ATTACHMENT 13

TSG

EXCAVATION INSPECTION LOG

Date	Time	Excavation OK/Not OK For Entry	Comments	Competent Person	Signature

Excavation will be inspected before the start of work each day, after each rainfall, or more often if soil/work conditions change.

ATTACHMENT 14

THE SOURCE GROUP, INC.

CONFINED SPACE ENTRY PERMIT
(POST OUTSIDE SPACE)

TO BE COMPLETED BY PROJECT MANAGER

DATE:_____PROJECT NAME:_____ PROJECT #: _____

LOCATION OF WORK:_____

HAZARDS IN THIS CONFINED SPACE:_____

DESCRIPTION OF WORK:_____

HAZARDS CREATED BY WORK TO BE DONE:_____

STAND-BY:_____ ENTRY LEADER:_____

EMPLOYEES ASSIGNED:_____

ENTRY DATE:_____ ENTRY TIME:_____ EXIT TIME:_____

OUTSIDE CONTRACTORS WORKING IN AREA:_____

(CIRCLE ONE)

1. Have all employees who will enter this space or act as standby received the following approvals and training:

Yes No a. Medical clearance within the past year.
Yes No b. Training in confined space entry.
Yes No c. Job emergency procedures have been reviewed with all employees involved.
Yes No d. Completed rescue drill for this type confined space.

2. Equipment identified by checks (√) in boxes will be available at entrance for emergencies. Equipment identified by (X) in boxes will be used by personnel in space.

☐ ☐ 1. 30-min SCBA
☐ ☐ 2. 15-min SCBA
☐ ☐ 3. Other Respirator _____
☐ ☐ 4. 2-way Radios
☐ ☐ 5. Tether - Life lines
☐ ☐ 6. Harness - Safety belt
☐ ☐ 7. Wristlets
☐ ☐ 8. Fall device for tether
☐ ☐ 9. Rolling body board
☐ ☐ 10. Ladder
☐ ☐ 11. Ladder extensions
☐ ☐ 12. Barricades for all openings
☐ ☐ 13. Tripod or other lifting device
☐ ☐ 14. Opening device for covers
☐ ☐ 15. Device to lock covers open
☐ ☐ 16. Fresh air blower and hose
☐ ☐ 17. LEL-0_2 monitor-alarm
☐ ☐ 18. Colorimetric tubes
☐ ☐ 19. Toxic gas air monitor
☐ ☐ 20. Hard hats
☐ ☐ 21. Safety shoes
☐ ☐ 22. Safety glasses
☐ ☐ 23. Full face shields
☐ ☐ 24. Protective arm covers
☐ ☐ 25. Full chemical protective suit
☐ ☐ 26. Chemical protective gloves
☐ ☐ 27. Chemical protective boots
☐ ☐ 28. Emergency light/Flashlight
☐ ☐ 29. Fire extinguisher
☐ ☐ 30. Pre-entry H&S Briefing
☐ ☐ 31. Stand-by employee(s)

ATTACHMENT 14

CONFINED SPACE ENTRY PERMIT

(POST OUTSIDE SPACE)

Date:_____ Project Name:._____

3. All lines that could discharge contaminants into the space have been/will be blanked off or line disconnected and pumping means locked out and tagged.
   Yes No N/A

4. Space has been/will be cleaned of any toxic residue or atmosphere by_____.
   Yes No N/A

5. Moving machinery has been/will be locked out and immobilized.
   Yes No N/A

6. Entry and exit to the space is provided by_____.
   Yes No N/A

7. Will work to be done in the space introduce contaminants to the space?
   Yes No N/A

8. What is capacity of blowers to be used in cubic feet per minute? _____.

9. Have all affected departments been notified of service interruption?
   Yes No N/A

10. Atmospheric gas tests will be performed by_____.

    Readings:
    Oxygen _____ Flammability %_____ Toxic Gas _____
    (Not <20% or >22%) (LEL <10%) (<____ppm)

11. Will continuous monitoring device be used? Yes No Type._____

12. Calibration date of meters used in items 10 and 11.
    a. _____ b. _____ c. _____

13. Has Corporate Health and Safety been contacted before entry?
    Yes No

14. Emergency communication means: 2-Way ☐ Telephone ☐ Other ☐

I have inspected the space to enter, the safety equipment that will be used, and approve employees' entry into the confined space.

Signed_____
Project Manager

Signed_____
Site Health and Safety Officer

ATTACHMENT 15

THE SOURCE GROUP, INC.

TABLES AND FIGURES FROM PREVIOUS INVESTIGATIONS

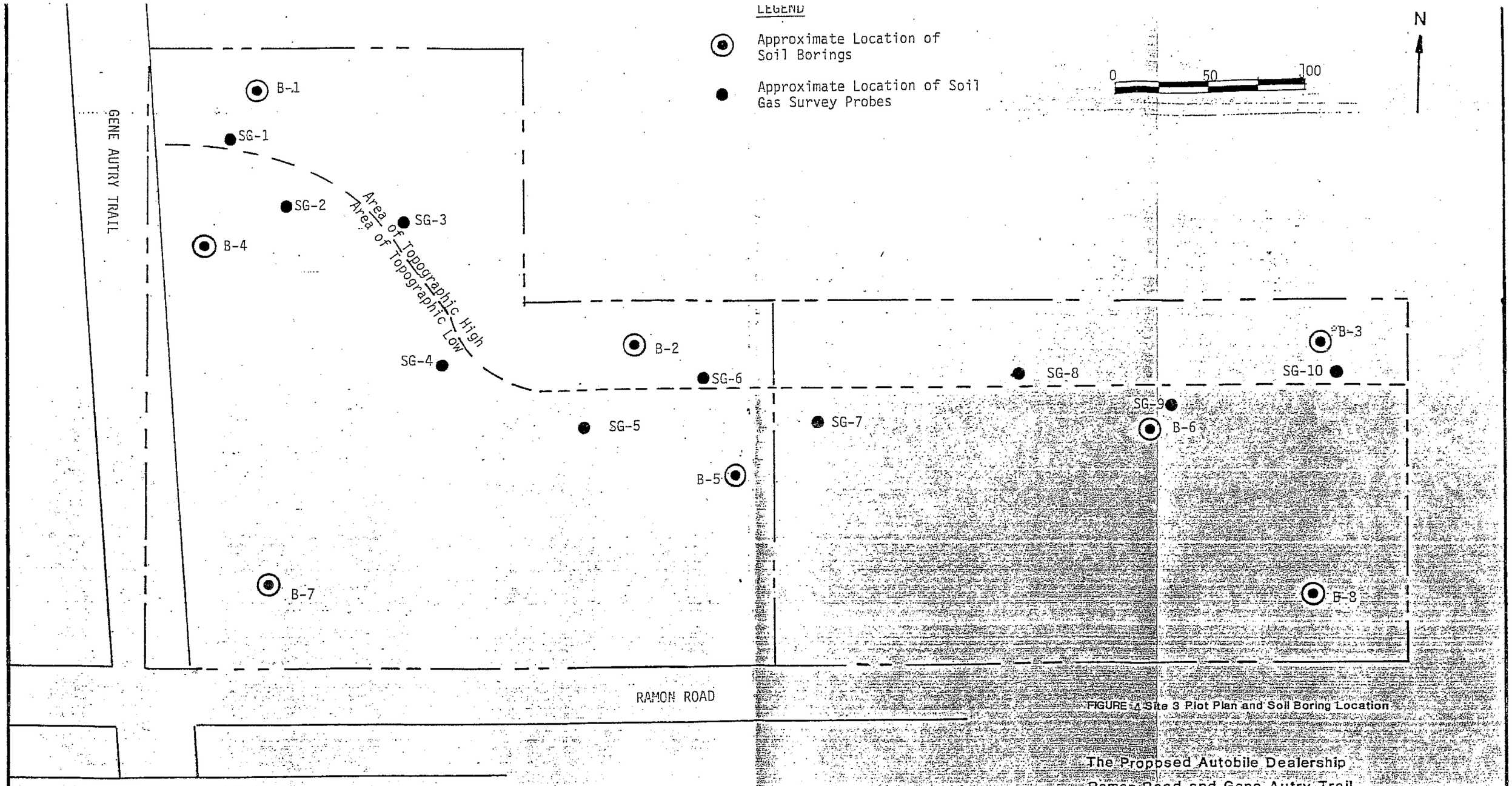


FIGURE 4 Site 3 Plot Plan and Soil Boring Location

The Proposed Autobile Dealership
Ramon Road and Gene Autry Trail
Palm Springs, California

Proj: 40862019-02	Scale: 1"=50'	Date: 4/7/87
Engineer/Geologist: PF	Drafting By: AJ	

LEIGHTON and ASSOCIATES, INC.

P.F. P File L&A 1987 DATA

ASSOCIATED LABORATORIES

806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT

LEIGHTON & ASSOCIATES
1989 Atlanta Avenue Suite 1
Riverside, CA 92507
Attn: Paul Fairbanks

LAB NO. F26717

REPORTED 3/17/87

SAMPLE Soil

RECEIVED 1/23/87

IDENTIFICATION Alstron - Project #5862019-01
Composite of MW-1, MW-2, MW-3

BASED ON SAMPLE As Submitted

EPA METHOD 8240:	*ND
EPA METHOD 8270:	*ND
EPA METHOD 8080:	*ND

* All compounds were None Detected.
See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical •
Microbiological •
Environmental •

10M

Client: Pelgrton & Associates
Lab No: F26717
Date: March 17, 1987

PURGEABLE ORGANICS
EPA METHOD 8240:

	LIMITS OF DETECTION
Chloromethane	ND< 30.0 µg/kg
Bromomethane	ND< 30.0 µg/kg
Vinyl Chloride	ND< 30.0 µg/kg
Chloroethane	ND< 30.0 µg/kg
Methylene Chloride	ND< 50.0 µg/kg
Acetone	ND< 50.0 µg/kg
Acrolein	ND< 50.0 µg/kg
Acrylonitrile	ND< 50.0 µg/kg
Carbon Disulfide	ND< 5.0 µg/kg
1,1-Dichloroethene	ND< 5.0 µg/kg
1,1-Dichloroethane	ND< 5.0 µg/kg
Trans-1,2-Dichloroethene	ND< 5.0 µg/kg
Tetrahydrofuran	ND< 5.0 µg/kg
Trichlorofluoromethane	ND< 5.0 µg/kg
Freon-TF	ND< 5.0 µg/kg
Ethylene Dibromide	ND< 5.0 µg/kg
1,4-Dioxane	ND< 5.0 µg/kg
1,2-Dibromo-3-Chloropropane	ND< 5.0 µg/kg
Chloroform	ND< 5.0 µg/kg
1,2-Dichloroethane	ND< 5.0 µg/kg
2-Butanone	ND< 50.0 µg/kg
1,1,1-Trichloroethane	ND< 5.0 µg/kg
Carbon Tetrachloride	ND< 5.0 µg/kg
Vinyl Acetate	ND< 30.0 µg/kg
Bromodichloromethane	ND< 5.0 µg/kg
1,1,2,2-Tetrachloroethane	ND< 5.0 µg/kg
1,2-Dichloropropane	ND< 5.0 µg/kg
Trans-1,3-Dichloropropene	ND< 5.0 µg/kg
Trichloroethene	ND< 5.0 µg/kg
Chlorodibromomethane	ND< 5.0 µg/kg
1,1,2-Trichloroethane	ND< 5.0 µg/kg
Benzene	ND< 5.0 µg/kg
Cis-1,3-Dichloropropene	ND< 5.0 µg/kg
2-Chloroethylvinyl Ether	ND< 50.0 µg/kg
Bromoform	ND< 5.0 µg/kg
2-Hexanone	ND< 30.0 µg/kg
4-Methyl-2-Pentanone	ND< 30.0 µg/kg
Tetrachloroethene	ND< 5.0 µg/kg
Toluene	ND< 5.0 µg/kg
Chlorobenzene	ND< 5.0 µg/kg
Ethylbenzene	ND< 5.0 µg/kg
Styrene	ND< 5.0 µg/kg
Total Xylenes	ND< 5.0 µg/kg
M-Chlorotoluene	ND< 5.0 µg/kg
1,3-Dichlorobenzene	ND< 5.0 µg/kg
1,4-Dichlorobenzene	ND< 5.0 µg/kg
1,2-Dichlorobenzene	ND< 5.0 µg/kg

