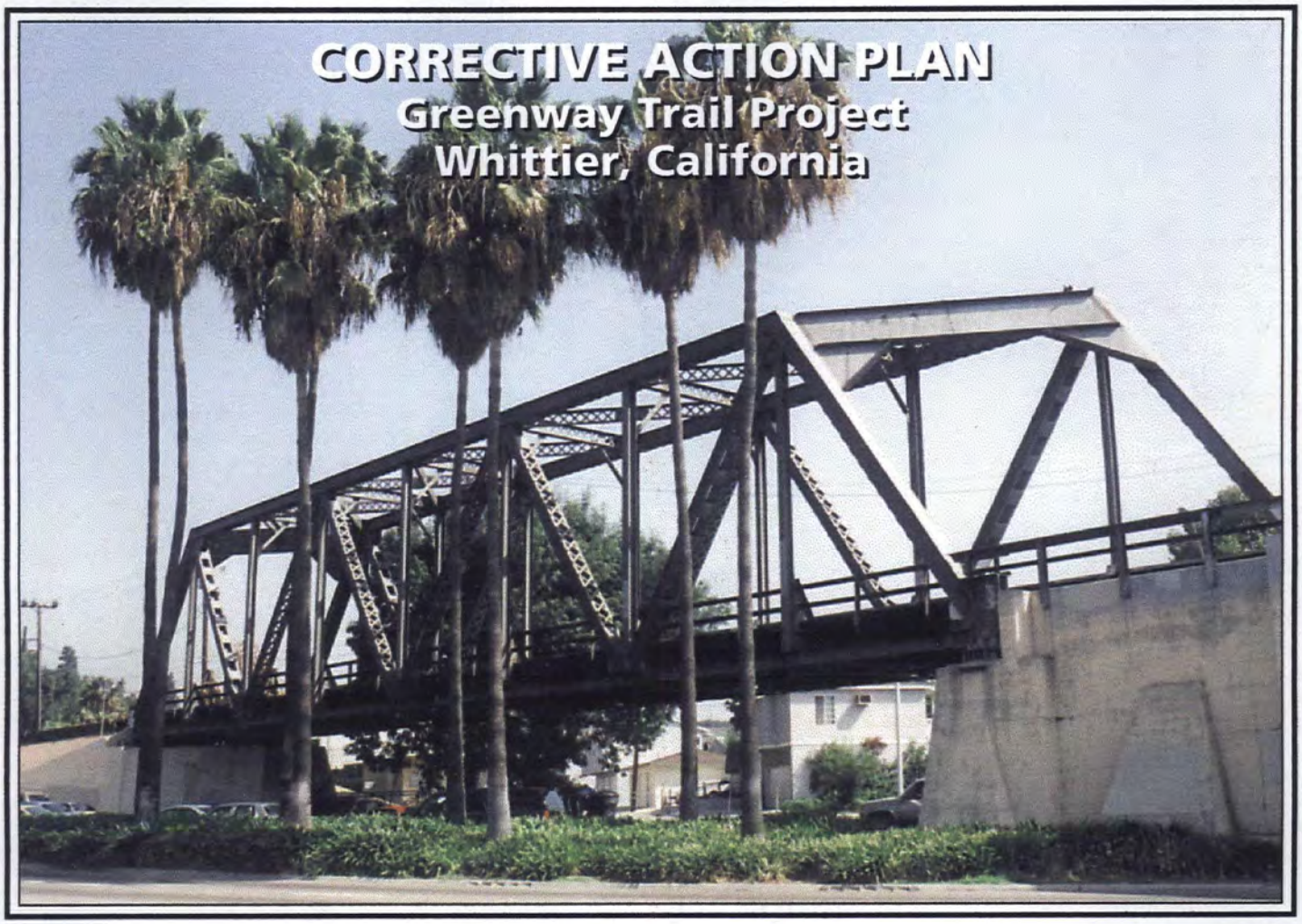

CORRECTIVE ACTION PLAN
Greenway Trail Project
Whittier, California

PREPARED FOR:

HYDE MILLER OWEN & TROST
REPRESENTING THE CITY OF WHITTIER

PREPARED BY:

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GEOCON

GEOCON PROJECT NO. A8050-06-03

NOVEMBER 2001

GEOCON
CONSULTANTS, INC.
ENVIRONMENTAL ■ GEOTECHNICAL ■ MATERIALS

Project No. A8050-06-03
November 8, 2001

Mr. Kirk E. Trost
Hyde, Miller, Owen & Trost
428 J Street, Suite 400
Sacramento, California 95814

Subject: GREENWAY TRAIL PROJECT
ABANDONED UNION PACIFIC RAILROAD CORRIDOR
WHITTIER, CALIFORNIA
CORRECTIVE ACTION PLAN

Dear Mr. Trost:

In accordance with your request, Geocon Consultants, Inc. has prepared this Corrective Action Plan (CAP) for the subject site. The *Site* consists of a 5.2-mile-long abandoned Union Pacific railroad corridor located in Whittier, California. The *Site* is currently being evaluated for purchase by the City of Whittier for potential redevelopment as a pedestrian trail and community park system.

The accompanying CAP summarizes the Phase I and II site assessment activities completed for the *Site*, presents a human health risk evaluation for arsenic-impacted track bed materials, and provides recommended remedial measures for identified site impacts including the removal and offsite disposal of identified near-surface debris fill materials.

If there are any questions concerning the contents of the CAP, or if Geocon may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

REGISTERED PROFESSIONAL ENGINEER
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LIST OF ACRONYMS

AST	Aboveground Storage Tank
ASTM	American Society of Testing and Materials
ATL	Advanced Technology Laboratories
bgs	Below Ground Surface
CAP	Corrective Action Plan
CCR	California Code of Regulations
CEG	Certified Engineering Geologist
CHG	Certified Hydrogeologist
COC	Chemicals of Concern
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
HMO&T	Hyde, Miller, Owen & Trost
HSC	Health and Safety Code
HSP	Health and Safety Plan
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MP	Mile Post
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PE	Professional Engineer
PRG	Preliminary Remediation Goal
RBCA	Risked-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
RECs	Recognized Environmental Conditions
ROW	Right-of- Way
SP	Southern Pacific
TCLP	Toxicity Characteristic Leaching Procedure
UCL	Upper Confidence Limit
UP	Union Pacific Railroad
USA	Underground Service Alert
UST	Underground Storage Tank
VOC	Volatile Organic Compound
yd^3	Cubic Yards

CORRECTIVE ACTION PLAN - GREENWAY TRAIL PROJECT

1.0 INTRODUCTION

1.1 Site Location and Existing Improvements

Geocon Consultants, Inc. has prepared this Corrective Action Plan (CAP) for the Greenway Trail Project under contract with Hyde, Miller, Owen & Trost (HMO&T) representing the City of Whittier. The *Site* consists of an approximate 5.2-mile long abandoned Union Pacific (UP) railroad corridor located in the City of Whittier, California.

The UP right-of-way (ROW) is generally 40 to 100 feet in width and extends from the mainline railroad connections near the San Gabriel River (Mile Post [MP] 0.0) to the former Southern Pacific (SP) railroad mainline connection south of Mills Avenue (MP 5.2). The approximate location of the *Site* is depicted on the Project Location Map, Figure 1. Site Plans prepared from City of Whittier maps dated 1962 are presented on Figures 2a through 2i.

1.2 Background

Geocon prepared a Phase I Environmental Site Assessment (ESA) report for the *Site* dated September 22, 2000. The Phase I ESA concluded that before construction of the railroad corridor in the early 1900s, commercial operations near the *Site* included agricultural, lumber, feed, fruit packing, and oil storage facilities. Former or existing railroad maintenance, refueling facilities, underground or aboveground storage tanks (USTs/ASTs) were not identified within the site boundaries. The Phase I ESA report identified potential recognized environmental conditions (RECs) at the *Site* including potential heavy metal soil impacts associated with the presence of slag ballast; potential pesticide, polychlorinated biphenyls (PCBs), and herbicide soil impacts associated with historical weed control activities; potential petroleum hydrocarbon impacted soil associated with adjacent facilities and dumped waste materials; and potential PCB-containing electrical equipment within onsite signal-switching structures.

The Phase I ESA report recommended the removal of refuse and waste from the corridor, and soil sampling and analytical testing to determine the presence of heavy metal, pesticide, PCB, herbicide, and petroleum hydrocarbon site impacts. The report further recommended the performance of an engineering survey to determine potential adjacent property encroachments onto the *Site*. It is understood that Thomsen Engineering, Inc. is currently under contract with HMO&T to provide surveying services for the *Site*.

URS under contract to UP completed a *Summary Report Right of Way Slag Investigation* for the *Site* dated November 14, 2000. The investigation included a site reconnaissance, limited ballast depth measurements, and sampling and analytical testing of two ballast samples (light and dark slag). URS

reported that the railroad ballast materials within the *Site* are primarily comprised of light and dark slag and gravels varying from 0 to 8 inches thick and from 8 to 60 feet in width. Based on the results of the field survey, URS estimated that approximately 5,000 cubic yards (yd^3) of slag impacted ballast materials and 6,300 yd^3 of potentially heavy metal impacted soil exist within the *Site*. The dark slag ballast sample contained an elevated chromium concentration and a vanadium concentration above the California hazardous waste threshold. The light slag ballast sample did not contain metal concentrations of concern with respect to California hazardous waste thresholds. Elevated concentrations (above naturally occurring background levels) of barium, chromium, copper and vanadium were further reported for each slag sample.

Geocon prepared a Phase II ESA for the *Site* dated October 11, 2001 summarizing the results of asbestos and lead-based paint surveys of the four railroad bridge structures located within the corridor; the excavation of 31 shallow exploratory trenches; near-surface soil and ballast sampling; and analytical testing. The results of the Phase II ESA indicated the presence of RECs within the *Site* including asbestos and lead-based paint bridge and retaining wall components, arsenic impacted slag ballast and track bed soil, near-surface debris fill materials located between Magnolia Avenue and Hadley Street, and the presence of abandoned battery boxes and sporadic surface debris material. Significant petroleum hydrocarbon, volatile organic compound (VOC), PCB, pesticide, and herbicide impacts were not detected in the random and targeted (adjacent facility) soil samples obtained within the corridor. A cumulative summary of the sample type and potential impact, and debris fill and ballast depth measurements are presented on the Sample Log, Table 1. A cumulative summary of the soil analytical data obtained during the Phase II ESA is presented on the attached Tables 2 through 5. Sample locations are depicted on the Site Plans, Figures 2a through 2i.

Recommendations were presented in the Phase II ESA regarding site clearing and surface debris removal, existing railroad track and signal improvement removal, and treatment of asbestos and lead-based structural components. The performance of a site-specific human health risk evaluation was recommended to determine an acceptable arsenic level for the track bed materials given the proposed recreational trail land-use. Additional site assessment was further recommended to determine the lateral and vertical extent of the buried debris fill materials encountered between Magnolia Avenue and Hadley Street and to provide an evaluation of potential environmental impairments associated with building and facility encroachments discovered during the engineering survey of the *Site* including the automobile repair facility located south of the Whittier Boulevard Bridge.

This CAP presents the results of additional site assessment activities performed at the *Site*, the statistical and human health risk evaluations of the elevated heavy metals detected in slag ballast and underlying track bed soils, and the recommended remedial measures and associated cost estimates for the removal and offsite disposal of encountered debris fill materials.

2.0 SITE ASSESSMENT RESULTS

The following site assessment activities were performed subsequent to the submittal of the Phase II ESA for the *Site*:

2.1 Pre-Field Activities

- Contacted Underground Service Alert (USA) on October 25, 2001 to attempt to delineate subsurface public utilities and conduits in proximity to the proposed exploration locations.
- Utilized the existing project *Health and Safety Plan* dated August 21, 2001 to provide guidelines on the use of personal protective equipment and health and safety procedures during the field activities.
- Retained the services of Spectrum Geophysics to provide geophysical survey services.
- Retained the services of Vironex to provide direct-push soil sampling services.
- Retained the services of Advanced Technology Laboratories (ATL) located in Signal Hill, California to perform chemical analyses of soil, debris fill and asbestos-containing material and paint chip samples.

2.2 Building Encroachment Survey

Review of a UP lease agreement dated May 23, 1990 indicates that an auto repair facility encroachment measuring 140 feet long by 25 foot wide exists within the *Site* immediately south of the Whittier Boulevard Bridge. The lease includes "Hazardous Substances and Waste" indemnification language. Based on a review of information obtained from the lessee, Ms. Chrys Vollmer, two gasoline USTs and one waste oil UST were removed from this facility in August 1991. Petroleum hydrocarbons were only detected in one soil sample obtained from the waste oil UST excavation at a relatively low concentration of 8.1 milligrams per kilogram (mg/kg). Copies of the building encroachment lease and the UST removal report are presented in Appendix A.

On October 24, 2001, a representative of Geocon performed a site visit to evaluate potential environmental impairments within the building encroachment. Kustom Workz located at 12360 E. Whittier Boulevard currently occupies the building encroachment facility. A Kustom Workz employee indicated that they have occupied the facility for approximately eight months, primarily use air tools to customize vehicles, and do not generate any hazardous waste products. Four below grade vehicle hoists within the garage bays are reportedly operated by air pressure. An air compressor and adjacent stained pavement surfaces were noted within a shed located to the rear of the facility within the leased portion of the *Site*.

Photographs of the Kustom Workz facility are presented on Figures 3a and 3b. The approximate limits of the building encroachment are depicted on Figure 4.

2.3 South Whittier Bridge Debris Fill

Observations on October 24, 2001 of the recently cleared railroad embankment slopes located to the rear of the Kustom Workz facility indicated the presence of surficial debris fill materials including metal, refractory brick, and potential asbestos-containing debris and slope backing materials. Potential asbestos-containing slope backing materials and concrete debris were noted on the eastern embankment slope approximately 200 feet south of the Whittier Boulevard Bridge abutment. A backfilled pedestrian tunnel was also noted approximately 500 feet south of the Whittier Boulevard Bridge abutment.

Surface soil samples (S11-0 through S16-0) and suspected asbestos material samples (ASB-1 and ASB-2) were obtained and submitted to ATL for the following analyses:

- Three soil samples analyzed for California Code of Regulations (CCR) Title 22 metals [(1)] by Environmental Protection Agency (EPA) Test Methods 6010B and 7471A (mercury cold vapor technique).
- Three soil samples for total lead following EPA Test Method 6010B.
- Two soil samples for pH following EPA Test Method 9045C.
- Two soil samples were further analyzed for Toxicity Characteristic Leaching Procedure (TCLP) soluble lead and copper following EPA Test Method 1311/6010B.
- Two material samples for asbestos content following EPA Test Method 600/M4-82-020.

[(1)] CCR Title 22 metals include antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc.

The results of the laboratory analyses indicated the presence of lead and copper in debris fill samples S11-0 and S12-0 at concentrations in excess of California hazardous waste thresholds. Debris material sample S11-0 contained a soluble TCLP lead value in excess of the EPA Resource Conservation and Recovery Act (RCRA) hazardous waste threshold. Debris fill samples S13-0 and S15-0 contained pH values of 8.18 and 11.08, respectively. The presence of asbestos was confirmed in each of the material samples at levels ranging between 30% and 85%.

Based on the surface soil data, Geocon performed 27 exploratory shallow excavations (T32 through T58) within the southern Whittier Boulevard Bridge embankment on October 30, 2001 to determine the nature and extent of the identified debris fill materials. The debris fill materials were noted to range from 1 to 2.5 feet in thickness extending approximately 250 feet in length along the eastern embankment slope and 400 feet in length along the western embankment slope. A sharp color contrast was noted between the dark brown debris fill materials and the underlying tan to light orange brown embankment fill.

Five debris material samples, 26 underlying embankment fill samples, and one pedestrian tunnel backfill material sample were analyzed for total lead following EPA Test Method 6010B. In addition, one slope backing material sample was analyzed for asbestos following EPA Test Method 600/M4-82-020.

Lead was detected in the debris soil samples at concentrations ranging from 82 to 1,500 mg/kg. Lead was only detected in 14 of the 27 underlying embankment fill material samples at relatively low concentrations ranging from 5 to 68 mg/kg. A composite sample comprised of four discrete (concentrated) debris fill samples contained a reported TCLP soluble lead concentration of 1.5 milligrams per liter (mg/l), below the federal RCRA waste threshold of 5.0 mg/l.

Lead was further detected in the pedestrian tunnel backfill material sample at 260 mg/kg that is below the EPA residential Preliminary Cleanup Goal (PRG) of 400.The slope backing material sample contained 3% asbestos.

Photographs of the Whittier Boulevard Bridge debris fill area are presented on Figures 3b and 3c. The approximate exploratory excavation and soil sample locations, and interpreted debris fill limits are presented on Figure 4. A summary of the debris fill thickness measurements is presented on Table 1. The laboratory analytical results are presented on Tables 2 and 5. Laboratory reports and chain-of-custody documentation are presented in Appendix B.

2.4 Hadley Street Debris Fill

Geocon retained Spectrum Geophysics to perform a geophysical survey in the immediate vicinity of the previously identified buried debris fill materials (trench T8) on the west side of the UP tracks between Magnolia Avenue and Hadley Street. The geophysical survey was performed on October 25, 2001 between the railroad tracks and the western retaining wall extending 400 feet southerly from Magnolia Avenue. The geophysical survey was constrained by the presence of track rails and retaining wall reinforcement although sporadic anomalies with similar signatures corresponding to buried debris in trench T8 were identified between 60 and 300 feet south of Magnolia Avenue. A copy of the geophysical summary report is presented in Appendix C.

Geocon performed 20 exploratory excavations (B1 through B20) within the Hadley Street debris fill area on October 30 and 31, 2001 to attempt to determine the vertical and lateral extent of the buried debris fill materials. Exploratory borings were performed using a Geoprobe direct-push rig equipped with four-foot long sample tubes. The borings were performed to a maximum depth of 12 feet below the ground surface (bgs).

An approximate two-foot thick debris fill layer containing rusted metal, glass bottles, china plate fragments, and other railroad related waste was encountered in exploratory locations T8, B1, B5, B10 and B13 at depths between the surface and eight feet bgs. Sporadic buried debris deposits were further

encountered in shallow soil at depths between 1.5 and 4 feet bgs in B4, B7, B15 and B17. The northern, eastern and southern limits of the identified debris fill materials appear to be defined by perimeter exploratory locations T7, B2, B3, B6, B8, B9, B11, B12, B14, B16, B18, B19 and B20. The western limits of the buried debris layer are undefined for a distance of approximately 125 feet adjacent to the westerly retaining wall.

Thirty-one soil samples obtained from borings B1 through B10 and one retaining wall paint chip sample were analyzed for total lead following EPA Test Method 6010B. Lead was detected in debris fill samples obtained from borings B4, B5, B7 and B10 at concentrations ranging from 8.7 to 2,200 mg/kg. Only six of 26 soil samples obtained from the miscellaneous fill materials overlying the debris material and the underlying alluvial soil contained detectable lead at relatively low concentrations ranging from 5.1 to 38 mg/kg.

A composite sample comprised of three discrete (concentrated) debris fill samples contained a reported TCLP soluble lead concentration of 5.9 mg/l, slightly above the federal RCRA waste threshold of 5.0 mg/l. It is anticipated that additional TCLP soluble testing performed on the excavated debris fill materials will yield TCLP soluble lead levels below the RCRA hazardous waste threshold due to the unavoidable incorporation of portions of the clean overburden and underlying native soil.

Lead was further detected in the retaining wall paint chip sample at 11 mg/kg. The slope backing material sample contained 3% asbestos.

Photographs of the Hadley Street debris fill area are presented on Figure 3d. The approximate exploratory excavation locations and interpreted debris fill limits are presented on Figure 5. A summary of the debris fill depth intervals is presented on Table 1. The laboratory analytical results are presented on Tables 2 and 5. Laboratory reports and chain-of-custody documentation are presented in Appendix B.

3.0 HUMAN HEALTH RISK EVALUATION

3.1 Slag Ballast and Track Bed Soil

Elevated levels of arsenic, lead and vanadium were detected in the slag ballast samples obtained from the *Site*. The following table presents the calculated 95% upper confidence limits (UCLs) and the residential and industrial EPA Region 9 PRGs for the elevated metals detected in the slag ballast materials:

Material	Metal	95% UCL (mg/kg)	Residential PRG	Industrial PRG
Light Slag	Arsenic	35	0.39 (22)[1]	2.7 (440)[1]
Dark Slag		50		
Light Slag	Lead	72	400	750
Dark Slag		358		
Light Slag	Vanadium	512	550	14,000
Dark Slag		89		

[1] EPA non-cancer endpoint

The soil materials underlying the track bed contain elevated levels of arsenic ranging from 8 to 210 mg/kg. The following table presents the calculated 95% UCLs and the residential and industrial EPA Region 9 PRGs for the elevated arsenic detected in the track bed soil samples:

Soil Sample Depth (feet)	Metal	95% UCL (mg/kg)	Residential PRG	Industrial PRG
1	Arsenic	47	0.39 (22)[1]	2.7 (440)[1]
2		39		

[1] EPA non-cancer endpoint

A summary of the statistical methods used to calculate the 95% UCL values for the slag ballast and track bed soil are presented in Appendix D.

3.2 Human Health Risk Evaluation

A human health risk evaluation was performed in general accordance with the Tier 2 Risk-Based Corrective Action (RBCA) methods outlined in the American Society of Testing and Materials (ASTM) Standard E1739-95. The site-specific and ASTM-defined input parameters associated with the Tier 2 RBCA evaluation are presented in Appendix D. The evaluation included the following assumptions and site-specific parameters:

General Assumptions

- An excess cancer risk level of $1x10^{-5}$ was used to define an acceptable risk for carcinogens. The California Proposition 65 Program uses a basis of 1 increased cancer risk in a population of 100,000, otherwise known as a $1x10^{-5}$ risk level. The $1x10^{-5}$ risk level is defined in California Proposition 65 as the risk level at or below which there exists no significant risk from exposure to chemicals of concern (COCs) [i.e., one or fewer excess cancer cases per 100,000 exposed persons.] The EPA, as referenced in ASTM Standard E1739-95, has also endorsed this value.

- A hazard quotient of 1.0 was used to define acceptable risk for non-carcinogens. The hazard quotient is defined as the ratio of the estimated exposure dose to a value that dose not produce adverse health effects. Hazard quotients of less than 1.0 represent acceptable risk. The reference dose value used for non-carcinogens is consistent with ASTM Standard E1739-95 default values.

- The only COC is arsenic. Representative concentrations of other metals did not exceed PRGs for residential soil at the $1 x10^{-5}$ risk level and are therefore are not evaluated further.

- For arsenic, an inhalation slope factor of 12 $(mg/kg\text{-}d)^{-1}$ and an oral slope factor of 1.5 were used. These values were obtained from the California EPA Office of Environmental Health Hazard Assessment Toxicity Criteria Database dated September 27, 2001.

Exposure Pathways

Surface slag ballast and track bed soil are the sources of elevated arsenic above naturally occurring background levels. The complete exposure pathways resulting from direct exposure to the primary sources are:

- Potential inhalation (outdoor air) of arsenic in fugitive dust.
- Potential ingestion of arsenic in slag and track bed soil.
- Potential dermal contact with arsenic in slag and track bed soil.

For purposes of this evaluation, potential impacts to groundwater are considered negligible as arsenic compounds tend to adsorb to soil and the depth to groundwater is reportedly between 30 and 70 feet bgs.

Site-Specific Parameters

Default ASTM parameter values were used except where site-specific data were available. The following site-specific parameters and assumptions were incorporated into the risk evaluation:

- Risk evaluation was based on a residential exposure scenario.
- Exposure frequency was changed from 350 days per year to 50 days per year to account for the recreational use of the proposed Greenway Trail.
- Bootstrap techniques were used to calculate representative concentrations of arsenic in soil and slag. Representative concentrations used are equivalent to the calculated 95% UCL about the mean. The representative arsenic concentrations are 37.2 mg/kg for slag and 46.6 mg/kg for soil beneath slag.

- The surface area of arsenic in soil/slag is estimated to be 1,584,000 ft^2. This is based on an average 60-foot width along five miles of trail.

Human Risk Evaluation Results

Based on the above assumptions and site-specific parameters, there is not an excess risk to human health (specifically an excess cancer risk) due to the presence of arsenic in the slag ballast materials and underlying track beds. The data output for the Tier 2 RBCA risk evaluation is presented in Appendix D.

Slag

The analysis of excess risk from the presence of slag ballast within the corridor (representative concentration of 37.2 mg/kg) indicates a cumulative excess cancer risk level of 4.7×10^{-6}. This risk value is less than the acceptable risk value of 1×10^{-5}. The hazard quotient for direct exposure to slag is reported as 2.4×10^{-2}1, which is less than the maximum acceptable hazard quotient of 1.0.

Soil Beneath Slag

The analysis of excess cancer risk from track bed soil beneath the slag (representative concentration of 46.6 mg/kg) indicates a cumulative excess cancer risk level of 5.9×10^{-6}. This risk value is less than the acceptable risk value of 1×10^{-5}. The hazard quotient for direct exposure to slag is reported as 3.0×10^{-2}, which is less than the maximum acceptable hazard quotient of 1.0.

4.0 CORRECTIVE ACTION PLAN

The following sections describe the recommended remedial site activities and provide procedures and protocols for the removal of debris fill materials identified between Magnolia Avenue and Hadley Street, and south of the Whittier Boulevard Bridge.

4.1 Existing Railroad Improvements

It is understood that the existing railroad track improvements (rail, spikes, plates and ties) and signal crossing improvements (battery boxes, crossing arms and signal boxes) will be removed by UP subsequent to corridor acquisition. Stained ballast areas should be removed and properly disposed. Remaining railroad ties that are unsuitable for recycling purposes may be disposed of at the Puente Hills Landfill facility under non-hazardous waste manifest for a current disposal fee of $24.10 per ton.

4.2 Site Clearing

The majority of the *Site* was observed to be generally free of dumped waste materials although littered trash and debris exist at various locations. Surface debris materials were noted within the *Site* at the following locations:

- Concrete/masonry block piles located north of Palm Avenue, south of Hadley Street, south of the Whittier Boulevard Bridge and north of Painter Avenue.
- Rail and tie stockpile located south of Hadley Street.
- Miscellaneous trash, rail ties and brush piles located between Calmada Avenue and Mills Avenue.
- Homeless encampment trash between Philadelphia Street and Penn Street and in the vicinity of the Whittier Boulevard Bridge.

The Site should be cleared of brush vegetation and observed trash and debris materials. Soil staining observed beneath the removed trash and debris should be sampled and/or removed and properly disposed.

4.3 Track Bed Ballast and Soil Materials

The light and dark slag ballast materials within the track bed at the *Site* contain elevated heavy metal concentrations notably arsenic, lead and vanadium. The arsenic levels are similar for the light and dark slag materials at 95% UCL concentrations of 35 and 50 mg/kg, respectively. The dark slag materials contain significantly higher lead concentrations (95% UCL = 358 mg/kg) and lower vanadium concentrations (95% = 89 mg/kg) when compared to the light slag materials (72 and 512 mg/kg, respectively). One dark slag sample (T12-.5) and one light slag sample (T7-.5) contained soluble lead levels above California hazardous waste thresholds. The dark slag sample further contained a total lead

concentration in excess of the California Health and Safety Code (HSC) Class I hazardous waste disposal threshold for lead of 350 mg/kg.

The primary contaminant of concern associated with the slag ballast materials and underlying track bed soil is arsenic. The light and dark slag ballast materials and underlying soil contain 95% UCL arsenic levels ranging between 35 and 50 mg/kg compared to the cancer residential and industrial PRGs of 0.39 and 2.7 mg/kg, respectively. Naturally occurring background arsenic values typically range from 8 to 12 mg/kg. The surface soil samples obtained from the corridor outside of the track bed areas contained a 95% UCL concentration for arsenic of 14 mg/kg.

The results of the human health risk evaluation indicate that the elevated arsenic concentrations in the existing slag ballast and underlying track bed soil at the *Site* do not present an unacceptable human health risk for the planned recreational land-use. Based on the calculated excess cancer risk under a residential exposure scenario, an exposure frequency of up to 84 days per year does not present an unacceptable risk.

The slag ballast materials within the *Site* are suitable for use as sub-base for planned asphalt/concrete pavements during trail construction activities. Slag ballast materials designated for offsite disposal will require management to an accepting landfill or recycling facility. Information obtained from the Los Angeles Sanitation District indicates that slag ballast materials that do not contain total and soluble metal concentrations above California CCR and HSC hazardous waste thresholds are acceptable for disposal at their Puente Hills Class II landfill facility under non-hazardous waste manifest for a current disposal fee of $24.10 per ton.

4.4 Asbestos and Lead-Based Paint

Special disposal and worker protection measures associated with asbestos-containing materials identified at the 605 Freeway overcrossing and lead-containing paint identified at the Norwalk Boulevard, Pickering Street and Whittier Boulevard overcrossing structures, the storm drain boxes at Pioneer Boulevard, and the retaining wall structure located between Magnolia Avenue and Hadley Street will be necessary in accordance with the recommendations presented in the previously referenced Phase II ESA report. Geocon obtained a cost estimate of $21,000 from Marcor Remediation, Inc. located in Cerritos, California for the bridge abatement activities. A copy of the asbestos and lead-based paint abatement cost estimate is presented in Appendix E.

Additional abatement costs should be anticipated for Occupational Safety and Health Administration (OSHA) required worker protection and monitoring activities during planned bridge renovation work and abatement of deteriorated lead-based paint retaining wall and storm drain box surfaces

4.5 Debris Fill Material Remediation

Based on the proposed recreational trail land-use of the rail corridor and the results of the soil sampling and analysis, Geocon recommends direct excavation and offsite land disposal as the most appropriate corrective action for the identified debris fill materials at the *Site*. Debris fill materials identified between Magnolia Avenue and Hadley Street were encountered at the retaining wall structure along the westerly site boundary. Subsurface exploration on the adjacent property would be required to confirm whether the debris fill materials extend beneath the retaining wall structure and onto the adjacent parcel. The remedial approach and associated cost estimates presented herein do not address potential offsite debris fill impacts.

The following sections present the recommended technical and logistical aspects of implementing remedial excavation and offsite disposal of the identified Hadley Street and Whittier Boulevard Bridge debris fill materials.

Pre-Field Activities

- Retain the services of an excavation contractor (Contractor) who possess a California Class A Contractor License and Hazardous Substances Removal and Remedial Actions Certification. All onsite personnel involved with the remedial debris fill material removal operations shall have completed 40-Hour Hazardous Waste Operations Training per Title 8 of the CCR, Section 5192 and applicable annual update training.

- The Contractor should prepare a project Workplan outlining the technical approach, sampling protocols, quality assurance/quality control field and laboratory procedures, and project schedule for submittal to and approval by the appropriate county or state regulatory agency.

- The Contractor should prepare a site-specific Health and Safety Plan (HSP) under the direction of and signed by a Certified Industrial Hygienist. The HSP should describe project staff training requirements, provide guidelines on the use of personal protective equipment, and outline dust monitoring protocols. In addition, the HSP should summarize the health and safety procedures to be implemented during the field activities.

- The Contractor should further prepare and submit a Stormwater Pollution Prevention Plan, Soil Disposal Transportation and Traffic Plan, and Site Security Plan.

- The Contractor should obtain a tree removal permit from the City of Whittier for the removal of designated trees within the Whittier Boulevard Bridge debris fill area to allow for excavation equipment access.

- The Contractor should provide a minimum of 48 hours notice prior to the start of the soil excavation activities to subscribing local public utilities via USA. Field meetings with public utility USA subscribers and utility potholing may be necessary to adequately delineate subsurface public utilities and conduits in proximity to the proposed remedial excavation locations.

- The Contractor should retain the services of a California-certified analytical laboratory to perform chemical analyses of the confirmation soil samples.

Field Activities

- Temporary construction fencing should be erected around the perimeter of each of the planned remedial excavation areas. Entry into the fenced working areas will be restricted to appropriately OSHA-trained personnel.

- Due to the limited working areas and to facilitate direct load-out and transportation of the excavated debris fill materials, the Contractor will obtain pre-approval from an appropriately licensed Class I landfill facility for acceptance of the waste materials. Additional soil analytical data may be required from the designated landfill facility prior to approval for direct hauling or prior to final acceptance of the material as a non-RCRA hazardous waste.

- The designated landfill facility should be pre-approved by the City of Whittier. A representative of the City of Whittier will sign the waste profile forms and Uniform Hazardous Waste Manifests as the waste generator.

- Removal of trees and brush, and concrete and asphalt rubble will be required to access portions of the planned Whittier Boulevard Bridge debris fill removal area. Removal and temporary stockpiling of slag ballast materials at both sites, and clean overburden soil at the Hadley Street site should be performed prior to the removal of debris fill materials. Removal of debris fill materials adjacent to the westerly retaining wall should be performed in sections to avoid structural damage.

- The excavated debris fill materials should be loaded directly into haul trucks. The haul trucks should be covered with tarps and appropriately manifested prior to transport to the designated landfill facility. Temporary stockpiling of the waste materials should not be performed outside of the fenced remedial excavation areas.

- The Contractor should implement effective dust control measures including watering the active work area to prevent visible dust. Work should be suspended if weather conditions, including wind speeds or gusts exceeding 25 miles per hour, prevent effective dust control. Excavation equipment should be inspected and cleaned (if necessary) prior to leaving the fenced excavation areas.

- Following the completed excavation activities based on visual observations, confirmation soil samples should be obtained from the bottom of the excavation to confirm effective removal of the debris fill materials to below the HSC Class I disposal threshold of 350 mg/kg. The soil samples should be collected in pre-cleaned six-inch long stainless steel tubes driven into the soil. The sample tubes should be sealed with teflon, capped, labeled, chilled, and transported to the laboratory utilizing standard chain-of-custody procedures.

- Each confirmation soil sample should be analyzed for total lead by EPA Test Method 6010B.

- Site restoration activities should include the placement and proper compaction of clean imported fill materials at the Hadley Street debris fill area.

Report Preparation

The Contractor should prepare a remediation summary report upon completion of the field, laboratory and soil disposal activities. The report should include the following:

- A summary of the remedial soil excavation activities including excavation limits and volumes, confirmation soil sample data evaluation, health and safety monitoring and site restoration.
- Copies of the laboratory reports, chain-of-custody documentation, compaction testing data, site photographs and waste disposal manifests.

The summary report should be submitted to the appropriate county or state regulatory agency or review and site closure status.

Remedial Cost Estimates

For preliminary planning purposes only, cost estimates to complete the planned remedial debris fill excavations for the Hadley Street and Whittier Boulevard Bridge areas are summarized on Table 6. The cost estimates are based on the following assumptions:

- The work will be contracted under California prevailing wage rates.
- The rail and ties will be removed by UP prior to commencing the remedial debris fill removal activities.
- The placement of backfill materials will not be required after removing the debris fill materials from the Whittier Boulevard Bridge embankment.
- The removal of debris fill materials at the Hadley Street area will be limited to the identified impacted areas within the *Site*. The cost estimates provided herein do not include costs associated with potential debris fill impacts located beneath and beyond the existing retaining wall along the western site boundary.
- The debris fill material disposal costs presented herein assume acceptance by the designated landfill as non-RCRA Class I hazardous waste. Pre-treatment of RCRA waste to non-RCRA levels will increase the estimated disposal costs by at least a factor of four. Additional soil characterization stockpile sampling may be required by the designated landfill facility prior to acceptance.

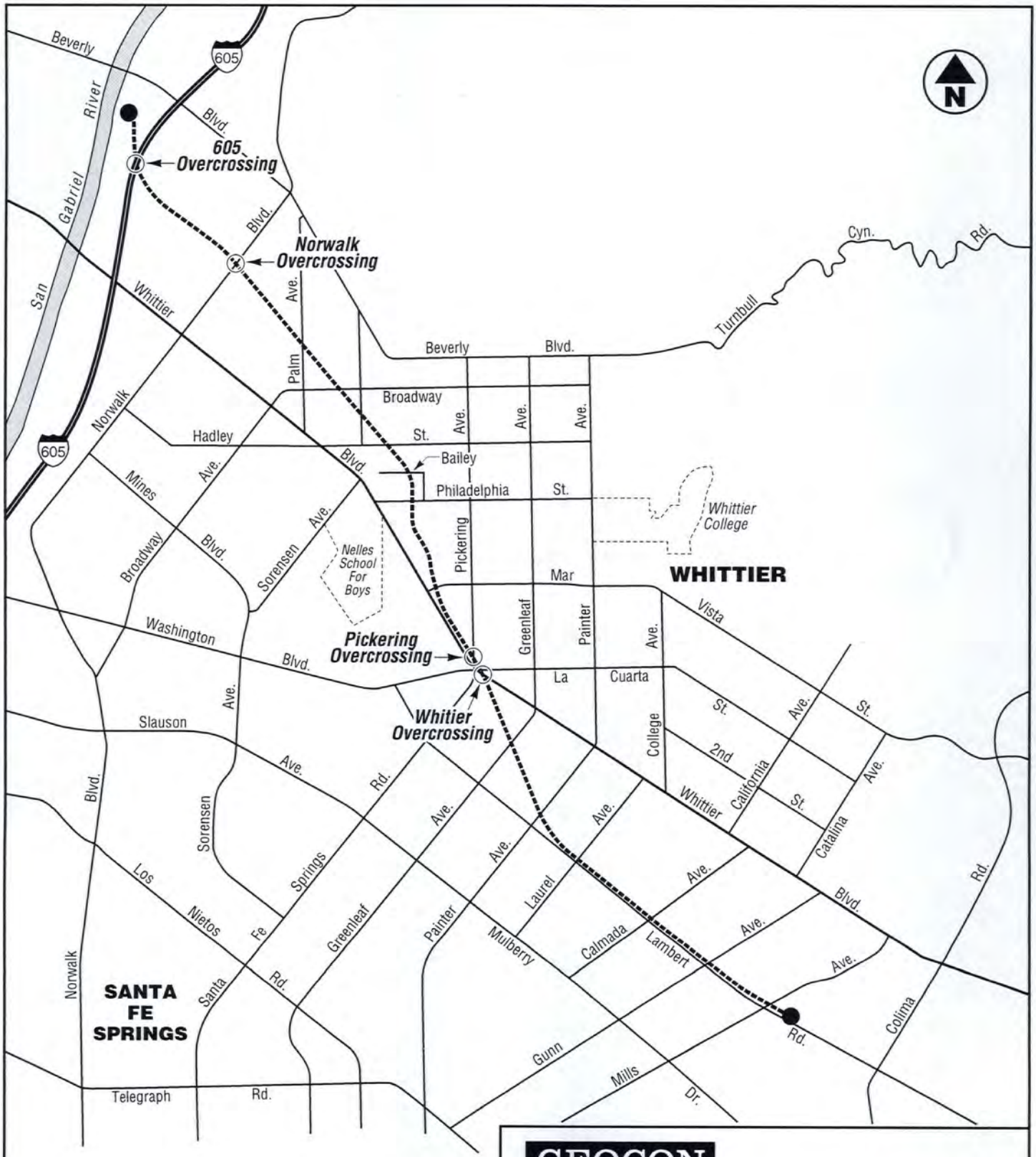
The actual remedial costs may vary from the cost estimates presented herein depending on when the work is performed and the actual volumes of excavated material requiring disposal. Subcontractor estimates based on year 2001 material, transportation and disposal fees are presented in Appendix E.

5.0 REPORT LIMITATIONS

This report has been prepared exclusively for HMO&T and the City of Whittier. The information contained herein is only valid as of the date of the report.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence or consultation either expressed or implied. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



0 1/2
Scale in Miles

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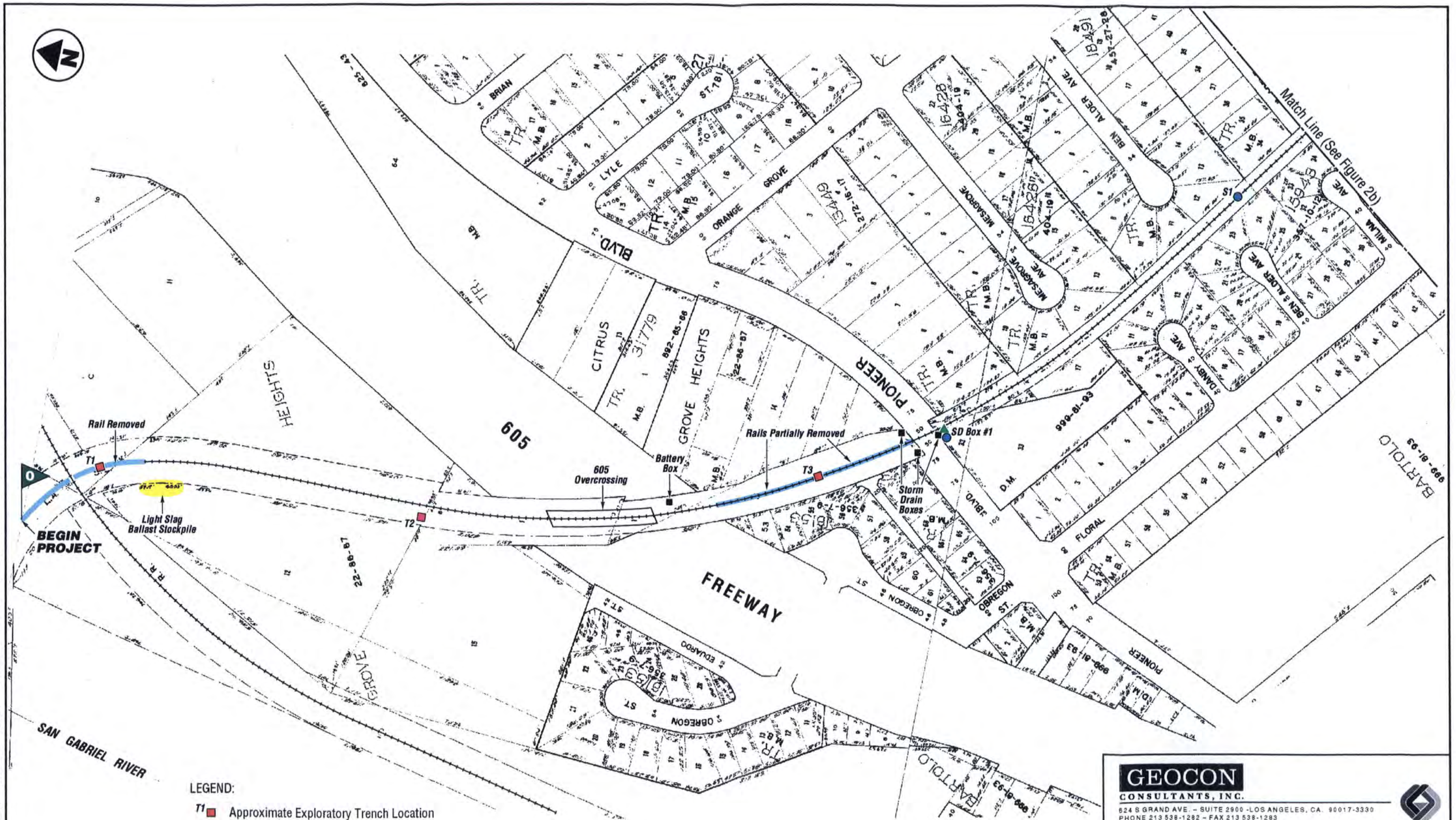
City of Whittier, California

PROJECT LOCATION MAP

A8050-06-03	November 2001	Figure 1



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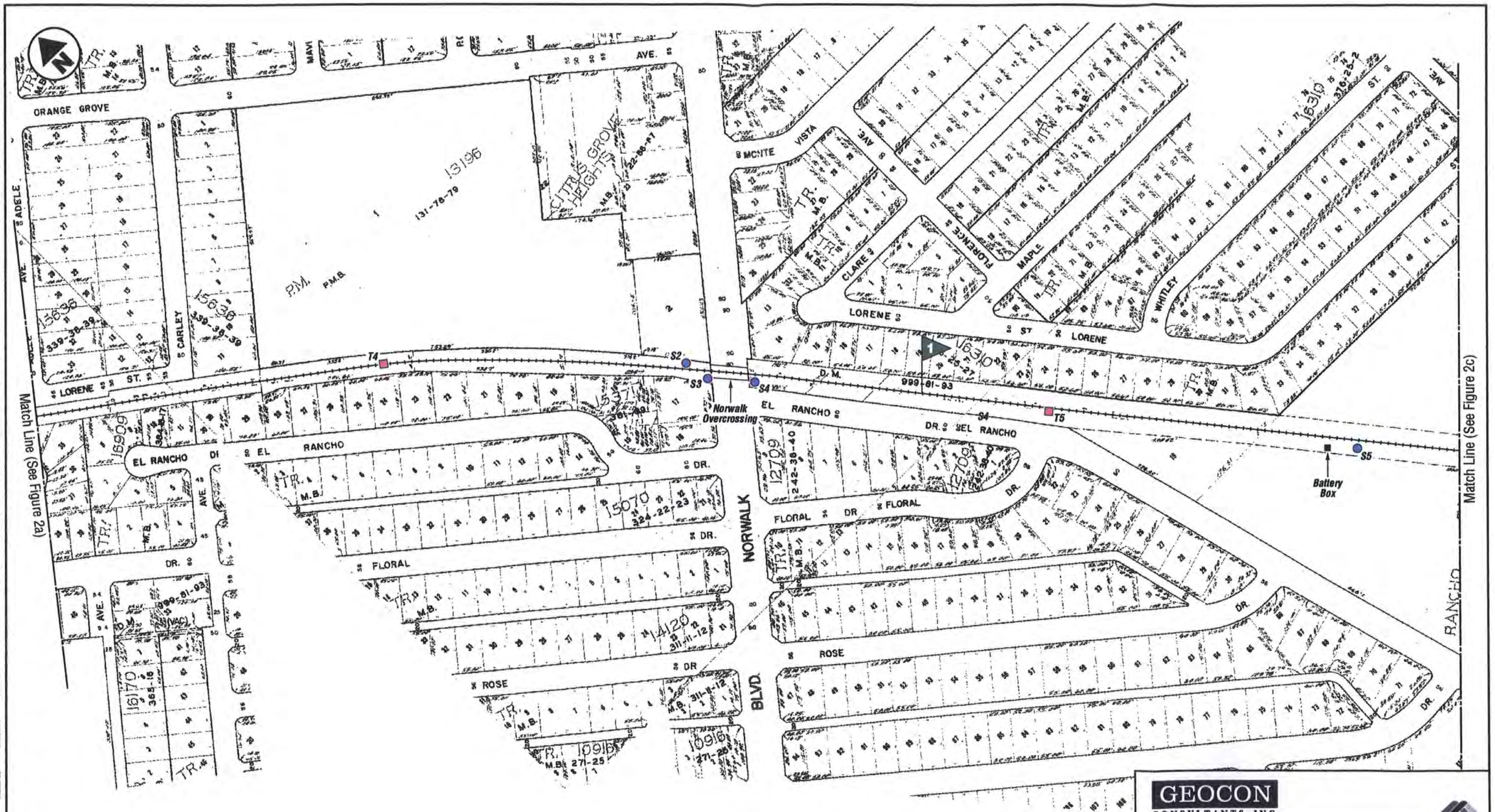
SITE PLAN

A8050-06-03	November 2001	Figure 2a



LEGEND:

- T1 Approximate Exploratory Trench Location
- S1 Approximate Surface Soil Sample Location
- Mile Post Marker

0 200
Scale in Feet

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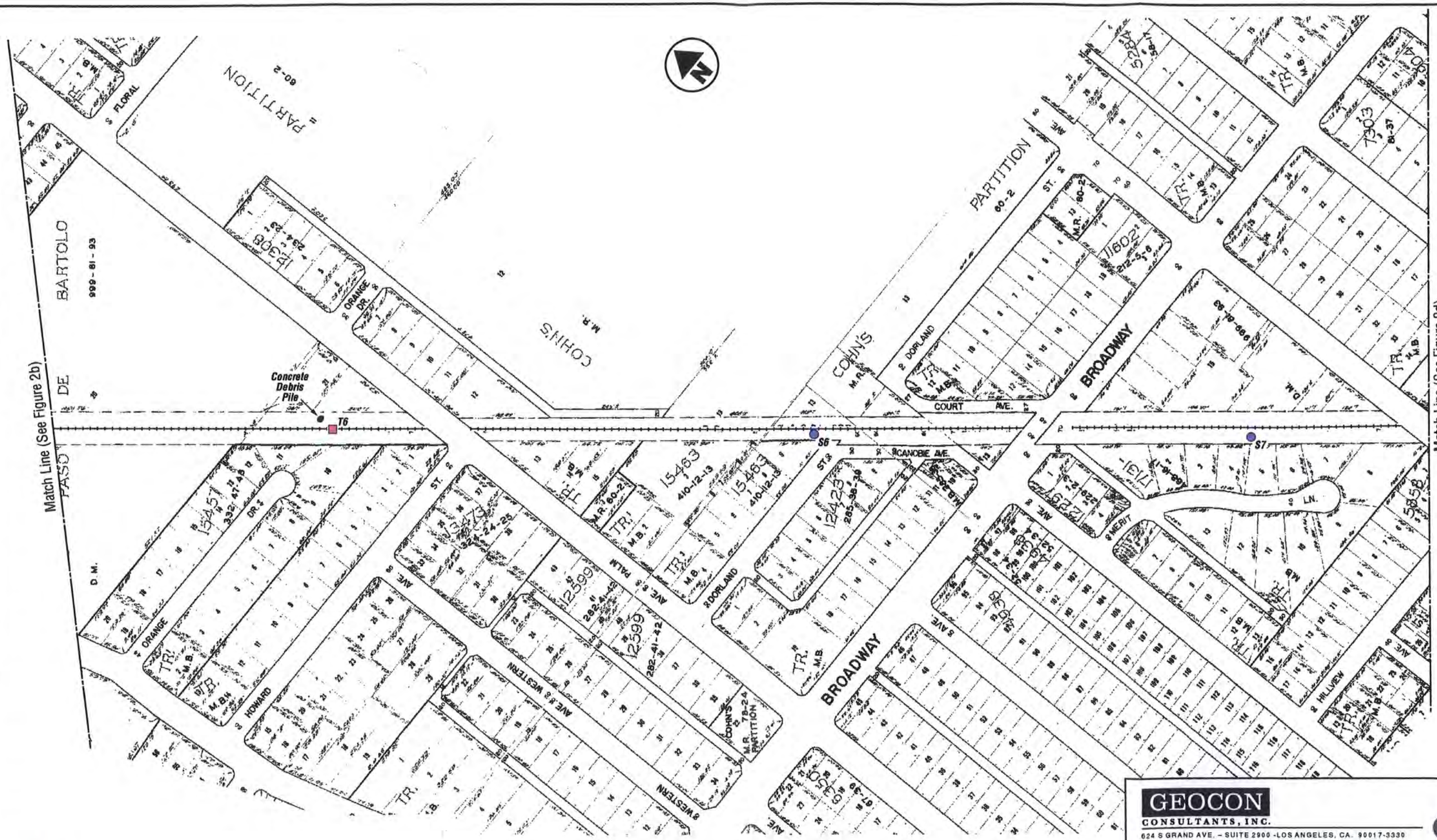
SITE PLAN

A8050-06-03	November 2001	Figure 2b



LEGEND:

T1 Approximate Exploratory Trench Location

S1 Approximate Surface Soil Sample Location

0 200

Scale in Feet

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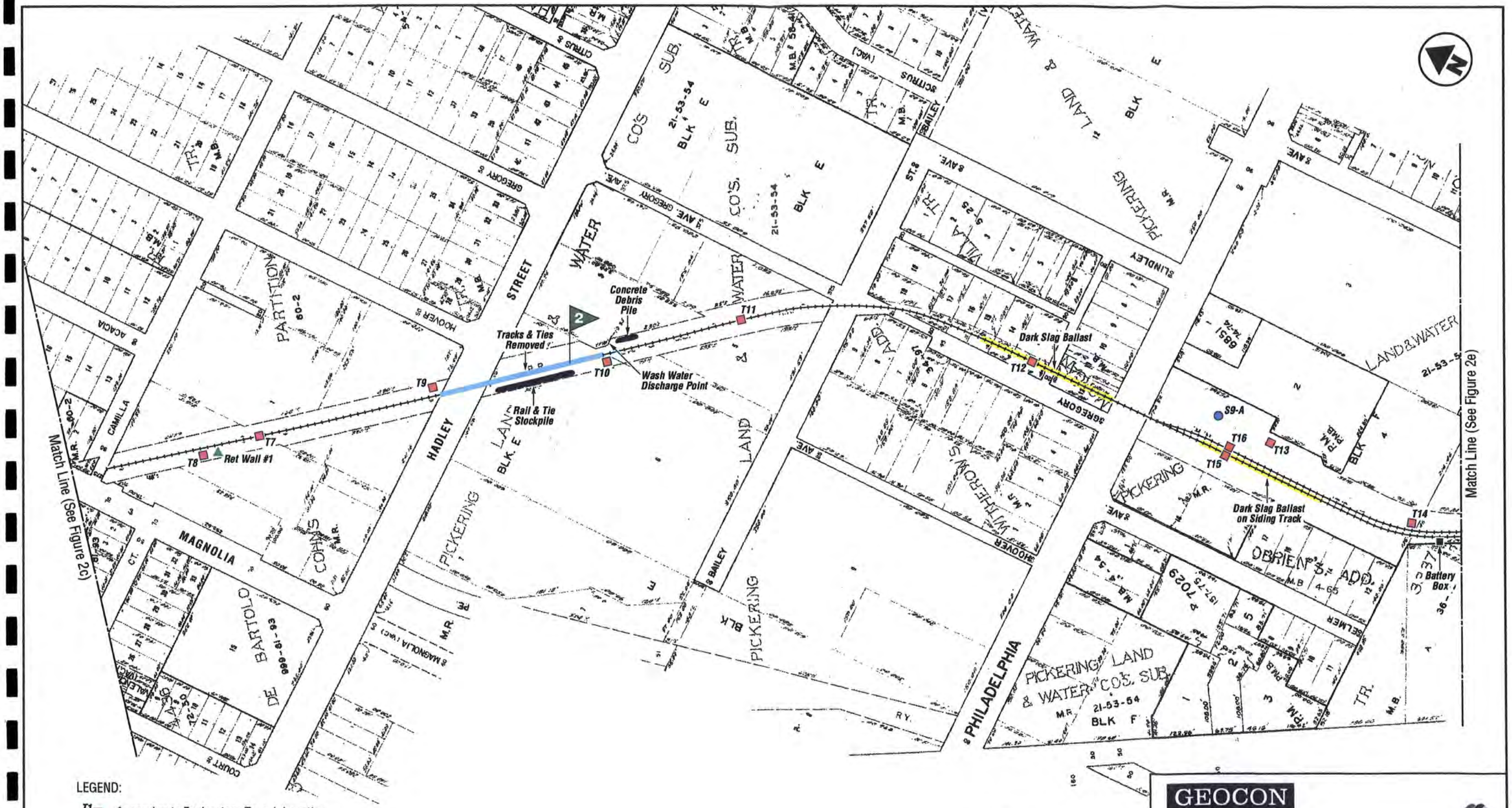
City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2c



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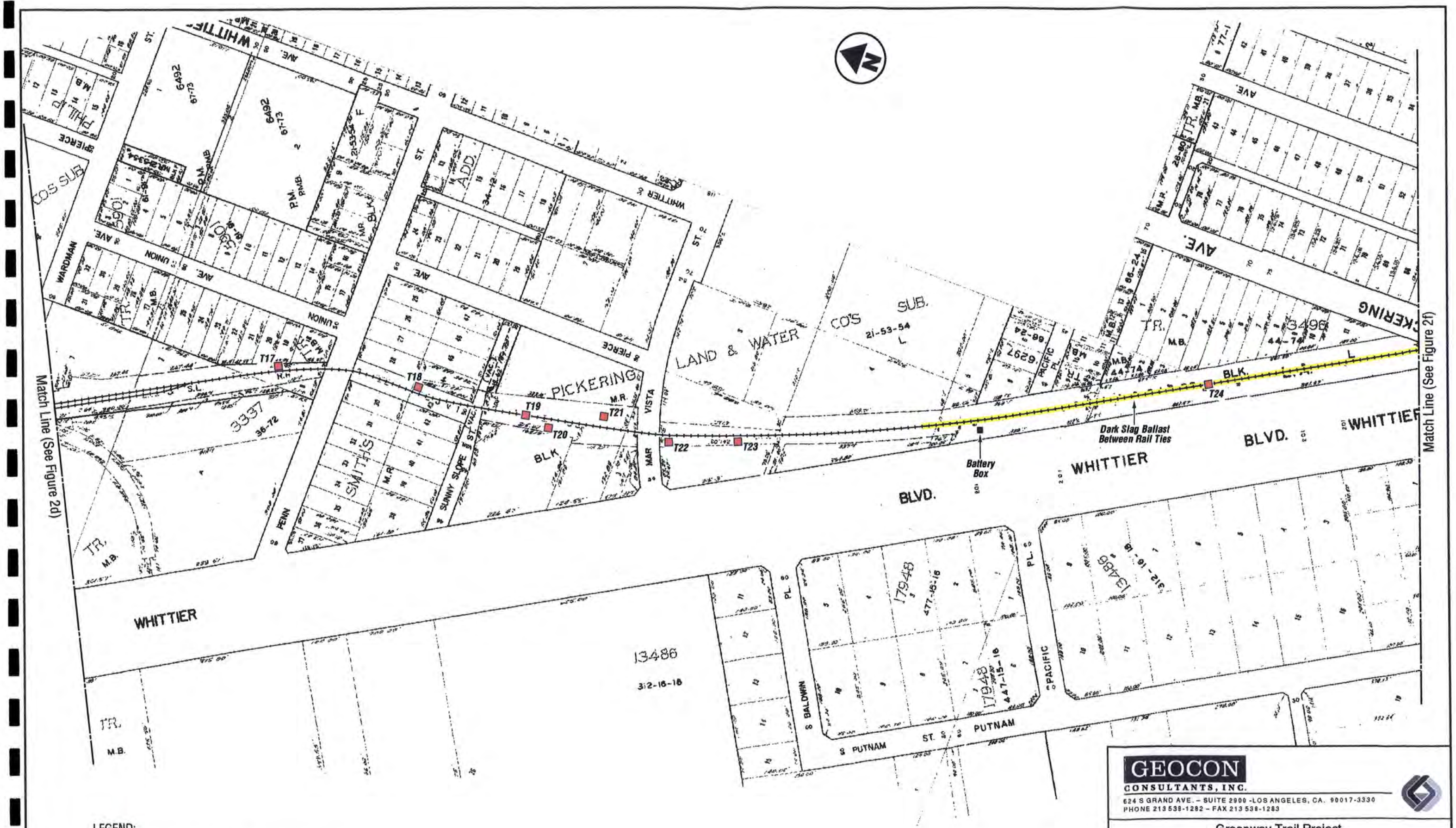
City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2d



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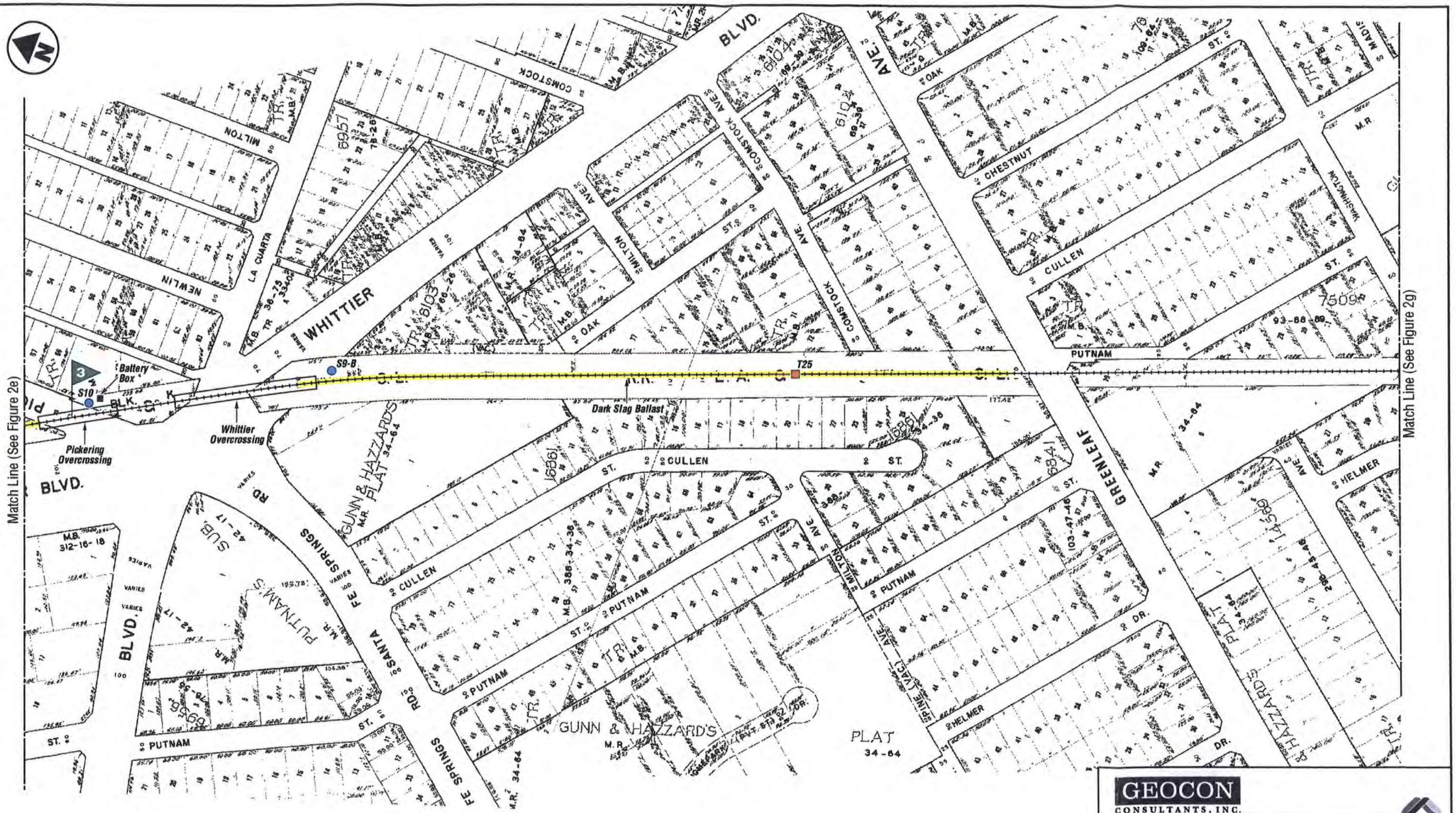
City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2e



LEGEND:

- T1 Approximate Exploratory Trench Location
- S1 Approximate Surface Soil Sample Location
- Approximate Extent of Dark Slag Ballast
- Mile Post Marker

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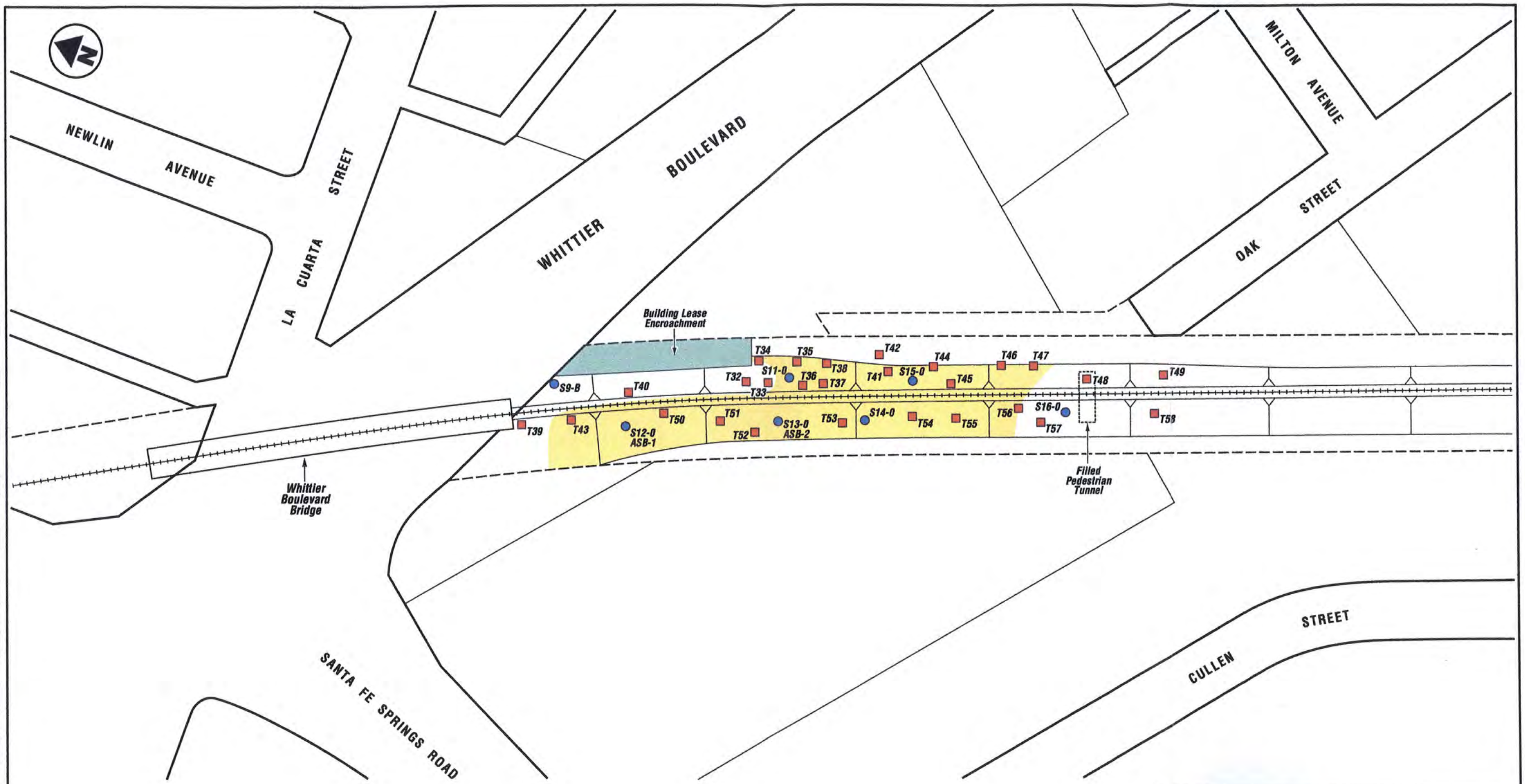
SITE PLAN

A8050-06-03	November 2001	Figure 2f



LEGEND:

