SOURCE REMOVAL
CORRECTIVE ACTION PLAN
FORMER AL PHILLIPS FACILITY
MARYLAND SQUARE SHOPPING CENTER
3661 MARYLAND PARKWAY
LAS VEGAS, NEVADA

FOR AL PHILLIPS THE CLEANER

URS CORPORATION
JOB NO. 26698724.00005
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URS

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1 INTRODUCTION

URS Corporation (URS) has prepared this Source Removal Corrective Action Plan (CAP) at the request of Al Phillips the Cleaners, Inc. (Al Phillips). Al Phillips took over control of assessment activities at the site in 2004 from the Herman Kishner Trust. This CAP includes further subsurface soil assessment and remedial action for control of tetrachloroethylene (PCE) in the vadose zone source area of the former Al Phillips facility. The soil assessment will be performed to further evaluate the vertical and lateral extent of PCE soil concentrations beneath the former dry cleaning equipment and floor trenches. Remedial actions will be based upon the results of this additional soil assessment, a cost/benefit analysis, and an agreed upon site-specific cleanup level (SSCL).

1.1 SITE LOCATION

The former Al Phillips facility is located in the Maryland Square Shopping Center at 3661 South Maryland Parkway, Las Vegas, Nevada (Figure 1). The site is located on the northeast corner of Parcel No. 162-15-602-009. The former facility was situated on the west side of Maryland Parkway, north of Twain Avenue, and across the street from The Boulevard Mall. The site is located in Township 21 South, Range 61 East, within the southeast quarter, of the southeast quarter, of the northeast quarter of Section 15.

1.2 SITE HISTORY AND INFORMATION

Based on Clark Count Assessor records, the area was first developed in 1969. The former Al Phillips facility was operated as a dry cleaner first by another firm and then by Al Phillips from 1969 to some time in 2000. One dry cleaning unit was operated at the facility during that time. The current property owner, Maryland Square LLC, demolished the former building including the concrete floor and foundations during July and August of 2006. To date, Maryland Square LLC has not provided information to Al Phillips regarding future development plans or timing for the site. Currently the site is covered by asphalt except for the location of the former building, which is dirt. The site is currently fenced. Storm water exits the site by sheet flow eastward toward Maryland Parkway and enters storm drain drop inlets on Maryland Parkway. The elevation of the site is approximately 1,993 feet above mean sea level.

Based on a subsurface investigation in June 2005 (URS, 2005), the lithology beneath the former Al Phillips facility is composed of the following: 1) fine grained sand which is likely fill material imported during site construction in the early to mid 1960s; 2) a layer of fine sandy silt which is likely native soil; 3) a thick layer of caliche that is firm- to well-cemented; and 4) a find sandy silt and a thin layer of sand near groundwater. Details of detected PCE soil contamination are provided in Section 1.3; however, PCE was detected in June 2005 to at least 16.5 feet below ground surface (bgs). Groundwater beneath the former facility is approximately 17 feet bgs.

The only significant potential migration pathway for PCE to migrate from the site is in groundwater which flows eastward across Maryland Parkway. Based on recent quarterly groundwater sampling, the PCE groundwater plume extends at least 3,300 feet downgradient from the site.

1.3 PRIOR INVESTIGATIONS

Converse Consultants (Converse) performed several subsurface assessments and groundwater sampling at the former Al Phillips facility from August 2000 through March 2004. URS reviewed Converse reports and other documents obtained from Converse and the Nevada Department of Environmental Protection (NDEP) and evaluated the data to assess whether or not the PCE source area and the nature of PCE concentrations in soil was characterized. Converse's findings indicate that PCE was detected at concentrations ranging from 110 micrograms per kilogram (µg/kg) to 15,000 µg/kg in four (B-1 through B-4) of five soil samples (B-1 through B-5) from beneath the former Al Phillips facility.

In April 2005, Al Phillips performed additional soil sampling at the former facility including drilling seven hollow-stem auger boreholes (B-6 through B-10) and two hand auger holes (B-11 and B-12) inside the former facility. Based on PCE analytical results from the soil samples collected during the investigation, eleven of nineteen soil samples exceeded the interim remediation goal of 100 µg/kg identified by NDEP. Eight of the soil samples contained PCE that exceeded the EPA residential PRG of 480 µg/kg and four of the soil samples contained PCE that exceeded the EPA industrial PRG of 1,300 µg/kg. PCE soil concentrations ranged from 38 µg/kg in borehole B-9 at 10 feet bgs to 120,000 µg/kg in borehole B-10 at 10 feet bgs. Borehole B-10 was located next to one of the floor drains and north of the former dry cleaning equipment.