Client: Leighton & Associates
Lab No.: E26717
Date: March 17, 1987

ORGANOCHLORINE PESTICIDES & PCB (EPA 8080):	LIMITS OF DETECTION
Aldrin	ND < 0.1 µg/kg
Alpha BHC	ND < 0.1 µg/kg
Beta BHC	ND < 0.2 µg/kg
Delta BHC	ND < 0.1 µg/kg
Gamma BHC (Lindane)	ND < 0.1 µg/kg
Chlordane	ND < 1.0 µg/kg
4,4'-DDD	ND < 0.4 µg/kg
4,4'-DDE	ND < 0.4 µg/kg
4,4'-DDT	ND < 0.4 µg/kg
Dieldrin	ND < 0.2 µg/kg
Endosulfan I	ND < 0.5 µg/kg
Endosulfan II	ND < 0.5 µg/kg
Endosulfan Sulfate	ND < 1.0 µg/kg
Endrin	ND < 0.2 µg/kg
Endrin Aldehyde	ND < 2.0 µg/kg
Heptachlor	ND < 0.1 µg/kg
Heptachlor Epoxide	ND < 0.1 µg/kg
Toxaphene	ND < 1.0 µg/kg
PCB-1016	ND < 1.0 µg/kg
PCB-1221	ND < 1.0 µg/kg
PCB-1232	ND < 1.0 µg/kg
PCB-1242	ND < 1.0 µg/kg
PCB-1248	ND < 1.0 µg/kg
PCB-1254	ND < 1.0 µg/kg
PCB-1260	ND < 1.0 µg/kg

Client: Geigerman & Associates
Lab No.: F26717
Date: March 17, 1987

LIMITS OF DETECTION WHEN TESTING
EPA METHOD 625: (8270)

N-Nitrosodimethylamine	ND <100 µg/kg
Phenol	ND <100 µg/kg
Aniline	ND <100 µg/kg
Bis(2-Chloroethyl)ether	ND <100 µg/kg
2-Chlorophenol	ND <100 µg/kg
1,3-Dichlorobenzene	ND <100 µg/kg
1,4-Dichlorobenzene	ND <100 µg/kg
Benzyl Alcohol	ND <100 µg/kg
1,2-Dichlorobenzene	ND <100 µg/kg
2-Methylphenol	ND <100 µg/kg
Bis(2-Chloroisopropyl)ether	ND <100 µg/kg
4-Methylphenol	ND <100 µg/kg
N-Nitrosodipropylamine	ND <100 µg/kg
Hexachloroethane	ND <100 µg/kg
Nitrobenzene	ND <100 µg/kg
Isophorone	ND <100 µg/kg
2-Nitrophenol	ND <100 µg/kg
2,4-Dimethylphenol	ND <100 µg/kg
Benzoic Acid	ND <500 µg/kg
Bis(2-Chloroethoxy)methane	ND <100 µg/kg
2,4-Dichlorophenol	ND <100 µg/kg
1,2,4-Trichlorobenzene	ND <100 µg/kg
Naphthalene	ND <100 µg/kg
4-Chloroaniline	ND <100 µg/kg
Hexachlorobutadiene	ND <100 µg/kg
4-Chloro-3-Methylphenol	ND <100 µg/kg
2-Methylnaphthalene	ND <100 µg/kg
Hexachlorocyclopentadiene	ND <100 µg/kg
2,4,6-Trichlorophenol	ND <100 µg/kg
2-Chloronaphthalene	ND <100 µg/kg
2-Nitroaniline	ND <500 µg/kg
Dimethyl Phthalate	ND <100 µg/kg
Acenaphthylene	ND <100 µg/kg
3-Nitroaniline	ND <500 µg/kg
Acenaphthene	ND <100 µg/kg
2,4-Dinitrophenol	ND <500 µg/kg
4-Nitrophenol	ND <500 µg/kg
Dibenzofuran	ND <100 µg/kg
2,4-Dinitrotoluene	ND <100 µg/kg
2,6-Dinitrotoluene	ND <100 µg/kg
Diethyl Phthalate	ND <100 µg/kg
4-Chlorophenyl Phenyl Ether	ND <100 µg/kg
Fluorene	ND <100 µg/kg
4-Nitroaniline	ND <500 µg/kg
4,6-Dinitro-2-Methylphenol	ND <500 µg/kg

Cont. on Page 2

N-Nitrosodiphenylamine	ND <100 µg/kg
4-Bromophenyl Phenyl Ether	ND <100 µg/kg
Hexachlorobenzene	ND <100 µg/kg
Pentachlorophenol	ND <500 µg/kg
Phenanthrene	ND <100 µg/kg
Anthracene	ND <100 µg/kg
Di-N-Butyl Phthalate	ND <100 µg/kg
Fluoranthene	ND <100 µg/kg
Benzidine	ND <500 µg/kg
Pyrene	ND <100 µg/kg
Butyl Benzyl Phthalate	ND <100 µg/kg
3,3'-Dichlorobenzidine	ND <200 µg/kg
Benzo(A)Anthracene	ND <100 µg/kg
Bis(2-Ethylhexyl)Phthalate	ND <100 µg/kg
Chrysene	ND <100 µg/kg
Di-N-Octyl Phthalate	ND <100 µg/kg
Benzo(B & K)Fluoranthenes	ND <100 µg/kg
Benzo(A)Pryene	ND <100 µg/kg
Indeno(1,2,3-CD) Pyrene	ND <100 µg/kg
Dibenzo(A,H)Anthracene	ND <100 µg/kg
Benzo(GHI)Perylene	ND <100 µg/kg

Project No.	Client and Site Location
5862019-01	Alstrom Cove Avery & Ramon Rd P.S.

Samplers (Signature): David Goodwin

Sample Number	Date	Time	Depth Below Grade (ft)	Sample Type	Suspect Contamination	No. of Containers	EPA Test Method No.	Priority Pollutants 50 (Composite into one sample)
HW-1	1/6/87	1200	9½	soil		1		✓
HW-2	↓	↓	16½	↓		1		
HW-3	↓	↓	9½	↓		1		

Call & Send Results to:
Leighton & Associates, Inc
1989 Atlanta Ave Suite 1
Riverside CA 92507
Attention: P.E. Fairbank
Phone No. 714-788-5800

REMARKS

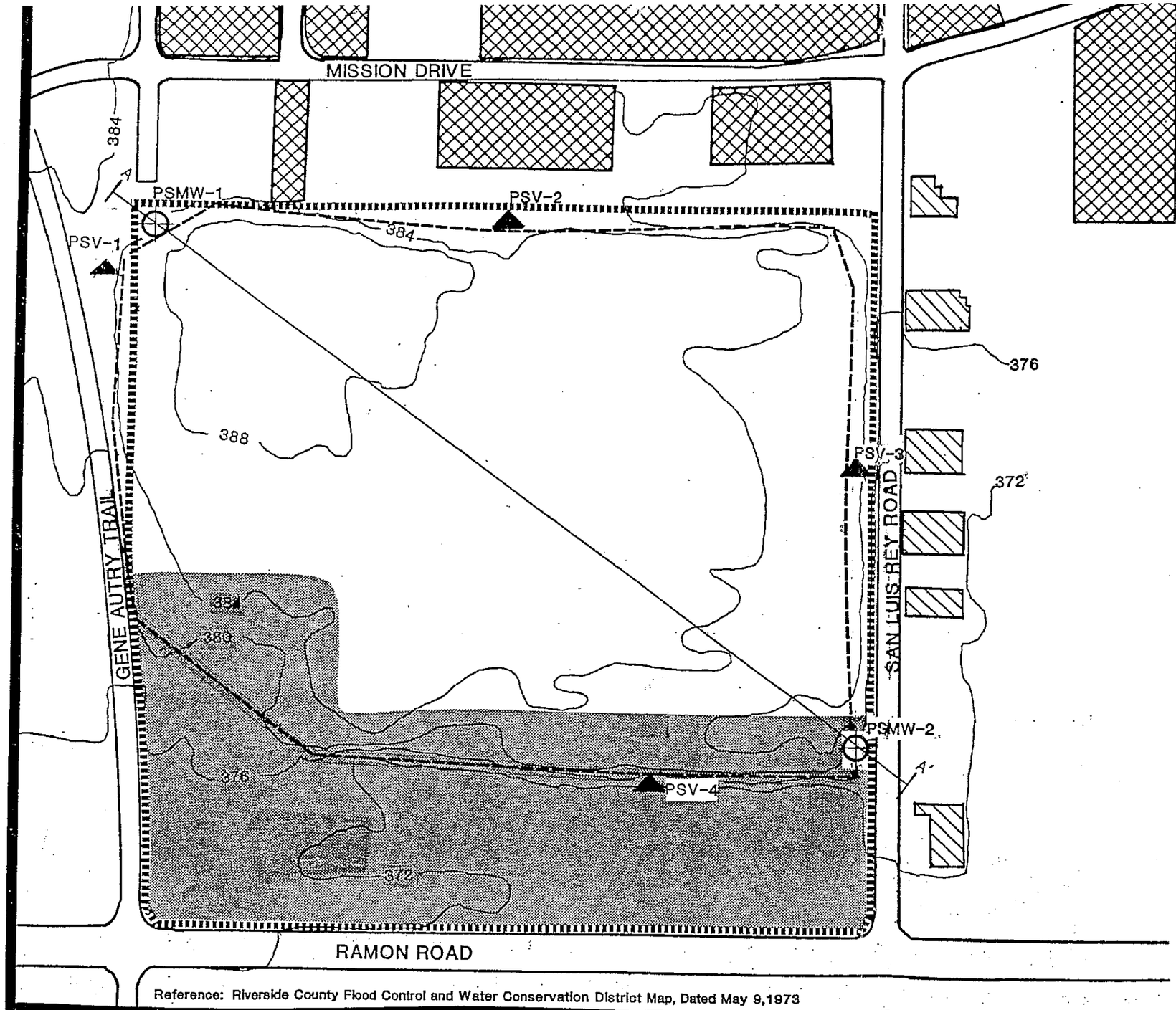
Sample Integrity: good
Samples Intact: Yes X No ____
Samples Properly Cooled: Yes X No ____
Samples Accepted: Yes X No ____
If not, why: ____

Samples Placed In Lab Refrigerator
Yes ✓ No ____ L&A Rep. Initials ____

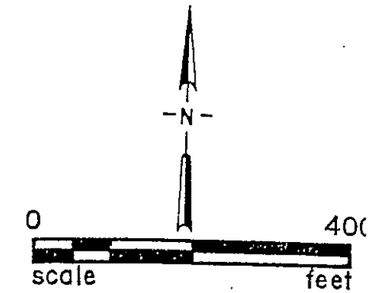
Relinquished by:	Date / Time	Received by:
David Goodwin	1/6/87 12:00	Scot Thomas
Scot Thomas	1-23-87 2:30 pm	James Ch...
James Chang	1-23-87 5:00 pm	Rupert Chu

Leighton and Associates, Inc.

