LIMITED AERIALLY-DEPOSITED LEAD ASSESSMENT STATE ROUTE 163 AND CLAIREMONT MESA BOULEVARD INTERCHANGE SAN DIEGO, CALIFORNIA

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October 21, 2002
Project No. 104446002

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Geotechnical and Environmental Sciences Consultants

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Mr. Michael Page
Mooney & Associates
9903 Business Park Avenue, Suite B
San Diego, California 92131-1120

Subject: Limited Aerially-Deposited Lead Assessment
State Route 163 and Clairemont Mesa Boulevard Interchange
San Diego, California

Dear Mr. Page:

Ninyo & Moore is pleased to submit this report for the evaluation of aerially-deposited lead in soil at the above-referenced site. This report was prepared in general accordance with our proposal P-5129, dated May 23, 2001, and your authorization to proceed.

We appreciate the opportunity to be of continued service to Mooney & Associates on this project. If you have any questions regarding this report, please contact Travis Stravasnik at 858/576-1000.

Sincerely,
NINYO & MOORE

Travis L. Stravasnik
Project Environmental Scientist

Sreekumar Gopinath, P.E.
Senior Engineer

TLS/SKG/kmf

Distribution: (2) Addressee
(5) Mr. David Sorenson, Kimley-Horn and Associates, Inc., 517 Fourth Avenue, Suite 301, San Diego, California, 92101

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1. INTRODUCTION

Ninyo & Moore has performed a limited assessment of subsurface soil at the State Route 163 and Clairemont Mesa Boulevard interchange, in the city and county of San Diego, California (Figure 1), in general accordance with our proposal P-5129, dated May 23, 2001. The purpose of this assessment was to evaluate aerially-deposited lead in near-surface soil along the proposed eastbound and westbound shoulders, and the on- and off-ramps. We understand that the results of this assessment will be used to evaluate the potential reuse and/or disposal of soils from the site during construction activities.

2. SCOPE OF WORK

Based upon the activities proposed, our scope of work included the following tasks:

- preparation of a site-specific health and safety plan (HSP);
- coordination with Caltrans Environmental Engineering personnel to select soil sample locations (locations were selected to coincide with the intersection of the proposed improvements and the existing roadway);
- acquisition of an Encroachment Permit from Caltrans for the soil sampling activities in the highway right of way;
- collection of soil samples using a 0.1-meter diameter hand auger at depths of 0.15, 0.30, and 0.60 meters below ground surface (bgs), or refusal;
- analyses of soil samples for total lead using United States Environmental Protection Agency (EPA) test method 6010B [soil samples that contained total lead greater than 50 milligrams per kilogram (mg/kg) were additionally tested for soluble lead using the waste extraction test with citric acid as the extractant (WET) using EPA test method 6010B. Twenty percent of the soil samples were randomly selected to be analyzed for soluble lead using the waste extraction test with de-ionized water as the extractant (DI-WET) using EPA test method 6010B];
- statistical analysis of lead results including grouping of the data into location and depth sets (as applicable); calculation of confidence intervals for the 90 and 95 upper confidence levels (UCLs); and correlation of total and soluble lead; and
- preparation of a report presenting our methodology, findings, and conclusions.

3. SUBSURFACE SITE ASSESSMENT ACTIVITIES

Ninyo & Moore conducted drilling and sampling activities in general accordance with our May 23, 2001 proposal. The following sections describe the subsurface site assessment activities.

3.1. Site Safety

Ninyo & Moore's field activities were performed in accordance with the site-specific HSP, which outlines specific safety procedures and equipment that were used during this project. The HSP was on-site during all field activities, and field personnel working on this project reviewed and signed it. A copy of the HSP is maintained in Ninyo & Moore's files.

3.2. Site Utility Clearance

Because soil borings were proposed to be advanced to a maximum depth of 0.60 meters bgs, and since hand auger drilling was the proposed method of boring advancement, utility conflicts were not anticipated. Therefore, utility notifications were not required.

3.3. Permits and Notifications

Because soil sampling activities were performed within the Caltrans right-of-way, a Standard Encroachment Permit Application was submitted to Caltrans. A project-specific Water Pollution Control Plan and a description of the proposed traffic control procedures were included with the application. In accordance with the Encroachment Permit 11-02-6SV0399, the Caltrans Inspector was notified of the field schedule prior to initiating work.

3.4. Soil Sampling Activities

On August 5 and 6, 2002, Ninyo & Moore personnel advanced 35 vertical soil borings (NMB1 through NMB35), using hand augers, to depths of up to 0.60 meters bgs. Soil samples were collected from each boring at depths of approximately 0.15, 0.30, and 0.60 meters bgs, or refusal. It should be noted that at some locations, adverse drilling conditions, including hard-packed road shoulders and abundant cobbles, were encountered, which prohibited the collection of soil samples from the proposed depths. Soil sample containers

consisted of glass jars with Teflon-lined, screw-type lids, which were sealed, labeled with pertinent information, stored in a chilled ice chest, and delivered to Sierra Analytical Laboratories in Laguna Hills, California, for analytical testing. The boring locations are shown on Figure 2.

4. SOIL HANDLING CRITERIA

Off-site disposal and on-site reuse are the two options for the management of soil generated during construction activities. Title 22 of the California Code of Regulations (CCR) establishes a total threshold limit concentration (TTLC) for lead at 1,000 mg/kg. For soluble lead, the soluble threshold limit concentration (STLC) has been established at 5 milligrams per liter (mg/ℓ) when analyzed by the WET. Soil that exceeds either of these criteria is considered a Title 22 hazardous waste. In addition, the California Health and Safety Code, section 25157.8, prohibits the land disposal of any waste with a total concentration of lead greater than 350 mg/kg.

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) Variance No. 00-H-VAR-06, dated September 22, 2000, provides the following criteria to Caltrans for reuse/disposal of lead-contaminated soil:

- Soil with a total lead concentration less than 1,496 mg/kg, and soluble lead concentration less than 500 μg/ℓ when analyzed by the DI-WET, can be reused on site provided that the soil is placed a minimum of 5 feet above the highest water table elevation and covered with at least 1 foot of non-hazardous soil.

- Soil with a total lead concentration less than 1,496 mg/kg, and more than 500 μg/ℓ but less than 50 mg/ℓ when analyzed by the DI-WET, can be reused on site provided that the soil is placed a minimum of 5 feet above the highest water table elevation and protected from infiltration by a pavement structure that will be maintained by Caltrans.

- Soil with a total lead concentration greater than 1,496 mg/kg, or a soluble lead concentration greater than 50 mg/ℓ when analyzed by the DI-WET, cannot be reused on site and should be disposed of in accordance with applicable state and federal laws.

It should be noted that, for on-site reuse, Caltrans typically uses the 90% upper confidence level ($UCL_{.90}$) to estimate the mean concentration of an environmental contaminant in soil. For off-site

disposal, Caltrans typically uses the 95% upper confidence level ($UCL_{.95}$) to estimate the mean concentration of an environmental contaminant in soil.

5. ANALYTICAL TESTING AND DISCUSSION

The following sections provide a summary of the lead analytical testing and a discussion of our findings.

5.1. Total Lead

Each of the 73 samples collected for this study was analyzed for total lead by EPA test method 6010B. None of the samples exceeded the Title 22 TTLC (1,000 mg/kg), or the Caltrans threshold for reuse (1,496 mg/kg).

To characterize the soil sample analytical results, total lead concentrations were sorted on a histogram. The histogram indicated that the data set did not approximate a normal distribution. The data were then transformed using the natural logarithm [$\ln(x)$], and the arcsine function, and plotted on histograms. A review of the three histograms indicated that the data better approximated a log normal distribution relative to the others. In addition, an exercise of the W test indicated that the data better approximated a log normal distribution. Therefore, statistical parameters (e.g., mean, standard deviation, and 90% and 95% upper confidence levels [$UCL_{.90}$ and $UCL_{.95}$]) were estimated using the natural logarithm data set. Statistical worksheets are presented in Appendix A. Laboratory analytical reports and chain-of-custody records are presented as Appendix B.

5.2. Soluble Lead - Citric Acid Extractant

Thirty soil samples contained concentrations of total lead that exceeded 50 mg/kg (10 times the Title 22 STLC of 5 mg/ℓ), and were subsequently tested by the WET. Eighteen of these samples had soluble lead concentrations that were greater than the Title 22 STLC. The 30 soluble lead concentrations were plotted against their respective total lead concentrations on a regression chart. A linear regression model was developed to estimate a soluble lead con-

centration from a corresponding total lead concentration. Calculated concentrations that were less than the detection limit were assigned a value equal to the detection limit. The estimated values of soluble lead were then transformed using the natural logarithm, and the mean, standard deviation, and 90% and 95% upper confidence levels ($UCL_{.90}$ and $UCL_{.95}$) were calculated using the natural logarithm data set.

5.3. Soluble Lead - De-Ionized Water Extractant

Sixteen of the 73 samples (approximately 20%) were randomly selected to be tested for soluble lead by the DI-WET. Six of 16 soil samples analyzed by the DI-WET contained lead at concentrations above the detection limit. The six soluble lead concentrations were plotted against their respective total lead concentrations on a regression chart. A linear regression model was developed to estimate a soluble lead concentration from a corresponding total lead concentration. Calculated concentrations that were less than the detection limit were assigned a value equal to the detection limit. The estimated values of soluble lead were then transformed using the natural logarithm, and the mean, standard deviation, and 90% and 95% upper confidence levels ($UCL_{.90}$ and $UCL_{.95}$) were calculated using the natural logarithm data set.