S11-0 Approximate Surface Soil Sample Location

T32 Approximate Exploratory Trench Location

Debris Fill Material

0 80
Scale in Feet

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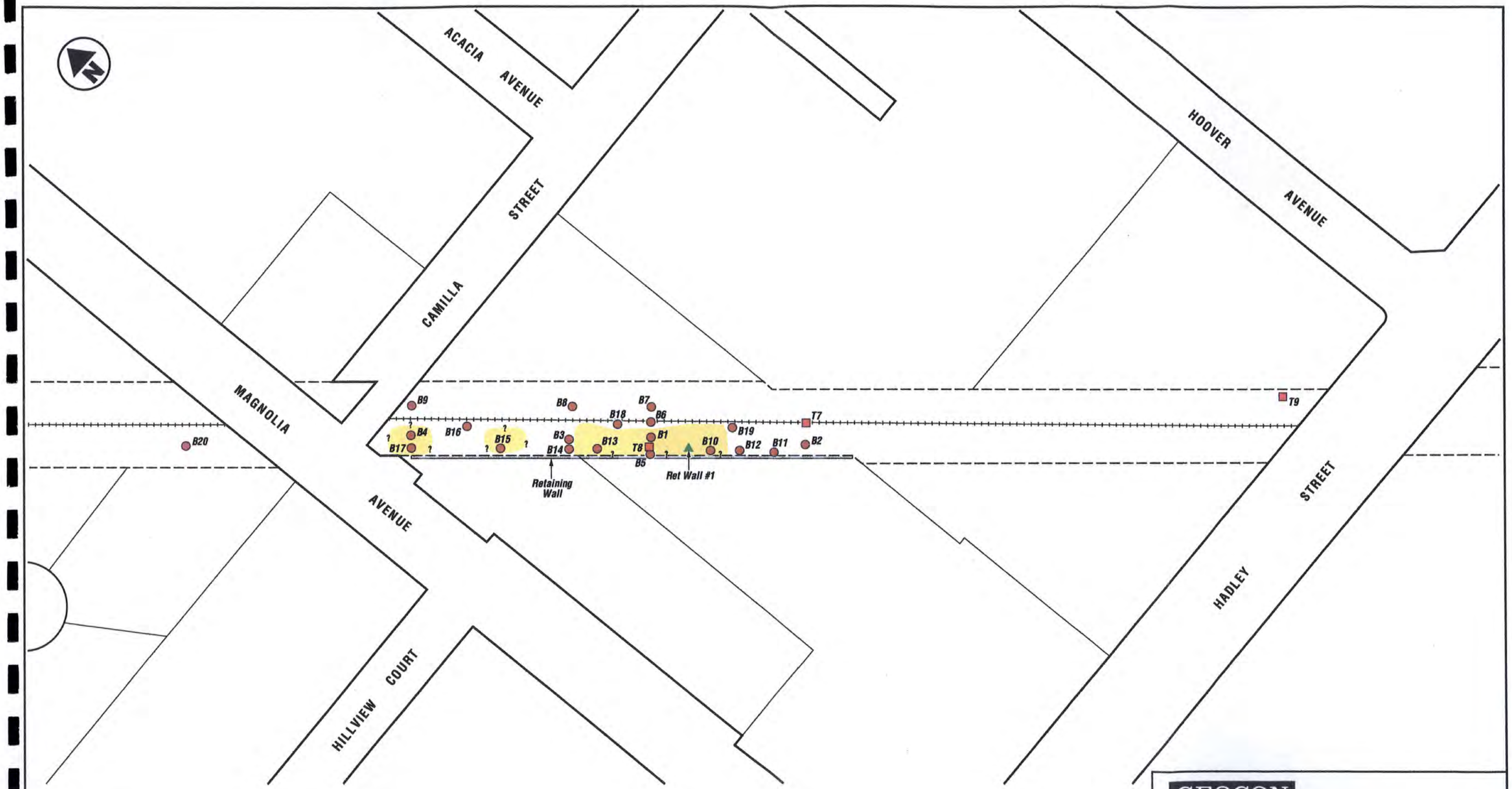
Whittier Boulevard Bridge Debris Fill Site Plan

A8050-06-03	November 2001	Figure 4



LEGEND:

- T7 ■ Approximate Exploratory Trench Location
- Ret Wall #1 ▲ Approximate Paint Chip Sample Location
- B1 ● Approximate Exploration Location
- Debris Fill Material (Queried Where Limits Undefined)

0 — 80
Scale in Feet

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Hadley Street Debris Fill Site Plan

A8050-06-03	November 2001	Figure 5

Photo No. 1 View of Kustom Workz Facility Located Adjacent and South of the Whittier Boulevard Bridge

Photo No. 2 View of Kustom Workz Building Encroachment Easement

SITE PHOTOS NO. 1 & 2

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Greenway Trail Project		
City of Whittier, California		
A8050-06-03	November 2001	Figure 3a

Photo No. 3 Air Compressor Shed and Stained Concrete Located Within Kustom Workz Building Encroachment Easement

Photo No. 4 View of Dark Debris Fill Materials Containing Refractory Brick Overlying Light Brown Bridge Embankment Fill

SITE PHOTOS NO. 3 & 4

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City of Whittier, California		
A8050-06-03	November 2001	Figure 3b

Photo No. 5 View of Pedestrian Tunnel Located Approximately 500 Feet South of the Whittier Boulevard Bridge

Photo No. 6 View of Pedestrian Tunnel Backfill Materials

SITE PHOTOS NO. 5 & 6

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City of Whittier, California		
A8050-06-03	November 2001	Figure 3c

Photo No. 7 Southerly View of Hadley Street Debris Fill Area

Photo No. 8 View of Debris Fill Materials Encountered in Trench T8

SITE PHOTOS NO. 7 & 8

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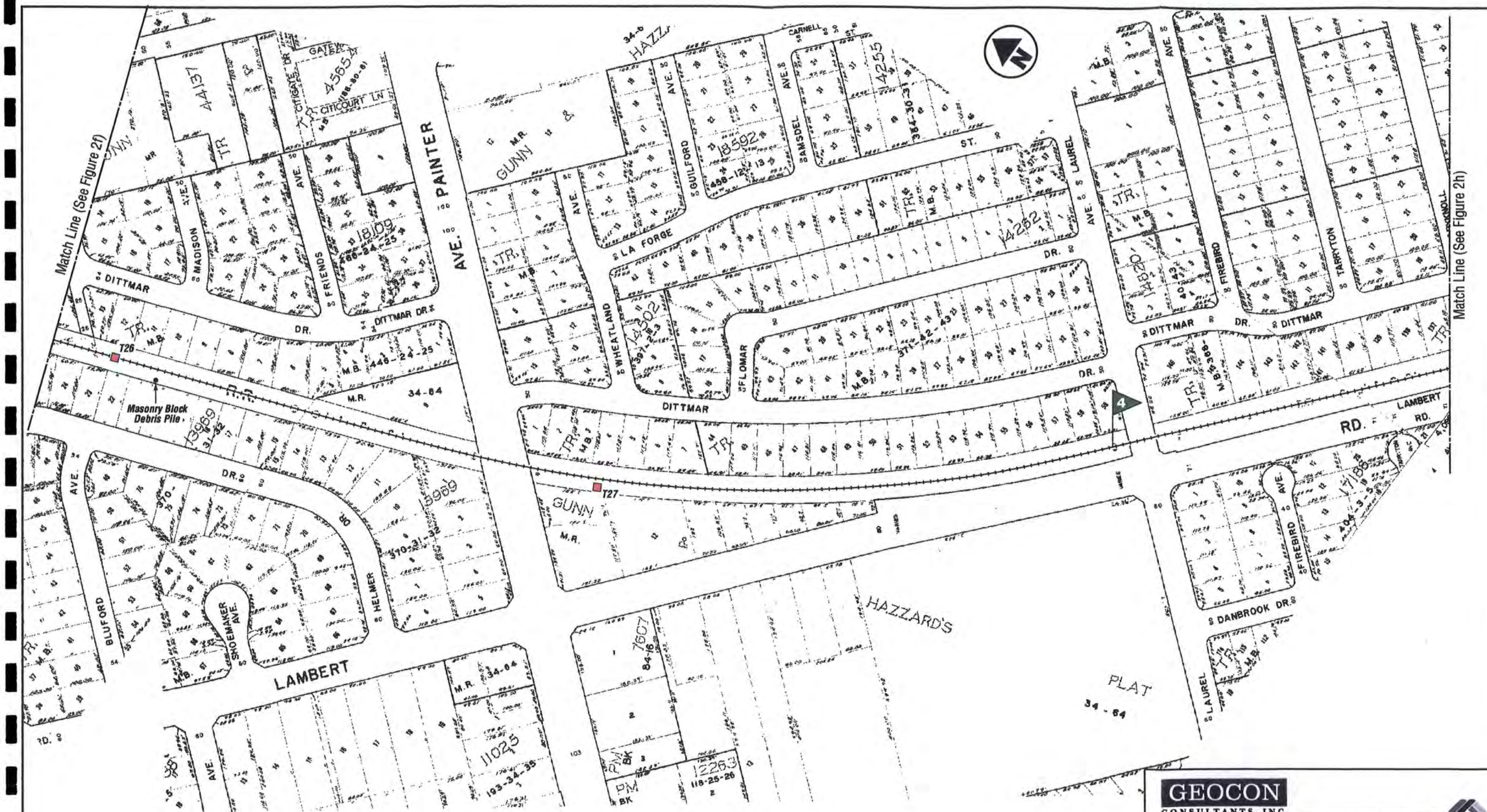
Greenway Trail Project		
City of Whittier, California		
A8050-06-03	November 2001	Figure 3d



LEGEND:

T1 ■ Approximate Exploratory Trench Location

Mile Post Marker

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SITE PLAN

A8050-06-03	November 2001	Figure 2g

LEGEND:

T1 ■ Approximate Exploratory Trench Location

Area of Partial or Complete Rail & Tie Removal

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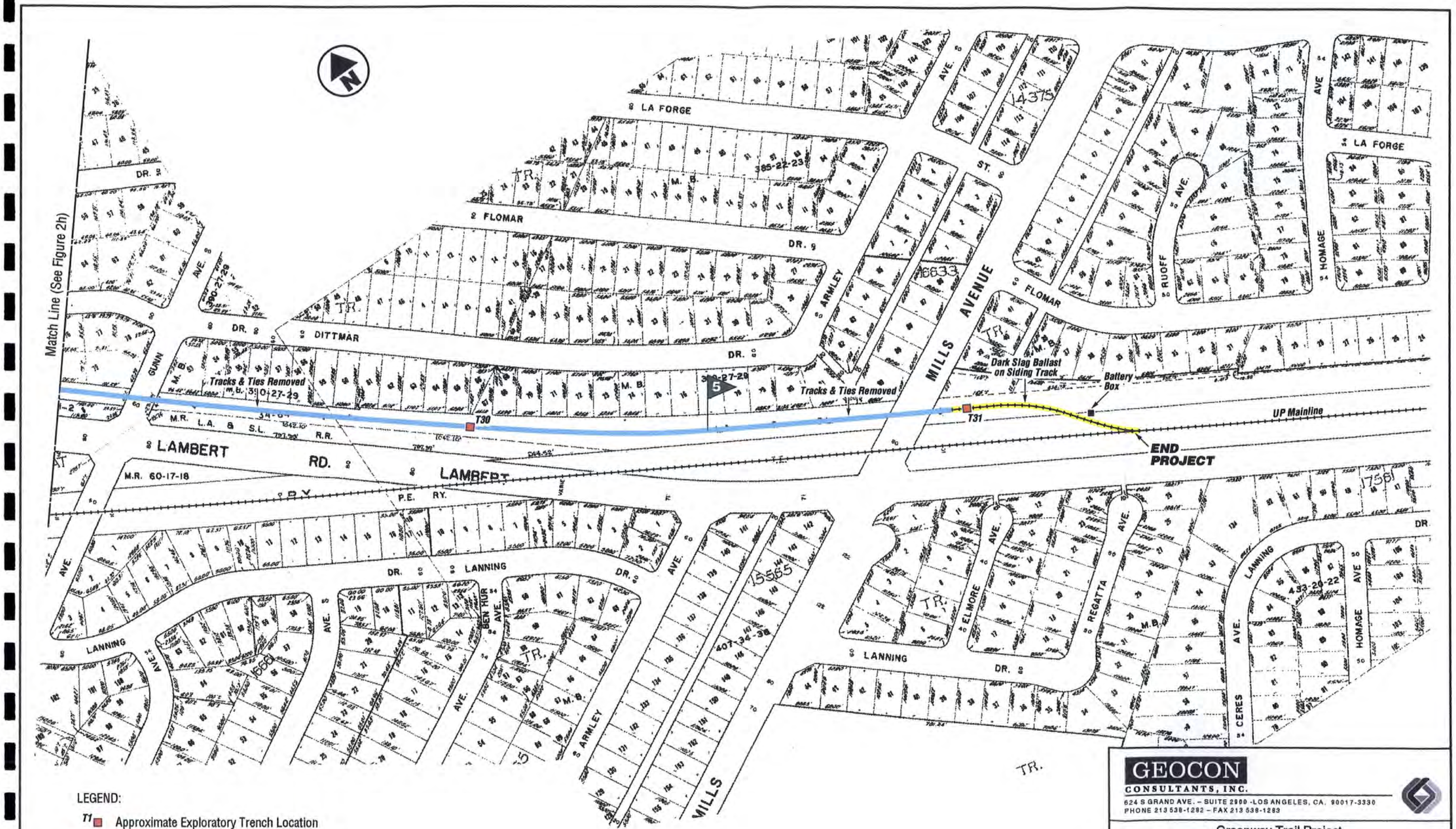
City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2h



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Greenway Trail Project

City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2i

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T1 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	4	NP	NP	30-40
T1 – 1	Soil						
T1 – 2	Soil						
T2 – 0.5	Soil	Heavy Metals - Slag	NP	5	NP	NP	10
T2 – 1	Soil						
T2 – 2	Soil						
T3 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	8	NP	8	12
T3 – 1	Soil						
T3 – 2	Soil						
T3 - Tie Gravel	Ballast	Creosote Stains Beneath Rail Ties					
T4 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	4	NP	NP	20
T4 – 1	Soil						
T4 – 2	Soil						
T5 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	4	NP	12	20
T5 – 1	Soil						
T5 – 2	Soil						
T6 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	8	NP	NP	16
T6 – 1	Soil						
T6 – 2	Soil						
T7 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	6	NP	NP	18
T7 – 1	Soil						
T7 – 2	Soil						
T8 – 1	Soil	Heavy Metals, TPH And VOCs Associated With Railroad Debris Fill Materials	4-7	NA	NA	NA	NA
T8 – 5.5	Debris Fill						
T8 – 7	Soil						
T8 – Stockpile	Debris Fill						
T9 – 1	Soil	TPH Stains Adjacent To Cool-A-Coo	NP	NA	NA	NA	NA
T10 – 1	Soil	TPH Adjacent To City Maintenance Facility	NP	7	NP	NP	17
T11 – 2	Soil	TPH Stain Within Track Bed	NP	10.5	NP	NP	17

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T12 – 0.5	Dark Slag Ballast	Heavy Metals – Slag	NP	NP	8	NA	15
T12 – 1	Soil						
T12 – 2	Soil						
T13 – 2	Soil	TPH - Former Train Station Site	NP	NA	NA	NA	NA
T14 – 1	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
T15 - 0.5	Dark Slag Ballast	Heavy Metals – Slag	NP	NP	4 (siding track)	NP	15
T15 – 1	Soil						
T15 – 2	Soil						
T16 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	6	NP	12	15
T16 – 1	Soil						
T16 – 2	Soil						
T17 - 1.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
T18 – 1	Soil	TPH and VOCs Adjacent To Mar Vista Molding Co.	NP	NA	NA	NA	NA
T19 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	18	15
T19 – 1	Soil						
T19 – 2	Soil						
T20 – 2	Soil	TPH and VOCs Adjacent to Former Dip Tank	NP	NA	NA	NA	NA
T21 – 1	Soil	VOCs From Glue Adjacent To Mar Vista Molding Co.	NP	NA	NA	NA	NA
T22 – 2	Soil	TPH Surface Stains/Oil Absorbent	NP	NA	NA	NA	NA
T23 – 1	Soil	TPH Surface Stains Adjacent To Pro Auto Sales	NP	NA	NA	NA	NA
T24 - 0.5	Light & Dark Slag Ballast	Heavy Metals – Slag	NP	4	12 (between ties)	NP	30-40 (slope)
T24 – 1	Soil						
T24 – 2	Soil						
T25 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	NP	4	12	22
T25 – 1	Soil						
T25 – 2	Soil						

TABLE I
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T26 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	9	17
T26 – 1	Soil						
T26 – 2	Soil						
T27 – 1	Soil	Pesticides, PCBs and Herbicides	NP	NA	NA	NA	NA
T28 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	9	15
T28 – 1	Soil						
T28 – 2	Soil						
T29 – 1	Soil	TPH Adjacent to Lambert Tire Facility	NP	NA	NA	NA	NA
T30 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	9	16
T30 – 1	Soil						
T30 – 2	Soil						
T31 - 0.5	Dark Slag Ballast	Heavy Metals - Slag	NP	NP	3	15	18
T31 – 1	Soil						
T31 – 2	Soil						
T31 – Slag	Dark Slag Ballast						
T32-.5	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T32 Backing Strip	Material	Asbestos Associated With Debris Fill Materials					
T33-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T34-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-2	NA	NA	NA	NA
T34-3	Soil						
T35-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T35-3	Soil						
T36-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T36-3	Soil						
T37-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T38-4.5	Soil	Heavy Metals Associated With Debris Fill Materials	0-3.5	NA	NA	NA	NA
T39-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T40-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T41-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2	NA	NA	NA	NA
T42-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T43-1.5	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T44-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T45-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1.5	NA	NA	NA	NA
T46-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1.5	NA	NA	NA	NA
T47-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-1.5	NA	NA	NA	NA
T47-2	Soil						
T48-3	Soil	Heavy Metals Associated With Pedestrian Tunnel Backfill Materials	NP	NA	NA	NA	NA
T49-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T50-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T51-1	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T52-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T53-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T54-1.5	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T55-.5	Debris	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T55-1.5	Soil						
T56-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T57-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T58-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
S1 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S2 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S3 – 0	Soil	Lead at Painted Norwalk Bridge Abutment	NP	NA	NA	NA	NA
S4 – 0	Soil	Lead at Painted Norwalk Bridge Abutment	NP	NA	NA	NA	NA
S5 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S6 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S7 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	6.5	NP	NP	17
S8 – 0	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S9 – A	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S9 – B	Soil	Lead From Paint at Pedestrian Tunnel	NP	NA	NA	NA	NA
S10 – 0	Soil	Lead From Paint at Whittier Bridge Abutment	NP	NA	NA	NA	NA
S11-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S12-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S13-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S14-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S15-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S16-0	Soil	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
ASB-1	Asbestos Material	Debris Fill @ S. Whittier Bridge Embankment	NA	NA	NA	NA	
ASB-2	Asbestos Material	Debris Fill @ S. Whittier Bridge Embankment	NA	NA	NA	NA	
SD Box #1	Beige Paint Chip	Lead Containing Paint at Storm Drain Box	NA	NA	NA	NA	NA
SD Box #1	Soil	Lead From Paint at Storm Drain Box	NA	NA	NA	NA	NA
Ret Wall #1	Beige Paint Chip	Lead Containing Paint at Retaining Wall	NA	NA	NA	NA	NA
Ret Wall #1	Soil	Lead From Paint at Retaining Wall	NA	NA	NA	NA	NA
Ret Paint	Beige Paint Chip	Lead Containing Paint at Retaining Wall	NA	NA	NA	NA	NA
B1-8	Native Soil	Heavy Metals – Hadley Street Debris Fill	4-7	NA	NA	NA	NA
B1-12	Native Soil						
B2-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B2-4	Native Soil						
B2-8	Native Soil						
B3-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B3-4	Native Soil						
B3-8	Native Soil						

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
B4-3	Debris Fill	Heavy Metals – Hadley Street Debris Fill	2-4	NA	NA	NA	NA
B4-4	Native Soil						
B4-8	Native Soil						
B5-2	Fill	Heavy Metals – Hadley Street Debris Fill	6-8	NA	NA	NA	NA
B5-4	Fill						
B5-7	Debris						
B5-8	Native Soil						
B5-12	Native Soil						
B6-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B6-4	Fill						
B6-6	Native Soil						
B6-8	Native Soil						
B6-12	Native Soil						
B7-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B7-4	Native Soil						
B7-8	Native Soil						
B7-12	Native Soil						
B8-4	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B8-8	Native Soil	Heavy Metals – Hadley Street Debris Fill					
B9-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B9-4	Fill						
B9-8	Native Soil						
B10-3	Debris Fill	Heavy Metals – Hadley Street Debris Fill	2.5-3.5	NA	NA	NA	NA
B-11	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-12	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-13	Debris	Heavy Metals – Hadley Street Debris Fill	0-2	NA	NA	NA	NA
B-14	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-15	Debris	Heavy Metals – Hadley Street Debris Fill	1.5-3	NA	NA	NA	NA
B-16	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-17	Debris	Heavy Metals – Hadley Street Debris Fill	2-4	NA	NA	NA	NA
B-18	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-19	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-20	Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

Notes: NP = Not present
NA = Not available

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T1-.5	T1-1	T1-2	T2-.5	T2-1	T2-2	T3-.5	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.50	0.50	0.42	0.49	0.50	0.50	<0.25	500	150
Arsenic	34	**210 (12/1.4)**	**93 (5.2/1.4)**	12	11	17	8.0	500	50
Barium	140	38	71	110	130	150	130	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	30	7.5	11	22	20	20	10	2,500	5,600
Cobalt	5.5	3.5	6.4	9.5	11	9.0	3.0	8,000	800
Copper	46	22	30	22	20	28	14	2,500	250
Lead	48	44	28	5.0	3.5	14	18	1,000	50
Mercury	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	20	2
Molybdenum	1.5	0.25	0.39	0.48	0.50	0.50	0.33	3,500	3,500
Nickel	14	6.0	10	18	19	18	5.5	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.5	1.5	1.2	1.0	1.0	1.0	0.50	700	70
Vanadium	38	15	23	41	37	38	30	2,400	240
Zinc	64	110	230	52	48	100	45	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T3-1	T3-2	T4-.5	T4-1	T4-2	T5-.5	T5-1	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.48	0.50	<0.25	0.48	0.45	1.0	0.50	500	150
Arsenic	**120 (4.8/1.2)**	18	4.0	**60 (7.1/<1.0)**	**90 (4.7/1.3)**	7.5	45	500	50
Barium	130	150	6.0	66	110	85	54	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	18	27	1.5	12	18	110	8.0	2,500	5,600
Cobalt	10	14	2.0	6.0	9.0	2.5	4.5	8,000	800
Copper	18	22	4.0	12	20	14	10	2,500	250
Lead	3.5	4.5	3.5	2.5	3.5	25	15	1,000	50
Mercury	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	20	2
Molybdenum	0.39	0.42	<0.25	<0.25	0.29	0.42	<0.25	3,500	3,500
Nickel	14	19	1.5	9.0	16	4.5	6.0	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.0	1.5	<0.25	1.0	1.0	3.0	1.5	700	70
Vanadium	36	53	5.5	24	35	**500 (11/<1.0)**	25	2,400	240
Zinc	48	57	20	34	46	34	110	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

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STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T5-2	T6-.5	T6-1	T6-2	T7-.5	T7-1	T7-2	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.40	0.50	0.43	0.45	1.0	0.50	0.31	500	150
Arsenic	**100 (4.2/1.2)**	44	**84 (3.7/<1.0)**	9.5	46	46	45	500	50
Barium	150	62	150	160	140	100	150	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	18	26	15	16	52	22	15	2,500	5,600
Cobalt	9.0	3.5	7.5	8.0	6.0	7.0	8.0	8,000	800
Copper	20	12	17	18	**1,000 (25/<1.0)**	160	22	2,500	250
Lead	3.5	20	3.5	3.0	**190 (6.1/<1.0)**	20	3.5	1,000	50
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	20	2
Molybdenum	0.50	0.50	1.0	1.5	1.5	0.50	1.0	3,500	3,500
Nickel	17	6.5	15	16	33	13	16	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.5	1.0	0.50	0.50	1.0	1.0	0.50	700	70
Vanadium	40	79	35	38	88	83	36	2,400	240
Zinc	59	64	120	46	260	160	46	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

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TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T8-1	T8-STK	T8-5.5	T8-7	T12-.5	T12-1	T12-2	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.27	<0.25	<0.25	<0.25	7.0	0.50	0.37	500	150
Arsenic	6.0	32	11	14	32	44	10	500	50
Barium	100	**3,600 (11/<1.0)**	170	210	7.5	50	130	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	9.5	76 (0.18 HEX)	12	14	0.50	47	17	2,500	5,600
Cobalt	4.0	4.5	7.0	8.0	17	4.5	7.5	8,000	800
Copper	14	64	30	29	**460 (<1.0/<1.0)**	16	20	2,500	250
Lead	25	**5,800**	**140 (74/<1.0)**	**160 (<1.0/<1.0)**	**630 (5.2/<1.0)**	38	3.0	1,000	50
Mercury	1.0	1.7	0.19	<0.10	<0.10	<0.10	0.20	20	2
Molybdenum	0.50	1.5	1.5	1.0	40	0.50	2.0	3,500	3,500
Nickel	10	10	16	16	3.0	9.0	20	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	2.5	<0.15	1.5	0.19	<0.15	<0.15	500	50
Thallium	0.50	3.0	0.50	1.0	0.31	0.50	1.0	700	70
Vanadium	19	18	29	31	0.50	73	40	2,400	240
Zinc	100	940	360	310	420	110	52	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
HEX = Hexavalent Chromium
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T15-.5	T15-1	T15-2	T16-.5	T16-1	T16-2	T19-.5	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	<0.25	0.27	0.29	1.0	<0.25	0.40	1.0	500	150
Arsenic	**60 (3.7/<1.0)**	16	8.0	18	18	15	13	500	50
Barium	94	170	120	160	140	150	84	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	1.0	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	9.5	16	13	200 (<0.1 HEX)	15	18	20	2,500	5,600
Cobalt	6.5	7.5	6.5	1.5	7.5	8.5	7.0	8,000	800
Copper	140	22	16	12	20	22	39	2,500	250
Lead	**94 (<1.0/<1.0)**	5.5	2.5	7.0	5.5	6.5	**84 (2.5/<1.0)**	1,000	50
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.27	20	2
Molybdenum	18	3.5	1.5	<0.25	2.0	2.0	1.0	3,500	3,500
Nickel	22	23	16	7.5	18	22	13	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	0.50	0.50	0.50	2.5	0.50	1.0	0.50	700	70
Vanadium	22	40	32	**1,000 (7.5/<1.0)**	36	42	34	2,400	240
Zinc	440	66	42	18	86	74	140	5,000	2,500

Notes: B6-1-.5
- B6 — Sample/bent identification
- 1 — Boring number
- .5 — Sample depth in feet below surface grade

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
HEX = Hexavalent Chromium
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T19-1	T19-2	T24-.5	T24-1	T24-2	T25-.5	T25-1	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.50	0.32	2.5	0.50	0.29	1.0	0.25	500	150
Arsenic	9.5	18	**70 (<1.0/<1.0)**	32	9.0	20	20	500	50
Barium	68	40	96	43	170	60	37	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	11	7.0	5.0	5.5	14	100	8.0	2,500	5,600
Cobalt	8.0	4.5	6.5	3.0	6.5	6.5	3.5	8,000	800
Copper	23	9.5	**510 (<1.0/<1.0)**	8.5	20	240	12	2,500	250
Lead	28	29	**330 (<1.0/<1.0)**	10	8.0	43	6.5	1,000	50
Mercury	<0.10	0.10	0.17	<0.10	0.11	<0.10	<0.10	20	2
Molybdenum	0.38	0.42	97	0.50	1.0	42	0.50	3,500	3,500
Nickel	9.0	6.5	5.0	4.5	15	6.5	5.0	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	0.50	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.0	0.50	0.28	0.50	0.50	1.0	0.50	700	70
Vanadium	30	16	8.0	16	32	120	20	2,400	240
Zinc	63	64	660	260	46	150	73	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

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(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T25-2	T26-.5	T26-1	T26-2	T28-.5	T28-1	T28-2	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.50	2.0	<0.25	0.38	1.0	<0.25	0.37	500	150
Arsenic	16	12	16	41	34	16	20	500	50
Barium	150	60	36	180	130	32	160	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	0.16	<0.15	<0.15	<0.15	100	10
Chromium	26	170	5.5	21	60	6.0	22	2,500	5,600
Cobalt	11	2.5	3.5	8.5	4.5	3.5	8.0	8,000	800
Copper	25	10	5.5	24	14	5.5	24	2,500	250
Lead	4.0	18	2.0	4.5	42	4.5	6.0	1,000	50
Mercury	<0.10	0.14	<0.10	<0.10	0.12	<0.10	<0.10	20	2
Molybdenum	0.50	<0.25	0.30	3.0	0.50	<0.25	2.5	3,500	3,500
Nickel	20	2.5	4.0	29	8.0	4.5	26	2,000	200
Selenium	<0.25	2.5	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.5	10	0.48	1.0	1.5	0.50	1.5	700	70
Vanadium	46	**710 (1.8/<1.0)**	15	50	130	16	50	2,400	240
Zinc	110	38	200	71	340	92	68	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

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TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T30-.5	T30-1	T30-2	T31-.5	T31-1	T31-2	T31-SLAG	S11-0	S12-0	S16-0	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram											
Antimony	0.50	<0.25	0.32	0.50	0.50	0.28	0.30	16	3.0	0.47	500	150
Arsenic	**64 (2.8/<1.0)**	28	28	22	34	26	2.0	30	15	7.5	500	50
Barium	94	38	130	76	98	44	9.5	250	150	90	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	4.0	<0.15	100	10
Chromium	66	7.5	18	15	18	8.0	1.0	52	34	15	2,500	5,600
Cobalt	6.5	4.0	7.5	8.0	8.0	4.0	12	16	10	7.5	8,000	800
Copper	18	6.5	18	**330 (<1.0/<1.0)**	26	7.5	**300 (<1.0/<1.0)**	**3,400 [5.0]**	840 [0.53]	19	2,500	250
Lead	28	3.0	3.5	**84 (<1.0/<1.0)**	40	2.5	28	**6,200 [14]**	**1,200 [0.74]**	29	1,000	50
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.4	0.72	<0.10	20	2
Molybdenum	1.0	0.37	1.5	4.5	1.0	0.44	5.0	7.5	7.0	0.50	3,500	3,500
Nickel	11	5.0	18	12	16	6.5	5.0	120	140	10	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	0.30	<0.15	<0.15	0.37	0.50	0.32	<0.15	500	50
Thallium	1.5	0.50	0.50	1.0	1.0	0.50	<0.25	2.5	1.0	1.0	700	70
Vanadium	110	20	38	28	36	18	1.5	54	120	28	2,400	240
Zinc	100	98	57	180	240	220	87	430	750	64	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant
[5.0] = Soluble concentration by Toxicity Characteristic Leaching Procedure (TCLP)

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS – PETROLEUM HYDROCARBONS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	DATE	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	VOCS EPA 8020 (µg/kg)	VOCS EPA 8260 (µg/kg)	SVOCs (µg/kg)
Detection Limit		<1.0	<1.0	<1.0	STD	STD	STD
T3-TIE G	8/23/01	---	<20	**1,600**	---	---	**35,000**[1]
T7-TIE G	8/23/01	---	<10	**340**	---	---	---
T8-STK	8/23/01	<1.0	<5.0	**250**	ND	**6.9**[2]	---
T8-5.5	8/23/01	<1.0	<10	**820**	ND	ND	---
T8-7	8/23/01	<1.0	<1.0	**5.2**	ND	ND	---
T9-1	8/23/01	---	<1.0	**96**	---	---	---
T10-1	8/23/01	<1.0	<1.0	**4.9**	ND	---	---
T11-2	8/23/01	<1.0	<1.0	**5.7**	ND	---	---
T13-2	8/23/01	<1.0	<1.0	**3.1**	ND	---	---
T18-1	8/23/01	---	<1.0	**17**	---	ND	---
T20-2	8/23/01	<1.0	<1.0	**6.5**	ND	**34**[3]	---
T21-1	8/23/01	---	---	---	---	ND	---
T22-2	8/23/01	---	<1.0	**7.1**	---	---	---
T23-1	8/23/01	---	<1.0	**5.1**	---	---	---
T29-1	8/23/01	<1.0	<5.0	**170**	ND	---	---

Notes:
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
µg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram
GRO = Gasoline Range Organics by EPA Test Method 8015
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds by EPA Test Method 8270
1 = SVOC = Fluoranthene
2 = VOC = Naphthalene
3 = VOC = Trichloroethene

< = Less than laboratory test method detection limits
--- = Not analyzed
ND = not detected above method detection limit
STD = Standard method detection limit for each constituent
BOLD = Detection

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS – PESTICIDES, PCBs AND HERBICIDES
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	DATE	PESTICIDES EPA TEST METHOD 8081 (µg/kg)	PCBs EPA TEST METHOD 8082 (µg/kg)	HERBICIDES EPA TEST METHOD 8151 (µg/kg)
Detection Limit		STD	STD	STD
T2-.5	8/23/01	ND	ND	ND
S1-.5	8/23/01	**6.2[1], 20[2], 46[3], 9.2[4], 60[5], 5.7[6], 9.5[7], 2.6[8]**	**220[9]**	ND
S2-.5	8/23/01	ND	ND	ND
S5-.5	8/23/01	ND	ND	ND
S6-.5	8/23/01	**14[2], 23[3], 16[4], 130[5], 10[6], 16[7]**	ND	ND
S7-.5	8/23/01	**41[1], 110[2], 46[3], 84[4], 370[5], 250[6], 64[7], 11[8]**	ND	ND
S8-0	8/23/01	ND	ND	ND
S9A-0	8/23/01	ND	ND	ND
T14-1	8/23/01	ND	ND	ND
T17-1.5	8/23/01	ND	ND	ND
T27-1	8/23/01	ND	ND	ND

Notes:
< = Less than laboratory test method detection limits
--- = Not analyzed
µg/kg = Micrograms per kilogram
STD = Standard method detection limit for each constituent
PCBs= Poly chlorinated Biphenyls
ND = not detected above method detection limit
PRG = Preliminary Remediation Goal
1 = 4,4'-DDD (Residential PRG = 2,400 µg/kg)
2 = 4,4'-DDE (Residential PRG = 1,700 µg/kg)
3 = 4,4'-DDT (Residential PRG = 1,700 µg/kg)
4 = alpha-Chlordane (Residential PRG = 1,600 µg/kg)
5 = Chlordane (Residential PRG = 1,600 µg/kg)
6 = Dieldrin (Residential PRG = 30 µg/kg)
7 = gamma-Chlordane (Residential PRG = 1,600 µg/kg)
8 = Heptachlor epoxide (Residential PRG = 53 µg/kg)
9 = PCBs = Aroclor 1260 (Residential PRG = 220 µg/kg)
BOLD = Detection

TABLE 5
SUMMARY OF SOIL AND PAINT CHIP ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD AND TOTAL ARSENIC
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	TOTAL LEAD EPA METHOD 6010 (mg/kg)	WET LEAD EPA METHOD 6010 (mg/l)	DI-WET LEAD EPA METHOD 6010 (mg/l)	TOTAL ARSENIC EPA METHOD 6010 (mg/kg)
T3-TIEG	22	---	---	10
T7-TIEG	**100**	---	---	46
T9-1	7.5	---	---	9.5
T10-1	4.0	---	---	7.0
T11-2	4.0	---	---	**99**
T13-2	4.0	---	---	7.0
T14-1	5.0	---	---	8.0
T17-1.5	12	---	---	36
T18-1	34	---	---	22
T20-2	15	---	---	8.0
T22-2	3.5	---	---	8.0
T23-1	14	---	---	16
T27-1	33	---	---	9.0
T29-1	<0.25	---	---	<0.25
T32.5	5.5	---	---	---
T33-1	<5	---	---	---
T34-1	82	---	---	---
T34-3	6.1	---	---	---
T35-1	**1,500**	---	---	---
T35-3	8.1	---	---	---
T36-1	**990**	---	---	---
T36-3	5.8	---	---	---
T37-3	<5	---	---	---
T38-4.5	12	---	---	---
T39-1	<5	---	---	---
T40-1	6.9	---	---	---
T41-3	<5	---	---	---
T42-1	5.4	---	---	---
T43-1.5	<5	---	---	---
T44-3	5.0	---	---	---
T45-2	<5	---	---	---
T46-2	<5	---	---	---
T47-1	**880**	---	---	---
T47-2	43	---	---	---
T48-3	**260**	---	---	---
T49-1	5.6	---	---	---
T50-2	<5	---	---	---
T51-1	**68**	---	---	---
T52-2	<5	---	---	---
T53-2	<5	---	---	---

TABLE 5
SUMMARY OF SOIL AND PAINT CHIP ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD AND TOTAL ARSENIC
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	TOTAL LEAD EPA METHOD 6010 (mg/kg)	WET LEAD EPA METHOD 6010 (mg/l)	DI-WET LEAD EPA METHOD 6010 (mg/l)	TOTAL ARSENIC EPA METHOD 6010 (mg/kg)
T54-1.5	<5	---	---	---
T55-.5	<5	---	---	---
T55-1.5	**290**	---	---	---
T56-3	5.7	---	---	---
T57-1	24	---	---	---
T58-1	5.1	---	---	---
S1-.5	16	---	---	25
S2-.5	13	---	---	8.0
S3-0	**120**	1.4	<1.0	---
S4-0	4.0	---	---	---
S5-.5	6.0	---	---	7.5
S6-.5	34	---	---	12
S7-.5	**66**	---	---	9.0
S8-0	**50**	---	---	6.5
S9A-0	**150**	---	---	12
S9B-0	**120**	2.7	<1.0	---
S10-0	**260**	**8.2**	<1.0	---
S13-0	**390**	---	---	---
S14-0	**550**	---	---	---
S15-0	33	---	---	---
SD BOX #1 PAINT	**1,100**	---	---	---
SD BOX #1 SOIL	**60**	2.2	<1.0	---
RET WALL #1 PAINT	6.0	---	---	---
RET WALL #1 SOIL	82	**9.5**	<1.0	---
RET PAINT	11			
B1-8	<5	---	---	---
B1-12	<5	---	---	---
B2-2	38	---	---	---
B2-4	<5	---	---	---
B2-8	<5	---	---	---
B3-2	<5	---	---	---
B3-4	<5	---	---	---
B3-8	<5	---	---	---
B4-3	7.2	---	---	---
B4-4	**2,200**	---	---	---
B4-8	<5	---	---	---

TABLE 5
SUMMARY OF SOIL AND PAINT CHIP ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD AND TOTAL ARSENIC
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	TOTAL LEAD EPA METHOD 6010 (mg/kg)	WET LEAD EPA METHOD 6010 (mg/l)	DI-WET LEAD EPA METHOD 6010 (mg/l)	TOTAL ARSENIC EPA METHOD 6010 (mg/kg)
B5-2	5.1	---	---	---
B5-4	<5	---	---	---
B5-7	8.7	---	---	---
B5-8	<5	---	---	---
B5-12	<5	---	---	---
B6-2	<5	---	---	---
B6-4	<5	---	---	---
B6-6	<5	---	---	---
B6-8	<5	---	---	---
B6-12	<5	---	---	---
B7-2	**560**	---	---	---
B7-4	<5	---	---	---
B7-8	<5	---	---	---
B7-12	<5	---	---	---
B8-4	10	---	---	---
B8-8	<5	---	---	---
B9-2	24	---	---	---
B9-4	17	---	---	---
B9-8	<5	---	---	---
B10-3	330	---	---	---

Notes: mg/kg = Milligrams per kilogram
mg/l = Milligrams per liter
WET = Waste Extract Test method using an acid extract
DI-WET = Waste Extract Test method using a deionized water extract
--- = Not analyzed
< = Less than laboratory reporting limits
BOLD = Greater than Total Threshold Limit Concentration of 1,000 mg/kg or
10 times Soluble Threshold Limit Concentration of 5 mg/l (50 mg/kg) for total lead concentrations.
BOLD = Greater than Soluble Threshold Limit Concentration of 5 mg/l for WET lead concentrations.
BOLD = Greater than 10 times Soluble Threshold Limit Concentration of 5 mg/l (50 mg/kg) for total arsenic concentrations.

TABLE 6
REMEDIATION COST ESTIMATE SUMMARY
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

Item No.	Site Work	Hadley Quantity	Whittier Quantity	Unit	Hadley Unit Cost	Whittier Unit Cost	Source	Hadley Total Cost	Whittier Total Cost
1	Pre-Field Planning/Permits	1	1	Lump Sum	5,000	5,000	(b)	5,000	5,000
2	Health & Safety	1	1	Lump Sum	1,500	2,500	(b)	1,500	2,500
3	Mobilization and Site Preparation	1	1	Lump Sum	4,100	9,800	(b)	4,100	9,800
4	Miscellaneous Equipment/Supplies	1	1	Lump Sum	2,100	4,300	(b)	2,100	4,300
5	Concrete/Asphalt Rubble and Trash Removal	0	500	Cubic Yard	0	35	(b)	0	17,500
6	Ballast and Overburden Soil Removal/Stockpile	250	225	Cubic Yard	12	26	(b)	3,000	5,850
7	Excavation of Debris Fill Material	250	1,260	Cubic Yard	28	28	(b)	7,000	35,280
8	Analytical Testing	1	1	Lump Sum	1,000	3,000	(b)	1,000	3,000
9	Fill Materials	300	0	Ton	16	0	(a)	4,800	0
10	Fill Placement/Compaction	500	0	Cubic Yard	15	0	(b)	7,500	0
11	Transport of Rubble/Trash	0	42	Load	0	115	(a)	0	4,830
12	Transport of Debris Fill	305	1,700	Ton	38	38	(a)	11,590	64,600
13	Disposal of Rubble/Trash	0	42	Load	0	230	(a)	0	9,960
14	Disposal of Non-RCRA Debris Fill Material	305	1,700	Ton	43.50	43.50	(a)	13,267.50	73,950
15	Site Restoration	1	1	Lump Sum	700	3,300	(b)	700	3,300
16	Compaction Testing	1	0	Lump Sum	1,300	0	(b)	1,300	0
17	Engineering Supervision and Reporting	1	1	Lump Sum	5,000	10,000	(b)	5,000	10,000
	Cost Subtotals							67,857.50	249,870
18	Contingency	25% of Subtotal Costs						16,964.50	62,468
	Total Estimated Costs							84,822	312,338

Cost Estimate Sources:

(a) Vendor quote information
(b) Engineers estimate based on experience with similar work

The costs estimates presented herein are intended for preliminary planning purposes only. The actual remedial costs may vary from the cost estimates presented herein depending on when the work is performed and the actual volumes of waste material requiring disposal.

APPENDIX A

(19)

9999 00431008354

CCMS COVERSHEET

AUDIT NUMBER	158958
DATE OF AGREEMENT	
PARTY NAME	HARRIS,GEORGE & VOLLMER,MARTHA
TYPE OF AGREEMENT	431
LOCATION	WHITTIER CA
CIRC7 FROM	CW202
MILEPOST FROM	3.11
BOX NUMBER	431 - 0083
BATCH NUMBER	3

ATTN: SUPERVISOR OF CONTRACTS -- ONLINE CONTRACT EXECUTION REPORT

U. P. R. R. Co.
Department
Audit No.

AUDIT NBR : 158958 SEQUENCE NBR: 132751

FOLDER NBR: 68623 VERSION NBR : 1

CUSTOMER NBR: 87353

OLD PARTY NAME: HARRIS,GEORGE & VOLLMER,MARTHA

OLD CITY : WHITTIER OLD STATE: CA

NEW PARTY NAME: HARRIS,GEORGE & VOLLMER,MARTHA

NEW CITY : WHITTIER NEW STATE: CA

AGRM DESCRIPTION: ENCROACHMENT - BUILDING

CONTRACT TYPE:

EFFECTIVE DATE	OLD: 1987-10-01	NEW: 1994-10-01
TERMINATION DATE	OLD: 9999-99-99	NEW: 9999-99-99
BILL AMOUNT	OLD: $1,200.00	NEW: $2,100.00
BILL FREQUENCY	OLD: AN	NEW: AN

EXECUTION COMMENTS:

RENTAL REEVALUATION CERTIFIED LETTER NO. P 434 075 160.

J. A. M.
OCT 4 1994

CONTRACT COMMENTS:

CODED
By:
Date:
JUN 22 1994

R P N
JUN 22 1994

DUPLICATE ORIGINAL - RAILROAD COPY

UNION PACIFIC RAILROAD COMPANY
CONTRACTS & REAL ESTATE DEPARTMENT

R.D. UHRICH
ASSISTANT VICE PRESIDENT

ROOM 1100, 1416 DODGE STREET
OMAHA, NEBRASKA 68179
(402) 271-3753
FAX (402) 271-5493

J. A. ANTHONY
DIRECTOR-CONTRACTS & JOINT FACILITIES
D. D. BROWN
DIRECTOR-REAL ESTATE
J. L. HAWKINS
DIRECTOR-OPERATIONS SUPPORT
D. H. LIGHTWINE
DIRECTOR-REAL ESTATE
W. R. ULRICH
DIRECTOR-BUILDING SERVICES

June 21, 1994

U. S. CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Folder: 686-23

Mr. George Harris
% Mr. Michael V. Vollmer
8831 Cliffside Drive
Huntington Beach, CA 92646

Dear Mr. Harris,

Reference is made to that certain Lease dated May 23, 1990 between Union Pacific Railroad Company and George Albert Harris and Martha Crystine Vollmer, covering a portion of the Railroad Company's property at Whittier, CA for building encroachment. Said Lease is identified in the Railroad Company's records as 158958.

Article 3 of this Lease provides for a periodic reevaluation of rental. In accordance with this provision, we recently reviewed the present day land values in Whittier and, in particular, in the general vicinity of the Lease site.

The results of this study indicate that the present rental no longer represents a fair annual market rental. Taking all matters into consideration and applying present day real estate values of the area, I am of the opinion that a rental of $2,100.00 per annum would reflect a fair market rental at this time.

In accordance with the provision of Article 3, of the Lease, this letter is to advise you that effective as of October 1, 1994 the rental will be $2,100.00 per annum.

Also attached for your review and appropriate handling is certain information and data relative to Hazardous Waste Regulations and Underground Storage Tanks. Please complete and return the Questionnaire attached hereto.

You will be billed at the new rate on October 1, 1994. If you have any questions, please contact me at (402) 271-4324.

Very truly yours,

Dennis Miller

J. D. Miller
Manager - Real Estate

RAILROAD ORIGINAL

ATTN: SUPERVISOR OF CONTRACTS -- ONLINE CONTRACT EXECUTION REPORT

AUDIT NBR :
FOLDER NBR: 68623

SEQUENCE NBR: 132751
VERSION NBR : 0
CUSTOMER NBR: 87353

OLD PARTY NAME: HARRIS,GEORGE & VOLLMER,MARTHA
OLD CITY : WHITTIER
OLD STATE: CA
NEW PARTY NAME:
NEW CITY :
NEW STATE:

U. P. R. R. Co.
Agreement
Audit No. 158958

AGRM DESCRIPTION: ENCROACHMENT - BUILDING
CONTRACT TYPE:

EFFECTIVE DATE	OLD: 1987-10-01		NEW:	
TERMINATION DATE	OLD: 9999-99-99		NEW:	
BILL AMOUNT	OLD:	$1,200.00	NEW:	$0.00
BILL FREQUENCY	OLD: AN		NEW:	

EXECUTION COMMENTS:

J.J.H.

FEB 13 1992

ONTRACT COMMENTS:
INDUSTRIAL LEASE AGREEMENT FOR A BUILDING ENCROACHMENT IN CONNECTION WITH AUTOMOBILE REPAIR SHOP AT WHITTIER, LOS ANGELES COUNTY, CALIFORNIA.

J. A. M.

APR 1 1992

158958

01
Approved, AVP-Law

RAILROAD ORIGINAL

158958

686-23

LEASE OF INDUSTRIAL
PROPERTY AT WHITTIER, CA

This Agreement made and entered into this 23rd day of May, 1990 by and between UNION PACIFIC RAILROAD COMPANY, a Utah corporation (hereinafter "Lessor"), and GEORGE ALBERT HARRIS and MARTHA CRYSTINE VOLLMER to be addressed at c/o Michael V. Vollmer, Atty. 8831 Cliffside Drive, Huntington Beach, CA 92646 (hereinafter "Lessee").

IT IS MUTUALLY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

Article I. PREMISES; LOCATION; USE.

A. The Lessor, for and in consideration of the rental to be paid and the covenants and conditions to be performed by the Lessee as hereinafter provided, does hereby lease and let unto the Lessee, for the period and subject to the terms and conditions herein stated, that portion of the premises of the Lessor (hereinafter "Premises"), at or near Whittier, Los Angeles County, California, shown on the plat dated May 11, 1990, marked Exhibit A, or described in the description, or both, hereto attached and hereby made a part hereof. The Premises leased under this agreement (hereinafter "Lease") may be used by the Lessee for building encroachment in connection with automobile repair shop and for other purposes incidental thereto, but shall not be used for any other purpose unless the Lessee has received the prior written consent of the Lessor.

B. The grant of right herein made to the Lessee is subject to each and all of the terms, provisions, conditions, limitations and covenants set forth herein and in Exhibit B, hereto attached.

Article 2. TERM.

A. The term of this lease is for the period of one year, commencing on the 1st day of October, 1987, unless sooner terminated as hereinafter provided.

B. Thereafter, so long as neither party is in default, this Lease will renew itself without further documentation from year to year until terminated as provided herein. Each renewal term will be upon the same terms and conditions set forth herein, including, without limitation, the Lessor's right to reevaluate the rental as provided in Article 3B below.

Article 3. RENTAL; RENTAL REEVALUATION.

A. The Lessee covenants and agrees to pay to the Lessor, as rental for the use of the Premises during the leasehold term, or any renewal thereof, rental of ONE THOUSAND TWO HUNDRED Dollars ($1,200.00) per annum payable annually in advance for each and every year, subject to reevaluation as provided in Paragraph B below.

01
Approved, AVP-Law

B. The Lessor may annually reevaluate the rental base upon which the above rental is computed. In the event the Lessor shall determine that the rental paid is no longer representative of a fair market rental, the Lessor may adjust the rental and shall advise the Lessee by written notice of such change. Such written notice shall be served at least thirty (30) days prior to the effective date of the new rental, it being understood however that rental adjustments shall not be made more often than once every twelve (12) months.

Article 4. SPECIAL PROVISIONS.

None.

IN WITNESS WHEREOF, the parties hereto have executed this Lease as of the day and year first herein written.

Witness

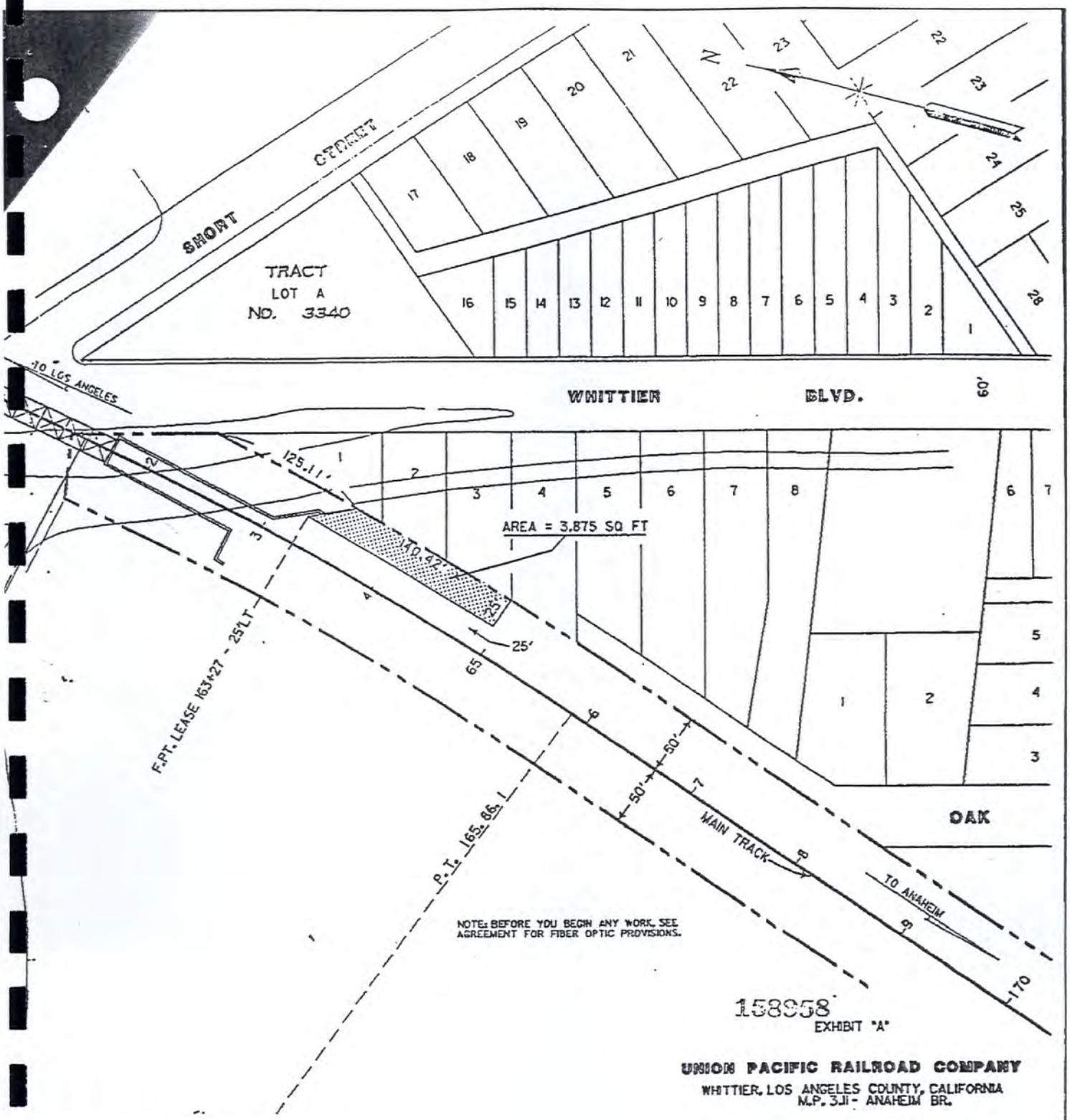
UNION PACIFIC RAILROAD COMPANY

By
Director - Field Operations

x George Albert Harris 1-31-92
George Albert Harris Lessee

x Martha Crystine Vollmer 1-31-92
Martha Crystine Vollmer Lessee

158958



UNION PACIFIC RAILROAD COMPANY

WHITTIER, LOS ANGELES COUNTY, CALIFORNIA
M.P. 3.11 - ANAHEIM BR.

LEASE TO GEORGE ALBERT HARRIS and
MARTHA CRYSTINE VOLLMER

SCALE: 1" = 100'
OFFICE OF DIRECTOR
CONTRACTS & REAL ESTATE
OMAHA, NEBRASKA MAY 8, 1990

GLC FILE: CA686023

= L E G E N D =

LEASE AREA SHOWN.....
UPRRCO. R/W OUTLINED.....

EXHIBIT B

Section 1. IMPROVEMENTS.

It is agreed that no improvements placed upon the Premises by the Lessee shall become a part of the realty.

Section 2. PRIOR RIGHTS.

A. This Lease is made without covenant of title or to give possession or for quiet enjoyment.

B. This Lease is made subject to all outstanding superior rights, including, but not limited to, underground facilities, rights-of-way for highways and for power, fiber optics and other communication lines and facilities, and the right of the Lessor to renew such outstanding rights, to renew the term thereof and to grant such new or additional rights, licenses or easements unto others as the Lessor in its sole discretion should deem necessary, convenient or appropriate. In the Lessee's use and occupancy of the Premises, the Lessee shall not disturb, damage or interfere with any such facilities of the Lessor or nonparties.

Section 3. PAYMENT OF RENTAL; UNPAID RENTAL.

A. All rental shall be paid in lawful money of the United States of America at the office of Union Pacific Railroad Company in Omaha, Nebraska, or at such other place as the Lessor shall designate in writing.

B. In the event that the rental herein specified to be paid has not been received by the Lessor within fifteen (15) days after the date that such rental payment is due, a finance charge of ten (10) percent of each unpaid rental payment shall be assessed against the Lessee and interest, at the rate of thirteen (13) percent per annum, shall be assessed against the unpaid rental and shall accrue until such rental payments are current and all interest payments and finance charges have been paid.

Section 4. TAXES AND ASSESSMENTS.

A. The Lessee further agrees to pay, before the same shall become delinquent, all taxes levied during the life of this Lease upon the Premises and upon any buildings and improvements thereon, or to reimburse the Lessor, either directly or as an amount included in Lessee's rental payment for sums paid by the Lessor for such taxes, except taxes levied upon the Premises as a component part of the railroad property of the Lessor in the state as a whole.

B. If, during the life of this Lease, any street or other improvement shall be made, whether consisting of new construction, maintenance, repairs, renewals, or reconstruction, and the whole or any portion of the cost of which is assessed against or is fairly assignable to the Premises, the Lessee agrees to pay in addition to the other payments herein provided for:

(1) Ten and one-half per cent (10-1/2%) per annum on the amount so assessed against or assignable to the Premises, when expenditures by the Lessor for such improvements are properly chargeable to capital account under accounting rules of the Interstate Commerce Commission current at the time; and

(2) The entire amount so assessed against or assignable to the Premises when expenditures for such improvements are not properly chargeable to capital account under said accounting rules.

Section 5. WATER RIGHTS.

This Lease does not grant, convey or transfer any right to the use of water under any water right owned or claimed by the Lessor which may be appurtenant to or otherwise associated with the Premises. All right, title, and interest in and to such water is expressly reserved unto the Lessor, its successors and assigns, and the right to use same or any part thereof may be obtained only by the prior written consent of the Lessor.

Section 6. CARE AND USE OF PREMISES.

A. In the Lessee's use and occupancy of the Premises, the Lessee will observe and exercise reasonable care and caution against damage or destruction to the Premises by fire or otherwise. The Lessee shall not do, suffer or permit anything upon or about the Premises which will or may increase the fire hazard thereon. The Lessee shall not commit or suffer waste thereof or injury thereto and shall not use or permit the use of the Premises for any unlawful purpose nor create or maintain thereon any nuisance or any offensive object, matter or thing. The Lessee, at Lessee's expense, will at all times keep the Premises in a safe, neat, clean and presentable condition including all sidewalks and public ways located on the Premises. The Lessee, at Lessee's expense, shall also keep the walkways appurtenant to any railroad spur track(s) on or serving the Premises, free and clear from debris, snow, ice and any other substance which would or might create a hazard thereon.

B. The Lessee shall not install, maintain or permit any sign or advertisement upon the Premises, except signs relating to the Lessee's business; provided such signs are properly installed and maintained by the Lessee and present a neat appearance. The Lessor reserves unto itself the exclusive right to permit the location of advertising signs of any kind whatsoever on the Premises.

C. In the event any building or other improvement not belonging to the Lessor on the Premises is damaged or destroyed by fire, storm, or other casualty, the Lessee shall, within thirty days after such happening, remove all debris and rubbish resulting therefrom; and if Lessee fails to do so, the Lessor may enter the Premises and remove such debris and rubbish, and the Lessee agrees to reimburse the Lessor, within thirty days after bill rendered, for all expenses incurred in such cleanup.

D. In the Lessee's occupancy and use of the Premises, the Lessee, at Lessee's expense, shall conform and comply with all applicable laws, ordinances and public regulations now or hereafter in effect, and hold harmless the Lessor from any failure so to do and from any fines, penalties, forfeitures or judgments resulting from Lessee's failure to conform and comply with all such laws, ordinances and public regulations.

E. It is further agreed that no gunpowder, gasoline, dynamite, or other explosive, flammables or hazardous materials shall be stored or kept upon the Premises. Nothing herein contained, however, shall prevent the storage of those hazardous commodities, if any, specified in Article I of the Articles of Agreement, nor the storage of oil or gasoline where same are used by the Lessee for fuel in the business carried on by the Lessee on the Premises, and are stored in quantities reasonable for such purposes; PROVIDED, however, that in all such excepted cases, the Lessee shall not store such commodities within fifty (50) feet from the center line of any main track and strictly comply with all federal, state and municipal laws and regulations relating to the storage of such commodities.

Section 7. HAZARDOUS SUBSTANCES AND WASTES.

A. Lessee shall comply with all federal, state and local environmental laws and regulations in its use of the Premises, including the Resource Conservation and Recovery Act, as amended (RCRA), and the Comprehensive Environmental Response Compensation and Liability Act, as amended (CERCLA). Lessee shall not treat, store or dispose of hazardous wastes on the Premises, as defined in RCRA, without first obtaining the Lessor's written permission. If such permission is granted, the Lessee shall obtain any necessary permits and identification numbers and provide the Lessor the identification numbers and copies of the permits. Lessee shall also assume all responsibility for and costs associated with any closure and/or post-closure care required. In addition, Lessee shall not install any underground storage tanks as defined in RCRA without first obtaining the Lessor's written permission. If such permission is granted, Lessee shall obtain any necessary permits, notify the proper authorities, and provide the Lessor with copies of such permits and notifications. Furthermore, Lessee shall assume all responsibility for and shall indemnify and defend Lessor against all costs and claims associated with a release or leak of any tank contents.

B. Lessee shall use its best efforts and safety practices to prevent the release of oil and hazardous substances as defined in CERCLA on the Premises. Notwithstanding, Lessee assumes all responsibility for the investigation and cleanup of any such release and shall indemnify and defend the Lessor, its officers, agents and employees, for all costs, including environmental consultant and attorney fees, and claims resulting from or associated with any such release. This provision shall continue in full force and effect regardless of whether this Lease is terminated pursuant to any other provision, or the Premises are abandoned and vacated by the Lessee.

Section 8. UTILITIES.

A. The Lessee shall arrange, secure, and be responsible for all water, gas, heat, electricity, power, sewer, telephone, and any and all other utilities and services supplied and/or furnished to the Premises in connection with the use of the Premises by the Lessee as herein provided, together with any and all taxes and/or assessments applicable thereto.

B. It is agreed that all utilities and services outlined above should be separately metered to the Lessee. In the event such utilities and services are not separately metered to Lessee, Lessee shall pay a reasonable proportion of the cost of such utilities and services, to be determined by the Lessor, of all charges jointly metered with other portions of the Lessor's property.

C. It is understood and agreed that none of the above utilities or services may be installed or permitted upon the Premises without first securing the written consent and approval of the Lessor for such installations and services.

Section 9. LIENS.

The Lessee shall pay, when due and before any lien shall attach to the Premises, if the same may lawfully be asserted, all charges for water, gas, light, and power furnished; and for rental or use of sewer facilities serving the Premises, and fully pay for all materials joined or affixed to the Premises, pay for all taxes and assessments, and pay in full all persons who perform labor upon the Premises, and shall not permit or suffer any mechanic's or materialman's or other lien of any kind or nature to be created or enforced against the Premises for

any work done or materials furnished thereon at the instance or request or on behalf of the Lessee; and the Lessee agrees to indemnify, hold harmless, and defend, the Lessor and Lessor's property against and from any and all liens, claims, demands, costs, and expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials or other things furnished.

Section 10. LESSOR'S PRIOR CONSENT REQUIRED FOR BUILDINGS, IMPROVEMENTS, STRUCTURES, DEVICES, TRACKAGE; LESSEE NOT TO IMPAIR CLEARANCES.

A. Detailed plans for all buildings, platforms, loading or unloading devices, structures and all alterations, improvements and/or additions thereto, which the Lessee shall desire to make upon the Premises or adjacent property or trackage, shall be presented to Lessor for Lessor's consent prior to installation upon the Premises. If the Lessor shall give its consent, the consent shall be deemed conditioned upon Lessee acquiring a permit to do such work from appropriate governmental agencies, the furnishing of a copy thereof to Lessor prior to the commencement of the work and the compliance by Lessee prior to the commencement of the work and the compliance by Lessee of all conditions of said permit in a prompt and expeditious manner.

B. All buildings, platforms, loading or unloading devices, structures, and/or material or obstruction of any kind erected, maintained, placed, piled, stacked, or maintained upon the Premises after the commencement of this Lease and any alterations, improvements, and/or additions thereto or to buildings, platforms, loading or unloading devices structures located on the Premises prior to the commencement of this Lease shall be constructed, operated, maintained, repaired, renewed, modified and/or reconstructed by the Lessee in strict conformity with Lessor's clearance standard entitled "Union Pacific Railroad Company's Standard Minimum Clearances for All New Structures and Facilities Along Industry Tracks," (hereinafter "Clearance Standard") as in effect at the time of the placement, construction, operation, maintenance, repair, renewal, modification or reconstruction.

C. The Lessor consents to Lessee's use of buildings, platforms, loading or unloading devices, structures and/or material or obstructions of any kind located upon the Premises which are in place at the time the Lessee takes possession of the Premises, or which were constructed, placed, piled, stored, stacked, or maintained upon the Premises with the express consent of the Lessor under the terms of a previous lease between Lessor and Lessee, but which are not in conformity with Lessor's current Clearance Standard.

D. Compliance with Lessor's Clearance Standard shall not relieve Lessee from the obligation to fully comply with the requirements of any federal, state, or municipal law or regulation; it being understood and agreed that Lessor's Clearance Standard are in addition to, and supplemental of, any and all requirements imposed by applicable law or regulation and shall be complied with unless to do so would cause Lessee to violate an applicable law or regulation.

E. The Lessee shall not locate or permit the location or erection of any poles upon the Premises, nor any beams, pipes, wires, structure or other obstruction over or under any tracks of the Lessor without the written consent of the Lessor. Lessor shall consider requests of the Lessee to impair clearances which are necessitated by the operational requirements of the Lessee, but Lessor shall not be obligated to consent to any impairment. Any necessary permission to impair clearances to which the Lessor has consented must be secured by the Lessee at its own expense, in advance of any impairment; and Lessee shall comply promptly and strictly with all requirements or orders issued by appropriate state or other public authority relating to such impairments.

F. Lessee assumes the risk of and shall indemnify, hold harmless, and defend the Lessor, its officers, agents, and employees, against and from all injury to or death of persons, or loss of or damage to property of the parties hereto and their employees and agents and to the person or property of any other person or corporation resulting from the Lessee's noncompliance with the provisions of this Section 10, or resulting directly or indirectly from any impairment of the clearances described in this Section 10, whether the Lessor had notice thereof or consented thereto, or whether authorized by applicable state or other public authority pursuant hereto, or existing without compliance with the provisions of this Section 10.

G. Any knowledge on the part of the Lessor of a violation of the clearance requirements of this Lease, whether such knowledge is actual or implied, shall not constitute a waiver and shall not relieve the Lessee of its obligation to indemnify and defend the Lessor, its officers, agents, and employees, for losses and claims resulting from such violation. However, the terms of this Section shall not apply to losses resulting from impairments or facilities created or constructed by the Lessor that will not benefit the Lessee.

Section 11. ASSUMPTION OF RISK; INDEMNITY.

A. The Lessee accepts the Premises in its present condition and hereby assumes the risk of any injury to and death of persons and damage to or destruction of property resulting from the condition of or any defects anywhere in or upon the Premises, regardless of whether such condition or defects are known or unknown, apparent or latent, and regardless of whether such condition or defects exist at the commencement of this Lease or at some later time.

B. The occupation of and activities upon the Premises by the Lessee will expose the Lessor's property, operations and facilities to additional hazards; and as one of the material considerations for this Lease, the Lessee agrees to assume the risk of and to indemnify and hold harmless the Lessor as follows:

1. The Lessee assumes the risk of and shall indemnify and hold harmless the Lessor, and its affiliates, their officers, agents and employees, against and from any and all liability, loss, damage, claims, demands, costs and expenses of whatsoever nature, including court costs and attorneys' fees, arising from or growing out of any injury to or death of persons whomsoever or loss of or damage to property whatsoever. The right to indemnify shall accrue when such injury, death, loss or damage occurs from any cause and is associated in whole or in part with, incidental to or caused by the occupation or use of the Premises, or any activity upon the Premises by the Lessee, its employees or agents, or by any person on or near the Premises by reason of any relation, contractual or otherwise, with the Lessee, its officers, employees or agents, or caused by Lessee's breach of this Lease. Except as provided in subparagraph 2 below, the Lessee shall not indemnify the Lessor when any such injury, death, loss or damage is caused by the sole, direct negligence of the Lessor, its officers, employees or agents.

2. The Lessee assumes all risk of and agrees to indemnify and hold harmless the Lessor from and against all demands, liability, claims and actions asserted by any person, including an insurer, arising out of or by reason of loss, damage or destruction of or to any and all improvements or other property (including, without limitation, rail cars and contents) on the Premises or in proximity to the Premises if used in connection with or incidental to the occupation of the Premises by the Lessee, and any and all incidental loss or injury to the business of the Lessee, (1) where occasioned by fire or other casualty, regardless of whether caused or contributed to by operations of the Lessor or any negligence of the Lessor, its officers, agents or employees; excepting only loss, damage or destruction of rail cars resulting from fire caused by the sole negligence of the Lessor, its officers, agents or employees and loss, damage or destruction of shipments in the course of transportation, which shall be governed by the contract of carriage; or (2) where occasioned by water to the Premises or to property located thereon belonging to or in the custody or control of the Lessee, including buildings and contents, regardless of whether such damage is caused or contributed to by the position, location, construction or condition of the roadbed, tracks, bridges, dikes, ditches or other structures of the Lessor.