Figure 2 is a scaled site plan of the former Al Phillips facility and shows the locations of boreholes B-1 thought B-5 drilled by Converse, boreholes B-6 through B-12 drilled by URS, the location of the former dry cleaning equipment and floor drains, and the location of two cross sections. Figure 2 also lists the concentrations of PCE detected in soil samples B-1 thought B-12 beneath the former facility and the respective depths of the samples.

Table 1-1 lists the boreholes, samples depths, sampling dates, and PCE concentrations detected during the Converse and URS assessments. No other VOC were detected in soil during these initial soil assessments.

Table 1-1. Summary of Borehole Soil Sample Data

Borehole ID	Sample Depth (in ft.)	Sample Date	PCE Concentration (µg/kg)
B-1*	2.5	May-02	15,000
B-2*	4	May-02	110
B-3*	3	May-02	170
B-4*	4	May-02	110
B-5*	3	May-02	ND
B-6	5	Apr-05	830
	10		300
	15		1,500
B-7	5	Apr-05	850

Borehole ID	Sample Depth (in ft.)	Sample Date	PCE Concentration (µg/kg)
	10		52
	15		69
B-8	5	Apr-05	4,700
	10		360
	15		640
	15[(1)]		180
B-9	5	Apr-05	ND
	10		38
	10[(1)]		50
	15		ND
B-10	5	Apr-05	1,200
	10		120,000
	15		3,500
B-11	2.5	Apr-05	46
B-12	3.5	Apr-05	ND

Note: * = Samples collected by Converse

2 SITE SPECIFIC DATA

2.1 UTILITY LOCATION

Figure 3 shows the approximate location of the sanitary sewer line for the buildings located on the northeast corner of the Maryland Square Shopping Center. This information was obtained from an investigation performed by Converse (2004). Based on this data, the sanitary sewer lines for each of the units in the former building exited the back side of the former building in the alleyway on the north side, traversed west, then turned south on the west side of the former building, turned east on the south side of the building, and exited the property into Maryland Parkway along the front side of the shops.

2.2 SITE GEOLOGY AND HYDROGEOLOGY

The site is located near the center of the Las Vegas Valley sedimentary basin. Based on the assessment performed by URS in 2005, the stratigraphy beneath the former Al Philips facility consists of a 1.5-foot to 2-foot layer of fine sand, then a 1.5-foot to 2-foot layer of hard fine sandy silt, then a 6.5-foot to 8.5-foot layer of firm to hard caliche, overlaying a 3.5-foot to 4.5-foot layer of fine sandy silt just above groundwater. A 0.5-foot layer of sand was encountered at the bottom of borehole B-10 just above groundwater. Cross Sections A-A' and B-B' on Figures 4 and 5 show the subsurface lithology beneath the former facility, the locations and depths of boreholes, the soil sample depths, the concentration of PCE in the soil samples, and the approximate groundwater elevation.

The Las Vegas Wash is the principal hydrologic feature in the Las Vegas Valley. Based on recent groundwater measurements in shallow monitoring wells, the depth to groundwater beneath the site is approximately 16 to 17 feet bgs. Figure 3 is a groundwater gradient map that shows the approximate elevation of groundwater beneath the former facility and the direction of groundwater flow. Groundwater flow is generally toward the east at a gradient of approximately 0.045-feet (vertical) per foot (horizontal).

