B1-0.5 (Sample I.D.# : 1209065-01) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	11-Sep-12 (AF)		3.2 mg/kg	
B1-1.5 (Sample I.D.# : 1209065-02) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B1-3.0 (Sample I.D.# : 1209065-03) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B1-4.0 (Sample I.D.# : 1209065-04) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B2-0.5 (Sample I.D.# : 1209065-05) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		7.2 mg/kg	
B2-1.5 (Sample I.D.# : 1209065-06) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
pH	EPA 9045B	AI20720	0.1	07-Sep-12 (JG)		9.3 pH Units	
B2-3.0 (Sample I.D.# : 1209065-07) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B2-4.0 (Sample I.D.# : 1209065-08) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B3-0.5 (Sample I.D.# : 1209065-09) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		3.4 mg/kg	
B3-1.5 (Sample I.D.# : 1209065-10) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B3-3.0 (Sample I.D.# : 1209065-11) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B11-0.5 (Sample I.D.# : 1209065-12) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		7.0 mg/kg	
B10-0.5 (Sample I.D.# : 1209065-13) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		4.7 mg/kg	
B4-0.5 (Sample I.D.# : 1209065-14) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		28 mg/kg	

Respectfully Submitted,

Pat Brueckner

Pat Brueckner 9/17/2012
Laboratory Director

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 17-Sep-12 14:54
Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
B5-0.5 (Sample I.D.# : 1209065-15) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		29 mg/kg	
B9-0.5 (Sample I.D.# : 1209065-16) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		99 mg/kg	
Lead	EPA 6010B(STLC)	AI21416	0.20	14-Sep-12 (AF)		4.9 mg/l	
B6-0.5 (Sample I.D.# : 1209065-17) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		4.4 mg/kg	
pH	EPA 9045B	AI20720	0.1	07-Sep-12 (JG)		8.9 pH Units	
B7-0.5 (Sample I.D.# : 1209065-18) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		1.8 mg/kg	
B7-1.5 (Sample I.D.# : 1209065-19) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		3.6 mg/kg	
B7-3.0 (Sample I.D.# : 1209065-20) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B7-4.0 (Sample I.D.# : 1209065-21) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B8-0.5 (Sample I.D.# : 1209065-22) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		2.8 mg/kg	
B8-1.5 (Sample I.D.# : 1209065-23) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)		2.2 mg/kg	
B8-3.0 (Sample I.D.# : 1209065-24) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	10-Sep-12 (AF)	<	1.0 mg/kg	
B8-4.0 (Sample I.D.# : 1209065-25) Collected: 06-Sep-12 By N&M							
Lead	EPA 6010B	AI20710	1.0	11-Sep-12 (AF)		25 mg/kg	

Respectfully Submitted,

Pat Brueckner 9/17/2012
Laboratory Director

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

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Attention: Mike Cushner
Report Date: 17-Sep-12 14:54
Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)	RESULT	NOTE
B8-4.0 (Sample I.D.# : 1209065-25) Collected: 06-Sep-12 By N&M						
pH	EPA 9045B	AI20720	0.1	07-Sep-12 (JG)	9.0 pH Units	
B12-0.5 (Sample I.D.# : 1209065-26) Collected: 06-Sep-12 By N&M						
Lead	EPA 6010B	AI20710	1.0	11-Sep-12 (AF)	7.8 mg/kg	
B12-1.5 (Sample I.D.# : 1209065-27) Collected: 06-Sep-12 By N&M						
Lead	EPA 6010B	AI20710	1.0	11-Sep-12 (AF)	2.5 mg/kg	
B12-3.0 (Sample I.D.# : 1209065-28) Collected: 06-Sep-12 By N&M						
Lead	EPA 6010B	AI20710	1.0	11-Sep-12 (AF)	2.5 mg/kg	
DW-1 (Sample I.D.# : 1209065-29) Collected: 06-Sep-12 By N&M						
Lead	EPA 6010B	AI20713	0.02	07-Sep-12 (SJ)	0.02 mg/l	

Respectfully Submitted,

Pat Brueckner 9/17/2012
Laboratory Director

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 17-Sep-12 14:54
Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