6. CONCLUSIONS

Based on the criteria presented in Section 4, we provide the following conclusions:

- ***On-Site Reuse*** The $UCL_{.90}$ for total lead was estimated as being 156.96 mg/kg, which does not exceed the action level of 1,496 mg/kg. The $UCL_{.90}$ for soluble lead by the DI-WET was calculated as being 460 μg/ℓ which does not exceed the action level of 500 μg/ℓ. If reused as fill material during a Caltrans project, soil should be placed under 1 foot or more of non-hazardous soil, and 5 feet or more above the highest water table.

- ***Off-Site Disposal*** The $UCL_{.95}$ for total lead was estimated as being 175.15 mg/kg, which does not exceed the land disposal limit concentration of 350 mg/kg. However, the $UCL_{.95}$ for soluble lead analyzed by the WET was estimated as being 8.13 mg/ℓ, which exceeds the STLC of 5 mg/ℓ. If exported, this material should be considered California-hazardous waste and should be handled, managed, transported, and disposed of in accordance with CCR Title 22. It should be noted that by considering different depths and or quadrants of the site as separate data sets, the resulting mean concentrations did not favorably change off-site disposal options.

- ***Handling*** 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 National Institute of Occupational Safety and Health (NIOSH) has established the permissible exposure limit (PEL) for lead at 0.05 milligrams per meters cubed (mg/m^3) in air based on an 8-hour time-weighted average (TWA); the Immediately Dangerous to Life and Health (IDLH) exposure limit is 100 mg/m^3. 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 Health and Safety Plan 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 Code of Federal Regulations (CFR) 1910.120 and 8 CCR 1532.1 The plan developed by the CIH should include a hazard analysis, describe dust control measures, air monitoring, signage, work practices, emergency response plans, personal protective equipment, decontamination, and documentation.

- Adverse drilling conditions prohibited the collection of soil samples from the proposed 0.60 meter depth at most locations. Therefore, the results of this assessment generally apply to depths of 0.30 meters or less. However, lead concentrations are anticipated to decrease with depth. If disposal of soil from depths greater than 0.30 meters is desired, it is recommended to perform additional assessment from the proposed excavation depths during grading, to evaluate the applicability of the results of this assessment to material at those depths.

7. LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Variations in site conditions may exist and conditions not observed or described in this report may be encountered during subsequent activities. Please also note that this study did not include an evaluation of geotechnical conditions or potential geologic hazards.

Ninyo & Moore's opinions and recommendations regarding environmental conditions, as presented in this report, are based on limited subsurface assessment and chemical analysis. Further assessment of potential adverse environmental impacts from past on-site and/or nearby use of hazardous

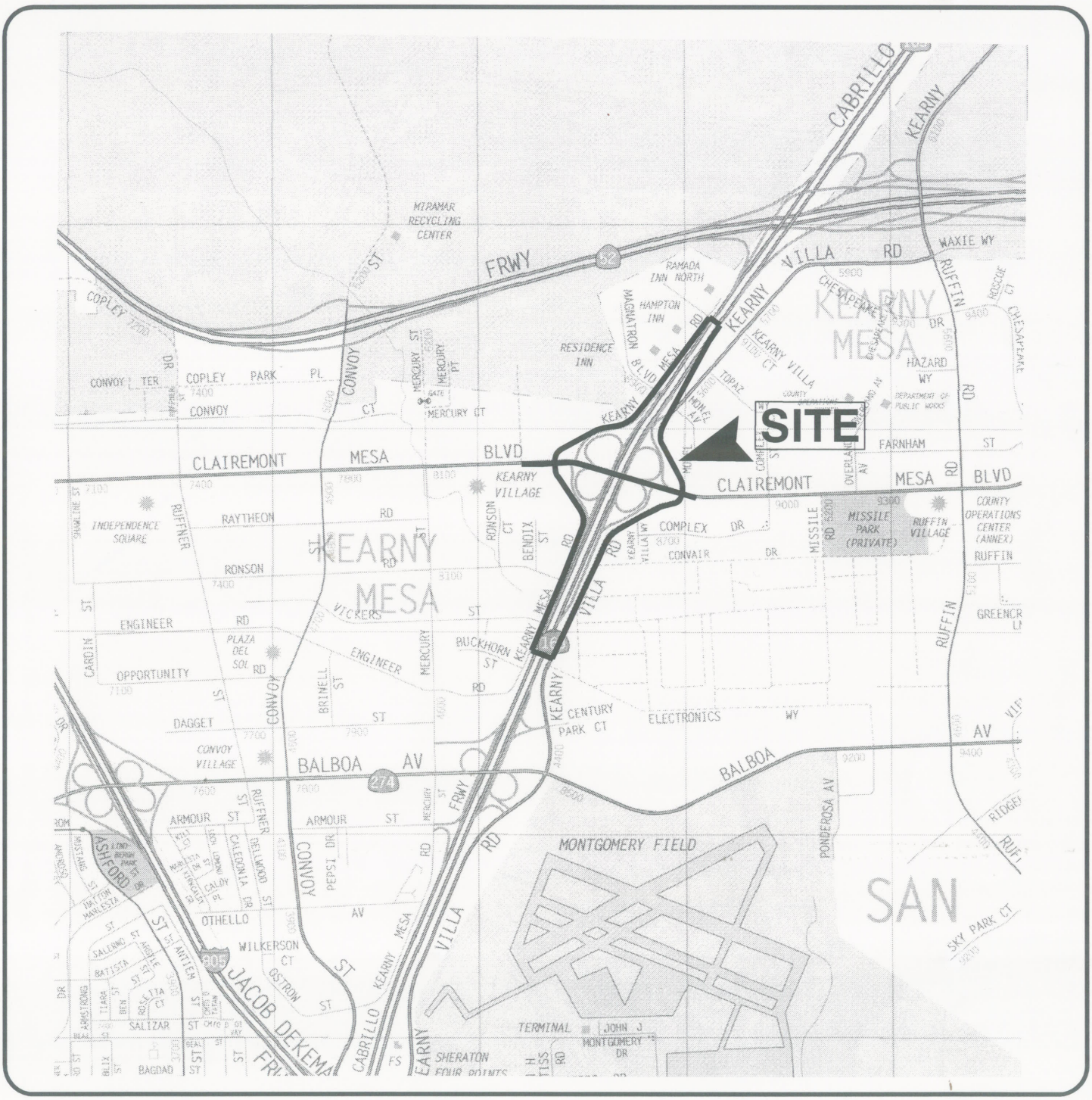
materials may be accomplished by a more comprehensive assessment. The samples collected and used for testing, and the observations made, are believed to be representative of the area(s) evaluated; however, conditions can vary significantly between sampling locations. Variations in soil and/or groundwater conditions will exist beyond the points explored in this evaluation.

The environmental interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and concentration of specific chemical or physical constituents in samples collected from the subject site. The testing and analyses have been conducted by an independent laboratory which is certified by the State of California to conduct such tests. Ninyo & Moore has no involvement in, or control over, such testing and analysis. Ninyo & Moore, therefore, disclaims responsibility for any inaccuracy in such laboratory results.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

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 requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.



REFERENCE: 2000 THOMAS GUIDE FOR SAN DIEGO COUNTY, STREET GUIDE AND DIRECTORY

NORTH

0 580 1160

Approximate Scale in Meters

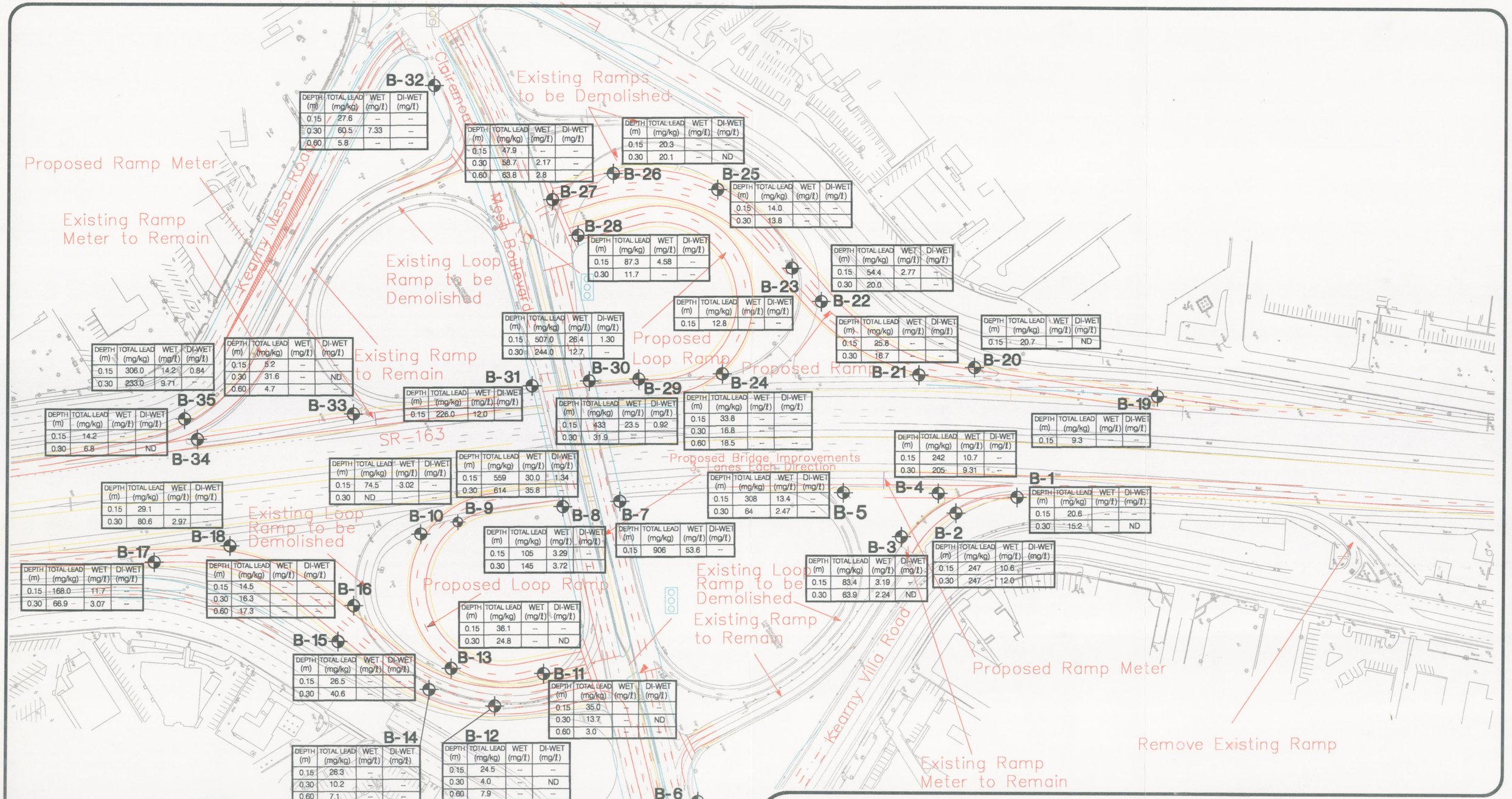
Ninyo & Moore

SITE LOCATION MAP

STATE ROUTE 163 AND
CLAIREMONT MESA BOULEVARD
SAN DIEGO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104446002	10/02	1

