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FINAL REPORT

RESULTS OF ADDITIONAL SOIL AND GROUNDWATER INVESTIGATIONS AND SURFACE WATER MONITORING PLAN, MARSH PORTION OF SUBUNIT 2A, RICHMOND FIELD STATION RICHMOND, CALIFORNIA (TASKS 3A & 3B, RWQCB ORDER NO. 01-102)

Prepared for
University of California Berkeley
Environment, Health, and Safety
317 University Hall, #1150
Berkeley, California 94720

November 21, 2001

URS
URS Corporation
500 12th Street, Suite 200
Oakland, California 94607

51.09967067.00

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Cecilio S. Felix
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Subject: **Results of Additional Soil and Groundwater Investigations And Surface Water Monitoring Plan, Marsh Portion of Subunit 2A, Richmond Field Station, Richmond, California**

Dear Mr. Felix:

In compliance with the California Regional Water Quality Control Board, San Francisco Bay Region's (RWQCB) Order No. 01-102, Tasks 2a and 2b, URS Corporation is pleased to submit the enclosed document titled *Results of Additional Soil and Groundwater Investigations and Surface Water Monitoring Plan, Marsh Portion of Subunit 2A, Richmond Field Station, Richmond, California* on the behalf of the University of California, Berkeley.

We appreciate the additional time granted us for completion of the report and discussions with Zeneca, Inc. If you have any questions or need further information, please call me at (510) 874-3284.

Sincerely,

URS CORPORATION

for

Diane K. Mims
Project Manager

George H. Muehleck, R.G.
Senior Hydrogeologist

REGISTERED GEOLOGIST
GEORGE MUEHLECK
No. 5392
exp 6/03
STATE OF CALIFORNIA

Enclosure

Cc: Karl Hans, Environment, Health, & Safety, University of California Berkeley
Jane Anderson, Zeneca, Inc.
Bill Carson, Levine Fricke

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On the behalf of the University of California Berkeley (UC Berkeley), URS Corporation (URS), UC Berkeley's environmental consultant, has prepared this report in compliance with the California Regional Water Quality Control Board, San Francisco Bay Region's (RWQCB) Order No. 01-102 Site Cleanup Requirements (SCR) of the Meade Street Operable Unit, Subunit 2A, Tasks 3a and 3b. To streamline the document submittal and review process, we have combined the requirements of these two tasks into one report. The requirements of the tasks are as follows:

The SCR Task 3a states:

"The Dischargers shall submit a technical report, acceptable to the Executive Officer, which provides the results of soil and groundwater investigations performed since the Field Sampling and Analysis results submitted in December 2000. If necessary, the report shall propose additional soil and/or groundwater sampling in order completely define the extent of pollution in the Western Stege Marsh in MSOU 2A."

The SCR Task 3b states:

"The Dischargers shall submit a technical report, acceptable to the Executive Officer, which proposes any additional surface water and sediment sampling necessary to monitor the extent of contamination within the Stege Marsh area of Subunit 2A".

UC Berkeley's Richmond Field Station (RFS) is designated as Subunit 2 and is located at 1301 S. 46th Street in Richmond, California as shown on Figure 1. Subunit 2 was divided by the RWQCB into two subunits. Subunit 2A consists of the southeastern portion of the RFS for which UC Berkeley and Zeneca are named as joint responsible parties. Subunit 2B consists of the northern and western portion of the RFS for which UC Berkeley is named as the sole responsible party. The location of Subunits 2A and 2B and their respective boundaries are shown on Figure 2.

Subunit 2A is located in the southeastern portion of the upland area adjacent to the Stege Marsh and the eastern portion of western Stege Marsh. A map showing the layout, features, and sampling locations within Subunit 2A is shown on Figure 3. This area includes the raised road of fill and cinders (the access road) from the upland portion of the RFS through Stege Marsh to the East Bay Regional Park District (EBRPD) Bay Trail. The elevation of this road is above the high tide level and is considered upland habitat for the purposes of the human health and ecological risk assessment.

The results provided in this report are from investigations performed by URS and is a follow-up to the submittal of UC Berkeley's report titled "Field Sampling and Analysis Results, University of California, Berkeley, Richmond Field Station/Stege Marsh, Richmond, California", prepared by URS and dated December 2000.

The objectives of the investigations performed to comply with Task 3a were to:

- Delineate the extent of metals, affected sediment, and pyrite cinders in the marsh portion of Subunit 2A;
- Evaluate the impacts of metals and cinders on the marsh; and
- Develop information necessary to complete SCR Task 3c, a conceptual Remedial Action Plan (RAP), that addresses soil and groundwater pollution within the upland portion of Subunit 2A; planned to be submitted by Zeneca to the RWQCB on December 15, 2001.

Based on the results of this additional sampling, it appears that the extent of the pyrite cinders and cinder impacts have been delineated with the exception of the western boundary (west of B8MA). To comply with the requirements of Task 3c, UC Berkeley has proposed sediment and surface water sampling to delineate the western extent of contamination in the marsh.

The contents of this report cover the information as requested under SCR Tasks 3a and 3b of Order Number 01-102.

1.1 SUMMARY OF REPORT ORGANIZATION

This document is organized as follows:

- Section 2 briefly summarizes the results from the marsh portion of Subunit 2A area that were presented in UC Berkeley's December 2000 report (prepared by URS);
- Section 3 describes field activities investigation and analysis of samples collected since December 2000;
- Section 4 presents the results of the recent field investigation;
- Section 5 presents the conclusions and recommendations based on the results of the additional investigation activities, and
- Section 6 presents the monitoring plan for the marsh portion of Subunit 2A as required by SCR Task 3b.

This section provides a summary of the results of the previous investigation of the marsh portion of Subunit 2A as provided in the previously referenced UC Berkeley December 2000 report to the RWQCB. Historically, this portion of the marsh was an intertidal mudflat (as shown on Figure 3). From the late 1800's to 1950, the RFS property was owned by the California Cap Company, a manufacturer of blasting caps.

The Cap Company manufactured mercury fulminate, a constituent of the blasting caps, in a facility north of the seawall located in the southern portion of Subunit 2B (Mercury Fulminate Area). Prior to the UC Berkeley purchase of the property in October 1950, the Cap Company removed all production facilities and attempted to remove hazardous materials at the site. Elevated concentrations of mercury in soil and groundwater have been detected in the Mercury Fulminate Area during UC Berkeley's previous and current investigations. This work will be reported to the RWQCB as required under SCR Task 4a. To date, this work has shown migration of mercury into Subunit 2A, possibly from a drainpipe extending into the marsh between the breakwater and seawall shown in historical area photos from 1948.

Stauffer Chemical Company, a manufacturer of sulfuric acid, owned the adjacent property to the east. Pyrite cinders, a by-product of the sulfuric acid manufacturing process, were deposited on the tidal flat that is now a part of Subunit 2A.

Several sources appear to have contributed to the metals detected within the marsh potion of Subunit 2A, including:

- Deposition of pyrite cinders;
- Migration of dissolved metals in groundwater including copper, nickel, and zinc from the Zeneca site located to the east (the groundwater flow direction is south to southwest);
- Migration of mercury from the California Cap Company's mercury fulminate facility;
- Surface flow of storm water from the California Cap Co./RFS site and the western portion of the Stauffer/Zeneca site into the marsh portion of the subunit; and
- Migration of dissolved metals in groundwater and the erosion of materials from the Zeneca landfill adjacent to the eastern boundary of Subunit 2A.

The chemicals of concern (COC) identified during previous investigations include arsenic, copper, mercury, lead, nickel, and zinc. A summary of previous data collected in the marsh portion of Subunit 2A is provided in Table 1 and Table 2. Due to the identification of these COCs, additional characterization was performed. The additional characterization and results are discussed in the following sections.

The general stratigraphy in the marsh portion of Subunit 2A, starting from the surface, is as follows:

- A layer of vegetation approximately one half foot thick;
- A water-filled space approximately 1 to 2 feet thick;
- A layer of pyrite cinders that varies from up to 4 feet thick at the eastern end to essentially absent in the western extent of Subunit 2A; and
- Bay sediments typical of tidal marshes in the San Francisco Bay estuary.

Since the December 2000 investigation results were reported to the RWQCB, URS performed additional characterization activities to further delineate the extent of the COCs within the marsh portion of Subunit 2A. Levine Fricke (LFR), Zeneca's environmental consultant, was involved with installation of some of the soil borings and collection of some grab groundwater samples. Field activities were conducted during the summer and fall of 2001. A description of the additional investigation activities is discussed below.

3.1 GRAB SAMPLES

As part of URS' risk assessment data collection activities, one additional surface sample was collected in the area between the orange pond and the access road. The location, shown on Figure 3, is designated SM131. The sample was collected to evaluate the western extent of toxicity due to the presence of metals and low pH.

3.2 HAND-AUGERED BORINGS

URS and LFR installed numerous hand-augered borings (> 50 locations) to a depth of approximately 4 to 5 feet for visual observation. The visual observations were used to evaluate the extent of pyrite cinders in the marsh portion of Subunit 2A. The approximate extent of cinders into the marsh is shown on Figure 4.

3.3 TEST PITS

On June 1, 2001, URS excavated a test pit, designated PH35, in the walking trail at the location shown on Figure 3. The purpose of the test pit was to evaluate the location and thickness of fill material and pyrite cinders. The test pit was excavated using a backhoe from the ground surface to Bay sediments at a depth of about 5 feet. In the test pit, an approximately two-foot-thick layer of fill overlies Bay sediments. The fill is believed to have originated from excavations for the construction of the nearby railroad embankment. No cinders were found in the test pit.

3.4 GEOPROBE BORINGS

On October 11, 2001, URS collected six soil samples and two groundwater samples from three Geoprobe borings installed by Precision Sampling Incorporated within the access road in the Subunit 2A marsh area. The borings were installed to delineate the extent of metals in the trail and evaluate whether COCs are present in groundwater as it enters the marsh. The boring locations are shown on Figure 3. URS's boring logs are shown in Appendix A. The laboratory analytical reports are presented in Appendix B. The analytical results for soil and groundwater samples are summarized in Tables 2, 3, and 4.

The results of the additional characterization activities described in Section 3 are presented below.

4.1 SOIL

URS collected and analyzed seven soil (fill, cinders, or sediment) samples at three locations for total metals by EPA Method 6010 and for mercury by EPA Method 7471. Recent and historical analytical results for soil samples are summarized in Table 1. Table 1 also shows the recent data screened against ecological site specific target levels (E-SSTLs) developed in UC Berkeley's risk assessment titled "Human Health and Ecological Tiered Risk Evaluation, University of California, Berkeley". This report, prepared by URS in compliance with SCR Task 1 of the Order, was submitted to RWQCB on November 21, 2001.

Cinders

Three cinder samples were collected at two locations in the northern segment of the access road (AR-1 and AR-2). Concentrations of copper, lead and zinc exceeded the relevant SSTLs at AR2 (4' bgs), while only zinc exceeded its SSTL at AR1 (2.5' bgs) as shown in Table 1. Arsenic ranged from 71 mg/kg to 350 mg/kg (average 190 mg/kg), copper ranged from 73 mg/kg to 2,200 mg/kg (average 733 mg/kg), lead ranged from 45 mg/kg to 650 mg/kg (average 426 mg/kg), and zinc ranged from 260 mg/kg to 3,900 mg/kg (average 1,595 mg/kg). In the three samples analyzed, the pH ranged from 2.8 to 7.2.

Sediment

Three sediment samples were collected from AR1 (at 8' bgs) and AR 2 (at 11' bgs and 11.5' bgs. The AR-1 sediment sample did not exceed any SSTLs. Both sediment samples from boring AR2 contained SSTL exceedances for copper, lead (at 11.5' only), mercury, and zinc. In the three sediment samples, arsenic ranges from 23 mg/kg to 1,600 mg/kg (average 868 mg/kg), copper ranges from 11 mg/kg to 1,200 mg/kg (average 643 mg/kg), lead ranged from 4.8 mg/kg to 520 mg/kg (average 275 mg/kg), mercury to 63 mg/kg (average 41 mg/kg), and zinc to 5,400 mg/kg (average 2,709 mg/kg). In the three samples analyzed, the pH ranged from 7.0 to 8.6.

4.2 GROUNDWATER

The dissolved metals and pH analytical results for the two groundwater samples, AR2 and AR3, are summarized in Table 2. The concentrations are screened against 10 times the Ambient Water Quality Criterion (AWQC) for protection of marine organisms or the water quality objectives contained in the RWQCB Water Quality Control Plan, San Francisco Bay Basin (1995), whichever is lower. The groundwater sample from location AR2 contains exceedances of the screening levels for nickel at 120 ug/L and zinc at 820 ug/L. Analytical data for EPA Method 8260 volatile organic compounds (VOCs) are summarized in Table 3. No VOCs exceeded their respective screening value from locations AR2 or AR3. In the two samples analyzed, the pH ranged from 5.4 to 7.6.

The additional characterization data results summarized in Section 4 were combined with data collected during previous investigations to evaluate the impacts of COCs to the marsh portion of Subunit 2A. The following outlines the conclusions derived from the evaluation of the data and presents recommendations for future investigation activities to fully characterize the extent of COC impacts to the marsh.

5.1 CONCLUSIONS

5.1.1 SOIL

The following summarizes the analytical results for 1) the recent and historical soil samples presented in Table 4 as screened against the E-SSTLs and 2) groundwater samples presented in Table 2 as screened against the AWQC. Locations of E-SSTL exceedances for metals are shown on Figure 4. Locations of AWQC exceedances for metals are shown on Figure 5.

- In the access road through the marsh, 14 samples of soil from six locations have been analyzed for metals (see Table 4). Nine of the 14 samples contained SSTL exceedances for one or more metals, primarily copper and zinc. Most of the exceedances were for soil samples collected from two of the six locations (AR-2 and RFS-4). In the 14 samples, copper concentrations ranged from 11 mg/kg to 8,090 mg/kg copper (average 1,312 mg/kg) and zinc ranged from 28 mg/kg to 5,400 mg/kg (average 1,856 mg/kg). Exceedances by lead, mercury, and/or chromium occur in no more than two samples each. Exceedances for copper, lead, mercury, and zinc were found to occur to a depth of 11.5 feet below ground surface (bgs) at location AR-2. In three samples analyzed, the pH ranges from 3.0 to 4.1
- Twenty-four soil samples (collected from 14 locations) have been analyzed in the tidal salt marsh habitat (see Table 4). Arsenic (13 of 24 samples) and cadmium (five of 24 samples) comprise most of the SSTL exceedances with arsenic ranging from 2.6 mg/kg to 1,330 mg/kg (average 492 mg/kg) and cadmium ranging from 1 mg/kg to 44 mg/kg (average11 mg/kg), respectively. Exceedances by selenium and mercury occur in no more than three samples each with selenium ranging from <0.3 mg/kg to 854 mg/kg (average concentration of 105 mg/kg) and mercury ranging from 1 mg/kg to 166 mg/kg (average concentration of 27 mg/kg), respectively. In five samples analyzed, the pH ranges from 4.5 to 7.9;
- Four samples from boring SM-108 at depths of 0, 2, 4.5 and 5.5' bgs have been analyzed in the shallow bay and channel habitat, specifically the orange pond. Two of the four soil samples from 2 and 4.5' bgs, contained arsenic, mercury, selenium and zinc exceeding the SSTLs. One sample also contained a SSTL exceedance for copper (at 4.5 feet). In the four samples, arsenic ranges from 7.2 mg/kg to 1,200 mg/kg (average 629 mg/kg), copper ranges from 18 mg/kg to 940 mg/kg (average 366 mg/kg), mercury ranges from 0.44 mg/kg to 53 mg/kg (average 16 mg/kg), selenium ranges from <0.29 mg/kg to 53 mg/kg (average 19 mg/kg), and zinc ranges from 50 mg/kg to 8,800 mg/kg (average 4,060 mg/kg). In the four samples analyzed, the pH ranges from 3.1 to 7.0.