Metals by EPA 6000/7000 Series Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AI20710 - EPA 3050B										
Blank (AI20710-BLK1)				Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	ND	1.0	mg/kg							
Blank (AI20710-BLK2)				Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	ND	1.0	mg/kg							
LCS (AI20710-BS1)				Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	25.0	1.0	mg/kg	25.0		100	80-120			
LCS (AI20710-BS2)				Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	26.2	1.0	mg/kg	25.0		105	80-120			
LCS Dup (AI20710-BSD1)				Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	24.8	1.0	mg/kg	25.0		99.3	80-120	0.757	20	
LCS Dup (AI20710-BSD2)				Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	26.0	1.0	mg/kg	25.0		104	80-120	0.429	20	
Duplicate (AI20710-DUP1)		Source: 1209065-01		Prepared: 07-Sep-12 Analyzed: 11-Sep-12						
Lead	3.84	1.0	mg/kg		3.19			18.6	20	
Duplicate (AI20710-DUP2)		Source: 1209065-22		Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	2.57	1.0	mg/kg		2.79			8.28	20	
Matrix Spike (AI20710-MS1)		Source: 1209065-01		Prepared: 07-Sep-12 Analyzed: 11-Sep-12						
Lead	127	1.0	mg/kg	125	3.19	98.8	75-125			
Matrix Spike (AI20710-MS2)		Source: 1209065-22		Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	106	1.0	mg/kg	125	2.79	82.6	75-125			

Respectfully Submitted,

Pat Brueckner 9/17/2012
Laboratory Director

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Attention: Mike Cushner
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Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

Metals by EPA 6000/7000 Series Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AI20710 - EPA 3050B										
Matrix Spike Dup (AI20710-MSD1)		Source: 1209065-01		Prepared: 07-Sep-12 Analyzed: 11-Sep-12						
Lead	127	1.0	mg/kg	125	3.19	99.2	75-125	0.385	20	
Matrix Spike Dup (AI20710-MSD2)		Source: 1209065-22		Prepared: 07-Sep-12 Analyzed: 10-Sep-12						
Lead	108	1.0	mg/kg	125	2.79	84.0	75-125	1.59	20	
Batch AI20713 - EPA 200 Series										
Blank (AI20713-BLK1)				Prepared & Analyzed: 07-Sep-12						
Lead	ND	0.02	mg/l							
LCS (AI20713-BS1)				Prepared & Analyzed: 07-Sep-12						
Lead	0.519	0.02	mg/l	0.500		104	80-120			
LCS Dup (AI20713-BSD1)				Prepared & Analyzed: 07-Sep-12						
Lead	0.509	0.02	mg/l	0.500		102	80-120	2.12	20	
Duplicate (AI20713-DUP1)		Source: 1209059-01		Prepared & Analyzed: 07-Sep-12						
Lead	ND	0.02	mg/l		ND				20	
Matrix Spike (AI20713-MS1)		Source: 1209059-01		Prepared & Analyzed: 07-Sep-12						
Lead	0.945	0.02	mg/l	1.00	ND	94.5	80-120			
Matrix Spike Dup (AI20713-MSD1)		Source: 1209059-01		Prepared & Analyzed: 07-Sep-12						
Lead	0.951	0.02	mg/l	1.00	ND	95.1	80-120	0.640	20	

Respectfully Submitted,

Pat Brueckner 9/17/2012
Laboratory Director

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Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 17-Sep-12 14:54
Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

STLC Metals by 6000/7000 Series Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AI21416 - TCLP Metals										
Blank (AI21416-BLK1)				Prepared & Analyzed: 14-Sep-12						
Lead	ND	0.02	mg/l							
LCS (AI21416-BS1)				Prepared & Analyzed: 14-Sep-12						
Lead	0.543	0.02	mg/l	0.500		109	80-120			
LCS Dup (AI21416-BSD1)				Prepared & Analyzed: 14-Sep-12						
Lead	0.548	0.02	mg/l	0.500		110	80-120	1.04	20	
Duplicate (AI21416-DUP1)		Source: 1209067-05		Prepared & Analyzed: 14-Sep-12						
Lead	3.75	0.20	mg/l		3.78			0.611	20	
Matrix Spike (AI21416-MS1)		Source: 1209067-05		Prepared & Analyzed: 14-Sep-12						
Lead	13.5	0.20	mg/l	10.0	3.78	97.3	80-120			
Matrix Spike Dup (AI21416-MSD1)		Source: 1209067-05		Prepared & Analyzed: 14-Sep-12						
Lead	13.4	0.20	mg/l	10.0	3.78	96.4	80-120	0.702	20	