104446002slm



LEGEND

B-35	Approximate location of hand auger boring
ND	Not detected
--	Not analyzed
TOTAL LEAD	Analyzed by EPA test method 6010B
WET	Soluble lead concentration by the waste extraction test using citric acid as the extracatant
DI-WET	Soluble lead concentration by the waste extraction test using de-ionized water as the extracatant

Scale: 1 : 2000
Metric

4446002res2

Ninyo & Moore

BORING LOCATION MAP AND SOIL SAMPLE ANALYTICAL RESULTS

STATE ROUTE 163 AND
CLAIREMONT MESA BOULEVARD
SAN DIEGO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104446002	10/02	2

ATTACHMENT A

SUMMARY TABLE AND STATISTICAL CALCULATIONS

Table 1 - Summary of Analytical Results for Aerially Deposited Lead

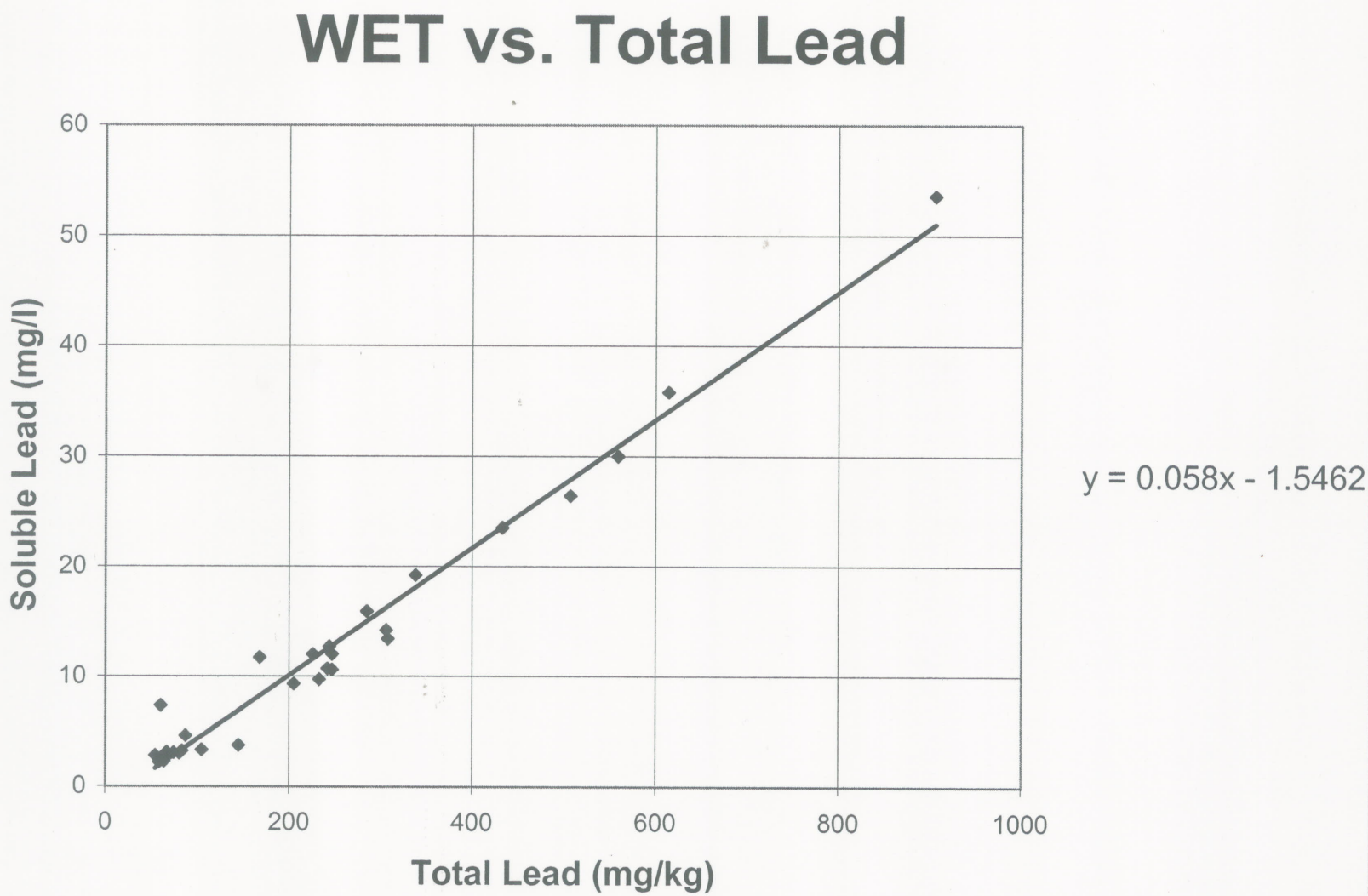
Sample ID	Depth (m)	Location	Total Lead* (mg/kg)	Soluble Lead by WET** (mg/ℓ)	Soluble Lead by DI-WET*** (mg/ℓ)
NMB1-0.15	0.15	NE-NR	20.6	--	--
NMB1-0.3	0.30	NE-NR	15.2	--	ND
NMB2-0.15	0.15	NE-NR	247.0	10.60	--
NMB2-0.3	0.30	NE-NR	247.0	12.00	--
NMB3-0.15	0.15	NE-NR	83.4	3.19	--
NMB3-0.3	0.30	NE-NR	63.9	2.24	ND
NMB4-0.15	0.15	NE-NR	242.0	10.70	--
NMB4-0.3	0.30	NE-NR	205.0	9.31	--
NMB5-0.15	0.15	NE-FR	308.0	13.40	--
NMB5-0.3	0.30	NE-FR	64.0	2.47	--
NMB6-0.15	0.15	NE-NR	338.0	19.20	0.79
NMB6-0.3	0.30	NE-NR	285.0	15.90	0.79
NMB7-0.15	0.15	NE-Bridge	906.0	53.60	--
NMB8-0.15	0.15	SE-Bridge	105.0	3.29	--
NMB8-0.3	0.30	SE-Bridge	145.0	3.72	--
NMB9-0.15	0.15	SE-NR	559.0	30.00	1.34
NMB9-0.3	0.30	SE-NR	614.0	35.80	--
NMB10-0.15	0.15	SE-NR	74.5	3.02	--
NMB10-0.3	0.30	SE-NR	ND	--	--
NMB11-0.15	0.15	SE-NR	35.0	--	--
NMB11-0.3	0.30	SE-NR	13.7	--	ND
NMB11-0.6	0.60	SE-NR	3.0	--	--
NMB12-0.15	0.15	SE-NR	24.5	--	--
NMB12-0.3	0.30	SE-FR	4.0	--	ND
NMB12-0.6	0.60	SE-FR	7.9	--	--
NMB13-0.15	0.15	SE-NR	36.1	--	--
NMB13-0.3	0.30	SE-NR	24.8	--	ND
NMB14-0.15	0.15	SE-FR	26.3	--	--
NMB14-0.3	0.30	SE-FR	10.2	--	--
NMB14-0.6	0.60	SE-FR	7.1	--	--
NMB15-0.15	0.15	SE-FR	26.5	--	--
NMB15-0.3	0.30	SE-FR	40.6	--	--
NMB16-0.15	0.15	SE-NR	14.5	--	--
NMB16-0.3	0.30	SE-NR	16.3	--	--
NMB16-0.6	0.60	SE-NR	17.3	--	--
NMB17-0.15	0.15	SE-FR	168.0	11.70	--
NMB17-0.3	0.30	SE-FR	66.9	3.07	--
NMB18-0.15	0.15	SE-FR	29.1	--	--
NMB18-0.3	0.30	SE-FR	80.6	2.97	--
NMB19-0.15	0.15	NW-FR	9.3	--	--
NMB20-0.15	0.15	NW-FR	20.7	--	ND
NMB21-0.15	0.15	NW-FR	25.8	--	--
NMB21-0.3	0.30	NW-FR	16.7	--	--
NMB22-0.15	0.15	NW-NR	54.4	2.77	--
NMB22-0.3	0.30	NW-NR	20.0	--	--
NMB23-0.15	0.15	NW-NR	12.8	--	--
NMB24-0.15	0.15	NW-NR	33.8	--	--
NMB24-0.3	0.30	NW-NR	16.8	--	--