Section 12. TERMINATION ON DEFAULT.

A. It is further agreed that the breach of any covenant, stipulation or condition herein contained to be kept and performed by the Lessee, shall, at the option of the Lessor, forthwith work a termination of this Lease, and all rights of the Lessee hereunder; provided, however, that the Lessee shall not be deemed in default under this Lease unless the Lessor has furnished written notice to the Lessee of Lessee's default, and the Lessee has failed to begin to cure that default within seventy-two (72) hours after receipt of Lessor's default notice or after commencing a cure, has failed to proceed diligently with its cure efforts.

B. After a default by the Lessee, the Lessor may at once re-enter upon the Premises and repossess itself thereof and remove all persons therefrom or may resort to an action of forcible/unlawful entry and detainer, or any other action to recover the same. A waiver by the Lessor of the breach by the Lessee of any covenant or condition of this Lease shall not impair the right of the Lessor to avail itself of any subsequent breach thereof.

Section 13. TERMINATION ON NOTICE.

A. This Lease may be terminated by written notice given by either the Lessor or the Lessee to the other party on any date in such notice stated, not less, however, than thirty (30) days subsequent to the date on which such notice shall be given.

B. Upon such termination and vacation of the Premises by the Lessee, the Lessor shall refund to the Lessee, on a pro rata basis, any unearned rental paid in advance.

Section 14. NOTICE.

A. Any notice, demand, request, consent, approval or communication that either party hereto desires or is required to give to the other party under this Lease shall be in writing. Notice shall be deemed to have been given to the Lessee by serving the Lessee personally or by mailing the same, postage prepaid, to the Lessee at the Premises or the last address known to the Lessor. Notice may be given to the Lessor by mailing the same, postage prepaid to the office of the General Director, Contracts & Real Estate, Room 1200, 1416 Dodge Street, Omaha, Nebraska 68179.

B. Postal notices shall be by certified mail, return receipt requested, and such notice shall be deemed given on the date deposited with the United States Postal Service.

Section 15. CONSENT.

Wherever the consent, approval, judgment or determination of Lessor is required or permitted under this Lease, Lessor shall exercise good faith and reasonable business judgment in granting or withholding such consent or approval or in making such judgment or determination and shall not unreasonably withhold or delay its consent, approval, judgment or determination.

Section 16. SURRENDER; ABANDONMENT; VACATION OF PREMISES; REMOVAL OF LESSEE'S PROPERTY.

A. The Lessee agrees that upon the expiration, abandonment of Premises by Lessee, or sooner termination of this Lease, the Lessee will peaceably and quietly surrender possession of the Premises to the Lessor, or the Lessor's successors and assigns, without Lessor giving any notice to quit or demand for possession. Lessee's non-use of the Premises for the purposes described in Article I of the Articles of Agreement of this Lease continuing for thirty (30) days shall be sufficient and conclusive evidence of such abandonment. No later than the expiration or termination date of this Lease, the Lessee shall (a) remove from the Premises, at the expense of the Lessee, all structures, property and other materials not belonging to the Lessor; and (b) restore the surface of the ground to as good a condition as the same was in before such structures were erected, including, without limiting the generality of the foregoing, the removal of foundations of such structures, the filling in of all excavations and pits and the removal of all debris and rubbish, all of which shall be performed at Lessee's expense. If the Lessee should fail to perform such removal, the Lessor may perform the work and the Lessee shall reimburse the Lessor for the cost thereof within thirty (30) days after bill rendered.

B. In the case of the Lessee's failure to remove such structures and other property, the same, at the option of the Lessor, shall upon the expiration of thirty (30) days after the termination of this Lease, become and thereafter remain the property of the Lessor; and if within one (1) year after the expiration of such thirty-day period the Lessor elects to and does remove, or cause to be removed, said structures and other property from the Premises and the market value thereof or of the material therefrom on removal does not equal the cost of such removal plus the cost of restoring the surface of the ground as aforesaid, then the Lessee shall reimburse the Lessor for the deficit within thirty (30) days after bill rendered.

Section 17. PROTECTION OF FIBER OPTICS.

A. Fiber optic cable systems may be buried on the Lessor's property. Lessee shall telephone the Lessor at 1-800-336-9193 (a 24-hour number) to determine if fiber optic cable is buried anywhere on the Premises. If it is, Lessee will telephone the telecommunications company(ies) involved, arrange for a cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the Premises.

B. In addition to the liability terms elsewhere in this Lease, the Lessee shall indemnify and hold the Lessor harmless against and from all cost, liability, and expense whatsoever (including, without limitation, attorney's fees and court costs and expenses) arising out of or in any way contributed to by any act or omission of the Lessee, its contractor, agents and/or employees, that causes or in any way or degree contributed to (a) any damage to or destruction of any telecommunications system by the Lessee, and/or its contractor, agents and/or employees, on Lessor's property, (b) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Lessor's property, and/or its contractor, agents and/or employees, on Lessor's property, and/or (c) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of, such telecommunication company(ies).

Section 18. LESSEE NOT TO SUBLET OR ASSIGN.

The Lessee agrees not to let to sublet the Premises, in whole or in part, or to assign this Lease without the consent in writing of the Lessor, and it is agreed that any transfer or assignment of this Lease, whether voluntary, by operation of law or otherwise, without such consent in writing, shall be absolutely void and, at the option of the Lessor, shall terminate this Lease.

Section 19. SUCCESSORS AND ASSIGNS.

Subject to the provisions of Section 18 hereof, this Lease shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, successors and assigns.

Shewey Environmental Management Co., Inc.
41360 Dixon Drive • Hemet, California 92543 • (714) 765-2780 • FAX (714) 765-2782

August 19, 1991

File No. 16429 - R/C - 1A
Permit No. 8327 - B

Los Angeles County
Department of Public Works
Waste Management Division
900 South Fremont Avenue
Alhambra, CA 91803 - 1331

Att: David Chou
Re: Closure of Underground Fuel Storage Tanks

Mr. Chou

Please review the following information concerning the site located at 12360 Whittier Blvd. The underground storage tank removal activities have been completed at this site. The attached document presents a report of those events and shall serve as a closure request for this site.

Regards

REGISTERED ENVIRONMENTAL ASSESSOR
JAMES C. SHEWEY
No. REA 01957
Expires: 6-30-92
STATE OF CALIFORNIA

J. Charlie Shewey
President SEMCO

Underground Storage Tank Removal

12360 East Whittier Blvd.

Whittier, California

Prepared for:

Martha Chrystine Vollmer and George Albert Harris
12360 East Whittier Blvd.
Whittier, California 90602

File No. 16429 - R/C - 1A
Permit No. 8327 - B
Project No. C - 014
August 18, 1991

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APPENDICIES

A. Uniform Hazardous Waste Manifest
B. Laboratory Sample Analysis Results & Chain of Custody

INTRODUCTION

Shewey Environmental Management Co., (SEMCO), has concluded underground fuel storage tank removals at 12630 East Whittier Boulevard, Whittier, CA.

This report presents a summary of the underground storage tank excavation and removal activities of 8/8/91.

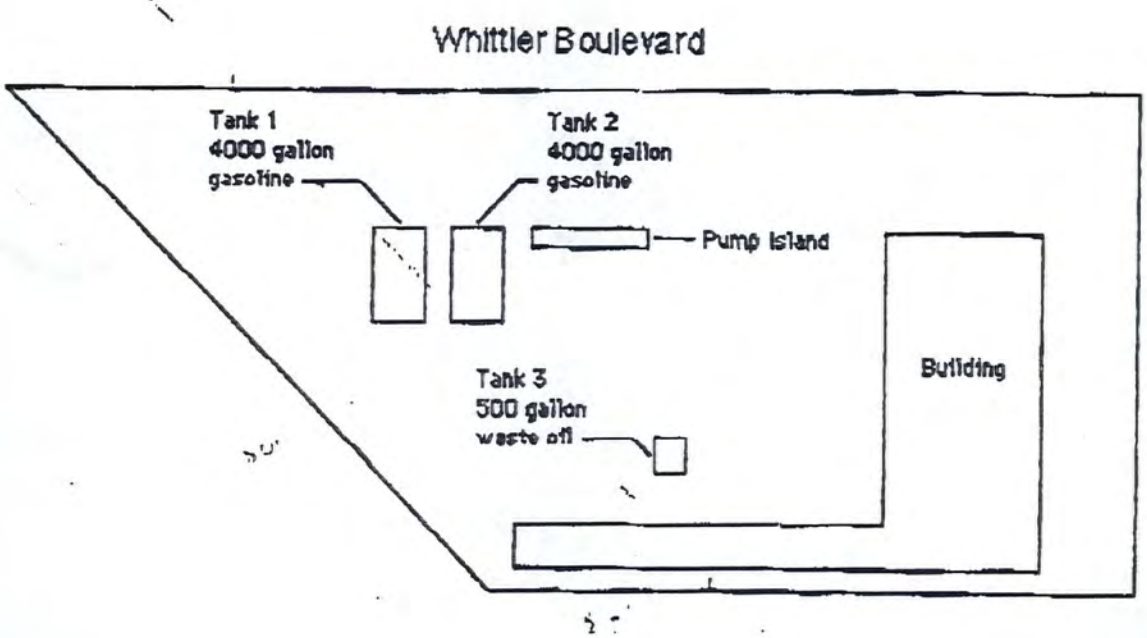
SITE WORK

Tank Removal

SEMCO performed underground fuel tank removal operations in accordance with removal directives from L.A. County Department of Public Works and L.A. County Fire Department, at the area indicated in Figure 1, Site Map. A total of three (3) steel underground storage tanks were removed. The tanks consisted of two (2) - 4,000 gallon gasoline tanks and one (1) - 500 gallon waste oil tank.

The waste oil tank and the two gasoline tanks contained negligible amounts of fluid and therefor did not necessitate residual product removal. All three tanks were purged of flammable vapors using dry ice, removed, and secured on a semi-truck/trailer. The tanks and related piping were then transported under Uniform Hazardous Waste Manifest, State Manifest Document No. 89891736, by Erickson, Inc., to the Erickson recycling facility in Fontana, CA for processing. A copy of the Uniform Hazardous Waste Manifest is included in Appendix A.

Monitoring of Lower Explosive Limit (LEL) and Oxygen levels in each tank was conducted to ensure safe tank removal and transport. Los Angeles County Fire Department inspector Steven Sanchez, was present to insure proper tank removal procedures.



NORTH	Crazy Joe's VW Repair 12360 E. Whittier Blvd. Whittier, CA
SEMCO C - 014	Map Scale 1" = 20'

Figure 1 Site Map

Soil Sampling

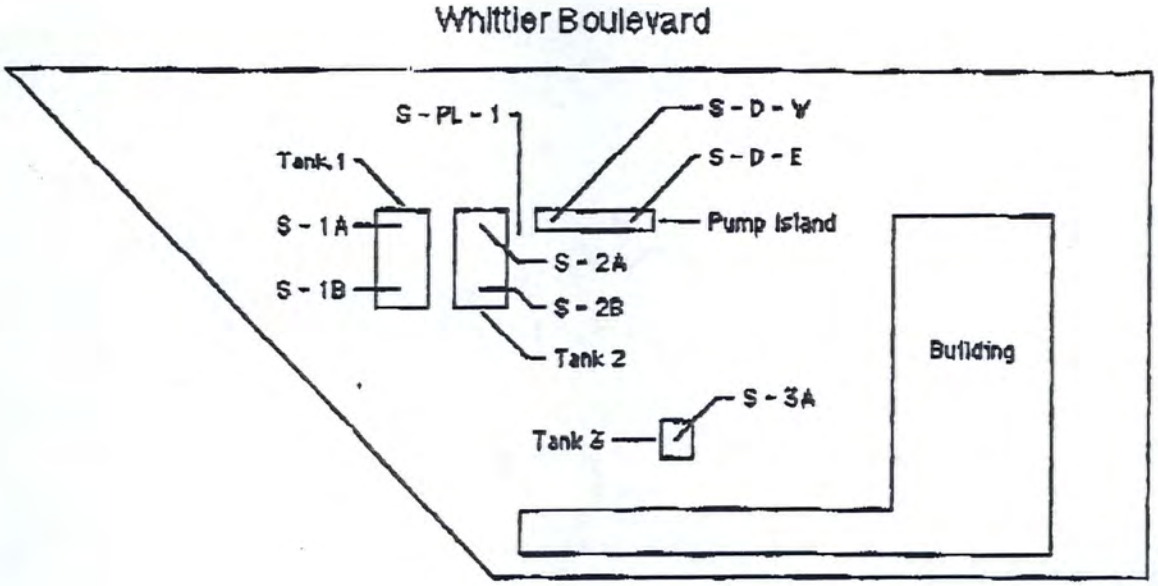
Upon removal of the tanks and related piping selected soil samples were taken from the vicinity of the removed items to determine if any potential soil contamination existed. Sample locations, depths and laboratory analysis methodologies were specified in advance by the Los Angeles County Department of Public works. All soil samples were collected on 8/8/91. Those specifications were followed during the sampling precedings. The sample locations are shown in Figure 2, Sample Map.

A total of eight (8) soil samples were obtained from the soils below the removed tanks, fuel despensers and product piping. The samples were taken from 2 - 4 feet below the the bottom of the tanks at depth of approximately 15 feet below surface grade and 2 - 3 feet below the dispensers and piping. The hand tools used in sample packaging were cleaned using standard cleaning procedures before reuse to avoid cross contamination. Soil samples were packaged in 8-ounce, clear glass sample jars with zero headspace. The sample jars were capped with Teflon lined lids, sealed, and labeled. Samples were then recorded on placed on a Chain-of-Custody document and placed in ice for transport to a State of California certified laboratory.

Sample Analysis and Results

All soil samples obtained during the site sampling were transported to Smith-Emery Co. of Los Angeles, CA for analysis. The laboratory was requested to analyze the samples by EPA Methods; 8015 modified/gasoline for Total Volatile Petroleum Hydrocarbons (TVPH), 8020 for benzene, toluene, xylenes, ethylbenzene (BTXE) and 418.1 for Total Petroleum Hydrocarbons (TPH), In addition, samples were analyzed by Department of Health Services (DOHS) specifications for organic lead (EPA method 3040/7420).

Table 1 presents a summary of the laboratory analysis for 8015 mod./gasoline (TVPH) and 8020 (BTXE).



NORTH	Crazy Joe's VW Repair 12360 E. Whittier Blvd. Whittier, CA
SEMCO C - 014	Map Scale 1" = 20'

Figure 2 Sample Map

TABLE 1

SAMPLE		8015 GAS	8020 BTXE			
Designation	Depth	TVPH**	Benzene*	Toluene*	Xylene*	Ehtelbenzene*
S - 1A	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 1B	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 2A	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 2B	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 3A	9'	Not Applicable	Not detected	Not detected	Not detected	Not detected
S - D - E	2'	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
S - D - W	2'	Not detected	Not detected	Not detected	Not detected	Not detected
S - PL - 1	3'	Not detected	Not detected	Not detected	Not detected	Not detected

* quantities given in parts per billion (µg/kg)
** quantities given in parts per million (mg/kg)

Table 2 presents a summary of the laboratory analysis for 418.1 (TPH) and 3040/7420 organic lead.

TABLE 2

SAMPLE		418.1	3040/7420
Designation	Depth	TPH*	Organic Lead*
S - 1A	15'	Not Applicable	Not detected
S - 1B	15'	Not Applicable	Not detected
S - 2A	15'	Not Applicable	Not detected
S - 2B	15'	Not Applicable	Not detected
S - 3A	9'	8.1 ppm	Not Applicable
S - D - E	2'	Not Applicable	Not Detected
S - D - W	2'	Not Applicable	Not detected
S - PL - 1	3'	Not Applicable	Not detected

* quantities given in parts per million (mg/kg)

Laboratory sample analysis results and Chain of Custody Documents are provided in Appendix B.

ENVIRONMENTAL ANALYSIS

Results of the soil the only detectable levels of petroleum hydrocarbons were present in sample S - 3A. Sample S - 3A was obtained 2 feet below the bottom of the 500 gallon waste oil tank.

The sample was analyzed by EPA methods 418.1 (TPH) and 8020 (BTXE). The analysis by EPA 418.1 showed a TPH concentration of 8.1 mg/kg (parts per million). EPA 8020 analysis of sample S - 3A, showed 'Not Detected' for B,T,X and E. The concentrations identified by EPA 418.1 analysis of this sample fall below acceptable action levels. All remaining samples showed concentrations of 'Not-Detected' for their related analysis.

CONCLUSIONS

In our professional opinion and based upon the analytical data provided by the sampling process, no further investigation or remedial action measures are needed at this site.

LIMITATIONS AND DISCLAIMER

The conclusions in this report address the property as shown on Figure 1, and are based on the following:

a) The results of the analyses of eight soil samples obtained upon tank removal.

b) Observations of SEMCO field personnel.

The services performed by SEMCO have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in southern California. No warranty, expressed or implied is made or intended with this report.

This report is subject to review by controlling public agencies having jurisdiction.

Should you have any questions concerning the information presented in this report, please contact this office.

The information in this report pertains to the site located at 12360 East Whittier Blvd., Whittier, CA. The scope of this report is restricted to the underground storage tank removal activities conducted at the above referenced site on 8/8/91.

REGISTERED ENVIRONMENTAL ASSESSOR
JAMES C. SHEWEY
No. REA 01957
Expires: 6-30-92
STATE OF CALIFORNIA

J. Charlie Shewey
REA 01957
GC 623013

REGISTERED GEOLOGIST
LEWIS S. LOHR
NO 2666
STATE OF CALIFORNIA

Lewis S. Lohr
Registered Geologist
RG 2666

Appendix A

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite ich typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD009112126 Manifest Document No. 01011
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address MARTHA CRYSTINE VOLLMER 8231 CLIFFSIDE DR. HUNTINGTON BEACH CA 92646
4. Generator's Phone 714/969-7251
A. State Manifest Document Number 89891736
B. State Generator's ID

5. Transporter 1 Company Name ERICKSON, INC.
6. US EPA ID Number CAD009146613912
C. State Transporter's ID 2 ID 740
D. Transporter's Phone 714-355-5601

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address ERICKSON, INC. 13738 SLOVER AVE. FONTANA, CA 92335
10. US EPA ID Number CAD098124313913
G. State Facility's ID
H. Facility's Phone 714-355-5601

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON RCRA HAZARDOUS WASTE SOLID (waste empty storage tank(s)	001	TP	00000	P	State 512 EPA/Other EXEMPT
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
EMPTY STORAGE TANK(S) ONCE CONTAINING PETROLEUM BY PRODUCT

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY CONTACT JIM PHONE 714-766-2251
GLOVES & GOGGLES TANK(S) 1112, 1113, 1114

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name | Signature | Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name Thomas W. Raymond | Signature | Month Day Year 10 10 01

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89891736

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW: GENERATOR RETAINS

Appendix B

SMITH-EMERY CO PANY
The Full Service Independent Testing Laboratory, Established 1904

781 East Washington Boulevard • Los Angeles, California 90021 • (213) 749-3411 • Fax: (213) 746-7228
P.O. Box 880550, Hunter's Point Shipyard Bldg 114 • San Francisco, California 94188 • (415) 330-3000 • Fax: (415) 822-5864
5427 East La Palma Avenue • Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

SKEWEY ENVIRONMENTAL MGMT. CO.
FILE # 71959
41360 DIXON DR.
HEMET, CA 92343

08/14/91

Attn: CHAD BEERS
714/765/2700

CRAZY JOE'S VW REPAIR, C-014
CHAIN OF CUSTODY

Sample #: 1220180101
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 1A

CONSTITUENT	METHOD	RESULT	UNIT
EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180102
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 1B

EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

 [ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 12201801

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The Full Service Independent Testing Laboratory, Established 1904
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P.O. Box 880550, Hunter's Point Shipyard Bldg. 114 • San Francisco, California 94188 • (415) 330-3000 • Fax: (415) 822-5864
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Sample #: 1220180103
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 2A

CONSTITUENT	METHOD	RESULT	UNIT
EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180104
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 2B

EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180105
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 3A

TOTAL PETROLEUM HYDROCARBONS	EPA 418.1	8.1	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG

 [ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 12201801

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5427 East La Palma Avenue • Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

CONSTITUENT	METHOD	RESULT	UNIT
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG

Sample #: 1220180106
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - D - E

EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	13	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180107
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - D - W

EPA 8015			
GASOLINE	EPA 8015	ND < 5 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	15	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	41	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

 [ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 12201801

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SMITH-EMERY CO PANY
The Full Service Independent Testing Laboratory, Established 1904

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• San Francisco, California 94188 • (415) 330-8000 • Fax: (415) 822-5864
• Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

Sample #: 1220180108
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1400
Method: GRAB

I.D.: S - PL - 1

CONSTITUENT	METHOD	RESULT	UNIT
EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Respectfully submitted,

Shahid Noori, Manager Chemical Lab

Adriana Tuculescu, Inorg. Supv.

ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit

12201801

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SMITH-EMERY COMPANY An Independent Commercial Testing Laboratory Established 1910
781 EAST WASHINGTON BOULEVARD • LOS ANGELES, CALIFORNIA 90021 • (213) 749-3411

FILE NO.: 71959
LABORATORY NO.: 122018010

CHAIN OF CUSTODY RECORD

Client name: SHEWEY ENVIRONMENTAL
Job number: C-014
Project name: CRAZY JOE'S VW REPAIR
Project manager: C. BEERS
Sampler(s): CHAD BEERS

Analyses required

Sample number	Date sampled	Time sampled	Type Composite or Grab	Sample description	Number of containers	8015 GAS	8020	HIB.1	ORGANIC LEAD					Remarks
1	8/8	12:00	G	S-1A	1	✓	✓		✓					
2				S-1B	1	✓	✓		✓					
3				S-2A	1	✓	✓		✓					
4				S-2B	1	✓	✓		✓					
5				S-3A	1		✓	✓						
6				S-D-E	1	✓	✓		✓					
7				S-D-W	1	✓	✓		✓					
8	8/8	14:00	G	S-PL-1	1	✓	✓		✓					

	Signature	Company	Date	Time
Relinquished by	C BEERS	SHEWEY	13:15	8/8/91
Received by	[illegible signature]	SMITH EMERY	8/8/91	13:15
Relinquished by				
Received by				
Relinquished by				
Received by				

APPENDIX B

RECEIVED
NOV 0 2 2001
BY: GEOCON

October 25, 2001

John Juhrend
Geocon Environmental
11375 Sunrise Park Drive #100
Rancho Cordova, CA 95742
TEL: (916) 852-9118
FAX (916) 852-9132

ELAP No: 1838

RE: Greenway Trail - A8050-06-03

Work Order No.: 053611

Attention: John Juhrend

Enclosed are the results for sample(s) received on October 24, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Edgar Caballero
Laboratory Director

This cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Print Date: *10/25/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S11-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:00:00 PM
Lab ID:	053611-001A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011025C** BatchID: **6140**				PrepDate:	**10/25/01**	Analyst: **RQ**
Antimony	16	0.25		mg/Kg	1.0	10/25/01
Arsenic	30	0.25		mg/Kg	1.0	10/25/01
Barium	250	0.15		mg/Kg	1.0	10/25/01
Beryllium	ND	0.15		mg/Kg	1.0	10/25/01
Cadmium	ND	0.15		mg/Kg	1.0	10/25/01
Chromium	52	0.15		mg/Kg	1.0	10/25/01
Cobalt	16	0.15		mg/Kg	1.0	10/25/01
Copper	3400	0.15		mg/Kg	1.0	10/25/01
Lead	6200	1.0		mg/Kg	4.0	10/25/01
Molybdenum	7.5	0.25		mg/Kg	1.0	10/25/01
Nickel	120	0.15		mg/Kg	1.0	10/25/01
Selenium	ND	0.25		mg/Kg	1.0	10/25/01
Silver	0.50	0.15		mg/Kg	1.0	10/25/01
Thallium	2.5	0.25		mg/Kg	1.0	10/25/01
Vanadium	54	0.15		mg/Kg	1.0	10/25/01
Zinc	430	0.50		mg/Kg	1.0	10/25/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011025B** BatchID: **6141**				PrepDate:	**10/25/01**	Analyst: **NS**
Mercury	1.4	0.10		mg/Kg	1.0	10/25/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *10/25/01*

CLIENT:	Geocon Environmental	Client Sample ID:	S12-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	Collection Date:	10/24/01 2:05:00 PM
Lab ID:	053611-002A	Matrix:	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011025C** BatchID: **6140**				PrepDate:	**10/25/01**	Analyst: **RQ**
Antimony	3.0	0.25		mg/Kg	1.0	10/25/01
Arsenic	15	0.25		mg/Kg	1.0	10/25/01
Barium	150	0.15		mg/Kg	1.0	10/25/01
Beryllium	ND	0.15		mg/Kg	1.0	10/25/01
Cadmium	4.0	0.15		mg/Kg	1.0	10/25/01
Chromium	34	0.15		mg/Kg	1.0	10/25/01
Cobalt	10	0.15		mg/Kg	1.0	10/25/01
Copper	840	0.15		mg/Kg	1.0	10/25/01
Lead	1200	0.25		mg/Kg	1.0	10/25/01
Molybdenum	7.0	0.25		mg/Kg	1.0	10/25/01
Nickel	140	0.15		mg/Kg	1.0	10/25/01
Selenium	ND	0.25		mg/Kg	1.0	10/25/01
Silver	0.32	0.15		mg/Kg	1.0	10/25/01
Thallium	1.0	0.25		mg/Kg	1.0	10/25/01
Vanadium	120	0.15		mg/Kg	1.0	10/25/01
Zinc	750	0.50		mg/Kg	1.0	10/25/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011025B** BatchID: **6141**				PrepDate:	**10/25/01**	Analyst: **NS**
Mercury	0.72	0.10		mg/Kg	1.0	10/25/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *10/25/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S16-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:35:00 PM
Lab ID:	053611-008A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011025C** BatchID: **6140**				PrepDate: **10/25/01**		Analyst: **RQ**
Antimony	0.47	0.25		mg/Kg	1.0	10/25/01
Arsenic	7.5	0.25		mg/Kg	1.0	10/25/01
Barium	90	0.15		mg/Kg	1.0	10/25/01
Beryllium	ND	0.15		mg/Kg	1.0	10/25/01
Cadmium	ND	0.15		mg/Kg	1.0	10/25/01
Chromium	15	0.15		mg/Kg	1.0	10/25/01
Cobalt	7.5	0.15		mg/Kg	1.0	10/25/01
Copper	19	0.15		mg/Kg	1.0	10/25/01
Lead	29	0.25		mg/Kg	1.0	10/25/01
Molybdenum	0.50	0.25		mg/Kg	1.0	10/25/01
Nickel	10	0.15		mg/Kg	1.0	10/25/01
Selenium	ND	0.25		mg/Kg	1.0	10/25/01
Silver	ND	0.15		mg/Kg	1.0	10/25/01
Thallium	1.0	0.25		mg/Kg	1.0	10/25/01
Vanadium	28	0.15		mg/Kg	1.0	10/25/01
Zinc	64	0.50		mg/Kg	1.0	10/25/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011025B** BatchID: **6141**				PrepDate: **10/25/01**		Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1.0	10/25/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: MR

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *25-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT
Method Blank

Sample ID **MB-6140** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MBLK SeqNo: **197177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.25		0				0			
Arsenic	ND	0.25		0				0			
Barium	ND	0.15		0				0			
Beryllium	ND	0.15		0				0			
Cadmium	ND	0.15		0				0			
Chromium	ND	0.15		0				0			
Cobalt	ND	0.15		0				0			
Copper	ND	0.15		0				0			
Lead	ND	0.25		0				0			
Molybdenum	ND	0.25		0				0			
Nickel	ND	0.15		0				0			
Selenium	ND	0.25		0				0			
Silver	ND	0.15		0				0			
Thallium	ND	0.25		0				0			
Vanadium	ND	0.15		0				0			
Zinc	ND	0.50		0				0			

Sample ID **MB-6141** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MBLK SeqNo: **197069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10		0				0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *25-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **053611-008AMS** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MS SeqNo: **197184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	82	0.25	125	0.47	66	32	115	0			
Arsenic	120	0.25	125	7.5	94	59	111	0			
Barium	440	0.15	125	90	283	34	151	0			S
Beryllium	110	0.15	125	0	89	56	112	0			
Cadmium	100	0.15	125	0	80	52	120	0			
Chromium	130	0.15	125	15	94	56	118	0			
Cobalt	110	0.15	125	7.5	84	58	117	0			
Copper	150	0.15	125	19	106	58	134	0			
Lead	140	0.25	125	29	85	47	128	0			
Molybdenum	110	0.25	125	0.5	87	56	115	0			
Nickel	120	0.15	125	10	87	52	120	0			
Selenium	110	0.25	125	0	86	46	108	0			
Silver	110	0.15	125	0	89	74	117	0			
Thallium	110	0.25	125	1	84	62	117	0			
Vanadium	160	0.15	125	28	107	55	122	0			
Zinc	260	0.50	125	64	156	43	134	0			S

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: W

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID **053611-008AMS** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MSD SeqNo: **197185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	89	0.25	125	0.47	71	32	115	82	8	20	
Arsenic	130	0.25	125	7.5	95	59	111	120	4	20	
Barium	230	0.15	125	90	116	34	151	440	63	20	R
Beryllium	120	0.15	125	0	94	56	112	110	7	20	
Cadmium	110	0.15	125	0	87	52	120	100	10	20	
Chromium	130	0.15	125	15	94	56	118	130	2	20	
Cobalt	120	0.15	125	7.5	89	58	117	110	6	20	
Copper	150	0.15	125	19	103	58	134	150	1	20	
Lead	140	0.25	125	29	87	47	128	140	4	20	
Molybdenum	110	0.25	125	0.5	91	56	115	110	1	20	
Nickel	120	0.15	125	10	91	52	120	120	1	20	
Selenium	110	0.25	125	0	90	46	108	110	2	20	
Silver	110	0.15	125	0	92	74	117	110	1	20	
Thallium	110	0.25	125	1	90	62	117	110	4	20	
Vanadium	160	0.15	125	28	104	55	122	160	1	20	
Zinc	190	0.50	125	64	102	43	134	260	31	20	R

Sample ID **053611-008AMS** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MS SeqNo: **197066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.92	0.10	0.83	0.074	101	62	146	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: _____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID **053611-008AMS** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MSD SeqNo: **197067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.87	0.10	0.83	0.074	95	62	146	0.92	5	33	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *25-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **LCS-6140** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

LCS SeqNo: **197178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46	0.25	50	0	93	80	120	0			
Arsenic	48	0.25	50	0	96	80	120	0			
Barium	49	0.15	50	0	98	80	120	0			
Beryllium	48	0.15	50	0	96	80	120	0			
Cadmium	48	0.15	50	0	95	80	120	0			
Chromium	48	0.15	50	0	96	80	120	0			
Cobalt	46	0.15	50	0	92	80	120	0			
Copper	48	0.15	50	0	97	80	120	0			
Lead	46	0.25	50	0	92	80	120	0			
Molybdenum	48	0.25	50	0.15	97	80	120	0			
Nickel	46	0.15	50	0	91	80	120	0			
Selenium	45	0.25	50	0	90	80	120	0			
Silver	40	0.15	50	0.022	80	80	120	0			
Thallium	48	0.25	50	0.21	95	80	120	0			
Vanadium	50	0.15	50	0	99	80	120	0			
Zinc	46	0.50	50	0	92	80	120	0			

Sample ID **LCS-6141** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

LCS SeqNo: **197068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.1	0.10	2.08	0	99	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories

Print Date: *10/30/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S11-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:00:00 PM
Lab ID:	053611-001A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS				**EPA 1311/ 6010B**		
RunID: **ICP2_011029G**	BatchID: **6196**			PrepDate:	**10/29/01**	Analyst: **RQ**
Copper	5.0	0.10		mg/L	1.0	10/29/01
Lead	14	0.10		mg/L	1.0	10/29/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *10/30/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S12-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:05:00 PM
Lab ID:	053611-002A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 1311/ 6010B**			
RunID: **ICP2_011029G**	BatchID: **6196**			PrepDate:	**10/29/01**	Analyst: **RQ**
Copper	0.53	0.10		mg/L	1.0	10/29/01
Lead	0.74	0.10		mg/L	1.0	10/29/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Diane

From: John Juhrend [juhrend@geoconinc.com]
Sent: Friday, October 26, 2001 12:26 PM
To: Diane Galvan
Subject: Greenway Trail

Diane -

Please analyze the following for TCLP lead and copper on 48-hr TAT:

053611-001A S11-0
053611-002A S12-0

Please reply confirming receipt of this request. Thanks for the excellent
service!

Sincerely,

John E. Juhrend, PE, CEG
Geocon Consultants, Inc.
11375 Sunrise Park Drive, Suite 100
Rancho Cordova, CA 95742
916.852.9118 Tel
916.852.9132 Fax
juhrend@geoconinc.com

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT
Method Blank

Sample ID **MB-6196** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**
MBLK SeqNo: **198640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.10		0				0			
Lead	ND	0.10		0				0			

Sample ID **MB-6189-TCLP** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**
MBLK SeqNo: **198641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.10	0	0	0	0	0	0			J
Lead	ND	0.10	0	0	0	0	0	0			J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: _____

All calculations are based on raw values.

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT:
Work Order:
Project:

QC SUMMARY REPORT

#Error

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID **053611-001AMS** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**

MS SeqNo: **198646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12	0.10	2.5	5	269	72	123	0			S
Lead	18	0.10	2.5	14	141	66	118	0			S

Sample ID **053611-001AMS** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**

MSD SeqNo: **198647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	8.4	0.10	2.5	5	135	72	123	12	33	20	SR
Lead	17	0.10	2.5	14	112	66	118	18	3	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **LCS-6196** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**

LCS SeqNo: **198642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.98	0.10	1	0	98	80	120	0			
Lead	0.98	0.10	1	0	98	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

October 29, 2001

John Juhrend
Geocon Environmental
11375 Sunrise Park Drive #100
Rancho Cordova, CA 95742
TEL: (916) 852-9118
FAX (916) 852-9132

ELAP No: 1838

RE: Greenway Trail - A8050-06-03

Work Order No.: 053611

Attention: John Juhrend

Enclosed are the results for sample(s) received on October 24, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Edgar Caballero
Laboratory Director

This cover letter and a case narrative are an integral part of this analytical report.

CLIENT: Geocon Environmental
Project: Greenway Trail - A8050-06-03
Lab Order: 053611

CASE NARRATIVE

Samples for Asbestos PLM were subcontracted to Scientific Laboratories of California, Inc.

The following is the list of corresponding Work Order/Client Sample ID's:

Work Order No.	Client Sample ID
053611-003A	ASB-1 (MATERIAL)
053611-005A	ASB-2 (MATERIAL)

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

SCIENTIFIC LABORATORIES OF CALIFORNIA, INC.
24416 SOUTH MAIN STREET • SUITE 308
CARSON, CA 90745
TEL: (310) 834-4868 • FAX: (310) 834-477

PLM Bulk Asbestos Report

Advanced Technology Laboratories
Attn: Rachel Arada
3275 Walnut Street
Signal Hill , CA 90807

Date Received 10/26/2001
Date Examined 10/27/2001
RE:

SciLab Job No. 901101714
P.O. # 21547
Page 1 of 2

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
053611-003A/ASB-1	901101714-01	*Yes*	85 %
Location Solid			
Description: Grey, Homogeneous, Bulk Material			
Asbestos Types Amosite 20. %. Chrysotile 65. %			
Other Material: Non-fibrous 15. %			
053611-005A/ASB-2	901101714-02.1	*No*	NAD
Location Solid			
Description: Black, Homogeneous, Felt			
Asbestos Types			
Other Material: Cellulose 30. %. Non-fibrous 70. %			
053611-005A/ASB-2	901101714-02.2	*Yes*	60 %
Location Solid			
Description: White, Heterogeneous, Pipe Insulation			
Asbestos Types Chrysotile 60. %			
Other Material: Non-fibrous 40. %			
053611-005A/ASB-2	901101714-02.3	*Yes*	30 %
Location Solid			
Description: Grey, Heterogeneous, Transite			
Asbestos Types Chrysotile 30. %			
Other Material: Non-fibrous 70. %			

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

SCIENTIFIC LABORATORIES OF CALIFORNIA, INC.
24416 SOUTH MAIN STREET • SUITE 308
CARSON, CA 90745
TEL: (310) 834-4868 • FAX: (310) 834-477

PLM Bulk Asbestos Report

Advanced Technology Laboratories
Attn: Rachel Arada
3275 Walnut Street
Signal Hill , CA 90807

Date Received 10/26/2001
Date Examined 10/27/2001

SciLab Job No. 901101714
P.O. # 21547
Page 2 of 2

RE:

Reporting Notes:

Analyzed by: Kieuanh Pham Duong Kieuanh Duong ; Date Analyzed: 10/27/01

*NAD/NSD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysi by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By:

Advanced Technology Laboratorie
3275 Walnut Street
Signal Hill, California 90807-
(562) 989-4045

SUB CHAIN-OF-CUSTODY RECORD

901101714

Subcontractor:
Scientific
24416 S. Main St.
Carson, CA 90308

TEL: (310) 834-4868
FAX: (310) 834-4772

Acct #:

QClevel: CT-TR1

24-Oct-01

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests: SM 100.1				
053611-003A \ ASB-1(Material)	Solid	10/24/01 2:10:00 PM	ZIPLOCK	1				
053611-005A \ ASB-2 (material)	Solid	10/24/01 2:20:00 PM	ZIPLOCK	1				

Comments: Results needed by 10/30/01 PO#21547

		Date/Time			Date/Time
Relinquished by:	[illegible]	10/24/01	Received by:	[illegible]	10/26/01 10:05
Relinquished by:			Received by:		

Advanced Technology Laboratories

Print Date: *29-Oct-01*

CLIENT:	Geocon Environmental	**Test No:**	EPA 9045C
Lab Order:	053611	**Units:**	pH Units
Project:	Greenway Trail - A8050-06-03	**Analyst:**	CA

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	pH	PQL	Qual	DF	Analysis Date
053611-004A	S13-0 (SOIL)	Soil	10/24/01	R12696	8.18	0.1		1	10/26/01
053611-007A	S15-0 (WHITE CHALK)	Soil	10/24/01	R12696	11.08	0.1		1	10/26/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *29-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Duplicate

Sample ID **053558-101adup** Batch ID: **R12696** Test Name **pH** Units **pH Uni** Analysis Date: **10/26/01** Prep Date: **10/26/01**

dup SeqNo: **197466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7	0.10	0	0	0	0	0	6.9	1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: _____

All calculations are based on raw values.

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: Date: Time:

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☑

Sample Condition Upon Receipt:
1. CHILLED Y☑ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON SACRAMENTO
Attn: JOHN JUNGERD
Address: 11375 SUNRISE PK. DRIVE #100
City: RANCHO CORDOVA State: CA Zip Code: 95742
TEL: (916) 852 9115
FAX: (916) 852 9132

Project Name: GREENWAY TRACK
Project #: A8050-06-03
Sampler: (Printed Name) JOHN JUNGERD (Signature)

Relinquished by: (Signature and Printed Name) Date: 10/24/01 Time: 15:00 Received by: (Signature and Printed Name) Date: 10/24/01 Time: 15:30
Relinquished by: (Signature and Printed Name) Date: 10/24/01 Time: 19:30 Received by: (Signature and Printed Name) Date: 10/24/01 Time: 7:20 AM
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name Date
Signature

Send Report To:
Attn:
Co:
Address
City State Zip

Bill To:
Attn:
Co:
Address
City State Zip

Special Instructions/Comments:
PLEASE FAX COPY OF CHAIN TO GEOCON 916 852 9132

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other
☐ Return To:
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analyte(s) Requested: 8081 / 8082 (Pesticides/PCB-OC); 8260 (Volatiles-GC/MS); 8015 / 8270 (SVOA-GC/MS); Metals-Total (CAC-6010 / 7000); 8015M TPH/BETEX (COMBINATION); 8015M TPH/D (Diesel-GC); PLUS ASBESTOS; SOIL ONLY

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE; OIL • SOLVENT • LIQUID; WATER • WASTEWATER; DRINKING WATER; AIR; WIPE • FILTER; OTHER

PRESERVATION

QA/QC: RTNE ☐ RWQCB ☐ WP ☐ NAVY ☐ CT ☐ OTHER

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample I.D.	Date	Time	8081	8260	8015	Metals	8015M TPH/BETEX	8015M TPH/D	PLUS ASBESTOS	SOIL ONLY	SOLID • SOIL • SLUDGE	OIL • SOLVENT • LIQUID	WATER • WASTEWATER	DRINKING WATER	AIR	WIPE • FILTER	OTHER	TAT	Container(s) #	Type	PRESERVATION	REMARKS
	053611-001	S11-0 (SOIL)	10/24/01	1400			X						X							A	1	BP		
	002	S12-0 (SOIL)		1405			X						X							A	1	BP		
	003	ASB-1 (MATERIAL)		1410						X			X							E	1	BP		5 SUBSAMP
	004	S13-0 (SOIL)		1415			X				X		X							E	1	BP		
	005	ASB-2 (MATERIAL)		1420						X			X							E	1	BP		9 SUBSAMP
	006	S14-0 (SOIL)		1425									X								1	BP		HOLD
	007	S15-0 (WHITE CHALK)		1430							X		X							E	1	BP		
	008	S16-0 (SOIL)		1435			X						X							A	1	BP		

* TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Advanced Technology
Laboratories

3275 Walnut Avenue
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: Geocon-RC / Attn: John Juhrend

From: Diane

RE: Results for 053697

Message:

Enclosed are the results for your Project Greenway Trail. Thank you very much for your business and we are looking forward to being of service to you.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Date: *01-Nov-01*

CLIENT: Geocon Environmental
Project: Greenway Trail - A8050-06-03
Lab Order: 053697

CASE NARRATIVE

Samples for Asbestos PLM were subcontracted to Scientific Laboratories of California, Inc.

The following is the list of corresponding Work Order/Client Sample ID's:

Work Order No.	Client Sample ID
053697-032A	T32 BACKING STRIP

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-001A	B1-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-002A	B1-12	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-003A	B2-2	Soil	10/30/01	6253	38	5		1	11/1/01
053697-004A	B2-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-005A	B2-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-006A	B3-2	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-007A	B3-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-008A	B3-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-009A	B4-3	Soil	10/30/01	6253	7.2	5		1	11/1/01
053697-010A	B4-4	Soil	10/30/01	6253	2200	5		1	11/1/01
053697-011A	B4-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-012A	B5-2	Soil	10/30/01	6253	5.1	5		1	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-013A	B5-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-014A	B5-7	Soil	10/30/01	6253	8.7	5		1	11/1/01
053697-015A	B5-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-016A	B5-12	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-017A	B6-2	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-018A	B6-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-019A	B6-6	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-020A	B6-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-021A	B6-12	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-022A	B7-2	Soil	10/30/01	6256	560	5		1	11/1/01
053697-023A	B7-4	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-024A	B7-8	Soil	10/30/01	6256	ND	5		1	11/1/01

Qualifiers:
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Initials: ____

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-025A	B7-12	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-026A	B8-4	Soil	10/30/01	6256	10	5		1	11/1/01
053697-027A	B8-8	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-028A	B9-2	Soil	10/30/01	6256	24	5		1	11/1/01
053697-029A	B9-4	Soil	10/30/01	6256	17	5		1	11/1/01
053697-030A	B9-8	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-031A	T32-.5	Soil	10/30/01	6256	5.5	5		1	11/1/01
053697-033A	T33-1	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-034A	T34-1	Soil	10/30/01	6256	82	5		1	11/1/01
053697-035A	T34-3	Soil	10/30/01	6256	6.1	5		1	11/1/01
053697-036A	T35-1	Soil	10/30/01	6256	1500	5		1	11/1/01
053697-037A	T35-3	Soil	10/30/01	6256	8.1	5		1	11/1/01

Qualifiers:
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H - Samples exceeding analytical holding time
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M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-038A	T36-1	Soil	10/30/01	6256	990	5		1	11/1/01
053697-039A	T36-3	Soil	10/30/01	6256	5.8	5		1	11/1/01
053697-040A	T37-3	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-041A	T38-4.5	Soil	10/30/01	6256	12	5		1	11/1/01
053697-042A	T39-1	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-043A	T40-1	Soil	10/30/01	6257	6.9	5		1	11/1/01
053697-044A	T41-3	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-045A	T42-1	Soil	10/30/01	6257	5.4	5		1	11/1/01
053697-046A	T43-1.5	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-047A	T44-3	Soil	10/30/01	6257	5.0	5		1	11/1/01
053697-048A	T45-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-049A	T46-2	Soil	10/30/01	6257	ND	5		1	11/1/01

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Initials: [illegible]

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-050A	T47-1	Soil	10/30/01	6257	880	5		1	11/1/01
053697-051A	T47-2	Soil	10/30/01	6257	43	5		1	11/1/01
053697-052A	T48-3	Soil	10/30/01	6257	260	5		1	11/1/01
053697-053A	T49-1	Soil	10/30/01	6257	5.6	5		1	11/1/01
053697-054A	T50-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-055A	T51-1	Soil	10/30/01	6257	68	5		1	11/1/01
053697-056A	T52-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-057A	T53-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-058A	T54-1.5	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-059A	T55-.5	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-060A	T55-1.5	Soil	10/30/01	6257	290	5		1	11/1/01
053697-061A	T56-3	Soil	10/30/01	6257	5.7	5		1	11/1/01

Qualifiers:
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Initials: [illegible]

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-062A	T57-1	Soil	10/30/01	6258	24	5		1	11/1/01
053697-063A	T58-1	Soil	10/30/01	6258	5.1	5		1	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: R

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *01-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-064A	RET PAINT	Paint Chip	10/30/01	6254	11	0.79		3.165	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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DO - Surrogate Diluted Out
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H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored, Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

SCIENTIFIC LABORATORIES OF CALIFORNIA, INC.
24416 SOUTH MAIN STREET • SUITE 308
CARSON, CA 90745
TEL: (310) 834-4868 • FAX: (310) 834-4771

PLM Bulk Asbestos Report

Advanced Technology Laboratories
Attn: Rachel Arada
3275 Walnut Street
Signal Hill , CA 90807

Date Received 10/31/2001 **SciLab Job No.** 901101843
Date Examined 10/31/2001 **P.O. #** 21555
Page 1 of 1

RE:

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
053697-032A	901101843-01	*Yes*	3 %

Location: T32 Backing Stip/Solid

Description: Black/Brown. Heterogeneous, Bulk Material
Asbestos Types: Chrysotile 3. %
Other Material: Non-fibrous 97. %

Reporting Notes:

Analyzed by: Kieuanh Pham Duong Kieuanh Duong ; Date Analyzed: 10/31/01

*NAD/NSD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory This PLM report relates ONLY to the items tested.

Reviewed By:_____

Advanced Technology Laboratorie
3275 Walnut Street
Signal Hill, California 90807-
(562) 989-4045

SUB CHAIN-OF-CUSTODY RECORD

901101843

Subcontractor:
Scientific
24416 S. Main St.
Carson, CA 90308

TEL: (310) 834-4868
FAX: (310) 834-4772

Acct #:

QClevel: CT-TR1

30-Oct-01

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests: SM 100.1
053697-032A \ T32 Backing stip	Solid	10/30/01 11:55:00 AM	ZIPLOCK	1

Comments: RUSH! Need results by 11/1/01. PO# 21555.

		Date/Time			Date/Time
Relinquished by:				Received by:	10/31/01
Relinquished by:		10/30/17		Received by:	

B-2

~~Vironex Inc.~~ ATL
~~3002 Dow Ave, Ste. 406~~
~~Tustin, CA 92780~~
~~1-800-847-6639~~

Chain of Custody Record

Client: GEOKON CONSULTANTS
Address: 11375 SUNRISE PARK DRIVE #100
Phone: 916 852 9118 Fax: 916 852 9132
Project Manager: JOHN IVANEND

Date: 10/30/01 Page: 1 Of 5
Project Name: GREENWAY TRAIL
Collector: JS Client Project #: A8050-06-03
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	TOTAL LEAD			Laboratory ID #	Preservative	Comments	Total # of containers
																			PLEASE HOMOGENIZE ALL SAMPLES PRIOR TO ANALYSIS 48-HR TAT	
B1-8	10/30/01	0730	SOIL											X						
B1-12		0735												X						
B2-2		0740												X					HOLD	
B2-4		0745												X						
B2-8		0750												X						
B3-2		0800												X					HOLD	
B3-4		0810												X						
B3-8		0815												X						
B4-3		0820												X					HOLD	
B4-4		0825												X						
B4-8		0830												X						
B5-2		0835												X						
B5-4		0840												X						
B5-7		0845												X						
B5-8		0850												X						

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[signature]	10/30/01 1600	[signature]	10/30/01 16:30
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
JA	10/30/01 16:30	S Baldwin	10/30/01 6:30 PM
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Turn around time: 48 HR

Notes

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

~~Vironex Inc.~~ ATL
~~3002 Dow Ave, Ste. 406~~
~~Tustin, CA 92780~~
~~1-800-847-6639~~

Chain of Custody Record

Client: GEOCON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01 Page: 2 Of 5
Project Name: GREENWAY TRAIL
Collector: JS Client Project #: A8050-06-03
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	TOTAL CAM			Laboratory ID #	Preservative	Comments	Total # of containers
																			SEE PAGE #1	
B5-12	10/30/01	0900	SOIL																	
B6-2		0905												X					HOLD	
B6-4		0910												X						
B6-6		0915												X						
B6-8		0920												X						
B6-12		0930												X						
B7-2		0935												X					HOLD	
B7-4		0940												X						
B7-8		0950												X						
B7-12		1000												X					HOLD	
B8-4		1010												X					HOLD	
B8-8		1020												X						
B9-2		1025												X						
B9-4		1030												X						
B9-8		1040												X						

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[signature]	10/30/01 1600	[signature]	10/30/01 1630
[signature]	10/30/01 18:30	[signature]	10/31/01 0:37 AM

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Notes

Turn around time: 48 HR

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc. ATL
3002 Dow Ave, Ste. 406
Tustin, CA 92780
1-800-847-6639

Chain of Custody Record

Client: GEOCON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01 Page: 3 Of 5
Project Name: EVERGREEN TRAIL
Collector: JD Client Project #: A8050-06-01
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals		TOTAL LEAD	ASPHALTS	Laboratory ID #	Preservative	Comments	Total # of containers
																			SEE PAGE #1	
T32-.5	10/30/01	1150	SOIL												X	X				
T32 BACKING STRIP		1155	SOLID																	
T33-1		1200	SOIL																	
T34-1		1205																		
T34-3		1210																		
T35-1		1215																		
T35-3		1220																		
T36-1		1225																		
T36-3		1230																		
T37-3		1240																		
T38-4.5		1245																		
T39-1		1250																		
T40-1		1300																		
T41-3		1310																		
T42-1		1315																		

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 1600		
Relinquished by: (signature) [signature]	Date / Time 10/30/01 16:30	Received by: (signature) [signature]	Date / Time 10/30/01 6:30 PM
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Turn around time: 48 HR

Notes

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc.
3002 Dow Ave, Ste. 406
Tustin, CA 92780
1-800-847-6639

AR

ATL

Chain of Custody Record

Client: GEOCON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01 Page: 4 Of 5
Project Name: GREENWAY TRAIL
Collector: JS Client Project #: A8050-06-03
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals		TOTAL LEAD	Laboratory ID #	Preservative	Comments	Total # of containers
																		SEE PAGE #1	
T43-1.5	10/30/01	1320	SOIL	BAGS											X				
T44-3		1325													X				
T45-2		1330													X				
T46-2		1340													X				
T47-1		1345													X				
T47-2		1350													X				
T48-3		1355													X				
T48-1		1400													X				
T50-2		1405													X				
T51-1		1410													X				
T52-2		1415													X				
T53-2		1420													X				
T54-1.5		1430													X				
T55-.5		1440													X				
T55-1.5		1445													X				

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
		JA	10/30/01 18:30
Relinquished by: (signature) JA	Date / Time 10/30/01 18:30	Received by: (signature) [illegible]	Date / Time 10/30/01 6:30 PM
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Notes

Turn around time: 48HR

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc.
3002 Dow Ave. Ste. 406
Tustin, CA 92780
1-800-847-6639

ATL

Chain of Custody Record

B10-3 PLEASE ANALYZE ON 24-HR RUSH

Client: GRACON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01
Page: 5 Of 5
Project Name: GREENWAY TRAIL
Collector: JS
Client Project #: A8050-06-03
Batch #:
Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (D) Metals	EPA 6010/7000 Title 22 Metals		TOTAL LEAD		Laboratory ID #	Preservative	Comments	Total # of containers
TS6-3	10/30/01	1450	SOIL	BAG											X				SEE PAGE #1	
TS7-1		1500													X					
TS8-1		1505													X					
RET PAINT		1050	PAINT												X					
B10-3		1100	SOIL												X					

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 1600	JA	10/30/01 1630
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
		[signature]	10/31/01
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
		Steadum	11/2/01 9AM

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Notes

Sample disposal instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Turnaround time around time: 48-HR

Advanced Technology
Laboratories

3275 Walnut Avenue
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: Geocon-RC / Attn: John Juhrend

From: Diane

RE: Results for 053611

Message:

Enclosed are the results for your Project Greenway Trail. Thank you very much for your business and we are looking forward to being of service to you.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Lab Order: 053611
Project: Greenway Trail - A8050-06-03
Lab ID: 053611-004A

Client Sample ID: S13-0 (SOIL)
Collection Date: 10/24/01 2:15:00 PM
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS				**EPA 6010B**		
RunID: ICP2_011107C BatchID: 6350				PrepDate: 11/6/01		Analyst: RQ
Lead	390	0.25		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored, Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Lab Order: 053611
Project: Greenway Trail - A8050-06-03
Lab ID: 053611-006A

Client Sample ID: S14-0 (SOIL)
Collection Date: 10/24/01 2:25:00 PM
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			EPA 6010B			
RunID: ICP2_011107C BatchID: 6350				PrepDate: 11/6/01		Analyst: RQ
Lead	550	0.25		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: Q

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Lab Order: 053611
Project: Greenway Trail - A8050-06-03
Lab ID: 053611-007A

Client Sample ID: S15-0 (WHITE CHALK)
Collection Date: 10/24/01 2:30:00 PM
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS				**EPA 6010B**		
RunID: ICP2_011107C BatchID: 6350				PrepDate: 11/6/01		Analyst: RQ
Lead	33	0.25		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: [illegible]

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Diane

From: John Juhrend [juhrend@geoconinc.com]
Sent: Tuesday, November 06, 2001 12:29 PM
To: Diane Galvan
Subject: Greenway Trail

Diane -

Please also analyze the following soil samples for total lead under 24-hr
TAT:

ATL # 053611

-004 (S13-0)
-006 (S14-0
-007 (S15-0)

Please confirm receipt of this request. Thanks,

Sincerely,

John E. Juhrend, PE, CEG
Geocon Consultants, Inc.
11375 Sunrise Park Drive, Suite 100
Rancho Cordova, CA 95742
916.852.9118 Tel
916.852.9132 Fax
juhrend@geoconinc.com

Advanced Technology
Laboratories

3275 Walnut Avenue
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: Geocon-RC / Attn: John Juhrend

From: Diane

RE: Results for 053749

Message:

Enclosed are the results for your Project Greenway Trail. Thank you very much for your business and we are looking forward to being of service to you.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Print Date: *11/5/01*

CLIENT: Geocon Environmental
Client Sample ID: B10-3
Lab Order: 053749
Project: Greenway Trail - A8050-06-03
Collection Date: 10/30/01 11:00:00 AM
Lab ID: 053749-001A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
LEAD BY ICP				EPA 6010B		
RunID: ICP2_011105A	BatchID: 6286			PrepDate: 11/2/01		Analyst: RQ
Lead	330	5.0		mg/Kg	1.0	11/5/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: [illegible]

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

APPENDIX C

SPECTRUM
GEOPHYSICS
Revealing The Subsurface

Mr. John Juhrend
Geocon Consultants
11375 Sunrise Park Drive; Suite 100
Rancho Cordova, CA 95742

October 26, 2001

RE: Explanation of Geophysical Services
Old Union Pacific Rail Line

Dear Mr. Juhrend:

On October 25, 2001, Spectrum Geophysics conducted a geophysical investigation at the Old Union Pacific Rail Line located at Magnolia and Hadley in Whittier, California. The purpose of the investigation was to identify possible buried metallic debris in an area approximately 290 x 15 feet in size. Our approach was to employ the Geonics' EM-61, a time-domain high definition metal detector and electromagnetic utility-locating instruments.

The EM-61 transmitter generates short pulses of electromagnetic energy which travel downward and outward and have a primary field associated with them. This energy becomes "trapped" in conductive materials and causes a secondary magnetic field to be generated in these materials. Between pulses, the receiver measures the voltage of the decay curve of this secondary magnetic field, which is proportional to the conductivity of the subsurface materials.

The geophysics crew established a grid and EM-61 voltage readings were taken, recorded and stored in a digital polycorder at 2.5-foot intervals along parallel lines spaced 2.5-feet apart. These data were downloaded to a laptop computer and processed. Contour maps were generated to assist in identifying anomalous areas that may represent buried debris. Utility-locating instruments were used to further characterize the source of significant EM-61 anomalies.

A previously uncovered site of metallic debris was located within the area of investigation and was the source of an anomaly approximately 120 millivolts in magnitude. Several anomalies with similar or greater signatures were identified elsewhere in the data. A storm drain and conduit were identified as the sources of a high magnitude anomaly along the north-west portion of the grid.

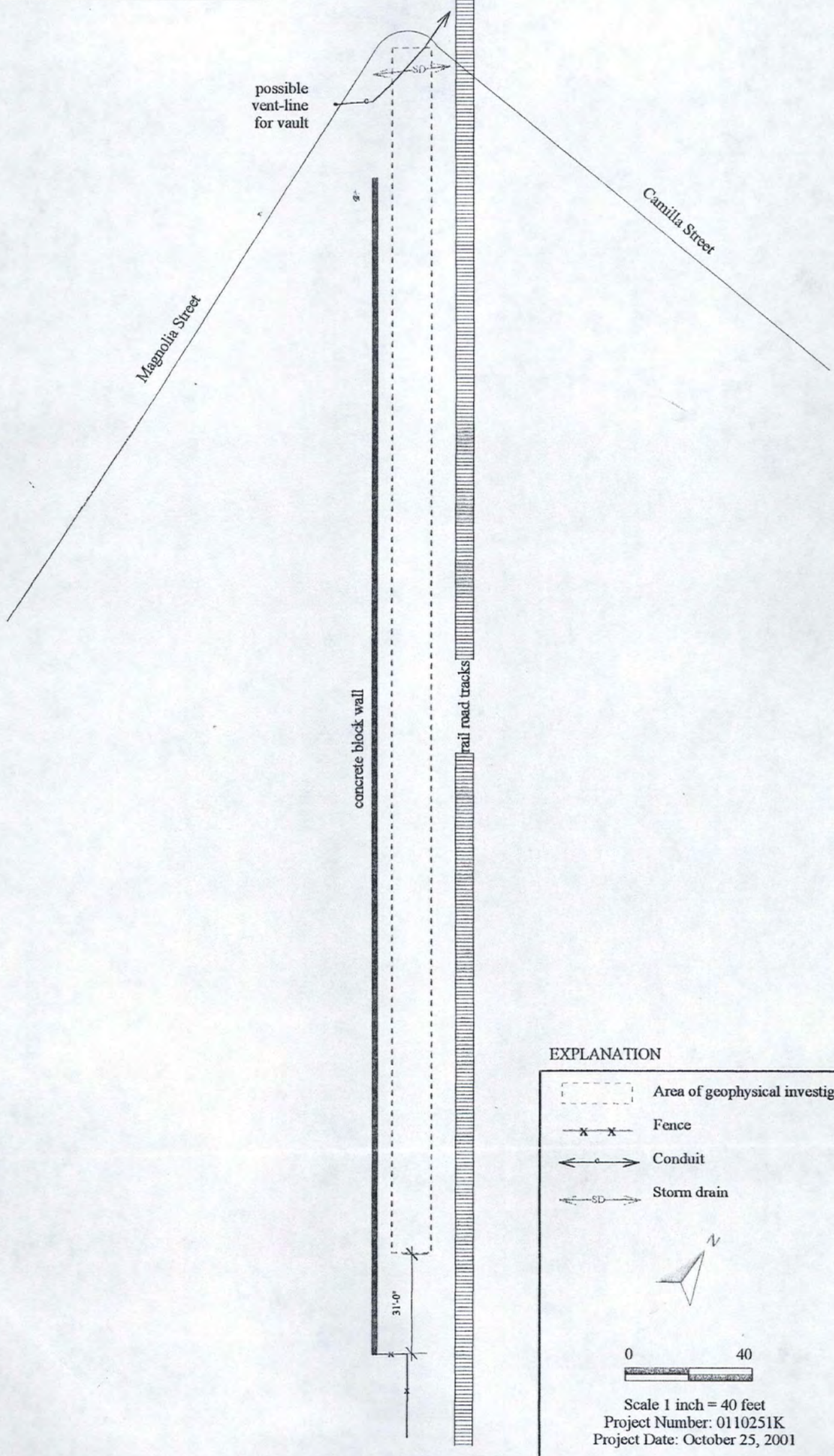
Sincerely,

Stephen Bagadinski

Stephen Bagadinski
Project Manager
bags@spectrum-geophysics.com

Area Of Geophysical Investigation
Old Union Pacific Rail Line
Magnolia and Hadley
Whittier, California

SPECTRUM
GEOPHYSICS
622 Glenoaks Boulevard, San Fernando, CA 91340
www.spectrum-geophysics.com



EXPLANATION

Area of geophysical investigation

Fence

Conduit

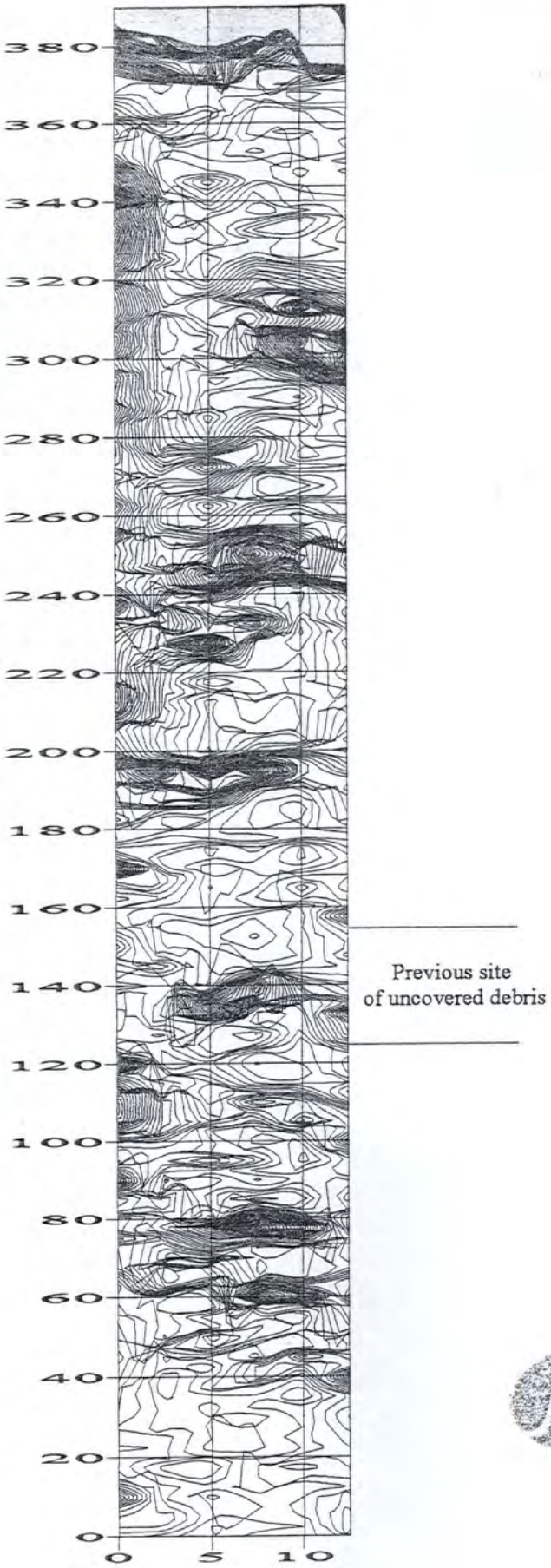
Storm drain

N

0 40

Scale 1 inch = 40 feet
Project Number: 0110251K
Project Date: October 25, 2001

EM-61 Data Top Coil Contour Map
Old Union Pacific Rail Line
Magnolia and Hadley
Whittier, California



millivolts

500
400
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

Contour Interval:
5 millivolts

SPECTRUM
GEOPHYSICS
622 Glenoaks Blvd., San Fernando, CA 91340

(Not to scale)
Project date: October 25, 2001
Project number: 0110251K

APPENDIX D

APPENDIX D

STATISTICAL METHODS

Statistical methods were applied to the slag ballast and underlying soil total arsenic, lead and vanadium data to evaluate: 1) the distribution of total metal concentrations for each sampling depth; 2) the upper confidence limits (UCLs) of the true means of the total metal concentrations for each sampling depth; and 3) if acceptable correlations between total and soluble metal concentrations exist that would allow the prediction of soluble metal concentrations based on calculated UCLs. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring,* by Richard Gilbert; in an EPA *Technology Support Center Issue* document entitled, *The Lognormal Distribution in Environmental Applications,* prepared by Ashok Singh et.al, dated December 1997; and in a book entitled *An Introduction to the Bootstrap,* by Bradley Efron and Robert J. Tibshirani.

Distribution of Total Metal Concentrations

The presence of non-detects and/or low concentrations in data sets can strongly skew sample data towards low values. In these cases, the data are often lognormally distributed or nonparametric and classical statistical methods do not work properly since they assume that the data exhibit an underlying normal distribution. Consequently, it is necessary to evaluate the distributions of the data sets to apply the appropriate methods when determining the UCLs on the true means. When evaluating the distribution of total arsenic, lead and vanadium concentrations, each sampling depth was treated as a separate data set.

The *W-Test* as described in Gilbert, was used to test the null hypothesis of underlying normal or lognormal distributions, or in other words, to test if either the non-transformed total lead data sets or the natural log-transformed total lead data sets are normally distributed. The *W Test* was used on data sets with 50 or fewer observations. Each test was performed at the $\alpha = 0.05$ significance level and indicated the following in the tables below:

Arsenic

Material	Normal ?	Lognormal ?	Appropriate Method for UCL
Slag	Possibly	Possibly	Nonparametric Bootstrap
Soil under slag at 1 ft bgs	No	Possibly	Lognormal Theory Bootstrap
Soil at 2 ft bgs	No	Possibly	Lognormal Theory Bootstrap

Lead

Material	Normal ?	Lognormal ?	Appropriate Method for UCL
Slag	No	Possibly	Lognormal Theory Bootstrap

Vanadium

Material	Normal ?	Lognormal ?	Appropriate Method for UCL
Slag	No	Possibly	Lognormal Theory Bootstrap

Consequently, as indicated above, nonparametric Bootstrap techniques were used to calculate the UCLs for arsenic in slag and lognormal theory Bootstrap was used to calculate the UCLs for the remaining data sets. The data used and the calculations for the *W Test* are attached herein.

Calculating the UCLs for the True Mean

The one-sided 90% and 95% UCLs of the true mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the true mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from the *Site*. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease and the UCLs move closer to the true mean.

The Bootstrap techniques used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap.* The UCLs summarized in the tables below:

Arsenic

Material	**90% UCL**	**95% UCL**
Slag	35 mg/kg	37 mg/kg
Soil under slag at 1 ft bgs	44 mg/kg	47 mg/kg
Soil at 2 ft bgs	37 mg/kg	39 mg/kg

Lead

Material	**90% UCL**	**95% UCL**
Slag	144 mg/kg	157 mg/kg

Vanadium

Material	**90% UCL**	**95% UCL**
Slag	423 mg/kg	471 mg/kg

Correlation of Total and Soluble Metals

Total and corresponding Waste Extraction Test (WET) soluble metal concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET soluble metal concentrations based on the UCLs calculated above.