In summary, the soil (fill, cinders, and sediment) within the access road has been found to contain low pH conditions, e.g., 3.0 at 9' bgs at location SM-110, and elevated metals above the SSTLs (see Table 4) for ecological receptors. The extent of cinders and metals within the access road extends from the upland portion of Subunit 2A south to approximately the bend in the road

near the small pond in the southeast corner of Subunit 2A. The vertical extent of SSTL exceedances appears to extend to a depth of at least 11 feet.

As discussed above, elevated concentrations of metals and low pH conditions have also been detected in the marsh west of the access road. Cinders overlie, or are mixed with, surficial sediments in the marsh. Cinders have been encountered up to approximately 4-5 feet below the water or vegetation mat surface in the portion of the pickleweed marsh adjacent to the access road. The thickness of the cinder layer decreases to the west. The western extent of the SSTL exceedances by metals and low pH conditions have not been completely identified at this time.

5.1.2 SURFACE WATER/GROUNDWATER

Table 2 shows the current and historical analytical results for surface water and groundwater for the marsh portion of Subunit 2A. The locations are shown on Figure 5.

Surface water samples were collected from three locations. SM-123 at the outfall of the eastern storm water pipe, SM-108 in the orange pond, and SM-109 near the southern portion of the access road (see Figure 3). Several metals, including arsenic, cadmium, copper, lead, nickel and zinc, were detected in the surface water samples at concentrations over the AWQC. The highest concentrations were detected in the surface water sample collected from SM108, located west of the access road and in the orange pond. This sample had a low pH of 2.8. SM-109 had exceedances for fewer metals (cadmium, copper, nickel, and zinc) and at lower concentrations but the pH was also low at 2.7. The surface water sample from SM-123 was diluted by rainwater but still contained an exceedance of 10 times the AWQC for zinc (810 ug/L). In general, COC concentrations decrease to the south.

Grab groundwater samples were collected from three locations (SM-110, AR2, and AR3) along the access road. Groundwater samples from two of the three locations contained exceedances of 10 times the AWQC. Location SM-110 contained exceedances for cadmium, chromium, copper, nickel and zinc. AR-2 contained exceedances for nickel and zinc (although orders of magnitude lower than SM-110. There were no exceedances at AR3. In addition, low concentrations of some VOC compounds were detected although they were below screening values (see Table 3).

5.2 RECOMMENDATIONS

Based on the data collected during investigations conducted within the marsh portion of Subunit 2A, we recommend that the western extent of the marsh portion of Subunit 2A be further delineated for relevant SSTL exceedances and low pH in sediment and surface water within the marsh. Toxicity tests may be performed at a selected number of locations to refine the delineation.

As required under Task 3b, Section 6 provides the groundwater sampling and analysis plan to delineate the extent of SSTL exceedances and low pH within the marsh portion of Subunit 2A.

Based on the results of the additional characterization, it is recommended that additional sediment and surface water samples be collected for analysis to delineate the western extent of SSTL exceedances and low pH within the marsh. Selected samples may be analyzed for toxicity. The proposed sampling locations are shown on Figure 5. Based on field observations, some of the samples collected may be held for analysis until deemed necessary for delineation. Sediment samples will be collected at the sediment surface to delineate the horizontal extent of COC impacts. Samples will be analyzed for metals and pH. In addition, surface water samples, to be analyzed for metals and pH, will be collected along the estimated western boundary of COC impacts to evaluate the extent of surface water impacts.

6.1 SEDIMENT AND SURFACE WATER COLLECTION AND LABORATORY ANALYSES

Sediment samples will be collected using a hand auger to the depths specified above. Surface water grab samples will be collected in 500-mL polyethylene bottles with no preservative. Sediment and surface water samples will be submitted to a California-certified laboratory to be filtered within 24 hours and analyzed for the following: Priority Pollutant Metals using EPA Method 6010/7400 and pH using EPA Method 9040/9045. The laboratory will provide preservatives, bottles, and coolers.

6.2 DECONTAMINATION PROCEDURES

Surface water samples will be collected using pre-sterilized laboratory provided containers. The hand auger will be decontaminated by the following procedures prior to, and between, each sampling event.

- Wash equipment with a solution of non-phosphate detergent.
- Rinse twice, initially using potable water followed by a second rinse using de-ionized water.
- Decontamination water should be contained and disposed of appropriately.

6.3 SAMPLE LABELS

Sample labels should be affixed to each sample bottle. These labels should be durable and water-resistant so they remain legible when wet. Each label will contain the following information.

- Sample Identification
- Initials of sample collector
- Time and date of sample collection
- Preservatives (if any); and
- Required Analysis.

6.4 CHAIN OF CUSTODY

Tracking sample possession will be accomplished by using the Chain-of-Custody (COC) record. A COC entry will be recorded for every sample and will accompany every shipment of samples to the laboratory.

6.5 QUALITY ASSURANCE / QUALITY CONTROL SAMPLES

The purpose of QA/QC procedures is to produce data of known high quality that meet or exceed the requirements of standard analytical methods. It is essential that data collection personnel adhere to strict QA/QC procedures to establish quality. The objectives of the quality assurance program are twofold:

- To provide the mechanism for ongoing control, and
- Evaluation of measurement data quality throughout the course of the project and to qualify data precision and accuracy.

The following data quality indicators will be used to evaluate the data usability and certainty:

- Accuracy
- Precision
- Representativeness
- Completeness
- Comparability

A discussion of each of these data quality indicators is provided below.

Accuracy

Accuracy is a measure of how close a reported value is to the true value and is evaluated using spike analyses. Spike analyses are performed by adding a known quantity of analyte to a sample, analyzing the sample, and comparing the observed result to the known addition. Accuracy is expressed as percent recovery (the difference between known and observed concentrations divided by the known concentration) and is calculated as:

$$\%R = \left(\frac{C_{OB} - C_X}{C_{sp}} \right) x\,100$$

where:

%R	=	percent recovery
C_{sp}	=	concentration of spike
C_{OB}	=	concentration measured in spiked sample analysis
C_x	=	concentration measured in unspiked sample analysis

Accuracy is evaluated using matrix spike (MS), laboratory control spikes (LCS), and surrogate spikes. Matrix spikes are spikes of target analytes into environmental samples and are used to evaluate impacts of matrix interference on accuracy. Laboratory control spikes are spikes of target analytes into clean water or sand and are used to evaluate accuracy of laboratory performance. Surrogate spikes are spikes of non-target analytes (compounds that are not likely to be detected in the sample but that behave similarly to the target analytes) into each sample. Surrogate spikes can only be performed for organic analyses and are used to evaluate accuracy on a sample specific basis.

Matrix spikes and LCS will be analyzed with each analytical batch. (A batch is up to 20 samples extracted and analyzed together under a given method protocol. Samples in an analytical batch should be of the same matrix. Reagent lots and handling procedures should be the same for all samples in a batch.) Surrogate spikes will be analyzed with each sample. Matrix spikes, LCS, and surrogate spike percent recoveries will be calculated and compared to the control limits provided in Appendix B. Analyses exhibiting recoveries outside control limits will be considered for re-analysis.

Precision

Precision refers to the level of agreement among repeated measurements of the same parameter. Precision is expressed as the relative percent difference (RPD) between duplicate measurements, calculated as:

$$RPD = \left(\frac{(C_1 - C_2)}{\left[\frac{(C_1 + C_2)}{2} \right]} \right) \times 100$$

where:

RPD = relative percent difference

C_1 = result from first sample

C_2 = result from second sample

Precision is evaluated using duplicate analyses and analyses of duplicate matrix spike samples (MS/MSD). Objectives for precision are provided in Appendix B.

Representativeness

Representativeness is the degree to which data accurately and precisely represent variations at a sampling point. Representativeness is a qualitative parameter.

To ensure representativeness in the samples being collected for this investigation, standard sampling procedures, as described above, will be strictly adhered to. Any deviations from these procedures will be noted in permanent ink in the field notebook. The field notebooks will be reviewed for deviations as part of evaluation of representativeness.

To ensure representativeness in the analyses being performed, the laboratory will follow standard procedures for collecting the aliquot of sample used for analysis as representative of the whole. Additional laboratory procedures to ensure representativeness include proper log-in, storage,

handling, and tracking of samples to minimize possibility of sample contamination, loss, or cross-labeling, and discrete sampling and analysis of immiscible layers, if present in sufficient quantity.

Completeness

Completeness will be evaluated as the amount of valid, usable data obtained from a measurement system compared to the amount that was expected. The quantitative description of completeness will be evaluated as the percentage of analytical results that are usable (i.e., results that do not require rejection based on review of QA/QC data). The objective for completeness for this investigation is 90 percent for each analytical parameter.

Comparability

Comparability is a qualitative evaluation of the confidence with which one data set can be compared to another measuring the same parameters. Comparability will be ensured through the use of the standard operating procedures for sampling and field operations as described in this Sampling and Analysis Plan.

Field Sampling Quality Control

Field quality assurance data are provided by the analysis of rinsate blanks and field duplicate samples. The following field QA/QC sample will be submitted for laboratory analysis:

- Rinsate Blanks - Rinsate blanks will be obtained by the collection of water used to rinse the sampling equipment following decontamination. Rinsate blanks will be collected and analyzed at a frequency of about 10 percent of the number of sediment samples collected.
- Field Duplicate Samples - Blind field duplicate samples will be collected and analyzed at a frequency of about 5 percent of the number of samples collected for each medium.

6.6 ADDITIONAL CHARACTERIZATION REPORT

The results of the additional characterization proposed under this plan will be submitted to the RWQCB as required under Order Number 01-102.

TABLE 1
METALS IN SOIL
HISTORICAL AND RECENT SAMPLES
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

EPA Method 6010 (7471 for Mercury), units = mg/kg

Sample Location	depth	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	pH
Recent Samples															
UPLAND HABITAT (access road)															
E-SSTL (hawk)					230	157	412	437	42	621				760	
Cinders															
AR1	2.5	4.5	150	<0.12	11	3	400	430	11	42	47	14	<0.31	1,300	2.8
AR1	5	<4	71	0.22	2.7	36	73	48	0.36	47	3.3	0.76	<0.33	490	6.5
AR2	4	6.3	350	0.15	26	31	2,200	650	21	53	120	17	1	3,900	7.2
Sediment															
AR1	8	<3.6	23	0.17	1.4	24	11	4.8	0.13	31	0.61	<0.3	<0.3	28	8.6
AR2	11	6.4	1600	0.3	16	54	720	300	61	70	93	4.9	1.1	2,700	7.6
AR2	11.5	19	980	0.17	35	73	1,200	520	63	65	200	11	<0.38	5,400	7
TIDAL SALT MARSH HABITAT															
E-SSTL (harvest mouse)			355		15		14,399	19,026	143	1,685	145			7,904	
Unknown															
SM-131	0	19.8 J	576	0.15	3	33	258	577	12	12	135	4.8	1.3	688	na
Historical Samples (see Table 4 for screening)															
21401		na	1,140	na	na	na	373	180	5.5	na	35.7	na	na	2500	na
B10MA	1	na	2210	na	12.3	185	495	357	20.2	na	11	na	na	694	na
B8MA	1	na	875	na	7.7	209	415	235	35.9	na	<1.6	na	na	517	na
B9MA	1	na	125	na	8.7	39.5	519	91.3	7.09	na	<11.1	na	na	1270	na
E-1	0	na	496	na	na	na	315	310	10.9	na	60.7	na	na	957	na
E-2	0	na	749	na	na	na	239	563	5.8	na	124	na	na	863	na
RFS-1	0	na	217	na	16	50.1	1330	236	5.7	na	19	na	na	3930	na
RFS-1	0-2	na	425	na	2.45	83.1	425	149	24.2	na	19.7	na	na	793	na
RFS-1	2.00-4	na	895	na	4.6	140	587	345	22	na	57	na	na	1000	na
RFS-1	4-5.75	na	172	na	1.12	54.8	145	76.7	9	na	9	na	na	304	na
RFS-2	0-2	na	973	na	11.1	136	1130	801	142	na	444	na	na	2000	na
RFS-2	2.0-4	na	746	na	8.2	59.6	620	211	53	na	78	na	na	1710	na
RFS-2	4.0-6	na	57	na	1.24	50.8	109	34.1	5.2	na	7	na	na	271	na

TABLE 1
METALS IN SOIL
HISTORICAL AND RECENT SAMPLES
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

Sample Location	depth	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	pH
RFS-3	0	na	1,020	na	2.4	12.7	193	37.2	1.3	na	6	na	na	517	na
RFS-3	0-2	na	746	na	2.97	11.8	745	289	27.5	na	854	na	na	945	na
RFS-3	2.0-3	na	1,330	na	44	48.3	1640	1240	166	na	610	na	na	5000	na
RFS-4	0-2	na	688	na	19.4	9.5	4,250	238	7.5	na	249	na	na	3,750	na
RFS-4	2.0-4	na	319	na	50	23.7	8,090	167	26.6	na	8	na	na	5,290	na
RFS-4	4.0-5	na	14	na	0.14	57.4	30	7.61	1.5	na	ND	na	na	60	na
SD1ESD	1	na	<348	na	31	37.6	813	172	8	na	<17.9	na	na	305	na
SD4MA	1	na	161	na	9.7	32.9	262	293	15.7	na	<4.5	na	na	697	na
SD6MA	1	na	555	na	33	33.8	823	814	10.6	na	8.7	na	na	2840	na
SM-108	0	na	610	na	21	4.9	54	8.9	0.86	120	6.7	na	na	190	3.1
SM-108	2	na	700	na	41	5.1	450	220	11	77	17	na	na	8,800	4.8
SM-108	4.5	na	1,200	na	36	24	940	310	53	85	53	na	na	7,200	6.1
SM-108	5.5	na	7.2	na	1.6	53	18	4.7	0.44	50	<0.29	na	na	50	7.0
SM-109	0	na	98	na	4.8	19	290	190	9.9	29	8.6	na	na	520	na
SM-109	0	na	200	na	12	19	230	84	9.5	51	9.9	na	na	1,300	4.5
SM-110	0	na	90	na	4.2	27 J	150	190	3	44 J	8.5	na	na	310	4.0
SM-110	9	na	350	na	6.5	3.6 J	420	45	1.4	32 J	3.2	na	na	260	3.0
SM-110	14	na	8.3	na	2.3	48 J	71	6.8	0.44	62 J	0.46	na	na	1,100	4.1
SM-123	0	na	26	na	3.9	24 J	460	76	4.3	53 J	4.2	na	na	1,300	5.8
SM-123	3	na	130	na	12	3.4 J	480	190	36	18 J	6.7	na	na	2,700	5.0
SM-123	8	na	2.6	na	1.7	37 J	23	5.3	0.95	65 J	<0.3	na	na	50	7.9
SM-124	3.5	na	260	na	18	33	12,000	700	35	140	18	na	na	770	7.2