Laboratory Name: Associated Lab
Certification No.: 154



Reference: Riverside County Flood Control and Water Conservation District Map, Dated May 9,1973



LEGEND

- SITE BOUNDARY
- APPROXIMATE BOUNDARY OF BURIED REFUSE
- AREA PROPOSED FOR AUTO DEALERSHIP
- PSMW-2 — APPROXIMATE LOCATION OF SWAT MONITORING WELL
- PSV-4 — APPROXIMATE LOCATION OF SWAT VADOSE ZONE BORING
- A — A' — CROSS SECTION, SEE FIGURE 6
- 384 — ELEVATION CONTOURS IN FEET ABOVE MEAN SEA LEVEL
- RESIDENTIAL AREAS
- COMMERCIAL BUISINESSES

Project Name	PALM SPRINGS S.W.A.T.
Project No.	6881139-02
Drafted By	TAJ — Date 3/27/89
Reviewed By	SDH — Date 3/28/89

Title: SWAT MONITORING WELL AND VADOSE ZONE SAMPLING LOCATIONS

Figure No. 6

5.1.5 Ground Water Sampling and Quality

Background and downgradient ground water quality were assessed based on analytical results of sample volumes drawn from PSMW-1 and PSMW-2, respectively. Prior to sample collection, each well was purged of stagnant water. Sample collection took place immediately following well development (see Section 5.1.4, above).

Once development/purging parameters stabilized, samples were collected employing a dual check valve Teflon bailer fitted with a bottom emptying device. Laboratory detergent and distilled water were used to clean the sampling equipment so as to minimize any cross-contamination between wells. Sample volumes were placed into laboratory supplied and designated sample containers, appropriately labeled, logged in a field notebook and transported to a California Department of Health Services (DHS) Certified Laboratory in a cold ice chest. Chain-of-Custody protocol was maintained to establish legal documentation of all sample transactions from the original collection to the final analysis. A copy of the Chain-of-Custody form is presented in Appendix F.

Analyses performed on collected ground water samples were defined in the State of California, Water Resources Control Board Draft Solid Waste Assessment Test Guidelines, 1986 (SWRCB 1986), and included EPA Methods 624 and 625, and a scan for metals performed by the inductively coupled plasma method (EPA/CLP Method). Metals reported are aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc. Additional analyses included tests for total dissolved solids, chemical oxygen demand, chloride and nitrate (as NO3). All analyses were performed by a California DHS approved laboratory implementing a strict quality assurance and quality control program. Table 1 presents the analytical results of the collected water samples. A copy of the laboratory report is found in Appendix F.

Table 1

Results of Ground Water Analyses

Analysis	PSMW-1 Concentration	PSMW-2 Concentration	Drinking Water Maximum Contaminant Levels
EPA Method 624	ND	ND	NL
EPA Method 625	ND	ND	NL
Chemical Oxygen Demand	ND	ND	NL
Total Dissolved Solids	232	230	1,000
Chloride	17.0	11.0	500
Nitrate (as NO3)	3.1	3.7	45
Aluminum	1.75	2.02	NL
Antimony	ND	ND	NL
Arsenic	ND	ND	0.05
Barium	0.05	0.06	1.0
Berryllium	ND	ND	NL
Cadmium	ND	ND	0.010
Calcium	45.9	48.0	NL
Chromium, Total	0.009	0.007	0.05
Cobalt	ND	ND	NL
Copper	0.01	0.01	1.0*
Iron	2.10	2.24	0.3*
Lead	0.002	ND	0.05
Magnesium	5.93	7.02	NL
Manganese	0.06	0.14	0.05*
Mercury	ND	ND	0.002
Nickel	ND	ND	NL
Potassium	4.16	4.34	NL
Selenium	ND	ND	0.01
Silver	0.005	ND	0.05
Sodium	19.5	21.7	NL
Thallium	ND	ND	NL
Vanadium	0.007	0.008	NL
Zinc	0.07	0.09	5.0*

Notes: All values are in milligrams per liter (mg/l).
ND = All compounds were None Detected.
NL = Not listed in Title 22 for drinking water standards.
* = Secondary drinking water standard. All other values are primary drinking water standards.

5.2 Vadose Zone Detection Monitoring

The vadose zone detection monitoring program consisted of soil sampling and analysis at 4 sites around the perimeter of the landfill body (PSV-1, PSV-2, PSV-3, and PSV-4, Figure 6). The sites are adjacent to the presumed thicker portions of landfill and spaced around the perimeter to provide a broad area of coverage. The landfill itself was not penetrated.

At each location, a boring was drilled to a depth of 20± feet and continuously sampled for geologic logging purposes. Continuous monitoring of soil gas emissions was conducted with a PID and Gas Tech. All values recorded by the instruments were zero. After completing the borehole, the onsite geologist reviewed the log to identify the finest grained stratum encountered. This stratum became the target for discrete depth sampling in an immediately adjacent boring. Soils encountered in these borings included blow sand, poorly sorted sand and gravel, and moderately sorted fine sand with silt. A split-spoon drive sample of the targeted stratum was collected in a brass sleeve, immediately capped with Teflon tape and a plastic cap, labeled, logged in the field notebook and placed in a chilled ice chest for transport to the analytical laboratory. Each boring was backfilled with native soil after sample collection. Decontamination of sampling and drilling equipment was accomplished between holes, and Chain-of-Custody protocol was followed. A copy of the geologic logs of the borings is presented in Appendix C. A copy of the Chain-of-Custody form is presented in Appendix F.

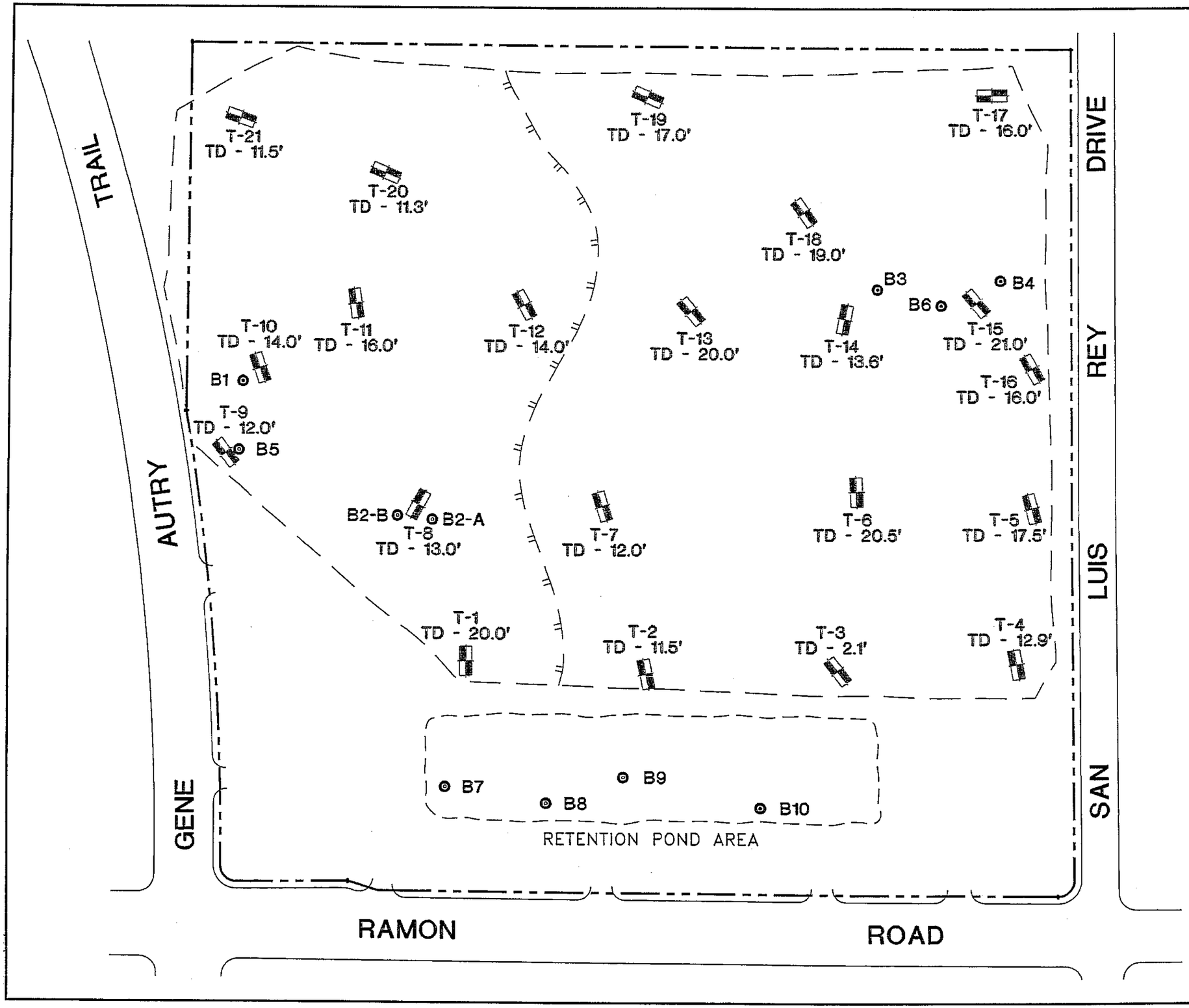
Analytical methods used for the vadose zone samples included EPA Methods 8240 for volatile organics and 8270 for semi-volatile organics. Table 2 presents the analytical results of the collected vadose zone samples. A copy of the laboratory report is found in Appendix F.

Table 2

Results of Vadose Zone Soil Analysis

Analysis	PSV-1	PSV-2	PSV-3	PSV-4
EPA Method 8240	ND	ND	ND	ND
EPA Method 8270	ND	ND	ND	ND

Note: ND = All compounds were None Detected.



LEGEND

- Limits of Existing Landfill
- Property Boundary
- Approximate Limit of Construction Debris
- T-21 TD - 11.5' — Approximate Location of Exploratory Trench TD Indicates Total Depth of Trench
- B1 — Approximate Location of Borings
- Approximate Limit of Retention Pond Area

Source: Leighton & Associates, Inc. 1993, Plate 1

N

0 150 300

APPROXIMATE SCALE IN FEET

DATE:	FILE NAME:	PROJECT NO.:
6/01/03	PSL . DWG	02-GLL-002

BORING LOCATION MAP

FORMER PALM SPRINGS LANDFILL
PALM SPRINGS, CALIFORNIA

The Source Group, Inc.

FIGURE: 2

TABLE 1

General Trench Data

Trench No.	Date Trenched	Total Depth (ft)	Thickness of Fill (ft)	Predominant Type of Fill *	Comments
T-1	5/17/93	15.0	10.7	C	Partially burned
T-2	5/17/93	11.5	11.5	H	Unburned
T-3	5/17/93	17.6	17.6	H	Unburned strong decomposition odor
T-4	5/17/93	12.9	10.5	H	Unburned
T-5	5/18/93	17.5	17.0	H	Unburned, strong decomposition odor
T-6	5/18/93	20.5	20.5+	H	Unburned, strong decomposition odor
T-7	5/18/93	12.0	8.8	H	Unburned
T-8	5/18/93	13.0	11.0	C	Burned melted glass, iron stained soils
T-9	5/18/93	12.0	10.4	C	Burned melted glass, charred wood, burned
T-10	5/18/93	14.0	12.2	C, H	Charred wood partially burned, vegetative debris
T-11	5/18/93	16.0	14.0	C	Unburned wood
T-12	5/18/93	14.0	12.0	C	Unburned, vegetative debris
T-13	5/18/93	20.0	20.0+	H	Strong citrus odors, abundant newspaper
T-14	5/19/93	13.6	11.6	H	Minor burning
T-15	5/19/93	21.0	20.0	H	Unburned, strong decomposition odor, soil blue-gray in color
T-16	5/19/93	16.0	12.4	H	Partially charred wood, abundant newspapers, cardboard
T-17	5/19/93	16.0	14.0	H	Partially burned
T-18	5/19/93	19.0	16.0	H	Abundant unburned paper and cardboard
T-19	5/19/93	17.0	14.5	H	Strong decomposition odor, primarily newspaper
T-20	5/19/93	11.3	7.0	C	Occasional partially burned wood and paper
T-21	5/19/93	11.5	9.0	C	Some charred wood

*H – Household debris consisting of papers, bottles, cardboard, tires, plastic, wood.
*C – Construction debris consisting of concrete rubble, bricks, blocks, rebar, broken glass, wood.