To estimate the degree of interrelation between total and corresponding WET soluble metal values (x and y, respectively), the *correlation coefficient [r]* is used (see Davis pg. 40). The correlation coefficient is a ratio that ranges from +1 to –1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all.

The *correlation coefficient* was calculated for 10 arsenic (x, y) data points and equaled 0.86. A *correlation coefficient* greater than or equal to 0.8 is adequate evidence that an acceptable correlation exists. An acceptable correlation could not be generated for the lead or vanadium data points.

The equation of the regression line for arsenic was determined to be $y = 0.0537(x)$ and, where x represents total arsenic concentration and y represents predicted WET soluble arsenic concentrations. This equation was used to estimate the predicted WET soluble arsenic concentration for the arsenic UCLs calculated above.

Representative Concentrations
Greenway Trail
A8050-06-03

Data Set	90% UCL (mg/kg)	95% UCL (mg/kg)	Data Distribution Normal?	Data Distribution Lognormal?	UCL Calculation Method
Arsenic - Slag	35.3	37.2	Possible	Possible	Nonparametric Bootstrap
Arsenic(dup) - Slag	33.2	34.9	Possible	Possible	Nonparametric Bootstrap
Arsenic - Dark Slag	46.6	50.2	Possible	Possible	Nonparametric Bootstrap
Arsenic(dup) - Dark Slag	41.7	44.0	No	Possible	Lognormal Theory Bootstrap
Arsenic - Light Slag	33.3	35.4	Possible	Possible	Nonparametric Bootstrap
Arsenic(dup) - Light Slag	31.7	34.0	No	Possible	Lognormal Theory Bootstrap
Lead - Slag	143.7	157.3	No	Possible	Lognormal Theory Bootstrap
Lead(dup) - Slag	182.1	199.3	No	Possible	Lognormal Theory Bootstrap
Lead - Dark Slag	322.6	358.3	No	Possible	Lognormal Theory Bootstrap
Lead(dup) - Dark Slag	363.8	392.8	Possible	Possible	Nonparametric Bootstrap
Lead - Light Slag	66.3	72.4	No	Possible	Lognormal Theory Bootstrap
Lead(dup) - Light Slag	60.8	66.5	No	Possible	Lognormal Theory Bootstrap
Vanadium - Slag	423.0	471.1	No	Possible	Lognormal Theory Bootstrap
Vanadium(dup) - Slag	650.7	738.6	No	Possible	Lognormal Theory Bootstrap
Vanadium - Dark Slag	77.5	88.8	No	Possible	Lognormal Theory Bootstrap
Vanadium(dup) - Dark Slag	70.1	80.9	No	Possible	Lognormal Theory Bootstrap
Vanadium - Light Slag	459.9	512.0	No	Possible	Lognormal Theory Bootstrap
Vanadium(dup) - Light Slag	685.1	775.8	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil under slag	58.0	61.9	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil under slag w/o T1	44.1	46.6	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil at 2 feet	40.9	43.4	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil at 2 feet w/o T1	36.6	38.8	No	Possible	Lognormal Theory Bootstrap

	Depth	Type	Arsenic	Arsenic (dup)	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
T12-.5	0.5	D	32	32	7	7.5	<0.15	<0.15	0.5	17	460	630
T15-.5	0.5	D	60	36	<0.25	94	<0.15	<0.15	9.5	6.5	140	94
T24-.5	0.5	D	70	70	2.5	96	<0.15	<0.15	5	6.5	510	330
T25-.5	0.5	D	20	20	1	60	<0.15	<0.15	100	6.5	240	43
T31-.5	0.5	D	22	22	0.5	76	<0.15	<0.15	15	8	330	84
T31-SLAG	0.5	D	2	24	0.3	9.5	<0.15	<0.15	1	12	300	28
T01-.5	0.5	L	34	34	0.5	140	<0.15	<0.15	30	5.5	46	48
T03-.5	0.5	L	8	8	<0.25	130	<0.15	<0.15	10	3	14	18
T04-.5	0.5	L	4	4	<0.25	6	<0.15	<0.15	1.5	2	4	3.5
T05-.5	0.5	L	7.5	7.5	1	85	<0.15	<0.15	110	2.5	14	25
T06-.5	0.5	L	44	44	0.5	62	<0.15	<0.15	26	3.5	12	20
T07-.5	0.5	L	46	46	1	140	<0.15	<0.15	52	6	1000	190
T16-.5	0.5	L	18	16	1	160	1	<0.15	200	1.5	12	7
T19-.5	0.5	L	13	13	1	84	<0.15	<0.15	20	7	39	84
T26-.5	0.5	L	12	12	2	60	<0.15	<0.15	170	2.5	10	18
T28-.5	0.5	L	34	9.5	1	130	<0.15	<0.15	60	4.5	14	42
T30-.5	0.5	L	64	64	0.5	94	<0.15	<0.15	66	6.5	18	28
		MAX	70	70	7	160	1	0	200	17	1000	630
		AVG	28.9	27.2	1.4	84.4	1.0	#DIV/0!	51.6	5.9	186.1	99.6
		TTLC	500	500	500	10,000	75	100	2,500	8,000	2,500	1,000
		STLC	50	50	150	1,000	8	10	50	800	250	5
		PRG - Res	22 (0.39)	22 (0.39)	31	5,400	150	37 (9)	210	4,700	2,900	400
		PRG - Ind	440 (2.7)	440 (2.7)	820	100,000	2,200	810	450	100,000	76,000	750

	Depth	Type	Lead (dup)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	anadium (dup)	Zinc
T12-.5	0.5	D	630	<0.10	40	3	<0.25	0.19	0.31	0.5	0.5	420
T15-.5	0.5	D	260	<0.10	18	22	<0.25	<0.15	0.5	22	8.5	440
T24-.5	0.5	D	330	0.17	97	5	<0.25	0.5	0.28	8	8	660
T25-.5	0.5	D	43	<0.10	42	6.5	<0.25	<0.15	1	120	120	150
T31-.5	0.5	D	84	<0.10	4.5	12	<0.25	0.3	1	28	28	180
T31-SLAG	0.5	D	200	<0.10	5	5	<0.25	0.37	<0.25	1.5	1	87
T01-.5	0.5	L	48	0.1	1.5	14	<0.25	<0.15	1.5	38	38	64
T03-.5	0.5	L	18	<0.10	0.33	5.5	<0.25	<0.15	0.5	30	30	45
T04-.5	0.5	L	3.5	0.11	<0.25	1.5	<0.25	<0.15	<0.25	5.5	5.5	20
T05-.5	0.5	L	25	<0.10	0.42	4.5	<0.25	<0.15	3	500	500	34
T06-.5	0.5	L	20	<0.10	0.5	6.5	<0.25	<0.15	1	79	79	64
T07-.5	0.5	L	190	<0.10	1.5	33	<0.25	<0.15	1	88	88	260
T16-.5	0.5	L	10	<0.10	<0.25	7.5	<0.25	<0.15	2.5	1000	2300	18
T19-.5	0.5	L	84	0.27	1	13	<0.25	<0.15	0.5	34	34	140
T26-.5	0.5	L	18	0.14	<0.25	2.5	2.5	<0.15	10	710	710	38
T28-.5	0.5	L	14	0.12	0.5	8	<0.25	<0.15	1.5	130	120	340
T30-.5	0.5	L	28	<0.10	1	11	<0.25	<0.15	1.5	110	110	100
		MAX	630	0.27	97	33	2.5	0.5	10	1000	2300	660
		AVG	118.0	0.2	15.2	9.4	2.5	0.3	1.7	170.9	245.9	180.0
		TTLC	1,000	20	3,500	2,000	100	500	700	2,400	2,400	5,000
		STLC	5	2	3,500	200	10	50	70	240	240	2,500
		PRG - Res	400	23	390	1600 (150)	390	390	52	550	550	23,000
		PRG - Ind	750	610	10,000	41,000	10,000	10,000	130	14,000	14,000	100,000

	Depth	Type	Arsenic	Arsenic (dup)	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
T02-.5	0.5	S	12		0.49	110	<0.15	<0.15	22	9.5	22	5
T01-1	1	S	210		0.5	38	<0.15	<0.15	7.5	3.5	22	44
T02-1	1	S	11		0.5	130	<0.15	<0.15	20	11	20	3.5
T03-1	1	S	120		0.48	130	<0.15	<0.15	18	10	18	3.5
T04-1	1	S	60		0.48	66	<0.15	<0.15	12	6	12	2.5
T05-1	1	S	45		0.5	54	<0.15	<0.15	8	4.5	10	15
T06-1	1	S	84		0.43	150	<0.15	<0.15	15	7.5	17	3.5
T07-1	1	S	46		0.5	100	<0.15	<0.15	22	7	160	20
T12-1	1	S	44		0.5	50	<0.15	<0.15	47	4.5	16	38
T15-1	1	S	16		0.27	170	<0.15	<0.15	16	7.5	22	5.5
T16-1	1	S	18		<0.25	140	<0.15	<0.15	15	7.5	20	5.5
T19-1	1	S	9.5		0.5	68	<0.15	<0.15	11	8	23	28
T24-1	1	S	32		0.5	43	<0.15	<0.15	5.5	3	8.5	10
T25-1	1	S	20		0.25	37	<0.15	<0.15	8	3.5	12	6.5
T26-1	1	S	16		<0.25	36	<0.15	<0.15	5.5	3.5	5.5	2
T28-1	1	S	16		<0.25	32	<0.15	<0.15	6	3.5	5.5	4.5
T30-1	1	S	28		<0.25	38	<0.15	<0.15	7.5	4	6.5	3
T31-1	1	S	34		0.5	98	<0.15	<0.15	18	8	26	40
		MAX	210		0.5	170	0	0	47	11	160	44
		AVG	45.6		0.5	82.8	#DIV/0!	#DIV/0!	14.7	6.2	23.7	13.3
		TTLC	500		500	10,000	75	100	2,500	8,000	2,500	1,000
		STLC	50		150	1,000	8	10	50	800	250	5
		PRG - Res	22 (0.39)		31	5,400	150	37 (9)	210	4,700	2,900	400
		PRG - Ind	440 (2.7)		820	100,000	2,200	810	450	100,000	76,000	750

	Depth	Type	Lead (dup)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium /anadium (dup)	Zinc
T02-.5	0.5	S		<0.10	0.48	18	<0.25	<0.15	1	41	52
T01-1	1	S		<0.10	0.25	6	<0.25	<0.15	1.5	15	110
T02-1	1	S		<0.10	0.5	19	<0.25	<0.15	1	37	48
T03-1	1	S		<0.10	0.39	14	<0.25	<0.15	1	36	48
T04-1	1	S		<0.10	<0.25	9	<0.25	<0.15	1	24	34
T05-1	1	S		<0.10	<0.25	6	<0.25	<0.15	1.5	25	110
T06-1	1	S		<0.10	1	15	<0.25	<0.15	0.5	35	120
T07-1	1	S		<0.10	0.5	13	<0.25	<0.15	1	83	160
T12-1	1	S		<0.10	0.5	9	<0.25	<0.15	0.5	73	110
T15-1	1	S		<0.10	3.5	23	<0.25	<0.15	0.5	40	66
T16-1	1	S		<0.10	2	18	<0.25	<0.15	0.5	36	86
T19-1	1	S		<0.10	0.38	9	<0.25	<0.15	1	30	63
T24-1	1	S		<0.10	0.5	4.5	<0.25	<0.15	0.5	16	260
T25-1	1	S		<0.10	0.5	5	<0.25	<0.15	0.5	20	73
T26-1	1	S		<0.10	0.3	4	<0.25	<0.15	0.48	15	200
T28-1	1	S		<0.10	<0.25	4.5	<0.25	<0.15	0.5	16	92
T30-1	1	S		<0.10	0.37	5	<0.25	<0.15	0.5	20	98
T31-1	1	S		<0.10	1	16	<0.25	<0.15	1	36	240
		MAX		0	3.5	23	0	0	1.5	83	260
		AVG		#DIV/0!	0.8	11.0	#DIV/0!	#DIV/0!	0.8	33.2	109.4
		TTLC		20	3,500	2,000	100	500	700	2,400	5,000
		STLC		2	3,500	200	10	50	70	240	2,500
		PRG - Res		23	390	1600 (150)	390	390	52	550	23,000
		PRG - Ind		610	10,000	41,000	10,000	10,000	130	14,000	100,000

	Depth	Type	Arsenic	Arsenic (dup)	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
T01-2	2	S	93		0.42	71	<0.15	<0.15	11	6.4	30	28
T02-2	2	S	17		0.5	150	<0.15	<0.15	20	9	28	14
T03-2	2	S	18		0.5	150	<0.15	<0.15	27	14	22	4.5
T04-2	2	S	90		0.45	110	<0.15	<0.15	18	9	20	3.5
T05-2	2	S	100		0.4	150	<0.15	<0.15	18	9	20	3.5
T06-2	2	S	9.5		0.45	160	<0.15	<0.15	16	8	18	3
T07-2	2	S	45		0.31	150	<0.15	<0.15	15	8	22	3.5
T12-2	2	S	10		0.37	130	<0.15	<0.15	17	7.5	20	3
T15-2	2	S	8		0.29	120	<0.15	<0.15	13	6.5	16	2.5
T16-2	2	S	15		0.4	150	<0.15	<0.15	18	8.5	22	6.5
T19-2	2	S	18		0.32	40	<0.15	<0.15	7	4.5	9.5	29
T24-2	2	S	9		0.29	170	<0.15	<0.15	14	6.5	20	8
T25-2	2	S	16		0.5	150	<0.15	<0.15	26	11	25	4
T26-2	2	S	41		0.38	180	<0.15	0.16	21	8.5	24	4.5
T28-2	2	S	20		0.37	160	<0.15	<0.15	22	8	24	6
T30-2	2	S	28		0.32	130	<0.15	<0.15	18	7.5	18	3.5
T31-2	2	S	26		0.28	44	<0.15	<0.15	8	4	7.5	2.5
		MAX	100		0.5	180	0	0.16	27	14	30	29
		AVG	33.1		0.4	130.3	#DIV/0!	0.2	17.0	8.0	20.4	7.6
		TTLC	500		500	10,000	75	100	2,500	8,000	2,500	1,000
		STLC	50		150	1,000	8	10	50	800	250	5
		PRG - Res	22 (0.39)		31	5,400	150	37 (9)	210	4,700	2,900	400
		PRG - Ind	440 (2.7)		820	100,000	2,200	810	450	100,000	76,000	750

	Depth	Type	Lead (dup)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium /anadium (dup)	Zinc
T01-2	2	S		<0.10	0.39	10	<0.25	<0.15	1.2	23	230
T02-2	2	S		<0.10	0.5	18	<0.25	<0.15	1	38	100
T03-2	2	S		<0.10	0.42	19	<0.25	<0.15	1.5	53	57
T04-2	2	S		<0.10	0.29	16	<0.25	<0.15	1	35	46
T05-2	2	S		<0.10	0.5	17	<0.25	<0.15	1.5	40	59
T06-2	2	S		<0.10	1.5	16	<0.25	<0.15	0.5	38	46
T07-2	2	S		<0.10	1	16	<0.25	<0.15	0.5	36	46
T12-2	2	S		0.2	2	20	<0.25	<0.15	1	40	52
T15-2	2	S		<0.10	1.5	16	<0.25	<0.15	0.5	32	42
T16-2	2	S		<0.10	2	22	<0.25	<0.15	1	42	74
T19-2	2	S		0.1	0.42	6.5	<0.25	<0.15	0.5	16	64
T24-2	2	S		0.11	1	15	<0.25	<0.15	0.5	32	46
T25-2	2	S		<0.10	0.5	20	<0.25	<0.15	1.5	46	110
T26-2	2	S		<0.10	3	29	<0.25	<0.15	1	50	71
T28-2	2	S		<0.10	2.5	26	<0.25	<0.15	1.5	50	68
T30-2	2	S		<0.10	1.5	18	<0.25	<0.15	0.5	38	57
T31-2	2	S		<0.10	0.44	6.5	<0.25	<0.15	0.5	18	220
		MAX		0.2	3	29	0	0	1.5	53	230
		AVG		0.1	1.1	17.1	#DIV/0!	#DIV/0!	0.9	36.9	81.6
		TTLC		20	3,500	2,000	100	500	700	2,400	5,000
		STLC		2	3,500	200	10	50	70	240	2,500
		PRG - Res		23	390	1600 (150)	390	390	52	550	23,000
		PRG - Ind		610	10,000	41,000	10,000	10,000	130	14,000	100,000

DESCRIPTION OF DATA SET

Greenway Trail - Arsenic - Slag

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	28.9
Standard Deviation (x)	21.6
MVUE Mean	31.8
Bootstrap Estimate of Population Mean	28.9
Bootstrap Estimate of Standard Error	5.0
Bootstrap Estimate of Population Mean (MVUE)	31.8
Bootstrap Estimate of Standard Error (MVUE)	7.7

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	**90%UCL**	**95%UCL**
Percentile Bootstrap	35.3	36.9
Pivotal (t) Bootstrap	36.1	38.8
Standard Bootstrap	35.3	37.2

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	**90%UCL**	**95%UCL**
Percentile Bootstrap	42.1	45.3
Standard Bootstrap	41.6	44.4

DESCRIPTION OF DATA SET

Greenway Trail - Lead - Slag

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	99.6
Standard Deviation (x)	159.2
MVUE Mean	94.3
Bootstrap Estimate of Population Mean	99.2
Bootstrap Estimate of Standard Error	37.7
Bootstrap Estimate of Population Mean (MVUE)	95.5
Bootstrap Estimate of Standard Error (MVUE)	37.6

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	149.8	160.8
Pivotal (t) Bootstrap	200.7	286.0
Standard Bootstrap	147.5	161.1

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	147.2	172.1
Standard Bootstrap	143.7	157.3

DESCRIPTION OF DATA SET

Greenway Trail - Vanadium - Slag

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	170.9
Standard Deviation (x)	287.2
MVUE Mean	249.7
Bootstrap Estimate of Population Mean	169.7
Bootstrap Estimate of Standard Error	66.9
Bootstrap Estimate of Population Mean (MVUE)	253.2
Bootstrap Estimate of Standard Error (MVUE)	132.5

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	260.2	286.6
Pivotal (t) Bootstrap	311.0	397.4
Standard Bootstrap	255.4	279.7

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	434.7	498.7
Standard Bootstrap	423.0	471.1

DESCRIPTION OF DATA SET

Greenway Trail - Arsenic - Soil under slag w/o T1

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	36.0
Standard Deviation (x)	29.5
MVUE Mean	35.4
Bootstrap Estimate of Population Mean	35.9
Bootstrap Estimate of Standard Error	7.1
Bootstrap Estimate of Population Mean (MVUE)	35.4
Bootstrap Estimate of Standard Error (MVUE)	6.8

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	45.1	48.9
Pivotal (t) Bootstrap	50.1	56.1
Standard Bootstrap	45.0	47.5

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	44.0	48.1
Standard Bootstrap	44.1	46.6

DESCRIPTION OF DATA SET

Greenway Trail - Arsenic - Soil at 2 feet w/o T1

DATA SET STATISTICS

Number of Samples	16
Arithemetic Mean	29.4
Standard Deviation (x)	27.8
MVUE Mean	28.3
Bootstrap Estimate of Population Mean	29.7
Bootstrap Estimate of Standard Error	6.7
Bootstrap Estimate of Population Mean (MVUE)	28.6
Bootstrap Estimate of Standard Error (MVUE)	6.2

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	38.4	41.3
Pivotal (t) Bootstrap	43.1	54.9
Standard Bootstrap	38.3	40.8

LOGNORMAL THEORY BOOTSTRAP

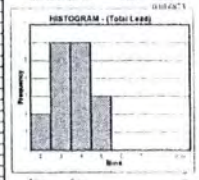
Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	36.5	39.9
Standard Bootstrap	36.6	38.8

PROJECT: Greenway Trail
DEPTH: Arsenic - Slog

i	Y[n-i+1]-Y[i]	i	Y(i)-mean	(i-n/2)^2	x
0.9968	3.6	1	2.99	0.23	3.47
0.3273	2.8	2	2.99	1.32	4.09
0.2580	2.4	3	2.99	1.98	4.25
0.1988	1.7	4	2.99	0.00	3.00
0.1534	1.3	5	2.99	0.01	3.09
0.1169	1.0	6	2.99	4.28	0.69
0.0725	0.6	7	2.99	0.29	3.53
0.0359	0.5	8	2.99	0.83	2.08
0.0000	---	9	2.99	2.37	1.39
---	---	10	2.99	0.95	2.01
---	---	11	2.99	0.63	1.74
---	---	12	2.99	0.70	1.83
---	---	13	2.99	0.01	2.89
---	---	14	2.99	0.18	2.56
---	---	15	2.99	0.26	2.48
---	---	16	2.99	0.79	1.93
---	---	17	2.99	1.37	1.16

W-Test for total lead - lognormal dist?

			sum list
d	16.388*11		1.7*6629
n	17		0.50*605
k	n		0.5281*4
W	0.937		0.11*11
			0.19911
kln-cvsd	n/2	FALSE	0.10662
kln-cvldf	(n-1)/2	TRUE	0.0630*9
			0.0606*3



bins	freq	
2	2	0
3	6	0
4	6	0
5	3	0
6	0	
7	0	
8	0	
more	0	

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.937 > 0.892

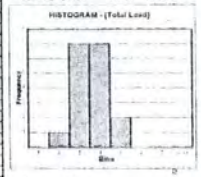
THE DISTRIBUTION MAY BE LOGNORMAL.

PROJECT: Greenway Trail
DEPTH: Arsenic(dup) - Slog

i	Y[n-i+1]-Y[i]	i	Y(i)-mean	(i-n/2)^2	x
0.9968	2.9	1	3.02	0.19	3.47
0.3273	2.1	2	3.02	0.91	3.58
0.2580	1.7	3	3.02	1.50	4.25
0.1988	1.5	4	3.02	0.00	3.00
0.1534	1.1	5	3.02	0.00	3.09
0.1169	1.0	6	3.02	0.03	1.18
0.0725	0.7	7	3.02	0.21	1.53
0.0359	0.2	8	3.02	0.49	2.08
0.0000	---	9	3.02	2.08	1.39
---	---	10	3.02	1.05	2.01
---	---	11	3.02	0.54	1.74
---	---	12	3.02	0.63	1.83
---	---	13	3.02	0.06	2.89
---	---	14	3.02	0.21	2.56
---	---	15	3.02	0.29	2.48
---	---	16	3.02	0.60	1.93
---	---	17	3.02	1.29	1.16

W-Test for total lead - lognormal dist?

			sum list
d	16.55*15		1.42*10
n	17		0.50*25
k	n		0.4142*7
W	0.975		0.304*4
			0.10*62
kln-cvsd	n/2	FALSE	0.10662
kln-cvldf	(n-1)/2	TRUE	0.0630*9



bins	freq	
1	0	0
2	1	0
3	7	0
4	7	0
5	2	
6	0	
7	0	
more	0	

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.975 > 0.892

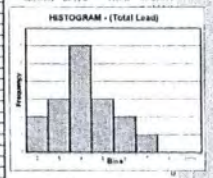
THE DISTRIBUTION MAY BE LOGNORMAL.

PROJECT: Greenway Trail
DEPTH: Lead - Slog

i	Y[n-i+1]-Y[i]	i	Y(i)-mean	(i-n/2)^2	x
0.9968	5.2	1	3.77	7.15	6.45
0.3273	3.9	2	3.77	0.99	4.51
0.2580	2.4	3	3.77	4.11	5.80
0.1988	1.7	4	3.77	0.00	3.76
0.1534	1.4	5	3.77	0.43	3.33
0.1169	1.2	6	3.77	0.19	3.33
0.0725	0.5	7	3.77	0.01	3.87
0.0359	0.4	8	3.77	0.78	2.89
0.0000	---	9	3.77	6.35	1.25
---	---	10	3.77	0.31	3.22
---	---	11	3.77	0.60	3.00
---	---	12	3.77	2.18	5.25
---	---	13	3.77	3.13	1.95
---	---	14	3.77	0.43	3.43
---	---	15	3.77	0.78	2.92
---	---	16	3.77	0.00	3.74
---	---	17	3.77	0.19	3.33

W-Test for total lead - lognormal dist?

			sum list
d	27.4388		2.57*861
n	17		1.2611*7
k	n		0.5*89
W	0.977		0.32*64
			0.22*142
kln-cvsd	n/2	FALSE	0.134*4
kln-cvldf	(n-1)/2	TRUE	0.0*677



bins	freq	
2	2	0
3	3	0
4	6	0
5	3	0
6	2	
7	1	
8	0	
more	0	

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.977 > 0.892

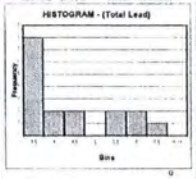
THE DISTRIBUTION MAY BE LOGNORMAL.

PROJECT: Greenway Trail
DEPTH: Lead(dup) - Slog

i	Y[n-i+1]-Y[i]	i	Y(i)-mean	(i-n/2)^2	x
0.9968	5.2	1	3.90	6.46	6.45
0.3273	3.5	2	3.90	2.74	5.56
0.2580	2.9	3	3.90	3.59	5.89
0.1988	2.4	4	3.90	0.02	3.76
0.1534	2.1	5	3.90	0.78	3.13
0.1169	1.4	6	3.90	1.91	5.30
0.0725	1.2	7	3.90	0.00	4
0.0359	0.5	8	3.90	1.03	3
0.0000	---	9	3.90	7.03	1
---	---	10	3.90	0.87	3
---	---	11	3.90	0.87	3
---	---	12	3.90	1.80	5
---	---	13	3.90	2.46	2
---	---	14	3.90	0.28	4
---	---	15	3.90	1.03	2.8907*
---	---	16	3.90	1.60	2.6390*
---	---	17	3.90	0.31	3

W-Test for total lead - lognormal dist?

			sum list
d	31.9595		2.5*861
n	17		1.1411*7
k	n		0.7*2693
W	0.9208		0.1*87
			0.3615*
kln-cvsd	n/2	FALSE	0.15151
kln-cvldf	(n-1)/2	TRUE	0.0*806



bins	freq	
3.5	8	0
4	2	0
4.5	2	0
5	0	0
5.5	2	
6	2	
6.5	1	
more	0	

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.971 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL.

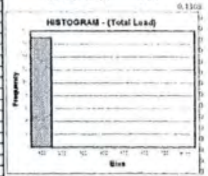
PROJECT: Greenway Trail
DEPTH: Arsenic - Slag

a	X(n-i+1)-X(i)
0.4968	68.0
0.3273	60.0
0.2540	52.5
0.1988	38.0
0.1524	32.0
0.1109	21.0
0.0725	16.0
0.0359	12.0
0.0000	---

i	X(mean)	(x-X)^2	x
1	29	10	32
2	29	970	60
3	29	1691	70
4	29	78	20
5	29	47	22
6	29	721	2
7	29	26	34
8	29	435	8
9	29	618	4
10	29	456	8
11	29	229	11
12	29	294	46
13	29	118	18
14	29	251	13
15	29	284	12
16	29	26	34
17	29	1235	64
18–50	---	---	

W-Test for total lead - normal dist

			sum list
d	7092.8824		33.7824
n	17		19.6
k	8		14.335
W	0.922		7.3544
			4.5968
k(n even) n/2		FALSE	2.3299
k(n odd) (n-1)/2		TRUE	1.16
			0.1103



bins	freq
100	17
200	0
300	0
400	0
500	0
600	0
700	0
more	0

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.922 > 0.892
THE DISTRIBUTION MAY BE NORMAL.

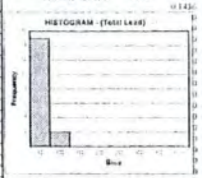
PROJECT: Greenway Trail
DEPTH: Arsenic(dup) - Slag

a	X(n-i+1)-X(i)
0.4968	65.0
0.3273	56.5
0.2540	38.0
0.1988	34.5
0.1524	23.0
0.1109	21.0
0.0725	16.0
0.0359	4.0
0.0000	---

i	X(mean)	(x-X)^2	x
1	27	21	32
2	27	78	36
3	27	1831	70
4	27	52	20
5	27	27	22
6	27	40	21
7	27	17	31
8	27	368	8
9	27	537	4
10	27	187	14
11	27	281	11
12	27	354	46
13	27	125	16
14	27	201	13
15	27	230	12
16	27	312	10
17	27	1336	64
18–50	---	---	

W-Test for total lead - normal dist

			sum list
d	6228.87		32.7688
n	17		18.4245
k	8		9.652
W	0.906		6.4506
			3.0816
k(n even) n/2		FALSE	2.3289
k(n odd) (n-1)/2		TRUE	1.16
			0.1436



bins	freq
50	15
100	2
150	0
200	0
250	0
300	0
350	0
more	0

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.906 > 0.892
THE DISTRIBUTION MAY BE NORMAL.

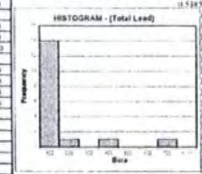
PROJECT: Greenway Trail
DEPTH: Lead - Slag

a	X(n-i+1)-X(i)
0.4968	626.5
0.3273	323.0
0.2540	172.0
0.1988	76.0
0.1524	64.0
0.1109	59.0
0.0725	20.0
0.0359	15.0
0.0000	---

i	X(mean)	(x-X)^2	x
1	100	281508	630.0
2	100	31	94.0
3	100	53103	330.0
4	100	3139	44.0
5	100	242	84.0
6	100	5121	28.0
7	100	2658	48.0
8	100	6652	18.0
9	100	9222	3.5
10	100	5550	25.0
11	100	6330	20.0
12	100	8180	190.0
13	100	8567	7.0
14	100	242	84.0
15	100	6652	18.0
16	100	3311	42.0
17	100	5121	28.0
18–50	---	---	

W-Test for total lead - normal dist

			sum list
d	495561		311.2452
n	17		105.7173
k	8		43.688
W	0.602		15.1088
			9.8176
k(n even) n/2		FALSE	6.5431
k(n odd) (n-1)/2		TRUE	1.45
			0.5385



bins	freq
100	14
200	1
300	0
400	1
500	0
600	0
700	1
more	0

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.602 < 0.892
THE DISTRIBUTION IS NOT NORMAL

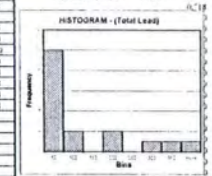
PROJECT: Route 60
DEPTH: Lead(dup) - Slag

a	X(n-i+1)-X(i)
0.4968	626.5
0.3273	320.0
0.2540	246.0
0.1988	162.0
0.1524	172.0
0.1109	64.0
0.0725	59.0
0.0359	20.0
0.0000	---

i	X(mean)	(x-X)^2	x
1	118	262171	630
2	118	20172	260
3	118	44956	330
4	118	5621	43
5	118	1154	84
6	118	6729	200
7	118	4836	48
8	118	9994	18
9	118	13104	1
10	118	8614	25
11	118	9598	20
12	118	5188	190
13	118	11658	10
14	118	1154	81
15	118	9994	18
16	118	10810	14
17	118	8095	28
18–50	---	---	

W-Test for total lead - normal dist

			sum list
d	433994.2		311.2452
n	17		104.736
k	8		62.484
W	0.7050		36.1816
			26.3848
k(n even) n/2		FALSE	7.0976
k(n odd) (n-1)/2		TRUE	4.2775
			0.718



bins	freq
50	10
100	2
150	0
200	2
250	0
300	1
350	1
more	1

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.705 < 0.892
THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium - Slag

a	N(n-i+1)-N(i)	i	X(mean)	(x-X)^2	x
0.4968	997.5	1	171	29620	1
0.3273	768.5	2	171	22157	22
0.2540	991.5	3	171	26521	8
0.1988	122.0	4	171	2586	120
0.1531	98.0	5	171	20107	28
0.1109	82.0	6	171	28080	2
0.0725	58.0	7	171	17650	38
0.0359	45.0	8	171	19810	30
0.0000	---	9	171	27142	6
---	---	10	171	108338	500
---	---	11	171	8437	79
---	---	12	171	6865	88
---	---	13	171	687485	1000
---	---	14	171	18729	34
---	---	15	171	290680	710
---	---	16	171	1609	130
---	---	17	171	3703	110
---	---	18	---	---	
---	---	19	---	---	
---	---	20	---	---	
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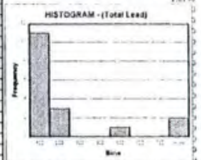
		50	---	---	

W-Test for total lead - normal dist

		ssn list
d	1132440	105.552
n	17	231.492
k	8	125.603
W	0.625	24.2536
		15.0312
k(n even) n/2	FALSE	9.0938
k(n odd) (n-1)/2	TRUE	1.205
		1.6155



bins	freq
100	11
200	3
300	0
400	0
500	1
600	0
700	0
more	2

FOR n = 17 AND FOR α = 0.05

$W_{n,\alpha}$ = 0.892

SINCE 0.625 < 0.892

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium(dup) - Slag

a	N(n-i+1)-N(i)	i	X(mean)	(x-X)^2	x
0.4964	2209.5	1	246	60025	1
0.3273	769.0	2	246	56161	9
0.2540	191.5	3	246	56662	8
0.1988	112.0	4	246	15851	120
0.1531	111.5	5	246	47386	28
0.1109	82.0	6	246	59082	1
0.0725	58.0	7	246	43222	38
0.0359	45.0	8	246	46618	30
0.0000	---	9	246	57798	6
---	---	10	246	64561	500
---	---	11	246	27889	79
---	---	12	246	24036	88
---	---	13	246	4218278	2300
---	---	14	246	44907	34
---	---	15	246	215378	710
---	---	16	246	15834	120
---	---	17	246	18172	110
---	---	18	---	---	
---	---	19	---	---	
---	---	20	---	---	
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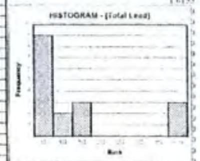
		49	---	---	
		50	---	---	

W-Test for total lead - normal dist

		ssn list
d	5075303	1142.49
n	17	232.056
k	8	125.693
W	0.176	22.2656
		17.1648
k(n even) n/2	FALSE	9.0938
k(n odd) (n-1)/2	TRUE	4.205
		1.6155



bins	freq
50	9
100	2
150	3
200	0
250	0
300	0
350	0
more	3

FOR n = 17 AND FOR α = 0.05

$W_{n,\alpha}$ = 0.892

SINCE 0.176 < 0.892

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag

a	N(n-i+1)-N(i)	i	X(mean)	(x-X)^2	x
0.4886	200.5	1	46	1132	12.0
0.3253	192.0	2	46	27015	210.0
0.2553	72.0	3	46	1200	11.0
0.2027	11.0	4	46	5530	120.0
0.1587	80.0	5	46	206	60.0
0.1197	29.0	6	46	0	45.0
0.0837	26.0	7	46	1472	84.0
0.0496	14.0	8	46	0	46.0
0.0163	4.0	9	46	3	11.0
---	---	10	46	878	16.0
---	---	11	46	761	18.0
---	---	12	46	1306	9.5
---	---	13	46	186	32.0
---	---	14	46	657	20.0
---	---	15	46	878	16.0
---	---	16	46	878	16.0
---	---	17	46	311	28.0
---	---	18	46	135	31.0
---	---	19	---	---	
---	---	20	---	---	
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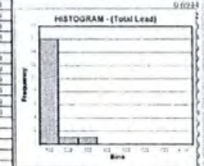
		50	---	---	

W-Test for total lead - normal dist

		ssn list
d	12551.9	97.9643
n	18	35.0577
k	9	18.3816
W	0.694	8.9184
		4.761
k(n even) n/2	TRUE	3.4713
k(n odd) (n-1)/2	FALSE	2.1762
		0.6944



bins	freq
100	16
200	1
300	1
400	0
500	0
600	0
700	0
more	0

FOR n = 18 AND FOR α = 0.05

$W_{n,\alpha}$ = 0.897

SINCE 0.694 < 0.897

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at 2 feet

a	N(n-i+1)-N(i)	i	X(mean)	(x-X)^2	x
0.4968	92.0	1	33	3582	93
0.3273	84.0	2	33	261	17
0.2540	80.5	3	33	229	18
0.1988	35.0	4	33	3232	90
0.1531	26.0	5	33	4469	100
0.1109	12.0	6	33	539	10
0.0725	9.0	7	33	130	45
0.0359	2.0	8	33	536	10
0.0000	---	9	33	632	8
---	---	10	33	329	15
---	---	11	33	229	18
---	---	12	33	583	9
---	---	13	33	294	16
---	---	14	33	62	41
---	---	15	33	173	20
---	---	16	33	26	28
---	---	17	33	51	26
---	---	18	---	---	
---	---	19	---	---	
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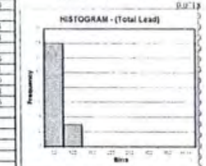
		50	---	---	

W-Test for total lead - normal dist

		ssn list
d	15889.9	45.7056
n	17	27.4932
k	8	20.447
W	0.7390	6.958
		3.9884
k(n even) n/2	FALSE	1.3308
k(n odd) (n-1)/2	TRUE	0.6525
		0.0718



bins	freq
50	14
100	3
150	0
200	0
250	0
300	0
350	0
more	0

FOR n = 17 AND FOR α = 0.05

$W_{n,\alpha}$ = 0.892

SINCE 0.739 < 0.892

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium - Slag

a	Y[n-i+1]-Y[i]	i	Y(mean)	(Yi-Y)^2	Y
0.4968	7.6	1	3.73	19.55	-0.69
0.3273	6.2	2	3.73	0.41	3.09
0.2540	4.5	3	3.73	2.72	2.08
0.1988	2.8	4	3.73	1.12	4.79
0.1534	1.7	5	3.73	0.16	3.33
0.1109	1.3	6	3.73	11.01	0.41
0.0725	1.1	7	3.73	0.01	3.61
0.0359	0.8	8	3.73	0.11	3.40
0.0000	---	9	3.73	1.09	1.70
---	---	10	3.73	6.18	6.21
---	---	11	3.73	0.41	4.37
---	---	12	3.73	0.56	1.48
---	---	13	3.73	10.11	6.91
---	---	14	3.73	0.01	3.53
---	---	15	3.73	8.05	6.57
---	---	16	3.73	1.30	4.87
---	---	17	3.73	0.94	4.70
---	---	18	---	---	
---	---	19	---	---	
---	---	20	---	---	
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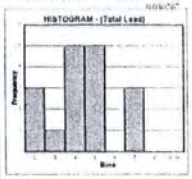
		50	---	---	

W-Test for total lead - lognormal dist?

			sum list
d	66.799952		3.776128
n	17		2.030102
k	8		1.143061
W	0.961		0.556273
			0.260235
k(n even) n/2		FALSE	0.151742
k(n odd) (n-1)/2		TRUE	0.079802
			0.028727



bins	freq	
		0
2	3	0
3	1	0
4	5	0
5	5	0
6	0	
7	3	
8	0	
more	0	

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.961 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium(dup) - Slag

a	Y[n-i+1]-Y[i]	i	Y(mean)	(Yi-Y)^2	Y
0.4968	5.3	1	3.69	19.23	-0.69
0.3273	6.6	2	3.69	2.41	2.14
0.2540	4.5	3	3.69	2.60	2.08
0.1988	2.7	4	3.69	1.20	4.79
0.1534	2.6	5	3.69	0.13	3.33
0.1109	1.4	6	3.69	11.61	0.28
0.0725	1.1	7	3.69	0.00	3.64
0.0359	0.8	8	3.69	0.08	3.40
0.0000	---	9	3.69	3.95	1.70
---	---	10	3.69	6.36	6.21
---	---	11	3.69	0.46	4.37
---	---	12	3.69	0.62	1.48
---	---	13	3.69	16.39	7.74
---	---	14	3.69	0.93	4.53
---	---	15	3.69	8.25	6.57
---	---	16	3.69	1.20	4.72
---	---	17	3.69	1.02	4.70
---	---	18	---	---	
---	---	19	---	---	
---	---	20	---	---	
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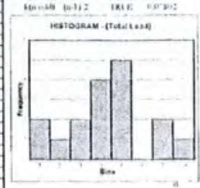
W-Test for total lead - lognormal dist?

			sum list
d	77.56662		1.15578
n	17		2.16441
k	8		1.135561
W	0.971		0.53686
			0.3115
k(n even) n/2		FALSE	0.151742
k(n odd) (n-1)/2		TRUE	0.07802



bins	freq	
		0
1	2	0
2	1	0
3	2	0
4	4	0
5	5	
6	0	
7	2	
more	1	

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.971 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag

a	Y[n-i+1]-Y[i]	i	Y(mean)	(Yi-Y)^2	Y
0.4886	3.1	1	3.43	0.87	2.18
0.3253	2.4	2	3.43	3.67	5.35
0.2553	1.9	3	3.43	1.07	2.40
0.2027	1.3	4	3.43	1.84	4.79
0.1587	1.1	5	3.43	0.11	4.09
0.1197	1.0	6	3.43	0.11	3.81
0.0837	0.9	7	3.43	1.00	4.43
0.0496	0.5	8	3.43	0.16	3.83
0.0163	0.1	9	3.43	0.13	3.78
---	---	10	3.43	0.43	2.77
---	---	11	3.43	0.29	2.89
---	---	12	3.43	1.39	2.25
---	---	13	3.43	0.00	3.47
---	---	14	3.43	0.19	3.00
---	---	15	3.43	0.43	2.77
---	---	16	3.43	0.43	2.77
---	---	17	3.43	0.01	3.33
---	---	18	3.43	0.01	3.53
---	---	19	---	---	
---	---	20	---	---	
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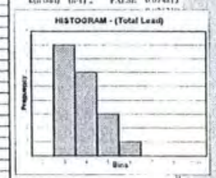
		49	---	---	
		50	---	---	

W-Test for total lead - lognormal dist?

			sum list
d	12.5316		1.512516
n	18		0.777336
k	9		0.486791
W	0.949		0.26792
			0.167596
k(n even) n/2		TRUE	0.123779
k(n odd) (n-1)/2		FALSE	0.074813



bins	freq	
		0
2	0	0
3	8	0
4	6	0
5	3	0
6	1	
7	0	
8	0	
more	0	

FOR n = 18 AND FOR α = 0.05
W_{crit} = 0.897

SINCE 0.949 > 0.897

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at 2 feet

a	Y[n-i+1]-Y[i]	i	Y(mean)	(Yi-Y)^2	Y
0.4968	2.5	1	3.16	1.87	4.53
0.3273	2.3	2	3.16	0.10	2.83
0.2540	2.2	3	3.16	0.07	2.89
0.1988	1.5	4	3.16	1.80	4.50
0.1534	1.0	5	3.16	2.10	4.61
0.1109	0.6	6	3.16	0.82	2.25
0.0725	0.4	7	3.16	0.42	4
0.0359	0.1	8	3.16	0.73	2
0.0000	---	9	3.16	1.16	2
---	---	10	3.16	0.20	3
---	---	11	3.16	0.07	3
---	---	12	3.16	0.92	2
---	---	13	3.16	0.15	3
---	---	14	3.16	0.31	4
---	---	15	3.16	0.03	2.995732
---	---	16	3.16	0.03	3.332205
---	---	17	3.16	0.03	3
---	---	18	---	---	
---	---	19	---	---	
---	---	20	---	---	
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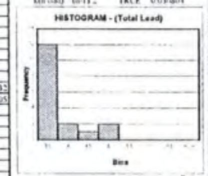
		50	---	---	

W-Test for total lead - lognormal dist?

			sum list
d	10.82035		1.254782
n	17		0.764368
k	8		0.571124
W	0.9113		0.299011
			0.154217
k(n even) n/2		FALSE	0.062061
k(n odd) (n-1)/2		TRUE	0.010804



bins	freq	
		0
3.5	12	0
4	2	0
4.5	1	0
5	2	0
5.5	0	
6	0	
6.5	0	
more	0	

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.911 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium - Mag

a	X[n-i+1]-X[i]	i	X(mean)	(x-X)^2	x
0.4968	999.5	1	171	29920	1
0.3273	798.5	2	171	22157	22
0.2540	893.5	3	171	26521	8
0.1988	122.0	4	171	2590	120
0.1524	98.0	5	171	20107	28
0.1109	82.0	6	171	28080	2
0.0725	56.0	7	171	17650	38
0.0359	15.6	8	171	19880	30
0.0000	---	9	171	27342	6
---	---	10	171	108338	500
---	---	11	171	8137	79
---	---	12	171	9865	88
---	---	13	171	687165	1000
---	---	14	171	18729	11
---	---	15	171	290080	710
---	---	16	171	1669	130
---	---	17	171	1702	110
---	---	18	---	---	
---	---	19	---	---	
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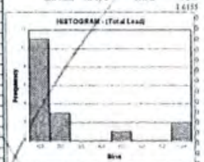
		50	---	---	

W-Test for total lead - normal dist

d 1320997.1
n 17
k 8
W 0.623

k(n even) n/2 FALSE
k(n odd) (n-1)/2 TRUE

sum list: 796.5516, 231.8921, 123.5643, 21.2530, 15.5302, 9.0630, 4.205, 1.4155



bins	freq
100	11
200	3
300	0
400	0
500	1
600	0
700	0
more	2

FOR n = 17 AND FOR α = 0.05
$W_{.05}$ = 0.892

SINCE 0.623 < 0.892

THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Vanadium(dup) - Mag

a	X[n-i+1]-X[i]	i	X(mean)	(x-X)^2	x
0.4968	2209.5	1	216	46227	1
0.3273	709.0	2	216	56361	9
0.2540	[illegible]	3	216	56002	8
0.1988	112.0	4	216	15851	120
0.1524	111.5	5	216	17326	28
0.1109	82.0	6	216	59082	1
0.0725	58.0	7	216	45227	38
0.0359	15.0	8	216	36618	30
0.0000	---	9	216	57798	6
---	---	10	216	64561	500
---	---	11	216	27060	79
---	---	12	216	21846	88
---	---	13	216	6589274	2800
---	---	14	216	14007	31
---	---	15	216	215378	710
---	---	16	216	15851	120
---	---	17	216	18472	110
---	---	18	---	---	
---	---	19	---	---	
---	---	20	---	---	
---	---	21	---	---	
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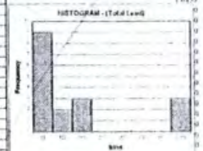
		50	---	---	

W-Test for total lead - normal dist

d 5075403
n 17
k 8
W 0.176

k(n even) n/2 FALSE
k(n odd) (n-1)/2 TRUE

sum list: 1112.392, 232.0857, 125.603, 22.2656, 17.1041, 9.0938, 4.205, 1.0155



bins	freq
50	9
100	2
150	3
200	0
250	0
300	0
350	0
more	3

FOR n = 17 AND FOR α = 0.05
$W_{.05}$ = 0.892

SINCE 0.176 < 0.892

THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag w/o TI

a	X[n-i+1]-X[i]	i	X(mean)	(x-X)^2	x
0.4968	110.5	1	36	575	12.0
0.3273	73.0	2	36	621	11.0
0.2540	68.0	3	36	7061	120.0
0.1968	30.0	4	36	577	60.0
0.1524	29.0	5	36	82	15.0
0.1109	28.0	6	36	2207	83.0
0.0725	16.0	7	36	101	46.0
0.0359	12.0	8	36	61	11.0
0.0000	---	9	36	399	16.0
---	---	10	36	323	18.0
---	---	11	36	701	9.5
---	---	12	36	16	32.0
---	---	13	36	253	20.0
---	---	14	36	399	16.0
---	---	15	36	329	18.0
---	---	16	36	61	28.0
---	---	17	36	4	31.0
---	---	18	---	---	
---	---	19	---	---	
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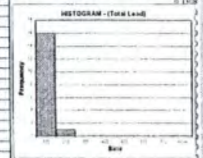
W-Test for total lead - normal dist

d 13908.2
n 17
k 8
W 0.607

k(n even) n/2 FALSE
k(n odd) (n-1)/2 TRUE

sum list: 54.8961, 23.4929, 12.192, 5.964, 4.4186, 3.1052, 1.16, 0.1308



bins	freq
100	16
200	1
300	0
400	0
500	0
600	0
700	0
more	0

FOR n = 17 AND FOR α = 0.05
$W_{.05}$ = 0.892

SINCE 0.607 < 0.892

THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at 2 feet w/o TI

a	X[n-i+1]-X[i]	i	X(mean)	(x-X)^2	x
0.5056	92.0	1	29	154	17
0.3290	81.0	2	29	130	18
0.2521	35.5	3	29	3672	90
0.1939	31.0	4	29	4983	150
0.1447	13.0	5	29	396	10
0.1005	10.0	6	29	213	15
0.0593	3.0	7	29	377	10
0.0196	0.0	8	29	158	8
---	---	9	29	208	15
---	---	10	29	130	18
---	---	11	29	410	9
---	---	12	29	180	16
---	---	13	29	134	11
---	---	14	29	88	20
---	---	15	29	1	28
---	---	16	29	12	26
---	---	17	---	---	
---	---	18	---	---	
---	---	19	---	---	
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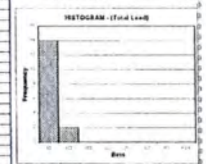
		50	---	---	

W-Test for total lead - normal dist

d 11583.61
n 16
k 8
W 0.7179

k(n even) n/2 TRUE
k(n odd) (n-1)/2 FALSE

sum list: 46.5152, 26.649, 8.91455, 6.0109, 1.8811, 1.003, 0.1779



bins	freq
50	14
100	2
150	0
200	0
250	0
300	0
350	0
more	0

FOR n = 16 AND FOR α = 0.05
$W_{.05}$ = 0.887

SINCE 0.718 < 0.887

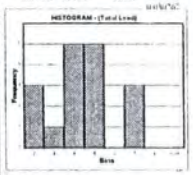
THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Vanadium - Slag

W-Test for total lead - logarithmic data

d	0.9993
n	17
k	8
W	0.961

km exists	n>2	FALSE	0.151742
km odd	n+1>2	TRUE	0.076962



bins	freq
2	3
3	1
4	5
5	5
6	0
7	3
8	0
more	0

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.961 > 0.892

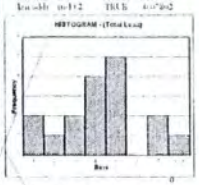
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium/pyr - Slag

W-Test for total lead - logarithmic data

d	0.9962
n	17
k	8
W	0.973

km exists	n>2	FALSE	0.151742
km odd	n+1>2	TRUE	0.076962



bins	freq
1	2
2	1
3	2
4	3
5	5
6	0
7	2
more	1

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.973 > 0.892

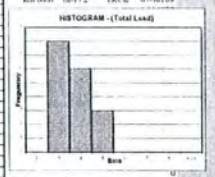
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag w/o TI

W-Test for total lead - logarithmic data

d	1.000411
n	17
k	8
W	0.959

km exists	n>2	FALSE	0.151218
km odd	n+1>2	TRUE	0.076109



bins	freq
2	0
3	8
4	6
5	3
6	0
7	0
8	0
more	0

FOR n = 17 AND FOR α = 0.05

W_{crit} = 0.892

SINCE 0.959 > 0.892

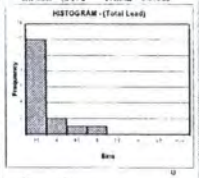
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at 2 feet w/o TI

W-Test for total lead - logarithmic data

d	0.989804
n	16
k	8
W	0.921

km exists	n>2	TRUE	0.078791
km odd	n+1>2	FALSE	0.09963



bins	freq
3.5	12
4	2
4.5	1
5	1
5.5	0
6	0
6.5	0
more	0

FOR n = 16 AND FOR α = 0.05

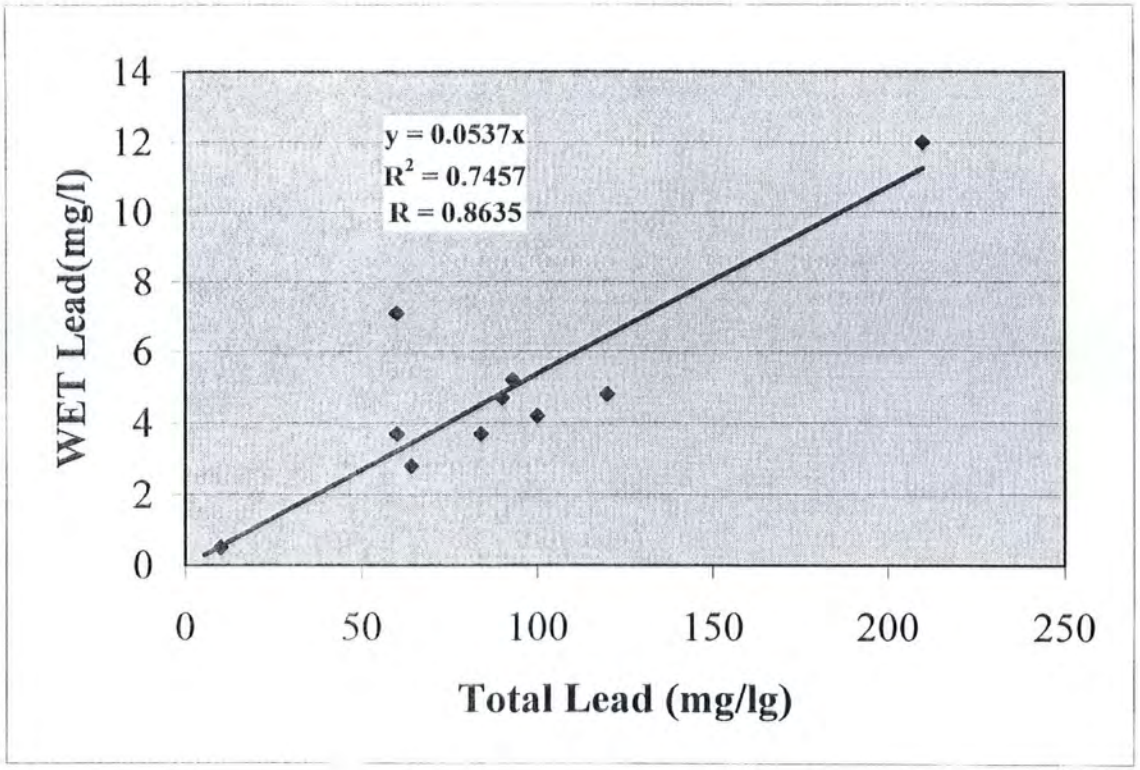
W_{crit} = 0.887

SINCE 0.921 > 0.887

THE DISTRIBUTION MAY BE LOGNORMAL

Greenway Trail
A8050-06-03
Arsenic

ID	Total	WET
T1-1	210	12
T1-2	93	5.2
T3-1	120	4.8
T4-1	60	7.1
T4-2	90	4.7
T5-2	100	4.2
T6-1	84	3.7
T15-.5	60	3.7
T24-.5	10	0.5
T30.5	64	2.8



Not Used

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Greenway Trail
Site Location:

Job Identification: A8050-06-03
Date Completed: 9/1/2001
Completed By: Geocon

Software: GSI RBCA Spreadsheet
Version: 1.0.1

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	***50***			250	180
EF.Derm	Exposure Frequency for dermal exposure	***50***			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	TRUE	FALSE	FALSE
S.v	Volatilization from Subsurface Soils	FALSE	FALSE	
GW.v	Volatilization from Groundwater	FALSE	FALSE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	FALSE	FALSE	
GW.b	Vapors from Groundwater	FALSE	FALSE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	TRUE	FALSE	FALSE
Groundwater Pathways:				
GW.i	Groundwater Ingestion	FALSE	FALSE	
S.l	Leaching to Groundwater from all Soils	FALSE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)		FALSE		FALSE
S	Inhalation receptor (cm)		TRUE		FALSE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	***1.0E-05***	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	2	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	***1.5E+09***	1.0E+06
W	Length of affect. soil parallel to wind (cm)	***1.8E+03***	1.0E+03
W.gw	Length of affect. soil parallel to groundwater (cm	1.5E+03	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)	1.0E+02	
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	2.5E+03
Ugw.tr	Groundwater seepage velocity (cm/yr)	6.6E+03
Ks	Saturated hydraulic conductivity(cm/s)	
grad	Groundwater gradient (cm/cm)	
Sw	Width of groundwater source zone (cm)	
Sd	Depth of groundwater source zone (cm)	
phi.eff	Effective porosity in water-bearing unit	3.8E-01
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is bioattenuation considered?	FALSE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value		
hc	Capillary zone thickness (cm)	5.0E+00		
hv	Vadose zone thickness (cm)	3.0E+02		
rho	Soil density (g/cm^3)	1.7		
foc	Fraction of organic carbon in vadose zone	0.01		
phi	Soil porosity in vadose zone	0.38		
Lgw	Depth to groundwater (cm)	3.0E+02		
Ls	Depth to top of affected subsurface soil (cm)	1.0E+02		
Lsubs	Thickness of affected subsurface soils (cm)	2.0E+02		
pH	Soil/groundwater pH	6.5		
		capillary	vadose	foundation
phi.w	Volumetric water content	0.342	0.12	0.12
phi.a	Volumetric air content	0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.01	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)		
ay	Transverse dispersivity (cm)		
az	Vertical dispersivity (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

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RBCA CHEMICAL DATABASE

Physical Property Data

CAS Number	Constituent	type	Molecular Weight (g/mole) MW	ref	Diffusion Coefficients in air (cm2/s) Dair	ref	in water (cm2/s) Dwat	ref	log (Koc) or log(Kd) (@ 20 - 25 C) log(l/kg)	ref	Henry's Law Constant (@ 20 - 25 C) (atm-m3) mol	(unitless)	ref	Vapor Pressure (@ 20 - 25 C) (mm Hg)	ref	Solubility (@ 20 - 25 C) (mg/L)	ref	acid pKa	base pKb	ref
7440-38-2	Arsenic	N	74.9	4	N/A		N/A		2.07	24	0.00E+00	0.00E+00		0.00E+00	14	4.41E+05	27			

Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

Software version: 1.0.1

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RBCA CHEMICAL DATABASE

Toxicity Data

CAS Number	Constituent	Reference Dose (mg/kg/day) Oral RfD_oral	ref	Inhalation RfD_inhal	ref	Slope Factors 1/(mg/kg/day) Oral SF_oral	ref	Inhalation SF_inhal	ref	EPA Weight of Evidence	Is Constituent Carcinogenic ?
7440-38-2	Arsenic	3.00E-04	R	-		1.50E+00	R	1.20E+01	R	A	TRUE

Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

Software version: 1.0.1

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RBCA CHEMICAL DATABASE

Miscellaneous Chemical Data

CAS Number	Constituent	Maximum Contaminant Level MCL (mg/L)	reference	Permissible Exposure Limit PEL/TLV (mg/m3)	ref	Relative Absorption Factors Oral	Dermal	Detection Limits Groundwater (mg/L)	ref	Soil (mg/kg)	ref	Half Life (First-Order Decay) (days) Saturated	Unsaturated	ref
7440-38-2	Arsenic	5.00E-02	50 FR 46936 (13 Nov 85	1.00E-02	OSHA	1	0	0.01	C	0.053	S			

Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

Software version: 1.0.1

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REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration in Groundwater value (mg/L)	note	in Surface Soil value (mg/kg)	note	in Subsurface Soil value (mg/kg)	note
Arsenic			1.0E+0			

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | *1 OF 9*

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS: VAPOR AND DUST INHALATION	Exposure Concentration								
	1) Source Medium	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Residential		On-Site Residential		On-Site Residential		On-Site Residential	
Arsenic	1.0E+0	3.6E+11		2.8E-12		1.7E-2		4.7E-14	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 2 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
Arsenic	0.0E+0								

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposue area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 3 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: VAPOR INHALATION Constituents of Concern	Exposure Concentration 1) Source Medium Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)		TOTAL PATHWAY INTAKE (mg/kg-day) *(Sum intake values from surface, subsurface & groundwater routes.)* On-Site Residential	
Arsenic	0.0E+0									4.7E-14	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 4 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS:

VAPOR INTRUSION TO BUILDINGS

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate: (mg/kg-day) (3) X (4)	
Arsenic	0.0E+0								

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 5 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER:
VAPOR INTRUSION TO BUILDINGS

Constituents of Concern	Exposure Concentration: 1) Source Medium — Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) — Receptor		3) Exposure Medium — Indoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier — (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate — (mg/kg-day) (3) X (4)		TOTAL PATHWAY INTAKE (mg/kg-day) *(Sum intake values from subsurface & groundwater routes.)*	
Arsenic	0.0E+0										

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

	Exposure Concentration				
	1) Source Medium	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day)		3) Average Daily Intake Rate (mg/kg-day) (1) x (2)	
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial
Arsenic	1.0E+0	0.0E+0		0.0E+0	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr
ET = Exposure time (hrs/day)
IR = Intake rate (mg/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:
INGESTION

Constituents of Concern	Exposure Concentration: 1) Source Medium — Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (IRxCFxEFxED)/(BWxAT) (kg/kg-day): On-Site Residential	On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2): On-Site Residential	On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from dermal & ingestion routes.): On-Site Residential	On-Site Commercial
Arsenic	1.0E+0	8.4E-8		8.4E-8		8.4E-8	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (mg/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SOIL: LEACHING TO GROUNDWATER/ GROUNDWATER INGESTION

Constituents of Concern	Exposure Concentration 1) Source Medium: Soil Concentration (mg/kg)	2) NAF Value (L/kg) Receptor		3) Exposure Medium Groundwater: POE Conc. (mg/L) (1)/(2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) x (4)	
Arsenic	1.0E+0								

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body Weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: INGESTION

Constituents of Concern	Exposure Concentration 1) Source Medium Groundwater Conc. (mg/L)	2) NAF Value (dim) Receptor		3) Exposure Medium Groundwater: POE Conc. (mg/L) (1)/(2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) x (4)		MAX. PATHWAY INTAKE (mg/kg-day) *(Maximum intake of active pathways soil leaching & groundwater routes.)*	
Arsenic	0.0E+0										

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 1 OF 4

TIER 2 PATHWAY RISK CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

		CARCINOGENIC RISK						TOXIC EFFECTS			
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential		(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential		(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	
Arsenic	A	4.7E-14		1.2E+1	5.6E-13						

Total Pathway Carcinogenic Risk = **5.6E-13** | **0.0E+0**

Total Pathway Hazard Index = **0.0E+0** | **0.0E+0**

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 2 OF 4

TIER 2 PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAYS ARE ACTIVE)

		CARCINOGENIC RISK					TOXIC EFFECTS			
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6)	
Arsenic	A			1.2E+1							

Total Pathway Carcinogenic Risk = 0.0E+0 | 0.0E+0

Total Pathway Hazard Index = 0.0E+0 | 0.0E+0

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 3 OF 4

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

		CARCINOGENIC RISK					TOXIC EFFECTS				
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Oral Slope Factor	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Oral Reference Dose	(7) Individual COC Hazard Quotient (5) / (6)	
Constituents of Concern		On-Site Residential	On-Site Commercial	(mg/kg-day)^-1	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial	(mg/kg-day)	On-Site Residential	On-Site Commercial
Arsenic	A	8.4E-8		1.5E+0	1.3E-7		2.0E-7		3.0E-4	6.5E-4	

Total Pathway Carcinogenic Risk = 1.3E-7 | 0.0E+0

Total Pathway Hazard Index = 6.5E-4 | 0.0E+0

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 4 OF 4

TIER 2 PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAYS ARE ACTIVE)

		CARCINOGENIC RISK					TOXIC EFFECTS			
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6)	
Arsenic	A			1.5E+0					3.0E-4		

Total Pathway Carcinogenic Risk = 0.0E+0 | 0.0E+0

Total Pathway Hazard Index = 0.0E+0 | 0.0E+0

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RBCA SITE ASSESSMENT	Tier 2 Worksheet 8.3

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	5.6E-13	1.0E-5	5.6E-13	N/A	☐	NC	1.0E+0	NC	N/A	■
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
SOIL EXPOSURE PATHWAYS										
Complete:	1.3E-7	1.0E-5	1.3E-7	N/A	☐	6.5E-4	1.0E+0	6.5E-4	N/A	☐
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■

CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	1.3E-7	1.0E-5	1.3E-7	N/A	☐	6.5E-4	1.0E+0	6.5E-4	N/A	☐

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.1

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

SURFACE SOIL SSTL VALUES (< 3.3 FT BGS)

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration		Soil Leaching to Groundwater			X	Ingestion, Inhalation and Dermal Contact			Construction Worker	Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)		Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)		Residential: (on-site)	Commercial: (on-site)		Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
7440-38-2	Arsenic	1.0E+0		NA	NA	NA		7.9E+1	NA		NA	7.9E+1	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

SUBSURFACE SOIL SSTL VALUES (> 3.3 FT BGS)

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential: (on-site)	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
7440-38-2	Arsenic	0.0E+0	NA	NA	NA	NA	NA	NA	NA	>Res	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
7440-38-2	Arsenic	0.0E+0	NA	NA	NA	NA	NA	NA	NA	>Sol	☐	<1

>Sol indicates risk-based target concentration greater than constituent solubility

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Client Sample ID: Composite #2 053697-010A,014
Lab Order: 053790
Project: Greenway Trail - A8050-06-03
Collection Date:
Lab ID: 053790-002A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011107C** BatchID: **6350**				PrepDate: **11/6/01**		Analyst: **RQ**
Arsenic	16	0.25		mg/Kg	1.0	11/7/01
Barium	510	0.15		mg/Kg	1.0	11/7/01
Cadmium	3.0	0.15		mg/Kg	1.0	11/7/01
Chromium	14	0.15		mg/Kg	1.0	11/7/01
Lead	630	0.25		mg/Kg	1.0	11/7/01
Selenium	3.0	0.25		mg/Kg	1.0	11/7/01
Silver	0.23	0.15		mg/Kg	1.0	11/7/01
LEAD BY ATOMIC ABSORPTION			**EPA 1311/ 7420**			
RunID: **AA2_011107B** BatchID: **6374**				PrepDate: **11/7/01**		Analyst: **NS**
Lead	5.9	0.20		mg/L	1.0	11/7/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011107A** BatchID: **6375**				PrepDate: **11/7/01**		Analyst: **NS**
Mercury	0.22	0.10		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: R

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Client Sample ID: Composite #1 053697-034A,036
Lab Order: 053790
Project: Greenway Trail - A8050-06-03
Collection Date:
Lab ID: 053790-001A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011107C** BatchID: **6350**				PrepDate: **11/6/01**		Analyst: **RQ**
Arsenic	24	0.25		mg/Kg	1.0	11/7/01
Barium	160	0.15		mg/Kg	1.0	11/7/01
Cadmium	ND	0.15		mg/Kg	1.0	11/7/01
Chromium	24	0.15		mg/Kg	1.0	11/7/01
Lead	1100	0.25		mg/Kg	1.0	11/7/01
Selenium	0.26	0.25		mg/Kg	1.0	11/7/01
Silver	0.33	0.15		mg/Kg	1.0	11/7/01
LEAD BY ATOMIC ABSORPTION			**EPA 1311/ 7420**			
RunID: **AA2_011107B** BatchID: **6374**				PrepDate: **11/7/01**		Analyst: **NS**
Lead	1.5	0.20		mg/L	1.0	11/7/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011107A** BatchID: **6375**				PrepDate: **11/7/01**		Analyst: **NS**
Mercury	0.36	0.10		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Diane

From: John Juhrend [juhrend@geoconinc.com]
Sent: Tuesday, November 06, 2001 9:22 AM
To: Diane Galvan
Subject: Greenway Trail

Diane -

Please generate the following two composite soil samples and analyze under
48 hour TAT for RCRA metals and TCLP soluble lead:

ATL 53697:

Composite #1: 034A, 036A, 038A and 050A (T34-1, T35-1, T36-1 and T47-1) RCRA
metals and TCLP Lead

Composite #2: 010A, 014A and 53749-001A (B4-4, B5-7 and B10-3)

Please confirm receipt of this e-mail. Need data by Thursday if possible.
Also need all original lab reports for recent results for this project overnighted. Thanks

Sincerely,

John E. Juhrend, PE, CEG
Geocon Consultants, Inc.
11375 Sunrise Park Drive, Suite 100
Rancho Cordova, CA 95742
916.852.9118 Tel
916.852.9132 Fax
juhrend@geoconinc.com

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90807
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: Date: Time:

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON - RC
Attn: John Juhrend
Address: 11375 Sunrise Park Drive # 100
City Rancho Cordova State CA Zip Code 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

Project Name: Runway Trail Project #: A8050-06-03 Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
			Sebastian	10/30/01	11/02/01
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name Date
Signature

Send Report To:
Attn:
Co:
Address
City State Zip

Bill To:
Attn:
Co:
Address
City State Zip

Special Instructions/Comments:
see attached

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other
☐ Return To:
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8081 / 8082 (Pesticides/PCB-GC); 8260 (Volatiles-GC/MS); 625 / 8270 (BNA-GC/MS); Metals-Total (CAC-6010 / 7000); 8015M TPHG/BTEX (COMBINATION); 8015M TPH/D (Diesel-GC); TCLP Lead; RCRA metals

CIRCLE APPROPRIATE MATRIX: SOLID (SOIL) • SLUDGE; OIL • SOLVENT • LIQUID; WATER • WASTEWATER; DRINKING WATER; AIR; WIPE • FILTER; OTHER

QA/QC: RTNE ☑ RWQCB ☐ WIP ☐ NAVY ☐ CT ☑ OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description / Sample I.D.	Date	Time	8081 / 8082 (Pesticides/PCB-GC)	8260 (Volatiles-GC/MS)	625 / 8270 (BNA-GC/MS)	Metals-Total (CAC-6010 / 7000)	8015M TPHG/BTEX (COMBINATION)	8015M TPH/D (Diesel-GC)	TCLP Lead	RCRA metals	SOLID (SOIL) • SLUDGE	OIL • SOLVENT • LIQUID	WATER • WASTEWATER	DRINKING WATER	AIR	WIPE • FILTER	OTHER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	053790-001	Comp (053697-34A, 36A, 38A, 00A)	11/02/01	11:44					X		X				X					C	1	V G	-	
	↓ 002	Comp (053697-10A, 14A, 053749-01A)	↓	↓					↓		↓				↓					↓	↓	↓ ↓		

* TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

APPENDIX E

MARCOR ENVIRONMENTAL

MARCOR Remediation, Inc.
16027 Carmenita Road
Cerritos, CA 90703-2208

562-921-2733
562-921-2383 (FAX)
800-237-6271
www.marcor.com

October 8, 2001

Mr. David A. Watts, CAC
Project Scientist
GEOCON CONSULTANTS, INC. **SENT VIA FAX: 925 371-5915**
11375 Sunrise Park Drive
Rancho Cordova, CA 95742

Subject: Asbestos and Lead Abatement Proposal
Union Pacific Railroad
Green Way Trail Project – Whittier, CA
MARCOR Proposal No: 101-417

Dear Mr. Watts:

Thank you for allowing MARCOR Remediation, Inc. to submit a proposal for asbestos and lead abatement on four Union Pacific Rail Road bridges in Whittier, California. We look forward to working with you on this and future projects.