Notes: na = not analyzed

 = SSTL exceedance in recent samples. See Table 4 for historical exceedances

TABLE 2
METALS AND pH IN GROUNDWATER
HISTORICAL AND RECENT SAMPLES
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

EPA Method 6010 (7470 for mercury); units = ug/L

Sample Location	Antimony	Arsenic	Berullium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	pH
AWQC (1)	na	36	na	9.3	50	3.1	5.6*	0.25*	8.2	71	1.9	na	58	
10 X AWQC	na	360	na	93	500	31	56*	2.5*	82	710	19	na	580*	
ACCESS ROAD TO RWQCB TRAIL														
SM-110-GW	<60	260	5.2	440	610	30,000	20	0.8	1,200	180	<5	22	55,000	2.2
AR2	<60	100	<2	20	<10	<10	<3	<0.2	120	33	<5 UJ	<5	820	5.4
AR3	<60	330	<2	<5	<10	<10	<3	<0.2	<20	7.8	<5 UJ	<5	23	7.6
MARSH														
SM-108-SW	<60	230	<2	94	15	620	16	<0.2	450	8.2	<5 UJ	12	22,000	2.8
SM-109-SW	<60	<5	<2	16	<10	190	3.2	<0.2	78	7.7	<5 UJ	<5	5,500	2.7
SM-123-GW	<60	26	<2	<5	<10	<10	<3	<0.2	<20	<5	<5	<5	810	7.0

Notes: 1) NOAA Ambient Water Quality Criteria for chronic marine exposure
* Based on current SFRWQCB Water Quality Objectives - will change upon amendment of Basin Plan to incorporate CA Toxic Rule Levels
2) na = not available or not analyzed.
3) UJ = estimated non-detect (Please see Appendix B for additional information.)
160 = exceeds NOAA Ambient Water Quality Criteria (AWQC) for chronic marine exposure
160 = exceeds 10 x AWQC

TABLE 3
VOCs IN GROUNDWATER
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

EPA Method 8260B, Units = ug/L

Location	AR2	AR3	SCREENING VALUE[a]
Parameter			
Freon 12	< 1.0	< 1.0	na
Chloromethane	< 1.0	< 1.0	na
Vinyl Chloride	< 0.5	< 0.5	4.9
Bromomethane	< 1.0	< 1.0	na
Chloroethane	< 1.0	< 1.0	na
Trichlorofluoromethane	< 0.5	< 0.5	na
Acetone	**14**	<10	**1500**
Freon 113	< 5.0	< 5.0	na
1,1-Dichloroethene	< 0.5	< 0.5	9.6
Methylene Chloride	<10	<10	na
Carbon Disulfide	< 0.5	**1.3**	na
MTBE	**3.1**	< 0.5	na
trans-1,2-Dichloroethene	< 0.5	< 0.5	590
Vinyl Acetate	<10	<10	na
1,1-Dichloroethane	< 0.5	< 0.5	na
2-Butanone	<10	<10	na
cis-1,2-Dichloroethene	**0.6**	< 0.5	**590**
2,2-Dichloropropane	< 0.5	< 0.5	na
Chloroform	< 0.5	< 0.5	28
Bromochloromethane	< 0.5	< 0.5	na
1,1,1-Trichloroethane	< 0.5	< 0.5	na
1,1-Dichloropropene	< 0.5	< 0.5	na
Carbon Tetrachloride	< 0.5	< 0.5	9.8
1,2-Dichloroethane	**2.1**	< 0.5	**420**
Benzene	**0.9**	< 0.5	**46**
Trichloroethene	**0.9**	< 0.5	**360**
1,2-Dichloropropane	< 0.5	< 0.5	na
Bromodichloromethane	< 0.5	< 0.5	na
Dibromomethane	< 0.5	< 0.5	na
4-Methyl-2-Pentanone	<10	<10	na
cis-1,3-Dichloropropene	< 0.5	< 0.5	na
Toluene	< 0.5	< 0.5	130
trans-1,3-Dichloropropene	< 0.5	< 0.5	na
1,1,2-Trichloroethane	< 0.5	< 0.5	930
2-Hexanone	<10	<10	na
1,3-Dichloropropane	< 0.5	< 0.5	na
Tetrachloroethene	**1.7**	< 0.5	**120**
Dibromochloromethane	< 0.5	< 0.5	na
1,2-Dibromoethane	< 0.5	< 0.5	na
Chlorobenzene	**3.0**	< 0.5	**50**
1,1,1,2-Tetrachloroethane	< 0.5	< 0.5	na
Ethylbenzene	< 0.5	< 0.5	na
m,p-Xylenes	< 0.5	< 0.5	13

TABLE 3
VOCs IN GROUNDWATER
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

EPA Method 8260B, Units = ug/L

Location	AR2	AR3	SCREENING VALUE[a]
Parameter			
o-Xylene	< 0.5	< 0.5	na
Styrene	< 0.5	< 0.5	na
Bromoform	< 1.0	< 1.0	na
Isopropylbenzene	< 0.5	< 0.5	na
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	na
1,2,3-Trichloropropane	< 0.5	< 0.5	na
Propylbenzene	< 0.5	< 0.5	na
Bromobenzene	< 0.5	< 0.5	na
1,3,5-Trimethylbenzene	< 0.5	< 0.5	na
2-Chlorotoluene	< 0.5	< 0.5	na
4-Chlorotoluene	< 0.5	< 0.5	na
tert-Butylbenzene	< 0.5	< 0.5	na
1,2,4-Trimethylbenzene	< 0.5	< 0.5	na
sec-Butylbenzene	< 0.5	< 0.5	na
para-Isopropyl Toluene	< 0.5	< 0.5	na
1,3-Dichlorobenzene	< 0.5	< 0.5	na
1,4-Dichlorobenzene	< 0.5	< 0.5	na
n-Butylbenzene	< 0.5	< 0.5	na
1,2-Dichlorobenzene	< 0.5	< 0.5	na
1,2-Dibromo-3-Chloropropane	< 0.5	< 0.5	na
1,2,4-Trichlorobenzene	< 0.5	< 0.5	na
Hexachlorobutadiene	< 0.5	< 0.5	na
Naphthalene	< 0.5	< 0.5	na
1,2,3-Trichlorobenzene	< 0.5	< 0.5	na

[a] SF-RWQCB RBSLs (2000) Lowest value was selected from RBS: groundwater that is not a current or potential drinking water resourc
na = not available

TABLE 4
ECOLOGICAL SCREENING OF CINDERS AND SEDIMENT
HISTORICAL AND RECENT SAMPLES
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

Location/Sample ID		Sample Depth (feet)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc	pH
UPLAND HABITAT (access road)												
E-SSTL (hawk)				230	157	412	437	42	621		760	
Cinders												
AR1		2.5	150	11	3	400	430	11	42	47	1,300	2.8
AR1		5	71	2.7	36	73	48	0.36	47	3.3	490	6.5
AR2		4	350	26	31	2,200	650	21	53	120	3,900	7.2
SM-110		0	90	4.2	27 J	150	190	3	44 J	8.5	310	4.0
SM-110		9	350	6.5	3.6 J	420	45	1.4	32 J	3.2	260	3.0
Sediment												
AR1		8	23	1.4	24	11	4.8	0.13	31	0.61	28	na
AR2		11	1,600	16	54	720	300	61	70	93	2,700	na
AR2		11.5	980	35	73	1,200	520	63	65	200	5,400	na
SM-110		14	8.3	2.3	48 J	71	6.8	0.44	62 J	0.46	1,100	4.1
Unknown												
RFS-4		2-99	0-2	688	19.4	9.5	4,250	238	7.5	na	249	3,750	na
RFS-4		2-99	2-4	319	50	23.7	8,090	167	26.6	na	8	5,290	na
RFS-4		2-99	4-5	14	0.14	57.4	30	7.61	1.5	na	ND	60	na
B10	MA	2-91	1	2,210	12.3	185	495	357	20.2	na	11	694	na
SD4	MA	2-91	1	161	9.7	32.9	262	293	15.7	na	<4.5	697	na
TIDAL SALT MARSH HABITAT												
Cinders												
SM-109		BIO	0	98	4.8	19	290	190	10	29	9	520	na
SM-109			0	200	12	19	230	84	10	51	10	1,300	4.5
SM-123			3	130	12	3.4 J	480	190	36	18 J	7	2,700	5.0
Sediment												
SM-123			0	26	4	24 J	460	76	4	53 J	4.2	1,300	5.8
SM-123			8	2.6	1.7	37 J	23	5.3	1	65 J	<0.3	50	7.9
SM-124			3.5	260	18	33	12,000	700	35	140	18	770	7.2
Unknown												
SM-131		S0	0	576	3	32	258	576	12	11	135	687	na
E-1		10-92	grab	496	na	na	315	310	11	na	61	957	na
E-2		10-92	grab	749	na	na	239	563	6	na	124	863	na
RFS-1		2-99	0	217	16	50.1	1,330	236	6	na	19	3,930	na
RFS-1		2-99	0-2	425	2	83.1	425	149	24	na	20	793	na
RFS-1		2-99	2-4	895	5	140	587	345	22	na	57	1,000	na
RFS-1		2-99	4-6	172	1	55	145	77	9	na	9	304	na

TABLE 4
ECOLOGICAL SCREENING OF CINDERS AND SEDIMENT
HISTORICAL AND RECENT SAMPLES
MARSH PORTION OF SUBUNIT 2A
RICHMOND FIELD STATION

Location/Sample ID			Sample Depth (feet)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc	pH
RFS-2		2-99	0-2	973	11.1	136	1,130	801	142	na	444	2,000	na
RFS-2		2-99	2-4	746	8.2	59.6	620	211	53	na	78	1,710	na
RFS-2		2-99	4-6	57	1.24	50.8	109	34.1	5.2	na	7	271	na
RFS-3		2-99	0	1,020	2.4	12.7	193	37.2	1.3	na	6	517	na
RFS-3		2-99	0-2	746	3	11.8	745	289	27.5	na	854	945	na
RFS-3		2-99	2-3	1,330	44	48.3	1640	1240	166	na	610	5,000	na
B8	MA	2-91	1	875	7.7	209	415	235	35.9	na	<1.6	517	na
B9	MA	2-91	1	125	8.7	39.5	519	91.3	7	na	<11.1	1,270	na
SD1	ESD	2-91	1	<348	31	37.6	813	172	8	na	<17.9	305	na
SD6	MA	2-91	1	555	33	33.8	823	814	10.6	na	8.7	2,840	na
21401		3-99	na	1,140	na	na	373	180	5.5	na	35.7	2,500	na
SHALLOW BAY AND CHANNEL HABITAT													
Cinders													
SM-108			0	610	21	4.9	54	8.9	0.86	120	6.7	190	3.1
SM-108			2	700	41	5.1	450	220	11	77	17	8,800	4.8
Sediment													
SM-108			4.5	1,200	36	24	940	310	53	85	53	7,200	6.1
SM-108			5.5	7.2	1.6	53	18	4.7	0.44	50	<0.29	50	7.0

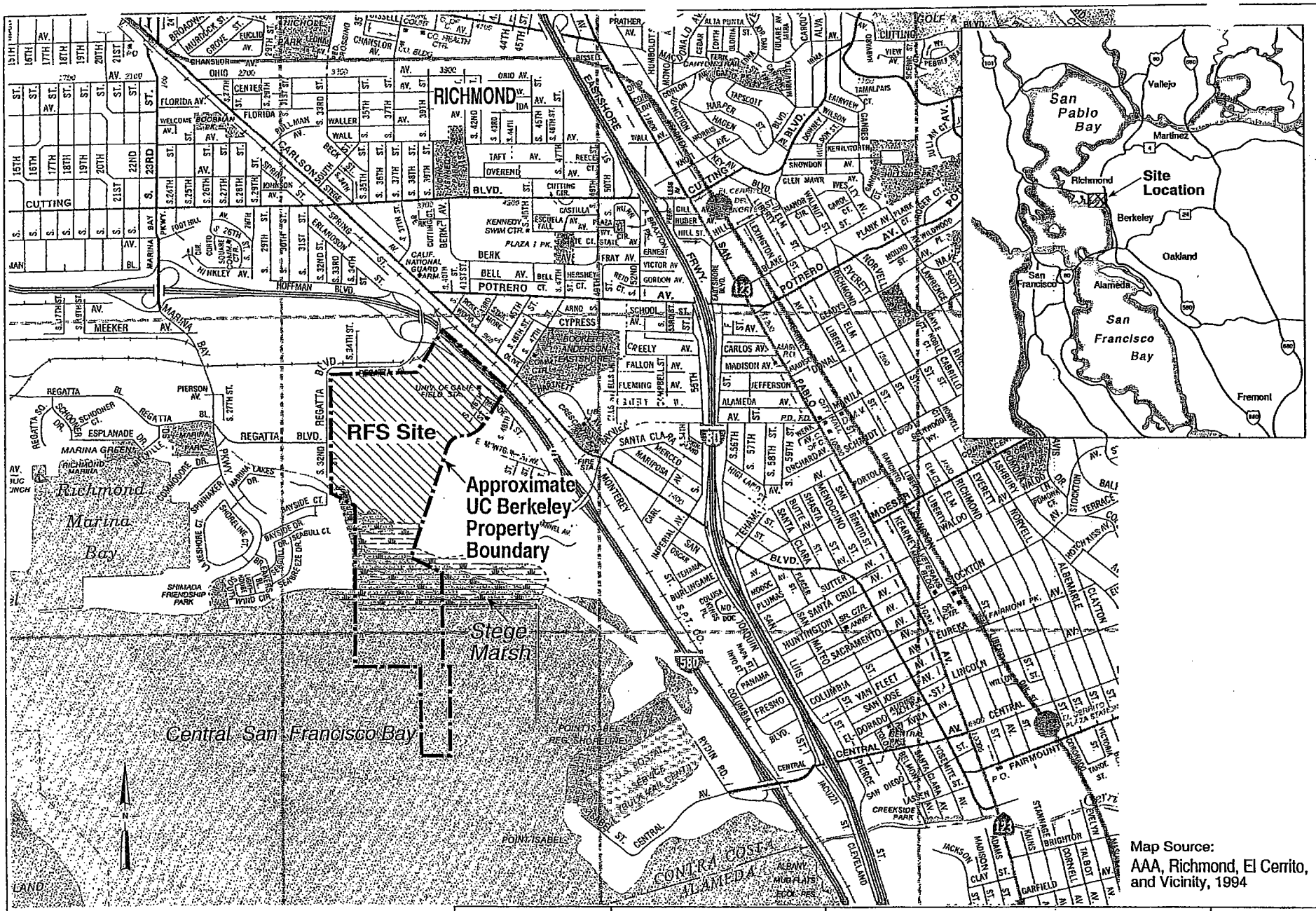
notes: Results reported as mg/kg

na = not analyzed

No exceedances for antimony, beryllium, silver, or thallium

123 = exceeds applicable Ecological Site Specific Target Level

J = The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample. See Appendix B.