TABLE 2

Summary of Select Analytical Results

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Extraction Pb (mg/l)	Cd (mg/l)	Cu (mg/l)	Zn (mg/l)	TRPH 418.1 (mg/kg)	TPH Diesel (mg/kg)	Pesticides and PCBs (ug/kg)
T-1, J-1	5	Fill	13	–	–	–	–	–	–	–	–
T-1, J-2	10	Fill	1,470	11.7	–	–	–	–	–	–	–
T-1, J-3	14	Native	120	6.92	–	–	–	–	–	–	–
T-1, J-4	15	Native	3	–	–	–	–	–	–	–	–
T-2, J-1	5	Native	261	–	–	–	–	–	–	–	–
T-2, J-2	9	Native	4	–	–	–	–	–	–	–	–
T-2, J-3	11.5	Native	14	–	–	–	–	–	–	–	–
T-3, J-1	5	Fill	2	–	–	–	–	–	–	–	–
T-3, J-2	9	Fill	38	–	–	–	–	–	–	–	–
T-3, J-3	14	Fill	17	–	–	–	–	–	–	–	–
T-3, J-4	21	Native	5	–	–	–	–	–	–	–	–
T-4, J-1	5	Fill	61	–	–	–	–	–	–	–	–
T-4, J-2	10	Fill	59	5.71	–	–	–	–	–	–	–
T-4, J-3	12.9	Native	7	–	–	–	–	–	–	–	–
T-5, J-1	5	Fill	57	3.82	–	–	–	–	–	–	–
T-5, J-2	10	Fill	64	4.23	–	–	–	–	–	–	–
T-5, J-3	14	Fill	55	–	–	–	–	–	–	–	–
T-5, J-4	17	Native	5	–	–	–	–	–	–	–	–
T-5, J-5	17.5	Native	69	4.7	–	–	–	–	–	–	*
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/l	.002 mg/l	.004 mg/l	.003 mg/l	2 mg/kg	5 mg/kg	
Action Levels			1000 mg/kg	5.0 mg/l	5.0 mg/l	1.0 mg/l	–	–	1000 mg/kg	1000 mg/kg	

* Method detection limit varies by analyte. See analytical report for specific method detection limit.

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 2 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Extraction Pb (mg/l)	TCLP Extraction Cd (mg/l)	TCLP Extraction Cu (mg/l)	TCLP Extraction Zn (mg/l)	TRPH 418.1 (mg/kg)	TPH Diesel (mg/kg)	Pesticides and PCBs (ug/kg)
T-6, J-1	5	Fill	19	–	–	–	–	–	–	–	–
T-6, J-2	11	Fill	40	–	–	–	–	–	–	–	–
T-6, J-3	16	Fill	22	–	–	–	–	–	–	–	–
T-6, J-4	20.5	Fill	24	–	–	–	–	–	–	–	–
T-7, J-1	5	Fill	11	–	–	–	–	–	–	–	–
T-7, J-2	10	Native	4	–	–	–	–	–	–	–	–
T-8, J-1	5	Fill	616	6.34	–	–	–	–	–	–	–
T-8, J-2	9.5	Fill	1,255	78.4	1.5	0.078	0.292	54.4	52	N.D.	N.D.
T-8, J-3	13	Native	6	–	–	–	–	–	–	–	–
T-9, J-1	5	Fill	372	21.8	–	–	–	–	–	–	–
T-9, J-2	9.5	Fill	373	3.53	0.13	0.016	0.062	0.912	10	N.D.	N.D.
T-9, J-3	12	Native	6	–	–	–	–	–	–	–	–
T-10, J-1	5	Fill	16	–	–	–	–	–	–	–	–
T-10, J-2	9.7	Fill	14	–	–	–	–	–	–	–	–
T-10, J-3	14	Native	12	–	–	–	–	–	–	–	–
T-11, J-1	5	Fill	45	–	–	–	–	–	–	–	–
T-11, J-2	9	Fill	19	–	–	–	–	–	–	–	–
T-11, J-3	15.6	Native	5	–	–	–	–	–	–	–	–
T-12, J-1	5	Fill	47	–	–	–	–	–	–	–	–
T-12, J-2	9	Fill	73	5.6	0.13	N.D.	0.07	3.1	48	N.D.	N.D.
T-12, J-3	14	Native	61	0.6	–	–	–	–	–	–	–
T-13, J-1	5	Fill	8	–	–	–	–	–	–	–	–
T-13, J-2	10.6	Fill	66	3.79	–	–	–	–	–	–	–
T-13, J-3	15	Fill	63	5.57	–	–	–	–	–	–	–
T-13, J-4	20	Fill	N.D.	–	–	–	–	–	–	–	–
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/l	.002 mg/l	.004 mg/l	.003 mg/l	2 mg/kg	5 mg/kg	*
Action Levels			1000 mg/kg	5.0 mg/l	5.0 mg/l	1.0 mg/l	–	–	1000 mg/kg	1000 mg/kg	

* Method detection limit varies by analyte. See analytical report for specific method detection limit.

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 2 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Extraction Pb (mg/l)	TCLP Extraction Cd (mg/l)	TCLP Extraction Cu (mg/l)	TCLP Extraction Zn (mg/l)	TRPH 418.1 (mg/kg)	TPH Diesel (mg/kg)	Pesticides and PCBs (ug/kg)
T-14, J-1	5	Fill	N.D.	–	–	–	–	–	–	–	–
T-14, J-2	10	Fill	97	8.5	0.42	N.D.	0.094	0.614	589	N.D.	N.D.
T-14, J-3	13.6	Native	5	–	–	–	–	–	–	–	–
T-15, J-1	5	Fill	55	–	0.3	N.D.	0.144	0.558	215	N.D.	N.D.
T-15, J-2	9.5	Fill	86	7.19	0.46	N.D.	0.102	1.75	717	9	N.D.
T-15, J-3	15	Fill	33	–	–	–	–	–	–	–	–
T-15, J-4	21	Native	3	–	–	–	–	–	–	–	–
T-16, J-1	5	Fill	64	2.48	–	–	–	–	–	–	–
T-16, J-2	10	Fill	32	–	–	–	–	–	–	–	–
T-16, J-3	15	Native	N.D.	–	–	–	–	–	–	–	–
T-17, J-1	5	Fill	N.D.	–	–	–	–	–	–	–	–
T-17, J-2	11	Fill	28	–	–	–	–	–	–	–	–
T-17, J-3	16	Native	6	–	–	–	–	–	–	–	–
T-18, J-1	5	Fill	37	–	–	–	–	–	–	–	–
T-18, J-2	10	Fill	30	–	–	–	–	–	–	–	–
T-18, J-3	14	Fill	125	5.14	–	–	–	–	–	–	–
T-18, J-4	18.2	Native	4	–	–	–	–	–	–	–	–
T-19, J-1	5	Fill	11	–	–	–	–	–	–	–	–
T-19, J-2	10	Fill	84	5.95	–	–	–	–	–	–	–
T-19, J-3	14	Fill	51	–	–	–	–	–	–	–	–
T-19, J-4	17	Native	4	–	–	–	–	–	–	–	–
T-20, J-1	5	Fill	29	–	–	–	–	–	–	–	–
T-20, J-2	10	Native	11	–	–	–	–	–	–	–	*
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/l	.002 mg/l	.004 mg/l	.003 mg/l	2 mg/kg	5 mg/kg	
Action Levels			1000 mg/kg	5.0 mg/l	5.0 mg/l	1.0 mg/l	–	–	1000 mg/kg	1000 mg/kg	

* Method detection limit varies by analyte. See analytical report for specific method detection limit.

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 2 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Extraction Pb (mg/l)	TCLP Extraction Cd (mg/l)	TCLP Extraction Cu (mg/l)	TCLP Extraction Zn (mg/l)	TRPH 418.1 (mg/kg)	TPH Diesel (mg/kg)	Pesticides and PCBs (ug/kg)
T-21, J-1	5	Fill	6	–	–	–	–	–	–	–	–
T-21, J-2	9	Fill	222	19.5	–	–	–	–	–	–	–
T-21, J-3	10.5	Native	9	–	–	–	–	–	–	–	–
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/l	.002 mg/l	.004 mg/l	.003 mg/l	2 mg/kg	5 mg/kg	*
Action Levels			1000 mg/kg	5.0 mg/l	5.0 mg/l	1.0 mg/l	–	–	1000 mg/kg	1000 mg/kg	

* Method detection limit varies by analyte. See analytical report for specific method detection limit.

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 3

Summary of Lead Analyses

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Pb Extraction (mg/l)
T–1, J–1	5	Fill	13	–	–
T–1, J–2	10	Fill	1,470	11.7	0.15
T–1, J–3	14	Native	120	6.92	–
T–1, J–4	15	Native	3	–	–
T–2, J–1	5	Native	261	–	–
T–2, J–2	9	Native	4	–	–
T–2, J–3	11.5	Native	14	–	–
T–3, J–1	5	Fill	2	–	–
T–3, J–2	9	Fill	38	–	–
T–3, J–3	14	Fill	17	–	–
T–3, J–4	21	Native	5	–	–
T–4, J–1	5	Fill	61	3.87	–
T–4, J–2	10	Fill	59	5.71	–
T–4, J–3	12.9	Native	7	–	–
T–5, J–1	5	Fill	57	3.82	–
T–5, J–2	10	Fill	64	4.23	–
T–5, J–3	14	Fill	55	–	–
T–5, J–4	17	Native	5	–	–
T–5, J–5	17.5	Native	69	4.7	–
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/kg
Action Level			1,000 mg/kg	5.0 mg/l	5.0 mg/l

Exceeds the Regulation Level. (CCR; Title 22)

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 3 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Pb Extraction (mg/l)
T–6, J–1	5	Fill	19	–	–
T–6, J–2	11	Fill	40	–	–
T–6, J–3	16	Fill	22	–	–
T–6, J–4	20.5	Fill	24	–	–
T–7, J–1	5	Fill	11	–	–
T–7, J–2	10	Native	4	–	–
T–8, J–1	5	Fill	616	6.34	–
T–8, J–2	9.6	Fill	1,255	78.4	1.5
T–8, J–3	13	Native	6	–	–
T–9, J–1	5	Fill	372	21.8	–
T–9, J–2	9.5	Fill	373	3.53	0.13
T–9, J–3	12	Native	6	–	–
T–10, J–1	5	Fill	16	–	–
T–10, J–2	9.7	Fill	14	–	–
T–10, J–3	14	Native	12	–	–
T–11, J–1	5	Fill	45	–	–
T–11, J–2	9	Fill	19	–	–
T–11, J–3	15.5	Native	5	–	–
T–12, J–1	5	Fill	47		
T–12, J–2	9	Fill	73	5.6	0.13
T–12, J–3	14	Native	61	0.6	–
T–13, J–1	5	Fill	8	–	–
T–13, J–2	10.6	Fill	66	3.79	–
T–13, J–3	15	Fill	63	5.57	–
T–13, J–4	20	Fill	N.D.	–	–
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/kg
Action Level			1,000 mg/kg	5.0 mg/l	5.0 mg/l

Exceeds the Regulation Level. (CCR; Title 22)

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 3 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Pb Extraction (mg/l)
T–14, J–1	5	Fill	N.D.	–	–
T–14, J–2	10	Fill	97	8.5	0.42
T–14, J–3	13.6	Native	5	–	–
T–15, J–1	5	Fill	55	–	0.3
T–15, J–2	9.5	Fill	86	7.19	0.46
T–15, J–3	15	Fill	33	–	–
T–15, J–4	21	Native	3	–	–
T–16, J–1	5	Fill	64	2.48	–
T–16, J–2	10	Fill	32	–	–
T–16, J–3	15	Native	N.D.	–	–
T–17, J–1	5	Fill	N.D.	–	–
T–17, J–2	11	Fill	28	–	–
T–17, J–3	16	Native	6	–	–
T–18, J–1	5	Fill	37	–	–
T–18, J–2	10	Fill	30	–	–
T–18, J–3	14	Fill	125	5.14	–
T–18, J–4	18.2	Native	4	–	–
T–19, J–1	5	Fill	11	–	–
T–19, J–2	10	Fill	84	5.95	–
T–19, J–3	14	Fill	51	–	–
T–19, J–4	17	Native	4	–	–
T–20, J–1	5	Fill	29	–	–
T–20, J–2	10	Native	11	–	–
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/kg
Action Level			1,000 mg/kg	5.0 mg/l	5.0 mg/l

Exceeds the Regulation Level. (CCR; Title 22)

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 3 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Pb 7420 (mg/kg)	STLC Pb (mg/l)	TCLP Pb Extraction (mg/l)
T–21, J–1	5	Fill	6	–	–
T–21, J–2	9	Fill	222	19.5	–
T–21, J–3	10.5	Native	9	–	–
Limits of Detection			2 mg/kg	.03 mg/l	0.002 mg/kg
Action Level			1,000 mg/kg	5.0 mg/l	5.0 mg/l

Exceeds the Regulation Level. (CCR; Title 22)

N.D.: Not detected in this analysis, or less than the method detection limit.