MARCOR prepared this proposal in accordance with a walk through of the job sites and a review of the Geocon Draft Report dated August 23, 2001. MARCOR proposes to complete the scope of work outlined in the CONCLUSIONS and RECOMMENDATIONS portion of Geocon's Draft Report as follows:

Asbestos Abatement
MARCOOR will complete this work in five working days for the lump sum of:
Eleven-Thousand Four-Hundred Dollars ($11,400.00).

Lead Abatement
MARCOR will complete this work in eight working days for the lump sum of:
Nine-Thousand Six-Hundred Dollars ($9,600.00).

MARCOR will require adequate lead time to ensure notifications to the proper authorities, including SCAQMD, Cal/OSHA, City of Whittier, Cal-Trans, and UPRR.

MARCOR's proposal is valid for 60 days and is contingent upon reaching mutually agreeable contract terms.
Please feel free to contact me at 562 902-8523 if you have any questions or you require additional information.

Sincerely

MARCOR Remediation, Inc.

Matt Westrup
Vice President

Celebrating our 20th year of successfully serving our customers.

Rock, Sand & Gravel, Rip Rap & Ballast Rock

Hanson

Hanson Aggregates
Los Angeles

1900 W. Garvey Ave. South, Suite 200
West Covina, California 91790-2653
Tel. 626-856-6700
Fax. 626-337-3401

IRWINDALE
13550 E. Live Oak Ave
(626) 358-1811

INLAND / CUCAMONGA
12082 Highland Ave
(909) 483-0569

EAGLE VALLEY / CORONA
19494 River Rock Road
(909) 371-7625

QUOTE 16861 IS JOB # _____ BID DATE: BDG START DATE: _____ COMPLETION DATE: 03/31/02

CUSTOMER NAME: GEO-CON CONSTRUCTION ZONE: 19423 MP: LA 677 B6

ADDRESS: _____ AS 400 ORDER # : _____

JOB NAME: CITY OF WHITTIER TRAILWAY PROJECT OWNER / GC: _____

JOB LOCATION: MAGNOLIA AV. & HADLEY ST. SALESMAN: House

WHITTIER QUOTE GIVEN BY: Inside Sales

PERSON TO CALL: BOB KIMBALL PHONE # 916-852-9118 FAX 916-852-9132

WE PROPOSE TO FURNISH YOU THE FOLLOWING MATERIALS AND/OR SERVICES FOR USE IN THE CONSTRUCTION OF THE ABOVE JOB:

SAND, ROCK (COMMERCIAL GRADES) DELIVERED IN BOTTOM DUMPS. PRICES ARE PER TON

QUANTITIES	DESCRIPTION	MATERIAL (TAXABLE)	HAUL (NO-TAX)	QUARRY	DEL. PRICE
300	MIX 48 (WCS / 1/2" CR.)	—	TT'S	IRWINDALE	13.75 W/TAX

********ABOVE HAUL CHARGES ARE SUBJECT TO TRANSPORTATION / TRUCKING RATE INCREASES. ********

PRICES ARE FIRM UNTIL: 03/31/02 THEN ADD: $ _____ FIRM UNTIL: _____ THEN ADD: $ _____ FIRM UNTIL: _____

MINIMUM LOAD 24 Tons. An extra charge for less than minimum load will be made. Add $_____ per ton for delivery by Truck & Trailer.

STANDING AND UNLOADING TIM Free unloading time 20 minutes per load. Excess time charged at $ 1.25 per minute for Rock & Sand.

RECYCLED BASE MATERIAL (CMB, PMB & CLASS II)

QUANTITIES	DESCRIPTION	PLANT	TRUCK TYPE	PRICE	FOB

PRICES ARE FIRM UNTIL: _____ THEN ADD: $ _____ FIRM UNTIL: _____ THEN ADD: $ _____ FIRM UNTIL: _____

CONTINUED ON PAGE 2

WASTE MANAGEMENT

9441 Wadena Way
Elk Grove, CA 95758
(916) 683-1575
(916) 683-5019 Fax

November 8, 2001

Mr. John Juhrend
Geocon Consultants
11375 Sunrise Park Dr. Suite 100
Rancho Cordova, CA 95742

Subject: Lead impacted material in Whittier

Dear John;
Waste Management and Kettleman Hills Landfill are pleased to quote the following rates for the aforementioned project:

Waste Description	Volume	Treatment	Rate
Non-RCRA soil with lead	2,000 tons	Direct landfill	$29.00/ ton
Kings County Tax (10% of Revenue)			$2.90/ ton
BOE tax (2001 only, generated in a clean up action)			$5.72/ ton
Transportation (23 ton minimum per load)			$30.00 / ton
Includes ½ hour loading and unloading, thereafter:			$65.00 / hour

This quotation includes the cost of the California Board of Equalization fees that are in effect for the year 2001. The correct amount for future years may or may not be the same.

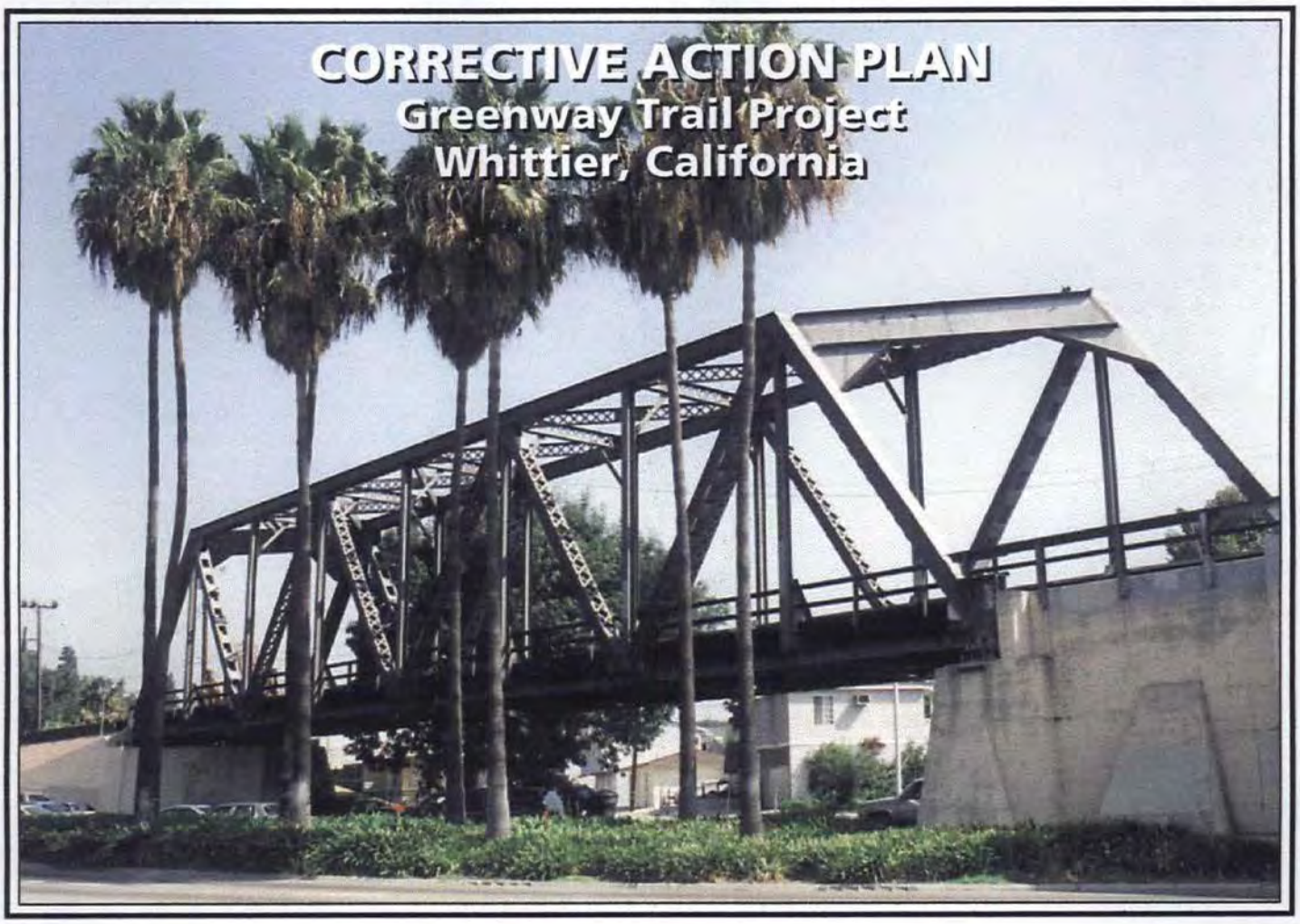
Non RCRA projects can be profiled, approved and scheduled in approximately three days. These rates are contingent upon profile approval, are based upon payment within the terms of the service agreement and are valid for thirty days unless extended in writing by Waste Management.

Thank you for the opportunity to provide service. If you have questions, please call me at (916) 683-1575.

Sincerely;

Jeff Metteer

Jeff Metteer
Waste Management, Inc.



CORRECTIVE ACTION PLAN
Greenway Trail Project
Whittier, California

PREPARED FOR:

HYDE MILLER OWEN & TROST
REPRESENTING THE CITY OF WHITTIER

PREPARED BY:

GEOCON CONSULTANTS, INC.
11375 SUNRISE PARK DRIVE, SUITE 100
RANCHO CORDOVA, CALIFORNIA

GEOCON

GEOCON PROJECT NO. A8050-06-03

NOVEMBER 2001

GEOCON
CONSULTANTS, INC.
ENVIRONMENTAL ■ GEOTECHNICAL ■ MATERIALS

Project No. A8050-06-03
November 8, 2001

Mr. Kirk E. Trost
Hyde, Miller, Owen & Trost
428 J Street, Suite 400
Sacramento, California 95814

Subject: GREENWAY TRAIL PROJECT
ABANDONED UNION PACIFIC RAILROAD CORRIDOR
WHITTIER, CALIFORNIA
CORRECTIVE ACTION PLAN

Dear Mr. Trost:

In accordance with your request, Geocon Consultants, Inc. has prepared this Corrective Action Plan (CAP) for the subject site. The *Site* consists of a 5.2-mile-long abandoned Union Pacific railroad corridor located in Whittier, California. The *Site* is currently being evaluated for purchase by the City of Whittier for potential redevelopment as a pedestrian trail and community park system.

The accompanying CAP summarizes the Phase I and II site assessment activities completed for the *Site*, presents a human health risk evaluation for arsenic-impacted track bed materials, and provides recommended remedial measures for identified site impacts including the removal and offsite disposal of identified near-surface debris fill materials.

If there are any questions concerning the contents of the CAP, or if Geocon may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

REGISTERED PROFESSIONAL ENGINEER
JOHN JUHREND
No. 46681
Exp. 06/30/03
CIVIL
STATE OF CALIFORNIA

John E. Juhrend, PE, CEG
Project Manager

FOR
Richard W. Day, CEG, CHG
Senior Geologist

JEJ:RWD:sd

(8) Addressee
(5) City of Whittier, Mr. Douglas C. Chotkevys

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LIST OF ACRONYMS

AST	Aboveground Storage Tank
ASTM	American Society of Testing and Materials
ATL	Advanced Technology Laboratories
bgs	Below Ground Surface
CAP	Corrective Action Plan
CCR	California Code of Regulations
CEG	Certified Engineering Geologist
CHG	Certified Hydrogeologist
COC	Chemicals of Concern
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
HMO&T	Hyde, Miller, Owen & Trost
HSC	Health and Safety Code
HSP	Health and Safety Plan
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MP	Mile Post
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PE	Professional Engineer
PRG	Preliminary Remediation Goal
RBCA	Risked-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
RECs	Recognized Environmental Conditions
ROW	Right-of- Way
SP	Southern Pacific
TCLP	Toxicity Characteristic Leaching Procedure
UCL	Upper Confidence Limit
UP	Union Pacific Railroad
USA	Underground Service Alert
UST	Underground Storage Tank
VOC	Volatile Organic Compound
yd^3	Cubic Yards

CORRECTIVE ACTION PLAN - GREENWAY TRAIL PROJECT

1.0 INTRODUCTION

1.1 Site Location and Existing Improvements

Geocon Consultants, Inc. has prepared this Corrective Action Plan (CAP) for the Greenway Trail Project under contract with Hyde, Miller, Owen & Trost (HMO&T) representing the City of Whittier. The *Site* consists of an approximate 5.2-mile long abandoned Union Pacific (UP) railroad corridor located in the City of Whittier, California.

The UP right-of-way (ROW) is generally 40 to 100 feet in width and extends from the mainline railroad connections near the San Gabriel River (Mile Post [MP] 0.0) to the former Southern Pacific (SP) railroad mainline connection south of Mills Avenue (MP 5.2). The approximate location of the *Site* is depicted on the Project Location Map, Figure 1. Site Plans prepared from City of Whittier maps dated 1962 are presented on Figures 2a through 2i.

1.2 Background

Geocon prepared a Phase I Environmental Site Assessment (ESA) report for the *Site* dated September 22, 2000. The Phase I ESA concluded that before construction of the railroad corridor in the early 1900s, commercial operations near the *Site* included agricultural, lumber, feed, fruit packing, and oil storage facilities. Former or existing railroad maintenance, refueling facilities, underground or aboveground storage tanks (USTs/ASTs) were not identified within the site boundaries. The Phase I ESA report identified potential recognized environmental conditions (RECs) at the *Site* including potential heavy metal soil impacts associated with the presence of slag ballast; potential pesticide, polychlorinated biphenyls (PCBs), and herbicide soil impacts associated with historical weed control activities; potential petroleum hydrocarbon impacted soil associated with adjacent facilities and dumped waste materials; and potential PCB-containing electrical equipment within onsite signal-switching structures.

The Phase I ESA report recommended the removal of refuse and waste from the corridor, and soil sampling and analytical testing to determine the presence of heavy metal, pesticide, PCB, herbicide, and petroleum hydrocarbon site impacts. The report further recommended the performance of an engineering survey to determine potential adjacent property encroachments onto the *Site*. It is understood that Thomsen Engineering, Inc. is currently under contract with HMO&T to provide surveying services for the *Site*.

URS under contract to UP completed a *Summary Report Right of Way Slag Investigation* for the *Site* dated November 14, 2000. The investigation included a site reconnaissance, limited ballast depth measurements, and sampling and analytical testing of two ballast samples (light and dark slag). URS

reported that the railroad ballast materials within the *Site* are primarily comprised of light and dark slag and gravels varying from 0 to 8 inches thick and from 8 to 60 feet in width. Based on the results of the field survey, URS estimated that approximately 5,000 cubic yards (yd^3) of slag impacted ballast materials and 6,300 yd^3 of potentially heavy metal impacted soil exist within the *Site*. The dark slag ballast sample contained an elevated chromium concentration and a vanadium concentration above the California hazardous waste threshold. The light slag ballast sample did not contain metal concentrations of concern with respect to California hazardous waste thresholds. Elevated concentrations (above naturally occurring background levels) of barium, chromium, copper and vanadium were further reported for each slag sample.

Geocon prepared a Phase II ESA for the *Site* dated October 11, 2001 summarizing the results of asbestos and lead-based paint surveys of the four railroad bridge structures located within the corridor; the excavation of 31 shallow exploratory trenches; near-surface soil and ballast sampling; and analytical testing. The results of the Phase II ESA indicated the presence of RECs within the *Site* including asbestos and lead-based paint bridge and retaining wall components, arsenic impacted slag ballast and track bed soil, near-surface debris fill materials located between Magnolia Avenue and Hadley Street, and the presence of abandoned battery boxes and sporadic surface debris material. Significant petroleum hydrocarbon, volatile organic compound (VOC), PCB, pesticide, and herbicide impacts were not detected in the random and targeted (adjacent facility) soil samples obtained within the corridor. A cumulative summary of the sample type and potential impact, and debris fill and ballast depth measurements are presented on the Sample Log, Table 1. A cumulative summary of the soil analytical data obtained during the Phase II ESA is presented on the attached Tables 2 through 5. Sample locations are depicted on the Site Plans, Figures 2a through 2i.

Recommendations were presented in the Phase II ESA regarding site clearing and surface debris removal, existing railroad track and signal improvement removal, and treatment of asbestos and lead-based structural components. The performance of a site-specific human health risk evaluation was recommended to determine an acceptable arsenic level for the track bed materials given the proposed recreational trail land-use. Additional site assessment was further recommended to determine the lateral and vertical extent of the buried debris fill materials encountered between Magnolia Avenue and Hadley Street and to provide an evaluation of potential environmental impairments associated with building and facility encroachments discovered during the engineering survey of the *Site* including the automobile repair facility located south of the Whittier Boulevard Bridge.

This CAP presents the results of additional site assessment activities performed at the *Site*, the statistical and human health risk evaluations of the elevated heavy metals detected in slag ballast and underlying track bed soils, and the recommended remedial measures and associated cost estimates for the removal and offsite disposal of encountered debris fill materials.

2.0 SITE ASSESSMENT RESULTS

The following site assessment activities were performed subsequent to the submittal of the Phase II ESA for the *Site*:

2.1 Pre-Field Activities

- Contacted Underground Service Alert (USA) on October 25, 2001 to attempt to delineate subsurface public utilities and conduits in proximity to the proposed exploration locations.
- Utilized the existing project *Health and Safety Plan* dated August 21, 2001 to provide guidelines on the use of personal protective equipment and health and safety procedures during the field activities.
- Retained the services of Spectrum Geophysics to provide geophysical survey services.
- Retained the services of Vironex to provide direct-push soil sampling services.
- Retained the services of Advanced Technology Laboratories (ATL) located in Signal Hill, California to perform chemical analyses of soil, debris fill and asbestos-containing material and paint chip samples.

2.2 Building Encroachment Survey

Review of a UP lease agreement dated May 23, 1990 indicates that an auto repair facility encroachment measuring 140 feet long by 25 foot wide exists within the *Site* immediately south of the Whittier Boulevard Bridge. The lease includes "Hazardous Substances and Waste" indemnification language. Based on a review of information obtained from the lessee, Ms. Chrys Vollmer, two gasoline USTs and one waste oil UST were removed from this facility in August 1991. Petroleum hydrocarbons were only detected in one soil sample obtained from the waste oil UST excavation at a relatively low concentration of 8.1 milligrams per kilogram (mg/kg). Copies of the building encroachment lease and the UST removal report are presented in Appendix A.

On October 24, 2001, a representative of Geocon performed a site visit to evaluate potential environmental impairments within the building encroachment. Kustom Workz located at 12360 E. Whittier Boulevard currently occupies the building encroachment facility. A Kustom Workz employee indicated that they have occupied the facility for approximately eight months, primarily use air tools to customize vehicles, and do not generate any hazardous waste products. Four below grade vehicle hoists within the garage bays are reportedly operated by air pressure. An air compressor and adjacent stained pavement surfaces were noted within a shed located to the rear of the facility within the leased portion of the *Site*.

Photographs of the Kustom Workz facility are presented on Figures 3a and 3b. The approximate limits of the building encroachment are depicted on Figure 4.

2.3 South Whittier Bridge Debris Fill

Observations on October 24, 2001 of the recently cleared railroad embankment slopes located to the rear of the Kustom Workz facility indicated the presence of surficial debris fill materials including metal, refractory brick, and potential asbestos-containing debris and slope backing materials. Potential asbestos-containing slope backing materials and concrete debris were noted on the eastern embankment slope approximately 200 feet south of the Whittier Boulevard Bridge abutment. A backfilled pedestrian tunnel was also noted approximately 500 feet south of the Whittier Boulevard Bridge abutment.

Surface soil samples (S11-0 through S16-0) and suspected asbestos material samples (ASB-1 and ASB-2) were obtained and submitted to ATL for the following analyses:

- Three soil samples analyzed for California Code of Regulations (CCR) Title 22 metals [(1)] by Environmental Protection Agency (EPA) Test Methods 6010B and 7471A (mercury cold vapor technique).
- Three soil samples for total lead following EPA Test Method 6010B.
- Two soil samples for pH following EPA Test Method 9045C.
- Two soil samples were further analyzed for Toxicity Characteristic Leaching Procedure (TCLP) soluble lead and copper following EPA Test Method 1311/6010B.
- Two material samples for asbestos content following EPA Test Method 600/M4-82-020.

[(1)] CCR Title 22 metals include antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc.

The results of the laboratory analyses indicated the presence of lead and copper in debris fill samples S11-0 and S12-0 at concentrations in excess of California hazardous waste thresholds. Debris material sample S11-0 contained a soluble TCLP lead value in excess of the EPA Resource Conservation and Recovery Act (RCRA) hazardous waste threshold. Debris fill samples S13-0 and S15-0 contained pH values of 8.18 and 11.08, respectively. The presence of asbestos was confirmed in each of the material samples at levels ranging between 30% and 85%.

Based on the surface soil data, Geocon performed 27 exploratory shallow excavations (T32 through T58) within the southern Whittier Boulevard Bridge embankment on October 30, 2001 to determine the nature and extent of the identified debris fill materials. The debris fill materials were noted to range from 1 to 2.5 feet in thickness extending approximately 250 feet in length along the eastern embankment slope and 400 feet in length along the western embankment slope. A sharp color contrast was noted between the dark brown debris fill materials and the underlying tan to light orange brown embankment fill.

Five debris material samples, 26 underlying embankment fill samples, and one pedestrian tunnel backfill material sample were analyzed for total lead following EPA Test Method 6010B. In addition, one slope backing material sample was analyzed for asbestos following EPA Test Method 600/M4-82-020.

Lead was detected in the debris soil samples at concentrations ranging from 82 to 1,500 mg/kg. Lead was only detected in 14 of the 27 underlying embankment fill material samples at relatively low concentrations ranging from 5 to 68 mg/kg. A composite sample comprised of four discrete (concentrated) debris fill samples contained a reported TCLP soluble lead concentration of 1.5 milligrams per liter (mg/l), below the federal RCRA waste threshold of 5.0 mg/l.

Lead was further detected in the pedestrian tunnel backfill material sample at 260 mg/kg that is below the EPA residential Preliminary Cleanup Goal (PRG) of 400.The slope backing material sample contained 3% asbestos.

Photographs of the Whittier Boulevard Bridge debris fill area are presented on Figures 3b and 3c. The approximate exploratory excavation and soil sample locations, and interpreted debris fill limits are presented on Figure 4. A summary of the debris fill thickness measurements is presented on Table 1. The laboratory analytical results are presented on Tables 2 and 5. Laboratory reports and chain-of-custody documentation are presented in Appendix B.

2.4 Hadley Street Debris Fill

Geocon retained Spectrum Geophysics to perform a geophysical survey in the immediate vicinity of the previously identified buried debris fill materials (trench T8) on the west side of the UP tracks between Magnolia Avenue and Hadley Street. The geophysical survey was performed on October 25, 2001 between the railroad tracks and the western retaining wall extending 400 feet southerly from Magnolia Avenue. The geophysical survey was constrained by the presence of track rails and retaining wall reinforcement although sporadic anomalies with similar signatures corresponding to buried debris in trench T8 were identified between 60 and 300 feet south of Magnolia Avenue. A copy of the geophysical summary report is presented in Appendix C.

Geocon performed 20 exploratory excavations (B1 through B20) within the Hadley Street debris fill area on October 30 and 31, 2001 to attempt to determine the vertical and lateral extent of the buried debris fill materials. Exploratory borings were performed using a Geoprobe direct-push rig equipped with four-foot long sample tubes. The borings were performed to a maximum depth of 12 feet below the ground surface (bgs).

An approximate two-foot thick debris fill layer containing rusted metal, glass bottles, china plate fragments, and other railroad related waste was encountered in exploratory locations T8, B1, B5, B10 and B13 at depths between the surface and eight feet bgs. Sporadic buried debris deposits were further

encountered in shallow soil at depths between 1.5 and 4 feet bgs in B4, B7, B15 and B17. The northern, eastern and southern limits of the identified debris fill materials appear to be defined by perimeter exploratory locations T7, B2, B3, B6, B8, B9, B11, B12, B14, B16, B18, B19 and B20. The western limits of the buried debris layer are undefined for a distance of approximately 125 feet adjacent to the westerly retaining wall.

Thirty-one soil samples obtained from borings B1 through B10 and one retaining wall paint chip sample were analyzed for total lead following EPA Test Method 6010B. Lead was detected in debris fill samples obtained from borings B4, B5, B7 and B10 at concentrations ranging from 8.7 to 2,200 mg/kg. Only six of 26 soil samples obtained from the miscellaneous fill materials overlying the debris material and the underlying alluvial soil contained detectable lead at relatively low concentrations ranging from 5.1 to 38 mg/kg.

A composite sample comprised of three discrete (concentrated) debris fill samples contained a reported TCLP soluble lead concentration of 5.9 mg/l, slightly above the federal RCRA waste threshold of 5.0 mg/l. It is anticipated that additional TCLP soluble testing performed on the excavated debris fill materials will yield TCLP soluble lead levels below the RCRA hazardous waste threshold due to the unavoidable incorporation of portions of the clean overburden and underlying native soil.

Lead was further detected in the retaining wall paint chip sample at 11 mg/kg. The slope backing material sample contained 3% asbestos.

Photographs of the Hadley Street debris fill area are presented on Figure 3d. The approximate exploratory excavation locations and interpreted debris fill limits are presented on Figure 5. A summary of the debris fill depth intervals is presented on Table 1. The laboratory analytical results are presented on Tables 2 and 5. Laboratory reports and chain-of-custody documentation are presented in Appendix B.

3.0 HUMAN HEALTH RISK EVALUATION

3.1 Slag Ballast and Track Bed Soil

Elevated levels of arsenic, lead and vanadium were detected in the slag ballast samples obtained from the *Site*. The following table presents the calculated 95% upper confidence limits (UCLs) and the residential and industrial EPA Region 9 PRGs for the elevated metals detected in the slag ballast materials:

Material	Metal	95% UCL (mg/kg)	Residential PRG	Industrial PRG
Light Slag	Arsenic	35	0.39 (22)[1]	2.7 (440)[1]
Dark Slag		50		
Light Slag	Lead	72	400	750
Dark Slag		358		
Light Slag	Vanadium	512	550	14,000
Dark Slag		89		

[1] EPA non-cancer endpoint

The soil materials underlying the track bed contain elevated levels of arsenic ranging from 8 to 210 mg/kg. The following table presents the calculated 95% UCLs and the residential and industrial EPA Region 9 PRGs for the elevated arsenic detected in the track bed soil samples:

Soil Sample Depth (feet)	Metal	95% UCL (mg/kg)	Residential PRG	Industrial PRG
1	Arsenic	47	0.39 (22)[1]	2.7 (440)[1]
2		39		

[1] EPA non-cancer endpoint

A summary of the statistical methods used to calculate the 95% UCL values for the slag ballast and track bed soil are presented in Appendix D.

3.2 Human Health Risk Evaluation

A human health risk evaluation was performed in general accordance with the Tier 2 Risk-Based Corrective Action (RBCA) methods outlined in the American Society of Testing and Materials (ASTM) Standard E1739-95. The site-specific and ASTM-defined input parameters associated with the Tier 2 RBCA evaluation are presented in Appendix D. The evaluation included the following assumptions and site-specific parameters:

General Assumptions

- An excess cancer risk level of $1x10^{-5}$ was used to define an acceptable risk for carcinogens. The California Proposition 65 Program uses a basis of 1 increased cancer risk in a population of 100,000, otherwise known as a $1x10^{-5}$ risk level. The $1x10^{-5}$ risk level is defined in California Proposition 65 as the risk level at or below which there exists no significant risk from exposure to chemicals of concern (COCs) [i.e., one or fewer excess cancer cases per 100,000 exposed persons.] The EPA, as referenced in ASTM Standard E1739-95, has also endorsed this value.

- A hazard quotient of 1.0 was used to define acceptable risk for non-carcinogens. The hazard quotient is defined as the ratio of the estimated exposure dose to a value that dose not produce adverse health effects. Hazard quotients of less than 1.0 represent acceptable risk. The reference dose value used for non-carcinogens is consistent with ASTM Standard E1739-95 default values.

- The only COC is arsenic. Representative concentrations of other metals did not exceed PRGs for residential soil at the $1 x10^{-5}$ risk level and are therefore are not evaluated further.

- For arsenic, an inhalation slope factor of 12 $(mg/kg\text{-}d)^{-1}$ and an oral slope factor of 1.5 were used. These values were obtained from the California EPA Office of Environmental Health Hazard Assessment Toxicity Criteria Database dated September 27, 2001.

Exposure Pathways

Surface slag ballast and track bed soil are the sources of elevated arsenic above naturally occurring background levels. The complete exposure pathways resulting from direct exposure to the primary sources are:

- Potential inhalation (outdoor air) of arsenic in fugitive dust.
- Potential ingestion of arsenic in slag and track bed soil.
- Potential dermal contact with arsenic in slag and track bed soil.

For purposes of this evaluation, potential impacts to groundwater are considered negligible as arsenic compounds tend to adsorb to soil and the depth to groundwater is reportedly between 30 and 70 feet bgs.

Site-Specific Parameters

Default ASTM parameter values were used except where site-specific data were available. The following site-specific parameters and assumptions were incorporated into the risk evaluation:

- Risk evaluation was based on a residential exposure scenario.
- Exposure frequency was changed from 350 days per year to 50 days per year to account for the recreational use of the proposed Greenway Trail.
- Bootstrap techniques were used to calculate representative concentrations of arsenic in soil and slag. Representative concentrations used are equivalent to the calculated 95% UCL about the mean. The representative arsenic concentrations are 37.2 mg/kg for slag and 46.6 mg/kg for soil beneath slag.

- The surface area of arsenic in soil/slag is estimated to be 1,584,000 ft^2. This is based on an average 60-foot width along five miles of trail.

Human Risk Evaluation Results

Based on the above assumptions and site-specific parameters, there is not an excess risk to human health (specifically an excess cancer risk) due to the presence of arsenic in the slag ballast materials and underlying track beds. The data output for the Tier 2 RBCA risk evaluation is presented in Appendix D.

Slag

The analysis of excess risk from the presence of slag ballast within the corridor (representative concentration of 37.2 mg/kg) indicates a cumulative excess cancer risk level of 4.7×10^{-6}. This risk value is less than the acceptable risk value of 1×10^{-5}. The hazard quotient for direct exposure to slag is reported as 2.4×10^{-2}1, which is less than the maximum acceptable hazard quotient of 1.0.

Soil Beneath Slag

The analysis of excess cancer risk from track bed soil beneath the slag (representative concentration of 46.6 mg/kg) indicates a cumulative excess cancer risk level of 5.9×10^{-6}. This risk value is less than the acceptable risk value of 1×10^{-5}. The hazard quotient for direct exposure to slag is reported as 3.0×10^{-2}, which is less than the maximum acceptable hazard quotient of 1.0.

4.0 CORRECTIVE ACTION PLAN

The following sections describe the recommended remedial site activities and provide procedures and protocols for the removal of debris fill materials identified between Magnolia Avenue and Hadley Street, and south of the Whittier Boulevard Bridge.

4.1 Existing Railroad Improvements

It is understood that the existing railroad track improvements (rail, spikes, plates and ties) and signal crossing improvements (battery boxes, crossing arms and signal boxes) will be removed by UP subsequent to corridor acquisition. Stained ballast areas should be removed and properly disposed. Remaining railroad ties that are unsuitable for recycling purposes may be disposed of at the Puente Hills Landfill facility under non-hazardous waste manifest for a current disposal fee of $24.10 per ton.

4.2 Site Clearing

The majority of the *Site* was observed to be generally free of dumped waste materials although littered trash and debris exist at various locations. Surface debris materials were noted within the *Site* at the following locations:

- Concrete/masonry block piles located north of Palm Avenue, south of Hadley Street, south of the Whittier Boulevard Bridge and north of Painter Avenue.
- Rail and tie stockpile located south of Hadley Street.
- Miscellaneous trash, rail ties and brush piles located between Calmada Avenue and Mills Avenue.
- Homeless encampment trash between Philadelphia Street and Penn Street and in the vicinity of the Whittier Boulevard Bridge.

The Site should be cleared of brush vegetation and observed trash and debris materials. Soil staining observed beneath the removed trash and debris should be sampled and/or removed and properly disposed.

4.3 Track Bed Ballast and Soil Materials

The light and dark slag ballast materials within the track bed at the *Site* contain elevated heavy metal concentrations notably arsenic, lead and vanadium. The arsenic levels are similar for the light and dark slag materials at 95% UCL concentrations of 35 and 50 mg/kg, respectively. The dark slag materials contain significantly higher lead concentrations (95% UCL = 358 mg/kg) and lower vanadium concentrations (95% = 89 mg/kg) when compared to the light slag materials (72 and 512 mg/kg, respectively). One dark slag sample (T12-.5) and one light slag sample (T7-.5) contained soluble lead levels above California hazardous waste thresholds. The dark slag sample further contained a total lead

concentration in excess of the California Health and Safety Code (HSC) Class I hazardous waste disposal threshold for lead of 350 mg/kg.

The primary contaminant of concern associated with the slag ballast materials and underlying track bed soil is arsenic. The light and dark slag ballast materials and underlying soil contain 95% UCL arsenic levels ranging between 35 and 50 mg/kg compared to the cancer residential and industrial PRGs of 0.39 and 2.7 mg/kg, respectively. Naturally occurring background arsenic values typically range from 8 to 12 mg/kg. The surface soil samples obtained from the corridor outside of the track bed areas contained a 95% UCL concentration for arsenic of 14 mg/kg.

The results of the human health risk evaluation indicate that the elevated arsenic concentrations in the existing slag ballast and underlying track bed soil at the *Site* do not present an unacceptable human health risk for the planned recreational land-use. Based on the calculated excess cancer risk under a residential exposure scenario, an exposure frequency of up to 84 days per year does not present an unacceptable risk.

The slag ballast materials within the *Site* are suitable for use as sub-base for planned asphalt/concrete pavements during trail construction activities. Slag ballast materials designated for offsite disposal will require management to an accepting landfill or recycling facility. Information obtained from the Los Angeles Sanitation District indicates that slag ballast materials that do not contain total and soluble metal concentrations above California CCR and HSC hazardous waste thresholds are acceptable for disposal at their Puente Hills Class II landfill facility under non-hazardous waste manifest for a current disposal fee of $24.10 per ton.

4.4 Asbestos and Lead-Based Paint

Special disposal and worker protection measures associated with asbestos-containing materials identified at the 605 Freeway overcrossing and lead-containing paint identified at the Norwalk Boulevard, Pickering Street and Whittier Boulevard overcrossing structures, the storm drain boxes at Pioneer Boulevard, and the retaining wall structure located between Magnolia Avenue and Hadley Street will be necessary in accordance with the recommendations presented in the previously referenced Phase II ESA report. Geocon obtained a cost estimate of $21,000 from Marcor Remediation, Inc. located in Cerritos, California for the bridge abatement activities. A copy of the asbestos and lead-based paint abatement cost estimate is presented in Appendix E.

Additional abatement costs should be anticipated for Occupational Safety and Health Administration (OSHA) required worker protection and monitoring activities during planned bridge renovation work and abatement of deteriorated lead-based paint retaining wall and storm drain box surfaces

4.5 Debris Fill Material Remediation

Based on the proposed recreational trail land-use of the rail corridor and the results of the soil sampling and analysis, Geocon recommends direct excavation and offsite land disposal as the most appropriate corrective action for the identified debris fill materials at the *Site*. Debris fill materials identified between Magnolia Avenue and Hadley Street were encountered at the retaining wall structure along the westerly site boundary. Subsurface exploration on the adjacent property would be required to confirm whether the debris fill materials extend beneath the retaining wall structure and onto the adjacent parcel. The remedial approach and associated cost estimates presented herein do not address potential offsite debris fill impacts.

The following sections present the recommended technical and logistical aspects of implementing remedial excavation and offsite disposal of the identified Hadley Street and Whittier Boulevard Bridge debris fill materials.

Pre-Field Activities

- Retain the services of an excavation contractor (Contractor) who possess a California Class A Contractor License and Hazardous Substances Removal and Remedial Actions Certification. All onsite personnel involved with the remedial debris fill material removal operations shall have completed 40-Hour Hazardous Waste Operations Training per Title 8 of the CCR, Section 5192 and applicable annual update training.

- The Contractor should prepare a project Workplan outlining the technical approach, sampling protocols, quality assurance/quality control field and laboratory procedures, and project schedule for submittal to and approval by the appropriate county or state regulatory agency.

- The Contractor should prepare a site-specific Health and Safety Plan (HSP) under the direction of and signed by a Certified Industrial Hygienist. The HSP should describe project staff training requirements, provide guidelines on the use of personal protective equipment, and outline dust monitoring protocols. In addition, the HSP should summarize the health and safety procedures to be implemented during the field activities.

- The Contractor should further prepare and submit a Stormwater Pollution Prevention Plan, Soil Disposal Transportation and Traffic Plan, and Site Security Plan.

- The Contractor should obtain a tree removal permit from the City of Whittier for the removal of designated trees within the Whittier Boulevard Bridge debris fill area to allow for excavation equipment access.

- The Contractor should provide a minimum of 48 hours notice prior to the start of the soil excavation activities to subscribing local public utilities via USA. Field meetings with public utility USA subscribers and utility potholing may be necessary to adequately delineate subsurface public utilities and conduits in proximity to the proposed remedial excavation locations.

- The Contractor should retain the services of a California-certified analytical laboratory to perform chemical analyses of the confirmation soil samples.

Field Activities

- Temporary construction fencing should be erected around the perimeter of each of the planned remedial excavation areas. Entry into the fenced working areas will be restricted to appropriately OSHA-trained personnel.

- Due to the limited working areas and to facilitate direct load-out and transportation of the excavated debris fill materials, the Contractor will obtain pre-approval from an appropriately licensed Class I landfill facility for acceptance of the waste materials. Additional soil analytical data may be required from the designated landfill facility prior to approval for direct hauling or prior to final acceptance of the material as a non-RCRA hazardous waste.

- The designated landfill facility should be pre-approved by the City of Whittier. A representative of the City of Whittier will sign the waste profile forms and Uniform Hazardous Waste Manifests as the waste generator.

- Removal of trees and brush, and concrete and asphalt rubble will be required to access portions of the planned Whittier Boulevard Bridge debris fill removal area. Removal and temporary stockpiling of slag ballast materials at both sites, and clean overburden soil at the Hadley Street site should be performed prior to the removal of debris fill materials. Removal of debris fill materials adjacent to the westerly retaining wall should be performed in sections to avoid structural damage.

- The excavated debris fill materials should be loaded directly into haul trucks. The haul trucks should be covered with tarps and appropriately manifested prior to transport to the designated landfill facility. Temporary stockpiling of the waste materials should not be performed outside of the fenced remedial excavation areas.

- The Contractor should implement effective dust control measures including watering the active work area to prevent visible dust. Work should be suspended if weather conditions, including wind speeds or gusts exceeding 25 miles per hour, prevent effective dust control. Excavation equipment should be inspected and cleaned (if necessary) prior to leaving the fenced excavation areas.

- Following the completed excavation activities based on visual observations, confirmation soil samples should be obtained from the bottom of the excavation to confirm effective removal of the debris fill materials to below the HSC Class I disposal threshold of 350 mg/kg. The soil samples should be collected in pre-cleaned six-inch long stainless steel tubes driven into the soil. The sample tubes should be sealed with teflon, capped, labeled, chilled, and transported to the laboratory utilizing standard chain-of-custody procedures.

- Each confirmation soil sample should be analyzed for total lead by EPA Test Method 6010B.

- Site restoration activities should include the placement and proper compaction of clean imported fill materials at the Hadley Street debris fill area.

Report Preparation

The Contractor should prepare a remediation summary report upon completion of the field, laboratory and soil disposal activities. The report should include the following:

- A summary of the remedial soil excavation activities including excavation limits and volumes, confirmation soil sample data evaluation, health and safety monitoring and site restoration.
- Copies of the laboratory reports, chain-of-custody documentation, compaction testing data, site photographs and waste disposal manifests.

The summary report should be submitted to the appropriate county or state regulatory agency or review and site closure status.

Remedial Cost Estimates

For preliminary planning purposes only, cost estimates to complete the planned remedial debris fill excavations for the Hadley Street and Whittier Boulevard Bridge areas are summarized on Table 6. The cost estimates are based on the following assumptions:

- The work will be contracted under California prevailing wage rates.
- The rail and ties will be removed by UP prior to commencing the remedial debris fill removal activities.
- The placement of backfill materials will not be required after removing the debris fill materials from the Whittier Boulevard Bridge embankment.
- The removal of debris fill materials at the Hadley Street area will be limited to the identified impacted areas within the *Site*. The cost estimates provided herein do not include costs associated with potential debris fill impacts located beneath and beyond the existing retaining wall along the western site boundary.
- The debris fill material disposal costs presented herein assume acceptance by the designated landfill as non-RCRA Class I hazardous waste. Pre-treatment of RCRA waste to non-RCRA levels will increase the estimated disposal costs by at least a factor of four. Additional soil characterization stockpile sampling may be required by the designated landfill facility prior to acceptance.

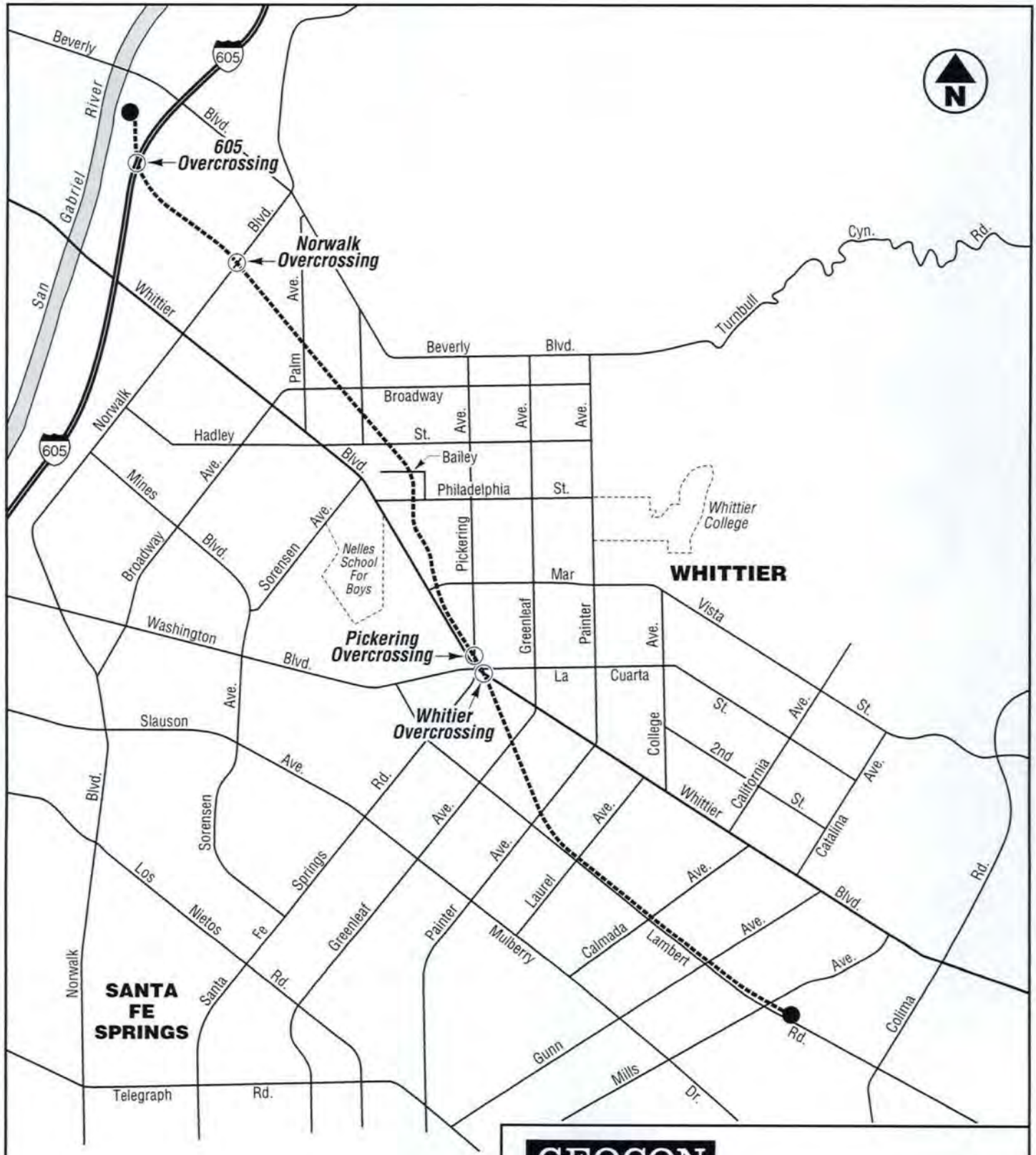
The actual remedial costs may vary from the cost estimates presented herein depending on when the work is performed and the actual volumes of excavated material requiring disposal. Subcontractor estimates based on year 2001 material, transportation and disposal fees are presented in Appendix E.

5.0 REPORT LIMITATIONS

This report has been prepared exclusively for HMO&T and the City of Whittier. The information contained herein is only valid as of the date of the report.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence or consultation either expressed or implied. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



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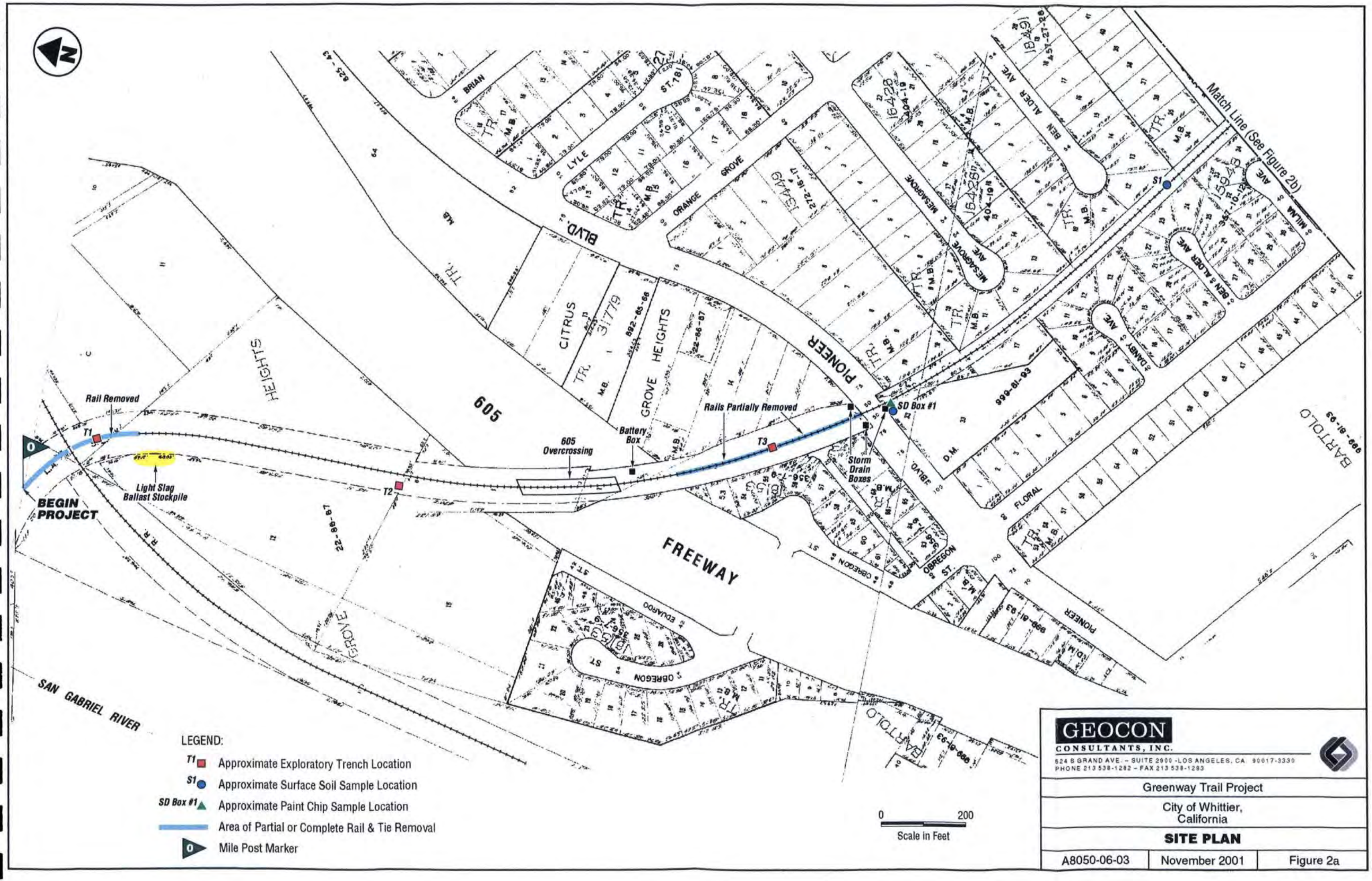
Greenway Trail Project

City of Whittier, California

PROJECT LOCATION MAP

A8050-06-03	November 2001	Figure 1


Match Line (See Figure 2b)
BEGIN PROJECT
Rail Removed
Light Slag Ballast Stockpile
605 Overcrossing
Battery Box
Rails Partially Removed
Storm Drain Boxes
SD Box #1
T1
T2
T3
S1
605
FREEWAY
PIONEER BLVD.
ORANGE GROVE
CITRUS HEIGHTS
BRIAN
LYLE
MESAGROVE AVE
BEN ALDER AVE
DANBY AVE
MILLA AVE
FLORAL
OBREGON ST.
EDWARD ST
BARTOLO
SAN GABRIEL RIVER
LEGEND:
T1 Approximate Exploratory Trench Location
S1 Approximate Surface Soil Sample Location
SD Box #1 Approximate Paint Chip Sample Location
Area of Partial or Complete Rail & Tie Removal
Mile Post Marker
0 200
Scale in Feet
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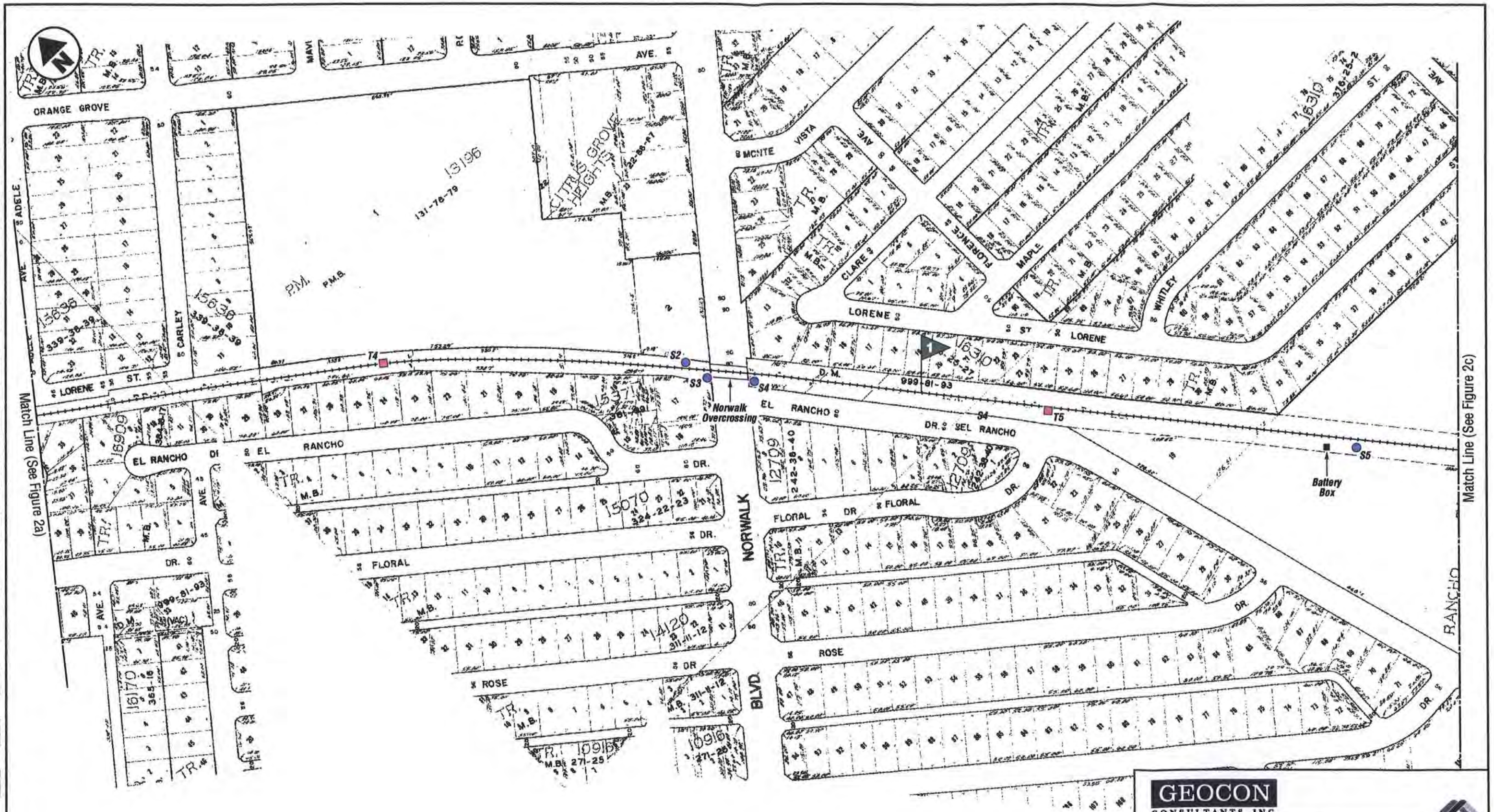
Greenway Trail Project
City of Whittier, California
SITE PLAN
A8050-06-03
November 2001
Figure 2a



LEGEND:

- T1 Approximate Exploratory Trench Location
- S1 Approximate Surface Soil Sample Location
- Mile Post Marker

0 200
Scale in Feet

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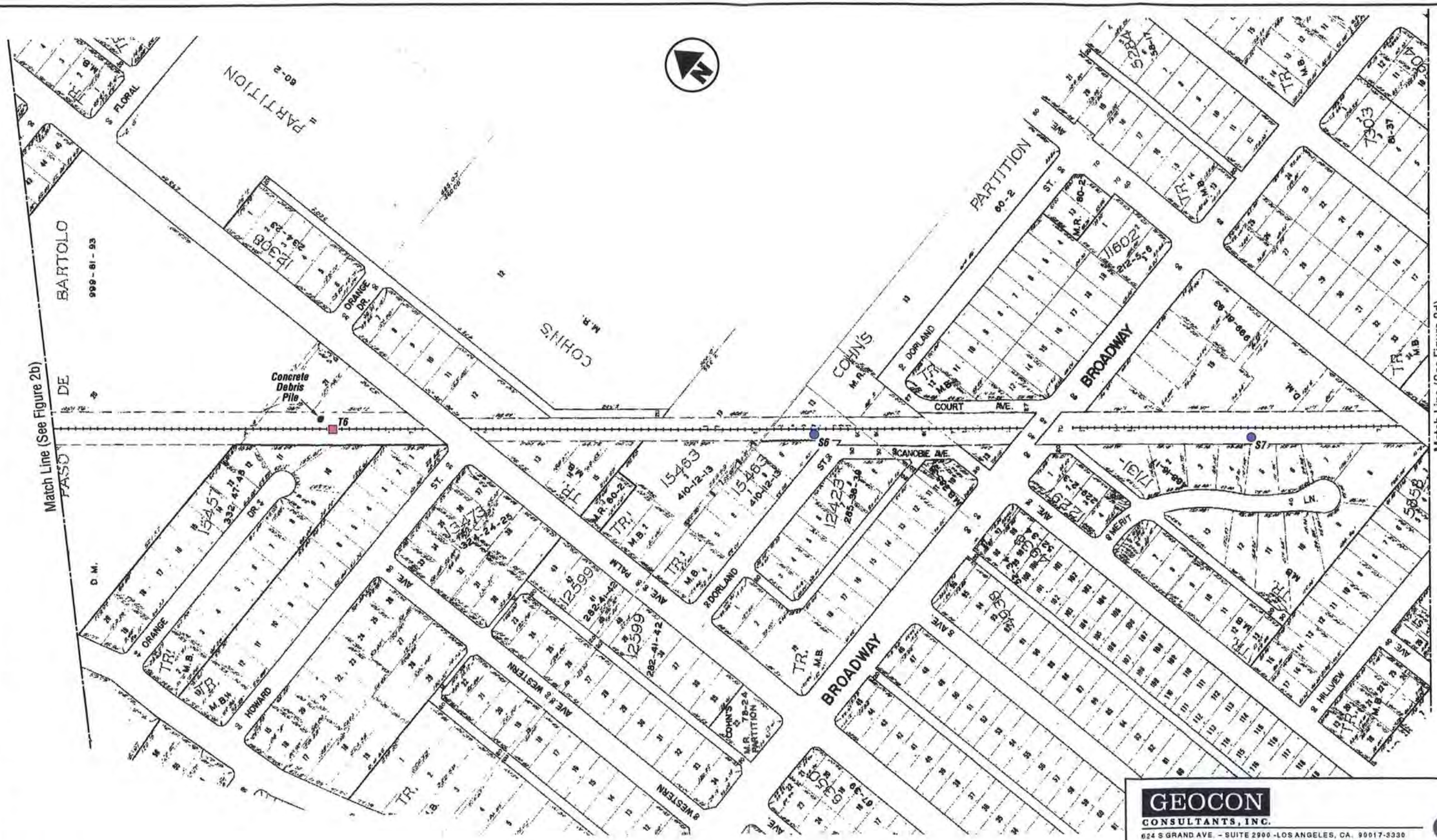
SITE PLAN

A8050-06-03	November 2001	Figure 2b



LEGEND:

T1 Approximate Exploratory Trench Location

S1 Approximate Surface Soil Sample Location

0 200
Scale in Feet

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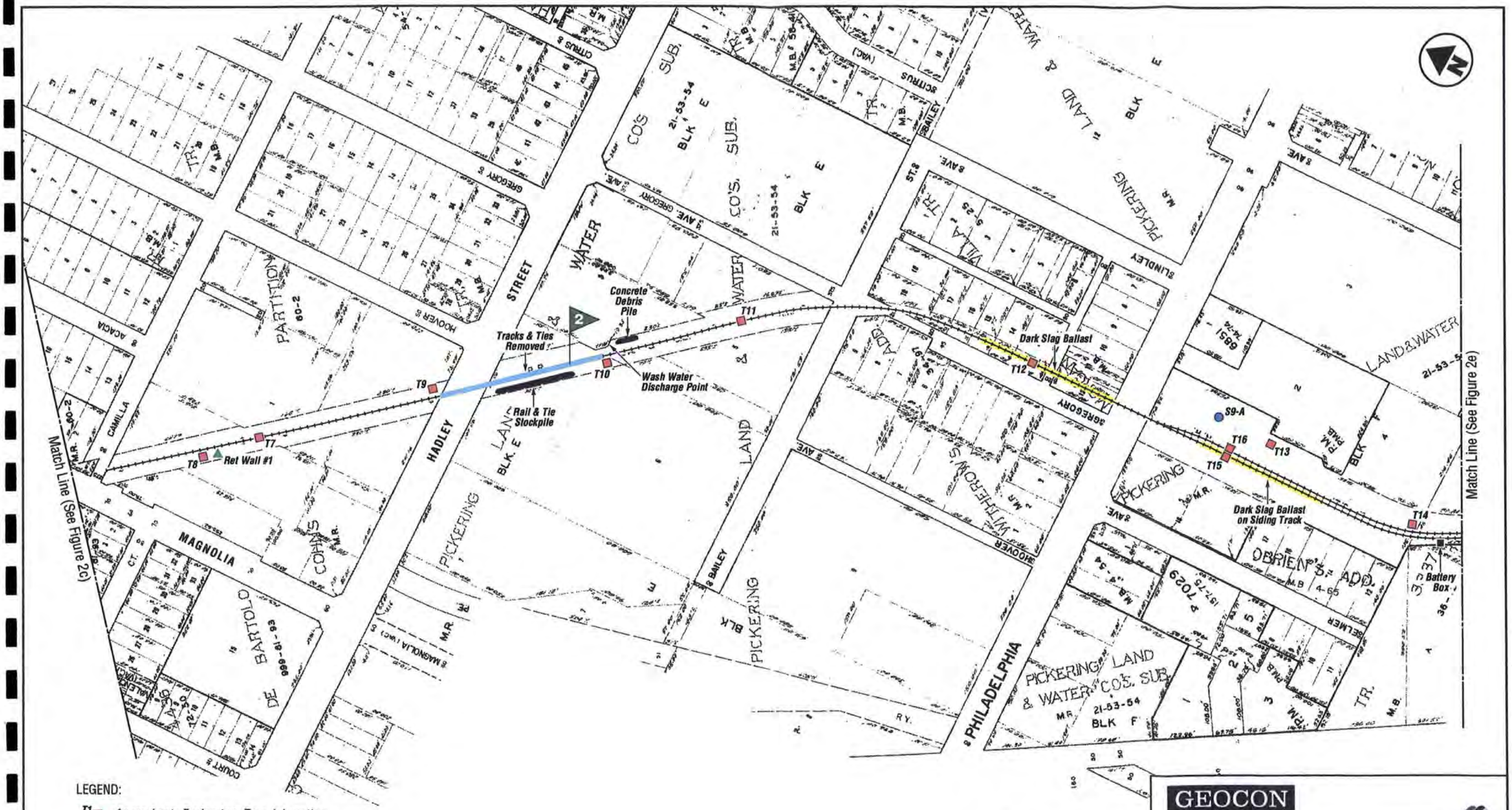
City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2c



LEGEND:

- T1 Approximate Exploratory Trench Location
- S1 Approximate Surface Soil Sample Location
- SD Box #1 Approximate Paint Chip Sample Location
- Area of Partial or Complete Rail & Tie Removal
- Approximate Extent of Dark Slag Ballast
- Mile Post Marker

0 200
Scale in Feet

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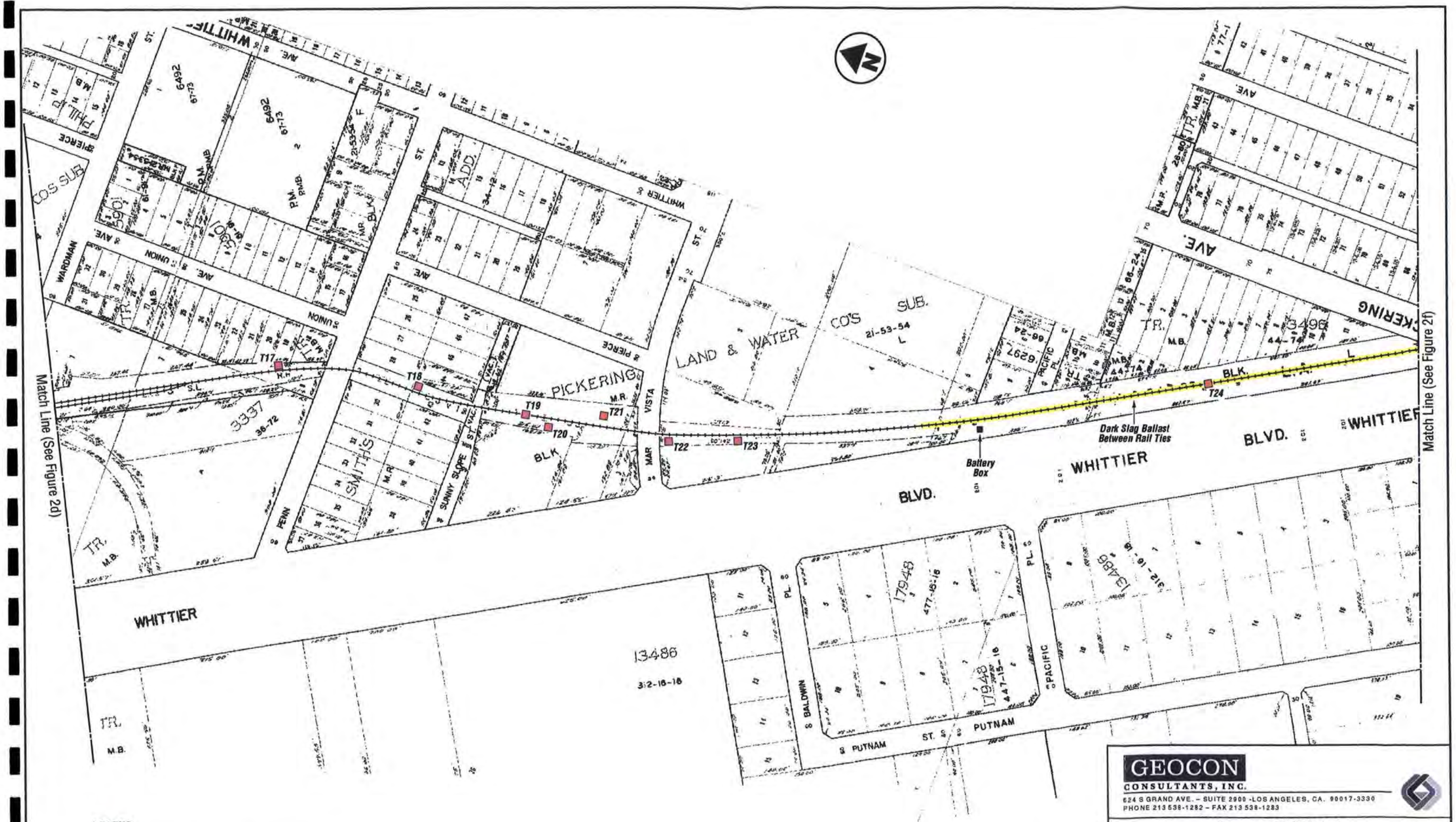
City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2d