Table 1 - Summary of Analytical Results for Aerially Deposited Lead

Sample ID	Depth (m)	Location	Total Lead* (mg/kg)	Soluble Lead by WET** (mg/ℓ)	Soluble Lead by DI-WET*** (mg/ℓ)
NMB24-0.6	0.60	NW-NR	18.5	--	--
NMB25-0.15	0.15	NW-NR	14.0	--	--
NMB25-0.3	0.30	NW-NR	13.8	--	--
NMB26-0.15	0.15	NW-NR	20.3	--	--
NMB26-0.3	0.30	NW-NR	20.1	--	ND
NMB27-0.15	0.15	NW-NR	47.9	--	--
NMB27-0.3	0.30	NW-NR	58.7	2.17	--
NMB27-0.6	0.60	NW-NR	63.8	2.80	--
NMB28-0.15	0.15	NW-NR	87.3	4.58	--
NMB28-0.3	0.30	NW-NR	11.7	--	--
NMB29-0.15	0.15	NW-NR	433.0	23.50	0.92
NMB29-0.3	0.30	NW-NR	31.9	--	--
NMB30-0.15	0.15	NW-Bridge	507.0	26.40	1.30
NMB30-0.3	0.30	NW-Bridge	244.0	12.70	--
NMB31-0.15	0.15	SW-Bridge	226.0	12.00	--
NMB32-0.15	0.15	SW-NR	27.6	--	--
NMB32-0.3	0.30	SW-NR	60.5	7.33	--
NMB32-0.6	0.60	SW-NR	5.8	--	--
NMB33-0.15	0.15	SW-FR	5.2	--	--
NMB33-0.3	0.30	SW-FR	31.6	--	ND
NMB33-0.6	0.60	SW-FR	4.7	--	--
NMB34-0.15	0.15	SW-NR	14.2	--	--
NMB34-0.3	0.30	SW-NR	6.8	--	ND
NMB35-0.15	0.15	SW-NR	306.0	14.20	0.84
NMB35-0.3	0.30	SW-NR	233.0	9.71	--

Notes:

ND = Not detected above the laboratory detection limit.
NR = Onramp
FR = Offramp
*Total lead analyzed by USEPA test method 6010B.
**Soluble lead analyzed by the Waste Extraction Test using citric acid as the extractant.
***Soluble lead analyzed by the Waste Extraction Test using deionized water as the extractant.

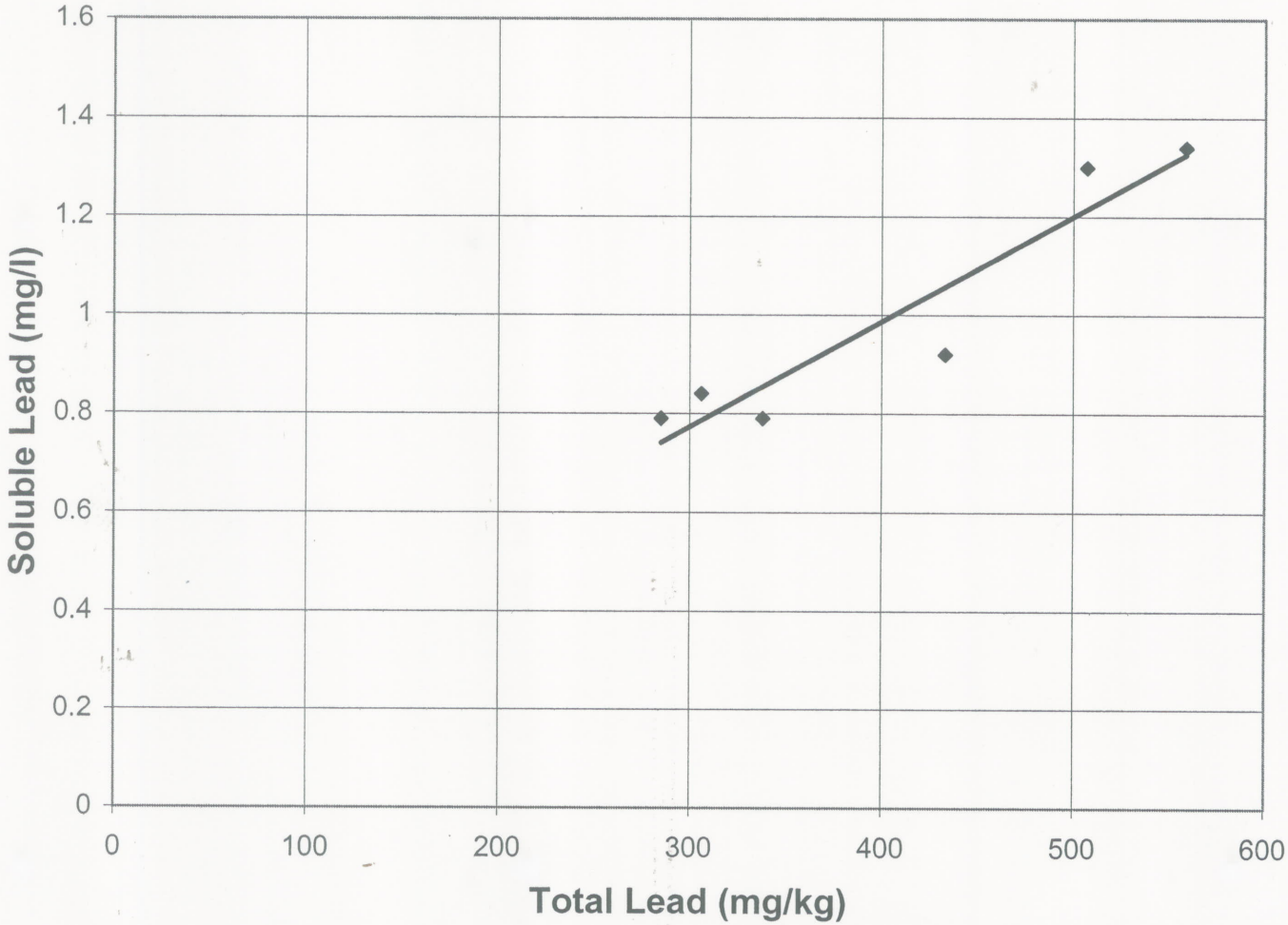

WET vs. Total Lead
Soluble Lead (mg/l)
Total Lead (mg/kg)
0
10
20
30
40
50
60
0
200
400
600
800
1000
y = 0.058x - 1.5462

Soluble Lead (by the WET) Statistical Worksheet

Sample ID	Depth (m)	Location	WET (mg/l)	i	x_i	$y_i = \ln(x_i)$	$(y_i-\acute{y})^2$
NMB1	0.15	NE-NR	0.3	1	0.3	-1.20	1.91
NMB1	0.30	NE-NR	0.3	2	0.3	-1.20	1.91
NMB2	0.15	NE-NR	12.8	3	0.3	-1.20	1.91
NMB2	0.30	NE-NR	12.8	4	0.3	-1.20	1.91
NMB3	0.15	NE-NR	3.3	5	0.3	-1.20	1.91
NMB3	0.30	NE-NR	2.2	6	0.3	-1.20	1.91
NMB4	0.15	NE-NR	12.5	7	0.3	-1.20	1.91
NMB4	0.30	NE-NR	10.3	8	0.3	-1.20	1.91
NMB5	0.15	NE-FR	16.3	9	0.3	-1.20	1.91
NMB5	0.30	NE-FR	2.2	10	0.3	-1.20	1.91
NMB6	0.15	NE-NR	18.1	11	0.3	-1.20	1.91
NMB6	0.30	NE-NR	15.0	12	0.3	-1.20	1.91
NMB7	0.15	NE-Bridge	51.0	13	0.3	-1.20	1.91
NMB8	0.15	SE-Bridge	4.5	14	0.3	-1.20	1.91
NMB8	0.30	SE-Bridge	6.9	15	0.3	-1.20	1.91
NMB9	0.15	SE-NR	30.9	16	0.3	-1.20	1.91
NMB9	0.30	SE-NR	34.1	17	0.3	-1.20	1.91
NMB10	0.15	SE-NR	2.8	18	0.3	-1.20	1.91
NMB10	0.30	SE-NR	0.3	19	0.3	-1.20	1.91
NMB11	0.15	SE-NR	0.5	20	0.3	-1.20	1.91
NMB11	0.30	SE-NR	0.3	21	0.3	-1.20	1.91
NMB11	0.60	SE-NR	0.3	22	0.3	-1.20	1.91
NMB12	0.15	SE-NR	0.3	23	0.3	-1.20	1.91
NMB12	0.30	SE-FR	0.3	24	0.3	-1.20	1.91
NMB12	0.60	SE-FR	0.3	25	0.3	-1.20	1.91
NMB13	0.15	SE-NR	0.5	26	0.3	-1.20	1.91
NMB13	0.30	SE-NR	0.3	27	0.3	-1.20	1.91
NMB14	0.15	SE-FR	0.3	28	0.3	-1.20	1.91
NMB14	0.30	SE-FR	0.3	29	0.3	-1.20	1.91
NMB14	0.60	SE-FR	0.3	30	0.3	-1.20	1.91
NMB15	0.15	SE-FR	0.3	31	0.3	-1.20	1.91
NMB15	0.30	SE-FR	0.8	32	0.3	-1.20	1.91
NMB16	0.15	SE-NR	0.3	33	0.3	-1.20	1.91
NMB16	0.30	SE-NR	0.3	34	0.3	-1.20	1.91
NMB16	0.60	SE-NR	0.3	35	0.3	-1.20	1.91
NMB17	0.15	SE-FR	8.2	36	0.3	-1.20	1.91
NMB17	0.30	SE-FR	2.3	37	0.3	-1.20	1.91
NMB18	0.15	SE-FR	0.3	38	0.3	-1.19	1.88
NMB18	0.30	SE-FR	3.1	39	0.4	-0.88	1.13
NMB19	0.15	NW-FR	0.3	40	0.5	-0.73	0.82
NMB20	0.15	NW-FR	0.3	41	0.5	-0.60	0.61
NMB21	0.15	NW-FR	0.3	42	0.8	-0.21	0.15
NMB21	0.30	NW-FR	0.3	43	1.2	0.21	0.00
NMB22	0.15	NW-NR	1.6	44	1.6	0.48	0.09
NMB22	0.30	NW-NR	0.3	45	1.9	0.62	0.19
NMB23	0.15	NW-NR	0.3	46	2.0	0.67	0.24
NMB24	0.15	NW-NR	0.4	47	2.2	0.77	0.35
NMB24	0.30	NW-NR	0.3	48	2.2	0.77	0.35
NMB24	0.60	NW-NR	0.3	49	2.2	0.77	0.35
NMB25	0.15	NW-NR	0.3	50	2.3	0.85	0.45
NMB25	0.30	NW-NR	0.3	51	2.8	1.02	0.71
NMB26	0.15	NW-NR	0.3	52	3.1	1.14	0.92
NMB26	0.30	NW-NR	0.3	53	3.3	1.19	1.02
NMB27	0.15	NW-NR	1.2	54	3.5	1.26	1.16
NMB27	0.30	NW-NR	1.9	55	4.5	1.51	1.78
NMB27	0.60	NW-NR	2.2	56	6.9	1.93	3.05
NMB28	0.15	NW-NR	3.5	57	8.2	2.10	3.70
NMB28	0.30	NW-NR	0.3	58	10.3	2.34	4.65
NMB29	0.15	NW-NR	23.6	59	11.6	2.45	5.14
NMB29	0.30	NW-NR	0.3	60	12.0	2.48	5.30
NMB30	0.15	NW-Bridge	27.9	61	12.5	2.52	5.50
NMB30	0.30	NW-Bridge	12.6	62	12.6	2.53	5.54
NMB31	0.15	SW-Bridge	11.6	63	12.8	2.55	5.61
NMB32	0.15	SW-NR	0.3	64	12.8	2.55	5.61
NMB32	0.30	SW-NR	2.0	65	15.0	2.71	6.39
NMB32	0.60	SW-NR	0.3	66	16.2	2.79	6.79
NMB33	0.15	SW-FR	0.3	67	16.3	2.79	6.83
NMB33	0.30	SW-FR	0.3	68	18.1	2.89	7.37
NMB33	0.60	SW-FR	0.3	69	23.6	3.16	8.88
NMB34	0.15	SW-NR	0.3	70	27.9	3.33	9.91
NMB34	0.30	SW-NR	0.3	71	30.9	3.43	10.57
NMB35	0.15	SW-NR	16.2	72	34.1	3.53	11.21
NMB35	0.30	SW-NR	12.0	73	51.0	3.93	14.08