TABLE 4

Total Metals

Sample ID	Sample Depth (ft)	Earth Material	Total Threshold Limit Concentration Sb (mg/kg)	Tot. Arsenic (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
T-1, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-1, J-2	10	Fill	0.14	2.77	82	N.D.	4.03	58.7	8	42.5	N.D.	N.D.	39	N.D.	1.1	N.D.	41	593
T-1, J-3	14	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-1, J-4	15	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-2, J-1	5	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-2, J-2	9	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-2, J-3	11.5	Native	N.D.	0.27	9	N.D.	N.D.	3.5	84	8.9	0.03	N.D.	5	N.D.	0.3	N.D.	10	30.6
T-3, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-3, J-2	9	Fill	0.163	0.73	39	N.D.	0.45	7.7	65	16.5	0.04	N.D.	5	N.D.	0.9	N.D.	12	108
T-3, J-3	14	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-3, J-4	21	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-4, J-1	5	Fill	0.19	0.53	43	N.D.	14.1	7.1	6	17.5	0.08	N.D.	9	0.04	0.5	N.D.	15	180
T-4, J-2	10	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-4, J-3	12.9	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-5, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-5, J-2	10	Fill	1.2	1.37	41	N.D.	0.53	8.1	6	20.3	0.33	N.D.	10	0.038	0.7	N.D.	15	112
T-5, J-3	14	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-5, J-4	17	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-5, J-5	17.5	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EPA Test Method			6040	7061	7080	7090	7130	7190	7200	7210	7470	7480	7520	7741	7750	7840	7910	7950
Limits of Detection			.009 mg/kg	.02 mg/kg	5 mg/kg	.2 mg/kg	.09 mg/kg	.7 mg/kg	1 mg/kg	.2 mg/kg	.02 mg/kg	4 mg/kg	1 mg/kg	.008 mg/kg	.3 mg/kg	5 mg/kg	9 mg/kg	.2 mg/kg
TTLC defined in Title 22			500 mg/kg	500 mg/kg	10000 mg/kg	75 mg/kg	100 mg/kg	2500 mg/kg	8000 mg/kg	2500 mg/kg	20 mg/kg	3500 mg/kg	2000 mg/kg	100 mg/kg	500 mg/kg	700 mg/kg	2400 mg/kg	5000 mg/kg
STLC defined in Title 22			15 mg/l	5.0 mg/l	100 mg/l	0.75 mg/l	1.0 mg/l	560 mg/l	80 mg/l	25 mg/l	0.2 mg/l	350 mg/l	20 mg/l	1.0 mg/l	5 mg/l	7.0 mg/l	24 mg/l	250 mg/l

N.D.: Not detected in this analysis, or less than the method detection limit.
Total Lead included in Tables 2 and 3.

Sb – Antimony
Ba – Barium
Be – Beryllium
Cd – Cadmium
Cr – Chromium
Co – Cobalt
Cu – Copper
Hg – Mercury
Mo – Molybdenum
Ni – Nickel
Se – Selenium
Ag – Silver
Tl – Thallium
V – Vanadium
Zn – Zinc

TABLE 4 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Threshold Limit Concentration															
			Sb (mg/kg)	Tot. Arsenic (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
T-5, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-5, J-2	11	Fill	0.212	1.53	16	ND	0.93	5.6	5	36.3	0.02	ND	8	ND	0.5	ND	ND	135
T-5, J-3	16	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-5, J-4	20.5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-7, J-1	5	Fill	0.035	0.65	14	N.D.	0.3	4.4	5	8.9	0.09	N.D.	6	N.D.	0.5	N.D.	12	35.8
T-7, J-2	10	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-8, J-1	5	Fill	9.95	3.35	119	N.D.	3.23	26.3	13	109	0.12	N.D.	28	N.D.	1.6	N.D.	N.D.	417
T-8, J-2	9.5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-8, J-3	13	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-9, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-9, J-2	9.5	Fill	2.45	4	57	N.D.	0.45	8.7	6	21.7	N.D.	N.D.	9	N.D.	1	N.D.	15	110
T-9, J-3	12	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-10, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-10, J-2	9.7	Fill	0.875	0.975	19	N.D.	0.33	4.8	5	28.8	N.D.	N.D.	8	N.D.	0.4	N.D.	N.D.	265
T-10, J-3	14	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-11, J-1	5	Fill	0.146	2.4	46	N.D.	0.65	6.7	5	16.3	N.D.	N.D.	8	N.D.	0.5	N.D.	15	106
T-11, J-2	9	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-11, J-3	15.5	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-12, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-12, J-2	9	Fill	0.35	0.48	19	N.D.	0.85	7.1	7	31.5	N.D.	N.D.	15	N.D.	0.6	N.D.	16	437
T-12, J-3	14	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-13, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-13, J-2	10.6	Fill	0.275	2.3	21	N.D.	0.6	5.6	6	23	N.D.	N.D.	12	0.045	0.5	N.D.	11	645
T-13, J-3	15	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-13, J-4	20	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EPA Test Method			6040	7061	7080	7090	7130	7190	7200	7210	7470	7480	7520	7741	7760	7840	7910	7950
Limits of Detection			.009 mg/kg	.02 mg/kg	5 mg/kg	.2 mg/kg	.09 mg/kg	.7 mg/kg	1 mg/kg	.2 mg/kg	.02 mg/kg	4 mg/kg	1 mg/kg	.008 mg/kg	.3 mg/kg	5 mg/kg	9 mg/kg	.2 mg/kg
TTLC defined in Title 22			500 mg/kg	500 mg/kg	10000 mg/kg	75 mg/kg	100 mg/kg	2500 mg/kg	8000 mg/kg	2500 mg/kg	20 mg/kg	3500 mg/kg	2000 mg/kg	100 mg/kg	500 mg/kg	700 mg/kg	2400 mg/kg	5000 mg/kg
STLC defined in Title 22			15 mg/l	5.0 mg/l	100 mg/l	0.75 mg/l	1.0 mg/l	560 mg/l	80 mg/l	25 mg/l	0.2 mg/l	350 mg/l	20 mg/l	1.0 mg/l	5 mg/l	7.0 mg/l	24 mg/l	250 mg/l

N.D.: Not detected in this analysis, or less than the method detection limit.
Total Lead included in Tables 2 and 3.

Sb – Antimony
Ba – Barium
Be – Beryllium
Cd – Cadmium
Cr – Chromium
Co – Cobalt
Cu – Copper
Hg – Mercury
Mo – Molybdenum
Ni – Nickel
Se – Selenium
Ag – Silver
Tl – Thallium
V – Vanadium
Zn – Zinc

TABLE 4 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Sb (mg/kg)	Tot. Arsenic (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
			Total Threshold Limit Concentration															
T-14, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-14, J-2	10	Fill	0.5	0.85	15	N.D.	0.25	5.2	5	11.6	0.07	N.D.	6	0.025	0.4	N.D.	11	105
T-14, J-3	13.5	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-15, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-15, J-2	9.5	Fill	0.223	0.73	31	N.D.	0.65	6.9	6	19.6	0.7	N.D.	8	0.05	0.8	N.D.	18	85.7
T-15, J-3	15	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-15, J-4	21	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-16, J-1	5	Fill	0.26	0.73	34	N.D.	0.4	7.7	6	17.4	0.39	N.D.	8	0.047	0.6	N.D.	15	460
T-16, J-2	10	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-16, J-3	15	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-17, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-17, J-2	11	Fill	0.975	1.6	26	N.D.	0.55	4.7	5	28.2	0.07	N.D.	7	N.D.	N.D.	N.D.	N.D.	347
T-17, J-3	16	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-18, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-18, J-2	10	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-18, J-3	14	Fill	0.25	2.37	29	N.D.	0.98	20.1	6	55.7	N.D.	N.D.	12	N.D.	–	N.D.	N.D.	162
T-18, J-4	16.2	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-19, J-1	5	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-19, J-2	10	Fill	0.525	0.88	24	N.D.	0.55	6.3	9	303	0.03	N.D.	25	0.043	0.7	N.D.	8	178
T-19, J-3	14	Fill	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-19, J-4	17	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-20, J-1	5	Fill	0.026	0.53	41	N.D.	0.53	3.4	6	31.5	0.08	N.D.	7	N.D.	0.7	N.D.	N.D.	82.5
T-20, J-2	10	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EPA Test Method			6040	7061	7080	7090	7130	7190	7200	7210	7470	7480	7520	7741	7760	7840	7910	7950
Limits of Detection			.009 mg/kg	.02 mg/kg	5 mg/kg	.2 mg/kg	.09 mg/kg	.7 mg/kg	1 mg/kg	.2 mg/kg	.02 mg/kg	4 mg/kg	1 mg/kg	.008 mg/kg	.3 mg/kg	5 mg/kg	9 mg/kg	.2 mg/kg
TTLC defined in Title 22			500 mg/kg	500 mg/kg	10000 mg/kg	75 mg/kg	100 mg/kg	2500 mg/kg	8000 mg/kg	2500 mg/kg	20 mg/kg	3500 mg/kg	2000 mg/kg	100 mg/kg	500 mg/kg	700 mg/kg	2400 mg/kg	5000 mg/kg
STLC defined in Title 22			15 mg/l	5.0 mg/l	100 mg/l	0.75 mg/l	1.0 mg/l	560 mg/l	80 mg/l	25 mg/l	0.2 mg/l	350 mg/l	20 mg/l	1.0 mg/l	5 mg/l	7.0 mg/l	24 mg/l	250 mg/l

N.D.: Not detected in this analysis, or less than the method detection limit.
Total Lead included in Tables 2 and 3.

Sb – Antimony
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Cr – Chromium
Co – Cobalt
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Hg – Mercury
Mo – Molybdenum
Ni – Nickel
Se – Selenium
Ag – Silver
Tl – Thallium
V – Vanadium
Zn – Zinc

TABLE 4 (Cont'd.)

Sample ID	Sample Depth (ft)	Earth Material	Total Threshold Limit Concentration: Sb (mg/kg)	Tot. Arsenic (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
T-21, J-1	5	FM	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T-21, J-2	9	FM	0.71	1.73	82	N.D.	1.27	11	6	87	0.11	N.D.	30	0.047	0.7	N.D.	9	427
T-21, J-3	10.5	Native	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EPA Test Method			6040	7061	7080	7090	7130	7190	7200	7210	7470	7480	7520	7741	7760	7840	7910	7950
Limits of Detection			.009 mg/kg	.02 mg/kg	5 mg/kg	.2 mg/kg	.09 mg/kg	.7 mg/kg	1 mg/kg	.2 mg/kg	.02 mg/kg	4 mg/kg	1 mg/kg	.008 mg/kg	.3 mg/kg	5 mg/kg	9 mg/kg	.2 mg/kg
TTLC defined in Title 22			500 mg/kg	500 mg/kg	10000 mg/kg	75 mg/kg	100 mg/kg	2500 mg/kg	8000 mg/kg	2500 mg/kg	20 mg/kg	3500 mg/kg	2000 mg/kg	100 mg/kg	500 mg/kg	700 mg/kg	2400 mg/kg	5000 mg/kg
STLC defined in Title 22			15 mg/l	5.0 mg/l	100 mg/l	0.75 mg/l	1.0 mg/l	560 mg/l	80 mg/l	25 mg/l	0.2 mg/l	350 mg/l	20 mg/l	1.0 mg/l	5 mg/l	7.0 mg/l	24 mg/l	250 mg/l

N.D.: Not detected in this analysis, or less than the method detection limit.
Total Lead included in Tables 2 and 3.