Map Source:
AAA, Richmond, El Cerrito, and Vicinity, 1994

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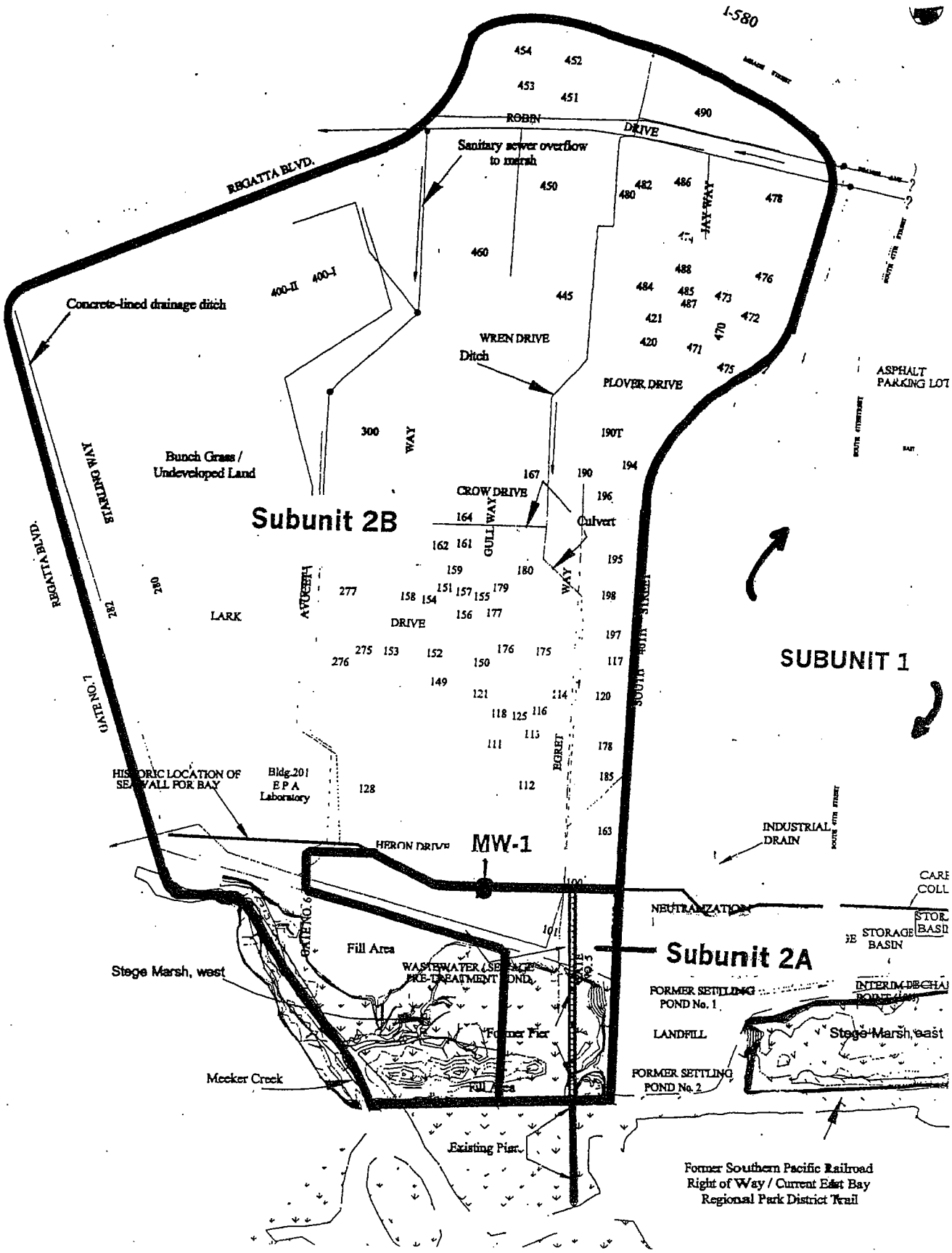
Project No. 51-09967067.00

UC Berkeley
Richmond Field Station

UNIVERSITY OF CALIFORNIA, BERKELEY
RICHMOND FIELD STATION
SITE LOCATION MAP

Figure 1

51-09967067.00-00003/101701/gos



Subunits 2A and 2B
Locations and Boundaries

Figure 2

Appendix A
Boring Logs

Project: UC Berkeley Richmond Field Station
Project Location: Richmond, California
Project Number: 51-09967067.00

Log of Boring AR1

Sheet 1 of 1

Date(s) Drilled	10/11/01	Logged By	B. Copeland	Checked By	J. Durkin
Drilling Method	Direct Push	Drill Bit Size/Type	2-inch-OD drive point	Total Depth of Borehole	10.0 feet
Drill Rig Type	Geoprobe	Drilling Contractor	Precision Drilling	Surface Elevation	Not available
Groundwater Levels(s)	First: 2.2 ft Completion: 3.8 ft bgs	Sampling Method(s)	4-foot dual tube Geoprobe sampler with acetate liner		
Location	Access Road	Borehole Completion	Backfilled with grout to ground surface		

Elevation, feet	Depth, feet	SAMPLES: Interval	SAMPLES: Lab ID Number	SAMPLES: Headspace PID, ppm	Graphic Log	MATERIAL DESCRIPTION	FIELD NOTES
	0					Cinders	
			AR1-2.5'-3'			← Yellow granular material and gray coarse gravel	Cinders 6 ft thick.
						← Yellow coarse sand and very soft cinders	
	5		AR1-5'-5.5'			SILTY SAND [SEDIMENT], dark maroon, wet, fine sand	
						Cinders with slices of silty sand (slough)	
						SILT, greenish gray and orange-gray, wet, little clay	
						SILTY CLAY, greenish gray, wet, medium stiff, little gravel to 1/2 inch dia. (no gravel at bottom)	
	10					**BOTTOM OF BORING AT 10 FEET**	Hole collapsed.
	15						
	20						
	25						

Report: ENV_3PS/W_SOLON; File: BERKRICH.GPJ; 11/28/2001 AR-01

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Project: UC Berkeley Richmond Field Station Project Location: Richmond, California Project Number: 51-09967067.00	**Log of Boring AR2** Sheet 1 of 1

Date(s) Drilled	10/11/01	Logged By	B. Copeland	Checked By	J. Durkin
Drilling Method	Direct Push	Drill Bit Size/Type	2-inch-OD drive point	Total Depth of Borehole	13.0 feet
Drill Rig Type	Geoprobe	Drilling Contractor	Precision Drilling	Surface Elevation	Not available
Groundwater Levels(s)	First: 6.5 ft 24 hrs: 5.80 ft bgs	Sampling Method(s)	4-foot dual tube Geoprobe sampler with acetate liner		
Location	Access Road	Borehole Completion	3/4-in.-dia. PVC temporary well, 0.010-in.-slot screen 3-13 ft; PVC pulled after water sampling and borehole grouted to surface		

Elevation, feet	Depth, feet	SAMPLES: Interval	SAMPLES: Lab ID Number	SAMPLES: Headspace PID, ppm	Graphic Log	MATERIAL DESCRIPTION	Temporary Well Schematic	FIELD NOTES AND WELL DETAILS
	0					Cinders		
						← Rock and concrete fragments, white powder, wood fragments		Cinders and/or cinders and soil approx. 10 ft thick.
						← Yellow powder		
			AR2-4'-4.5'					← Temporary Well, 3/4-in. PVC casing, 0.010-in. slotted screen 2-12 ft **Groundwater Sample AR2, pH=5.4**
	5					SANDY SILT, greenish gray and dark gray, moist, soft		
						← 2-inch concrete fragments		
						← Layer of stiff clay 2 inches thick, some cinders		
				40		SAND, maroon and dark gray, wet, coarse, little gravel, intermixed with cinders		
	10					SILT [SEDIMENT], dark gray, wet, soft		
			AR2-11'-11.5'			← Odor		
			AR2-11.5'-12'	40		SAND, dark gray, wet, coarse, some gravel to 1 inch dia.		
						BOTTOM OF BORING AT 13 FEET		
	15							
	20							
	25							

Report: ENV_3PS/W_SOLON; File: BERKRICH.GPJ; 11/28/2001 AR-02

URS

Project: UC Berkeley Richmond Field Station
Project Location: Richmond, California
Project Number: 51-09967067.00

Log of Boring AR3

Sheet 1 of 1

Date(s) Drilled	10/11/01	Logged By	B. Copeland	Checked By	J. Durkin
Drilling Method	Direct Push	Drill Bit Size/Type	2-inch-OD drive point	Total Depth of Borehole	10.0 feet
Drill Rig Type	Geoprobe	Drilling Contractor	Precision Drilling	Surface Elevation	Not available
Groundwater Levels(s)	First: None 24 hrs: 6.35 ft bgs	Sampling Method(s)	4-foot dual tube Geoprobe sampler with acetate liner		
Location	Access Road	Borehole Completion	3/4-in.-dia. PVC temporary well, 0.010-in.-slot screen 0-10 ft; PVC pulled after water sampling and borehole grouted to surface		

Elevation, feet	Depth, feet	SAMPLES: Interval	SAMPLES: Lab ID Number	SAMPLES: Headspace PID, ppm	Graphic Log	MATERIAL DESCRIPTION	Temporary Well Schematic	FIELD NOTES AND WELL DETAILS
	0					GRAVELLY SILT [FILL], reddish brown, dry, gravel to 1 inch dia., some decomposed cinders(?), wood fragments		Cinders in soil layer approx. 1 ft thick.
						SILT [FILL], mottled gray and reddish brown, damp, trace to no clay, root fragments		
						← Increasing clay		← Temporary Well, 3/4-in. PVC casing, 0.010-in. slotted screen 0-10 ft **Groundwater Sample AR3, pH=7.6**
						CLAY [FILL], gray, wet, soft, roots and plant material		
	5		AR3-5'-5.5'			SILT [SEDIMENT], dark gray, wet, soft, abundant plant material		
						← Shell fragments		
			AR3-8'-8.5'			← Odor		
						SAND, dark gray, wet, fine		
	10					**BOTTOM OF BORING AT 10 FEET**		
	15							
	20							
	25							

Report: ENV_3PS/W_SOLON; File: BERKRICH.GPJ; 11/19/2001 AR-03

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Appendix B
QA/QC Review

The quality assurance/quality control (QA/QC) review process is used to evaluate the quality and usability of the analytical data. A summary of the parameters that were reviewed as part of the QA/QC evaluation process is provided below. Thereafter, a brief explanation is provided of the data qualifiers that were assigned to results during the QA/QC process. Finally, a summary is provided of the qualified sample results, by sample matrix and by analytical method. The analytical data that were qualified are summarized in Table B-1.

Summary of QA/QC Review Parameters

Method Holding Times

The analytical methods used for the investigation have prescribed holding times. The method holding time is defined as the maximum amount of time after collection that a sample may be held prior to extraction and/or analysis. Sample integrity becomes questionable for samples extracted and/or analyzed outside of the prescribed holding times due to degradation and/or volatilization of the sample. The analytical results of such samples extracted and/or analyzed outside the prescribed method holding time are suspect. The QA/QC review identifies results with exceeded method holding times.

Method Blanks

Method blanks are prepared in the laboratory using deionized, distilled (Reagent Grade Type II) water. Method blanks are extracted and/or analyzed following the same procedures as an environmental sample. Analysis of the method blank indicates potential sources of contamination from laboratory procedures (e.g. contaminated reagents, improperly cleaned laboratory equipment) or persistent contamination due to the presence of certain compounds in the ambient laboratory environment. The QA/QC review identifies method blanks with detections of target analytes and evaluates the effect of the detections on sample results.

Matrix Spikes and Laboratory Control Samples

Matrix spikes (MSs), matrix spike duplicates (MSDs), laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) are analyzed by the laboratory to evaluate the accuracy and precision of the sample extraction and analysis procedures and to evaluate potential matrix interference. Matrix interference, the effect of the sample matrix on the analysis, may partially or completely mask the response of analytical instrumentation to the target analyte(s). Matrix interference may have a varying impact on the accuracy and precision of the extraction and/or analysis procedures, and may bias the sample results high or low.

The MS is prepared by adding a known quantity of the target compound(s) to a sample. The sample is then extracted and/or analyzed as a typical environmental sample and the results are reported as percent recovery. The spike percent recovery is defined as:

$$\text{Recovery (\%)} = \frac{\text{spike analysis result - original sample concentration}}{\text{concentration of spike addition}} \text{x100\%}$$

MS recoveries are reviewed for compliance with laboratory-established control limits to evaluate the accuracy of the extraction and/or analysis procedures.

LCSs are prepared exactly like MSs using a clean control matrix rather than an environmental sample. Typical control matrices include Reagent Grade Type II water and clean sand. LCSs are used to evaluate laboratory accuracy independent of matrix effects.

The QA/QC review identifies spike recoveries outside laboratory control limits and evaluates the effect of these recoveries on the sample results.

Laboratory Duplicate Analyses

Duplicate analyses are performed by the laboratory to evaluate the precision of analytical procedures. The laboratory may perform MSD and/or LCSD analyses.

Precision is evaluated by calculating a relative percent difference (RPD) using the following equation:

$$\text{RPD (\%)} = \left| \frac{\text{(Spike Concentration} - \text{Spike Duplicate Concentration)}}{\frac{1}{2}\text{(Spike Concentration} + \text{Spike Duplicate Concentration)}} \right| \text{x 100\%}$$

The RPDs are compared to laboratory-established control limits to evaluate analytical precision. The QA/QC review identifies RPDs outside laboratory control limits and evaluates the effect of these recoveries on the sample results.

Surrogate Recoveries

Surrogates are organic compounds that are similar to the target analytes in terms of their chemical structures and response to the analytical instrumentation, but are not usually detected in environmental samples. Surrogates are added to each environmental and laboratory QC sample to monitor the effect of the matrix on the accuracy of the extraction and/or analysis. Results for surrogate analyses are reported in terms of percent recovery (which is defined above). Reported recoveries are compared to laboratory-established control limits to evaluate sample-specific accuracy. The QA/QC review identifies surrogate recoveries outside laboratory control limits and evaluates the effect of these recoveries on the sample results.

Explanation of Analytical Data Qualifiers

The analytical data were reviewed and qualified following USEPA guidelines for organic and inorganic data review (USEPA, 1999, 1994). The qualifiers assigned to results during the QA/QC process are defined below.

UJ The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

In the section below, results qualified as estimated indicate that a "UJ" qualifier was assigned to the results.

Summary of Qualified Analytical Data

The qualified data by matrix and analytical method are summarized. A complete summary of the qualified data is included in Table B-1.

Water Samples

- Qualification of USEPA Method 6010B (silver) results as estimated was due to low MS recovery that indicates a potential low bias.

In summary, the QA/QC review found the data to be of acceptable quality, with no limitations for use. Data of acceptable quality include results qualified as estimated.

References

USEPA. 1994. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. February.

USEPA. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review. October.

Table B-1
Summary of Qualified Analytical Data
U.C. Berkeley, Richmond Field Station

Sample ID	Matrix	Method	Analyte	Qualifier	Explanation
AR2	Water	6010B	Silver	UJ	MS recovery (60%) out of control (72%-125%)
AR3	Water	6010B	Silver	UJ	MS recovery (60%) out of control (72%-125%)

Appendix C
Laboratory Analytical Reports

Note: The laboratory analytical reports in this appendix contain analytical results for some locations outside of the subject area which are not discussed in this report.

154694

URS 500 12th Street, Suite 200
Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 510996706700

SAMPLERS: (Signature) B Copeland

	DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method	EPA Method	EPA Method	EPA Method	CP metals*	pH	8260		Number of Containers
-1	10/11/01	8:10	A4-12A	W					~~X~~			hold	1
-2		9:10	A4-9A						X	X			1
-3		10:40	A4-13A						X	X			1
-4		10:25	A4-5A						~~X~~			hold	1
-5			PB12B						~~X~~		X		3
			~~[illegible]~~										~~2~~
-6			A4-16						~~X~~			hold	1
-7			PB12-0	S					X	X			1
-8			AR1-2.5						X	X			1
-9			AR2-4						X	X			1
-10			AR2-11						X	X			1
-11			AR2-11.5						X	X	X		1
-12			AR1-5						X	X			1
-13			AR1-8						X	X	X		1
-14			A4-16-5.5						X	X			1
-15			A4-16-11.5						X	X			1

REMARKS (Sample preservation, handling procedures, etc.)