Count (n) =	73
Mean ($\acute{y}$) =	0.18
Variance (s_y^2) =	2.91
Standard Deviation (s_y) =	1.70
$H_{.90}$ for one sided =	2.3067
$H_{.95}$ for one sided =	3.0553
$UCL_{.90}$ =	**8.13**
$UCL_{.95}$ =	**9.45**

DI-WET vs. Total Lead



$y = 0.0021x + 0.1324$

Soluble Lead (by the DI-WET) Statistical Worksheet

Sample ID	Depth (m)	Location	DI WET (mg/l)
NMB1	0.15	NE-NR	0.300
NMB1	0.30	NE-NR	0.300
NMB2	0.15	NE-NR	0.651
NMB2	0.30	NE-NR	0.651
NMB3	0.15	NE-NR	0.308
NMB3	0.30	NE-NR	0.300
NMB4	0.15	NE-NR	0.641
NMB4	0.30	NE-NR	0.563
NMB5	0.15	NE-FR	0.779
NMB5	0.30	NE-FR	0.300
NMB6	0.15	NE-NR	0.842
NMB6	0.30	NE-NR	0.731
NMB7	0.15	NE-Bridge	2.035
NMB8	0.15	SE-Bridge	0.353
NMB8	0.30	SE-Bridge	0.437
NMB9	0.15	SE-NR	1.306
NMB9	0.30	SE-NR	1.422
NMB10	0.15	SE-NR	0.300
NMB10	0.30	SE-NR	0.300
NMB11	0.15	SE-NR	0.300
NMB11	0.30	SE-NR	0.300
NMB11	0.60	SE-NR	0.300
NMB12	0.15	SE-NR	0.300
NMB12	0.30	SE-FR	0.300
NMB12	0.60	SE-FR	0.300
NMB13	0.15	SE-NR	0.300
NMB13	0.30	SE-NR	0.300
NMB14	0.15	SE-FR	0.300
NMB14	0.30	SE-FR	0.300
NMB14	0.60	SE-FR	0.300
NMB15	0.15	SE-FR	0.300
NMB15	0.30	SE-FR	0.300
NMB16	0.15	SE-NR	0.300
NMB16	0.30	SE-NR	0.300
NMB16	0.60	SE-NR	0.300
NMB17	0.15	SE-FR	0.485
NMB17	0.30	SE-FR	0.300
NMB18	0.15	SE-FR	0.300
NMB18	0.30	SE-FR	0.302
NMB19	0.15	NW-FR	0.300
NMB20	0.15	NW-FR	0.300
NMB21	0.15	NW-FR	0.300
NMB21	0.30	NW-FR	0.300
NMB22	0.15	NW-NR	0.300
NMB22	0.30	NW-NR	0.300
NMB23	0.15	NW-NR	0.300
NMB24	0.15	NW-NR	0.300
NMB24	0.30	NW-NR	0.300
NMB24	0.60	NW-NR	0.300
NMB25	0.15	NW-NR	0.300
NMB25	0.30	NW-NR	0.300
NMB26	0.15	NW-NR	0.300
NMB26	0.30	NW-NR	0.300
NMB27	0.15	NW-NR	0.300
NMB27	0.30	NW-NR	0.300
NMB27	0.60	NW-NR	0.300
NMB28	0.15	NW-NR	0.316
NMB28	0.30	NW-NR	0.300
NMB29	0.15	NW-NR	1.042
NMB29	0.30	NW-NR	0.300
NMB30	0.15	NW-Bridge	1.197
NMB30	0.30	NW-Bridge	0.645
NMB31	0.15	SW-Bridge	0.607
NMB32	0.15	SW-NR	0.300
NMB32	0.30	SW-NR	0.300
NMB32	0.60	SW-NR	0.300
NMB33	0.15	SW-FR	0.300
NMB33	0.30	SW-FR	0.300
NMB33	0.60	SW-FR	0.300
NMB34	0.15	SW-NR	0.300
NMB34	0.30	SW-NR	0.300
NMB35	0.15	SW-NR	0.775
NMB35	0.30	SW-NR	0.622

i	x_i	$y_i = \ln(x_i)$	$(y_i - \dot{y})^2$
1	0.300	-1.20	0.06
2	0.300	-1.20	0.06
3	0.300	-1.20	0.06
4	0.300	-1.20	0.06
5	0.300	-1.20	0.06
6	0.300	-1.20	0.06
7	0.300	-1.20	0.06
8	0.300	-1.20	0.06
9	0.300	-1.20	0.06
10	0.300	-1.20	0.06
11	0.300	-1.20	0.06
12	0.300	-1.20	0.06
13	0.300	-1.20	0.06
14	0.300	-1.20	0.06
15	0.300	-1.20	0.06
16	0.300	-1.20	0.06
17	0.300	-1.20	0.06
18	0.300	-1.20	0.06
19	0.300	-1.20	0.06
20	0.300	-1.20	0.06
21	0.300	-1.20	0.06
22	0.300	-1.20	0.06
23	0.300	-1.20	0.06
24	0.300	-1.20	0.06
25	0.300	-1.20	0.06
26	0.300	-1.20	0.06
27	0.300	-1.20	0.06
28	0.300	-1.20	0.06
29	0.300	-1.20	0.06
30	0.300	-1.20	0.06
31	0.300	-1.20	0.06
32	0.300	-1.20	0.06
33	0.300	-1.20	0.06
34	0.300	-1.20	0.06
35	0.300	-1.20	0.06
36	0.300	-1.20	0.06
37	0.300	-1.20	0.06
38	0.300	-1.20	0.06
39	0.300	-1.20	0.06
40	0.300	-1.20	0.06
41	0.300	-1.20	0.06
42	0.300	-1.20	0.06
43	0.300	-1.20	0.06
44	0.300	-1.20	0.06
45	0.300	-1.20	0.06
46	0.300	-1.20	0.06
47	0.300	-1.20	0.06
48	0.300	-1.20	0.06
49	0.300	-1.20	0.06
50	0.300	-1.20	0.06
51	0.300	-1.20	0.06
52	0.302	-1.20	0.06
53	0.308	-1.18	0.05
54	0.316	-1.15	0.04
55	0.353	-1.04	0.01
56	0.437	-0.83	0.02
57	0.485	-0.72	0.06
58	0.563	-0.57	0.15
59	0.607	-0.50	0.21
60	0.622	-0.48	0.24
61	0.641	-0.45	0.27
62	0.645	-0.44	0.27
63	0.651	-0.43	0.28
64	0.651	-0.43	0.28
65	0.731	-0.31	0.42
66	0.775	-0.25	0.50
67	0.779	-0.25	0.51
68	0.842	-0.17	0.63
69	1.042	0.04	1.01
70	1.197	0.18	1.30
71	1.306	0.27	1.51
72	1.422	0.35	1.73
73	2.035	0.71	2.80

Count (n) =	73
Mean ($\dot{y}$) =	-0.96
Variance (s_y^2) =	0.21
Standard Deviation (s_y) =	0.46
$H_{.90}$ for one sided =	1.4069
$H_{.95}$ for one sided =	1.8330
$UCL_{.90}$ =	**0.46**
$UCL_{.95}$ =	**0.47**

ATTACHMENT B

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

SIERRA
ANALYTICAL

Date: 08/28/02

Ninyo & Moore		Client Project Number:	104446002
5710 Ruffin Road		Date Sampled:	08/05/02
San Diego, CA. 92123		Date Samples Received:	08/07/02
Attention:	Mr. Travis Stravasnik	Sierra Project No.:	0208-083

Attached are the results of the chemo-physical analysis of the sample(s) from the project identified above.