Sb – Antimony
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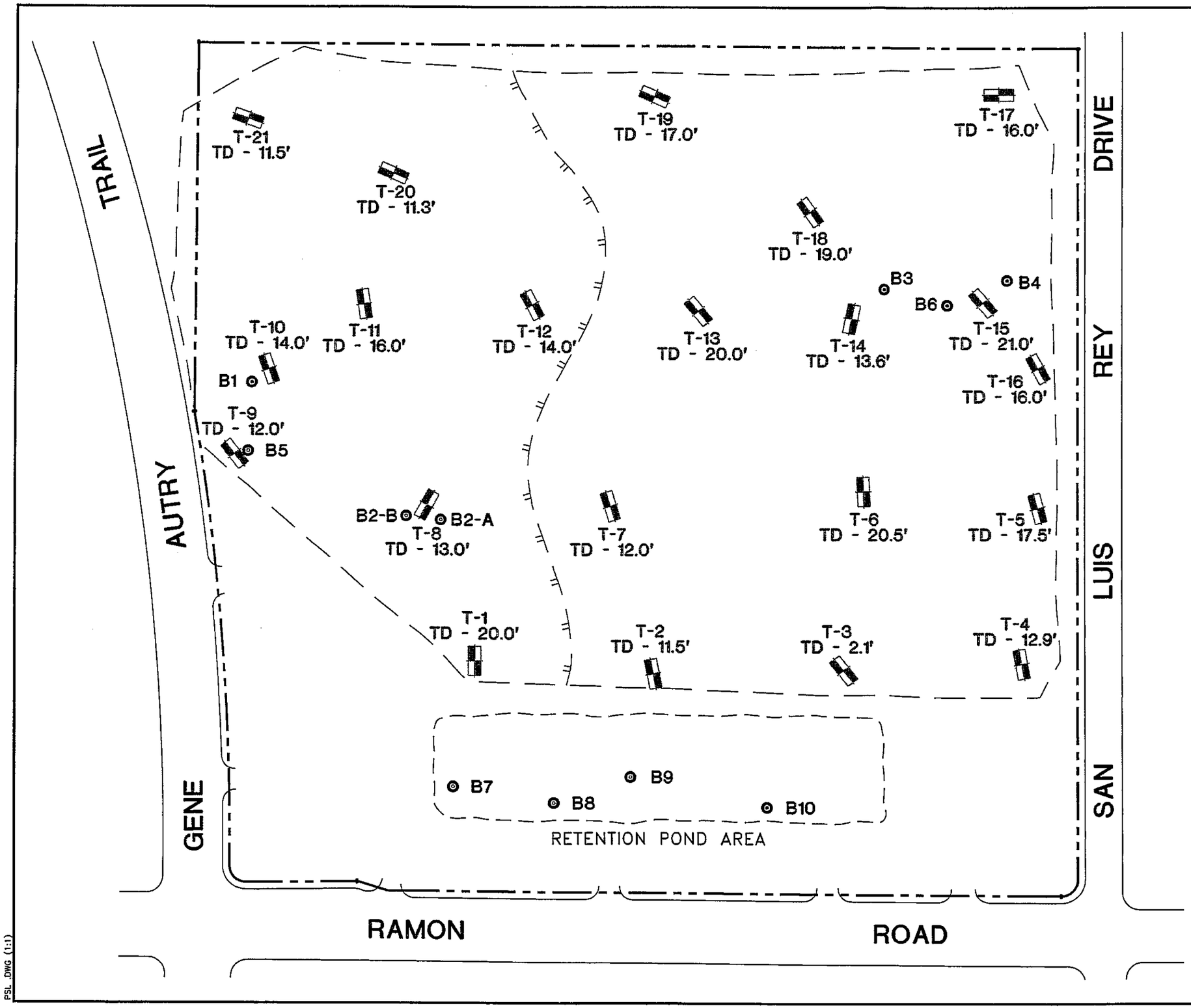
Mo – Molybdenum
Ni – Nickel
Se – Selenium
Ag – Silver
Tl – Thallium
V – Vanadium
Zn – Zinc



LEGEND

- Limits of Existing Landfill
- Property Boundary
- Approximate Limit of Construction Debris
- T-21 TD - 11.5' — Approximate Location of Exploratory Trench TD Indicates Total Depth of Trench
- B1 — Approximate Location of Borings
- Approximate Limit of Retention Pond Area

Source: Leighton & Associates, Inc. 1993, Plate 1

N

0 150 300

APPROXIMATE SCALE IN FEET

DATE:	FILE NAME:	PROJECT NO.:
6/01/03	PSL . DWG	02-GLL-002

BORING LOCATION MAP

FORMER PALM SPRINGS LANDFILL
PALM SPRINGS, CALIFORNIA

The Source Group, Inc.

FIGURE: 2

PSL . DWG (1:1)

TABLE 1

Summary of Soil Analytical Data
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran Compounds

Former Palm Springs Landfill
Palm Springs, California

Compound Names		CAS Registry Number	Results (units in ng/g = µg/kg)						
Abbreviated	Full		B2C-0.5-1	B1-10-10.5	B1-17.5-18	B3-5.5-6	B6-10-10.5	B6-17.5-18	B5-8.5-9
2,3,7,8-TCDD	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	1746-01-6	<0.0066	<0.098	<0.0072	<0.0056	<0.018	<0.0044	<0.0096
Total TCDD			<0.0066	<0.098	<0.0072	<0.0056	<0.018	<0.0044	<0.0096
1,2,3,7,8-PeCDD	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	40321-76-4	<0.026	<0.91	<0.046	<0.046	<0.10	<0.028	<0.083
Total PeCDD			<0.16	<1.0	<0.15	<0.18	<0.33	<0.14	<0.22
1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	39227-28-6	<0.015	<0.17	<0.018	<0.023	<0.033	<0.011	<0.054
1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	57653-85-7	<0.017	<0.58	<0.021	<0.025	<0.12	<0.012	<0.054
1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	19408-74-3	<0.014	<1.1	<0.015	<0.027	<0.20	<0.0062	<0.044
Total HxCDD			<0.017	<1.1	<0.021	<0.034	<0.50	<0.012	<0.090
1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	35822-46-9	<0.085	**1.9**	<0.015	<0.46	**10**	<0.018	<0.28
Total HpCDD			<0.085	**3.9**	<0.030	<0.46	**21**	<0.025	<0.28
OCDD	1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin	3268-87-9	<0.42	**7.5**	<0.015	**2.4**	**91**	<0.092	<0.63
2,3,7,8-TCDF	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	<0.0039	<0.038	<0.0055	<0.0068	<0.16	<0.0055	<0.015
Total TCDF			<0.0046	<0.10	<0.0077	<0.0068	<0.16	<0.0055	<0.016
1,2,3,7,8-PeCDF	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	<0.010	<0.13	<0.0094	<0.010	<0.027	<0.0090	<0.019
2,3,4,7,8-PeCDF	2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	<0.011	<0.17	<0.011	<0.014	<0.045	<0.0081	<0.026
Total PeCDF			<0.024	<0.17	<0.014	<0.034	<0.045	<0.011	<0.054
1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	<0.0077	<0.17	<0.0035	<0.017	<0.025	<0.0024	<0.022
1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	<0.0059	<0.20	<0.0029	<0.020	<0.044	<0.0018	<0.030
2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	<0.0078	<0.22	<0.0071	<0.015	<0.12	<0.0058	<0.049
1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	<0.015	<0.19	<0.0060	<0.017	<0.070	<0.0045	<0.055
Total HxCDF			<0.019	<0.22	<0.0092	<0.057	<0.22	<0.0073	<0.055
1,2,3,7,8-HpCDF	1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	<0.021	<0.24	<0.0090	<0.014	<0.22	<0.010	<0.059
1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	<0.040	<0.16	<0.014	<0.026	<0.13	<0.0079	<0.056
Total HpCDF			<0.040	<0.24	<0.017	<0.035	<0.68	<0.013	<0.084
OCDF	1,2,3,4,5,6,7,8-Octachlorodibenzofuran	39001-02-0	<0.064	<0.27	<0.029	<0.051	<0.32	<0.020	<0.086

Notes:
1. Sample Matrix was Soil or Landfill Solids.
2. Samples collected March 26-27, 2003.
3. Samples analyzed by EPA 8280A.
4. Samples Analyzed by Severn Trent Laboratories, Inc.

TABLE 3
Summary of Soil Analytical Data
Title 22 Metals (17)

Former Palm Springs Landfill
Palm Springs, California

Compound	Sample ID				Industrial PRG	CAL-Modified Industrial	Soil Screening Level [3]
	B7-11-11.5	B8-4-4.5	B9-7-7.5	B10-4-4.5			
Antimony	<10	<10	<10	<10	410	--	5
Arsenic	**0.71**	<0.5	<0.5	**0.58**	1.6 [4]	--	29
Barium	**87**	**58**	**48**	**73**	67,000	--	1,600
Beryllium	<1	<1	<1	<1	1,900	--	63
Cadmuim	<1	<1	<1	<1	450	7.4	8.0
Chromium	**18**	**8.4**	**11**	**12**	450	--	38
Cobalt	**9.5**	**4.1**	**5.6**	**6.9**	1,900	--	--
Copper	**31**	**22**	**28**	**16**	41,000	--	--
Lead	**4.1**	**5.6**	<3	<3	750	--	--
Mercury	<0.05	**0.12**	<0.05	**0.051**	310 [5]	--	--
Molybdenum	<5	<5	<5	<5	5,100	--	--
Nickel	**8.8**	**3.1**	**4.9**	**5.0**	20000 [6]	--	130[6]
Selenium	<0.5	<0.5	<0.5	<0.5	5,100	--	5
Silver	**1.1**	**2.2**	<1	<1	5,100	--	34
Thalium	<5	<5	<5	<5	67	--	--
Vanadium	**37**	**18**	**21**	**26**	7,200	--	6,000
Zinc	**66**	**53**	**46**	**46**	100,000	--	12,000
Sample Date	03/27/03	03/27/03	03/27/03	03/27/03			

Notes: 1. Sample Matrix was Soil or Landfill Solids.
3. Migration to Groundwater; DAF 20.
2. Units in milligrams/kilogram (mg/kg).
4. PRG Based on Cancer Endpoint
5. PRG as Mercury Chloride.
6. PRG and SSL as Nickel (soluble salts)
6. "–" = No Value Assigned for these Compounds.
7. PRG = Preliminary Remedial Goals; EPA Region 9 PRG Table, October 1, 2002.
8. SSL = Soil Screening Levels; EPA Region 9 PRG Table, October 1, 2002.