~~Normal TAT~~ ~~72~~ hour per BC

* dissolved in groundwater, pls filter within 24 hrs.

Results to Bill Copeland 510-874-3192

Received ☐ On Ice
☐ Cold ☑ Ambient ☑ Intact

Preservation Correct?
☑ Yes ☐ No ☐ N/A

TOTAL NUMBER OF CONTAINERS: 17

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
B Copeland	10/11/01 1630	[signature]			

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY (Signature)	DATE/TIME

Percent Moisture Summary Report

Date: 15-OCT-01
Batch: 67116
Analyst: MLT

Sample	Method	Date	Tare(g)	Wet(g)	Dry(g)	Percent Solids	Percent Moisture
154694-007	CLP SOW 390	15-OCT-01	14.9945	20.716	19.8781	85	15
154694-008	CLP SOW 390	15-OCT-01	15.9411	22.2056	20.8417	78	22
154694-009	CLP SOW 390	15-OCT-01	15.3435	20.4926	19.5419	82	18
154694-010	CLP SOW 390	15-OCT-01	15.238	20.5251	18.3028	58	42
154694-011	CLP SOW 390	15-OCT-01	15.006	20.6374	18.5488	63	37
154694-012	CLP SOW 390	15-OCT-01	15.674	20.9606	19.5378	73	27
154694-013	CLP SOW 390	15-OCT-01	15.2629	20.4256	19.24	77	23
154694-014	CLP SOW 390	15-OCT-01	15.6721	21.0714	19.6605	74	26
154694-015	CLP SOW 390	15-OCT-01	15.8061	22.0426	21.001	83	17
154723-001	CLP SOW 390	15-OCT-01	15.0668	20.9797	19.8901	82	18
154723-002	CLP SOW 390	15-OCT-01	15.988	20.9163	20.0931	83	17
154723-003	CLP SOW 390	15-OCT-01	15.3642	20.3718	18.9726	72	28
154723-004	CLP SOW 390	15-OCT-01	15.0951	20.7515	19.8067	83	17
154723-005	CLP SOW 390	15-OCT-01	15.5898	21.0422	19.6434	74	26
154723-006	CLP SOW 390	15-OCT-01	15.9942	20.4625	19.5729	80	20
154723-008	CLP SOW 390	15-OCT-01	15.0759	21.4455	19.7714	74	26
154723-009	CLP SOW 390	15-OCT-01	15.9781	20.9402	20.0603	82	18
154728-001	CLP SOW 390	15-OCT-01	15.731	21.3079	20.6583	88	12
154728-002	CLP SOW 390	15-OCT-01	15.8095	21.0313	20.5203	90	10
QC158838 of 154694-007	CLP SOW 390	15-OCT-01	15.5489	20.3556	19.6928	86	14
					RPD:	1.0%	6.0%

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	PB12B	Batch#:	67134
Lab ID:	154694-005	Sampled:	10/11/01
Matrix:	Water	Received:	10/11/01
Units:	ug/L	Analyzed:	10/16/01
Diln Fac:	40.00		

Analyte	Result	RL
Freon 12	ND	40
Chloromethane	ND	40
Vinyl Chloride	ND	20
Bromomethane	ND	40
Chloroethane	ND	40
Trichlorofluoromethane	ND	20
Acetone	ND	400
Freon 113	ND	200
1,1-Dichloroethene	ND	20
Methylene Chloride	ND	400
Carbon Disulfide	ND	20
MTBE	ND	20
trans-1,2-Dichloroethene	ND	20
Vinyl Acetate	ND	400
1,1-Dichloroethane	ND	20
2-Butanone	ND	400
cis-1,2-Dichloroethene	ND	20
2,2-Dichloropropane	ND	20
Chloroform	ND	20
Bromochloromethane	ND	20
1,1,1-Trichloroethane	ND	20
1,1-Dichloropropene	ND	20
Carbon Tetrachloride	ND	20
1,2-Dichloroethane	ND	20
Benzene	ND	20
Trichloroethene	120	20
1,2-Dichloropropane	ND	20
Bromodichloromethane	ND	20
Dibromomethane	ND	20
4-Methyl-2-Pentanone	ND	400
cis-1,3-Dichloropropene	ND	20
Toluene	ND	20
trans-1,3-Dichloropropene	ND	20
1,1,2-Trichloroethane	ND	20
2-Hexanone	ND	400
1,3-Dichloropropane	ND	20
Tetrachloroethene	6,500	20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	PB12B	Batch#:	67134
Lab ID:	154694-005	Sampled:	10/11/01
Matrix:	Water	Received:	10/11/01
Units:	ug/L	Analyzed:	10/16/01
Diln Fac:	40.00		

Analyte	Result	RL
Dibromochloromethane	ND	20
1,2-Dibromoethane	ND	20
Chlorobenzene	ND	20
1,1,1,2-Tetrachloroethane	ND	20
Ethylbenzene	ND	20
m,p-Xylenes	ND	20
o-Xylene	ND	20
Styrene	ND	20
Bromoform	ND	40
Isopropylbenzene	ND	20
1,1,2,2-Tetrachloroethane	ND	20
1,2,3-Trichloropropane	ND	20
Propylbenzene	ND	20
Bromobenzene	ND	20
1,3,5-Trimethylbenzene	ND	20
2-Chlorotoluene	ND	20
4-Chlorotoluene	ND	20
tert-Butylbenzene	ND	20
1,2,4-Trimethylbenzene	ND	20
sec-Butylbenzene	ND	20
para-Isopropyl Toluene	ND	20
1,3-Dichlorobenzene	ND	20
1,4-Dichlorobenzene	ND	20
n-Butylbenzene	ND	20
1,2-Dichlorobenzene	ND	20
1,2-Dibromo-3-Chloropropane	ND	20
1,2,4-Trichlorobenzene	ND	20
Hexachlorobutadiene	ND	20
Naphthalene	ND	20
1,2,3-Trichlorobenzene	ND	20

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-122
1,2-Dichloroethane-d4	116	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	103	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158899	Batch#:	67134
Matrix:	Water	Analyzed:	10/16/01
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158899	Batch#:	67134
Matrix:	Water	Analyzed:	10/16/01
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-122
1,2-Dichloroethane-d4	114	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	105	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158900	Batch#:	67134
Matrix:	Water	Analyzed:	10/16/01
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158900	Batch#:	67134
Matrix:	Water	Analyzed:	10/16/01
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-122
1,2-Dichloroethane-d4	111	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	105	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC158898	Batch#:	67134
Matrix:	Water	Analyzed:	10/16/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	58.36	117	74-132
Benzene	50.00	49.72	99	80-116
Trichloroethene	50.00	51.77	104	80-119
Toluene	50.00	48.22	96	80-120
Chlorobenzene	50.00	49.75	100	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-122
1,2-Dichloroethane-d4	116	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	104	80-115

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	67134
MSS Lab ID:	154724-001	Sampled:	10/11/01
Matrix:	Water	Received:	10/11/01
Units:	ug/L	Analyzed:	10/17/01
Diln Fac:	1.000		

Type: MS Lab ID: QC158919

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.2900	50.00	62.09	124	70-132
Benzene	<0.08100	50.00	51.22	102	80-114
Trichloroethene	<0.07300	50.00	53.31	107	62-137
Toluene	<0.08500	50.00	50.40	101	79-121
Chlorobenzene	<0.08100	50.00	49.86	100	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-122
1,2-Dichloroethane-d4	121	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	103	80-115

Type: MSD Lab ID: QC158920

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	59.02	118	70-132	5	20
Benzene	50.00	49.45	99	80-114	4	20
Trichloroethene	50.00	51.68	103	62-137	3	20
Toluene	50.00	48.86	98	79-121	3	20
Chlorobenzene	50.00	49.07	98	80-117	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-122
1,2-Dichloroethane-d4	118	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	103	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR2-11.5	Diln Fac:	1.000
Lab ID:	154694-011	Batch#:	67063
Matrix:	Soil	Sampled:	10/11/01
Units:	ug/Kg	Received:	10/11/01
Basis:	dry	Analyzed:	10/12/01

Moisture: 37%

Analyte	Result	RL
Freon 12	ND	16
Chloromethane	ND	16
Vinyl Chloride	ND	16
Bromomethane	ND	16
Chloroethane	ND	16
Trichlorofluoromethane	ND	7.9
Acetone	ND	32
Freon 113	ND	7.9
1,1-Dichloroethene	ND	7.9
Methylene Chloride	ND	32
Carbon Disulfide	ND	7.9
MTBE	ND	7.9
trans-1,2-Dichloroethene	ND	7.9
Vinyl Acetate	ND	79
1,1-Dichloroethane	ND	7.9
2-Butanone	ND	16
cis-1,2-Dichloroethene	ND	7.9
2,2-Dichloropropane	ND	7.9
Chloroform	ND	7.9
Bromochloromethane	ND	7.9
1,1,1-Trichloroethane	ND	7.9
1,1-Dichloropropene	ND	7.9
Carbon Tetrachloride	ND	7.9
1,2-Dichloroethane	ND	7.9
Benzene	ND	7.9
Trichloroethene	ND	7.9
1,2-Dichloropropane	ND	7.9
Bromodichloromethane	ND	7.9
Dibromomethane	ND	7.9
4-Methyl-2-Pentanone	ND	16
cis-1,3-Dichloropropene	ND	7.9
Toluene	ND	7.9
trans-1,3-Dichloropropene	ND	7.9
1,1,2-Trichloroethane	ND	7.9
2-Hexanone	ND	16
1,3-Dichloropropane	ND	7.9
Tetrachloroethene	ND	7.9
Dibromochloromethane	ND	7.9
1,2-Dibromoethane	ND	7.9
Chlorobenzene	ND	7.9
1,1,1,2-Tetrachloroethane	ND	7.9
Ethylbenzene	ND	7.9
m,p-Xylenes	ND	7.9
o-Xylene	ND	7.9
Styrene	ND	7.9
Bromoform	ND	7.9
Isopropylbenzene	ND	7.9
1,1,2,2-Tetrachloroethane	ND	7.9
1,2,3-Trichloropropane	ND	7.9
Propylbenzene	ND	7.9
Bromobenzene	ND	7.9
1,3,5-Trimethylbenzene	ND	7.9
2-Chlorotoluene	ND	7.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR2-11.5	Diln Fac:	1.000
Lab ID:	154694-011	Batch#:	67063
Matrix:	Soil	Sampled:	10/11/01
Units:	ug/Kg	Received:	10/11/01
Basis:	dry	Analyzed:	10/12/01

Analyte	Result	RL
4-Chlorotoluene	ND	7.9
tert-Butylbenzene	ND	7.9
1,2,4-Trimethylbenzene	ND	7.9
sec-Butylbenzene	ND	7.9
para-Isopropyl Toluene	ND	7.9
1,3-Dichlorobenzene	ND	7.9
1,4-Dichlorobenzene	ND	7.9
n-Butylbenzene	ND	7.9
1,2-Dichlorobenzene	ND	7.9
1,2-Dibromo-3-Chloropropane	ND	7.9
1,2,4-Trichlorobenzene	ND	7.9
Hexachlorobutadiene	ND	7.9
Naphthalene	ND	7.9
1,2,3-Trichlorobenzene	ND	7.9

Surrogate	%REC	Limits
Dibromofluoromethane	112	63-133
1,2-Dichloroethane-d4	122	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	104	77-126

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR1-8	Diln Fac:	1.000
Lab ID:	154694-013	Batch#:	67063
Matrix:	Soil	Sampled:	10/11/01
Units:	ug/Kg	Received:	10/11/01
Basis:	dry	Analyzed:	10/12/01

Moisture: 23%

Analyte	Result	RL
Freon 12	ND	13
Chloromethane	ND	13
Vinyl Chloride	ND	13
Bromomethane	ND	13
Chloroethane	ND	13
Trichlorofluoromethane	ND	6.5
Acetone	47	26
Freon 113	ND	6.5
1,1-Dichloroethene	ND	6.5
Methylene Chloride	ND	26
Carbon Disulfide	ND	6.5
MTBE	ND	6.5
trans-1,2-Dichloroethene	ND	6.5
Vinyl Acetate	ND	65
1,1-Dichloroethane	ND	6.5
2-Butanone	ND	13
cis-1,2-Dichloroethene	ND	6.5
2,2-Dichloropropane	ND	6.5
Chloroform	ND	6.5
Bromochloromethane	ND	6.5
1,1,1-Trichloroethane	ND	6.5
1,1-Dichloropropene	ND	6.5
Carbon Tetrachloride	ND	6.5
1,2-Dichloroethane	ND	6.5
Benzene	ND	6.5
Trichloroethene	ND	6.5
1,2-Dichloropropane	ND	6.5
Bromodichloromethane	ND	6.5
Dibromomethane	ND	6.5
4-Methyl-2-Pentanone	ND	13
cis-1,3-Dichloropropene	ND	6.5
Toluene	ND	6.5
trans-1,3-Dichloropropene	ND	6.5
1,1,2-Trichloroethane	ND	6.5
2-Hexanone	ND	13
1,3-Dichloropropane	ND	6.5
Tetrachloroethene	ND	6.5
Dibromochloromethane	ND	6.5
1,2-Dibromoethane	ND	6.5
Chlorobenzene	ND	6.5
1,1,1,2-Tetrachloroethane	ND	6.5
Ethylbenzene	ND	6.5
m,p-Xylenes	ND	6.5
o-Xylene	ND	6.5
Styrene	ND	6.5
Bromoform	ND	6.5
Isopropylbenzene	ND	6.5
1,1,2,2-Tetrachloroethane	ND	6.5
1,2,3-Trichloropropane	ND	6.5
Propylbenzene	ND	6.5
Bromobenzene	ND	6.5
1,3,5-Trimethylbenzene	ND	6.5
2-Chlorotoluene	ND	6.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR1-8	Diln Fac:	1.000
Lab ID:	154694-013	Batch#:	67063
Matrix:	Soil	Sampled:	10/11/01
Units:	ug/Kg	Received:	10/11/01
Basis:	dry	Analyzed:	10/12/01

Analyte	Result	RL
4-Chlorotoluene	ND	6.5
tert-Butylbenzene	ND	6.5
1,2,4-Trimethylbenzene	ND	6.5
sec-Butylbenzene	ND	6.5
para-Isopropyl Toluene	ND	6.5
1,3-Dichlorobenzene	ND	6.5
1,4-Dichlorobenzene	ND	6.5
n-Butylbenzene	ND	6.5
1,2-Dichlorobenzene	ND	6.5
1,2-Dibromo-3-Chloropropane	ND	6.5
1,2,4-Trichlorobenzene	ND	6.5
Hexachlorobutadiene	ND	6.5
Naphthalene	ND	6.5
1,2,3-Trichlorobenzene	ND	6.5

Surrogate	%REC	Limits
Dibromofluoromethane	107	63-133
1,2-Dichloroethane-d4	124	76-127
Toluene-d8	99	80-111
Bromofluorobenzene	101	77-126

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC158609	Diln Fac:	1.000
Matrix:	Soil	Batch#:	67063
Units:	ug/Kg	Analyzed:	10/12/01

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC158609	Diln Fac:	1.000
Matrix:	Soil	Batch#:	67063
Units:	ug/Kg	Analyzed:	10/12/01

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	105	63-133
1,2-Dichloroethane-d4	118	76-127
Toluene-d8	99	80-111
Bromofluorobenzene	99	77-126