The samples were received by Sierra Laboratories, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analysis were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report. If you require additional retaining time, please advise us.

Richard K. Forsyth
Laboratory Director

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

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E-Mail: sierralabs@earthlink.net

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/08/02-08/09/02
		Date Analyzed:	08/14/02
Sierra Project No.:	0208-083	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Soil	**Report Date:**	08/15/02

Individual Metals (TTLC)
Preparation Method: EPA Method 3050B
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:				Units
		Lead			Dilution Factor	
16330	NMB1-0.15	20.6			1	mg/kg
16331	NMB1-0.30	15.2			2	mg/kg
16332	NMB2-0.15	247			1	mg/kg
16333	NMB2-0.3	247			1	mg/kg
16334	NMB3-0.15	83.4			1	mg/kg
16335	NMB3-0.3	63.9			1	mg/kg
16336	NMB4-0.15	242			1	mg/kg
16337	NMB4-0.3	205			1	mg/kg
16338	NMB5-0.15	308			1	mg/kg
16339	NMB5-0.3	64.0			1	mg/kg
16340	NMB6-0.15	338			1	mg/kg
16341	NMB6-0.3	285			1	mg/kg
16342	NMB7-0.15	906			2	mg/kg
16343	NMB8-0.15	105			2	mg/kg
16344	NMB8-0.3	145			1	mg/kg
16345	NMB9-0.15	559			1	mg/kg
16346	NMB9-0.3	614			1	mg/kg
Practical Quantitation Limit		2.85				

ND means Not Detected
Reporting Limit = Practical Quantitation Limit x Dilution Factor
Results reported on an "As Is" basis, not dry weight.

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/08/02-08/09/02
		Date Analyzed:	08/14/02
Sierra Project No.:	0208-083	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Soil	**Report Date:**	08/15/02

Individual Metals (TTLC)
Preparation Method: EPA Method 3050B
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:				Units
		Lead			Dilution Factor	
16347	NMB10-0.15	74.5			1	mg/kg
16348	NMB10-0.3	ND			2	mg/kg
16349	NMB11-0.15	35.0			1	mg/kg
16350	NMB11-0.3	13.7			1	mg/kg
16351	NMB11-0.6	3.04			1	mg/kg
16352	NMB12-0.15	24.5			1	mg/kg
16353	NMB12-0.3	3.97			1	mg/kg
16354	NMB12-0.6	7.93			1	mg/kg
16355	NMB13-0.15	36.1			1	mg/kg
16356	NMB13-0.3	24.8			1	mg/kg
16357	NMB14-0.15	26.3			1	mg/kg
16358	NMB14-0.3	10.2			1	mg/kg
16359	NMB14-0.6	7.06			1	mg/kg
16360	NMB15-0.15	26.5			1	mg/kg
16361	NMB15-0.3	40.6			1	mg/kg
16362	NMB16-0.15	14.5			1	mg/kg
16363	NMB16-0.3	16.3			1	mg/kg
Practical Quantitation Limit		2.85				

ND means Not Detected
Reporting Limit = Practical Quantitation Limit x Dilution Factor
Results reported on an "As Is" basis, not dry weight.

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/08/02-08/09/02
		Date Analyzed:	08/14/02
Sierra Project No.:	0208-083	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Soil	**Report Date:**	08/15/02

Individual Metals (TTLC)
Preparation Method: EPA Method 3050B
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:				Units
		Lead			Dilution Factor	
16364	NMB16-0.6	17.3			1	mg/kg
16365	NMB17-0.15	168			1	mg/kg
16366	NMB17-0.3	66.9			1	mg/kg
16367	NMB18-0.15	29.1			1	mg/kg
16368	NMB18-0.3	80.6			1	mg/kg
16369	NMB19-0.15	9.34			1	mg/kg
16370	NMB20-0.15	20.7			1	mg/kg
16371	NMB21-0.15	25.8			1	mg/kg
16372	NMB21-0.3	16.7			1	mg/kg
16373	NMB22-0.15	54.4			1	mg/kg
16374	NMB22-0.3	20.0			1	mg/kg
16375	NMB23-0.15	12.8			1	mg/kg
16376	NMB24-0.15	33.8			1	mg/kg
16377	NMB24-0.3	16.8			1	mg/kg
16378	NMB24-0.6	18.5			1	mg/kg
16379	NMB25-0.15	14.0			1	mg/kg
16380	NMB25-0.3	13.8			1	mg/kg
Practical Quantitation Limit		2.85				

ND means Not Detected
Reporting Limit = Practical Quantitation Limit x Dilution Factor
Results reported on an "As Is" basis, not dry weight.

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/08/02-08/09/02
		Date Analyzed:	08/14/02
Sierra Project No.:	0208-083	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Soil	**Report Date:**	08/15/02

Individual Metals (TTLC)
Preparation Method: EPA Method 3050B
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:				Units
		Lead			Dilution Factor	
16381	NMB26-0.15	20.3			1	mg/kg
16382	NMB26-0.3	20.1			1	mg/kg
16383	NMB27-0.15	47.9			1	mg/kg
16384	NMB27-0.3	58.7			1	mg/kg
16385	NMB27-0.6	63.8			1	mg/kg
16386	NMB28-0.15	87.3			1	mg/kg
16387	NMB28-0.3	11.7			1	mg/kg
16388	NMB29-0.15	433			1	mg/kg
16389	NMB29-0.3	31.9			1	mg/kg
16390	NMB30-0.15	507			1	mg/kg
16391	NMB30-0.3	244			1	mg/kg
16392	NMB31-0.15	226			1	mg/kg
16393	NMB32-0.15	27.6			1	mg/kg
16394	NMB32-0.3	60.5			1	mg/kg
16395	NMB32-0.6	5.83			1	mg/kg
16396	NMB33-0.15	5.24			1	mg/kg
16397	NMB33-0.3	31.6			1	mg/kg
Practical Quantitation Limit		2.85				

ND means Not Detected
Reporting Limit = Practical Quantitation Limit x Dilution Factor
Results reported on an "As Is" basis, not dry weight.

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/08/02-08/09/02
		Date Analyzed:	08/14/02
Sierra Project No.:	0208-083	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Soil	**Report Date:**	08/15/02

Individual Metals (TTLC)
Preparation Method: EPA Method 3050B
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:				Units
		Lead			Dilution Factor	
16398	NMB33-0.6	4.67			1	mg/kg
16399	NMB34-0.15	14.2			1	mg/kg
16400	NMB34-0.3	6.82			1	mg/kg
16401	NMB35-0.15	306			1	mg/kg
16402	NMB35-0.3	233			1	mg/kg
Practical Quantitation Limit		2.85				

ND means Not Detected
Reporting Limit = Practical Quantitation Limit x Dilution Factor
Results reported on an "As Is" basis, not dry weight.

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/23/02
		Date Analyzed:	08/27/02
Sierra Project No.:	0208-083-Addendum	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Liquid Extract	**Report Date:**	08/27/02

Individual Metals (STLC)
California Wet Extraction Test (WET) and EPA 3010A
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:					Units
		Lead					
16332	NMB2-0.15	10.6					mg/L
16333	NMB2-0.3	12.0					mg/L
16334	NMB3-0.15	3.19					mg/L
16335	NMB3-0.3	2.24					mg/L
16336	NMB4-0.15	10.7					mg/L
16337	NMB4-0.3	9.31					mg/L
16338	NMB5-0.15	13.4					mg/L
16339	NMB5-0.3	2.47					mg/L
16340	NMB6-0.15	19.2					mg/L
16341	NMB6-0.3	15.9					mg/L
16342	NMB7-0.15	53.6					mg/L
16343	NMB8-0.15	3.29					mg/L
16344	NMB8-0.3	3.72					mg/L
16345	NMB9-0.15	30.0					mg/L
16346	NMB9-0.3	35.8					mg/L
16347	NMB10-0.15	3.02					mg/L
STLC Limit		5.0					
Reporting Limit		0.30					

ND means Not Detected

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	08/23/02
		Date Analyzed:	08/27/02
Sierra Project No.:	0208-083-Addendum	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Liquid Extract	**Report Date:**	08/27/02

Individual Metals (STLC)
California Wet Extraction Test (WET) and EPA 3010A
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:					Units
		Lead					
16365	NMB17-0.15	11.7					mg/L
16366	NMB17-0.3	3.07					mg/L
16368	NMB18-0.3	2.97					mg/L
16373	NMB22-0.15	2.77					mg/L
16384	NMB27-0.3	2.17					mg/L
16385	NMB27-0.6	2.80					mg/L
16386	NMB28-0.15	4.58					mg/L
16388	NMB29-0.15	23.5					mg/L
16390	NMB30-0.15	26.4					mg/L
16391	NMB30-0.3	12.7					mg/L
16392	NMB31-0.15	12.0					mg/L
16394	NMB32-0.3	7.33					mg/L
16401	NMB35-0.15	14.2					mg/L
16402	NMB35-0.3	9.71					mg/L
STLC Limit		5.0					
Reporting Limit		0.30					

ND means Not Detected

Project Addendum / Change Order

Sierra Project Number : 0208-083

Sierra Project manager : Tracy Collins

Client Name : Ninyo + Moore

Turn Around Time : Normal

Client Project ID : 104446002

Sample Location : B33

Sierra Sample No.	Matrix	Addendum / Change to be performed
16332	Soil	WET extraction, run for Lead
16333		
16334		
16335		
16336		
16337		
16338		
16339		
16340		
16341		
16342		
16343		
16344		
16345		
16346		
16347		
16365		
16366		
16368		
16373		
16384		