2.3 DOWN GRADIENT WELLS

URS performed a website review of domestic, public supply/municipal, commercial, and irrigation water wells located near the source area and the identified groundwater PCE plume. Nevada Division of Water Resources (NDWR) records indicate that none of these types of wells is located within a 1/8-mile radius of the source area. The closest down gradient irrigation well is located approximately 3,550 feet east of the former Al Phillips facility next to an irrigation pond near the southern end of the Las Vegas National Golf Club (formerly the Sahara-Nevada Country Club), approximately 250 feet east of groundwater monitoring well MW-27 located on Ottawa Circle. According to NDWR records, this irrigation well was installed in early 1961, has a surface cement surface seal to 130 feet bgs, is 750 feet deep, is perforated from 500 feet to 750 feet, and has a gravel filter pack from 130 feet to 750 feet bgs. According to NDEP, a low concentration of PCE was detected in this well during 2006. Two other wells have been drilled on the golf course in 1961 and 1977. These wells are located further to the east on the golf course and are 769 feet and 620 feet deep respectively. The deeper well is perforated from 645 feet to 764 feet and has a cement seal

from 150 feet to ground surface. The filter pack (likely gravel but not documented) is likely from 150 feet to 769 feet bgs. The shallower well is perforated from 220 feet to 620 feet, has a cement seal from 100 feet to ground surface, and has a gravel filter pack from 100 feet to 620 feet bgs. Apparently these irrigation wells are currently used for irrigation of the golf course.

According to NDWR records, the closest down gradient (easterly) domestic drinking water wells are located in the neighborhood east of Eastern Avenue between Twain Avenue on the south and Emerson Avenue on the north. There are a number of other domestic wells located in Section 14 and the western half of Section 13, east of the former Al Phillips facility, however these wells are located hundreds or thousands of feet south, north of east of the site of the known PCE groundwater plume. These wells were installed between 1951 and 1998 with the majority being installed in the 1950s to mid 1970s. It is not known if these domestic wells are currently utilized for drinking water or if the residences are serviced by the Las Vegas Valley Water District.

2.4 ESTIMATED EXTENT OF PCE CONTAMINATED SOIL

Figures 4 and 5 show cross sections A-A' and B-B', respectively, through the subsurface beneath the former Al Phillips facility. These cross sections also show the estimated lateral and vertical extent of PCE-contaminated soil along these cross sections at the interim remedial goal of 100 µg/kg, the U.S. Environmental Protection Agency's (EPA) residential Primary Remediation Goal (PRG) of 480 µg/kg, and the EPA industrial PRG of 1,300 µg/kg. These approximate lateral and vertical extents are based on conservative assumptions regarding the concentration contours for the interim remediation goal and the residential and industrial PRGs for PCE. Figure 6 shows the estimated lateral extent of PCE-contaminated soil in plan view at the interim remedial goal of 100 µg/kg, the EPA residential PRG of 480 µg/kg, and the EPA industrial PRG of 1,300 µg/kg. Preliminary cubic yardage values for the three PCE concentration values listed above were calculated using estimated diameter and height values from the cross sections utilizing the following equation:

$$\text{Excavated cubic yards of PCE-contaminated soil} = (pr^2 \times h) \times 1\text{cyd}/27\text{sqft} \times 1.5$$

where:

r = radius of the soil contamination
h is the height of the soil contamination
cyd = cubic years
sqft = square feet

The factor of 1.5 converts the in-place cubic yards of soil into excavated cubic yards.

Based on estimates of the lateral and vertical extent of PCE-contaminated soil for the three PCE concentrations identified above obtained from Cross Sections A-A' and B-B', the estimated quantities of PCE-contaminated soil that would need to be excavated at the former Al Phillips facility and disposed of are listed in Table 2-1.

Table 2-1. Estimated Cubic Yards and Tons of PCE Contaminated Soil

Contaminant Level	In-Place Cubic Yard	Excavated Cubic Yards[1]	Excavated Tons[2]
Interim Remedial Goal 100 µg/kg	565	848	1,145
Residential PRG 480 µg/kg	145	218	294
Industrial PRG 1,300 µg/kg	117	175	236

Notes:
[1] In-place cubic yard is approximately 1.5 excavated cubic yard.
[2] Tons calculated using a soil density of 100 pounds/cubic foot or 2,700 pounds/cubic yard and 1.0 ton equals 2,000 pounds.

2.5 PRELIMINARY COST-BENEFIT ANALYSIS

The following preliminary cost-based analysis for excavation and disposal of PCE contaminated soil at the former Al Phillips facility is provided to demonstrate the viability of this method of remediation. This analysis will be updated once the proposed subsurface assessment presented in this CAP has been performed. Execution of soil removal and disposal will depend directly on this cost analysis.