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC158608	Diln Fac:	1.000
Matrix:	Soil	Batch#:	67063
Units:	ug/Kg	Analyzed:	10/12/01

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	37.23	74	66-138
Benzene	50.00	46.66	93	76-121
Trichloroethene	50.00	52.78	106	75-124
Toluene	50.00	46.92	94	75-124
Chlorobenzene	50.00	46.93	94	78-115

Surrogate	%REC	Limits
Dibromofluoromethane	109	63-133
1,2-Dichloroethane-d4	123	76-127
Toluene-d8	99	80-111
Bromofluorobenzene	97	77-126

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR1-8	Diln Fac:	1.000
MSS Lab ID:	154694-013	Batch#:	67063
Matrix:	Soil	Sampled:	10/11/01
Units:	ug/Kg	Received:	10/11/01
Basis:	dry	Analyzed:	10/12/01

Type: MS Moisture: 23%
Lab ID: QC158634

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	ND	64.94	68.51	105	42-145
Benzene	ND	64.94	52.99	82	50-133
Trichloroethene	ND	64.94	56.83	88	33-133
Toluene	ND	64.94	52.00	80	45-134
Chlorobenzene	ND	64.94	47.73	74	38-137

Surrogate	%REC	Limits
Dibromofluoromethane	108	63-133
1,2-Dichloroethane-d4	121	76-127
Toluene-d8	101	80-111
Bromofluorobenzene	98	77-126

Type: MSD Moisture: 23%
Lab ID: QC158635

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	64.94	66.09	102	42-145	4	31
Benzene	64.94	50.50	78	50-133	5	29
Trichloroethene	64.94	54.65	84	33-133	4	30
Toluene	64.94	49.14	76	45-134	6	29
Chlorobenzene	64.94	46.29	71	38-137	3	31

Surrogate	%REC	Limits
Dibromofluoromethane	106	63-133
1,2-Dichloroethane-d4	117	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	99	77-126

ND= Not Detected
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700		
Field ID:	A4-9A	Diln Fac:	1.000
Lab ID:	154694-002	Sampled:	10/11/01
Matrix:	Filtrate	Received:	10/11/01
Units:	ug/L	Analyzed:	10/15/01

Analyte	Result	RL	Batch#	Prepared	Analysis
Antimony	ND	60	67051	10/11/01	EPA 6010B
Arsenic	ND	5.0	67051	10/11/01	EPA 6010B
Beryllium	ND	2.0	67051	10/11/01	EPA 6010B
Cadmium	ND	5.0	67051	10/11/01	EPA 6010B
Chromium	ND	10	67051	10/11/01	EPA 6010B
Copper	ND	10	67051	10/11/01	EPA 6010B
Lead	ND	3.0	67051	10/11/01	EPA 6010B
Mercury	ND	0.20	67111	10/15/01	EPA 7470A
Nickel	ND	20	67051	10/11/01	EPA 6010B
Selenium	ND	5.0	67051	10/11/01	EPA 6010B
Silver	ND	5.0	67051	10/11/01	EPA 6010B
Thallium	ND	5.0	67051	10/11/01	EPA 6010B
Zinc	ND	20	67051	10/11/01	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700		
Field ID:	A4-13A	Diln Fac:	1.000
Lab ID:	154694-003	Sampled:	10/11/01
Matrix:	Filtrate	Received:	10/11/01
Units:	ug/L	Analyzed:	10/15/01

Analyte	Result	RL	Batch#	Prepared	Analysis
Antimony	ND	60	67051	10/11/01	EPA 6010B
Arsenic	ND	5.0	67051	10/11/01	EPA 6010B
Beryllium	ND	2.0	67051	10/11/01	EPA 6010B
Cadmium	ND	5.0	67051	10/11/01	EPA 6010B
Chromium	ND	10	67051	10/11/01	EPA 6010B
Copper	ND	10	67051	10/11/01	EPA 6010B
Lead	ND	3.0	67051	10/11/01	EPA 6010B
Mercury	ND	0.20	67111	10/15/01	EPA 7470A
Nickel	110	20	67051	10/11/01	EPA 6010B
Selenium	ND	5.0	67051	10/11/01	EPA 6010B
Silver	ND	5.0	67051	10/11/01	EPA 6010B
Thallium	7.7	5.0	67051	10/11/01	EPA 6010B
Zinc	38	20	67051	10/11/01	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158560	Batch#:	67051
Matrix:	Filtrate	Prepared:	10/11/01
Units:	ug/L	Analyzed:	10/15/01

Analyte	Result	RL
Antimony	ND	60
Arsenic	ND	5.0
Beryllium	ND	2.0
Cadmium	ND	5.0
Chromium	ND	10
Copper	ND	10
Lead	ND	3.0
Nickel	ND	20
Selenium	ND	5.0
Silver	ND	5.0
Thallium	ND	5.0
Zinc	ND	20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	67111
Lab ID:	QC158790	Prepared:	10/15/01
Matrix:	Filtrate	Analyzed:	10/15/01
Units:	ug/L		

Result	RL
ND	0.20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Matrix:	Filtrate	Batch#:	67051
Units:	ug/L	Prepared:	10/11/01
Diln Fac:	1.000	Analyzed:	10/15/01

Type: BS Lab ID: QC158561

Analyte	Spiked	Result	%REC	Limits
Antimony	500.0	587.0	117	75-123
Arsenic	100.0	112.0	112	80-120
Beryllium	50.00	54.00	108	80-116
Cadmium	50.00	52.50	105	80-126
Chromium	200.0	209.0	105	80-113
Copper	250.0	259.0	104	80-114
Lead	100.0	107.0	107	78-120
Nickel	500.0	524.0	105	80-116
Selenium	100.0	107.0	107	79-120
Silver	50.00	51.70	103	80-120
Thallium	100.0	102.0	102	80-119
Zinc	500.0	517.0	103	72-126

Type: BSD Lab ID: QC158562

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	500.0	567.0	113	75-123	3	21
Arsenic	100.0	108.0	108	80-120	4	20
Beryllium	50.00	54.50	109	80-116	1	20
Cadmium	50.00	53.10	106	80-126	1	20
Chromium	200.0	211.0	106	80-113	1	21
Copper	250.0	261.0	104	80-114	1	24
Lead	100.0	108.0	108	78-120	1	20
Nickel	500.0	528.0	106	80-116	1	23
Selenium	100.0	111.0	111	79-120	4	20
Silver	50.00	51.60	103	80-120	0	26
Thallium	100.0	102.0	102	80-119	0	20
Zinc	500.0	521.0	104	72-126	1	26

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	SDUP	Batch#:	67051
MSS Lab ID:	154670-005	Sampled:	10/10/01
Lab ID:	QC158563	Received:	10/10/01
Matrix:	Filtrate	Prepared:	10/11/01
Units:	ug/L	Analyzed:	10/15/01

Analyte	MSS Result	Result	RL	RPD	Lim
Antimony	<60.00	ND	60	NC	29
Arsenic	12.70	11.90	5.0	7	42
Beryllium	<2.000	ND	2.0	NC	20
Cadmium	7.890	7.970	5.0	1	25
Chromium	<10.00	ND	10	NC	20
Copper	<10.00	ND	10	NC	20
Lead	3.500	4.570	3.0	27	29
Nickel	53.70	53.50	20	0	20
Selenium	9.390	10.30	5.0	9	40
Silver	<5.000	ND	5.0	NC	30
Thallium	14.30	17.60	5.0	21	41
Zinc	35.40	34.50	20	3	33

NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	SSPIKE	Batch#:	67051
MSS Lab ID:	154670-005	Sampled:	10/10/01
Lab ID:	QC158564	Received:	10/10/01
Matrix:	Filtrate	Prepared:	10/11/01
Units:	ug/L	Analyzed:	10/15/01

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	15.70	500.0	471.0	91	64-128
Arsenic	12.70	100.0	116.0	103	65-131
Beryllium	<0.2500	50.00	46.80	94	71-124
Cadmium	7.890	50.00	53.70	92	70-127
Chromium	1.170	200.0	184.0	91	70-124
Copper	<0.6200	250.0	238.0	95	74-122
Lead	3.500	100.0	97.10	94	66-128
Nickel	53.70	500.0	507.0	91	70-126
Selenium	9.390	100.0	108.0	99	65-132
Silver	<0.6200	50.00	47.90	96	72-125
Thallium	14.30	100.0	101.0	87	58-134
Zinc	35.40	500.0	520.0	97	69-129

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	67111
Matrix:	Filtrate	Prepared:	10/15/01
Units:	ug/L	Analyzed:	10/15/01
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC158791	5.000	4.310	86	80-116		
BSD	QC158792	5.000	4.300	86	80-116	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	A4-7	Batch#:	67111
Type:	SDUP	Sampled:	10/12/01
MSS Lab ID:	154723-011	Received:	10/12/01
Lab ID:	QC158793	Prepared:	10/15/01
Matrix:	Filtrate	Analyzed:	10/15/01
Units:	ug/L		

MSS Result	Result	RL	RPD	Lim
<0.2000	ND	0.20	NC	22

NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	A4-7	Batch#:	67111
Type:	MS	Sampled:	10/12/01
MSS Lab ID:	154723-011	Received:	10/12/01
Lab ID:	QC158794	Prepared:	10/15/01
Matrix:	Filtrate	Analyzed:	10/15/01
Units:	ug/L		

MSS Result	Spiked	Result	%REC	Limits
0.05000	5.000	4.970	98	80-114

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	PB12-0	Basis:	dry
Lab ID:	154694-007	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 15%

Analyte	Result	RL	Dil Fac	Batch#	Prepared	Prep	Analysis
Antimony	ND	3.4	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	220	0.29	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	ND	0.11	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	8.1	0.29	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	17	0.57	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	170	0.57	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	190	0.17	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	8.8	3.7	200.0	67143	10/16/01	METHOD	EPA 7471
Nickel	42	1.1	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	32	0.29	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	2.1	0.29	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.29	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	130	1.1	1.000	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	ARI-2.5	Basis:	dry
Lab ID:	154694-008	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 22%

Analyte	Result	RL	Diln Fac	Batch#	Prepared	Prep	Analysis
Antimony	4.5	3.7	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	150	0.31	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	ND	0.12	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	11	0.31	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	3.0	0.62	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	400	0.62	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	430	0.19	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	11	4.7	200.0	67143	10/16/01	METHOD	EPA 7471
Nickel	42	1.2	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	47	0.31	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	14	0.31	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.31	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	1,300	120	100.0	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	AR2-4	Basis:	dry
Lab ID:	154694-009	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 18%

Analyte	Result	RL	Dil'n Fac	Batch#	Prepared	Prep	Analysis
Antimony	6.3	3.3	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	350	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	0.15	0.11	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	26	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	31	0.55	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	2,200	55	100.0	67083	10/12/01	EPA 3050	EPA 6010B
Lead	650	0.17	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	21	4.9	200.0	67143	10/16/01	METHOD	EPA 7471
Nickel	53	1.1	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	120	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	17	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	1.0	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	3,900	110	100.0	67083	10/12/01	EPA 3050	EPA 6010B

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	AR2-11	Basis:	dry
Lab ID:	154694-010	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 42%

Analyte	Result	RL	Diln Fac	Batch#	Prepared	Prep	Analysis
Antimony	6.4	5.1	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	1,600	0.43	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	0.30	0.17	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	16	0.43	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	54	0.86	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	720	0.86	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	300	0.26	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	61	6.2	200.0	67143	10/16/01	METHOD	EPA 7471
Nickel	70	1.7	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	93	0.43	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	4.9	0.43	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	1.1	0.43	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	2,700	170	100.0	67083	10/12/01	EPA 3050	EPA 6010B

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	AR2-11.5	Basis:	dry
Lab ID:	154694-011	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 37%

Analyte	Result	RL	Diln Fac	Batch#	Prepared	Prep	Analysis
Antimony	19	4.6	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	980	0.38	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	0.17	0.15	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	35	0.38	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	73	0.76	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	1,200	0.76	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	520	0.23	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	63	5.0	200.0	67143	10/16/01	METHOD	EPA 7471
Nickel	65	1.5	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	200	0.38	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	11	0.38	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.38	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	5,400	150	100.0	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	AR1-5	Basis:	dry
Lab ID:	154694-012	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 27%

Analyte	Result	RL	Diln Fac	Batch#	Prepared	Prep	Analysis
Antimony	ND	4.0	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	71	0.33	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	0.22	0.13	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	2.7	0.33	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	36	0.66	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	73	0.66	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	48	0.20	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	0.36	0.022	1.000	67143	10/16/01	METHOD	EPA 7471
Nickel	47	1.3	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	3.3	0.33	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	0.76	0.33	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.33	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	490	130	100.0	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	AR1-8	Diln Fac:	1.000
Lab ID:	154694-013	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01
Basis:	dry		

Moisture: 23%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	3.6	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	23	0.30	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	0.17	0.12	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	1.4	0.30	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	24	0.60	67083	10/12/01	EPA 3050	EPA 6010B
Copper	11	0.60	67083	10/12/01	EPA 3050	EPA 6010B
Lead	4.8	0.18	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	0.13	0.019	67143	10/16/01	METHOD	EPA 7471
Nickel	31	1.2	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	0.61	0.30	67083	10/12/01	EPA 3050	EPA 6010B
Silver	ND	0.30	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.30	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	28	1.2	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	A4-16-5.5	Basis:	dry
Lab ID:	154694-014	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 26%

Analyte	Result	RL	Dil Fac	Batch#	Prepared	Prep	Analysis
Antimony	ND	3.8	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	100	0.32	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	ND	0.13	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	24	0.32	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	2.6	0.63	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	860	0.63	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	71	0.19	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	1,000	98	5,000	67143	10/16/01	METHOD	EPA 7471
Nickel	36	1.3	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	2.4	0.32	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	5.0	0.32	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.32	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	6,400	130	100.0	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Project#:	510996706700
Client:	URS Corporation	Location:	UCB-Richmond Field Sta.
Field ID:	A4-16-11.5	Basis:	dry
Lab ID:	154694-015	Sampled:	10/11/01
Matrix:	Soil	Received:	10/11/01
Units:	mg/Kg	Analyzed:	10/16/01

Moisture: 17%

Analyte	Result	RL	Diln Fac	Batch#	Prepared	Prep	Analysis
Antimony	ND	3.4	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Arsenic	1.9	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Beryllium	0.23	0.11	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Cadmium	1.3	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Chromium	30	0.56	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Copper	19	0.56	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Lead	6.8	0.17	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Mercury	5.4	4.3	200.0	67143	10/16/01	METHOD	EPA 7471
Nickel	43	1.1	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Selenium	ND	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Silver	ND	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Thallium	ND	0.28	1.000	67083	10/12/01	EPA 3050	EPA 6010B
Zinc	81	1.1	1.000	67083	10/12/01	EPA 3050	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3050
Project#:	510996706700	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158681	Batch#:	67083
Matrix:	Soil	Prepared:	10/12/01
Units:	mg/Kg	Analyzed:	10/16/01
Basis:	as received		

Analyte	Result	RL
Antimony	ND	3.0
Arsenic	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.50
Copper	ND	0.50
Lead	ND	0.15
Nickel	ND	1.0
Selenium	ND	0.25
Silver	ND	0.25
Thallium	ND	0.25
Zinc	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7471
Analyte:	Mercury	Basis:	as received
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158930	Batch#:	67143
Matrix:	Soil	Prepared:	10/16/01
Units:	mg/Kg	Analyzed:	10/16/01