Addendum / Change Order Taken By :

Signature

08/19/02 2:50pm

Date Time

Addendum / Change Order Requested By:

Travis Stravasnik

Printed Name

Requested Via :

FAX Letter Phone In Person

Project Addendum / Change Order

Sierra Project Number : 0208-083

Sierra Project manager : Tracy Collins

Client Name : Ninyo & Moore

Turn Around Time : Normal

Client Project ID : 104446002

Sample Location : B33

Sierra Sample No.	Matrix	Addendum / Change to be performed
16385	Soil	WET extraction, run for Lead
16386	↓	↓
16388	↓	↓
16390	↓	↓
16391	↓	↓
16392	↓	↓
16394	↓	↓
16401	↓	↓
16402	↓	↓

Addendum / Change Order Taken By :

Justin B. Mull

Signature

08/19/02 2:50pm

Date Time

Addendum / Change Order Requested By:

Travis Stravasnik

Printed Name

Requested Via :

FAX Letter Phone In Person

Ninyo & Moore Transmittal

5710 Ruffin Road, San Diego, California 92123 ◆ Phone 858/576-1000 ◆ Fax 858/576-9600 ◆ www.ninyoandmoore.com

To:	Justin Null	**Date:**	August 19, 2002
Firm:	Sierra Analytical	**Fax No:**	949.348.9115
Address:		**Telephone No:**	949.348.9389
From:	Travis Stravasnik	**Total Pages Including Transmittal:**	1
Subject:	Clairemont Mesa & SR-163, San Diego (Sierra ID 0208-083)	**Project No:**	104446002

☐ **Urgent** ☐ **For Approval** ☒ **For Your Use** ☐ **Please Reply** ☐ **As Requested**

Original Document: ☒ **Will Not Follow** ☐ **Will Follow** ☐ **By U.S. Mail** ☐ **By Other**

Justin,
Please analyze those samples from the subject project, containing lead at 50 mg/kg or greater, for soluble lead by the WET method. Process on a normal TAT basis. Thanks,

Travis Stravasnik

- Geotechnical Engineering
- Engineering Geology
- Materials Testing and Inspection
- Construction Management
- Engineering Design
- Environmental Engineering
- Environmental Site Assessments
- Regulatory Compliance and Permitting
- Water Quality and Resource Evaluations
- Hazardous Waste Management
- Soil and Groundwater Remediation
- Asbestos and Lead-Based Paint Surveys
- Geophysical Studies
- Mineral Resource Evaluations
- Value Engineering
- Forensic Studies
- Expert Witness Testimony

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CHAIN OF CUSTODY RECORD

Date: 08/05/02 Page 1 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

5 DAY

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)	Comments
NMB1-0.15	16330	8-5-02	soil	None	glass jar	1	X	
NMB1-0.3	16331					1	X	
NMB2-0.15	16332					1	X	
NMB2-0.3	16333					1	X	
NMB3-0.15	16334					1	X	
NMB3-0.3	16335					1	X	
NMB4-0.15	16336					1	X	
NMB4-0.3	16337					1	X	
NMB5-0.15	16338					1	X	
NMB5-0.3	16339					1	X	

1 Sampler Signature: Dalin N. D'Alessandro		Shipped Via:	
Printed Name: Dalin N. D'Alessandro		(Carrier/Waybill No.)	
2 Relinquished By: Dalin N. D'Alessandro	Date: 8/7/02	Received By: RAN KLEFFER	Date: 8-7-02
Company: Ninyo & Moore	Time: 10:18am	Company: SIERRA ANALYTICAL	Time: 10:20
3 Relinquished By:	Date:	Received By:	Date:
Company:	Time:	Company:	Time:
4 Relinquished By:	Date:	Received By:	Date:
Company:	Time:	Company:	Time:

Special Instructions: If total lead is greater than 50 mg/kg, contact Travis Stravasnik for further instructions.

73 Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

73 Total Number of Containers Received by Laboratory

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive ____ mos.
☐ Other ____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☒ Intact
☐ Sample Seals
☒ Properly Labeled
☒ Appropriate Sample Container
☐ Chilled - Temp (°C) 1.8°C
☐ Preservatives - Verified By ____
☐ Other ____
☐ Storage Location B33

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CHAIN OF CUSTODY RECORD

Date 08/05/02 Page 2 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)	Comments
NMB6-0.15	16340	8-5-02	soil	None	glass jar	1	X	
NMB6-0.3	16341	↓	↓	↓	↓	1	X	
NMB7-0.15	16342					1	X	
NMB8-0.15	16343					1	X	
NMB8-0.3	16344					1	X	
NMB9-0.15	16345					1	X	
NMB9-0.3	16346					1	X	
NMB10-0.15	16347					1	X	
NMB10-0.3	16348					1	X	
NMB11-0.15	16349					1	X	

1 Sampler Signature: Dalin N. D'Alessandro		Shipped Via:	
Printed Name: Dalin N. D'Alessandro		(Carrier/Waybill No.)	
2 Relinquished By: Dalin N. D'Alessandro	Date: 8/7/02	Received By: RYAN VERFORT	Date: 8/7/02
Company: Ninyo & Moore	Time: 10:00am	Company: SIERRA ANALYTICAL	Time: 10:20
3 Relinquished By:	Date:	Received By:	Date:
Company:	Time:	Company:	Time:
4 Relinquished By:	Date:	Received By:	Date:
Company:	Time:	Company:	Time:

Total Number of Containers Submitted to Laboratory: 73

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory:

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive _____ mos.
☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☐ Intact ☐ Chilled - Temp (°C) _____
☐ Sample Seals ☐ Preservatives - Verified By _____
☐ Properly Labeled ☐ Other _____
☐ Appropriate Sample Container ☐ Storage Location _____

Special Instructions: If total lead is greater than 50mg/kg, contact Travis Stravasnik for further instructions.

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CHAIN OF CUSTODY RECORD

Date: 08/05/02 Page 3 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)	Comments
NMB11-0.3	16350	8-5-02	Soil	None	glass jar	1	X	
NMB11-0.6	16351	↓	↓	↓	↓	1	X	
NMB12-0.15	16352					1	X	
NMB12-0.3	16353					1	X	
NMB12-0.6	16354					1	X	
NMB13-0.15	16355					1	X	
NMB13-0.3	16356					1	X	
NMB14-0.15	16357					1	X	
NMB14-0.3	16358					1	X	
NMB14-0.6	16359					1	X	

1 Sampler Signature: Dalin N. D'Alessandro		Shipped Via:	
Printed Name: Dalin N. D'Alessandro		(Carrier/Waybill No.)	
2 Relinquished By: Dalin N. D'Alessandro	Date: 8/7/02	Received By: RYAN KRAFFCIK	Date: 8/7/02
Company: Ninyo & Moore	Time: 10:00am	Company: SIERRA ANALYTICAL	Time: 10:20
3 Relinquished By:	Date:	Received By:	Date:
Company:	Time:	Company:	Time:
4 Relinquished By:	Date:	Received By:	Date:
Company:	Time:	Company:	Time:

Special Instructions: If total lead is greater than 50 mg/kg, contact Travis Stravasnik for further instructions.

73 — Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive _____ mos.
☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☐ Intact ☐ Chilled - Temp (°C) _____
☐ Sample Seals ☐ Preservatives - Verified By _____
☐ Properly Labeled ☐ Other _____
☐ Appropriate Sample Container ☐ Storage Location _____

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CHAIN OF CUSTODY RECORD

Date: 08/05/02 Page 4 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Strarasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)	Comments
NMB15-0.15	16360	8-5-02	Soil	None	glass jar	1	X	
NMB15-0.3	16361					1	X	
NMB16-0.15	16362					1	X	
NMB16-0.3	16363					1	X	
NMB16-0.6	16364					1	X	
NMB17-0.15	16365					1	X	
NMB17-0.3	16366					1	X	
NMB18-0.15	16367					1	X	
NMB18-0.3	16368					1	X	
NMB19-0.15	16369					1	X	

1 Sampler Signature: Dalin N. D'Alessandro
Printed Name: Dalin N. D'Alessandro
Shipped Via:
(Carrier/Waybill No.)

2 Relinquished By: Dalin N. D'Alessandro Date: 8/2/02
Company: Ninyo & Moore Time: 10:10am
Received By: RYAN KIEFFER Date: 8-7-02
Company: SIERRA ANALYTICAL Time: 10:20

3 Relinquished By: Date:
Company: Time:
Received By: Date:
Company: Time:

4 Relinquished By: Date:
Company: Time:
Received By: Date:
Company: Time:

73 Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive _____ mos.
☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☐ Intact ☐ Chilled - Temp (°C) _____
☐ Sample Seals ☐ Preservatives - Verified By _____
☐ Properly Labeled ☐ Other _____
☐ Appropriate Sample Container ☐ Storage Location _____

Special Instructions: If total lead is greater than 50 mg/kg, contact Travis Strarasnik for further instructions.

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CHAIN OF CUSTODY RECORD

Date: 08/05/02 Page 5 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
~~Suite E-Tech~~
San Diego, CA 92123-1013
Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)											Comments
NMB20-0.15	16370	8-5-02	soil	None	glass jar	1	X											
NMB21-0.15	16371					1	X											
NMB21-0.3	16372					1	X											
NMB22-0.15	16373					1	X											
NMB22-0.3	16374					1	X											
		5mD																

1 Sampler Signature: Dalin N. D'Alessandro
Printed Name: Dalin N. D'Alessandro
Shipped Via:
(Carrier/Waybill No.)

2 Relinquished By: Dalin N. D'Alessandro Date: 8/7/02 Received By: R. Wanlieffer Date: 08/7/02
Company: Ninyo & Moore Time: 10:18am Company: Sierra Analytical Time: 10:20

3 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

4 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

Special Instructions: If total lead is greater than 50mg/kg, contact Travis Stravasnik for further instructions.