Respectfully Submitted,

Pat Brueckner

Pat Brueckner 9/17/2012
Laboratory Director

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Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 17-Sep-12 14:54
Subject: Lead Soil Samples

Project/P.O.#: 208449012, Rte 73 , N.Beach/C.Mesa

General Inorganic Nonmetallic Chemistry by Standard Methods/EPA Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AI20720 - General Preparation										
Duplicate (AI20720-DUP1)		**Source: 1209065-06**		Prepared & Analyzed: 07-Sep-12						
pH	9.28	0.1	pH Units		9.29			0.108	15	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis

Respectfully Submitted,

Pat Brueckner

Pat Brueckner 9/17/2012
Laboratory Director

LABORATORY:	SITE: Route 73 between Post Mile 25.7 and Post Mile 28.0, Newport Beach and Costa Mesa, California	CONSULTANT:
Pat Chem Laboratories 11990 Discovery Court Moorpark, CA 93021 (805) 532-0012 / fax (805) 532-0016	EA 0H0341 Project Number 208449012	Ninyo & Moore 475 Goddard, Suite 200 Irvine, CA 92618 (949) 753-7070 / fax (949) 753-7071

Special Instructions:
Homogenize the samples
If total lead is <1,000 mg/kg, but >/= 50 mg/kg, run STLC WET test (citric acid extraction EPA Method 7000 series)
If STLC WET >/= 5 mg/l, run STLC-DI (DI extraction EPA Method 7000 series)
If total lead is >/=1,000 mg/kg or STLC WET >/=5 mg/l, run TCLP (EPA Method 7000 series for leachable lead)

1209065

Samplers Name: Patrick Cullip

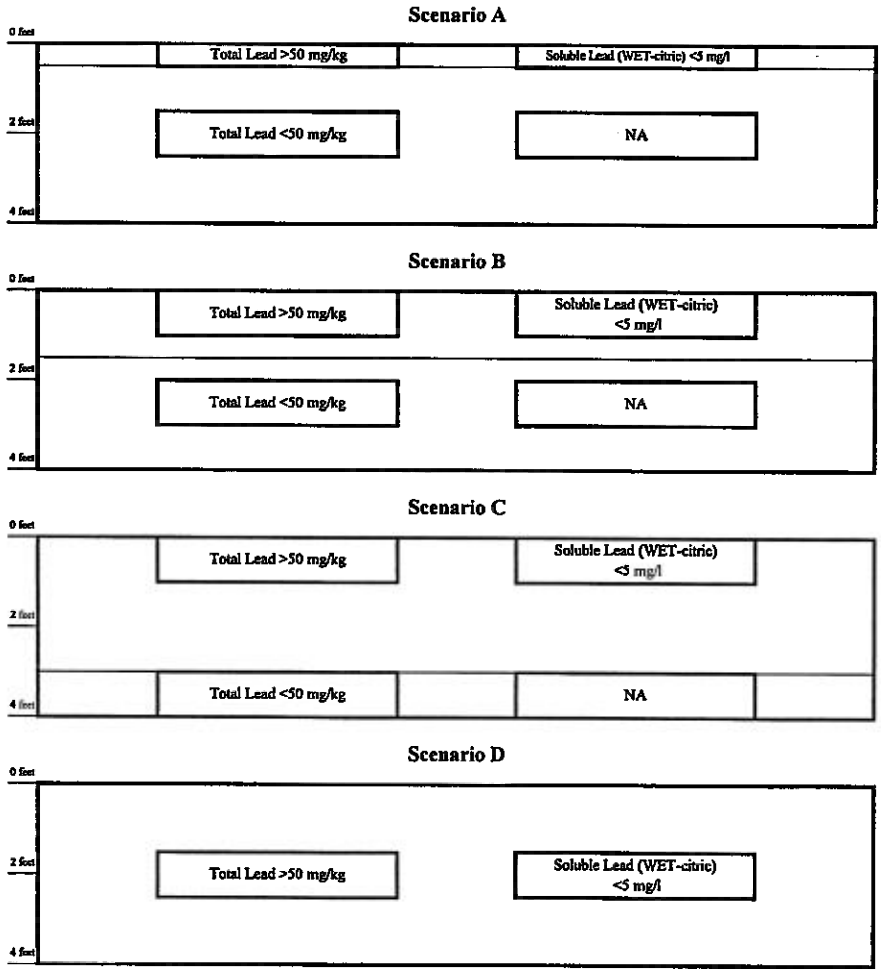
Relinquished by (name/date and time):	Received by (name/date and time):
Patrick Cullip 9/6/12 14:30	9/6/12 14:30
Relinquished by (name/date and time): 9/6/12 15:40	Received by (name/date and time): 9/6/12 1540
Relinquished by (name/date and time): 9/6/12 15:40	Received by (name/date and time): Heidi Leighton 9/6/12 1540
Relinquished by (name/date and time):	Received by (name/date and time):