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Greenway Trail Project

City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2e

LEGEND:

- T1 Approximate Exploratory Trench Location
- S1 Approximate Surface Soil Sample Location
- Approximate Extent of Dark Slag Ballast
- Mile Post Marker

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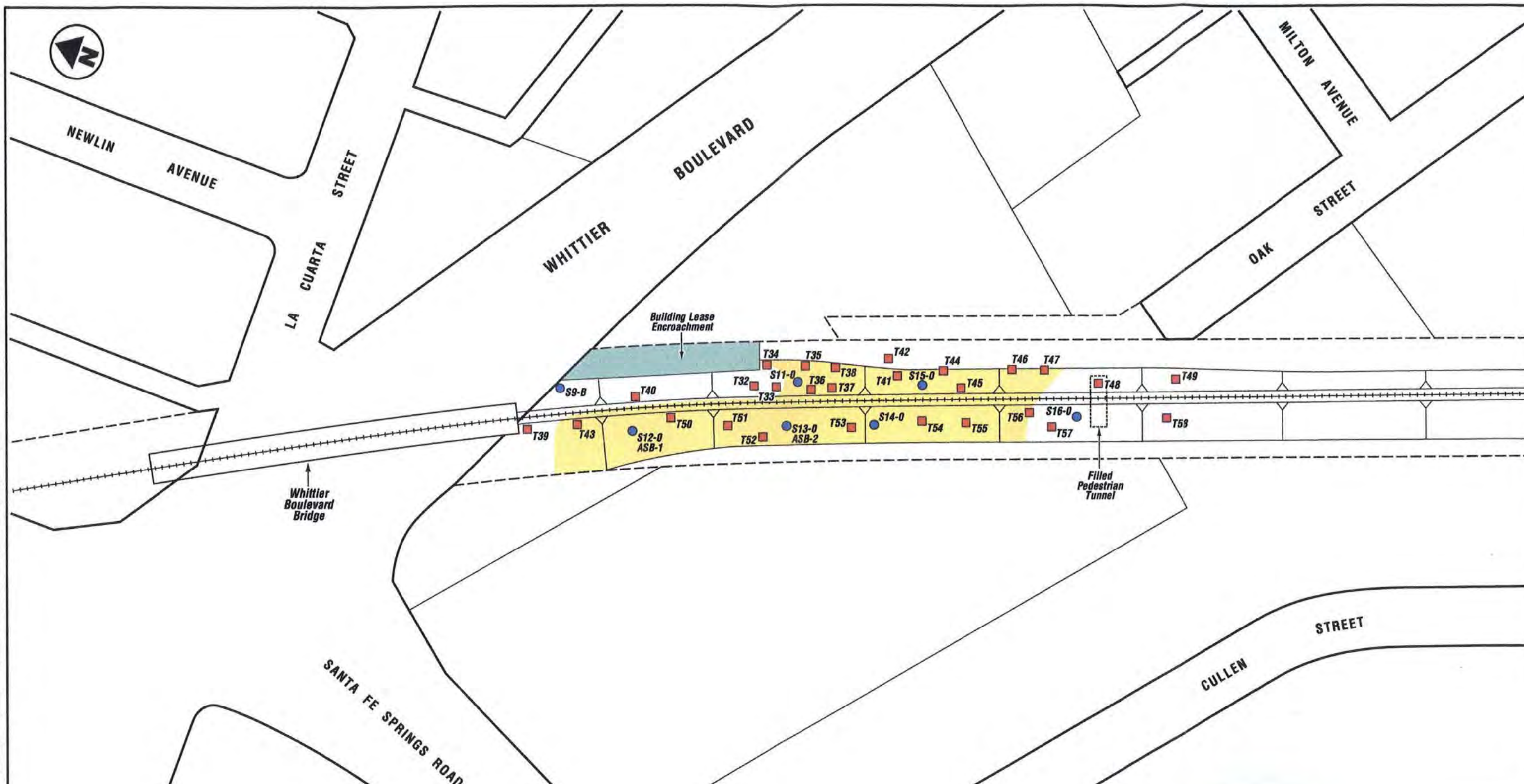
Greenway Trail Project

City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2f



LEGEND:

S11-0 ● Approximate Surface Soil Sample Location

T32 ■ Approximate Exploratory Trench Location

Debris Fill Material

0 80
Scale in Feet

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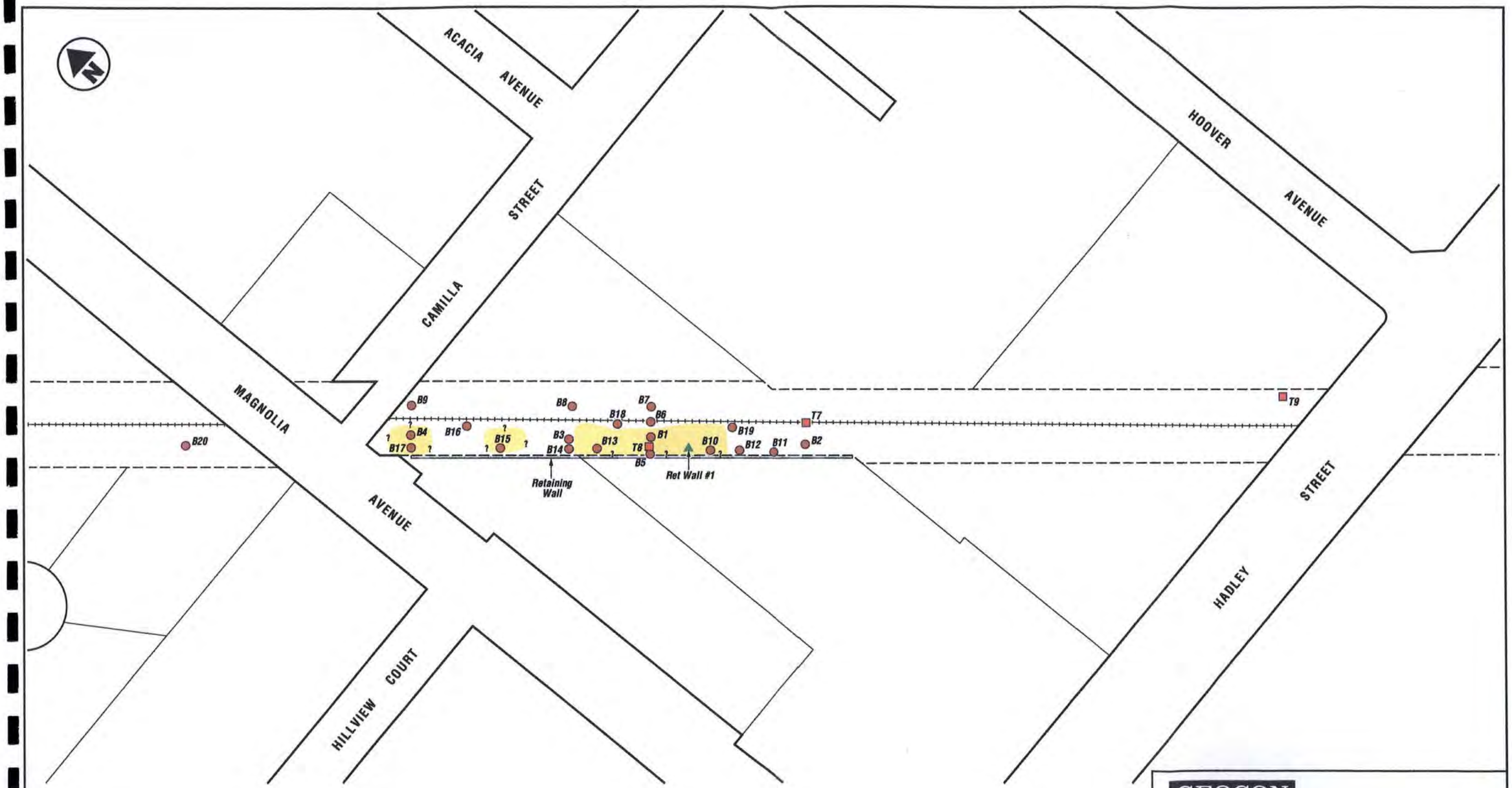
City of Whittier, California

Whittier Boulevard Bridge Debris Fill Site Plan

A8050-06-03	November 2001	Figure 4



LEGEND:

- T7 ■ Approximate Exploratory Trench Location
- Ret Wall #1 ▲ Approximate Paint Chip Sample Location
- B1 ● Approximate Exploration Location
- Debris Fill Material (Queried Where Limits Undefined)

0 80
Scale in Feet

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Hadley Street Debris Fill Site Plan

A8050-06-03	November 2001	Figure 5

Photo No. 1 View of Kustom Workz Facility Located Adjacent and South of the Whittier Boulevard Bridge

Photo No. 2 View of Kustom Workz Building Encroachment Easement

SITE PHOTOS NO. 1 & 2

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City of Whittier, California		
A8050-06-03	November 2001	Figure 3a

Photo No. 3 Air Compressor Shed and Stained Concrete Located Within Kustom Workz Building Encroachment Easement

Photo No. 4 View of Dark Debris Fill Materials Containing Refractory Brick Overlying Light Brown Bridge Embankment Fill

SITE PHOTOS NO. 3 & 4

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Greenway Trail Project		
City of Whittier, California		
A8050-06-03	November 2001	Figure 3b

Photo No. 5 View of Pedestrian Tunnel Located Approximately 500 Feet South of the Whittier Boulevard Bridge

Photo No. 6 View of Pedestrian Tunnel Backfill Materials

SITE PHOTOS NO. 5 & 6

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Greenway Trail Project		
City of Whittier, California		
A8050-06-03	November 2001	Figure 3c

Photo No. 7 Southerly View of Hadley Street Debris Fill Area

Photo No. 8 View of Debris Fill Materials Encountered in Trench T8

SITE PHOTOS NO. 7 & 8

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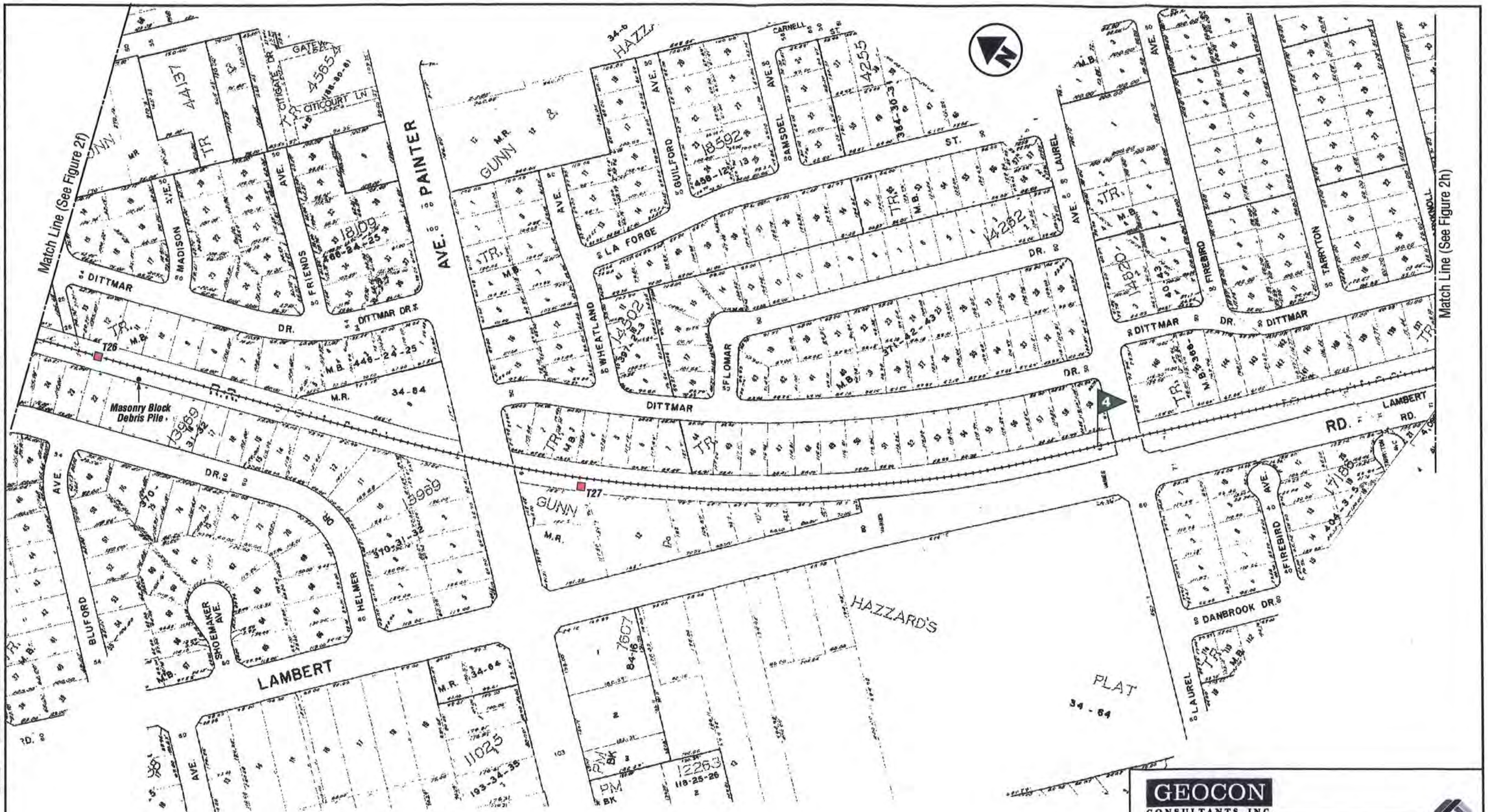
Greenway Trail Project		
City of Whittier, California		
A8050-06-03	November 2001	Figure 3d



LEGEND:

T1 Approximate Exploratory Trench Location

Mile Post Marker

0 200
Scale in Feet

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Greenway Trail Project

City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2g

LEGEND:

T1 Approximate Exploratory Trench Location

Area of Partial or Complete Rail & Tie Removal

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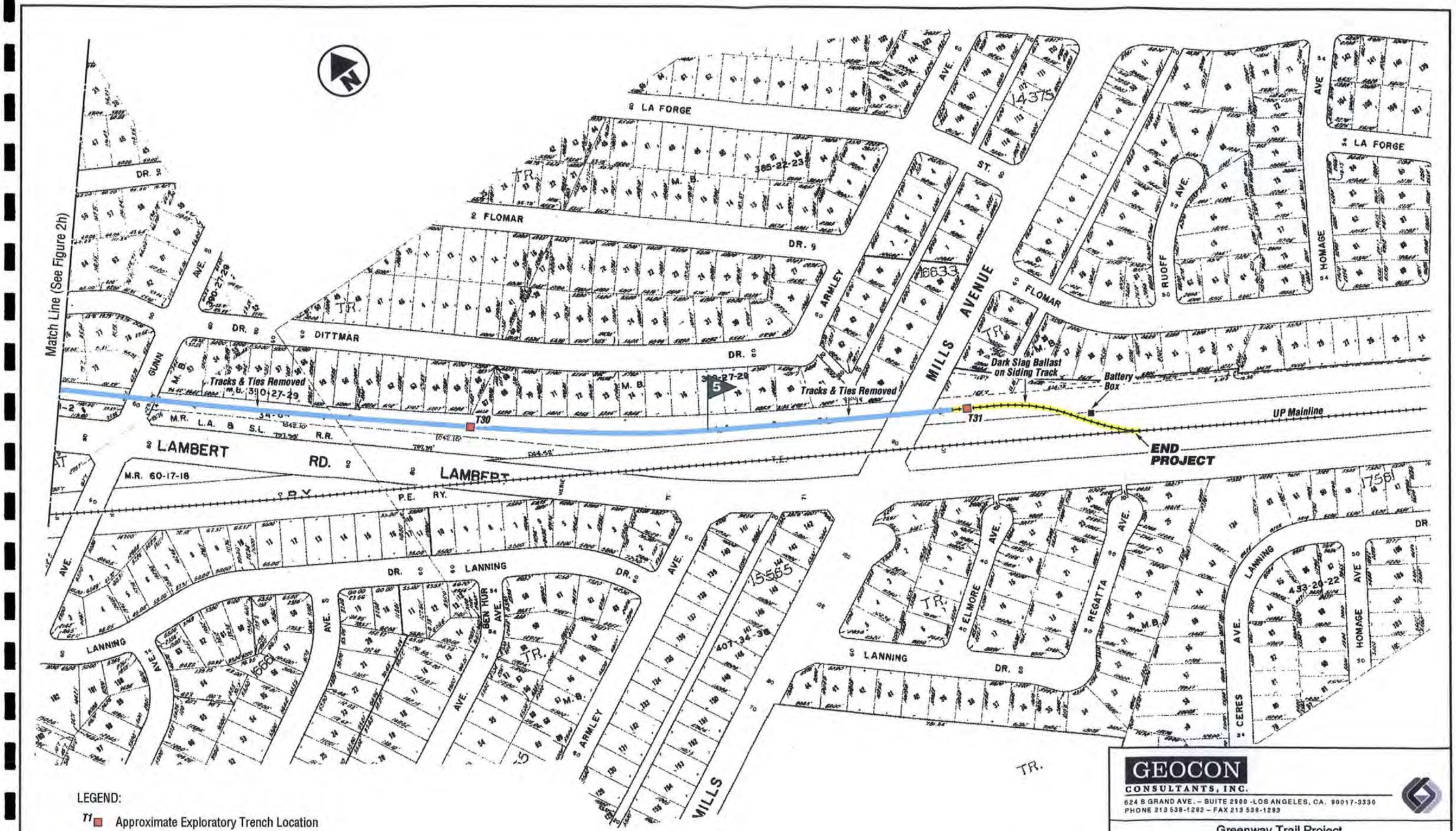
Greenway Trail Project

City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2h



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Greenway Trail Project

City of Whittier, California

SITE PLAN

A8050-06-03	November 2001	Figure 2i

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T1 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	4	NP	NP	30-40
T1 – 1	Soil						
T1 – 2	Soil						
T2 – 0.5	Soil	Heavy Metals - Slag	NP	5	NP	NP	10
T2 – 1	Soil						
T2 – 2	Soil						
T3 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	8	NP	8	12
T3 – 1	Soil						
T3 – 2	Soil						
T3 - Tie Gravel	Ballast	Creosote Stains Beneath Rail Ties					
T4 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	4	NP	NP	20
T4 – 1	Soil						
T4 – 2	Soil						
T5 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	4	NP	12	20
T5 – 1	Soil						
T5 – 2	Soil						
T6 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	8	NP	NP	16
T6 – 1	Soil						
T6 – 2	Soil						
T7 – 0.5	Light Slag Ballast	Heavy Metals - Slag	NP	6	NP	NP	18
T7 – 1	Soil						
T7 – 2	Soil						
T8 – 1	Soil	Heavy Metals, TPH And VOCs Associated With Railroad Debris Fill Materials	4-7	NA	NA	NA	NA
T8 – 5.5	Debris Fill						
T8 – 7	Soil						
T8 – Stockpile	Debris Fill						
T9 – 1	Soil	TPH Stains Adjacent To Cool-A-Coo	NP	NA	NA	NA	NA
T10 – 1	Soil	TPH Adjacent To City Maintenance Facility	NP	7	NP	NP	17
T11 – 2	Soil	TPH Stain Within Track Bed	NP	10.5	NP	NP	17

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T12 – 0.5	Dark Slag Ballast	Heavy Metals – Slag	NP	NP	8	NA	15
T12 – 1	Soil						
T12 – 2	Soil						
T13 – 2	Soil	TPH - Former Train Station Site	NP	NA	NA	NA	NA
T14 – 1	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
T15 - 0.5	Dark Slag Ballast	Heavy Metals – Slag	NP	NP	4 (siding track)	NP	15
T15 – 1	Soil						
T15 – 2	Soil						
T16 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	6	NP	12	15
T16 – 1	Soil						
T16 – 2	Soil						
T17 - 1.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
T18 – 1	Soil	TPH and VOCs Adjacent To Mar Vista Molding Co.	NP	NA	NA	NA	NA
T19 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	18	15
T19 – 1	Soil						
T19 – 2	Soil						
T20 – 2	Soil	TPH and VOCs Adjacent to Former Dip Tank	NP	NA	NA	NA	NA
T21 – 1	Soil	VOCs From Glue Adjacent To Mar Vista Molding Co.	NP	NA	NA	NA	NA
T22 – 2	Soil	TPH Surface Stains/Oil Absorbent	NP	NA	NA	NA	NA
T23 – 1	Soil	TPH Surface Stains Adjacent To Pro Auto Sales	NP	NA	NA	NA	NA
T24 - 0.5	Light & Dark Slag Ballast	Heavy Metals – Slag	NP	4	12 (between ties)	NP	30-40 (slope)
T24 – 1	Soil						
T24 – 2	Soil						
T25 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	NP	4	12	22
T25 – 1	Soil						
T25 – 2	Soil						

TABLE I
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T26 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	9	17
T26 – 1	Soil						
T26 – 2	Soil						
T27 – 1	Soil	Pesticides, PCBs and Herbicides	NP	NA	NA	NA	NA
T28 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	9	15
T28 – 1	Soil						
T28 – 2	Soil						
T29 – 1	Soil	TPH Adjacent to Lambert Tire Facility	NP	NA	NA	NA	NA
T30 - 0.5	Light Slag Ballast	Heavy Metals – Slag	NP	3	NP	9	16
T30 – 1	Soil						
T30 – 2	Soil						
T31 - 0.5	Dark Slag Ballast	Heavy Metals - Slag	NP	NP	3	15	18
T31 – 1	Soil						
T31 – 2	Soil						
T31 – Slag	Dark Slag Ballast						
T32-.5	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T32 Backing Strip	Material	Asbestos Associated With Debris Fill Materials					
T33-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T34-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-2	NA	NA	NA	NA
T34-3	Soil						
T35-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T35-3	Soil						
T36-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T36-3	Soil						
T37-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T38-4.5	Soil	Heavy Metals Associated With Debris Fill Materials	0-3.5	NA	NA	NA	NA
T39-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
T40-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T41-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2	NA	NA	NA	NA
T42-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T43-1.5	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T44-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T45-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1.5	NA	NA	NA	NA
T46-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1.5	NA	NA	NA	NA
T47-1	Debris Fill	Heavy Metals Associated With Debris Fill Materials	0-1.5	NA	NA	NA	NA
T47-2	Soil						
T48-3	Soil	Heavy Metals Associated With Pedestrian Tunnel Backfill Materials	NP	NA	NA	NA	NA
T49-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T50-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T51-1	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T52-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T53-2	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T54-1.5	Soil	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T55-.5	Debris	Heavy Metals Associated With Debris Fill Materials	0-1	NA	NA	NA	NA
T55-1.5	Soil						
T56-3	Soil	Heavy Metals Associated With Debris Fill Materials	0-2.5	NA	NA	NA	NA
T57-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA
T58-1	Soil	Heavy Metals Associated With Debris Fill Materials	NP	NA	NA	NA	NA

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
S1 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S2 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S3 – 0	Soil	Lead at Painted Norwalk Bridge Abutment	NP	NA	NA	NA	NA
S4 – 0	Soil	Lead at Painted Norwalk Bridge Abutment	NP	NA	NA	NA	NA
S5 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S6 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S7 – 0.5	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	6.5	NP	NP	17
S8 – 0	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S9 – A	Soil	Pesticides, PCBs, Herbicides, lead and arsenic	NP	NA	NA	NA	NA
S9 – B	Soil	Lead From Paint at Pedestrian Tunnel	NP	NA	NA	NA	NA
S10 – 0	Soil	Lead From Paint at Whittier Bridge Abutment	NP	NA	NA	NA	NA
S11-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S12-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S13-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S14-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S15-0	Debris Fill	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
S16-0	Soil	Heavy Metals – Whittier Bridge Debris Fill	NA	NA	NA	NA	NA
ASB-1	Asbestos Material	Debris Fill @ S. Whittier Bridge Embankment	NA	NA	NA	NA	
ASB-2	Asbestos Material	Debris Fill @ S. Whittier Bridge Embankment	NA	NA	NA	NA	
SD Box #1	Beige Paint Chip	Lead Containing Paint at Storm Drain Box	NA	NA	NA	NA	NA
SD Box #1	Soil	Lead From Paint at Storm Drain Box	NA	NA	NA	NA	NA
Ret Wall #1	Beige Paint Chip	Lead Containing Paint at Retaining Wall	NA	NA	NA	NA	NA
Ret Wall #1	Soil	Lead From Paint at Retaining Wall	NA	NA	NA	NA	NA
Ret Paint	Beige Paint Chip	Lead Containing Paint at Retaining Wall	NA	NA	NA	NA	NA
B1-8	Native Soil	Heavy Metals – Hadley Street Debris Fill	4-7	NA	NA	NA	NA
B1-12	Native Soil						
B2-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B2-4	Native Soil						
B2-8	Native Soil						
B3-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B3-4	Native Soil						
B3-8	Native Soil						

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE IDENTIFICATION – DEPTH (feet)	SAMPLE TYPE	POTENTIAL IMPACT	DEBRIS FILL DEPTH INTERVAL (feet)	LIGHT SLAG DEPTH (inches)	DARK SLAG DEPTH (inches)	GRAVEL DEPTH (inches)	BALLAST WIDTH (feet)
B4-3	Debris Fill	Heavy Metals – Hadley Street Debris Fill	2-4	NA	NA	NA	NA
B4-4	Native Soil						
B4-8	Native Soil						
B5-2	Fill	Heavy Metals – Hadley Street Debris Fill	6-8	NA	NA	NA	NA
B5-4	Fill						
B5-7	Debris						
B5-8	Native Soil						
B5-12	Native Soil						
B6-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B6-4	Fill						
B6-6	Native Soil						
B6-8	Native Soil						
B6-12	Native Soil						
B7-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B7-4	Native Soil						
B7-8	Native Soil						
B7-12	Native Soil						
B8-4	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B8-8	Native Soil	Heavy Metals – Hadley Street Debris Fill					
B9-2	Fill	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B9-4	Fill						
B9-8	Native Soil						
B10-3	Debris Fill	Heavy Metals – Hadley Street Debris Fill	2.5-3.5	NA	NA	NA	NA
B-11	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-12	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-13	Debris	Heavy Metals – Hadley Street Debris Fill	0-2	NA	NA	NA	NA
B-14	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-15	Debris	Heavy Metals – Hadley Street Debris Fill	1.5-3	NA	NA	NA	NA
B-16	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-17	Debris	Heavy Metals – Hadley Street Debris Fill	2-4	NA	NA	NA	NA
B-18	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-19	Fill/Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA
B-20	Native Soil	Heavy Metals – Hadley Street Debris Fill	NP	NA	NA	NA	NA

TABLE 1
SAMPLE LOG
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

Notes: NP = Not present
NA = Not available

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T1-.5	T1-1	T1-2	T2-.5	T2-1	T2-2	T3-.5	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.50	0.50	0.42	0.49	0.50	0.50	<0.25	500	150
Arsenic	34	**210 (12/1.4)**	**93 (5.2/1.4)**	12	11	17	8.0	500	50
Barium	140	38	71	110	130	150	130	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	30	7.5	11	22	20	20	10	2,500	5,600
Cobalt	5.5	3.5	6.4	9.5	11	9.0	3.0	8,000	800
Copper	46	22	30	22	20	28	14	2,500	250
Lead	48	44	28	5.0	3.5	14	18	1,000	50
Mercury	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	20	2
Molybdenum	1.5	0.25	0.39	0.48	0.50	0.50	0.33	3,500	3,500
Nickel	14	6.0	10	18	19	18	5.5	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.5	1.5	1.2	1.0	1.0	1.0	0.50	700	70
Vanadium	38	15	23	41	37	38	30	2,400	240
Zinc	64	110	230	52	48	100	45	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T3-1	T3-2	T4-.5	T4-1	T4-2	T5-.5	T5-1	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.48	0.50	<0.25	0.48	0.45	1.0	0.50	500	150
Arsenic	**120 (4.8/1.2)**	18	4.0	**60 (7.1/<1.0)**	**90 (4.7/1.3)**	7.5	45	500	50
Barium	130	150	6.0	66	110	85	54	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	18	27	1.5	12	18	110	8.0	2,500	5,600
Cobalt	10	14	2.0	6.0	9.0	2.5	4.5	8,000	800
Copper	18	22	4.0	12	20	14	10	2,500	250
Lead	3.5	4.5	3.5	2.5	3.5	25	15	1,000	50
Mercury	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	20	2
Molybdenum	0.39	0.42	<0.25	<0.25	0.29	0.42	<0.25	3,500	3,500
Nickel	14	19	1.5	9.0	16	4.5	6.0	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.0	1.5	<0.25	1.0	1.0	3.0	1.5	700	70
Vanadium	36	53	5.5	24	35	**500 (11/<1.0)**	25	2,400	240
Zinc	48	57	20	34	46	34	110	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T5-2	T6-.5	T6-1	T6-2	T7-.5	T7-1	T7-2	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.40	0.50	0.43	0.45	1.0	0.50	0.31	500	150
Arsenic	**100 (4.2/1.2)**	44	**84 (3.7/<1.0)**	9.5	46	46	45	500	50
Barium	150	62	150	160	140	100	150	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	18	26	15	16	52	22	15	2,500	5,600
Cobalt	9.0	3.5	7.5	8.0	6.0	7.0	8.0	8,000	800
Copper	20	12	17	18	**1,000 (25/<1.0)**	160	22	2,500	250
Lead	3.5	20	3.5	3.0	**190 (6.1/<1.0)**	20	3.5	1,000	50
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	20	2
Molybdenum	0.50	0.50	1.0	1.5	1.5	0.50	1.0	3,500	3,500
Nickel	17	6.5	15	16	33	13	16	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.5	1.0	0.50	0.50	1.0	1.0	0.50	700	70
Vanadium	40	79	35	38	88	83	36	2,400	240
Zinc	59	64	120	46	260	160	46	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T8-1	T8-STK	T8-5.5	T8-7	T12-.5	T12-1	T12-2	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.27	<0.25	<0.25	<0.25	7.0	0.50	0.37	500	150
Arsenic	6.0	32	11	14	32	44	10	500	50
Barium	100	**3,600 (11/<1.0)**	170	210	7.5	50	130	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	9.5	76 (0.18 HEX)	12	14	0.50	47	17	2,500	5,600
Cobalt	4.0	4.5	7.0	8.0	17	4.5	7.5	8,000	800
Copper	14	64	30	29	**460 (<1.0/<1.0)**	16	20	2,500	250
Lead	25	**5,800**	**140 (74/<1.0)**	**160 (<1.0/<1.0)**	**630 (5.2/<1.0)**	38	3.0	1,000	50
Mercury	1.0	1.7	0.19	<0.10	<0.10	<0.10	0.20	20	2
Molybdenum	0.50	1.5	1.5	1.0	40	0.50	2.0	3,500	3,500
Nickel	10	10	16	16	3.0	9.0	20	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	2.5	<0.15	1.5	0.19	<0.15	<0.15	500	50
Thallium	0.50	3.0	0.50	1.0	0.31	0.50	1.0	700	70
Vanadium	19	18	29	31	0.50	73	40	2,400	240
Zinc	100	940	360	310	420	110	52	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
HEX = Hexavalent Chromium
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T15-.5	T15-1	T15-2	T16-.5	T16-1	T16-2	T19-.5	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	<0.25	0.27	0.29	1.0	<0.25	0.40	1.0	500	150
Arsenic	**60 (3.7/<1.0)**	16	8.0	18	18	15	13	500	50
Barium	94	170	120	160	140	150	84	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	1.0	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	9.5	16	13	200 (<0.1 HEX)	15	18	20	2,500	5,600
Cobalt	6.5	7.5	6.5	1.5	7.5	8.5	7.0	8,000	800
Copper	140	22	16	12	20	22	39	2,500	250
Lead	**94 (<1.0/<1.0)**	5.5	2.5	7.0	5.5	6.5	**84 (2.5/<1.0)**	1,000	50
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.27	20	2
Molybdenum	18	3.5	1.5	<0.25	2.0	2.0	1.0	3,500	3,500
Nickel	22	23	16	7.5	18	22	13	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	0.50	0.50	0.50	2.5	0.50	1.0	0.50	700	70
Vanadium	22	40	32	**1,000 (7.5/<1.0)**	36	42	34	2,400	240
Zinc	440	66	42	18	86	74	140	5,000	2,500

Notes: B6-1-.5
- .5 — Sample depth in feet below surface grade
- 1 — Boring number
- B6 — Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
HEX = Hexavalent Chromium
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T19-1	T19-2	T24-.5	T24-1	T24-2	T25-.5	T25-1	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.50	0.32	2.5	0.50	0.29	1.0	0.25	500	150
Arsenic	9.5	18	**70 (<1.0/<1.0)**	32	9.0	20	20	500	50
Barium	68	40	96	43	170	60	37	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	100	10
Chromium	11	7.0	5.0	5.5	14	100	8.0	2,500	5,600
Cobalt	8.0	4.5	6.5	3.0	6.5	6.5	3.5	8,000	800
Copper	23	9.5	**510 (<1.0/<1.0)**	8.5	20	240	12	2,500	250
Lead	28	29	**330 (<1.0/<1.0)**	10	8.0	43	6.5	1,000	50
Mercury	<0.10	0.10	0.17	<0.10	0.11	<0.10	<0.10	20	2
Molybdenum	0.38	0.42	97	0.50	1.0	42	0.50	3,500	3,500
Nickel	9.0	6.5	5.0	4.5	15	6.5	5.0	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	0.50	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.0	0.50	0.28	0.50	0.50	1.0	0.50	700	70
Vanadium	30	16	8.0	16	32	120	20	2,400	240
Zinc	63	64	660	260	46	150	73	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T25-2	T26-.5	T26-1	T26-2	T28-.5	T28-1	T28-2	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram								
Antimony	0.50	2.0	<0.25	0.38	1.0	<0.25	0.37	500	150
Arsenic	16	12	16	41	34	16	20	500	50
Barium	150	60	36	180	130	32	160	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	0.16	<0.15	<0.15	<0.15	100	10
Chromium	26	170	5.5	21	60	6.0	22	2,500	5,600
Cobalt	11	2.5	3.5	8.5	4.5	3.5	8.0	8,000	800
Copper	25	10	5.5	24	14	5.5	24	2,500	250
Lead	4.0	18	2.0	4.5	42	4.5	6.0	1,000	50
Mercury	<0.10	0.14	<0.10	<0.10	0.12	<0.10	<0.10	20	2
Molybdenum	0.50	<0.25	0.30	3.0	0.50	<0.25	2.5	3,500	3,500
Nickel	20	2.5	4.0	29	8.0	4.5	26	2,000	200
Selenium	<0.25	2.5	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	500	50
Thallium	1.5	10	0.48	1.0	1.5	0.50	1.5	700	70
Vanadium	46	**710 (1.8/<1.0)**	15	50	130	16	50	2,400	240
Zinc	110	38	200	71	340	92	68	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS- TITLE 22 METALS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	T30-.5	T30-1	T30-2	T31-.5	T31-1	T31-2	T31-SLAG	S11-0	S12-0	S16-0	TTLC	10 X STLC
ANALYTE	Results in milligrams per kilogram											
Antimony	0.50	<0.25	0.32	0.50	0.50	0.28	0.30	16	3.0	0.47	500	150
Arsenic	**64 (2.8/<1.0)**	28	28	22	34	26	2.0	30	15	7.5	500	50
Barium	94	38	130	76	98	44	9.5	250	150	90	10,000	1,000
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	75	7.5
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	4.0	<0.15	100	10
Chromium	66	7.5	18	15	18	8.0	1.0	52	34	15	2,500	5,600
Cobalt	6.5	4.0	7.5	8.0	8.0	4.0	12	16	10	7.5	8,000	800
Copper	18	6.5	18	**330 (<1.0/<1.0)**	26	7.5	**300 (<1.0/<1.0)**	**3,400 [5.0]**	840 [0.53]	19	2,500	250
Lead	28	3.0	3.5	**84 (<1.0/<1.0)**	40	2.5	28	**6,200 [14]**	**1,200 [0.74]**	29	1,000	50
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.4	0.72	<0.10	20	2
Molybdenum	1.0	0.37	1.5	4.5	1.0	0.44	5.0	7.5	7.0	0.50	3,500	3,500
Nickel	11	5.0	18	12	16	6.5	5.0	120	140	10	2,000	200
Selenium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	100	10
Silver	<0.15	<0.15	<0.15	0.30	<0.15	<0.15	0.37	0.50	0.32	<0.15	500	50
Thallium	1.5	0.50	0.50	1.0	1.0	0.50	<0.25	2.5	1.0	1.0	700	70
Vanadium	110	20	38	28	36	18	1.5	54	120	28	2,400	240
Zinc	100	98	57	180	240	220	87	430	750	64	5,000	2,500

Notes: B6-1-.5
- Sample depth in feet below surface grade
- Boring number
- Sample/bent identification

< = Less than laboratory detection limits.
TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
(5.2/<1.0) = Soluble concentration by Waste Extraction Test (WET) using citric acid and WET using de-ionized water extractant
[5.0] = Soluble concentration by Toxicity Characteristic Leaching Procedure (TCLP)

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS – PETROLEUM HYDROCARBONS
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	DATE	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	VOCS EPA 8020 (µg/kg)	VOCS EPA 8260 (µg/kg)	SVOCs (µg/kg)
Detection Limit		<1.0	<1.0	<1.0	STD	STD	STD
T3-TIE G	8/23/01	---	<20	**1,600**	---	---	**35,000**[1]
T7-TIE G	8/23/01	---	<10	**340**	---	---	---
T8-STK	8/23/01	<1.0	<5.0	**250**	ND	**6.9**[2]	---
T8-5.5	8/23/01	<1.0	<10	**820**	ND	ND	---
T8-7	8/23/01	<1.0	<1.0	**5.2**	ND	ND	---
T9-1	8/23/01	---	<1.0	**96**	---	---	---
T10-1	8/23/01	<1.0	<1.0	**4.9**	ND	---	---
T11-2	8/23/01	<1.0	<1.0	**5.7**	ND	---	---
T13-2	8/23/01	<1.0	<1.0	**3.1**	ND	---	---
T18-1	8/23/01	---	<1.0	**17**	---	ND	---
T20-2	8/23/01	<1.0	<1.0	**6.5**	ND	**34**[3]	---
T21-1	8/23/01	---	---	---	---	ND	---
T22-2	8/23/01	---	<1.0	**7.1**	---	---	---
T23-1	8/23/01	---	<1.0	**5.1**	---	---	---
T29-1	8/23/01	<1.0	<5.0	**170**	ND	---	---

Notes:
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
µg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram
GRO = Gasoline Range Organics by EPA Test Method 8015
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds by EPA Test Method 8270
1 = SVOC = Fluoranthene
2 = VOC = Naphthalene
3 = VOC = Trichloroethene

< = Less than laboratory test method detection limits
--- = Not analyzed
ND = not detected above method detection limit
STD = Standard method detection limit for each constituent
BOLD = Detection

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS – PESTICIDES, PCBs AND HERBICIDES
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	DATE	PESTICIDES EPA TEST METHOD 8081 (µg/kg)	PCBs EPA TEST METHOD 8082 (µg/kg)	HERBICIDES EPA TEST METHOD 8151 (µg/kg)
Detection Limit		STD	STD	STD
T2-.5	8/23/01	ND	ND	ND
S1-.5	8/23/01	**6.2[1], 20[2], 46[3], 9.2[4], 60[5], 5.7[6], 9.5[7], 2.6[8]**	**220[9]**	ND
S2-.5	8/23/01	ND	ND	ND
S5-.5	8/23/01	ND	ND	ND
S6-.5	8/23/01	**14[2], 23[3], 16[4], 130[5], 10[6], 16[7]**	ND	ND
S7-.5	8/23/01	**41[1], 110[2], 46[3], 84[4], 370[5], 250[6], 64[7], 11[8]**	ND	ND
S8-0	8/23/01	ND	ND	ND
S9A-0	8/23/01	ND	ND	ND
T14-1	8/23/01	ND	ND	ND
T17-1.5	8/23/01	ND	ND	ND
T27-1	8/23/01	ND	ND	ND

Notes:
< = Less than laboratory test method detection limits
--- = Not analyzed
µg/kg = Micrograms per kilogram
STD = Standard method detection limit for each constituent
PCBs= Poly chlorinated Biphenyls
ND = not detected above method detection limit
PRG = Preliminary Remediation Goal
1 = 4,4'-DDD (Residential PRG = 2,400 µg/kg)
2 = 4,4'-DDE (Residential PRG = 1,700 µg/kg)
3 = 4,4'-DDT (Residential PRG = 1,700 µg/kg)
4 = alpha-Chlordane (Residential PRG = 1,600 µg/kg)
5 = Chlordane (Residential PRG = 1,600 µg/kg)
6 = Dieldrin (Residential PRG = 30 µg/kg)
7 = gamma-Chlordane (Residential PRG = 1,600 µg/kg)
8 = Heptachlor epoxide (Residential PRG = 53 µg/kg)
9 = PCBs = Aroclor 1260 (Residential PRG = 220 µg/kg)
BOLD = Detection

TABLE 5
SUMMARY OF SOIL AND PAINT CHIP ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD AND TOTAL ARSENIC
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	TOTAL LEAD EPA METHOD 6010 (mg/kg)	WET LEAD EPA METHOD 6010 (mg/l)	DI-WET LEAD EPA METHOD 6010 (mg/l)	TOTAL ARSENIC EPA METHOD 6010 (mg/kg)
T3-TIEG	22	---	---	10
T7-TIEG	**100**	---	---	46
T9-1	7.5	---	---	9.5
T10-1	4.0	---	---	7.0
T11-2	4.0	---	---	**99**
T13-2	4.0	---	---	7.0
T14-1	5.0	---	---	8.0
T17-1.5	12	---	---	36
T18-1	34	---	---	22
T20-2	15	---	---	8.0
T22-2	3.5	---	---	8.0
T23-1	14	---	---	16
T27-1	33	---	---	9.0
T29-1	<0.25	---	---	<0.25
T32.5	5.5	---	---	---
T33-1	<5	---	---	---
T34-1	82	---	---	---
T34-3	6.1	---	---	---
T35-1	**1,500**	---	---	---
T35-3	8.1	---	---	---
T36-1	**990**	---	---	---
T36-3	5.8	---	---	---
T37-3	<5	---	---	---
T38-4.5	12	---	---	---
T39-1	<5	---	---	---
T40-1	6.9	---	---	---
T41-3	<5	---	---	---
T42-1	5.4	---	---	---
T43-1.5	<5	---	---	---
T44-3	5.0	---	---	---
T45-2	<5	---	---	---
T46-2	<5	---	---	---
T47-1	**880**	---	---	---
T47-2	43	---	---	---
T48-3	**260**	---	---	---
T49-1	5.6	---	---	---
T50-2	<5	---	---	---
T51-1	**68**	---	---	---
T52-2	<5	---	---	---
T53-2	<5	---	---	---

TABLE 5
SUMMARY OF SOIL AND PAINT CHIP ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD AND TOTAL ARSENIC
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	TOTAL LEAD EPA METHOD 6010 (mg/kg)	WET LEAD EPA METHOD 6010 (mg/l)	DI-WET LEAD EPA METHOD 6010 (mg/l)	TOTAL ARSENIC EPA METHOD 6010 (mg/kg)
T54-1.5	<5	---	---	---
T55-.5	<5	---	---	---
T55-1.5	**290**	---	---	---
T56-3	5.7	---	---	---
T57-1	24	---	---	---
T58-1	5.1	---	---	---
S1-.5	16	---	---	25
S2-.5	13	---	---	8.0
S3-0	**120**	1.4	<1.0	---
S4-0	4.0	---	---	---
S5-.5	6.0	---	---	7.5
S6-.5	34	---	---	12
S7-.5	**66**	---	---	9.0
S8-0	**50**	---	---	6.5
S9A-0	**150**	---	---	12
S9B-0	**120**	2.7	<1.0	---
S10-0	**260**	**8.2**	<1.0	---
S13-0	**390**	---	---	---
S14-0	**550**	---	---	---
S15-0	33	---	---	---
SD BOX #1 PAINT	**1,100**	---	---	---
SD BOX #1 SOIL	**60**	2.2	<1.0	---
RET WALL #1 PAINT	6.0	---	---	---
RET WALL #1 SOIL	82	**9.5**	<1.0	---
RET PAINT	11			
B1-8	<5	---	---	---
B1-12	<5	---	---	---
B2-2	38	---	---	---
B2-4	<5	---	---	---
B2-8	<5	---	---	---
B3-2	<5	---	---	---
B3-4	<5	---	---	---
B3-8	<5	---	---	---
B4-3	7.2	---	---	---
B4-4	**2,200**	---	---	---
B4-8	<5	---	---	---

TABLE 5
SUMMARY OF SOIL AND PAINT CHIP ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD AND TOTAL ARSENIC
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

SAMPLE I.D.	TOTAL LEAD EPA METHOD 6010 (mg/kg)	WET LEAD EPA METHOD 6010 (mg/l)	DI-WET LEAD EPA METHOD 6010 (mg/l)	TOTAL ARSENIC EPA METHOD 6010 (mg/kg)
B5-2	5.1	---	---	---
B5-4	<5	---	---	---
B5-7	8.7	---	---	---
B5-8	<5	---	---	---
B5-12	<5	---	---	---
B6-2	<5	---	---	---
B6-4	<5	---	---	---
B6-6	<5	---	---	---
B6-8	<5	---	---	---
B6-12	<5	---	---	---
B7-2	**560**	---	---	---
B7-4	<5	---	---	---
B7-8	<5	---	---	---
B7-12	<5	---	---	---
B8-4	10	---	---	---
B8-8	<5	---	---	---
B9-2	24	---	---	---
B9-4	17	---	---	---
B9-8	<5	---	---	---
B10-3	330	---	---	---

Notes: mg/kg = Milligrams per kilogram
mg/l = Milligrams per liter
WET = Waste Extract Test method using an acid extract
DI-WET = Waste Extract Test method using a deionized water extract
--- = Not analyzed
< = Less than laboratory reporting limits
BOLD = Greater than Total Threshold Limit Concentration of 1,000 mg/kg or
10 times Soluble Threshold Limit Concentration of 5 mg/l (50 mg/kg) for total lead concentrations.
BOLD = Greater than Soluble Threshold Limit Concentration of 5 mg/l for WET lead concentrations.
BOLD = Greater than 10 times Soluble Threshold Limit Concentration of 5 mg/l (50 mg/kg) for total arsenic concentrations.

TABLE 6
REMEDIATION COST ESTIMATE SUMMARY
GREENWAY TRAIL PROJECT
WHITTIER, CALIFORNIA

Item No.	Site Work	Hadley Quantity	Whittier Quantity	Unit	Hadley Unit Cost	Whittier Unit Cost	Source	Hadley Total Cost	Whittier Total Cost
1	Pre-Field Planning/Permits	1	1	Lump Sum	5,000	5,000	(b)	5,000	5,000
2	Health & Safety	1	1	Lump Sum	1,500	2,500	(b)	1,500	2,500
3	Mobilization and Site Preparation	1	1	Lump Sum	4,100	9,800	(b)	4,100	9,800
4	Miscellaneous Equipment/Supplies	1	1	Lump Sum	2,100	4,300	(b)	2,100	4,300
5	Concrete/Asphalt Rubble and Trash Removal	0	500	Cubic Yard	0	35	(b)	0	17,500
6	Ballast and Overburden Soil Removal/Stockpile	250	225	Cubic Yard	12	26	(b)	3,000	5,850
7	Excavation of Debris Fill Material	250	1,260	Cubic Yard	28	28	(b)	7,000	35,280
8	Analytical Testing	1	1	Lump Sum	1,000	3,000	(b)	1,000	3,000
9	Fill Materials	300	0	Ton	16	0	(a)	4,800	0
10	Fill Placement/Compaction	500	0	Cubic Yard	15	0	(b)	7,500	0
11	Transport of Rubble/Trash	0	42	Load	0	115	(a)	0	4,830
12	Transport of Debris Fill	305	1,700	Ton	38	38	(a)	11,590	64,600
13	Disposal of Rubble/Trash	0	42	Load	0	230	(a)	0	9,960
14	Disposal of Non-RCRA Debris Fill Material	305	1,700	Ton	43.50	43.50	(a)	13,267.50	73,950
15	Site Restoration	1	1	Lump Sum	700	3,300	(b)	700	3,300
16	Compaction Testing	1	0	Lump Sum	1,300	0	(b)	1,300	0
17	Engineering Supervision and Reporting	1	1	Lump Sum	5,000	10,000	(b)	5,000	10,000
	Cost Subtotals							67,857.50	249,870
18	Contingency	25% of Subtotal Costs						16,964.50	62,468
	Total Estimated Costs							84,822	312,338

Cost Estimate Sources:

(a) Vendor quote information
(b) Engineers estimate based on experience with similar work

The costs estimates presented herein are intended for preliminary planning purposes only. The actual remedial costs may vary from the cost estimates presented herein depending on when the work is performed and the actual volumes of waste material requiring disposal.

APPENDIX A

19

9999 00431008354

CCMS COVERSHEET

AUDIT NUMBER	158958
DATE OF AGREEMENT	
PARTY NAME	HARRIS,GEORGE & VOLLMER,MARTHA
TYPE OF AGREEMENT	431
LOCATION	WHITTIER CA
CIRC7 FROM	CW202
MILEPOST FROM	3.11
BOX NUMBER	431 - 0083
BATCH NUMBER	3

ATTN: SUPERVISOR OF CONTRACTS -- ONLINE CONTRACT EXECUTION REPORT

U. P. R. R. Co.
Department

AUDIT NBR : 158958 SEQUENCE NBR: 132751

Audit No.

FOLDER NBR: 68623 VERSION NBR : 1

CUSTOMER NBR: 87353

OLD PARTY NAME: HARRIS,GEORGE & VOLLMER,MARTHA

OLD CITY : WHITTIER OLD STATE: CA

NEW PARTY NAME: HARRIS,GEORGE & VOLLMER,MARTHA

NEW CITY : WHITTIER NEW STATE: CA

AGRM DESCRIPTION: ENCROACHMENT - BUILDING

CONTRACT TYPE:

EFFECTIVE DATE	OLD: 1987-10-01	NEW: 1994-10-01
TERMINATION DATE	OLD: 9999-99-99	NEW: 9999-99-99
BILL AMOUNT	OLD: $1,200.00	NEW: $2,100.00
BILL FREQUENCY	OLD: AN	NEW: AN

EXECUTION COMMENTS:

RENTAL REEVALUATION CERTIFIED LETTER NO. P 434 075 160.

J. A. M.
OCT 4 1994

CONTRACT COMMENTS:

CODED
By:
Date:
JUN 22 1994

R P N
JUN 22 1994

DUPLICATE ORIGINAL - RAILROAD COPY

UNION PACIFIC RAILROAD COMPANY
CONTRACTS & REAL ESTATE DEPARTMENT

R.D. UHRICH
ASSISTANT VICE PRESIDENT

ROOM 1100, 1416 DODGE STREET
OMAHA, NEBRASKA 68179
(402) 271-3753
FAX (402) 271-5493

J. A. ANTHONY
DIRECTOR-CONTRACTS & JOINT FACILITIES
D. D. BROWN
DIRECTOR-REAL ESTATE
J. L. HAWKINS
DIRECTOR-OPERATIONS SUPPORT
D. H. LIGHTWINE
DIRECTOR-REAL ESTATE
W. R. ULRICH
DIRECTOR-BUILDING SERVICES

June 21, 1994

U. S. CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Folder: 686-23

Mr. George Harris
% Mr. Michael V. Vollmer
8831 Cliffside Drive
Huntington Beach, CA 92646

Dear Mr. Harris,

Reference is made to that certain Lease dated May 23, 1990 between Union Pacific Railroad Company and George Albert Harris and Martha Crystine Vollmer, covering a portion of the Railroad Company's property at Whittier, CA for building encroachment. Said Lease is identified in the Railroad Company's records as 158958.

Article 3 of this Lease provides for a periodic reevaluation of rental. In accordance with this provision, we recently reviewed the present day land values in Whittier and, in particular, in the general vicinity of the Lease site.

The results of this study indicate that the present rental no longer represents a fair annual market rental. Taking all matters into consideration and applying present day real estate values of the area, I am of the opinion that a rental of $2,100.00 per annum would reflect a fair market rental at this time.

In accordance with the provision of Article 3, of the Lease, this letter is to advise you that effective as of October 1, 1994 the rental will be $2,100.00 per annum.

Also attached for your review and appropriate handling is certain information and data relative to Hazardous Waste Regulations and Underground Storage Tanks. Please complete and return the Questionnaire attached hereto.

You will be billed at the new rate on October 1, 1994. If you have any questions, please contact me at (402) 271-4324.

Very truly yours,

Dennis Miller

J. D. Miller
Manager - Real Estate

RAILROAD ORIGINAL

ATTN: SUPERVISOR OF CONTRACTS -- ONLINE CONTRACT EXECUTION REPORT

AUDIT NBR :
FOLDER NBR: 68623

SEQUENCE NBR: 132751
VERSION NBR : 0
CUSTOMER NBR: 87353

OLD PARTY NAME: HARRIS,GEORGE & VOLLMER,MARTHA
OLD CITY : WHITTIER
OLD STATE: CA
NEW PARTY NAME:
NEW CITY :
NEW STATE:

U. P. R. R. Co.
Agreement
Audit No. 158958

AGRM DESCRIPTION: ENCROACHMENT - BUILDING
CONTRACT TYPE:

EFFECTIVE DATE	OLD: 1987-10-01		NEW:	
TERMINATION DATE	OLD: 9999-99-99		NEW:	
BILL AMOUNT	OLD:	$1,200.00	NEW:	$0.00
BILL FREQUENCY	OLD: AN		NEW:	

EXECUTION COMMENTS:

J.J.H.

FEB 13 1992

ONTRACT COMMENTS:
INDUSTRIAL LEASE AGREEMENT FOR A BUILDING ENCROACHMENT IN CONNECTION WITH AUTOMOBILE REPAIR SHOP AT WHITTIER, LOS ANGELES COUNTY, CALIFORNIA.

J. A. M.

APR 1 1992

158958

01
Approved, AVP-Law

RAILROAD ORIGINAL

158958

686-23

LEASE OF INDUSTRIAL
PROPERTY AT WHITTIER, CA

This Agreement made and entered into this 23rd day of May, 1990 by and between UNION PACIFIC RAILROAD COMPANY, a Utah corporation (hereinafter "Lessor"), and GEORGE ALBERT HARRIS and MARTHA CRYSTINE VOLLMER to be addressed at c/o Michael V. Vollmer, Atty. 8831 Cliffside Drive, Huntington Beach, CA 92646 (hereinafter "Lessee").

IT IS MUTUALLY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

Article I. PREMISES; LOCATION; USE.

A. The Lessor, for and in consideration of the rental to be paid and the covenants and conditions to be performed by the Lessee as hereinafter provided, does hereby lease and let unto the Lessee, for the period and subject to the terms and conditions herein stated, that portion of the premises of the Lessor (hereinafter "Premises"), at or near Whittier, Los Angeles County, California, shown on the plat dated May 11, 1990, marked Exhibit A, or described in the description, or both, hereto attached and hereby made a part hereof. The Premises leased under this agreement (hereinafter "Lease") may be used by the Lessee for building encroachment in connection with automobile repair shop and for other purposes incidental thereto, but shall not be used for any other purpose unless the Lessee has received the prior written consent of the Lessor.

B. The grant of right herein made to the Lessee is subject to each and all of the terms, provisions, conditions, limitations and covenants set forth herein and in Exhibit B, hereto attached.

Article 2. TERM.

A. The term of this lease is for the period of one year, commencing on the 1st day of October, 1987, unless sooner terminated as hereinafter provided.

B. Thereafter, so long as neither party is in default, this Lease will renew itself without further documentation from year to year until terminated as provided herein. Each renewal term will be upon the same terms and conditions set forth herein, including, without limitation, the Lessor's right to reevaluate the rental as provided in Article 3B below.

Article 3. RENTAL; RENTAL REEVALUATION.

A. The Lessee covenants and agrees to pay to the Lessor, as rental for the use of the Premises during the leasehold term, or any renewal thereof, rental of ONE THOUSAND TWO HUNDRED Dollars ($1,200.00) per annum payable annually in advance for each and every year, subject to reevaluation as provided in Paragraph B below.

01
Approved, AVP-Law

B. The Lessor may annually reevaluate the rental base upon which the above rental is computed. In the event the Lessor shall determine that the rental paid is no longer representative of a fair market rental, the Lessor may adjust the rental and shall advise the Lessee by written notice of such change. Such written notice shall be served at least thirty (30) days prior to the effective date of the new rental, it being understood however that rental adjustments shall not be made more often than once every twelve (12) months.

Article 4. SPECIAL PROVISIONS.

None.

IN WITNESS WHEREOF, the parties hereto have executed this Lease as of the day and year first herein written.

Witness

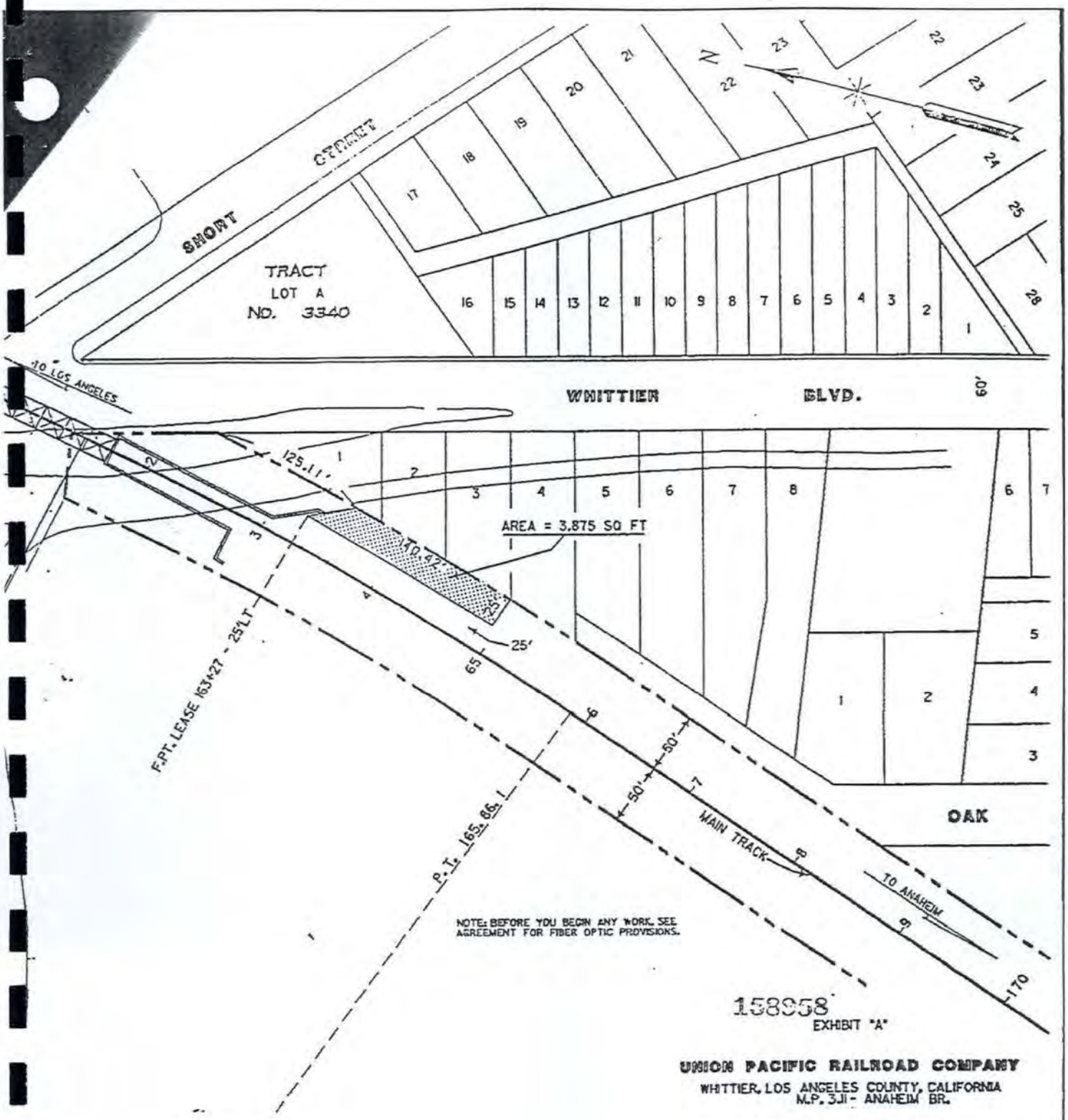
UNION PACIFIC RAILROAD COMPANY

By
Director - Field Operations

x 1-31-92
George Albert Harris Lessee

x 1-31-92
Martha Crystine Vollmer Lessee

158958



158958

EXHIBIT "A"

UNION PACIFIC RAILROAD COMPANY

WHITTIER, LOS ANGELES COUNTY, CALIFORNIA
M.P. 3.11 - ANAHEIM BR.

LEASE TO GEORGE ALBERT HARRIS and
MARTHA CRYSTINE VOLLMER

SCALE: 1" = 100'
OFFICE OF DIRECTOR
CONTRACTS & REAL ESTATE
OMAHA, NEBRASKA MAY 8, 1990

GLC FILE: CA686023

= L E G E N D =

LEASE AREA SHOWN.....
UPRRCO. R/W OUTLINED.....

EXHIBIT B

Section 1. IMPROVEMENTS.

It is agreed that no improvements placed upon the Premises by the Lessee shall become a part of the realty.

Section 2. PRIOR RIGHTS.

A. This Lease is made without covenant of title or to give possession or for quiet enjoyment.

B. This Lease is made subject to all outstanding superior rights, including, but not limited to, underground facilities, rights-of-way for highways and for power, fiber optics and other communication lines and facilities, and the right of the Lessor to renew such outstanding rights, to renew the term thereof and to grant such new or additional rights, licenses or easements unto others as the Lessor in its sole discretion should deem necessary, convenient or appropriate. In the Lessee's use and occupancy of the Premises, the Lessee shall not disturb, damage or interfere with any such facilities of the Lessor or nonparties.

Section 3. PAYMENT OF RENTAL; UNPAID RENTAL.

A. All rental shall be paid in lawful money of the United States of America at the office of Union Pacific Railroad Company in Omaha, Nebraska, or at such other place as the Lessor shall designate in writing.

B. In the event that the rental herein specified to be paid has not been received by the Lessor within fifteen (15) days after the date that such rental payment is due, a finance charge of ten (10) percent of each unpaid rental payment shall be assessed against the Lessee and interest, at the rate of thirteen (13) percent per annum, shall be assessed against the unpaid rental and shall accrue until such rental payments are current and all interest payments and finance charges have been paid.

Section 4. TAXES AND ASSESSMENTS.

A. The Lessee further agrees to pay, before the same shall become delinquent, all taxes levied during the life of this Lease upon the Premises and upon any buildings and improvements thereon, or to reimburse the Lessor, either directly or as an amount included in Lessee's rental payment for sums paid by the Lessor for such taxes, except taxes levied upon the Premises as a component part of the railroad property of the Lessor in the state as a whole.

B. If, during the life of this Lease, any street or other improvement shall be made, whether consisting of new construction, maintenance, repairs, renewals, or reconstruction, and the whole or any portion of the cost of which is assessed against or is fairly assignable to the Premises, the Lessee agrees to pay in addition to the other payments herein provided for:

(1) Ten and one-half per cent (10-1/2%) per annum on the amount so assessed against or assignable to the Premises, when expenditures by the Lessor for such improvements are properly chargeable to capital account under accounting rules of the Interstate Commerce Commission current at the time; and

(2) The entire amount so assessed against or assignable to the Premises when expenditures for such improvements are not properly chargeable to capital account under said accounting rules.

Section 5. WATER RIGHTS.

This Lease does not grant, convey or transfer any right to the use of water under any water right owned or claimed by the Lessor which may be appurtenant to or otherwise associated with the Premises. All right, title, and interest in and to such water is expressly reserved unto the Lessor, its successors and assigns, and the right to use same or any part thereof may be obtained only by the prior written consent of the Lessor.

Section 6. CARE AND USE OF PREMISES.

A. In the Lessee's use and occupancy of the Premises, the Lessee will observe and exercise reasonable care and caution against damage or destruction to the Premises by fire or otherwise. The Lessee shall not do, suffer or permit anything upon or about the Premises which will or may increase the fire hazard thereon. The Lessee shall not commit or suffer waste thereof or injury thereto and shall not use or permit the use of the Premises for any unlawful purpose nor create or maintain thereon any nuisance or any offensive object, matter or thing. The Lessee, at Lessee's expense, will at all times keep the Premises in a safe, neat, clean and presentable condition including all sidewalks and public ways located on the Premises. The Lessee, at Lessee's expense, shall also keep the walkways appurtenant to any railroad spur track(s) on or serving the Premises, free and clear from debris, snow, ice and any other substance which would or might create a hazard thereon.

B. The Lessee shall not install, maintain or permit any sign or advertisement upon the Premises, except signs relating to the Lessee's business; provided such signs are properly installed and maintained by the Lessee and present a neat appearance. The Lessor reserves unto itself the exclusive right to permit the location of advertising signs of any kind whatsoever on the Premises.

C. In the event any building or other improvement not belonging to the Lessor on the Premises is damaged or destroyed by fire, storm, or other casualty, the Lessee shall, within thirty days after such happening, remove all debris and rubbish resulting therefrom; and if Lessee fails to do so, the Lessor may enter the Premises and remove such debris and rubbish, and the Lessee agrees to reimburse the Lessor, within thirty days after bill rendered, for all expenses incurred in such cleanup.

D. In the Lessee's occupancy and use of the Premises, the Lessee, at Lessee's expense, shall conform and comply with all applicable laws, ordinances and public regulations now or hereafter in effect, and hold harmless the Lessor from any failure so to do and from any fines, penalties, forfeitures or judgments resulting from Lessee's failure to conform and comply with all such laws, ordinances and public regulations.

E. It is further agreed that no gunpowder, gasoline, dynamite, or other explosive, flammables or hazardous materials shall be stored or kept upon the Premises. Nothing herein contained, however, shall prevent the storage of those hazardous commodities, if any, specified in Article I of the Articles of Agreement, nor the storage of oil or gasoline where same are used by the Lessee for fuel in the business carried on by the Lessee on the Premises, and are stored in quantities reasonable for such purposes; PROVIDED, however, that in all such excepted cases, the Lessee shall not store such commodities within fifty (50) feet from the center line of any main track and strictly comply with all federal, state and municipal laws and regulations relating to the storage of such commodities.

Section 7. HAZARDOUS SUBSTANCES AND WASTES.

A. Lessee shall comply with all federal, state and local environmental laws and regulations in its use of the Premises, including the Resource Conservation and Recovery Act, as amended (RCRA), and the Comprehensive Environmental Response Compensation and Liability Act, as amended (CERCLA). Lessee shall not treat, store or dispose of hazardous wastes on the Premises, as defined in RCRA, without first obtaining the Lessor's written permission. If such permission is granted, the Lessee shall obtain any necessary permits and identification numbers and provide the Lessor the identification numbers and copies of the permits. Lessee shall also assume all responsibility for and costs associated with any closure and/or post-closure care required. In addition, Lessee shall not install any underground storage tanks as defined in RCRA without first obtaining the Lessor's written permission. If such permission is granted, Lessee shall obtain any necessary permits, notify the proper authorities, and provide the Lessor with copies of such permits and notifications. Furthermore, Lessee shall assume all responsibility for and shall indemnify and defend Lessor against all costs and claims associated with a release or leak of any tank contents.