73 Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive _____ mos.
☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☐ Intact ☐ Chilled - Temp (°C) _____
☐ Sample Seals ☐ Preservatives - Verified By _____
☐ Properly Labeled ☐ Other _____
☐ Appropriate Sample Container ☐ Storage Location _____

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CHAIN OF CUSTODY RECORD

Date: 08/06/02 Page 6 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested:
- ☐ Immediate
- ☐ 24 Hour
- ☐ 48 Hour
- ☐ 72 Hour
- ☐ 4 Day
- ☐ 5 Day
- ☒ Normal
- ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)	Comments
NMB23-0.15	16375	8-6-02	Soil	None	glass jar	1	X	
NMB24-0.15	16376					1	X	
NMB24-0.3	16377					1	X	
NMB24-0.6	16378					1	X	
NMB25-0.15	16379					1	X	
NMB25-0.3	16380					1	X	
NMB26-0.15	16381					1	X	
NMB26-0.3	16382					1	X	
NMB27-0.15	16383					1	X	
NMB27-0.3	16384					1	X	

1 Sampler Signature: Dalin N. D'Alessandro
Printed Name: Dalin N. D'Alessandro
Shipped Via:
(Carrier/Waybill No.)

2 Relinquished By: Dalin N. D'Alessandro Date: 8/7/02 Received By: RYAN KIEFFER Date: 8/7/02
Company: Ninyo & Moore Time: 10:18am Company: SIERRA ANALYTICAL Time: 11:20

3 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

4 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

Special Instructions: If total lead is greater than 50mg/kg, contact Travis Stravasnik for further instructions.

73 Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory

Sample Disposal:
- ☐ Return to Client
- ☒ Lab Disposal*
- ☐ Archive _____ mos.
- ☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
- ☐ Intact
- ☐ Sample Seals
- ☐ Properly Labeled
- ☐ Appropriate Sample Container
- ☐ Chilled - Temp (°C) _____
- ☐ Preservatives - Verified By _____
- ☐ Other _____
- ☐ Storage Location _____

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CHAIN OF CUSTODY RECORD

Date: 08/06/02 Page 7 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total lead (6010B or 7420)											Comments
NMB27-0.6	16385		soil	None	glass jar	1	X											
NMB28-0.15	16386		↓	↓	↓	1	X											
NMB28-0.3	16387					1	X											
NMB29-0.15	16388					1	X											
NMB29-0.3	16389					1	X											
NMB30-0.15	16390					1	X											
NMB30-0.3	16391					1	X											
NMB31-0.15	16392					1	X											
NMB32-0.15	16393					1	X											
NMB32-0.3	16394					1	X											

1 Sampler Signature: Dalin N. D'Alessandro
Printed Name: Dalin N. D'Alessandro
Shipped Via:
(Carrier/Waybill No.)

2 Relinquished By: Dalin N. D'Alessandro Date: 8/2/02 Received By: RYAN KUFFER Date: 8-7-02
Company: Ninyo & Moore Time: 10:18am Company: SIERRA ANALYTICAL Time: 10:20

3 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

4 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

Special Instructions: If total lead is greater than 50 mg/kg, contact Travis Stravasnik for further instructions.

73 Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive _____ mos.
☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☐ Intact ☐ Chilled - Temp (°C) _____
☐ Sample Seals ☐ Preservatives - Verified By _____
☐ Properly Labeled ☐ Other _____
☐ Appropriate Sample Container ☐ Storage Location _____

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CHAIN OF CUSTODY RECORD

Date: 08/06/02 Page 8 of 8

Lab Project ID: 0208-083

Client: Ninyo & Moore
Client Address: 5710 Ruffin Road
San Diego, CA 92123-1013

Client Tel. No.: 858/576-1000
Client Fax No.: 858/576-9600
Client Proj. Mgr.: Travis Stravasnik

Client Project ID: 104446002

Turn Around Time Requested: ☐ Immediate ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 4 Day ☐ 5 Day ☒ Normal ☐ Mobile

Analyses Requested

Client Sample ID.	Sierra Sample No.	Date/Time	Matrix	Preservatives	Container Type	No. of Containers	Total Lead (6010B or 7420)	Comments
NMB32-0.6	16395	8-6-02	soil	None	glass jar	1	X	
NMB33-0.15	16396	↓	↓	↓	↓	1	X	
NMB33-0.3	16397					1	X	
NMB33-0.6	16398					1	X	
NMB34-0.15	16399					1	X	
NMB34-0.3	16400					1	X	
NMB35-0.15	16401					1	X	
NMB35-0.3	16402	↓	↓	↓	↓	1	X	
			and	and	and			

1 Sampler Signature: Dalin N. D'Alessandro
Printed Name: Dalin N. D'Alessandro
Shipped Via:
(Carrier/Waybill No.)

2 Relinquished By: Dalin N. D'Alessandro Date: 8/7/02 Received By: Ryan Kieffer Date: 8-7-02
Company: Ninyo & Moore Time: 10:15am Company: SIERRA ANALYTICAL Time: 10:20

3 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

4 Relinquished By: Date: Received By: Date:
Company: Time: Company: Time:

Special Instructions: If total lead is greater than 50 mg/kg, contact Travis Stravasnik for further instructions.

73 Total Number of Containers Submitted to Laboratory

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under SIERRA's Terms and Conditions, unless otherwise agreed upon in writing between SIERRA and CLIENT.
* - Samples determined to be hazardous by SIERRA will be returned to CLIENT.

Total Number of Containers Received by Laboratory

Sample Disposal:
☐ Return to Client
☒ Lab Disposal*
☐ Archive _____ mos.
☐ Other _____

FOR LABORATORY USE ONLY - Sample Receipt Conditions:
☐ Intact ☐ Chilled - Temp (°C) _____
☐ Sample Seals ☐ Preservatives - Verified By _____
☐ Properly Labeled ☐ Other _____
☐ Appropriate Sample Container ☐ Storage Location _____

Rev: 041301

DISTRIBUTION: White - To Accompany Samples, Yellow - Laboratory Copy, Pink - Field Personnel Copy

Ninyo and Moore **5710 Ruffin Road** **San Diego, CA 92123**		**ELAP No.:**	2320
		Date Sampled:	08/05/02-08/06/02
		Date Received:	08/07/02
		Date Prepared:	10/11/02
		Date Analyzed:	10/15/02
Sierra Project No.:	0208-083-Addendum	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Liquid Extract	**Report Date:**	10/16/02

Individual Metals Analysis
Modified* California Wet Extraction Test (WET) and EPA 3010A
Analysis Method: EPA Method 6010B

Sierra Sample No.	Client Sample No.	Test Parameters:					Units
		Lead					
16331	NMB1-0.3	ND					mg/L
16335	NMB3-0.3	ND					mg/L
16340	NMB6-0.15	0.79					mg/L
16341	NMB6-0.3	0.79					mg/L
16345	NMB9-0.15	1.34					mg/L
16350	NMB11-0.3	ND					mg/L
16353	NMB12-0.3	ND					mg/L
16356	NMB13-0.3	ND					mg/L
16370	NMB20-0.15	ND					mg/L
16382	NMB26-0.3	ND					mg/L
16388	NMB29-0.15	0.92					mg/L
16390	NMB30-0.15	1.30					mg/L
16396	NMB33-0.15	ND					mg/L
16397	NMB33-0.3	ND					mg/L
16400	NMB34-0.3	ND					mg/L
16401	NMB35-0.15	0.84					mg/L
Reporting Limit		0.30					

ND means Not Detected

* Deionized water was used as the extraction solution

SIERRA
ANALYTICAL

Date: 10/16/02

Ninyo & Moore
5710 Ruffin Road
San Diego, CA. 92123
Attention: Mr. Travis Stravasnik

Client Project Number: 104446002
Date Sampled: 08/05/02
Date Samples Received: 08/07/02
Sierra Project No.: 0208-083-Addendum

Attached are the results of the chemo-physical analysis of the sample(s) from the project identified above.

The samples were received by Sierra Laboratories, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analysis were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report. If you require additional retaining time, please advise us.

Richard K. Forsyth
Laboratory Director

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

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Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs@earthlink.net

Ninyo and Moore		**ELAP No.:**	2320
5710 Ruffin Road		**Date Sampled:**	08/05/02-08/06/02
San Diego, CA 92123		**Date Received:**	08/07/02
		Date Prepared:	10/11/02
Sierra Project No.:	0208-083-Addendum	**Date Analyzed:**	10/15/02
Sierra Sample No.:	16331 & 16396	**Analyst:**	JBN/BW
Client Project ID:	104446002		
Sample Matrix:	Soil	**Report Date:**	10/16/02

Metals Analysis Quality Control Report
Preparation Method: EPA Method 3010a
Analysis Method: EPA Method 6010b

Analyte	Method Blank	LFB	Sample	Sample Dup	MS	MSD	Relative Percent Difference between Duplicates	Percent Recovery
Pb	0.0008	0.192	ND	ND	0.201	0.210	0.0	100.5
Pb	-0.0001	---	ND	ND	---	---	0.0	---

Project Addendum / Change Order

Sierra Project Number : ~~20~~ JEN 0208-083 Sierra Project manager : Tracy C.

Client Name : Ninyo & Moore Turn Around Time : Normal

Client Project ID : 104446002 Sample Location :

Sierra Sample No.	Matrix	Addendum / Change to be performed
16331	Soil	deionized water - WET Method
16335		
16340		
16341		
16345		
16350		
16353		
16356		
16370		
16382		
16388		
16390		
16396		
16397		
16400		
16401		

Addendum / Change Order Taken By :

Signature Justin B. Mull

Date 10/10/02 Time 2:46pm

Addendum / Change Order Requested By:

Travis Stravasnik
Printed Name

Requested Via :

FAX Letter (e-mail) Phone In Person