Result	RL
ND	0.020

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3050
Project#:	510996706700	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	67083
Units:	mg/Kg	Prepared:	10/12/01
Basis:	as received	Analyzed:	10/16/01
Diln Fac:	1.000		

Type: BS Lab ID: QC158682

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	93.50	94	60-129
Arsenic	50.00	44.45	89	64-116
Beryllium	2.500	2.300	92	70-114
Cadmium	10.00	8.300	83	59-114
Chromium	100.0	90.00	90	68-111
Copper	12.50	11.60	93	67-114
Lead	100.0	86.50	87	66-110
Nickel	25.00	22.10	88	68-111
Selenium	50.00	41.65	83	61-110
Silver	10.00	9.000	90	57-116
Thallium	50.00	41.70	83	60-111
Zinc	25.00	21.50	86	57-119

Type: BSD Lab ID: QC158683

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	94.00	94	60-129	1	20
Arsenic	50.00	45.60	91	64-116	3	20
Beryllium	2.500	2.385	95	70-114	4	20
Cadmium	10.00	8.600	86	59-114	4	20
Chromium	100.0	92.50	93	68-111	3	20
Copper	12.50	11.75	94	67-114	1	20
Lead	100.0	89.00	89	66-110	3	20
Nickel	25.00	22.85	91	68-111	3	20
Selenium	50.00	42.10	84	61-110	1	20
Silver	10.00	9.150	92	57-116	2	20
Thallium	50.00	43.75	88	60-111	5	20
Zinc	25.00	22.10	88	57-119	3	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3050
Project#:	510996706700	Analysis:	EPA 6010B
Field ID:	A4-6-7	Diln Fac:	1.000
Type:	SDUP	Batch#:	67083
MSS Lab ID:	154723-002	Sampled:	10/12/01
Lab ID:	QC158684	Received:	10/12/01
Matrix:	Soil	Prepared:	10/12/01
Units:	mg/Kg	Analyzed:	10/16/01
Basis:	dry		

Moisture: 17%

Analyte	MSS Result	Result	RL	RPD	Lim
Antimony	<3.459	ND	3.4	NC	46
Arsenic	3.459	3.854	0.29	11	36
Beryllium	0.3851	0.3769	0.11	2	25
Cadmium	1.614	1.702	0.29	5	27
Chromium	28.02	34.95	0.57	22	32
Copper	20.75	19.99	0.57	4	38
Lead	5.938	4.939	0.17	18	41
Nickel	45.71	38.43	1.1	17	35
Selenium	0.6053	0.3877	0.29	44 *	34
Silver	<0.2882	ND	0.29	NC	23
Thallium	<0.2882	ND	0.29	NC	36
Zinc	35.97	37.23	1.1	3	37

*= Value outside of QC limits; see narrative
NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3050
Project#:	510996706700	Analysis:	EPA 6010B
Field ID:	A4-6-7	Diln Fac:	1.000
Type:	SSPIKE	Batch#:	67083
MSS Lab ID:	154723-002	Sampled:	10/12/01
Lab ID:	QC158685	Received:	10/12/01
Matrix:	Soil	Prepared:	10/12/01
Units:	mg/Kg	Analyzed:	10/16/01
Basis:	dry		

Moisture: 17%

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<1.566	119.9	28.23	24	15-142
Arsenic	3.459	59.94	48.43	75	38-124
Beryllium	0.3851	2.997	2.895	84	46-120
Cadmium	1.614	11.99	11.03	79	37-117
Chromium	28.02	119.9	130.7	86	21-137
Copper	20.75	14.99	35.90	101	24-150
Lead	5.938	119.9	98.90	78	24-132
Nickel	45.71	29.97	77.92	107	21-142
Selenium	0.6053	59.94	37.94	62	32-118
Silver	<0.08916	11.99	9.770	82	45-118
Thallium	<0.1928	59.94	45.97	77	42-112
Zinc	35.97	29.97	66.53	102	20-146

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7471
Analyte:	Mercury	Diln Fac:	1.000
Matrix:	Soil	Batch#:	67143
Units:	mg/Kg	Prepared:	10/16/01
Basis:	as received	Analyzed:	10/16/01

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC158931	0.5000	0.5120	102	80-114		
BSD	QC158932	0.5000	0.5130	103	80-114	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7471
Analyte:	Mercury	Basis:	dry
Field ID:	A4-6-5.5	Diln Fac:	200.0
Type:	SDUP	Batch#:	67143
MSS Lab ID:	154723-001	Sampled:	10/12/01
Lab ID:	QC158933	Received:	10/12/01
Matrix:	Soil	Prepared:	10/16/01
Units:	mg/Kg	Analyzed:	10/16/01

MSS Result	Result	RL	Moisture	RPD	Lim
56.98	63.23	4.5	18%	10	35

RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7471
Analyte:	Mercury	Basis:	dry
Field ID:	A4-6-5.5	Diln Fac:	200.0
Type:	MS	Batch#:	67143
MSS Lab ID:	154723-001	Sampled:	10/12/01
Lab ID:	QC158934	Received:	10/12/01
Matrix:	Soil	Prepared:	10/16/01
Units:	mg/Kg	Analyzed:	10/16/01

MSS Result	Spiked	Result	%REC	Limits	Moisture
56.98	0.5646	70.46	2388 NM	62-135	18%

NM= Not Meaningful

Curtis & Tompkins, Ltd.

pH

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Analysis:	EPA 9045C
Project#:	510996706700		
Analyte:	pH	Batch#:	67160
Matrix:	Soil	Sampled:	10/11/01
Units:	SU	Received:	10/11/01
Diln Fac:	1.000	Analyzed:	10/16/01

Field ID	Lab ID	Result	RL
PB12-0	154694-007	2.1	1.0
ARI-2.5	154694-008	2.8	1.0
AR2-4	154694-009	7.2	1.0
AR2-11	154694-010	7.6	1.0
AR2-11.5	154694-011	7.0	1.0
AR1-5	154694-012	6.5	1.0
AR1-8	154694-013	8.6	1.0
A4-16-5.5	154694-014	5.9	1.0
A4-16-11.5	154694-015	7.8	1.0

RL= Reporting Limit

Curtis & Tompkins, Ltd.

pH

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Analysis:	EPA 9045C
Project#:	510996706700		
Analyte:	pH	Units:	SU
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	SDUP	Batch#:	67160
MSS Lab ID:	154573-003	Sampled:	09/30/01
Lab ID:	QC158989	Received:	10/04/01
Matrix:	Miscell.	Analyzed:	10/16/01

MSS Result	Result	RL	RPD	Lim
12.45	12.46	1.0	0	20

RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

pH

Lab #:	154694	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Analysis:	EPA 9040B
Project#:	510996706700		
Analyte:	pH	Batch#:	67098
Matrix:	Water	Sampled:	10/11/01
Units:	SU	Received:	10/11/01
Diln Fac:	1.000	Analyzed:	10/11/01

Field ID	Lab ID	Result	RL
A4-9A	154694-002	7.1	1.0
A4-13A	154694-003	6.7	1.0

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Laboratory Numbers: **154727**
Client: **URS Corporation**
Project #: **510996706700**
Location: **UCB-Richmond Field Station**

Sampled Date: **10/12/01**
Received Date: **10/12/01**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for two water samples, which were received from the site referenced above on October 12, 2001. The samples were received cold and intact.

VOCs (EPA 8260B): No analytical problems were encountered.

SVOCs (EPA 8270): Low Terphenyl-d14 surrogate recoveries were observed for samples AR2 (CT# 154727-001) and AR3 (CT# 154727-002). The low recoveries were confirmed by reanalysis. No other analytical problems were encountered.

Metals (EPA 6000/7000B): Low silver sample spike recovery was observed for sample AR2 (CT# 154727-001). No other analytical other problems were encountered.

General Chemistry: No analytical problems were encountered.

154727

URS 500 12th Street, Suite 200
Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 5109967067OO

SAMPLERS: (Signature) Bill Copeland

	DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method 8260	EPA Method 8270	EPA Method	EPA Method	PP metals *	pH per BC TD 10/12/01							Number of Containers	REMARKS (Sample preservation, handling procedures, etc,)
1	10/12/01		AR2	W	X	X			X								5	48 hr TAT
2	〃		AR3	W	X	X			X								5	* dissolved p/s filter within 24 hours

Received ☐ On Ice
☐ Cold ☒ Ambient ☒ Intact

Preservation Correct?
☐ Yes ☐ No ☐ N/A

Results to Bill Copeland (510) 874-3192

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
B Copeland	10/12/01 1715	[signature]			

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY (Signature)	DATE/TIME

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR2	Batch#:	67282
Lab ID:	154727-001	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Analyzed:	10/22/01
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	3.0	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-122
1,2-Dichloroethane-d4	110	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	99	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR3	Batch#:	67173
Lab ID:	154727-002	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Analyzed:	10/17/01
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	1.3	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Field ID:	AR3	Batch#:	67173
Lab ID:	154727-002	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Analyzed:	10/17/01
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	111	80-122
1,2-Dichloroethane-d4	96	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	98	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC159036	Batch#:	67173
Matrix:	Water	Analyzed:	10/17/01
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC159036	Batch#:	67173
Matrix:	Water	Analyzed:	10/17/01
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-122
1,2-Dichloroethane-d4	91	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	98	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC159473	Batch#:	67282
Matrix:	Water	Analyzed:	10/22/01
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC159473	Batch#:	67282
Matrix:	Water	Analyzed:	10/22/01
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	108	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	99	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	67173
Units:	ug/L	Analyzed:	10/17/01
Diln Fac:	1.000		

Type: BS Lab ID: QC159033

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	60.15	120	74-132
Benzene	50.00	47.40	95	80-116
Trichloroethene	50.00	46.00	92	80-119
Toluene	50.00	47.50	95	80-120
Chlorobenzene	50.00	48.31	97	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-122
1,2-Dichloroethane-d4	90	78-123
Toluene-d8	98	80-110
Bromofluorobenzene	98	80-115

Type: BSD Lab ID: QC159034

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	57.72	115	74-132	4	20
Benzene	50.00	45.33	91	80-116	4	20
Trichloroethene	50.00	44.59	89	80-119	3	20
Toluene	50.00	45.43	91	80-120	4	20
Chlorobenzene	50.00	46.63	93	80-117	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-122
1,2-Dichloroethane-d4	91	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	95	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 5030B
Project#:	510996706700	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	67282
Units:	ug/L	Analyzed:	10/22/01
Diln Fac:	1.000		

Type: BS Lab ID: QC159471

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	51.91	104	74-132
Benzene	50.00	44.66	89	80-116
Trichloroethene	50.00	47.93	96	80-119
Toluene	50.00	45.44	91	80-120
Chlorobenzene	50.00	46.73	93	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-122
1,2-Dichloroethane-d4	110	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	97	80-115

Type: BSD Lab ID: QC159472

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	51.19	102	74-132	1	20
Benzene	50.00	46.17	92	80-116	3	20
Trichloroethene	50.00	49.33	99	80-119	3	20
Toluene	50.00	46.65	93	80-120	3	20
Chlorobenzene	50.00	47.67	95	80-117	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-122
1,2-Dichloroethane-d4	109	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	95	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Field ID:	AR2	Batch#:	67144
Lab ID:	154727-001	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Prepared:	10/16/01
Diln Fac:	1.000	Analyzed:	10/18/01

Analyte	Result	RL
N-Nitrosodimethylamine	ND	9.6
Phenol	ND	9.6
bis(2-Chloroethyl)ether	ND	9.6
2-Chlorophenol	ND	9.6
1,3-Dichlorobenzene	ND	9.6
1,4-Dichlorobenzene	ND	9.6
Benzyl alcohol	ND	9.6
1,2-Dichlorobenzene	ND	9.6
2-Methylphenol	ND	9.6
bis(2-Chloroisopropyl) ether	ND	9.6
4-Methylphenol	ND	9.6
N-Nitroso-di-n-propylamine	ND	9.6
Hexachloroethane	ND	9.6
Nitrobenzene	ND	9.6
Isophorone	ND	9.6
2-Nitrophenol	ND	48
2,4-Dimethylphenol	ND	9.6
Benzoic acid	ND	48
bis(2-Chloroethoxy)methane	ND	9.6
2,4-Dichlorophenol	ND	9.6
1,2,4-Trichlorobenzene	ND	9.6
Naphthalene	ND	9.6
4-Chloroaniline	ND	9.6
Hexachlorobutadiene	ND	9.6
4-Chloro-3-methylphenol	ND	9.6
2-Methylnaphthalene	ND	9.6
Hexachlorocyclopentadiene	ND	48
2,4,6-Trichlorophenol	ND	9.6
2,4,5-Trichlorophenol	ND	9.6
2-Chloronaphthalene	ND	9.6
2-Nitroaniline	ND	48
Dimethylphthalate	ND	9.6
Acenaphthylene	ND	9.6
2,6-Dinitrotoluene	ND	9.6
3-Nitroaniline	ND	48
Acenaphthene	ND	9.6
2,4-Dinitrophenol	ND	48
4-Nitrophenol	ND	48
Dibenzofuran	ND	9.6
2,4-Dinitrotoluene	ND	9.6
Diethylphthalate	ND	9.6
Fluorene	ND	9.6
4-Chlorophenyl-phenylether	ND	9.6
4-Nitroaniline	ND	48
4,6-Dinitro-2-methylphenol	ND	48
N-Nitrosodiphenylamine	ND	9.6
Azobenzene	ND	9.6
4-Bromophenyl-phenylether	ND	9.6
Hexachlorobenzene	ND	9.6
Pentachlorophenol	ND	48
Phenanthrene	ND	9.6
Anthracene	ND	9.6
Di-n-butylphthalate	ND	9.6
Fluoranthene	ND	9.6

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Field ID:	AR2	Batch#:	67144
Lab ID:	154727-001	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Prepared:	10/16/01
Diln Fac:	1.000	Analyzed:	10/18/01

Analyte	Result	RL
Pyrene	ND	9.6
Butylbenzylphthalate	ND	9.6
3,3'-Dichlorobenzidine	ND	48
Benzo(a)anthracene	ND	9.6
Chrysene	ND	9.6
bis(2-Ethylhexyl)phthalate	ND	9.6
Di-n-octylphthalate	ND	9.6
Benzo(b)fluoranthene	ND	9.6
Benzo(k)fluoranthene	ND	9.6
Benzo(a)pyrene	ND	9.6
Indeno(1,2,3-cd)pyrene	ND	9.6
Dibenz(a,h)anthracene	ND	9.6
Benzo(g,h,i)perylene	ND	9.6

Surrogate	%REC	Limits
2-Fluorophenol	58	17-119
Phenol-d5	65	18-129
2,4,6-Tribromophenol	65	19-136
Nitrobenzene-d5	66	34-126
2-Fluorobiphenyl	49	30-121
Terphenyl-d14	12 *	15-142

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Field ID:	AR3	Batch#:	67144
Lab ID:	154727-002	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Prepared:	10/16/01
Diln Fac:	1.000	Analyzed:	10/18/01