B. Lessee shall use its best efforts and safety practices to prevent the release of oil and hazardous substances as defined in CERCLA on the Premises. Notwithstanding, Lessee assumes all responsibility for the investigation and cleanup of any such release and shall indemnify and defend the Lessor, its officers, agents and employees, for all costs, including environmental consultant and attorney fees, and claims resulting from or associated with any such release. This provision shall continue in full force and effect regardless of whether this Lease is terminated pursuant to any other provision, or the Premises are abandoned and vacated by the Lessee.

Section 8. UTILITIES.

A. The Lessee shall arrange, secure, and be responsible for all water, gas, heat, electricity, power, sewer, telephone, and any and all other utilities and services supplied and/or furnished to the Premises in connection with the use of the Premises by the Lessee as herein provided, together with any and all taxes and/or assessments applicable thereto.

B. It is agreed that all utilities and services outlined above should be separately metered to the Lessee. In the event such utilities and services are not separately metered to Lessee, Lessee shall pay a reasonable proportion of the cost of such utilities and services, to be determined by the Lessor, of all charges jointly metered with other portions of the Lessor's property.

C. It is understood and agreed that none of the above utilities or services may be installed or permitted upon the Premises without first securing the written consent and approval of the Lessor for such installations and services.

Section 9. LIENS.

The Lessee shall pay, when due and before any lien shall attach to the Premises, if the same may lawfully be asserted, all charges for water, gas, light, and power furnished; and for rental or use of sewer facilities serving the Premises, and fully pay for all materials joined or affixed to the Premises, pay for all taxes and assessments, and pay in full all persons who perform labor upon the Premises, and shall not permit or suffer any mechanic's or materialman's or other lien of any kind or nature to be created or enforced against the Premises for

any work done or materials furnished thereon at the instance or request or on behalf of the Lessee; and the Lessee agrees to indemnify, hold harmless, and defend, the Lessor and Lessor's property against and from any and all liens, claims, demands, costs, and expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials or other things furnished.

Section 10. LESSOR'S PRIOR CONSENT REQUIRED FOR BUILDINGS, IMPROVEMENTS, STRUCTURES, DEVICES, TRACKAGE; LESSEE NOT TO IMPAIR CLEARANCES.

A. Detailed plans for all buildings, platforms, loading or unloading devices, structures and all alterations, improvements and/or additions thereto, which the Lessee shall desire to make upon the Premises or adjacent property or trackage, shall be presented to Lessor for Lessor's consent prior to installation upon the Premises. If the Lessor shall give its consent, the consent shall be deemed conditioned upon Lessee acquiring a permit to do such work from appropriate governmental agencies, the furnishing of a copy thereof to Lessor prior to the commencement of the work and the compliance by Lessee prior to the commencement of the work and the compliance by Lessee of all conditions of said permit in a prompt and expeditious manner.

B. All buildings, platforms, loading or unloading devices, structures, and/or material or obstruction of any kind erected, maintained, placed, piled, stacked, or maintained upon the Premises after the commencement of this Lease and any alterations, improvements, and/or additions thereto or to buildings, platforms, loading or unloading devices structures located on the Premises prior to the commencement of this Lease shall be constructed, operated, maintained, repaired, renewed, modified and/or reconstructed by the Lessee in strict conformity with Lessor's clearance standard entitled "Union Pacific Railroad Company's Standard Minimum Clearances for All New Structures and Facilities Along Industry Tracks," (hereinafter "Clearance Standard") as in effect at the time of the placement, construction, operation, maintenance, repair, renewal, modification or reconstruction.

C. The Lessor consents to Lessee's use of buildings, platforms, loading or unloading devices, structures and/or material or obstructions of any kind located upon the Premises which are in place at the time the Lessee takes possession of the Premises, or which were constructed, placed, piled, stored, stacked, or maintained upon the Premises with the express consent of the Lessor under the terms of a previous lease between Lessor and Lessee, but which are not in conformity with Lessor's current Clearance Standard.

D. Compliance with Lessor's Clearance Standard shall not relieve Lessee from the obligation to fully comply with the requirements of any federal, state, or municipal law or regulation; it being understood and agreed that Lessor's Clearance Standard are in addition to, and supplemental of, any and all requirements imposed by applicable law or regulation and shall be complied with unless to do so would cause Lessee to violate an applicable law or regulation.

E. The Lessee shall not locate or permit the location or erection of any poles upon the Premises, nor any beams, pipes, wires, structure or other obstruction over or under any tracks of the Lessor without the written consent of the Lessor. Lessor shall consider requests of the Lessee to impair clearances which are necessitated by the operational requirements of the Lessee, but Lessor shall not be obligated to consent to any impairment. Any necessary permission to impair clearances to which the Lessor has consented must be secured by the Lessee at its own expense, in advance of any impairment; and Lessee shall comply promptly and strictly with all requirements or orders issued by appropriate state or other public authority relating to such impairments.

F. Lessee assumes the risk of and shall indemnify, hold harmless, and defend the Lessor, its officers, agents, and employees, against and from all injury to or death of persons, or loss of or damage to property of the parties hereto and their employees and agents and to the person or property of any other person or corporation resulting from the Lessee's noncompliance with the provisions of this Section 10, or resulting directly or indirectly from any impairment of the clearances described in this Section 10, whether the Lessor had notice thereof or consented thereto, or whether authorized by applicable state or other public authority pursuant hereto, or existing without compliance with the provisions of this Section 10.

G. Any knowledge on the part of the Lessor of a violation of the clearance requirements of this Lease, whether such knowledge is actual or implied, shall not constitute a waiver and shall not relieve the Lessee of its obligation to indemnify and defend the Lessor, its officers, agents, and employees, for losses and claims resulting from such violation. However, the terms of this Section shall not apply to losses resulting from impairments or facilities created or constructed by the Lessor that will not benefit the Lessee.

Section 11. ASSUMPTION OF RISK; INDEMNITY.

A. The Lessee accepts the Premises in its present condition and hereby assumes the risk of any injury to and death of persons and damage to or destruction of property resulting from the condition of or any defects anywhere in or upon the Premises, regardless of whether such condition or defects are known or unknown, apparent or latent, and regardless of whether such condition or defects exist at the commencement of this Lease or at some later time.

B. The occupation of and activities upon the Premises by the Lessee will expose the Lessor's property, operations and facilities to additional hazards; and as one of the material considerations for this Lease, the Lessee agrees to assume the risk of and to indemnify and hold harmless the Lessor as follows:

1. The Lessee assumes the risk of and shall indemnify and hold harmless the Lessor, and its affiliates, their officers, agents and employees, against and from any and all liability, loss, damage, claims, demands, costs and expenses of whatsoever nature, including court costs and attorneys' fees, arising from or growing out of any injury to or death of persons whomsoever or loss of or damage to property whatsoever. The right to indemnify shall accrue when such injury, death, loss or damage occurs from any cause and is associated in whole or in part with, incidental to or caused by the occupation or use of the Premises, or any activity upon the Premises by the Lessee, its employees or agents, or by any person on or near the Premises by reason of any relation, contractual or otherwise, with the Lessee, its officers, employees or agents, or caused by Lessee's breach of this Lease. Except as provided in subparagraph 2 below, the Lessee shall not indemnify the Lessor when any such injury, death, loss or damage is caused by the sole, direct negligence of the Lessor, its officers, employees or agents.

2. The Lessee assumes all risk of and agrees to indemnify and hold harmless the Lessor from and against all demands, liability, claims and actions asserted by any person, including an insurer, arising out of or by reason of loss, damage or destruction of or to any and all improvements or other property (including, without limitation, rail cars and contents) on the Premises or in proximity to the Premises if used in connection with or incidental to the occupation of the Premises by the Lessee, and any and all incidental loss or injury to the business of the Lessee, (1) where occasioned by fire or other casualty, regardless of whether caused or contributed to by operations of the Lessor or any negligence of the Lessor, its officers, agents or employees; excepting only loss, damage or destruction of rail cars resulting from fire caused by the sole negligence of the Lessor, its officers, agents or employees and loss, damage or destruction of shipments in the course of transportation, which shall be governed by the contract of carriage; or (2) where occasioned by water to the Premises or to property located thereon belonging to or in the custody or control of the Lessee, including buildings and contents, regardless of whether such damage is caused or contributed to by the position, location, construction or condition of the roadbed, tracks, bridges, dikes, ditches or other structures of the Lessor.

Section 12. TERMINATION ON DEFAULT.

A. It is further agreed that the breach of any covenant, stipulation or condition herein contained to be kept and performed by the Lessee, shall, at the option of the Lessor, forthwith work a termination of this Lease, and all rights of the Lessee hereunder; provided, however, that the Lessee shall not be deemed in default under this Lease unless the Lessor has furnished written notice to the Lessee of Lessee's default, and the Lessee has failed to begin to cure that default within seventy-two (72) hours after receipt of Lessor's default notice or after commencing a cure, has failed to proceed diligently with its cure efforts.

B. After a default by the Lessee, the Lessor may at once re-enter upon the Premises and repossess itself thereof and remove all persons therefrom or may resort to an action of forcible/unlawful entry and detainer, or any other action to recover the same. A waiver by the Lessor of the breach by the Lessee of any covenant or condition of this Lease shall not impair the right of the Lessor to avail itself of any subsequent breach thereof.

Section 13. TERMINATION ON NOTICE.

A. This Lease may be terminated by written notice given by either the Lessor or the Lessee to the other party on any date in such notice stated, not less, however, than thirty (30) days subsequent to the date on which such notice shall be given.

B. Upon such termination and vacation of the Premises by the Lessee, the Lessor shall refund to the Lessee, on a pro rata basis, any unearned rental paid in advance.

Section 14. NOTICE.

A. Any notice, demand, request, consent, approval or communication that either party hereto desires or is required to give to the other party under this Lease shall be in writing. Notice shall be deemed to have been given to the Lessee by serving the Lessee personally or by mailing the same, postage prepaid, to the Lessee at the Premises or the last address known to the Lessor. Notice may be given to the Lessor by mailing the same, postage prepaid to the office of the General Director, Contracts & Real Estate, Room 1200, 1416 Dodge Street, Omaha, Nebraska 68179.

B. Postal notices shall be by certified mail, return receipt requested, and such notice shall be deemed given on the date deposited with the United States Postal Service.

Section 15. CONSENT.

Wherever the consent, approval, judgment or determination of Lessor is required or permitted under this Lease, Lessor shall exercise good faith and reasonable business judgment in granting or withholding such consent or approval or in making such judgment or determination and shall not unreasonably withhold or delay its consent, approval, judgment or determination.

Section 16. SURRENDER; ABANDONMENT; VACATION OF PREMISES; REMOVAL OF LESSEE'S PROPERTY.

A. The Lessee agrees that upon the expiration, abandonment of Premises by Lessee, or sooner termination of this Lease, the Lessee will peaceably and quietly surrender possession of the Premises to the Lessor, or the Lessor's successors and assigns, without Lessor giving any notice to quit or demand for possession. Lessee's non-use of the Premises for the purposes described in Article I of the Articles of Agreement of this Lease continuing for thirty (30) days shall be sufficient and conclusive evidence of such abandonment. No later than the expiration or termination date of this Lease, the Lessee shall (a) remove from the Premises, at the expense of the Lessee, all structures, property and other materials not belonging to the Lessor; and (b) restore the surface of the ground to as good a condition as the same was in before such structures were erected, including, without limiting the generality of the foregoing, the removal of foundations of such structures, the filling in of all excavations and pits and the removal of all debris and rubbish, all of which shall be performed at Lessee's expense. If the Lessee should fail to perform such removal, the Lessor may perform the work and the Lessee shall reimburse the Lessor for the cost thereof within thirty (30) days after bill rendered.

B. In the case of the Lessee's failure to remove such structures and other property, the same, at the option of the Lessor, shall upon the expiration of thirty (30) days after the termination of this Lease, become and thereafter remain the property of the Lessor; and if within one (1) year after the expiration of such thirty-day period the Lessor elects to and does remove, or cause to be removed, said structures and other property from the Premises and the market value thereof or of the material therefrom on removal does not equal the cost of such removal plus the cost of restoring the surface of the ground as aforesaid, then the Lessee shall reimburse the Lessor for the deficit within thirty (30) days after bill rendered.

Section 17. PROTECTION OF FIBER OPTICS.

A. Fiber optic cable systems may be buried on the Lessor's property. Lessee shall telephone the Lessor at 1-800-336-9193 (a 24-hour number) to determine if fiber optic cable is buried anywhere on the Premises. If it is, Lessee will telephone the telecommunications company(ies) involved, arrange for a cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the Premises.

B. In addition to the liability terms elsewhere in this Lease, the Lessee shall indemnify and hold the Lessor harmless against and from all cost, liability, and expense whatsoever (including, without limitation, attorney's fees and court costs and expenses) arising out of or in any way contributed to by any act or omission of the Lessee, its contractor, agents and/or employees, that causes or in any way or degree contributed to (a) any damage to or destruction of any telecommunications system by the Lessee, and/or its contractor, agents and/or employees, on Lessor's property, (b) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Lessor's property, and/or its contractor, agents and/or employees, on Lessor's property, and/or (c) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of, such telecommunication company(ies).

Section 18. LESSEE NOT TO SUBLET OR ASSIGN.

The Lessee agrees not to let to sublet the Premises, in whole or in part, or to assign this Lease without the consent in writing of the Lessor, and it is agreed that any transfer or assignment of this Lease, whether voluntary, by operation of law or otherwise, without such consent in writing, shall be absolutely void and, at the option of the Lessor, shall terminate this Lease.

Section 19. SUCCESSORS AND ASSIGNS.

Subject to the provisions of Section 18 hereof, this Lease shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, successors and assigns.

Shewey Environmental Management Co., Inc.
41360 Dixon Drive • Hemet, California 92543 • (714) 765-2780 • FAX (714) 765-2782

August 19, 1991

File No. 16429 - R/C - 1A
Permit No. 8327 - B

Los Angeles County
Department of Public Works
Waste Management Division
900 South Fremont Avenue
Alhambra, CA 91803 - 1331

Att: David Chou
Re: Closure of Underground Fuel Storage Tanks

Mr. Chou

Please review the following information concerning the site located at 12360 Whittier Blvd. The underground storage tank removal activities have been completed at this site. The attached document presents a report of those events and shall serve as a closure request for this site.

Regards

REGISTERED ENVIRONMENTAL ASSESSOR
JAMES C. SHEWEY
No. REA 01957
Expires: 6-30-92
STATE OF CALIFORNIA

J. Charlie Shewey
President SEMCO

Underground Storage Tank Removal

12360 East Whittier Blvd.

Whittier, California

Prepared for:

Martha Chrystine Vollmer and George Albert Harris
12360 East Whittier Blvd.
Whittier, California 90602

File No. 16429 - R/C - 1A
Permit No. 8327 - B
Project No. C - 014
August 16, 1991

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APPENDICIES

A. Uniform Hazardous Waste Manifest
B. Laboratory Sample Analysis Results & Chain of Custody

INTRODUCTION

Shewey Environmental Management Co., (SEMCO), has concluded underground fuel storage tank removals at 12630 East Whittier Boulevard, Whittier, CA.

This report presents a summary of the underground storage tank excavation and removal activities of 8/8/91.

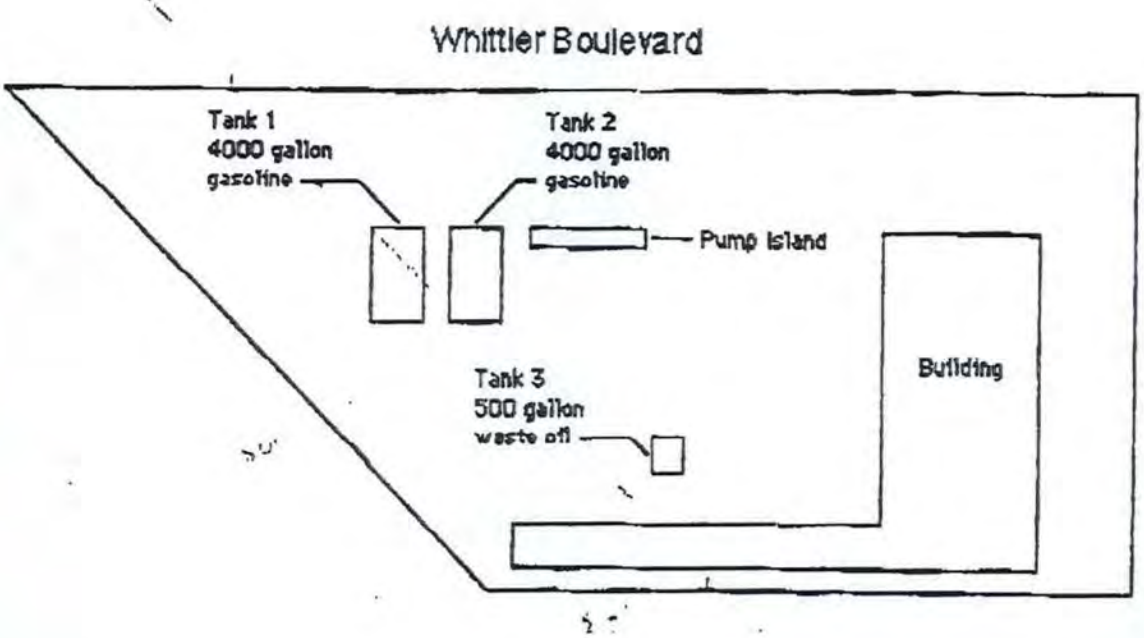
SITE WORK

Tank Removal

SEMCO performed underground fuel tank removal operations in accordance with removal directives from L.A. County Department of Public Works and L.A. County Fire Department, at the area indicated in Figure 1, Site Map. A total of three (3) steel underground storage tanks were removed. The tanks consisted of two (2) - 4,000 gallon gasoline tanks and one (1) - 500 gallon waste oil tank.

The waste oil tank and the two gasoline tanks contained negligible amounts of fluid and therefor did not necessitate residual product removal. All three tanks were purged of flammable vapors using dry ice, removed, and secured on a semi-truck/trailer. The tanks and related piping were then transported under Uniform Hazardous Waste Manifest, State Manifest Document No. 89891736, by Erickson, Inc., to the Erickson recycling facility in Fontana, CA for processing. A copy of the Uniform Hazardous Waste Manifest is included in Appendix A.

Monitoring of Lower Explosive Limit (LEL) and Oxygen levels in each tank was conducted to ensure safe tank removal and transport. Los Angeles County Fire Department inspector Steven Sanchez, was present to insure proper tank removal procedures.



NORTH	Crazy Joe's VW Repair 12360 E. Whittier Blvd. Whittier, CA
SEMCO C - 014	Map Scale 1" = 20'

Figure 1 Site Map

Soil Sampling

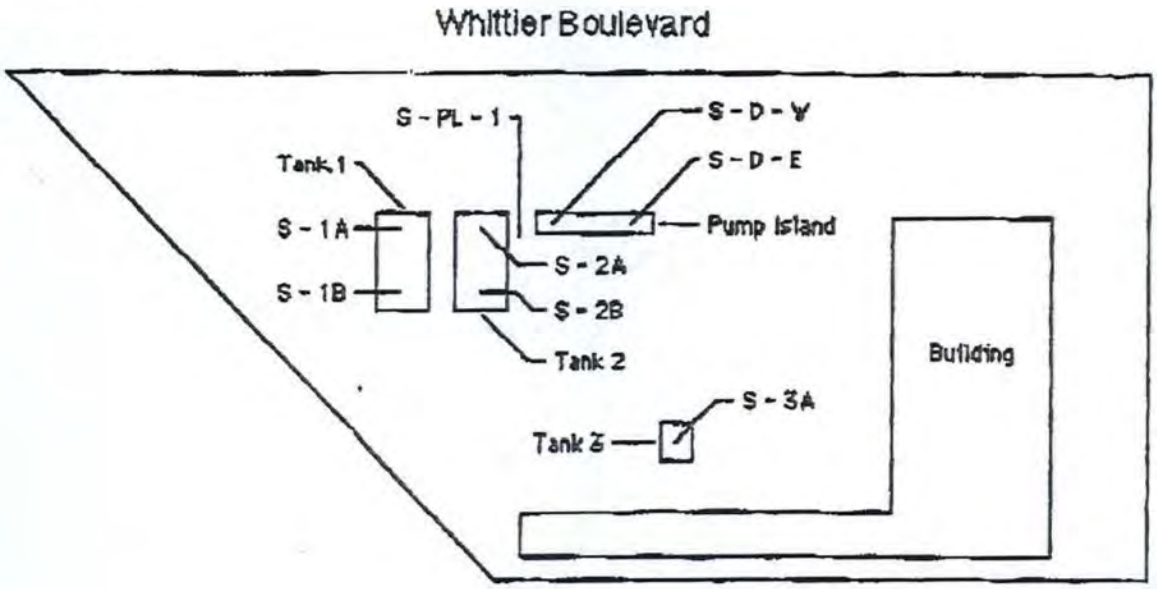
Upon removal of the tanks and related piping selected soil samples were taken from the vicinity of the removed items to determine if any potential soil contamination existed. Sample locations, depths and laboratory analysis methodologies were specified in advance by the Los Angeles County Department of Public works. All soil samples were collected on 8/8/91. Those specifications were followed during the sampling precedings. The sample locations are shown in Figure 2, Sample Map.

A total of eight (8) soil samples were obtained from the soils below the removed tanks, fuel despensers and product piping. The samples were taken from 2 - 4 feet below the the bottom of the tanks at depth of approximately 15 feet below surface grade and 2 - 3 feet below the dispensers and piping. The hand tools used in sample packaging were cleaned using standard cleaning procedures before reuse to avoid cross contamination. Soil samples were packaged in 8-ounce, clear glass sample jars with zero headspace. The sample jars were capped with Teflon lined lids, sealed, and labeled. Samples were then recorded on placed on a Chain-of-Custody document and placed in ice for transport to a State of California certified laboratory.

Sample Analysis and Results

All soil samples obtained during the site sampling were transported to Smith-Emery Co. of Los Angeles, CA for analysis. The laboratory was requested to analyze the samples by EPA Methods; 8015 modified/gasoline for Total Volatile Petroleum Hydrocarbons (TVPH), 8020 for benzene, toluene, xylenes, ethylbenzene (BTXE) and 418.1 for Total Petroleum Hydrocarbons (TPH), In addition, samples were analyzed by Department of Health Services (DOHS) specifications for organic lead (EPA method 3040/7420).

Table 1 presents a summary of the laboratory analysis for 8015 mod./gasoline (TVPH) and 8020 (BTXE).



NORTH	Crazy Jne's VW Repair 12360 E. Whittier Blvd. Whittier, CA
SEMCO C - 014	Map Scale 1" = 20'

Figure 2 Sample Map

TABLE 1

SAMPLE		8015 GAS	8020 BTXE			
Designation	Depth	TVPH**	Benzene*	Toluene*	Xylene*	Ehtelbenzene*
S - 1A	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 1B	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 2A	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 2B	15'	Not detected	Not detected	Not detected	Not detected	Not detected
S - 3A	9'	Not Applicable	Not detected	Not detected	Not detected	Not detected
S - D - E	2'	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
S - D - W	2'	Not detected	Not detected	Not detected	Not detected	Not detected
S - PL - 1	3'	Not detected	Not detected	Not detected	Not detected	Not detected

* quantities given in parts per billion (µg/kg)
** quantities given in parts per million (mg/kg)

Table 2 presents a summary of the laboratory analysis for 418.1 (TPH) and 3040/7420 organic lead.

TABLE 2

SAMPLE		418.1	3040/7420
Designation	Depth	TPH*	Organic Lead*
S - 1A	15'	Not Applicable	Not detected
S - 1B	15'	Not Applicable	Not detected
S - 2A	15'	Not Applicable	Not detected
S - 2B	15'	Not Applicable	Not detected
S - 3A	9'	8.1 ppm	Not Applicable
S - D - E	2'	Not Applicable	Not Detected
S - D - W	2'	Not Applicable	Not detected
S - PL - 1	3'	Not Applicable	Not detected

* quantities given in parts per million (mg/kg)

Laboratory sample analysis results and Chain of Custody Documents are provided in Appendix B.

ENVIRONMENTAL ANALYSIS

Results of the soil the only detectable levels of petroleum hydrocarbons were present in sample S - 3A. Sample S - 3A was obtained 2 feet below the bottom of the 500 gallon waste oil tank.

The sample was analyzed by EPA methods 418.1 (TPH) and 8020 (BTXE). The analysis by EPA 418.1 showed a TPH concentration of 8.1 mg/kg (parts per million). EPA 8020 analysis of sample S - 3A, showed 'Not Detected' for B,T,X and E. The concentrations identified by EPA 418.1 analysis of this sample fall below acceptable action levels. All remaining samples showed concentrations of 'Not-Detected' for their related analysis.

CONCLUSIONS

In our professional opinion and based upon the analytical data provided by the sampling process, no further investigation or remedial action measures are needed at this site.

LIMITATIONS AND DISCLAIMER

The conclusions in this report address the property as shown on Figure 1, and are based on the following:

a) The results of the analyses of eight soil samples obtained upon tank removal.

b) Observations of SEMCO field personnel.

The services performed by SEMCO have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in southern California. No warranty, expressed or implied is made or intended with this report.

This report is subject to review by controlling public agencies having jurisdiction.

Should you have any questions concerning the information presented in this report, please contact this office.

The information in this report pertains to the site located at 12360 East Whittier Blvd., Whittier, CA. The scope of this report is restricted to the underground storage tank removal activities conducted at the above referenced site on 8/8/91.

REGISTERED ENVIRONMENTAL ASSESSOR
JAMES C. SHEWEY
No. REA 01957
Expires: 6-30-92
STATE OF CALIFORNIA

J. Charlie Shewey
REA 01957
GC 623013

REGISTERED GEOLOGIST
LEWIS S. LOHR
NO 2666
STATE OF CALIFORNIA

Lewis S. Lohr
Registered Geologist
RG 2666

Appendix A

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite pitch typewriter)

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C A D 0 0 4 1 1 2 1 2 8 1 — Manifest Document No. 0 1 1 1 0 1
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: MARTHA CRYSTINE VOLLMER, 8231 CLIFFSIDE DR., HUNTINGTON BEACH CA 92646
4. Generator's Phone: 714/969-7251
A. State Manifest Document Number: 89891736
B. State Generator's ID:

5. Transporter 1 Company Name: ERICKSON, INC.
6. US EPA ID Number: C A D 0 0 9 4 6 6 3 9 2
C. State Transporter's ID: 2 10 740
D. Transporter's Phone: 714-355-5601

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: ERICKSON, INC. 13738 SLOVER AVE. FONTANA, CA 92335
10. US EPA ID Number: C A D 9 8 2 4 3 4 9 3 3
G. State Facility's ID
H. Facility's Phone: 714-355-5601

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON RCRA HAZARDOUS WASTE SOLID (waste empty storage tank(s)		TP	0000	P	State 512 / EPA/Other EXEMPT
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: EMPTY STORAGE TANK(S) ONCE CONTAINING PETROLEUM BY PRODUCT

K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information: 24 HOUR EMERGENCY CONTACT JIM PHONE 714-765-2251
GLOVES & GOGGLES TANK(S) 1112, 1113, 1114

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas W. Bowman — Signature: [illegible] — Month Day Year: 10 10 01

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

89891736

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW: GENERATOR RETAINS

Appendix B

SMITH-EMERY CO PANY
The Full Service Independent Testing Laboratory, Established 1904

781 East Washington Boulevard • Los Angeles, California 90021 • (213) 749-3411 • Fax: (213) 746-7228
P.O. Box 880550, Hunter's Point Shipyard Bldg 114 • San Francisco, California 94188 • (415) 330-3000 • Fax: (415) 822-5864
5427 East La Palma Avenue • Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

SHEWEY ENVIRONMENTAL MGMT. CO. 08/14/91
FILE # 71959
41360 DIXON DR.
HEMET, CA 92343

Attn: CHAD BEERS
714/765/2700

CRAZY JOE'S VW REPAIR, C-014
CHAIN OF CUSTODY

Sample #: 1220180101
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 1A

CONSTITUENT	METHOD	RESULT	UNIT
EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180102
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 1B

EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

 (ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit) 12201801

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5427 East La Palma Avenue • Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

Sample #: 1220180103
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 2A

CONSTITUENT	METHOD	RESULT	UNIT
EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180104
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 2B

EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180105
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - 3A

TOTAL PETROLEUM HYDROCARBONS	EPA 418.1	8.1	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG

 (ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit) 12201801

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5427 East La Palma Avenue • Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

CONSTITUENT	METHOD	RESULT	UNIT
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG

Sample #: 1220180106
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - D - E

EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	13	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Sample #: 1220180107
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1200
Method: GRAB

I.D.: S - D - W

EPA 8015			
GASOLINE	EPA 8015	ND < 5 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	15	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	41	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

 ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit] 12201801

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5427 East La Palma Avenue

• Los Angeles, California 90021 • (213) 749-3411 • Fax: (213) 746-7228
• San Francisco, California 94188 • (415) 330-6000 • Fax: (415) 822-5864
• Anaheim, California 92807 • (714) 693-1026 • Fax: (714) 693-1034

Sample #: 1220180108
Received: 08/08/91
Type: SOIL

Collector: Client
Sampling Date & Time: 08/08/91, 1400
Method: GRAB

I.D.: S - PL - 1

CONSTITUENT	METHOD	RESULT	UNIT
EPA 8015			
GASOLINE	EPA 8015	ND < 1 *	MG/KG
EPA 8020			
BENZENE	EPA 8020	ND < 5 *	UG/KG
TOLUENE	EPA 8020	ND < 5	UG/KG
ETHYLBENZENE	EPA 8020	ND < 10	UG/KG
XYLENES	EPA 8020	ND < 10	UG/KG
LEAD, ORGANIC	EPA 3040/7420	ND <0.2	MG/KG

Respectfully submitted,

Shahid Noori, Manager Chemical Lab

Adriana Tuculescu, Inorg. Supv.

ND = None Detected; (G) = Grab; MDL = Minimum Detection Limit

12201801

ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS. AUTHORIZATION FOR PUBLICATION OF OUR REPORT, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING THEM IS RESERVED PENDING OUR WRITTEN APPROVAL AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES.

SMITH-EMERY COMPANY An Independent Commercial Testing Laboratory Established 1910
781 EAST WASHINGTON BOULEVARD · LOS ANGELES, CALIFORNIA 90021 · (213) 749-3411

FILE NO.: 71959
LABORATORY NO.: 122018010

CHAIN OF CUSTODY RECORD

Client name: SHEWEY ENVIRONMENTAL
Job number: C-014
Project name: CRAZY JOE'S VW REPAIR
Project manager: C. BEERS
Sampler(s): CHAD BEERS

Analyses required

Sample number	Date sampled	Time sampled	Type Composite or Grab	Sample description	Number of containers	8015 GAS	8020	HIB.1	ORGANIC LEAD					Remarks
1	8/8	12:00	G	S-1A	1	✓	✓		✓					
2				S-1B	1	✓	✓		✓					
3				S-2A	1	✓	✓		✓					
4				S-2B	1	✓	✓		✓					
5				S-3A	1		✓	✓						
6				S-D-E	1	✓	✓		✓					
7				S-D-W	1	✓	✓		✓					
8	8/8	14:00	G	S-PL-1	1	✓	✓		✓					

	Signature	Company	Date	Time
Relinquished by	C BEERS	SHEWEY	13:15	8/8/91
Received by	[illegible]	SMITH EMERY	8/8/91	13:15
Relinquished by				
Received by				
Relinquished by				
Received by				

APPENDIX B

RECEIVED
NOV 1 2 2001
BY: GEOCON

October 25, 2001

John Juhrend
Geocon Environmental
11375 Sunrise Park Drive #100
Rancho Cordova, CA 95742
TEL: (916) 852-9118
FAX (916) 852-9132

ELAP No: 1838

RE: Greenway Trail - A8050-06-03

Work Order No.: 053611

Attention: John Juhrend

Enclosed are the results for sample(s) received on October 24, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Edgar Caballero
Laboratory Director

This cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Print Date: *10/25/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S11-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:00:00 PM
Lab ID:	053611-001A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011025C** BatchID: **6140**				PrepDate:	**10/25/01**	Analyst: **RQ**
Antimony	16	0.25		mg/Kg	1.0	10/25/01
Arsenic	30	0.25		mg/Kg	1.0	10/25/01
Barium	250	0.15		mg/Kg	1.0	10/25/01
Beryllium	ND	0.15		mg/Kg	1.0	10/25/01
Cadmium	ND	0.15		mg/Kg	1.0	10/25/01
Chromium	52	0.15		mg/Kg	1.0	10/25/01
Cobalt	16	0.15		mg/Kg	1.0	10/25/01
Copper	3400	0.15		mg/Kg	1.0	10/25/01
Lead	6200	1.0		mg/Kg	4.0	10/25/01
Molybdenum	7.5	0.25		mg/Kg	1.0	10/25/01
Nickel	120	0.15		mg/Kg	1.0	10/25/01
Selenium	ND	0.25		mg/Kg	1.0	10/25/01
Silver	0.50	0.15		mg/Kg	1.0	10/25/01
Thallium	2.5	0.25		mg/Kg	1.0	10/25/01
Vanadium	54	0.15		mg/Kg	1.0	10/25/01
Zinc	430	0.50		mg/Kg	1.0	10/25/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011025B** BatchID: **6141**				PrepDate:	**10/25/01**	Analyst: **NS**
Mercury	1.4	0.10		mg/Kg	1.0	10/25/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *10/25/01*

CLIENT:	Geocon Environmental	Client Sample ID:	S12-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	Collection Date:	10/24/01 2:05:00 PM
Lab ID:	053611-002A	Matrix:	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011025C** BatchID: **6140**				PrepDate:	**10/25/01**	Analyst: **RQ**
Antimony	3.0	0.25		mg/Kg	1.0	10/25/01
Arsenic	15	0.25		mg/Kg	1.0	10/25/01
Barium	150	0.15		mg/Kg	1.0	10/25/01
Beryllium	ND	0.15		mg/Kg	1.0	10/25/01
Cadmium	4.0	0.15		mg/Kg	1.0	10/25/01
Chromium	34	0.15		mg/Kg	1.0	10/25/01
Cobalt	10	0.15		mg/Kg	1.0	10/25/01
Copper	840	0.15		mg/Kg	1.0	10/25/01
Lead	1200	0.25		mg/Kg	1.0	10/25/01
Molybdenum	7.0	0.25		mg/Kg	1.0	10/25/01
Nickel	140	0.15		mg/Kg	1.0	10/25/01
Selenium	ND	0.25		mg/Kg	1.0	10/25/01
Silver	0.32	0.15		mg/Kg	1.0	10/25/01
Thallium	1.0	0.25		mg/Kg	1.0	10/25/01
Vanadium	120	0.15		mg/Kg	1.0	10/25/01
Zinc	750	0.50		mg/Kg	1.0	10/25/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011025B** BatchID: **6141**				PrepDate:	**10/25/01**	Analyst: **NS**
Mercury	0.72	0.10		mg/Kg	1.0	10/25/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *10/25/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S16-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:35:00 PM
Lab ID:	053611-008A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011025C** BatchID: **6140**				PrepDate: **10/25/01**		Analyst: **RQ**
Antimony	0.47	0.25		mg/Kg	1.0	10/25/01
Arsenic	7.5	0.25		mg/Kg	1.0	10/25/01
Barium	90	0.15		mg/Kg	1.0	10/25/01
Beryllium	ND	0.15		mg/Kg	1.0	10/25/01
Cadmium	ND	0.15		mg/Kg	1.0	10/25/01
Chromium	15	0.15		mg/Kg	1.0	10/25/01
Cobalt	7.5	0.15		mg/Kg	1.0	10/25/01
Copper	19	0.15		mg/Kg	1.0	10/25/01
Lead	29	0.25		mg/Kg	1.0	10/25/01
Molybdenum	0.50	0.25		mg/Kg	1.0	10/25/01
Nickel	10	0.15		mg/Kg	1.0	10/25/01
Selenium	ND	0.25		mg/Kg	1.0	10/25/01
Silver	ND	0.15		mg/Kg	1.0	10/25/01
Thallium	1.0	0.25		mg/Kg	1.0	10/25/01
Vanadium	28	0.15		mg/Kg	1.0	10/25/01
Zinc	64	0.50		mg/Kg	1.0	10/25/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011025B** BatchID: **6141**				PrepDate: **10/25/01**		Analyst: **NS**
Mercury	ND	0.10		mg/Kg	1.0	10/25/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *25-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT
Method Blank

Sample ID **MB-6140** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**
MBLK SeqNo: **197177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.25		0				0			
Arsenic	ND	0.25		0				0			
Barium	ND	0.15		0				0			
Beryllium	ND	0.15		0				0			
Cadmium	ND	0.15		0				0			
Chromium	ND	0.15		0				0			
Cobalt	ND	0.15		0				0			
Copper	ND	0.15		0				0			
Lead	ND	0.25		0				0			
Molybdenum	ND	0.25		0				0			
Nickel	ND	0.15		0				0			
Selenium	ND	0.25		0				0			
Silver	ND	0.15		0				0			
Thallium	ND	0.25		0				0			
Vanadium	ND	0.15		0				0			
Zinc	ND	0.50		0				0			

Sample ID **MB-6141** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**
MBLK SeqNo: **197069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10		0				0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *25-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID **053611-008AMS** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MS SeqNo: **197184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	82	0.25	125	0.47	66	32	115	0			
Arsenic	120	0.25	125	7.5	94	59	111	0			
Barium	440	0.15	125	90	283	34	151	0			S
Beryllium	110	0.15	125	0	89	56	112	0			
Cadmium	100	0.15	125	0	80	52	120	0			
Chromium	130	0.15	125	15	94	56	118	0			
Cobalt	110	0.15	125	7.5	84	58	117	0			
Copper	150	0.15	125	19	106	58	134	0			
Lead	140	0.25	125	29	85	47	128	0			
Molybdenum	110	0.25	125	0.5	87	56	115	0			
Nickel	120	0.15	125	10	87	52	120	0			
Selenium	110	0.25	125	0	86	46	108	0			
Silver	110	0.15	125	0	89	74	117	0			
Thallium	110	0.25	125	1	84	62	117	0			
Vanadium	160	0.15	125	28	107	55	122	0			
Zinc	260	0.50	125	64	156	43	134	0			S

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID **053611-008AMS** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MSD SeqNo: **197185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	89	0.25	125	0.47	71	32	115	82	8	20	
Arsenic	130	0.25	125	7.5	95	59	111	120	4	20	
Barium	230	0.15	125	90	116	34	151	440	63	20	R
Beryllium	120	0.15	125	0	94	56	112	110	7	20	
Cadmium	110	0.15	125	0	87	52	120	100	10	20	
Chromium	130	0.15	125	15	94	56	118	130	2	20	
Cobalt	120	0.15	125	7.5	89	58	117	110	6	20	
Copper	150	0.15	125	19	103	58	134	150	1	20	
Lead	140	0.25	125	29	87	47	128	140	4	20	
Molybdenum	110	0.25	125	0.5	91	56	115	110	1	20	
Nickel	120	0.15	125	10	91	52	120	120	1	20	
Selenium	110	0.25	125	0	90	46	108	110	2	20	
Silver	110	0.15	125	0	92	74	117	110	1	20	
Thallium	110	0.25	125	1	90	62	117	110	4	20	
Vanadium	160	0.15	125	28	104	55	122	160	1	20	
Zinc	190	0.50	125	64	102	43	134	260	31	20	R

Sample ID **053611-008AMS** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MS SeqNo: **197066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.92	0.10	0.83	0.074	101	62	146	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: _____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID **053611-008AMS** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

MSD SeqNo: **197067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.87	0.10	0.83	0.074	95	62	146	0.92	5	33	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *25-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **LCS-6140** Batch ID: **6140** Test Name **ICP METALS** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

LCS SeqNo: **197178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46	0.25	50	0	93	80	120	0			
Arsenic	48	0.25	50	0	96	80	120	0			
Barium	49	0.15	50	0	98	80	120	0			
Beryllium	48	0.15	50	0	96	80	120	0			
Cadmium	48	0.15	50	0	95	80	120	0			
Chromium	48	0.15	50	0	96	80	120	0			
Cobalt	46	0.15	50	0	92	80	120	0			
Copper	48	0.15	50	0	97	80	120	0			
Lead	46	0.25	50	0	92	80	120	0			
Molybdenum	48	0.25	50	0.15	97	80	120	0			
Nickel	46	0.15	50	0	91	80	120	0			
Selenium	45	0.25	50	0	90	80	120	0			
Silver	40	0.15	50	0.022	80	80	120	0			
Thallium	48	0.25	50	0.21	95	80	120	0			
Vanadium	50	0.15	50	0	99	80	120	0			
Zinc	46	0.50	50	0	92	80	120	0			

Sample ID **LCS-6141** Batch ID: **6141** Test Name **MERCURY BY COLD VAPOR TECHNIQUE** Units **mg/Kg** Analysis Date: **10/25/01** Prep Date: **10/25/01**

LCS SeqNo: **197068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.1	0.10	2.08	0	99	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories

Print Date: *10/30/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S11-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:00:00 PM
Lab ID:	053611-001A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 1311/ 6010B**			
RunID: **ICP2_011029G**	BatchID: **6196**			PrepDate: **10/29/01**		Analyst: **RQ**
Copper	5.0	0.10		mg/L	1.0	10/29/01
Lead	14	0.10		mg/L	1.0	10/29/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *10/30/01*

CLIENT:	Geocon Environmental	**Client Sample ID:**	S12-0 (SOIL)
Lab Order:	053611		
Project:	Greenway Trail - A8050-06-03	**Collection Date:**	10/24/01 2:05:00 PM
Lab ID:	053611-002A	**Matrix:**	Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 1311/ 6010B**			
RunID: **ICP2_011029G**	BatchID: **6196**			PrepDate:	**10/29/01**	Analyst: **RQ**
Copper	0.53	0.10		mg/L	1.0	10/29/01
Lead	0.74	0.10		mg/L	1.0	10/29/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Diane

From: John Juhrend [juhrend@geoconinc.com]
Sent: Friday, October 26, 2001 12:26 PM
To: Diane Galvan
Subject: Greenway Trail

Diane -

Please analyze the following for TCLP lead and copper on 48-hr TAT:

053611-001A S11-0
053611-002A S12-0

Please reply confirming receipt of this request. Thanks for the excellent
service!

Sincerely,

John E. Juhrend, PE, CEG
Geocon Consultants, Inc.
11375 Sunrise Park Drive, Suite 100
Rancho Cordova, CA 95742
916.852.9118 Tel
916.852.9132 Fax
juhrend@geoconinc.com

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT
Method Blank

Sample ID **MB-6196** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**
MBLK SeqNo: **198640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.10		0				0			
Lead	ND	0.10		0				0			

Sample ID **MB-6189-TCLP** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**
MBLK SeqNo: **198641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.10	0	0	0	0	0	0			J
Lead	ND	0.10	0	0	0	0	0	0			J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: _____

All calculations are based on raw values.

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT:
Work Order:
Project:

QC SUMMARY REPORT

#Error

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
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DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **053611-001AMS** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**

MS SeqNo: **198646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12	0.10	2.5	5	269	72	123	0			S
Lead	18	0.10	2.5	14	141	66	118	0			S

Sample ID **053611-001AMS** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**

MSD SeqNo: **198647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	8.4	0.10	2.5	5	135	72	123	12	33	20	SR
Lead	17	0.10	2.5	14	112	66	118	18	3	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *30-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **LCS-6196** Batch ID: **6196** Test Name **ICP METALS by TCLP Extraction** Units **mg/L** Analysis Date: **10/29/01** Prep Date: **10/29/01**

LCS SeqNo: **198642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.98	0.10	1	0	98	80	120	0			
Lead	0.98	0.10	1	0	98	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: ____

All calculations are based on raw values.

October 29, 2001

John Juhrend
Geocon Environmental
11375 Sunrise Park Drive #100
Rancho Cordova, CA 95742
TEL: (916) 852-9118
FAX (916) 852-9132

ELAP No: 1838

RE: Greenway Trail - A8050-06-03

Work Order No.: 053611

Attention: John Juhrend

Enclosed are the results for sample(s) received on October 24, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Edgar Caballero
Laboratory Director

This cover letter and a case narrative are an integral part of this analytical report.

CLIENT: Geocon Environmental
Project: Greenway Trail - A8050-06-03
Lab Order: 053611

CASE NARRATIVE

Samples for Asbestos PLM were subcontracted to Scientific Laboratories of California, Inc.

The following is the list of corresponding Work Order/Client Sample ID's:

Work Order No.	Client Sample ID
053611-003A	ASB-1 (MATERIAL)
053611-005A	ASB-2 (MATERIAL)

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

SCIENTIFIC LABORATORIES OF CALIFORNIA, INC.
24416 SOUTH MAIN STREET • SUITE 308
CARSON, CA 90745
TEL: (310) 834-4868 • FAX: (310) 834-477

PLM Bulk Asbestos Report

Advanced Technology Laboratories
Attn: Rachel Arada
3275 Walnut Street
Signal Hill , CA 90807

Date Received 10/26/2001
Date Examined 10/27/2001
RE:

SciLab Job No. 901101714
P.O. # 21547
Page 1 of 2

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
053611-003A/ASB-1	901101714-01	*Yes*	85 %

Location Solid

Description: Grey, Homogeneous, Bulk Material
Asbestos Types Amosite 20. %. Chrysotile 65. %
Other Material: Non-fibrous 15. %

053611-005A/ASB-2	901101714-02.1	*No*	NAD

Location Solid

Description: Black, Homogeneous, Felt
Asbestos Types
Other Material: Cellulose 30. %. Non-fibrous 70. %

053611-005A/ASB-2	901101714-02.2	*Yes*	60 %

Location Solid

Description: White, Heterogeneous, Pipe Insulation
Asbestos Types Chrysotile 60. %
Other Material: Non-fibrous 40. %

053611-005A/ASB-2	901101714-02.3	*Yes*	30 %

Location Solid

Description: Grey, Heterogeneous, Transite
Asbestos Types Chrysotile 30. %
Other Material: Non-fibrous 70. %

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PLM Bulk Asbestos Report

Advanced Technology Laboratories
Attn: Rachel Arada
3275 Walnut Street
Signal Hill , CA 90807

Date Received 10/26/2001
Date Examined 10/27/2001

SciLab Job No. 901101714
P.O. # 21547
Page 2 of 2

RE:

Reporting Notes:

Analyzed by: Kieuanh Pham Duong Kieuanh Duong ; Date Analyzed: 10/27/01

*NAD/NSD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysi by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: _____

Advanced Technology Laboratorie
3275 Walnut Street
Signal Hill, California 90807-
(562) 989-4045

SUB CHAIN-OF-CUSTODY RECORD

90110714

Subcontractor:
Scientific
24416 S. Main St.
Carson, CA 90308

TEL: (310) 834-4868
FAX: (310) 834-4772

Acct #:

QClevel: CT-TR1

24-Oct-01

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests: SM 100.1				
053611-003A \ ASB-1(Material)	Solid	10/24/01 2:10:00 PM	ZIPLOCK	1				
053611-005A \ ASB-2 (material)	Solid	10/24/01 2:20:00 PM	ZIPLOCK	1				

Comments: Results needed by 10/30/01 PO#21547

		Date/Time			Date/Time
Relinquished by:	[illegible]	10/24/01	Received by:	[illegible]	10/26/01 10:05
Relinquished by:			Received by:		

Advanced Technology Laboratories

Print Date: *29-Oct-01*

CLIENT:	Geocon Environmental	**Test No:**	EPA 9045C
Lab Order:	053611	**Units:**	pH Units
Project:	Greenway Trail - A8050-06-03	**Analyst:**	CA

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	pH	PQL	Qual	DF	Analysis Date
053611-004A	S13-0 (SOIL)	Soil	10/24/01	R12696	8.18	0.1		1	10/26/01
053611-007A	S15-0 (WHITE CHALK)	Soil	10/24/01	R12696	11.08	0.1		1	10/26/01

Qualifiers:

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DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *29-Oct-01*

CLIENT: Geocon Environmental
Work Order: 053611
Project: Greenway Trail - A8050-06-03

QC SUMMARY REPORT

Sample Duplicate

Sample ID **053558-101adup** Batch ID: **R12696** Test Name **pH** Units **pH Uni** Analysis Date: **10/26/01** Prep Date: **10/26/01**

dup SeqNo: **197466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7	0.10	0	0	0	0	0	6.9	1	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: _____

All calculations are based on raw values.

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: Date: Time:

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☑

Sample Condition Upon Receipt:
1. CHILLED Y ☑ N ☐ 4. SEALED Y ☐ N ☐
2. HEADSPACE (VOA) Y ☐ N ☐ 5. # OF SPLS MATCH COC Y ☐ N ☐
3. CONTAINER INTACT Y ☐ N ☐ 6. PRESERVED Y ☐ N ☐

Client: GEOCON SACRAMENTO
Attn: JOHN JUNGERS
Address: 11375 SUNRISE PK. DRIVE #400
City: RANCHO CORDOVA State: CA Zip Code: 95742
TEL: (916) 852 9115
FAX: (916) 852 9132

Project Name: GREENWAY TRACK
Project #: A8052-06-03
Sampler: JOHN JUNGERS (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Date: 10/24/01 Time: 15:00 Received by: (Signature and Printed Name) ATL Date: 10/24/01 Time: 15:00
Relinquished by: (Signature and Printed Name) ATL Date: 10/24/01 Time: 19:30 Received by: (Signature and Printed Name) Date: 10/25/01 Time: 9:20 AM
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name Date
Signature

Send Report To:
Attn:
Co:
Address
City State Zip

Bill To:
Attn:
Co:
Address
City State Zip

Special Instructions/Comments:
PLEASE FAX COPY OF CHAIN TO GEOCON 916 852 9132

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other
☐ Return To:
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL

Circle or Add Analyte(s) Requested: 8260 / 8260 (Protocol/CR-GC); 8260 (Volatiles-SC/HS); 625 / 8270 (BNA-SC/HS); Metals-Total (CAC-6010 / 7000); 8015M TPH/BETEX (COMBINATION); 8015M TPH/D (Diesel-GC); PLUS MOISTURE; SOIL OIL

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE; OIL • SOLVENT • LIQUID; WATER • WASTEWATER; DRINKING WATER; AIR; WIPE • FILTER; OTHER

QA/QC: RTNE ☐ RWQCS ☐ WP ☐ NAVY ☐ CT ☐ OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	053611-001	S11-0 (SOIL)	10/24/01	1400	A	1	BP		
	002	S12-0 (SOIL)		1405	A	1	BP		
	003	ASB-1 (MANUAL)		1410	E	1	BP		5 SUBMITTED
	004	S13-0 (SOIL)		1415	E	1	BP		
	005	ASB-2 (MANUAL)		1420	E	1	BP		4 SUBMITTED
	006	S14-0 (SOIL)		1425		1	BP		HOLD
	007	S15-0 (WATER CANAL)		1430	E	1	BP		
	008	S16-0 (SOIL)		1435	A	1	BP		

* TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Advanced Technology
Laboratories

3275 Walnut Avenue
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: Geocon-RC / Attn: John Juhrend

From: Diane

RE: Results for 053697

Message:

Enclosed are the results for your Project Greenway Trail. Thank you very much for your business and we are looking forward to being of service to you.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Date: *01-Nov-01*

CLIENT: Geocon Environmental
Project: Greenway Trail - A8050-06-03
Lab Order: 053697

CASE NARRATIVE

Samples for Asbestos PLM were subcontracted to Scientific Laboratories of California, Inc.

The following is the list of corresponding Work Order/Client Sample ID's:

Work Order No.	Client Sample ID
053697-032A	T32 BACKING STRIP

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-001A	B1-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-002A	B1-12	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-003A	B2-2	Soil	10/30/01	6253	38	5		1	11/1/01
053697-004A	B2-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-005A	B2-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-006A	B3-2	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-007A	B3-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-008A	B3-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-009A	B4-3	Soil	10/30/01	6253	7.2	5		1	11/1/01
053697-010A	B4-4	Soil	10/30/01	6253	2200	5		1	11/1/01
053697-011A	B4-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-012A	B5-2	Soil	10/30/01	6253	5.1	5		1	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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DO - Surrogate Diluted Out
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H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-013A	B5-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-014A	B5-7	Soil	10/30/01	6253	8.7	5		1	11/1/01
053697-015A	B5-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-016A	B5-12	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-017A	B6-2	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-018A	B6-4	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-019A	B6-6	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-020A	B6-8	Soil	10/30/01	6253	ND	5		1	11/1/01
053697-021A	B6-12	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-022A	B7-2	Soil	10/30/01	6256	560	5		1	11/1/01
053697-023A	B7-4	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-024A	B7-8	Soil	10/30/01	6256	ND	5		1	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
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Initials: _____

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-025A	B7-12	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-026A	B8-4	Soil	10/30/01	6256	10	5		1	11/1/01
053697-027A	B8-8	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-028A	B9-2	Soil	10/30/01	6256	24	5		1	11/1/01
053697-029A	B9-4	Soil	10/30/01	6256	17	5		1	11/1/01
053697-030A	B9-8	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-031A	T32-.5	Soil	10/30/01	6256	5.5	5		1	11/1/01
053697-033A	T33-1	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-034A	T34-1	Soil	10/30/01	6256	82	5		1	11/1/01
053697-035A	T34-3	Soil	10/30/01	6256	6.1	5		1	11/1/01
053697-036A	T35-1	Soil	10/30/01	6256	1500	5		1	11/1/01
053697-037A	T35-3	Soil	10/30/01	6256	8.1	5		1	11/1/01

Qualifiers:
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Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-038A	T36-1	Soil	10/30/01	6256	990	5		1	11/1/01
053697-039A	T36-3	Soil	10/30/01	6256	5.8	5		1	11/1/01
053697-040A	T37-3	Soil	10/30/01	6256	ND	5		1	11/1/01
053697-041A	T38-4.5	Soil	10/30/01	6256	12	5		1	11/1/01
053697-042A	T39-1	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-043A	T40-1	Soil	10/30/01	6257	6.9	5		1	11/1/01
053697-044A	T41-3	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-045A	T42-1	Soil	10/30/01	6257	5.4	5		1	11/1/01
053697-046A	T43-1.5	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-047A	T44-3	Soil	10/30/01	6257	5.0	5		1	11/1/01
053697-048A	T45-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-049A	T46-2	Soil	10/30/01	6257	ND	5		1	11/1/01

Qualifiers:
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DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
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M - Not Monitored. Highly Reactive

Initials: [illegible]

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-050A	T47-1	Soil	10/30/01	6257	880	5		1	11/1/01
053697-051A	T47-2	Soil	10/30/01	6257	43	5		1	11/1/01
053697-052A	T48-3	Soil	10/30/01	6257	260	5		1	11/1/01
053697-053A	T49-1	Soil	10/30/01	6257	5.6	5		1	11/1/01
053697-054A	T50-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-055A	T51-1	Soil	10/30/01	6257	68	5		1	11/1/01
053697-056A	T52-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-057A	T53-2	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-058A	T54-1.5	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-059A	T55-.5	Soil	10/30/01	6257	ND	5		1	11/1/01
053697-060A	T55-1.5	Soil	10/30/01	6257	290	5		1	11/1/01
053697-061A	T56-3	Soil	10/30/01	6257	5.7	5		1	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: [illegible]

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *08-Nov-01*

CLIENT: Geocon Environmental
Lab Order: 053697
Project: Greenway Trail - A8050-06-03

Test No: EPA 6010B
Units: mg/Kg
Analyst: RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-062A	T57-1	Soil	10/30/01	6258	24	5		1	11/1/01
053697-063A	T58-1	Soil	10/30/01	6258	5.1	5		1	11/1/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: R

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *01-Nov-01*

CLIENT:	Geocon Environmental	**Test No:**	EPA 6010B
Lab Order:	053697	**Units:**	mg/Kg
Project:	Greenway Trail - A8050-06-03	**Analyst:**	RQ

Sample ID	Client Sample ID	Matrix	Collection Date	QC Batch	Lead	PQL	Qual	DF	Analysis Date
053697-064A	RET PAINT	Paint Chip	10/30/01	6254	11	0.79		3.165	11/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored, Highly Reactive

Initials: RA

1

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

SCIENTIFIC LABORATORIES OF CALIFORNIA, INC.
24416 SOUTH MAIN STREET • SUITE 308
CARSON, CA 90745
TEL: (310) 834-4868 • FAX: (310) 834-4771

PLM Bulk Asbestos Report

Advanced Technology Laboratories
Attn: Rachel Arada
3275 Walnut Street
Signal Hill , CA 90807

Date Received 10/31/2001
Date Examined 10/31/2001
RE:

SciLab Job No. 901101843
P.O. # 21555
Page 1 of 1

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
053697-032A	901101843-01	*Yes*	3 %

Location: T32 Backing Stip/Solid

Description: Black/Brown, Heterogeneous, Bulk Material
Asbestos Types: Chrysotile 3. %
Other Material: Non-fibrous 97. %

Reporting Notes:

Analyzed by: Kieuanh Pham Duong Kieuanh Duong ; Date Analyzed: 10/31/01

*NAD/NSD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By:_____

Advanced Technology Laboratorie
3275 Walnut Street
Signal Hill, California 90807-
(562) 989-4045

SUB CHAIN-OF-CUSTODY RECORD

901101843

Subcontractor:
Scientific
24416 S. Main St.
Carson, CA 90308

TEL: (310) 834-4668
FAX: (310) 834-4772

Acct #:

QClevel: CT-TR1

30-Oct-01

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests: SM 100.1
053697-032A \ T32 Backing stip	Solid	10/30/01 11:55:00 AM	ZIPLOCK	1

Comments: RUSH! Need results by 11/1/01. PO# 21555.

		Date/Time			Date/Time
Relinquished by:	[illegible]	10/30/01	Received by:	[illegible]	10/31/01
Relinquished by:			Received by:		

B:a

Vironex Inc. ATL
3002 Dow Ave, Ste. 406
Tustin, CA 92780
1-800-847-6639

Chain of Custody Record

Client: GEOKON CONSULTANTS
Address: 11375 SUNRISE PARK DRIVE #100
Phone: 916 852 9118 Fax: 916 852 9132
Project Manager: JOHN JUNGEND

Date: 10/30/01 Page: 2 of 5
Project Name: GREENWAY TRAIL
Collector: JJ Client Project #: A8050-06-03
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	TOTAL LEAD			Laboratory ID #	Preservative	Comments	Total # of containers
B1-8	10/30/01	0730	SOIL											X					PLEASE HOMOGENIZE ALL SAMPLES PRIOR TO ANALYSIS 48-HR TAT	
B1-12		0735												X						
B2-2		0740												X					HOLD	
B2-4		0745												X						
B2-8		0750												X						
B3-2		0800												X					HOLD	
B3-4		0810												X						
B3-8		0815												X						
B4-3		0820												X					HOLD	
B4-4		0825												X						
B4-8		0830												X						
B5-2		0835												X						
B5-4		0840												X						
B5-7		0845												X						
B5-8		0850												X						

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 1600	[signature]	10/30/01 16:30
Relinquished by: (signature) JA	Date / Time 10/30/01 16:30	Received by: (signature) [signature]	Date / Time 10/30/01 6:30 PM
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Turn around time: 48 HR

Notes

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc. ATL
3002 Dow Ave, Ste. 406
Tustin, CA 92780
1-800-847-6639

Chain of Custody Record

Client: GEOCON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01 Page: 2 Of 5
Project Name: GREENWAY TRAIL
Collector: JS Client Project #: A8050-06-03
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	TOTAL LEAD			Laboratory ID #	Preservative	Comments	Total # of containers
																			SEE PAGE #1	
B5-12	10/30/01	0900	Soil											X						
B6-2		0905												X					HOLD	
B6-4		0910												X						
B6-6		0915												X						
B6-8		0920												X						
B6-12		0930												X						
B7-2		0935												X					HOLD	
B7-4		0940												X						
B7-8		0950												X						
B7-12		1000												X					HOLD	
B8-4		1010												X					HOLD	
B8-8		1020												X						
B9-2		1025												X						
B9-4		1030												X						
B9-8		1040												X						

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 1600	[signature]	10/30/01 1630
[signature]	10/30/01 18:30	[signature]	10/31/01 0:37 AM

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Notes

Turn around time: 48 HR

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc. ATL
3002 Dow Ave, Ste. 406
Tustin, CA 92780
1-800-847-6639

Chain of Custody Record

Client: GEOCON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01 Page: 3 Of 5
Project Name: GREENWAY TRAIL
Collector: JO Client Project #: A8050-06-01
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals		TOTAL LEAD	PURGEABLES	Laboratory ID #	Preservative	Comments	Total # of containers
																			SEE PAGE #1	
T32-5	10/30/01	1150	SOIL												X					
T32 BACKING STRIP		1155	SOLID													X				
T33-1		1200	SOIL												X	X				
T34-1		1205													X	X				
T34-3		1210													X	X				
T35-1		1215													X	X				
T35-3		1220													X	X				
T36-1		1225													X	X				
T36-3		1230													X	X				
T37-3		1240													X	X				
T38-4.5		1245													X	X				
T39-1		1250													X	X				
T40-1		1300													X	X				
T41-3		1310													X	X				
T42-1		1315													X	X				

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 1600		
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 18:30	[signature]	10/30/01 6:30 PM
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Turn around time: 48 HR

Notes

Sample Disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc.
3002 Dow Ave, Ste. 406
Tustin, CA 92780
1-800-847-6639

AR

ATL

Chain of Custody Record

Client: GEOCON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01 Page: 4 Of 5
Project Name: GREENWAY TRAIL
Collector: JJ Client Project #: A8050-06-03
Batch #: Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals	TOTAL LEAD	Laboratory ID #	Preservative	Comments	Total # of containers
																	SEE PAGE #1	
T43-1.5	10/30/01	1320	SOIL	BAGS										X				
T44-3		1325												X				
T45-2		1330												X				
T46-2		1340												X				
T47-1		1345												X				
T47-2		1350												X				
T48-3		1355			√	√								X				
T48-1		1400												X				
T50-2		1405												X				
T51-1		1410												X				
T52-2		1415												X				
T53-2		1420												X				
T54-1.5		1430												X				
T55-.5		1440												X				
T55-1.5		1445												X				

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
		JA	10/30/01 18:30
JA	10/30/01 18:30	[illegible]	10/30/01 [illegible]

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold

Notes

Turn around time: 48 HR

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Vironex Inc.
3002 Dow Ave. Ste. 406
Tustin, CA 92780
1-800-847-6639

ATL

Chain of Custody Record

B10-3 PLEASE ANALYZE ON 24-HR RUSH

Client: GRACON
Address:
Phone: Fax:
Project Manager:

Date: 10/30/01
Project Name: GREENWAY TRAIL
Collector: JS
Batch #:
Page: 5 Of 5
Client Project #: A8050-06-03
Proposal #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	EPA 8010	EPA 8020	EPA 8260	EPA 8270	EPA 418.1	EPA 8015M (gasoline)	EPA 8015M (diesel)	EPA 6010/7000 RCRA (8) Metals	EPA 6010/7000 Title 22 Metals		TOTAL LEAD		Laboratory ID #	Preservative	Comments	Total # of containers
TS6-3	10/30/01	1450	SOIL	BAG											X				SEE PAGE #1	
TS7-1	↓	1500	↓	↓											X					
TS8-1	↓	1505	↓	↓											X					
REF PAINT	↓	1050	PAINT	↓											X					
B10-3	↓	1100	SOIL	↓											X					

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
[signature]	10/30/01 1600	JOA	10/30/01 16:30
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
		[signature]	11/2/01
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
		Steadam	11/2/01 9AM

Total # of containers
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold
Turn around time: 48-HR

Notes

Sample Disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

Advanced Technology
Laboratories

3275 Walnut Avenue
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: Geocon-RC / Attn: John Juhrend

From: Diane

RE: Results for 053611

Message:

Enclosed are the results for your Project Greenway Trail. Thank you very much for your business and we are looking forward to being of service to you.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Client Sample ID: S13-0 (SOIL)
Lab Order: 053611
Project: Greenway Trail - A8050-06-03
Collection Date: 10/24/01 2:15:00 PM
Lab ID: 053611-004A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS				**EPA 6010B**		
RunID: ICP2_011107C BatchID: 6350				PrepDate: 11/6/01		Analyst: RQ
Lead	390	0.25		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Lab Order: 053611
Project: Greenway Trail - A8050-06-03
Lab ID: 053611-006A

Client Sample ID: S14-0 (SOIL)
Collection Date: 10/24/01 2:25:00 PM
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			EPA 6010B			
RunID: ICP2_011107C BatchID: 6350				PrepDate: 11/6/01		Analyst: RQ
Lead	550	0.25		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: Q

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Client Sample ID: S15-0 (WHITE CHALK)
Lab Order: 053611
Project: Greenway Trail - A8050-06-03
Collection Date: 10/24/01 2:30:00 PM
Lab ID: 053611-007A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS				EPA 6010B		
RunID: ICP2_011107C BatchID: 6350				PrepDate: 11/6/01		Analyst: RQ
Lead	33	0.25		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials:

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Diane

From: John Juhrend [juhrend@geoconinc.com]
Sent: Tuesday, November 06, 2001 12:29 PM
To: Diane Galvan
Subject: Greenway Trail

Diane -

Please also analyze the following soil samples for total lead under 24-hr
TAT:

ATL # 053611

-004 (S13-0)
-006 (S14-0
-007 (S15-0)

Please confirm receipt of this request. Thanks,

Sincerely,

John E. Juhrend, PE, CEG
Geocon Consultants, Inc.
11375 Sunrise Park Drive, Suite 100
Rancho Cordova, CA 95742
916.852.9118 Tel
916.852.9132 Fax
juhrend@geoconinc.com

Advanced Technology
Laboratories

3275 Walnut Avenue
Signal Hill CA 90807
(562) 989-4045 Phone
(562) 989-4040 Fax

Fax Transmittal Sheet

To: Geocon-RC / Attn: John Juhrend

From: Diane

RE: Results for 053749

Message:

Enclosed are the results for your Project Greenway Trail. Thank you very much for your business and we are looking forward to being of service to you.

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address. Thank you.

Advanced Technology Laboratories

Print Date: *11/5/01*

CLIENT: Geocon Environmental
Client Sample ID: B10-3
Lab Order: 053749
Project: Greenway Trail - A8050-06-03
Collection Date: 10/30/01 11:00:00 AM
Lab ID: 053749-001A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
LEAD BY ICP			EPA 6010B			
RunID: ICP2_011105A	BatchID: 6286			PrepDate: 11/2/01		Analyst: RQ
Lead	330	5.0		mg/Kg	1.0	11/5/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

APPENDIX C

SPECTRUM
GEOPHYSICS
Revealing The Subsurface

Mr. John Juhrend
Geocon Consultants
11375 Sunrise Park Drive; Suite 100
Rancho Cordova, CA 95742

October 26, 2001

RE: Explanation of Geophysical Services
Old Union Pacific Rail Line

Dear Mr. Juhrend:

On October 25, 2001, Spectrum Geophysics conducted a geophysical investigation at the Old Union Pacific Rail Line located at Magnolia and Hadley in Whittier, California. The purpose of the investigation was to identify possible buried metallic debris in an area approximately 290 x 15 feet in size. Our approach was to employ the Geonics' EM-61, a time-domain high definition metal detector and electromagnetic utility-locating instruments.

The EM-61 transmitter generates short pulses of electromagnetic energy which travel downward and outward and have a primary field associated with them. This energy becomes "trapped" in conductive materials and causes a secondary magnetic field to be generated in these materials. Between pulses, the receiver measures the voltage of the decay curve of this secondary magnetic field, which is proportional to the conductivity of the subsurface materials.

The geophysics crew established a grid and EM-61 voltage readings were taken, recorded and stored in a digital polycorder at 2.5-foot intervals along parallel lines spaced 2.5-feet apart. These data were downloaded to a laptop computer and processed. Contour maps were generated to assist in identifying anomalous areas that may represent buried debris. Utility-locating instruments were used to further characterize the source of significant EM-61 anomalies.

A previously uncovered site of metallic debris was located within the area of investigation and was the source of an anomaly approximately 120 millivolts in magnitude. Several anomalies with similar or greater signatures were identified elsewhere in the data. A storm drain and conduit were identified as the sources of a high magnitude anomaly along the north-west portion of the grid.