Lab No.	Sample I. D.	Date	Time	Total Lead EPA Method 6010	pH EPA Method 9045	Sample Type	Turn-Around Time	Container Type	HOLD
1	B1-0.5	9/6/12	0752	X		Soil	Normal	Glass Jar	
2	B1-1.5		0756	X		Soil	Normal	Glass Jar	
3	B1-3.0		0800	X		Soil	Normal	Glass Jar	
4	B1-4.0		0804	X		Soil	Normal	Glass Jar	
5	B2-0.5		0817	X		Soil	Normal	Glass Jar	
6	B2-1.5		0819	X	X	Soil	Normal	Glass Jar	
7	B2-3.0		0823	X		Soil	Normal	Glass Jar	
8	B2-4.0		0826	X		Soil	Normal	Glass Jar	
9	B3-0.5		0840	X		Soil	Normal	Glass Jar	
10	B3-1.5		0844	X		Soil	Normal	Glass Jar	
11	B3-3.0		0850	X		Soil	Normal	Glass Jar	
	~~B11-0.5~~					Soil	Normal	Glass Jar	
12	B11-0.5		0914	X		Soil	Normal	Glass Jar	
13	B10-0.5		0916	X		Soil	Normal	Glass Jar	
14	B4-0.5		0933	X		Soil	Normal	Glass Jar	
15	B5-0.5		0940	X		Soil	Normal	Glass Jar	
16	B9-0.5		0947	X		Soil	Normal	Glass Jar	
17	B6-0.5		1014	X	X	Soil	Normal	Glass Jar	
18	B7-0.5		1048	X		Soil	Normal	Glass Jar	
19	B7-1.5		1052	X		Soil	Normal	Glass Jar	
20	B7-3.0		1058	X		Soil	Normal	Glass Jar	
21	B7-4.0		1102	X		Soil	Normal	Glass Jar	
22	B8-0.5		1112	X		Soil	Normal	Glass Jar	
23	B8-1.5		1119	X		Soil	Normal	Glass Jar	
24	B8-3.0		1126	X		Soil	Normal	Glass Jar	
25	B8-4.0		1132	X	X	Soil	Normal	Glass Jar	
26	B12-0.5		1144	X		Soil	Normal	Glass Jar	
27	B12-1.5		1148	X		Soil	Normal	Glass Jar	
28	B12-3.0	✓	1154	X		Soil	Normal	Glass Jar	
	~~Empty~~					Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
29	DW-1	9/6/12	1245	X		water	Normal	Plastic	

APPENDIX C

BLOCK DIAGRAMS

FIGURE C1 – BLOCK DIAGRAM FOR POTENTIAL CALTRANS RIGHT-OF-WAY RE-USE - SITE



– Non-hazardous soil with respect to total and soluble lead

– Reuse Condition 1 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and cover with at least 1 foot of non-hazardous soil]