TABLE 2

Summary of Soil Analytical Data

Polynuclear Aromatic Hydrocarbons

Former Palm Springs Landfill
Palm Springs, California

Compound	Sample ID						Industrial PRG	CAL-Modified Industrial	Soil Screening Level
	B2D-0.5-1	B1-10-10.5	B3-5.5-6	B6-10-10.5	B8-4-4.5	B5-8.5-9			
Acenaphthene	<0.020	**0.029**	<0.020	**0.021**	<0.020	<0.020	29,000	--	570
Acenaphthylene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	--	--	--
Anthracene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	100,000	--	12,000
Benz[a]anthracene	<0.020	<0.020	**0.034**	**0.170**	**0.020**	<0.020	2.1	--	2.0
Benzo[a]pyrene	<0.020	<0.020	**0.024**	**0.074**	<0.020	<0.020	0.21	--	8.0
Benzo[b]fluoranthene	**0.020**	**0.026**	**0.037**	**0.150**	<0.020	<0.020	2.1	--	5.0
Benzo[g,h,I]perylene	<0.020	<0.020	<0.020	**0.055**	<0.020	<0.020	--	--	--
Benzo[k]fluoranthene	**0.022**	<0.020	<0.020	**0.052**	<0.020	<0.020	21	1.3	49
Chrysene	**0.039**	**0.092**	<0.020	**0.076**	<0.020	<0.020	210	13	160
Dibenzo[a,h]anthracene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.21	--	2.0
Fluoranthene	<0.020	<0.020	**0.030**	**0.130**	<0.020	<0.020	22,000	--	4,300
Fluorene	<0.020	**0.089**	<0.020	<0.020	<0.020	<0.020	26,000	--	560
Indeno[1,2,3-cd]pyrene	<0.020	<0.020	<0.020	**0.040**	<0.020	<0.020	2.1	--	14
Naphthalene	<0.020	**0.420**	<0.020	**0.140**	<0.020	<0.020	190	--	84
Phenanthrene	<0.020	**0.530**	<0.020	**0.093**	<0.020	<0.020	--	--	--
Pyrene	<0.020	<0.020	**0.033**	**0.170**	<0.020	<0.020	29,000	--	4,200
Sample Date	03/26/03	03/26/03	03/27/03	03/27/03	03/27/03	03/26/03			

Notes:
1. Sample Matrix was Soil or Landfill Solids.
2. Units in milligrams/kilogram (mg/kg).
3. EPA 8270 (PAHs) by Selective Ion Monitoring (SIM) Methodology.
4. "--" = No Value Assigned for these Compounds.
5. PAH = Polynuclear Aromatic Hydrocarbons.
6. PRG = Preliminary Remedial Goals; EPA Region 9 PRG Table, October 1, 2002.
7. SSL = Soil Screening Levels; EPA Region 9 PRG Table, October 1, 2002.

ATTACHMENT 16

THE SOURCE GROUP, INC.

INCREMENTAL CANCER RISK TO WORKERS – DIOXIN AND RELATED COMPOUNDS

The DTSC has asked The Source Group (TSG) to evaluate worker safety with respect to Dioxin compounds likely to be encountered at the former Palm Springs Landfill (PSL) during construction. This letter summarizes a limited risk evaluation of the site considering available data.

Summary of Analytical Data

Table 1 summarizes recent sample data (collected in April 2003) for seventeen dioxin and related compounds (collectively referred to as "Dioxin") identified as possible cancer causing. A complete discussion of site sampling was reported in an earlier TSG report (Remedial Investigation Report, July 2003).

At many sites, sample locations are selected in a random manner (or semi random manner to assure a good site coverage) that makes it easy to justify averaging data. The dioxin data for this site, however, is biased in the sense samples were collected in areas where markers for burning existed. It was felt this approach would sample areas most likely to have higher concentrations of dioxin and related compounds. Because the samples were "targeted," the sample data set is relatively small compared to a more random sampling that might be applied to a similar sized property. Given the history of the Site, this biased sampling appears to be a justifiable approach. Perhaps the main shortcoming of the data set is a lack of background data for comparison; a comparison with background data is, therefore, not included.

The analytical data indicates that most analytes (15 of 17) of interest are non-detect and that most detected concentrations are estimated values for various reasons. The seventeen compounds of most interest are shown with the corresponding TEQ in Table 1.

Representative Site Concentration

Generally the individual TEQs are added together to generate an equivalent 2,3,7,8 TCDD source concentration. A risk evaluations is then based on this number. There are several ways to generate this equivalent source concentration given the limitations of the existing data:

ATTACHMENT 16 (continued)

INCREMENTAL CANCER RISK TO WORKERS – DIOXIN AND RELATED COMPOUNDS

Case #	Method	Total TEQ
	Use ½ the maximum R.L. for each compound with all NDs. Use the maximum observed concentration for each analyte, including estimated parameters. This is the most conservative approach.	794 ppt
	For all NDs use ½ the average R.L. Use the maximum observed concentrations for each anaiyte, Including estimated parameters. This is a very conservative approach.	253 ppt*
	For all NDs use ½ the average R.L. Use the average concentrations of all anaiytes.	163 ppt
	For each analyte for which all measurements are ND, use a concentration of zero. Use maximum concentrations of all detected analvtes.	109 ppt
	For each analyte for which all measurements are ND, use a concentration of zero. Use average concentrations of all detected analvtes.	19 ppt

*ppt = parts per trillion

Given the biased sampling and given that the landfilled soil will become well mixed during construction, Case 5 is probably best representative of the true site source term. Case 3 is an alternative, more conservative concentration.

Risk Evaluation

The simplest risk evaluation approach is to compare the total TEQ against accepted screening concentrations for soil. Screening levels have been set by various regulatory agencies to provide a reference point to determine if a more complex evaluation is necessary. For Dioxin there is range of published screening levels including:

- Historically, the EPA has used a screening level of 1000 ppt for residential soil. (This is likely to be changed.)
- Historically, the EPA has used a screening range of 5,000 to 20,000 ppt for commercial areas. (This is likely to be changed.) This appears to be more applicable than the previous screening concentration.
- For residential direct contact the EPA (Part 201, Environmental Remediation, 1994 PA 451) established a RDCC of 90 ppt TEQ. This does not appear to be applicable.
- The ATSDR (1997) published guidance criteria of 50 ppt TEQ as a screening level for further study (one or more samples).
- The ASTDR also published guidance criteria of 1000 ppt TEQ as an action level.
- Region IX preliminary remediation goal (PRG), residential soil: 3.9e-6 mg/kg or 03.9 ppt. This would not appear to be applicable.

INCREMENTAL CANCER RISK TO WORKERS – DIOXIN AND RELATED COMPOUNDS

- ☐ Region IX PRG, Industrial soil: 1.6e-5 mglkg or 16 ppt. This would appear to be most applicable after site remediation.

The site may be acceptable for remediation without further analysis with respect to site worker safety by comparison with the most applicable screening criteria. This is without consideration for any minimal protective worker clothing or protective breathing measures likely to be part of the Project safety procedures that would further mitigate any risks.

Another approach is to apply DTSC developed criteria from the "Preliminary Endangerment Assessment Guidance Manual." That manual provides algorithms to estimate Risk from a variety of pathways. With respect to the current site the exposure pathways are inhalation, ingestion of dust and dermal contact with soil. The algorithms in this guidance manual are known to be conservative and have been applied to a wide variety of sites. Those algorithms were use to evaluate the Site. The following considerations/assumptions were used in the analysis:

1. Exposure considers only adult workers. Exposure to children is not considered.
2. Assumes exposure is limited to 1/3 of a year. It is estimated construction will be completed in less than 3 months.
3. Assumes a representative site Dioxin Total TEQ of 109 ppt.

The following incremental cancer risks were calculated:

1. Ingestion of soil: 0.0897E-06
2. Dermal Contact with soil: 0.0453E-06
3. Inhalation: 1.40E-11

The total calculated incremental cancer risk from Dioxin is 0.135E-06 is less than the 1E-06 threshold generally considered to be acceptable (neglecting other risk sources). This estimated incremental cancer risk does include mitigating factors including worker protective clothing and equipment. The source concentration assumed may be five times higher than a more representative source concentration for the Site and still meet the risk threshold.

The DTSC algorithms assume a dust concentration of 50 microgramslcubic meter as part of the calculations for incremental risk by way of inhalation. This is the same dust limit requirement imposed by *DTSC Rule* 403 *(d)(4)* at the property boundary. Since the working area goes close to the property boundary, this concentration appears to be a good estimate for worker exposure. It should also be noted the fraction of total incremental risk posed by inhalation is insignificant compared to other pathways.

INCREMENTAL CANCER RISK TO WORKERS – DIOXIN AND RELATED COMPOUNDS

Conclusion

The incremental site cancer risk posed by Dioxin appears to be within acceptable limits for worker exposure.

ATTACHMENT 16 (continued)

INCREMENTAL CANCER RISK TO WORKERS – DIOXIN AND RELATED COMPOUNDS

Table 1

Data Summary

			B2C-0.5-1		B5-10-10.5		B1-17.5-18		B3-5.5-6		B3-13-13.5		B6-17.5-18		B5-8.5-9			
		TEF	RL	Concent.	RL	Concent.	RL	Concent.	RL	Concent.	RL	Concent.	RL	Concent.	RL	Concent.	[Average]	TEQ Case 5
	PCDDs																	
1	2,3,7,8-TCDD	1	0.0066	ND	0.098	ND	0.072	ND	0.0056	ND	0.018	ND	0.0044	ND	0.0096	ND	0	0
2	1,2,3,7,8-PeCDD	1	0.026	ND	0.91	ND	0.046	ND	0.046	ND	0.1	ND	0.028	ND	0.083	ND	0	0
3	1,2,3,4,7,8-HxCDD	0.1	0.015	ND	0.17	ND	0.018	ND	0.023	ND	0.033	ND	0.011	ND	0.054	ND	0	0
4	1,2,3,6,7,8-HxCDD	0.1	0.017	ND	0.58	ND	0.021	ND	0.025	ND	0.12	ND	0.012	ND	0.054	ND	0	0
5	1,2,3,7,8,9-HxCDD	0.1	0.014	ND	1.1	ND	0.015	ND	0.027	ND	0.2	ND	0.0062	ND	0.044	ND	0	0
6	1,2,3,4,6,7,8-HpCDD	0.01	0.085	ND		1.9	0.015	ND	0.46	ND		10	0.018	ND	0.28	ND	1.7	0.017
7	OCDD	0.0001	0.42	ND		7.5	0.015	ND		2.4		91	0.092	ND	0.63	ND	14.414	0.001
	PCDFs																	
8	2,3,7,8-TCDF	0.1	0.0039	ND	0.038	ND	0.0055	ND	0.0068	ND	0.016	ND	0.0055	ND	0.015	ND	0	0
9	1,2,3,7,8-PeCDF	0.05	0.01	ND	0.13	ND	0.0094	ND	0.01	ND	0.027	ND	0.009	ND	0.019	ND	0	0
10	2,3,4,7,8-PeCDF	0.5	0.011	ND	0.17	ND	0.011	ND	0.014	ND	0.045	ND	0.0081	ND	0.026	ND	0	0
11	1,2,3,4,7,8-HxCDF	0.1	0.0077	ND	0.17	ND	0.0035	ND	0.017	ND	0.025	ND	0.0024	ND	0.022	ND	0	0
12	1,2,3,6,7,8-HxCDF	0.1	0.0059	ND	0.2	ND	0.0029	ND	0.02	ND	0.044	ND	0.0018	ND	0.03	ND	0	0
13	1,2,3,7,8,9-HxCDF	0.1	0.015	ND	0.19	ND	0.006	ND	0.017	ND	0.07	ND	0.0045	ND	0.055	ND	0	0
14	2,3,4,6,7,8-HxCDF	0.1	0.0078	ND	0.22	ND	0.0071	ND	0.015	ND	0.12	ND	0.0058	ND	0.049	ND	0	0
15	1,2,3,4,6,7,8-HpCDF	0.01	0.021	ND	0.24	ND	0.009	ND	0.014	ND	0.22	ND	0.01	ND	0.059	ND	0	0
16	1,2,3,4,7,8,9-HpCDF	0.01	0.04	ND	0.16	ND	0.014	ND	0.026	ND	0.13	ND	0.0079	ND	0.056	ND	0	0
17	OCDF	0.0001	0.064	ND	0.27	ND	0.029	ND	0.051	ND	0.32	ND	0.02	ND	0.086	ND	0	0