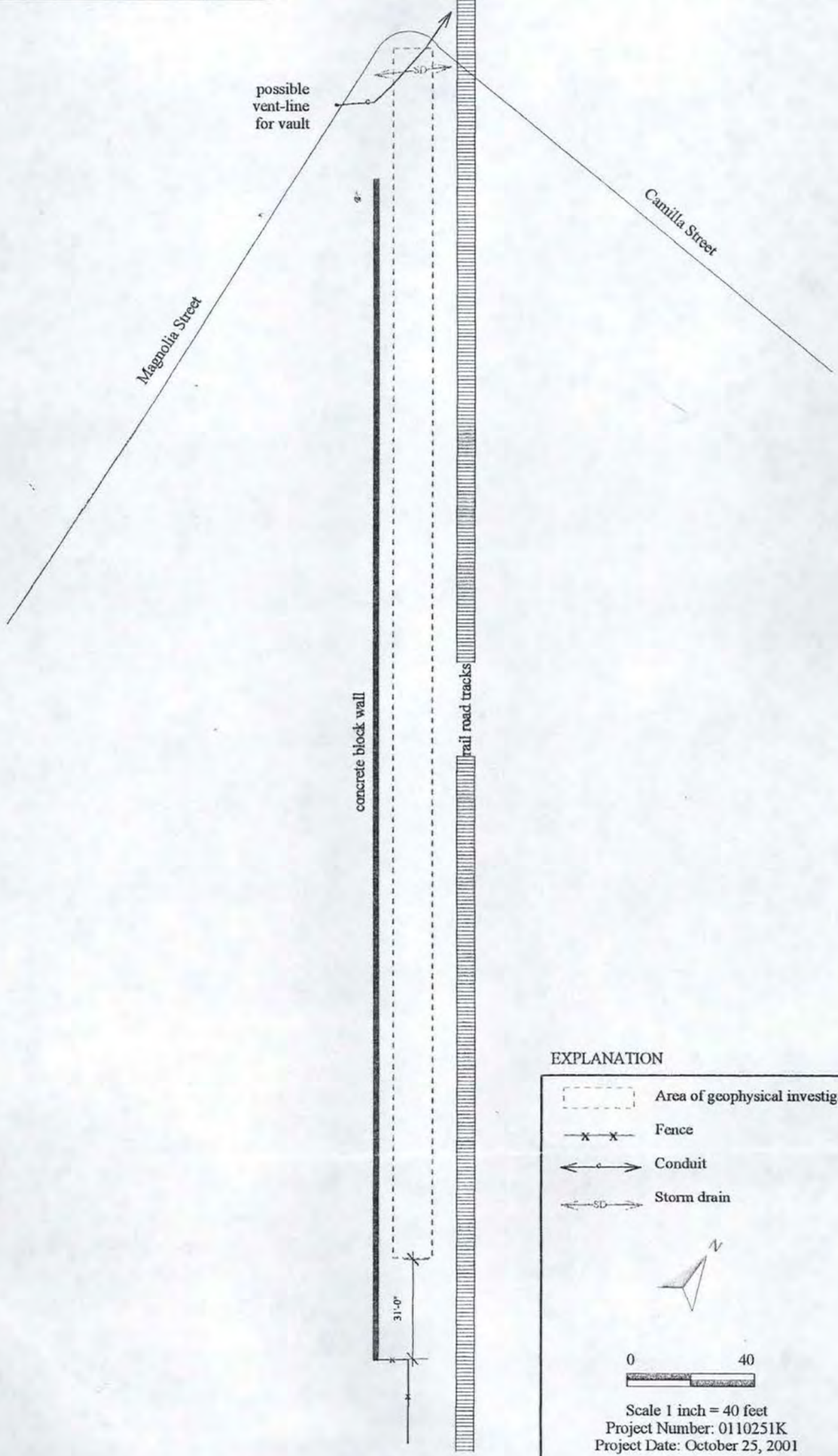
Sincerely,

Stephen Bagadinski

Stephen Bagadinski
Project Manager
bags@spectrum-geophysics.com

Area Of Geophysical Investigation
Old Union Pacific Rail Line
Magnolia and Hadley
Whittier, California

SPECTRUM
GEOPHYSICS
622 Glenoaks Boulevard, San Fernando, CA 91340
www.spectrum-geophysics.com



EXPLANATION

Area of geophysical investigation

Fence

Conduit

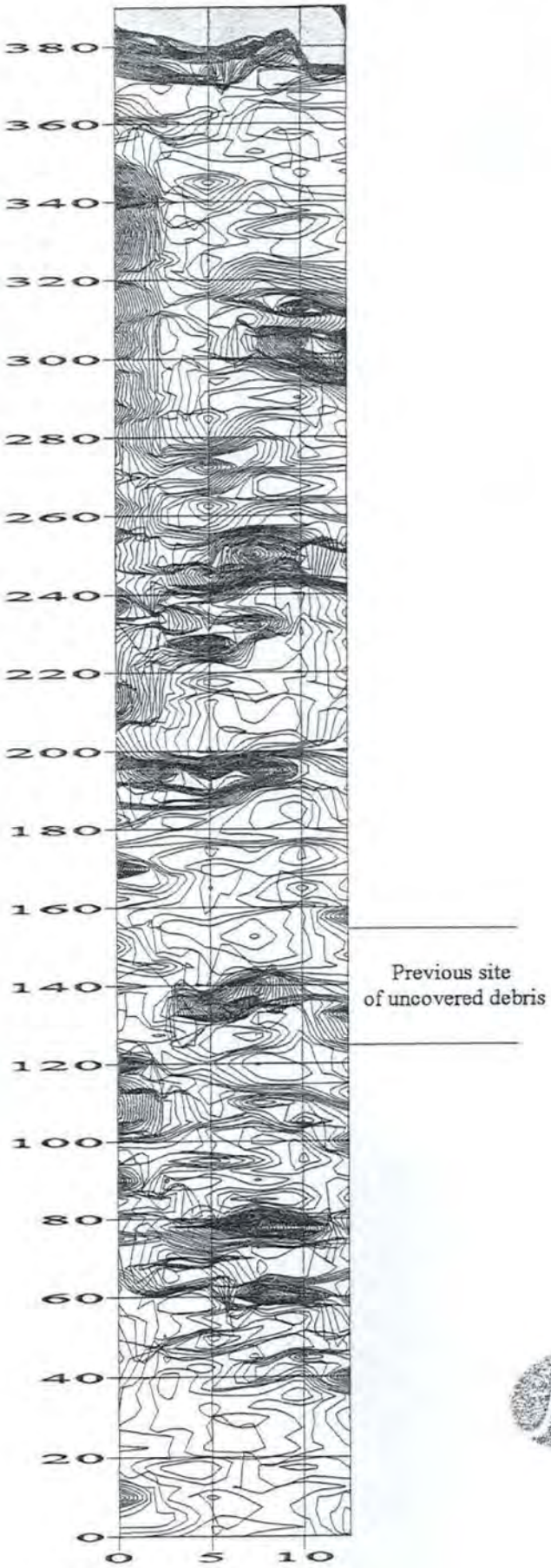
Storm drain

N

0 40

Scale 1 inch = 40 feet
Project Number: 0110251K
Project Date: October 25, 2001

EM-61 Data Top Coil Contour Map
Old Union Pacific Rail Line
Magnolia and Hadley
Whittier, California



millivolts

500
400
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

Contour Interval:
5 millivolts

SPECTRUM
GEOPHYSICS
622 Glenoaks Blvd., San Fernando, CA 91340

(Not to scale)
Project date: October 25, 2001
Project number: 0110251K

APPENDIX D

APPENDIX D

STATISTICAL METHODS

Statistical methods were applied to the slag ballast and underlying soil total arsenic, lead and vanadium data to evaluate: 1) the distribution of total metal concentrations for each sampling depth; 2) the upper confidence limits (UCLs) of the true means of the total metal concentrations for each sampling depth; and 3) if acceptable correlations between total and soluble metal concentrations exist that would allow the prediction of soluble metal concentrations based on calculated UCLs. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring,* by Richard Gilbert; in an EPA *Technology Support Center Issue* document entitled, *The Lognormal Distribution in Environmental Applications,* prepared by Ashok Singh et.al, dated December 1997; and in a book entitled *An Introduction to the Bootstrap,* by Bradley Efron and Robert J. Tibshirani.

Distribution of Total Metal Concentrations

The presence of non-detects and/or low concentrations in data sets can strongly skew sample data towards low values. In these cases, the data are often lognormally distributed or nonparametric and classical statistical methods do not work properly since they assume that the data exhibit an underlying normal distribution. Consequently, it is necessary to evaluate the distributions of the data sets to apply the appropriate methods when determining the UCLs on the true means. When evaluating the distribution of total arsenic, lead and vanadium concentrations, each sampling depth was treated as a separate data set.

The *W-Test* as described in Gilbert, was used to test the null hypothesis of underlying normal or lognormal distributions, or in other words, to test if either the non-transformed total lead data sets or the natural log-transformed total lead data sets are normally distributed. The *W Test* was used on data sets with 50 or fewer observations. Each test was performed at the $\alpha = 0.05$ significance level and indicated the following in the tables below:

Arsenic

Material	Normal ?	Lognormal ?	Appropriate Method for UCL
Slag	Possibly	Possibly	Nonparametric Bootstrap
Soil under slag at 1 ft bgs	No	Possibly	Lognormal Theory Bootstrap
Soil at 2 ft bgs	No	Possibly	Lognormal Theory Bootstrap

Lead

Material	Normal ?	Lognormal ?	Appropriate Method for UCL
Slag	No	Possibly	Lognormal Theory Bootstrap

Vanadium

Material	Normal ?	Lognormal ?	Appropriate Method for UCL
Slag	No	Possibly	Lognormal Theory Bootstrap

Consequently, as indicated above, nonparametric Bootstrap techniques were used to calculate the UCLs for arsenic in slag and lognormal theory Bootstrap was used to calculate the UCLs for the remaining data sets. The data used and the calculations for the *W Test* are attached herein.

Calculating the UCLs for the True Mean

The one-sided 90% and 95% UCLs of the true mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the true mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from the *Site*. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease and the UCLs move closer to the true mean.

The Bootstrap techniques used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap.* The UCLs summarized in the tables below:

Arsenic

Material	90% UCL	95% UCL
Slag	35 mg/kg	37 mg/kg
Soil under slag at 1 ft bgs	44 mg/kg	47 mg/kg
Soil at 2 ft bgs	37 mg/kg	39 mg/kg

Lead

Material	90% UCL	95% UCL
Slag	144 mg/kg	157 mg/kg

Vanadium

Material	90% UCL	95% UCL
Slag	423 mg/kg	471 mg/kg

Correlation of Total and Soluble Metals

Total and corresponding Waste Extraction Test (WET) soluble metal concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET soluble metal concentrations based on the UCLs calculated above.

To estimate the degree of interrelation between total and corresponding WET soluble metal values (x and y, respectively), the *correlation coefficient [r]* is used (see Davis pg. 40). The correlation coefficient is a ratio that ranges from +1 to –1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all.

The *correlation coefficient* was calculated for 10 arsenic (x, y) data points and equaled 0.86. A *correlation coefficient* greater than or equal to 0.8 is adequate evidence that an acceptable correlation exists. An acceptable correlation could not be generated for the lead or vanadium data points.

The equation of the regression line for arsenic was determined to be $y = 0.0537(x)$ and, where x represents total arsenic concentration and y represents predicted WET soluble arsenic concentrations. This equation was used to estimate the predicted WET soluble arsenic concentration for the arsenic UCLs calculated above.

Representative Concentrations
Greenway Trail
A8050-06-03

Data Set	90% UCL (mg/kg)	95% UCL (mg/kg)	Data Distribution Normal?	Data Distribution Lognormal?	UCL Calculation Method
Arsenic - Slag	35.3	37.2	Possible	Possible	Nonparametric Bootstrap
Arsenic(dup) - Slag	33.2	34.9	Possible	Possible	Nonparametric Bootstrap
Arsenic - Dark Slag	46.6	50.2	Possible	Possible	Nonparametric Bootstrap
Arsenic(dup) - Dark Slag	41.7	44.0	No	Possible	Lognormal Theory Bootstrap
Arsenic - Light Slag	33.3	35.4	Possible	Possible	Nonparametric Bootstrap
Arsenic(dup) - Light Slag	31.7	34.0	No	Possible	Lognormal Theory Bootstrap
Lead - Slag	143.7	157.3	No	Possible	Lognormal Theory Bootstrap
Lead(dup) - Slag	182.1	199.3	No	Possible	Lognormal Theory Bootstrap
Lead - Dark Slag	322.6	358.3	No	Possible	Lognormal Theory Bootstrap
Lead(dup) - Dark Slag	363.8	392.8	Possible	Possible	Nonparametric Bootstrap
Lead - Light Slag	66.3	72.4	No	Possible	Lognormal Theory Bootstrap
Lead(dup) - Light Slag	60.8	66.5	No	Possible	Lognormal Theory Bootstrap
Vanadium - Slag	423.0	471.1	No	Possible	Lognormal Theory Bootstrap
Vanadium(dup) - Slag	650.7	738.6	No	Possible	Lognormal Theory Bootstrap
Vanadium - Dark Slag	77.5	88.8	No	Possible	Lognormal Theory Bootstrap
Vanadium(dup) - Dark Slag	70.1	80.9	No	Possible	Lognormal Theory Bootstrap
Vanadium - Light Slag	459.9	512.0	No	Possible	Lognormal Theory Bootstrap
Vanadium(dup) - Light Slag	685.1	775.8	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil under slag	58.0	61.9	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil under slag w/o T1	44.1	46.6	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil at 2 feet	40.9	43.4	No	Possible	Lognormal Theory Bootstrap
Arsenic - Soil at 2 feet w/o T1	36.6	38.8	No	Possible	Lognormal Theory Bootstrap

	Depth	Type	Arsenic	Arsenic (dup)	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
T12-.5	0.5	D	32	32	7	7.5	<0.15	<0.15	0.5	17	460	630
T15-.5	0.5	D	60	36	<0.25	94	<0.15	<0.15	9.5	6.5	140	94
T24-.5	0.5	D	70	70	2.5	96	<0.15	<0.15	5	6.5	510	330
T25-.5	0.5	D	20	20	1	60	<0.15	<0.15	100	6.5	240	43
T31-.5	0.5	D	22	22	0.5	76	<0.15	<0.15	15	8	330	84
T31-SLAG	0.5	D	2	24	0.3	9.5	<0.15	<0.15	1	12	300	28
T01-.5	0.5	L	34	34	0.5	140	<0.15	<0.15	30	5.5	46	48
T03-.5	0.5	L	8	8	<0.25	130	<0.15	<0.15	10	3	14	18
T04-.5	0.5	L	4	4	<0.25	6	<0.15	<0.15	1.5	2	4	3.5
T05-.5	0.5	L	7.5	7.5	1	85	<0.15	<0.15	110	2.5	14	25
T06-.5	0.5	L	44	44	0.5	62	<0.15	<0.15	26	3.5	12	20
T07-.5	0.5	L	46	46	1	140	<0.15	<0.15	52	6	1000	190
T16-.5	0.5	L	18	16	1	160	1	<0.15	200	1.5	12	7
T19-.5	0.5	L	13	13	1	84	<0.15	<0.15	20	7	39	84
T26-.5	0.5	L	12	12	2	60	<0.15	<0.15	170	2.5	10	18
T28-.5	0.5	L	34	9.5	1	130	<0.15	<0.15	60	4.5	14	42
T30-.5	0.5	L	64	64	0.5	94	<0.15	<0.15	66	6.5	18	28
		MAX	70	70	7	160	1	0	200	17	1000	630
		AVG	28.9	27.2	1.4	84.4	1.0	#DIV/0!	51.6	5.9	186.1	99.6
		TTLC	500	500	500	10,000	75	100	2,500	8,000	2,500	1,000
		STLC	50	50	150	1,000	8	10	50	800	250	5
		PRG - Res	22 (0.39)	22 (0.39)	31	5,400	150	37 (9)	210	4,700	2,900	400
		PRG - Ind	440 (2.7)	440 (2.7)	820	100,000	2,200	810	450	100,000	76,000	750

	Depth	Type	Lead (dup)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	anadium (dup)	Zinc
T12-.5	0.5	D	630	<0.10	40	3	<0.25	0.19	0.31	0.5	0.5	420
T15-.5	0.5	D	260	<0.10	18	22	<0.25	<0.15	0.5	22	8.5	440
T24-.5	0.5	D	330	0.17	97	5	<0.25	0.5	0.28	8	8	660
T25-.5	0.5	D	43	<0.10	42	6.5	<0.25	<0.15	1	120	120	150
T31-.5	0.5	D	84	<0.10	4.5	12	<0.25	0.3	1	28	28	180
T31-SLAG	0.5	D	200	<0.10	5	5	<0.25	0.37	<0.25	1.5	1	87
T01-.5	0.5	L	48	0.1	1.5	14	<0.25	<0.15	1.5	38	38	64
T03-.5	0.5	L	18	<0.10	0.33	5.5	<0.25	<0.15	0.5	30	30	45
T04-.5	0.5	L	3.5	0.11	<0.25	1.5	<0.25	<0.15	<0.25	5.5	5.5	20
T05-.5	0.5	L	25	<0.10	0.42	4.5	<0.25	<0.15	3	500	500	34
T06-.5	0.5	L	20	<0.10	0.5	6.5	<0.25	<0.15	1	79	79	64
T07-.5	0.5	L	190	<0.10	1.5	33	<0.25	<0.15	1	88	88	260
T16-.5	0.5	L	10	<0.10	<0.25	7.5	<0.25	<0.15	2.5	1000	2300	18
T19-.5	0.5	L	84	0.27	1	13	<0.25	<0.15	0.5	34	34	140
T26-.5	0.5	L	18	0.14	<0.25	2.5	2.5	<0.15	10	710	710	38
T28-.5	0.5	L	14	0.12	0.5	8	<0.25	<0.15	1.5	130	120	340
T30-.5	0.5	L	28	<0.10	1	11	<0.25	<0.15	1.5	110	110	100
		MAX	630	0.27	97	33	2.5	0.5	10	1000	2300	660
		AVG	118.0	0.2	15.2	9.4	2.5	0.3	1.7	170.9	245.9	180.0
		TTLC	1,000	20	3,500	2,000	100	500	700	2,400	2,400	5,000
		STLC	5	2	3,500	200	10	50	70	240	240	2,500
		PRG - Res	400	23	390	1600 (150)	390	390	52	550	550	23,000
		PRG - Ind	750	610	10,000	41,000	10,000	10,000	130	14,000	14,000	100,000

	Depth	Type	Arsenic	Arsenic (dup)	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
T02-.5	0.5	S	12		0.49	110	<0.15	<0.15	22	9.5	22	5
T01-1	1	S	210		0.5	38	<0.15	<0.15	7.5	3.5	22	44
T02-1	1	S	11		0.5	130	<0.15	<0.15	20	11	20	3.5
T03-1	1	S	120		0.48	130	<0.15	<0.15	18	10	18	3.5
T04-1	1	S	60		0.48	66	<0.15	<0.15	12	6	12	2.5
T05-1	1	S	45		0.5	54	<0.15	<0.15	8	4.5	10	15
T06-1	1	S	84		0.43	150	<0.15	<0.15	15	7.5	17	3.5
T07-1	1	S	46		0.5	100	<0.15	<0.15	22	7	160	20
T12-1	1	S	44		0.5	50	<0.15	<0.15	47	4.5	16	38
T15-1	1	S	16		0.27	170	<0.15	<0.15	16	7.5	22	5.5
T16-1	1	S	18		<0.25	140	<0.15	<0.15	15	7.5	20	5.5
T19-1	1	S	9.5		0.5	68	<0.15	<0.15	11	8	23	28
T24-1	1	S	32		0.5	43	<0.15	<0.15	5.5	3	8.5	10
T25-1	1	S	20		0.25	37	<0.15	<0.15	8	3.5	12	6.5
T26-1	1	S	16		<0.25	36	<0.15	<0.15	5.5	3.5	5.5	2
T28-1	1	S	16		<0.25	32	<0.15	<0.15	6	3.5	5.5	4.5
T30-1	1	S	28		<0.25	38	<0.15	<0.15	7.5	4	6.5	3
T31-1	1	S	34		0.5	98	<0.15	<0.15	18	8	26	40
		MAX	210		0.5	170	0	0	47	11	160	44
		AVG	45.6		0.5	82.8	#DIV/0!	#DIV/0!	14.7	6.2	23.7	13.3
		TTLC	500		500	10,000	75	100	2,500	8,000	2,500	1,000
		STLC	50		150	1,000	8	10	50	800	250	5
		PRG - Res	22 (0.39)		31	5,400	150	37 (9)	210	4,700	2,900	400
		PRG - Ind	440 (2.7)		820	100,000	2,200	810	450	100,000	76,000	750

	Depth	Type	Lead (dup)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium /anadium (dup)	Zinc
T02-.5	0.5	S		<0.10	0.48	18	<0.25	<0.15	1	41	52
T01-1	1	S		<0.10	0.25	6	<0.25	<0.15	1.5	15	110
T02-1	1	S		<0.10	0.5	19	<0.25	<0.15	1	37	48
T03-1	1	S		<0.10	0.39	14	<0.25	<0.15	1	36	48
T04-1	1	S		<0.10	<0.25	9	<0.25	<0.15	1	24	34
T05-1	1	S		<0.10	<0.25	6	<0.25	<0.15	1.5	25	110
T06-1	1	S		<0.10	1	15	<0.25	<0.15	0.5	35	120
T07-1	1	S		<0.10	0.5	13	<0.25	<0.15	1	83	160
T12-1	1	S		<0.10	0.5	9	<0.25	<0.15	0.5	73	110
T15-1	1	S		<0.10	3.5	23	<0.25	<0.15	0.5	40	66
T16-1	1	S		<0.10	2	18	<0.25	<0.15	0.5	36	86
T19-1	1	S		<0.10	0.38	9	<0.25	<0.15	1	30	63
T24-1	1	S		<0.10	0.5	4.5	<0.25	<0.15	0.5	16	260
T25-1	1	S		<0.10	0.5	5	<0.25	<0.15	0.5	20	73
T26-1	1	S		<0.10	0.3	4	<0.25	<0.15	0.48	15	200
T28-1	1	S		<0.10	<0.25	4.5	<0.25	<0.15	0.5	16	92
T30-1	1	S		<0.10	0.37	5	<0.25	<0.15	0.5	20	98
T31-1	1	S		<0.10	1	16	<0.25	<0.15	1	36	240
		MAX		0	3.5	23	0	0	1.5	83	260
		AVG		#DIV/0!	0.8	11.0	#DIV/0!	#DIV/0!	0.8	33.2	109.4
		TTLC		20	3,500	2,000	100	500	700	2,400	5,000
		STLC		2	3,500	200	10	50	70	240	2,500
		PRG - Res		23	390	1600 (150)	390	390	52	550	23,000
		PRG - Ind		610	10,000	41,000	10,000	10,000	130	14,000	100,000

	Depth	Type	Arsenic	Arsenic (dup)	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
T01-2	2	S	93		0.42	71	<0.15	<0.15	11	6.4	30	28
T02-2	2	S	17		0.5	150	<0.15	<0.15	20	9	28	14
T03-2	2	S	18		0.5	150	<0.15	<0.15	27	14	22	4.5
T04-2	2	S	90		0.45	110	<0.15	<0.15	18	9	20	3.5
T05-2	2	S	100		0.4	150	<0.15	<0.15	18	9	20	3.5
T06-2	2	S	9.5		0.45	160	<0.15	<0.15	16	8	18	3
T07-2	2	S	45		0.31	150	<0.15	<0.15	15	8	22	3.5
T12-2	2	S	10		0.37	130	<0.15	<0.15	17	7.5	20	3
T15-2	2	S	8		0.29	120	<0.15	<0.15	13	6.5	16	2.5
T16-2	2	S	15		0.4	150	<0.15	<0.15	18	8.5	22	6.5
T19-2	2	S	18		0.32	40	<0.15	<0.15	7	4.5	9.5	29
T24-2	2	S	9		0.29	170	<0.15	<0.15	14	6.5	20	8
T25-2	2	S	16		0.5	150	<0.15	<0.15	26	11	25	4
T26-2	2	S	41		0.38	180	<0.15	0.16	21	8.5	24	4.5
T28-2	2	S	20		0.37	160	<0.15	<0.15	22	8	24	6
T30-2	2	S	28		0.32	130	<0.15	<0.15	18	7.5	18	3.5
T31-2	2	S	26		0.28	44	<0.15	<0.15	8	4	7.5	2.5
		MAX	100		0.5	180	0	0.16	27	14	30	29
		AVG	33.1		0.4	130.3	#DIV/0!	0.2	17.0	8.0	20.4	7.6
		TTLC	500		500	10,000	75	100	2,500	8,000	2,500	1,000
		STLC	50		150	1,000	8	10	50	800	250	5
		PRG - Res	22 (0.39)		31	5,400	150	37 (9)	210	4,700	2,900	400
		PRG - Ind	440 (2.7)		820	100,000	2,200	810	450	100,000	76,000	750

	Depth	Type	Lead (dup)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium /anadium (dup)	Zinc
T01-2	2	S		<0.10	0.39	10	<0.25	<0.15	1.2	23	230
T02-2	2	S		<0.10	0.5	18	<0.25	<0.15	1	38	100
T03-2	2	S		<0.10	0.42	19	<0.25	<0.15	1.5	53	57
T04-2	2	S		<0.10	0.29	16	<0.25	<0.15	1	35	46
T05-2	2	S		<0.10	0.5	17	<0.25	<0.15	1.5	40	59
T06-2	2	S		<0.10	1.5	16	<0.25	<0.15	0.5	38	46
T07-2	2	S		<0.10	1	16	<0.25	<0.15	0.5	36	46
T12-2	2	S		0.2	2	20	<0.25	<0.15	1	40	52
T15-2	2	S		<0.10	1.5	16	<0.25	<0.15	0.5	32	42
T16-2	2	S		<0.10	2	22	<0.25	<0.15	1	42	74
T19-2	2	S		0.1	0.42	6.5	<0.25	<0.15	0.5	16	64
T24-2	2	S		0.11	1	15	<0.25	<0.15	0.5	32	46
T25-2	2	S		<0.10	0.5	20	<0.25	<0.15	1.5	46	110
T26-2	2	S		<0.10	3	29	<0.25	<0.15	1	50	71
T28-2	2	S		<0.10	2.5	26	<0.25	<0.15	1.5	50	68
T30-2	2	S		<0.10	1.5	18	<0.25	<0.15	0.5	38	57
T31-2	2	S		<0.10	0.44	6.5	<0.25	<0.15	0.5	18	220
		MAX		0.2	3	29	0	0	1.5	53	230
		AVG		0.1	1.1	17.1	#DIV/0!	#DIV/0!	0.9	36.9	81.6
		TTLC		20	3,500	2,000	100	500	700	2,400	5,000
		STLC		2	3,500	200	10	50	70	240	2,500
		PRG - Res		23	390	1600 (150)	390	390	52	550	23,000
		PRG - Ind		610	10,000	41,000	10,000	10,000	130	14,000	100,000

DESCRIPTION OF DATA SET

Greenway Trail - Arsenic - Slag

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	28.9
Standard Deviation (x)	21.6
MVUE Mean	31.8
Bootstrap Estimate of Population Mean	28.9
Bootstrap Estimate of Standard Error	5.0
Bootstrap Estimate of Population Mean (MVUE)	31.8
Bootstrap Estimate of Standard Error (MVUE)	7.7

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	**90%UCL**	**95%UCL**
Percentile Bootstrap	35.3	36.9
Pivotal (t) Bootstrap	36.1	38.8
Standard Bootstrap	35.3	37.2

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	**90%UCL**	**95%UCL**
Percentile Bootstrap	42.1	45.3
Standard Bootstrap	41.6	44.4

DESCRIPTION OF DATA SET

Greenway Trail - Lead - Slag

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	99.6
Standard Deviation (x)	159.2
MVUE Mean	94.3
Bootstrap Estimate of Population Mean	99.2
Bootstrap Estimate of Standard Error	37.7
Bootstrap Estimate of Population Mean (MVUE)	95.5
Bootstrap Estimate of Standard Error (MVUE)	37.6

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	149.8	160.8
Pivotal (t) Bootstrap	200.7	286.0
Standard Bootstrap	147.5	161.1

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	147.2	172.1
Standard Bootstrap	143.7	157.3

DESCRIPTION OF DATA SET

Greenway Trail - Vanadium - Slag

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	170.9
Standard Deviation (x)	287.2
MVUE Mean	249.7
Bootstrap Estimate of Population Mean	169.7
Bootstrap Estimate of Standard Error	66.9
Bootstrap Estimate of Population Mean (MVUE)	253.2
Bootstrap Estimate of Standard Error (MVUE)	132.5

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	**90%UCL**	**95%UCL**
Percentile Bootstrap	260.2	286.6
Pivotal (t) Bootstrap	311.0	397.4
Standard Bootstrap	255.4	279.7

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	**90%UCL**	**95%UCL**
Percentile Bootstrap	434.7	498.7
Standard Bootstrap	423.0	471.1

DESCRIPTION OF DATA SET

Greenway Trail - Arsenic - Soil under slag w/o T1

DATA SET STATISTICS

Number of Samples	17
Arithemetic Mean	36.0
Standard Deviation (x)	29.5
MVUE Mean	35.4
Bootstrap Estimate of Population Mean	35.9
Bootstrap Estimate of Standard Error	7.1
Bootstrap Estimate of Population Mean (MVUE)	35.4
Bootstrap Estimate of Standard Error (MVUE)	6.8

NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	45.1	48.9
Pivotal (t) Bootstrap	50.1	56.1
Standard Bootstrap	45.0	47.5

LOGNORMAL THEORY BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	44.0	48.1
Standard Bootstrap	44.1	46.6

DESCRIPTION OF DATA SET

Greenway Trail - Arsenic - Soil at 2 feet w/o T1

DATA SET STATISTICS

Number of Samples	16
Arithemetic Mean	29.4
Standard Deviation (x)	27.8
MVUE Mean	28.3
Bootstrap Estimate of Population Mean	29.7
Bootstrap Estimate of Standard Error	6.7
Bootstrap Estimate of Population Mean (MVUE)	28.6
Bootstrap Estimate of Standard Error (MVUE)	6.2

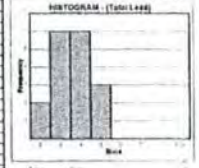
NONPARAMETRIC BOOTSTRAP

Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	38.4	41.3
Pivotal (t) Bootstrap	43.1	54.9
Standard Bootstrap	38.3	40.8

LOGNORMAL THEORY BOOTSTRAP

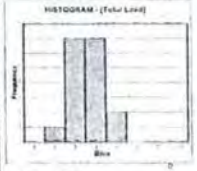
Bootstrap Type	90%UCL	95%UCL
Percentile Bootstrap	36.5	39.9
Standard Bootstrap	36.6	38.8

PROJECT: Greenway Trail
DEPTH: Arsenic - Mag



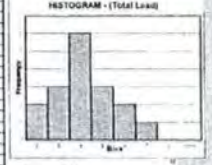
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic(deep) - Mag



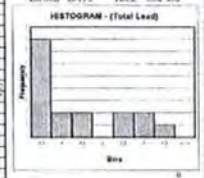
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Lead - Mag



THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Lead(deep) - Mag



THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Mag

W-Test for total Lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION MAY BE NORMAL

PROJECT: Greenway Trail
DEPTH: Lead(dup) - Mag

W-Test for total Lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION MAY BE NORMAL

PROJECT: Greenway Trail
DEPTH: Lead - Mag

W-Test for total Lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Route 60
DEPTH: Lead(dup) - Mag

W-Test for total Lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium - 5bsg

W-Test for total lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium(dup) - 5bsg

W-Test for total lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - 3ssl under dsg

W-Test for total lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - 3ssl at 2 feet

W-Test for total lead - normal dist

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL

PROJECT: Greenway Trail
DEPTH: Vacuolitum - Slag

W-Test for total lead - lognormal dist?

i	Y(i-1)/N	i	Y(i)/n	(i-1)/n	z
0.0968	0.0	1	3.73	10.54	0.00
0.3273	0.2	2	3.73	6.31	3.02
0.2500	0.3	3	3.73	2.72	2.98
0.1968	0.4	4	3.73	1.12	4.79
0.1591	0.7	5	3.73	0.48	3.33
0.1109	0.8	6	3.73	11.01	0.01
0.0725	0.9	7	3.73	0.04	3.61
0.0359	0.8	8	3.73	0.11	3.40
0.0000	—	9	3.73	4.09	1.70
—	—	10	3.73	6.18	0.71
—	—	11	3.73	8.41	0.47
—	—	12	3.73	0.86	3.48
—	—	13	3.73	10.11	0.01
—	—	14	3.73	0.01	3.93
—	—	15	3.73	8.05	0.57
—	—	16	3.73	1.95	4.07
—	—	17	3.73	0.05	4.70
—	—	18	—	—	
—	—	19	—	—	
—	—	20	—	—	
—	—	21	—	—	
—	—	22	—	—	
—	—	23	—	—	
—	—	24	—	—	
—	—	25	—	—	
—	—	26	—	—	
—	—	27	—	—	
—	—	28	—	—	
—	—	29	—	—	
—	—	30	—	—	
—	—	31	—	—	
—	—	32	—	—	
—	—	33	—	—	
—	—	34	—	—	
—	—	35	—	—	
—	—	36	—	—	
—	—	37	—	—	
—	—	38	—	—	
—	—	39	—	—	
—	—	40	—	—	
—	—	41	—	—	
—	—	42	—	—	
—	—	43	—	—	
—	—	44	—	—	
—	—	45	—	—	
—	—	46	—	—	
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—	—	49	—	—	
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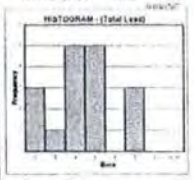

Bins	freq	
2	3	0
3	1	0
4	4	0
5	5	0
6	0	
7	1	
8	0	
more	0	

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.981 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Vacuolitum(deep) - Slag

W-Test for total lead - lognormal dist?

i	Y(i-1)/N	i	Y(i)/n	(i-1)/n	z
0.0968	0.0	1	3.03	10.73	0.00
0.3273	0.6	2	3.03	2.0	2.11
0.2500	0.5	3	3.03	2.00	2.98
0.1968	2.7	4	3.03	1.20	4.79
0.1591	2.6	5	3.03	0.13	3.33
0.1109	1.1	6	3.03	11.63	0.00
0.0725	1.1	7	3.03	0.07	3.61
0.0359	0.8	8	3.03	0.08	3.40
0.0000	—	9	3.03	3.95	1.70
—	—	10	3.03	6.36	0.71
—	—	11	3.03	9.10	0.47
—	—	12	3.03	0.62	3.48
—	—	13	3.03	10.39	0.01
—	—	14	3.03	0.02	3.93
—	—	15	3.03	8.25	0.57
—	—	16	3.03	1.75	4.07
—	—	17	3.03	0.02	4.70
—	—	18	—	—	
—	—	19	—	—	
—	—	20	—	—	
—	—	21	—	—	
—	—	22	—	—	
—	—	23	—	—	
—	—	24	—	—	
—	—	25	—	—	
—	—	26	—	—	
—	—	27	—	—	
—	—	28	—	—	
—	—	29	—	—	
—	—	30	—	—	
—	—	31	—	—	
—	—	32	—	—	
—	—	33	—	—	
—	—	34	—	—	
—	—	35	—	—	
—	—	36	—	—	
—	—	37	—	—	
—	—	38	—	—	
—	—	39	—	—	
—	—	40	—	—	
—	—	41	—	—	
—	—	42	—	—	
—	—	43	—	—	
—	—	44	—	—	
—	—	45	—	—	
—	—	46	—	—	
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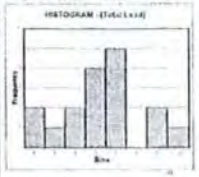

Bins	freq	
1	2	0
2	3	0
3	2	0
4	5	0
5	3	
6	0	
7	2	
more	1	

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.971 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag

W-Test for total lead - lognormal dist?

i	Y(i-1)/N	i	Y(i)/n	(i-1)/n	z
0.0968	0.1	1	3.41	0.80	3.98
0.3273	0.3	2	3.41	3.67	5.35
0.2500	1.0	3	3.41	1.07	2.80
0.1968	1.3	4	3.41	1.81	4.79
0.1591	1.3	5	3.41	0.14	3.09
0.1109	1.0	6	3.41	0.13	3.80
0.0725	0.9	7	3.41	1.90	4.43
0.0359	0.5	8	3.41	0.16	3.83
0.0000	0.1	9	3.41	0.11	3.78
—	—	10	3.41	0.41	3.77
—	—	11	3.41	0.52	3.82
—	—	12	3.41	3.39	2.75
—	—	13	3.41	0.00	3.47
—	—	14	3.41	0.07	3.60
—	—	15	3.41	0.11	3.77
—	—	16	3.41	0.13	3.77
—	—	17	3.41	0.01	3.93
—	—	18	3.41	0.01	3.93
—	—	19	—	—	
—	—	20	—	—	
—	—	21	—	—	
—	—	22	—	—	
—	—	23	—	—	
—	—	24	—	—	
—	—	25	—	—	
—	—	26	—	—	
—	—	27	—	—	
—	—	28	—	—	
—	—	29	—	—	
—	—	30	—	—	
—	—	31	—	—	
—	—	32	—	—	
—	—	33	—	—	
—	—	34	—	—	
—	—	35	—	—	
—	—	36	—	—	
—	—	37	—	—	
—	—	38	—	—	
—	—	39	—	—	
—	—	40	—	—	
—	—	41	—	—	
—	—	42	—	—	
—	—	43	—	—	
—	—	44	—	—	
—	—	45	—	—	
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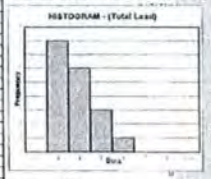
—	—	50	—	—	



Bins	freq	
2	0	0
3	8	0
4	6	0
5	3	0
6	1	
7	0	
8	0	
more	0	

FOR n = 18 AND FOR α = 0.05
W_{crit} = 0.897

SINCE 0.910 > 0.897

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at 2 feet

W-Test for total lead - lognormal dist?

i	Y(i-1)/N	i	Y(i)/n	(i-1)/n	z
0.0968	2.5	1	3.16	1.42	3.33
0.3273	2.5	2	3.16	0.16	2.83
0.2500	2.2	3	3.16	0.07	2.89
0.1968	1.5	4	3.16	1.89	3.50
0.1591	1.6	5	3.16	2.10	3.61
0.1109	0.6	6	3.16	0.82	3.55
0.0725	0.3	7	3.16	0.42	4
0.0359	0.1	8	3.16	0.73	2
0.0000	—	9	3.16	1.16	2
—	—	10	3.16	0.26	3
—	—	11	3.16	0.07	3
—	—	12	3.16	0.52	2
—	—	13	3.16	0.15	3
—	—	14	3.16	0.31	3
—	—	15	3.16	0.63	2.0915
—	—	16	3.16	0.01	3.337205
—	—	17	3.16	0.01	3
—	—	18	—	—	
—	—	19	—	—	
—	—	20	—	—	
—	—	21	—	—	
—	—	22	—	—	
—	—	23	—	—	
—	—	24	—	—	
—	—	25	—	—	
—	—	26	—	—	
—	—	27	—	—	
—	—	28	—	—	
—	—	29	—	—	
—	—	30	—	—	
—	—	31	—	—	
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—	—	33	—	—	
—	—	34	—	—	
—	—	35	—	—	
—	—	36	—	—	
—	—	37	—	—	
—	—	38	—	—	
—	—	39	—	—	
—	—	40	—	—	
—	—	41	—	—	
—	—	42	—	—	
—	—	43	—	—	
—	—	44	—	—	
—	—	45	—	—	
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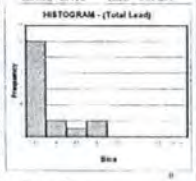


Bins	freq	
3.5	12	0
4	2	0
4.5	1	0
5	2	0
5.5	0	
6	0	
6.5	0	
more	0	

FOR n = 17 AND FOR α = 0.05
W_{crit} = 0.892

SINCE 0.911 > 0.892

THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Vanadium - Mag

W-Test for normality - normal data

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Vanadium/Sulfur - Mag

W-Test for normality - normal data

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag w/o II

W-Test for normality - normal data

HISTOGRAM - (Total Lead)

THE DISTRIBUTION IS NOT NORMAL.

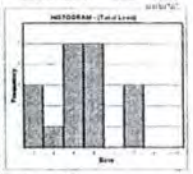
PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at Floor w/o II

W-Test for normality - normal data

HISTOGRAM - (Total Lead)

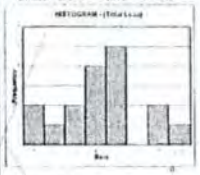
THE DISTRIBUTION IS NOT NORMAL.

PROJECT: Greenway Trail
DEPTH: Vermilion - Slag



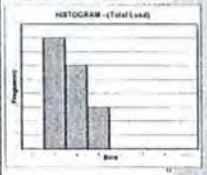
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Vermilion/Spoil - Slag



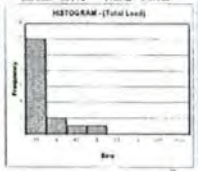
THE DISTRIBUTION MAY BE LOGNORMAL

PROJECT: Greenway Trail
DEPTH: Arsenic - Soil under slag w/o TI



THE DISTRIBUTION MAY BE LOGNORMAL

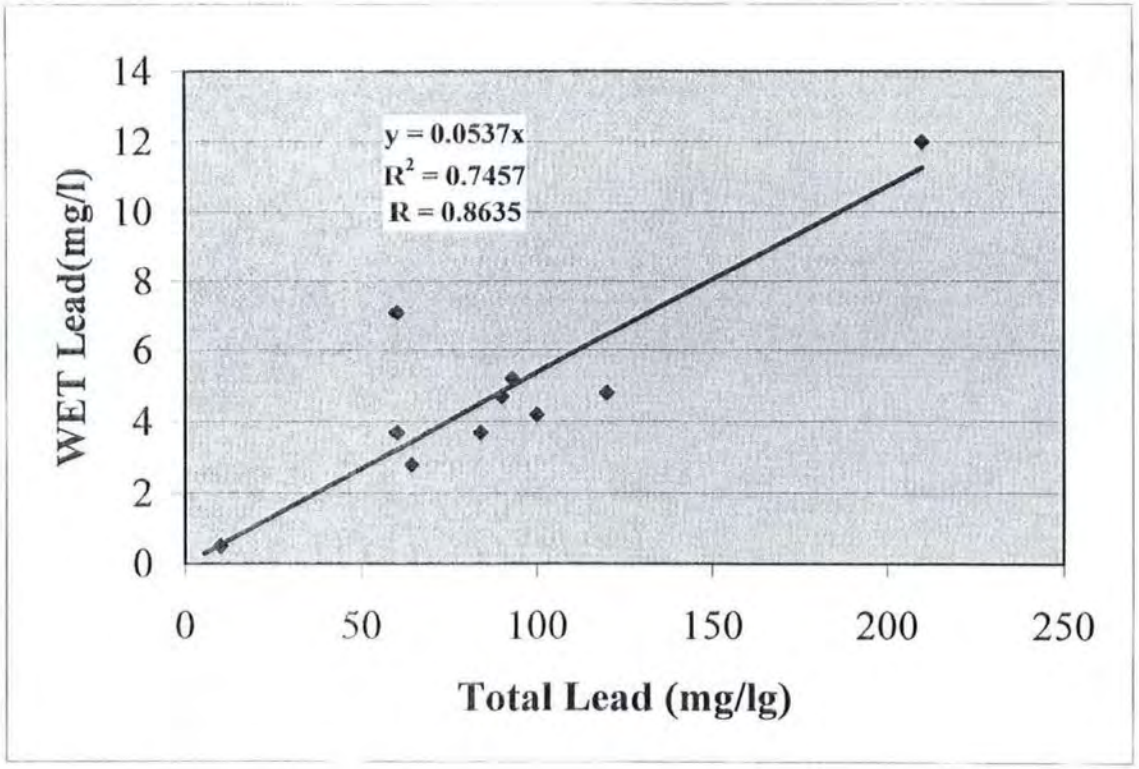
PROJECT: Greenway Trail
DEPTH: Arsenic - Soil at 2 feet w/o TI



THE DISTRIBUTION MAY BE LOGNORMAL

Greenway Trail
A8050-06-03
Arsenic

ID	Total	WET
T1-1	210	12
T1-2	93	5.2
T3-1	120	4.8
T4-1	60	7.1
T4-2	90	4.7
T5-2	100	4.2
T6-1	84	3.7
T15-.5	60	3.7
T24-.5	10	0.5
T30.5	64	2.8



Not Used

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Greenway Trail
Site Location:

Job Identification: A6050-06-03
Date Completed: 9/1/2001
Completed By: Geocon

Software: GSI RBCA Spreadsheet
Version: 1.0.1

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	***50***			250	180
EF Derm	Exposure Frequency for dermal exposure	***50***			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	TRUE	FALSE	FALSE
S.v	Volatilization from Subsurface Soils	FALSE	FALSE	
GW.v	Volatilization from Groundwater	FALSE	FALSE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	FALSE	FALSE	
GW.b	Vapors from Groundwater	FALSE	FALSE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	TRUE	FALSE	FALSE
Groundwater Pathways:				
GW.i	Groundwater Ingestion	FALSE	FALSE	
S.l	Leaching to Groundwater from all Soils	FALSE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)		FALSE		FALSE
S	Inhalation receptor (cm)		TRUE		FALSE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	***1.0E-05***	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	2	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	***1.5E+09***	1.0E+06
W	Length of affect. soil parallel to wind (cm)	***1.8E+03***	1.0E+03
W.gw	Length of affect. soil parallel to groundwater (cm	1.5E+03	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)	1.0E+02	
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	2.5E+03
Ugw.tr	Groundwater seepage velocity (cm/yr)	6.6E+03
Ks	Saturated hydraulic conductivity(cm/s)	
grad	Groundwater gradient (cm/cm)	
Sw	Width of groundwater source zone (cm)	
Sd	Depth of groundwater source zone (cm)	
phi.eff	Effective porosity in water-bearing unit	3.8E-01
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is bioattenuation considered?	FALSE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value		
hc	Capillary zone thickness (cm)	5.0E+00		
hv	Vadose zone thickness (cm)	3.0E+02		
rho	Soil density (g/cm^3)	1.7		
foc	Fraction of organic carbon in vadose zone	0.01		
phi	Soil porosity in vadose zone	0.38		
Lgw	Depth to groundwater (cm)	3.0E+02		
Ls	Depth to top of affected subsurface soil (cm)	1.0E+02		
Lsubs	Thickness of affected subsurface soils (cm)	2.0E+02		
pH	Soil/groundwater pH	6.5		
		capillary	vadose	foundation
phi.w	Volumetric water content	0.342	0.12	0.12
phi.a	Volumetric air content	0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.01	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)		
ay	Transverse dispersivity (cm)		
az	Vertical dispersivity (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

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RBCA CHEMICAL DATABASE

Physical Property Data

CAS Number	Constituent	type	Molecular Weight (g/mole) MW	ref	Diffusion Coefficients in air (cm2/s) Dair	ref	in water (cm2/s) Dwat	ref	log (Koc) or log(Kd) (@ 20 - 25 C) log(l/kg)	ref	Henry's Law Constant (@ 20 - 25 C) (atm-m3) mol	(unitless)	ref	Vapor Pressure (@ 20 - 25 C) (mm Hg)	ref	Solubility (@ 20 - 25 C) (mg/L)	ref	acid pKa	base pKb	ref
7440-38-2	Arsenic	N	74.9	4	N/A		N/A		2.07	24	0.00E+00	0.00E+00		0.00E+00	14	4.41E+05	27			

Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

Software version: 1.0.1

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RBCA CHEMICAL DATABASE

Toxicity Data

CAS Number	Constituent	Reference Dose (mg/kg/day) Oral RfD_oral	ref	Inhalation RfD_inhal	ref	Slope Factors 1/(mg/kg/day) Oral SF_oral	ref	Inhalation SF_inhal	ref	EPA Weight of Evidence	Is Constituent Carcinogenic ?
7440-38-2	Arsenic	3.00E-04	R	-		1.50E+00	R	1.20E+01	R	A	TRUE

Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

Software version: 1.0.1

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RBCA CHEMICAL DATABASE

Miscellaneous Chemical Data

CAS Number	Constituent	Maximum Contaminant Level MCL (mg/L)	reference	Permissible Exposure Limit PEL/TLV (mg/m3)	ref	Relative Absorption Factors Oral	Dermal	Detection Limits Groundwater (mg/L)	ref	Soil (mg/kg)	ref	Half Life (First-Order Decay) (days) Saturated	Unsaturated	ref
7440-38-2	Arsenic	5.00E-02	50 FR 46936 (13 Nov 85	1.00E-02	OSHA	1	0	0.01	C	0.053	S			

Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

Software version: 1.0.1

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REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Arsenic			1.0E+0			

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 1 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS: VAPOR AND DUST INHALATION	Exposure Concentration								
	1) Source Medium	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Residential		On-Site Residential		On-Site Residential		On-Site Residential	
Arsenic	1.0E+0	3.6E+11		2.8E-12		1.7E-2		4.7E-14	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 2 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)	
Arsenic	0.0E+0								

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposue area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 3 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: VAPOR INHALATION Constituents of Concern	Exposure Concentration 1) Source Medium Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor		3) Exposure Medium Outdoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)		TOTAL PATHWAY INTAKE (mg/kg-day) *(Sum intake values from surface, subsurface & groundwater routes.)* On-Site Residential	
Arsenic	0.0E+0									4.7E-14	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 4 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS:

VAPOR INTRUSION TO BUILDINGS

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc (mg/kg)	2) NAF Value (m^3/kg) Receptor		3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day)		5) Average Daily Intake Rate: (mg/kg-day) (3) X (4)	
Arsenic	0.0E+0								

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 5 OF 9

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: VAPOR INTRUSION TO BUILDINGS Constituents of Concern	Exposure Concentration 1) Source Medium Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor		3) Exposure Medium Indoor Air: POE Conc. (mg/m^3) (1) / (2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg day)		5) Average Daily Intake Rate (mg/kg-day) (3) X (4)		TOTAL PATHWAY INTAKE (mg/kg-day) *(Sum intake values from subsurface & groundwater routes.)*	
Arsenic	0.0E+0										

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

	Exposure Concentration				
	1) Source Medium	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day)		3) Average Daily Intake Rate (mg/kg-day) (1) x (2)	
Constituents of Concern	Surface Soil Conc. (mg/kg)	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial
Arsenic	1.0E+0	0.0E+0		0.0E+0	

NOTE: ABS = Dermal absorption factor (dim) BW = Body weight (kg) EF = Exposure frequencey (days/yr POE = Point of exposure
AF = Adherance factor (mg/cm^2) CF = Units conversion factor ET = Exposure time (hrs/day) SA = Skin exposure area (cm^2/day)
AT = Averaging time (days) ED = Exposure duration (yrs) IR = Intake rate (mg/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:
INGESTION

Constituents of Concern	Exposure Concentration: 1) Source Medium — Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (IRxCFxEFxED)/(BWxAT) (kg/kg-day) — On-Site Residential	On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2) — On-Site Residential	On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from dermal & ingestion routes.) — On-Site Residential	On-Site Commercial
Arsenic	1.0E+0	8.4E-8		8.4E-8		8.4E-8	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (mg/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

SOIL: LEACHING TO GROUNDWATER/ GROUNDWATER INGESTION

Constituents of Concern	Exposure Concentration 1) Source Medium: Soil Concentration (mg/kg)	2) NAF Value (L/kg) Receptor		3) Exposure Medium Groundwater: POE Conc. (mg/L) (1)/(2)		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (L/kg-day)		5) Average Daily Intake Rate (mg/kg-day) (3) x (4)	
Arsenic	1.0E+0								

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body Weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Intake rate (L/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail Site Location: 0 Completed By: Geocon Date Completed: 9/1/2001

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: INGESTION

Constituents of Concern	Exposure Concentration: 1) Source Medium — Groundwater Conc. (mg/L)	2) NAF Value (dim) — Receptor		3) Exposure Medium — Groundwater: POE Conc. (mg/L) (1)/(2)		4) Exposure Multiplier — (IRxEFxED)/(BWxAT) (L/kg-day)		5) Average Daily Intake Rate — (mg/kg-day) (3) x (4)		MAX. PATHWAY INTAKE (mg/kg-day) *(Maximum intake of active pathways soil leaching & groundwater routes.)*	
Arsenic	0.0E+0										

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Intake rate (L/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | *1 OF 4*

TIER 2 PATHWAY RISK CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

		CARCINOGENIC RISK						TOXIC EFFECTS			
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential		(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential		(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	
Arsenic	A	4.7E-14		1.2E+1	5.6E-13						
Total Pathway Carcinogenic Risk =					**5.6E-13**	**0.0E+0**	***Total Pathway Hazard Index =***			**0.0E+0**	**0.0E+0**

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 2 OF 4

TIER 2 PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ☐ (CHECKED IF PATHWAYS ARE ACTIVE)

		CARCINOGENIC RISK					TOXIC EFFECTS			
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6)	
Arsenic	A			1.2E+1							
				Total Pathway Carcinogenic Risk =	0.0E+0	0.0E+0			***Total Pathway Hazard Index =***	0.0E+0	0.0E+0

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | 3 OF 4

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

	CARCINOGENIC RISK							TOXIC EFFECTS			
	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Oral Slope Factor	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Oral Reference Dose	(7) Individual COC Hazard Quotient (5) / (6)	
Constituents of Concern		On-Site Residential	On-Site Commercial	(mg/kg-day)^-1	On-Site Residential	On-Site Commercial	On-Site Residential	On-Site Commercial	(mg/kg-day)	On-Site Residential	On-Site Commercial
Arsenic	A	8.4E-8		1.5E+0	1.3E-7		2.0E-7		3.0E-4	6.5E-4	

Total Pathway Carcinogenic Risk = 1.3E-7 | 0.0E+0

Total Pathway Hazard Index = 6.5E-4 | 0.0E+0

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Site Name: Greenway Trail | Site Location: 0 | Completed By: Geocon | Date Completed: 9/1/2001 | *4 OF 4*

TIER 2 PATHWAY RISK CALCULATION

GROUNDWATER EXPOSURE PATHWAYS ☐ **(CHECKED IF PATHWAYS ARE ACTIVE)**

		CARCINOGENIC RISK						TOXIC EFFECTS		
Constituents of Concern	(1) EPA Carcinogenic Classification	(2) Total Carcinogenic Intake Rate (mg/kg/day)		(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3)		(5) Total Toxicant Intake Rate (mg/kg/day)		(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6)	
Arsenic	A			1.5E+0					3.0E-4		
		Total Pathway Carcinogenic Risk =			0.0E+0	0.0E+0	***Total Pathway Hazard Index =***			0.0E+0	0.0E+0

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Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK: Individual COC Risk: Maximum Value	Individual COC Risk: Target Risk	Cumulative COC Risk: Total Value	Cumulative COC Risk: Target Risk	Risk Limit(s) Exceeded?	BASELINE TOXIC EFFECTS: Hazard Quotient: Maximum Value	Hazard Quotient: Applicable Limit	Hazard Index: Total Value	Hazard Index: Applicable Limit	Toxicity Limit(s) Exceeded?
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	5.6E-13	1.0E-5	5.6E-13	N/A	☐	NC	1.0E+0	NC	N/A	■
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
SOIL EXPOSURE PATHWAYS										
Complete:	1.3E-7	1.0E-5	1.3E-7	N/A	☐	6.5E-4	1.0E+0	6.5E-4	N/A	☐
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	1.3E-7	1.0E-5	1.3E-7	N/A	☐	6.5E-4	1.0E+0	6.5E-4	N/A	☐

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.1

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

SURFACE SOIL SSTL VALUES (< 3.3 FT BGS)

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration		Soil Leaching to Groundwater			X	Ingestion, Inhalation and Dermal Contact		Construction Worker	Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)		Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)		Residential: (on-site)	Commercial: (on-site)	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
7440-38-2	Arsenic	1.0E+0		NA	NA	NA		7.9E+1	NA	NA	7.9E+1	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

SUBSURFACE SOIL SSTL VALUES (> 3.3 FT BGS)

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential: (on-site)	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
7440-38-2	Arsenic	0.0E+0	NA	NA	NA	NA	NA	NA	NA	>Res	☐	<1

>Res indicates risk-based target concentration greater than constituent residual saturation value

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Greenway Trail
Site Location: 0

Completed By: Geocon
Date Completed: 9/1/2001

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
7440-38-2	Arsenic	0.0E+0	NA	NA	NA	NA	NA	NA	NA	>Sol	☐	<1

>Sol indicates risk-based target concentration greater than constituent solubility

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-123-AZX-456

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Client Sample ID: Composite #2 053697-010A,014
Lab Order: 053790
Project: Greenway Trail - A8050-06-03
Collection Date:
Lab ID: 053790-002A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011107C** BatchID: **6350**				PrepDate: **11/6/01**		Analyst: **RQ**
Arsenic	16	0.25		mg/Kg	1.0	11/7/01
Barium	510	0.15		mg/Kg	1.0	11/7/01
Cadmium	3.0	0.15		mg/Kg	1.0	11/7/01
Chromium	14	0.15		mg/Kg	1.0	11/7/01
Lead	630	0.25		mg/Kg	1.0	11/7/01
Selenium	3.0	0.25		mg/Kg	1.0	11/7/01
Silver	0.23	0.15		mg/Kg	1.0	11/7/01
LEAD BY ATOMIC ABSORPTION			**EPA 1311/ 7420**			
RunID: **AA2_011107B** BatchID: **6374**				PrepDate: **11/7/01**		Analyst: **NS**
Lead	5.9	0.20		mg/L	1.0	11/7/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011107A** BatchID: **6375**				PrepDate: **11/7/01**		Analyst: **NS**
Mercury	0.22	0.10		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: R

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *11/7/01*

CLIENT: Geocon Environmental
Client Sample ID: Composite #1 053697-034A,036
Lab Order: 053790
Project: Greenway Trail - A8050-06-03
Collection Date:
Lab ID: 053790-001A
Matrix: Soil

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS			**EPA 6010B**			
RunID: **ICP2_011107C** BatchID: **6350**				PrepDate: **11/6/01**		Analyst: **RQ**
Arsenic	24	0.25		mg/Kg	1.0	11/7/01
Barium	160	0.15		mg/Kg	1.0	11/7/01
Cadmium	ND	0.15		mg/Kg	1.0	11/7/01
Chromium	24	0.15		mg/Kg	1.0	11/7/01
Lead	1100	0.25		mg/Kg	1.0	11/7/01
Selenium	0.26	0.25		mg/Kg	1.0	11/7/01
Silver	0.33	0.15		mg/Kg	1.0	11/7/01
LEAD BY ATOMIC ABSORPTION			**EPA 1311/ 7420**			
RunID: **AA2_011107B** BatchID: **6374**				PrepDate: **11/7/01**		Analyst: **NS**
Lead	1.5	0.20		mg/L	1.0	11/7/01
MERCURY BY COLD VAPOR TECHNIQUE			**EPA 7471A**			
RunID: **AA1_011107A** BatchID: **6375**				PrepDate: **11/7/01**		Analyst: **NS**
Mercury	0.36	0.10		mg/Kg	1.0	11/7/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: _____

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Diane

From: John Juhrend [juhrend@geoconinc.com]
Sent: Tuesday, November 06, 2001 9:22 AM
To: Diane Galvan
Subject: Greenway Trail

Diane -

Please generate the following two composite soil samples and analyze under
48 hour TAT for RCRA metals and TCLP soluble lead:

ATL 53697:

Composite #1: 034A, 036A, 038A and 050A (T34-1, T35-1, T36-1 and T47-1) RCRA
metals and TCLP Lead

Composite #2: 010A, 014A and 53749-001A (B4-4, B5-7 and B10-3)

Please confirm receipt of this e-mail. Need data by Thursday if possible.
Also need all original lab reports for recent results for this project overnighted. Thanks

Sincerely,

John E. Juhrend, PE, CEG
Geocon Consultants, Inc.
11375 Sunrise Park Drive, Suite 100
Rancho Cordova, CA 95742
916.852.9118 Tel
916.852.9132 Fax
juhrend@geoconinc.com

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90807
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: Date: Time:

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON - RC
Attn: John Juhrend
Address: 11375 Sunrise Park Drive # 100
City Rancho Cordova State CA Zip Code 95742
TEL: (916) 852-9118
FAX: (916) 852-9132

Project Name: Freeway Trail Project #: A8050-06-03 Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: 10/30/01 Time: 11:02/01
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name Date
Signature

Send Report To:
Attn:
Co:
Address
City State Zip

Bill To:
Attn:
Co:
Address
City State Zip

Special Instructions/Comments:
see attached

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other
☐ Return To:
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8081 / 8082 (Pesticides/PCB-GC) | 8260 (Volatiles-GC/MS) | 625 / 8270 (BNA-GC/MS) | Metals-Total (CAC-6010 / 7000) | 8015M TPHG/BTEX (COMBINATION) | 8015M TPHD (Diesel-GC) | TLP Lead | RCRA metals

CIRCLE APPROPRIATE MATRIX: SOLID (SOIL) • SLUDGE | OIL • SOLVENT • LIQUID | WATER • WASTEWATER | DRINKING WATER | AIR | WIPE • FILTER | OTHER

QA/QC: RTNE ☑ RWQCB ☐ WIP ☐ NAVY ☐ CT ☑ OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	8081 / 8082	8260	625 / 8270	Metals-Total	8015M TPHG/BTEX	8015M TPHD	TLP Lead	RCRA metals	SOLID (SOIL)	OIL • SOLVENT • LIQUID	WATER • WASTEWATER	DRINKING WATER	AIR	WIPE • FILTER	OTHER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	053790-001	comp (053697-34A, 36A, 38A, 40A)	11/02/01	11:44					X	X			X							C	1	V G	-	
	↓ 002	comp (053697-10A, 14A, 053749-21A)	↓	↓					↓	↓			↓							↓	↓	↓ ↓		

* TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

APPENDIX E

MARCOR ENVIRONMENTAL

MARCOR Remediation, Inc.
16027 Carmenita Road
Cerritos, CA 90703-2208

562-921-2733
562-921-2383 (FAX)
800-237-6271
www.marcor.com

October 8, 2001

Mr. David A. Watts, CAC
Project Scientist
GEOCON CONSULTANTS, INC. **SENT VIA FAX: 925 371-5915**
11375 Sunrise Park Drive
Rancho Cordova, CA 95742

Subject: Asbestos and Lead Abatement Proposal
Union Pacific Railroad
Green Way Trail Project – Whittier, CA
MARCOR Proposal No: 101-417

Dear Mr. Watts:

Thank you for allowing MARCOR Remediation, Inc. to submit a proposal for asbestos and lead abatement on four Union Pacific Rail Road bridges in Whittier, California. We look forward to working with you on this and future projects.

MARCOR prepared this proposal in accordance with a walk through of the job sites and a review of the Geocon Draft Report dated August 23, 2001. MARCOR proposes to complete the scope of work outlined in the CONCLUSIONS and RECOMMENDATIONS portion of Geocon's Draft Report as follows:

Asbestos Abatement
MARCOOR will complete this work in five working days for the lump sum of:
Eleven-Thousand Four-Hundred Dollars ($11,400.00).

Lead Abatement
MARCOR will complete this work in eight working days for the lump sum of:
Nine-Thousand Six-Hundred Dollars ($9,600.00).

MARCOR will require adequate lead time to ensure notifications to the proper authorities, including SCAQMD, Cal/OSHA, City of Whittier, Cal-Trans, and UPRR.

MARCOR's proposal is valid for 60 days and is contingent upon reaching mutually agreeable contract terms.
Please feel free to contact me at 562 902-8523 if you have any questions or you require additional information.

Sincerely

MARCOR Remediation, Inc.

Matt Westrup
Vice President

Celebrating our 20th year of successfully serving our customers.

Rock, Sand & Gravel, Rip Rap & Ballast Rock

Hanson

Hanson Aggregates
Los Angeles

1900 W. Garvey Ave. South, Suite 200
West Covina, California 91790-2653
Tel. 626-856-6700
Fax. 626-337-3401

IRWINDALE
13550 E. Live Oak Ave
(626) 358-1811

INLAND / CUCAMONGA
12082 Highland Ave
(909) 483-0569

EAGLE VALLEY / CORONA
19494 River Rock Road
(909) 371-7625

QUOTE 16861 IS JOB # _____ BID DATE: SDG START DATE: _____ COMPLETION DATE: 03/31/02

CUSTOMER NAME: GEO-CON CONSTRUCTION ZONE: 19423 MP: LA 677 B6

ADDRESS: _____ AS 400 ORDER # : _____

JOB NAME: CITY OF WHITTIER TRAILWAY PROJECT OWNER / GC: _____

JOB LOCATION: MAGNOLIA AV. & HADLEY ST. SALESMAN: House

WHITTIER QUOTE GIVEN BY: Inside Sales

PERSON TO CALL: BOB KIMBALL PHONE # 916-852-9118 FAX 916-852-9132

WE PROPOSE TO FURNISH YOU THE FOLLOWING MATERIALS AND/OR SERVICES FOR USE IN THE CONSTRUCTION OF THE ABOVE JOB:

SAND, ROCK (COMMERCIAL GRADES) DELIVERED IN BOTTOM DUMPS. PRICES ARE PER TON

QUANTITIES	DESCRIPTION	MATERIAL (TAXABLE)	HAUL (NO-TAX)	QUARRY	DEL. PRICE
300	MIX 48 (WCS / 1/2" CR.)	—	TT'S	IRWINDALE	13.75 W/TAX

********ABOVE HAUL CHARGES ARE SUBJECT TO TRANSPORTATION / TRUCKING RATE INCREASES. ********

PRICES ARE FIRM UNTIL: 03/31/02 THEN ADD: $ _____ FIRM UNTIL: _____ THEN ADD: $ _____ FIRM UNTIL: _____

MINIMUM LOAD 24 Tons. An extra charge for less than minimum load will be made. Add $_____ per ton for delivery by Truck & Trailer.

STANDING AND UNLOADING TIM Free unloading time 20 minutes per load. Excess time charged at $ 1.25 per minute for Rock & Sand.

RECYCLED BASE MATERIAL (CMB, PMB & CLASS II)

QUANTITIES	DESCRIPTION	PLANT	TRUCK TYPE	PRICE	FOB

PRICES ARE FIRM UNTIL: _____ THEN ADD: $ _____ FIRM UNTIL: _____ THEN ADD: $ _____ FIRM UNTIL: _____

CONTINUED ON PAGE 2

WASTE MANAGEMENT

9441 Wadena Way
Elk Grove, CA 95758
(916) 683-1575
(916) 683-5019 Fax

November 8, 2001

Mr. John Juhrend
Geocon Consultants
11375 Sunrise Park Dr. Suite 100
Rancho Cordova, CA 95742

Subject: Lead impacted material in Whittier

Dear John;
Waste Management and Kettleman Hills Landfill are pleased to quote the following rates for the aforementioned project:

Waste Description	Volume	Treatment	Rate
Non-RCRA soil with lead	2,000 tons	Direct landfill	$29.00/ ton
Kings County Tax (10% of Revenue)			$2.90/ ton
BOE tax (2001 only, generated in a clean up action)			$5.72/ ton
Transportation (23 ton minimum per load)			$30.00 / ton
Includes ½ hour loading and unloading, thereafter:			$65.00 / hour

This quotation includes the cost of the California Board of Equalization fees that are in effect for the year 2001. The correct amount for future years may or may not be the same.

Non RCRA projects can be profiled, approved and scheduled in approximately three days. These rates are contingent upon profile approval, are based upon payment within the terms of the service agreement and are valid for thirty days unless extended in writing by Waste Management.

Thank you for the opportunity to provide service. If you have questions, please call me at (916) 683-1575.

Sincerely;

Jeff Metteer

Jeff Metteer
Waste Management, Inc.