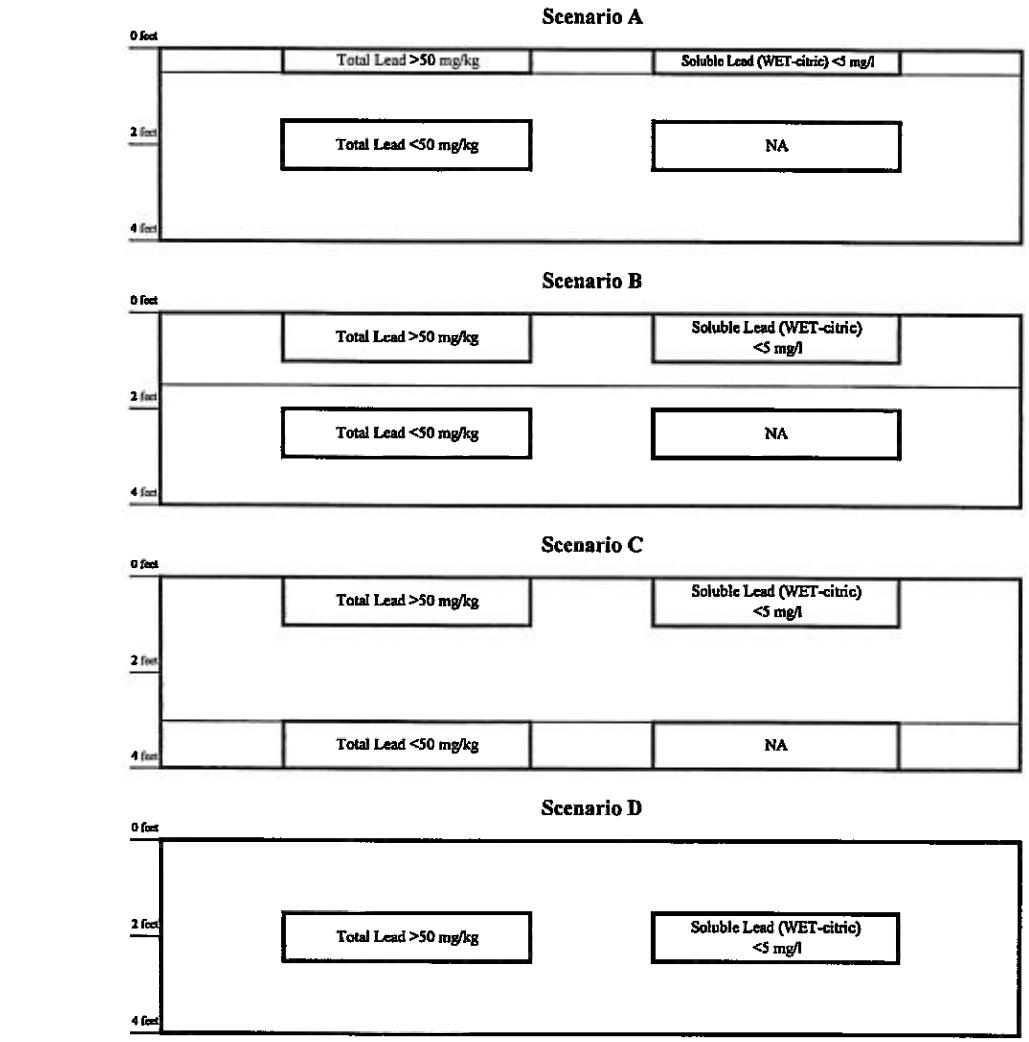
– Reuse Condition 2 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and protect from infiltration with a pavement structure which will be maintained by Caltrans]

– Hazardous. Class 1 disposal site, all other Title 22 CCR requirements apply

– Hazardous. Class 1 disposal site RCRA based on the layer having a TCLP value ≥ 5 mg/l

CCR – California Code of Regulations
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
NA – not applicable
RCRA – Resource, Conservation, and Recovery Act
TCLP – Toxicity Characteristic Leaching Procedure
UCL – upper confidence limit
WET-citric acid – soluble lead using the Waste Extraction Test with citric acid
WET-DI – soluble lead using the Waste Extraction Test with deionized water

FIGURE C2 – BLOCK DIAGRAM FOR POTENTIAL CALTRANS OFF SITE DISPOSAL - SITE



– Non-hazardous soil with respect to total and soluble lead

– Reuse Condition 1 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and cover with at least 1 foot of non-hazardous soil]

– Reuse Condition 2 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and protect from infiltration with a pavement structure which will be maintained by Caltrans]

– Hazardous. Class 1 disposal site, all other Title 22 CCR requirements apply

– Hazardous. Class 1 disposal site RCRA based on the layer having a TCLP value ≥ 5 mg/l

CCR – California Code of Regulations
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
NA – not applicable
RCRA – Resource, Conservation, and Recovery Act
TCLP – Toxicity Characteristic Leaching Procedure
UCL – upper confidence limit
WET-citric acid – soluble lead using the Waste Extraction Test with citric acid
WET-DI – soluble lead using the Waste Extraction Test with deionized water