TEQ 0.018441 ng/g or ppb
TEQ 18.4 ppt

***Reduced Data-After112 RL* is used for all "ND" Compounds**

		TEF	B2C-0.5-1	B5-10-10.5	B1-17.5-18	B3-5.5-6	B3-13-13.5	B6-17.5-18	B5-8.5-9	[Average]	TEQ Case 1	TEQ Case 2	TEQ Case 3	TEQ Case 4
	PCDDs													
1	2,3,7,8-TCDD	1	0.0033	0.049	0.036	0.0028	0.009	0.0022	0.0048	0.015	0.049	0.015	0.015	0
2	1,2,3,7,8-PeCDD	1	0.013	0.455	0.023	0.023	0.05	0.014	0.0415	0.089	0.455	0.089	0.089	0
3	1,2,3,4,7,8-HxCDD	0.1	0.0075	0.085	0.009	0.0115	0.0165	0.0055	0.027	0.023	0.009	0.002	0.002	0
4	1,2,3,6,7,8-HxCDD	0.1	0.0085	0.29	0.0105	0.0125	0.06	0.006	0.027	0.059	0.029	0.006	0.006	0
5	1,2,3,7,8,9-HxCDD	0.1	0.007	0.55	0.0075	0.0135	0.1	0.0031	0.022	0.100	0.055	0.010	0.010	0
6	1,2,3,4,6,7,8-HpCDD	0.01	0.0425	1.9	0.0075	0.23	10	0.009	0.14	1.761	0.100	0.100	0.018	0.100
7	OCDD	0.0001	0.21	7.5	0.0075	2.4	91	0.046	0.315	14.497	0.009	0.009	0.001	0.009
	PCDFs													
8	2,3,7,8-TCDF	0.1	0.00195	0.019	0.00275	0.0034	0.008	0.00275	0.0075	0.006	0.002	0.001	0.001	0
9	1,2,3,7,8-PeCDF	0.05	0.005	0.065	0.0047	0.005	0.0135	0.0045	0.0095	0.015	0.003	0.001	0.001	0
10	2,3,4,7,8-PeCDF	0.5	0.0055	0.085	0.0055	0.007	0.0225	0.00405	0.013	0.020	0.043	0.010	0.010	0
11	1,2,3,4,7,8-HxCDF	0.1	0.00385	0.085	0.00175	0.0085	0.0125	0.0012	0.011	0.018	0.009	0.002	0.002	0
12	1,2,3,6,7,8-HxCDF	0.1	0.00295	0.1	0.00145	0.01	0.022	0.0009	0.015	0.022	0.010	0.002	0.002	0
13	1,2,3,7,8,9-HxCDF	0.1	0.0075	0.095	0.003	0.0085	0.035	0.00225	0.0275	0.026	0.010	0.003	0.003	0
14	2,3,4,6,7,8-HxCDF	0.1	0.0039	0.11	0.00355	0.0075	0.06	0.0029	0.0245	0.030	0.011	0.003	0.003	0
15	1,2,3,4,6,7,8-HpCDF	0.01	0.0105	0.12	0.0045	0.007	0.11	0.005	0.0295	0.041	0.001	0.000	0.000	0
16	1,2,3,4,7,8,9-HpCDF	0.01	0.02	0.08	0.007	0.013	0.065	0.00395	0.028	0.031	0.001	0.000	0.000	0
17	OCDF	0.0001	0.032	0.135	0.0145	0.0255	0.16	0.01	0.043	0.060	0.000	0.000	0.000	0

TEQ	0784	0253	0163	0.109 ng/g or ppb
TEQ	784	253	163	109 ppt
TEQ	0.000794	0.000253	0.000163	0.000109 ppm

TEF - Toxicity Equivalency Factor
TEQ - Toxicity Equivalents

ATTACHMENT 17

THE SOURCE GROUP, INC.

INCREMENTAL CANCER RISK TO WORKERS - LEAD

The DTSC has asked The Source Group, Inc. (TSG) to evaluate worker safety with respect to lead in soil likely to be encountered at the Former Palm Springs Landfill (PSL) during construction. This letter summarizes a limited risk evaluation of the site considering the available data.

Summary of Analytical Data

Table 2 summarizes most sample data collected by TSG in 2003 and Leighton & Associates (Leighton) in 1993 from the PSL. A complete discussion of site sampling was reported in an earlier TSG report (Remedial Investigation Report, July 2003) and an earlier Leighton report (Interim Data Report..., 1993). Table 2 also includes some summary statistics.

Data from native soil was also collected by Leighton, but is not included in this letter.

Representative Site Concentration

There are several possibilities for choosing a representative site concentration:

Case #	Method	[Pb]
1	Median concentration. This understates the lead-impacted soil	36 mg/kg
2	Average of samples collected.	116 mg/kg
3	95 % UCL of average. This is more conservative estimate of the true site averaae concentration.	192 mg/kg
4	99 % UCL of average. This is a still more conservative estimate of the true site average concentration. Only 6 of the 51 samples were greater in concentration than this Concentration.	216 mg/kg
5	Maximum sample concentration. This overstates worker exposure. Only 3 samples of 51 total samples were greater than 373 mg/kg.	1470 mg/kg

*mg/kg = milligrams/kilograms

Case 4 is a conservative estimate of the true site average of the PSL, and its use in a risk evaluation is protective of worker exposure.

ATTACHMENT 17 (continued)

INCREMENTAL CANCER RISK TO WORKERS - LEAD

Risk Evaluation

The simplest risk evaluation approach is to compare the representative site concentration against accepted screening concentrations for soil. Screening levels have been set by various regulatory agencies to provide a reference point to determine if a more complex evaluation is necessary:

- The DTSC has used a concentration of 255 mg/kg for new school sites in California. Typically this is applied to maximum concentrations found at a site.
- Region IX preliminary remediation goal (PRG), residential soil: 400 mg/kg. This would not appear to be applicable.
- Region IX PRG, Industrial soil: 750 mg/kg. This would appear to be most applicable after site remediation.
- Cal Modified PRG, residential soil: 150 mg/kg. This would not appear to be applicable.

The site may be acceptable for remediation without further analysis with respect to site worker safety by comparison with the most applicable screening criteria. This is without consideration for any minimal protective worker clothing or protective breathing measures likely to be part of the Project safety procedures that would further mitigate any risks.

Another approach is to apply DTSC developed criteria from the "Preliminary Endangerment Assessment Guidance Manual." That manual provides algorithms to estimate Risk from a variety of sources. With respect to the current site the exposure pathways are inhalation, ingestion of dust and dermal contact with soil. The algorithms in this guidance manual are known to be conservative and have been applied to a wide variety of sites. Those algorithms were use to evaluate the Site. The following considerations/assumptions were used in the analysis:

1. Exposure considers only adult workers. Exposure to children is not considered.
2. Assumes exposure is limited to 1/3 of a year (4 months). It is estimated construction will be completed in less than 3 months.
3. Assumes a representative site lead concentration of 216 mg/kg.

The following incremental cancer risks were calculated:

1. Ingestion of soil:	1.16E-8
2. Dermal Contact with soil:	2.0E-9
3. Inhalation:	9.0E-12

The total calculated incremental cancer risk from lead is 1.3E-8 is less than the 1E-06 threshold generally considered to be acceptable (neglecting other risk sources). This estimated incremental cancer risk does include mitigating factors such as worker protective clothing and equipment.

ATTACHMENT 17 (continued)

INCREMENTAL CANCER RISK TO WORKERS - LEAD

Conclusion

The incremental site cancer risk posed by lead appears to be within acceptable limits for worker exposure.

If you have any questions, please contact Mr. Evensen at (805) **373-9063,**x206.

DRAFT

DRAFT

James **M.** Evensen, Jr., R.G, C.HG.
Principal Hydrogeologist

Ken Weston, P.E., REA II

Attachments: Table 2

Attachment 17 (continued)

Incremental Cancer Risk to Workers - Lead

Table 2 Lead Data – Palm Springs Landfill

	Depth fbg	[Pb] mg/kg	STLC - Pb mg/l	TCLP - Pb mg/l	Date Sampled
B7-11	11.5	4.1			3/27/2003
B8-4	4.5	5.6			3/27/2003
B9-7	7.5	3			3/27/2003
B10-4	4.5	3			3/27/2003
T-1, J-1	5	13			Leighton & Ass. 1993
T-1, J-2	10	1470	11.7		Leighton & Ass. 1993
T-3, J-1	5	2			Leighton & Ass. 1993
T-3, J-2	9	36			Leighton & Ass. 1993
T-3, J-3	14	17			Leighton & Ass. 1993
T-4, J-1	5	61			Leighton & Ass. 1993
T-4, J-2	10	59	5.71		Leighton & Ass. 1993
T-5, J-1	5	57	3.82		Leighton & Ass. 1993
T-5, J-2	10	64	4.23		Leighton & Ass. 1993
T-5, J-3	14	55			Leighton & Ass. 1993
T-6, J-1	5	19			Leighton & Ass. 1993
T-6, J-2	11	40			Leighton & Ass. 1993
T-6, J-3	16	22			Leighton & Ass. 1993
T-6, J-4	20.5	24			Leighton & Ass. 1993
T-7, J-1	5	11			Leighton & Ass. 1993
T-8, J-1	5	616	6.34		Leighton & Ass. 1993
T-8, J-2	9.5	1255	78.4	1.5	Leighton & Ass. 1993
T-9, J-1	5	372	21.6		Leighton & Ass. 1993
T-9, J-2	9.5	373	3.53	0.13	Leighton & Ass. 1993
T-10, J-1	5	16			Leighton & Ass. 1993
T-10, J-2	9.7	14			Leighton & Ass. 1993
T-11, J-1	5	45			Leighton & Ass. 1993
T-11, J-2	9	19			Leighton & Ass. 1993

ATTACHMENT 17 (continued)

INCREMENTAL CANCER RISK TO WORKERS - LEAD

Sample	Depth fbg	[Pb] rnglkg	STLC - Pb mg/l	TCLP - Pb mg/l	Date Sampled
T-12, J-1	5	47			Leighton & Ass. 1993
T-12, J-2	9	73	5.6	0.13	Leighton & Ass. 1993
T-13, J-1	5	6			Leighton & Ass. 1993
T-13, J-2	10.6	66	3.79		Leighton & Ass. 1993
T-13, J-3	15	63	5.57		Leighton & Ass. 1993
T-13, J-4	20	2			Leighton & Ass. 1993
T-14, J-1	5	2			Leighton & Ass. 1993
T-14, J-2	10	97	8.5	0.42	Leighton & Ass. 1993
T-15, J-1	5	55		0.3	Leighton & Ass. 1993
T-15, J-2	9.5	86	7.19	0.46	Leighton & Ass. 1993
T-15, J-3	15	33			Leighton & Ass. 1993
T-16, J-1	5	64	2.48		Leighton & Ass. 1993
T-16, J-2	10	32			Leighton & Ass. 1993
T-17, J-1	5	2			Leighton & Ass. 1993
T-17, J-2	11	28			Leighton & Ass. 1993
T-18, J-1	5	37			Leighton & Ass. 1993
T-18, J-2	10	30			Leighton & Ass. 1993
T-18, J-3	14	125	5.14		Leighton & Ass. 1993
T-19, J-1	5	11			Leighton & Ass. 1993
T-19, J-2	10	84	5.95		Leighton & Ass. 1993
T-19, J-3	14	51			Leighton & Ass. 1993
T-20, J-1	5	29			Leighton & Ass. 1993
T-21, J-1	5	6			Leighton & Ass. 1993
T-21, J-2	9	222	19.5		Leighton & Ass. 1993

Statistics

[Average Pb]	8.8	116.2
[Maximum Pb]		1470
Median		36
# of Samples		51
Stand. Dev.		277.5
95 % UCL		192.4
99 % UCL		216.3

Method detection limits were substituted for reported "non detects." (indicated in red)