Analyte	Result	RL
N-Nitrosodimethylamine	ND	9.6
Phenol	ND	9.6
bis(2-Chloroethyl)ether	ND	9.6
2-Chlorophenol	ND	9.6
1,3-Dichlorobenzene	ND	9.6
1,4-Dichlorobenzene	ND	9.6
Benzyl alcohol	ND	9.6
1,2-Dichlorobenzene	ND	9.6
2-Methylphenol	ND	9.6
bis(2-Chloroisopropyl) ether	ND	9.6
4-Methylphenol	ND	9.6
N-Nitroso-di-n-propylamine	ND	9.6
Hexachloroethane	ND	9.6
Nitrobenzene	ND	9.6
Isophorone	ND	9.6
2-Nitrophenol	ND	48
2,4-Dimethylphenol	ND	9.6
Benzoic acid	ND	48
bis(2-Chloroethoxy)methane	ND	9.6
2,4-Dichlorophenol	ND	9.6
1,2,4-Trichlorobenzene	ND	9.6
Naphthalene	ND	9.6
4-Chloroaniline	ND	9.6
Hexachlorobutadiene	ND	9.6
4-Chloro-3-methylphenol	ND	9.6
2-Methylnaphthalene	ND	9.6
Hexachlorocyclopentadiene	ND	48
2,4,6-Trichlorophenol	ND	9.6
2,4,5-Trichlorophenol	ND	9.6
2-Chloronaphthalene	ND	9.6
2-Nitroaniline	ND	48
Dimethylphthalate	ND	9.6
Acenaphthylene	ND	9.6
2,6-Dinitrotoluene	ND	9.6
3-Nitroaniline	ND	48
Acenaphthene	ND	9.6
2,4-Dinitrophenol	ND	48
4-Nitrophenol	ND	48
Dibenzofuran	ND	9.6
2,4-Dinitrotoluene	ND	9.6
Diethylphthalate	ND	9.6
Fluorene	ND	9.6
4-Chlorophenyl-phenylether	ND	9.6
4-Nitroaniline	ND	48
4,6-Dinitro-2-methylphenol	ND	48
N-Nitrosodiphenylamine	ND	9.6
Azobenzene	ND	9.6
4-Bromophenyl-phenylether	ND	9.6
Hexachlorobenzene	ND	9.6
Pentachlorophenol	ND	48
Phenanthrene	ND	9.6
Anthracene	ND	9.6
Di-n-butylphthalate	ND	9.6
Fluoranthene	ND	9.6

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Field ID:	AR3	Batch#:	67144
Lab ID:	154727-002	Sampled:	10/12/01
Matrix:	Water	Received:	10/12/01
Units:	ug/L	Prepared:	10/16/01
Diln Fac:	1.000	Analyzed:	10/18/01

Analyte	Result	RL
Pyrene	ND	9.6
Butylbenzylphthalate	ND	9.6
3,3'-Dichlorobenzidine	ND	48
Benzo(a)anthracene	ND	9.6
Chrysene	ND	9.6
bis(2-Ethylhexyl)phthalate	ND	9.6
Di-n-octylphthalate	ND	9.6
Benzo(b)fluoranthene	ND	9.6
Benzo(k)fluoranthene	ND	9.6
Benzo(a)pyrene	ND	9.6
Indeno(1,2,3-cd)pyrene	ND	9.6
Dibenz(a,h)anthracene	ND	9.6
Benzo(g,h,i)perylene	ND	9.6

Surrogate	%REC	Limits
2-Fluorophenol	58	17-119
Phenol-d5	64	18-129
2,4,6-Tribromophenol	51	19-136
Nitrobenzene-d5	59	34-126
2-Fluorobiphenyl	36	30-121
Terphenyl-d14	8 *	15-142

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158935	Batch#:	67144
Matrix:	Water	Prepared:	10/16/01
Units:	ug/L	Analyzed:	10/17/01

Analyte	Result	RL
N-Nitrosodimethylamine	ND	10
Phenol	ND	10
bis(2-Chloroethyl)ether	ND	10
2-Chlorophenol	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
Benzyl alcohol	ND	10
1,2-Dichlorobenzene	ND	10
2-Methylphenol	ND	10
bis(2-Chloroisopropyl) ether	ND	10
4-Methylphenol	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
bis(2-Chloroethoxy)methane	ND	10
2,4-Dichlorophenol	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
4-Chloro-3-methylphenol	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	50
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50
Acenaphthene	ND	10
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158935	Batch#:	67144
Matrix:	Water	Prepared:	10/16/01
Units:	ug/L	Analyzed:	10/17/01

Analyte	Result	RL
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
Fluorene	ND	10
4-Chlorophenyl-phenylether	ND	10
4-Nitroaniline	ND	50
4,6-Dinitro-2-methylphenol	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Pentachlorophenol	ND	50
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10

Surrogate	%REC	Limits
2-Fluorophenol	69	17-119
Phenol-d5	68	18-129
2,4,6-Tribromophenol	67	19-136
Nitrobenzene-d5	72	34-126
2-Fluorobiphenyl	72	30-121
Terphenyl-d14	74	15-142

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	EPA 3520C
Project#:	510996706700	Analysis:	EPA 8270C
Matrix:	Water	Batch#:	67144
Units:	ug/L	Prepared:	10/16/01
Diln Fac:	1.000	Analyzed:	10/17/01

Type: BS Lab ID: QC158936

Analyte	Spiked	Result	%REC	Limits
Phenol	100.0	59.94	60	32-110
2-Chlorophenol	100.0	64.33	64	35-116
1,4-Dichlorobenzene	50.00	29.72	59	25-110
N-Nitroso-di-n-propylamine	50.00	29.88	60	37-130
1,2,4-Trichlorobenzene	50.00	31.49	63	28-110
4-Chloro-3-methylphenol	100.0	64.29	64	39-114
Acenaphthene	50.00	35.90	72	42-113
4-Nitrophenol	100.0	66.73	67	32-110
2,4-Dinitrotoluene	50.00	41.26	83	40-114
Pentachlorophenol	100.0	58.22	58	18-110
Pyrene	50.00	37.24	74	42-116

Surrogate	%REC	Limits
2-Fluorophenol	62	17-119
Phenol-d5	60	18-129
2,4,6-Tribromophenol	66	19-136
Nitrobenzene-d5	64	34-126
2-Fluorobiphenyl	69	30-121
Terphenyl-d14	69	15-142

Type: BSD Lab ID: QC158937

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Phenol	100.0	57.07	57	32-110	5	26
2-Chlorophenol	100.0	60.76	61	35-116	6	28
1,4-Dichlorobenzene	50.00	27.83	56	25-110	7	32
N-Nitroso-di-n-propylamine	50.00	27.60	55	37-130	8	32
1,2,4-Trichlorobenzene	50.00	29.59	59	28-110	6	28
4-Chloro-3-methylphenol	100.0	59.94	60	39-114	7	20
Acenaphthene	50.00	33.55	67	42-113	7	20
4-Nitrophenol	100.0	61.76	62	32-110	8	21
2,4-Dinitrotoluene	50.00	37.64	75	40-114	9	20
Pentachlorophenol	100.0	54.57	55	18-110	6	25
Pyrene	50.00	34.78	70	42-116	7	20

Surrogate	%REC	Limits
2-Fluorophenol	56	17-119
Phenol-d5	56	18-129
2,4,6-Tribromophenol	61	19-136
Nitrobenzene-d5	60	34-126
2-Fluorobiphenyl	63	30-121
Terphenyl-d14	64	15-142

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700		
Field ID:	AR2	Diln Fac:	1.000
Lab ID:	154727-001	Sampled:	10/12/01
Matrix:	Filtrate	Received:	10/12/01
Units:	ug/L		

Analyte	Result	RL	Batch#	Prepared	Analyzed	Analysis
Antimony	ND	60	67084	10/12/01	10/16/01	EPA 6010B
Arsenic	100	5.0	67084	10/12/01	10/16/01	EPA 6010B
Beryllium	ND	2.0	67084	10/12/01	10/16/01	EPA 6010B
Cadmium	20	5.0	67084	10/12/01	10/16/01	EPA 6010B
Chromium	ND	10	67084	10/12/01	10/16/01	EPA 6010B
Copper	ND	10	67084	10/12/01	10/16/01	EPA 6010B
Lead	ND	3.0	67084	10/12/01	10/16/01	EPA 6010B
Mercury	ND	0.20	67176	10/17/01	10/17/01	EPA 7470A
Nickel	120	20	67084	10/12/01	10/16/01	EPA 6010B
Selenium	33	5.0	67084	10/12/01	10/16/01	EPA 6010B
Silver	ND U5	5.0	67084	10/12/01	10/16/01	EPA 6010B
Thallium	ND	5.0	67084	10/12/01	10/16/01	EPA 6010B
Zinc	820	20	67084	10/12/01	10/16/01	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700		
Field ID:	AR3	Diln Fac:	1.000
Lab ID:	154727-002	Sampled:	10/12/01
Matrix:	Filtrate	Received:	10/12/01
Units:	ug/L		

Analyte	Result	RL	Batch#	Prepared	Analyzed	Analysis
Antimony	ND	60	67084	10/12/01	10/16/01	EPA 6010B
Arsenic	330	5.0	67084	10/12/01	10/16/01	EPA 6010B
Beryllium	ND	2.0	67084	10/12/01	10/16/01	EPA 6010B
Cadmium	ND	5.0	67084	10/12/01	10/16/01	EPA 6010B
Chromium	ND	10	67084	10/12/01	10/16/01	EPA 6010B
Copper	ND	10	67084	10/12/01	10/16/01	EPA 6010B
Lead	ND	3.0	67084	10/12/01	10/16/01	EPA 6010B
Mercury	ND	0.20	67176	10/17/01	10/17/01	EPA 7470A
Nickel	ND	20	67084	10/12/01	10/16/01	EPA 6010B
Selenium	7.8	5.0	67084	10/12/01	10/16/01	EPA 6010B
Silver	ND UJ	5.0	67084	10/12/01	10/16/01	EPA 6010B
Thallium	ND	5.0	67084	10/12/01	10/16/01	EPA 6010B
Zinc	23	20	67084	10/12/01	10/16/01	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC158686	Batch#:	67084
Matrix:	Filtrate	Prepared:	10/12/01
Units:	ug/L	Analyzed:	10/16/01

Analyte	Result	RL
Antimony	ND	60
Arsenic	ND	5.0
Beryllium	ND	2.0
Cadmium	ND	5.0
Chromium	ND	10
Copper	ND	10
Lead	ND	3.0
Nickel	ND	20
Selenium	ND	5.0
Silver	ND	5.0
Thallium	ND	5.0
Zinc	ND	20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	67176
Lab ID:	QC159046	Prepared:	10/17/01
Matrix:	Water	Analyzed:	10/17/01
Units:	ug/L		

Result	RL
ND	0.20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Matrix:	Filtrate	Batch#:	67084
Units:	ug/L	Prepared:	10/12/01
Diln Fac:	1.000	Analyzed:	10/16/01

Type: BS Lab ID: QC158687

Analyte	Spiked	Result	%REC	Limits
Antimony	500.0	436.0	87	75-123
Arsenic	100.0	101.0	101	80-120
Beryllium	50.00	47.30	95	80-116
Cadmium	50.00	48.40	97	80-126
Chromium	200.0	190.0	95	80-113
Copper	250.0	234.0	94	80-114
Lead	100.0	95.30	95	78-120
Nickel	500.0	478.0	96	80-116
Selenium	100.0	98.00	98	79-120
Silver	50.00	48.00	96	80-120
Thallium	100.0	95.90	96	80-119
Zinc	500.0	481.0	96	72-126

Type: BSD Lab ID: QC158688

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	500.0	479.0	96	75-123	9	21
Arsenic	100.0	99.90	100	80-120	1	20
Beryllium	50.00	47.50	95	80-116	0	20
Cadmium	50.00	48.50	97	80-126	0	20
Chromium	200.0	190.0	95	80-113	0	21
Copper	250.0	231.0	92	80-114	1	24
Lead	100.0	96.50	97	78-120	1	20
Nickel	500.0	480.0	96	80-116	0	23
Selenium	100.0	101.0	101	79-120	3	20
Silver	50.00	47.70	95	80-120	1	26
Thallium	100.0	97.00	97	80-119	1	20
Zinc	500.0	482.0	96	72-126	0	26

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 6010B
Field ID:	AR2	Diln Fac:	1.000
Type:	SSPIKE	Batch#:	67084
MSS Lab ID:	154727-001	Sampled:	10/12/01
Lab ID:	QC158690	Received:	10/12/01
Matrix:	Filtrate	Prepared:	10/12/01
Units:	ug/L	Analyzed:	10/16/01

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	58.80	500.0	514.0	91	64-128
Arsenic	104.0	100.0	207.0	103	65-131
Beryllium	0.7750	50.00	44.70	88	71-124
Cadmium	19.50	50.00	64.20	89	70-127
Chromium	<1.100	200.0	174.0	87	70-124
Copper	<0.6200	250.0	228.0	91	74-122
Lead	2.150	100.0	91.40	89	66-128
Nickel	124.0	500.0	569.0	89	70-126
Selenium	32.50	100.0	126.0	94	65-132
Silver	<0.6200	50.00	29.80	60 *	72-125
Thallium	<4.100	100.0	91.70	92	58-134
Zinc	822.0	500.0	1,290	94	69-129

*= Value outside of QC limits; see narrative

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	67176
Field ID:	ZZZZZZZZZZ	Sampled:	10/16/01
MSS Lab ID:	154792-002	Received:	10/16/01
Matrix:	Water	Prepared:	10/17/01
Units:	ug/L	Analyzed:	10/17/01
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC159049	<0.04600	5.000	5.470	109	80-114		
MSD	QC159050		5.000	5.430	109	80-114	1	22

RPD= Relative Percent Difference

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Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	67176
Type:	SDUP	Sampled:	10/11/01
MSS Lab ID:	154699-004	Received:	10/11/01
Lab ID:	QC159051	Prepared:	10/17/01
Matrix:	Filtrate	Analyzed:	10/17/01
Units:	ug/L		

MSS Result	Result	RL	RPD	Lim
<0.2000	ND	0.20	NC	22

NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	67176
Type:	SDUP	Sampled:	10/11/01
MSS Lab ID:	154699-004	Received:	10/11/01
Lab ID:	QC159051	Prepared:	10/17/01
Matrix:	Filtrate	Analyzed:	10/17/01
Units:	ug/L		

MSS Result	Result	RL	RPD	Lim
<0.2000	ND	0.20	NC	22

NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference

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Priority Pollutant Metals

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Prep:	METHOD
Project#:	510996706700	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	67176
Type:	MS	Sampled:	10/11/01
MSS Lab ID:	154699-004	Received:	10/11/01
Lab ID:	QC159052	Prepared:	10/17/01
Matrix:	Filtrate	Analyzed:	10/17/01
Units:	ug/L		

MSS Result	Spiked	Result	%REC	Limits
<0.04600	5.000	5.250	105	80-114

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pH

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Analysis:	EPA 9040B
Project#:	510996706700		
Analyte:	pH	Batch#:	67166
Matrix:	Water	Sampled:	10/12/01
Units:	SU	Received:	10/12/01
Diln Fac:	1.000	Analyzed:	10/16/01

Field ID	Lab ID	Result	RL
AR2	154727-001	5.4	1.0
AR3	154727-002	7.6	1.0

RL= Reporting Limit

Curtis & Tompkins, Ltd.

pH

Lab #:	154727	Location:	UCB-Richmond Field Sta.
Client:	URS Corporation	Analysis:	EPA 9040B
Project#:	510996706700		
Analyte:	pH	Units:	SU
Field ID:	AR2	Diln Fac:	1.000
Type:	SDUP	Batch#:	67166
MSS Lab ID:	154727-001	Sampled:	10/12/01
Lab ID:	QC159006	Received:	10/12/01
Matrix:	Water	Analyzed:	10/16/01

MSS Result	Result	RL	RPD	Lim
5.360	5.340	1.0	0	20

RL= Reporting Limit
RPD= Relative Percent Difference