Disposal of PCE-contaminated soils is regulated under the Code of Federal Regulations (CFR) Section 268.48 and Section 268.49 as an "F" listed waste (F002, in this case PCE-contaminated soil). CFR 268.48 specifies that PCE waste with concentrations up to 6 mg/kg (parts per million) or 6,000 µg/kg (parts per billion) meets the Universal Treatment Standard (UTS) and can be disposed of without treatment. CFR 268.49 states that there is an alternative Land Disposal Restriction (LDR) treatment standard of as much as 10 times the concentration of PCE-contaminated waste up to 60 mg/kg (ppm) or 60,000 µg/kg (ppb). The highest concentration detected beneath the former Al Phillips facility to date has been 120,000 µg/kg (ppb) or 120 mg/kg which is twice the 10 times rule for meeting the LDR treatment standard.

The closest disposal facility to the former Al Phillips facility is the US Ecology site located in Beatty, Nevada approximately 100 miles northwest of Las Vegas, Nevada. The facility can dispose of PCE-contaminated waste that meets the UTS of 6 ppm (6,000 ppb) or the LDR 10 times rule of 60 ppm (60,000 ppb) without any treatment. PCE-contaminated material that is over the LDR requirement of 60 ppm can be disposed of at the facility but requires chemical treatment so that it meets the LDR prior to disposal.

It is estimated that approximately 2.5 tons of PCE-contaminated soil from the site will require chemical treatment. The remainder of the estimated (Table 2-1) PCE-contaminated soil (1,142.5 tons > 100 µg/kg, 291.5 tons > 480 µg/kg, or 233.5 tons > 1,300 µg/kg) could be disposed of without chemical treatment. Table 2-2 is a summary of the estimated costs for performing further soil

investigation, excavation, transportation, disposal, and reporting of PCE-contaminated soil from the former Al Phillips facility that exceeds the IRG of 100 µg/kg, the EPA residential PRG of 480 µg/kg, and the EPA industrial PRG of 1,300 µg/kg. These estimated costs are provided as a preliminary cost-benefit analysis to aid in reaching an agreement with NDEP on what the appropriate SSCL for PCE-contaminated soil should be.

Table 2-2. Comparison of Estimated Excavation and Disposal Costs

Remedial Goal	Further Soi Assessmen	Excavate & Backfill[1]	Transport	Disposal	Reportin	Total
Interim Remedial Goal 100 µg/kg	$33,500	$70,500	$39,500	$155,500	$7,000	$306,000
Residential PRG 480 µg/kg	$33,500	$68,000	$10,500	$41,000	$6,000	$159,000
Industrial PRG 1,300 µg/kg	$33,500	$65,000	$8,500	$33,000	$6,500	$146,500

Notes:
[1] Quantity of PCE contaminated soil is 1,142.5 tons > 100µg/kg, 291.5 tons > 480 µg/kg, 233.5 tons >1,300 µg/kg.
[2] Transport of soil in 60, 16, and 13 truck loads based on the tonnage of soil to be transported.
[3] Disposal based on $135/ton for soil not requiring treatment and $525/ton for soil requiring treatment.

The estimated excavation costs are based on the use of a mobile laboratory to perform quick turn-around analysis of confirmation soil samples collected on the bottom and sidewalls of the excavation. These costs are also based on the assumption that even though the quantity of PCE-contaminated soil that will be transported and disposed of is very different, soil with concentrations of PCE below the given IRG, residential PRG, or industrial PRG will still need to be excavated to remove the soil that is destined for disposal. These respective costs also include costs for obtaining a dust permit and possibly an air quality permit for excavation of PCE-contaminated soil, and Environmental Manager fees. These costs also assume that the material placed in the excavation will not be a controlled and compacted backfill. If the property owner wants the backfill to be compacted and documented, then additional costs will be incurred.

The estimated transportation costs are based on a six-hour transport day using five end-dump trucks hauling a maximum of 19 tons of soil per load. This amounts to 12 days, 3.5 days, and 2.5 days of transport time for the respective tons to be transported. These respective costs also include Environmental Manager fees for loading and transport coordination.

The estimated disposal costs vary based on the quantity of soil to be disposed and the concentration of PCE contained in the soil. These respective costs also include Environmental Manager fees related to soil disposal.

These estimated costs do not include the cost for preparation of this CAP, costs related to the investigation or monitoring of associated PCE groundwater contamination, or groundwater remediation. These estimated costs for soil remediation at the former Al Phillips facility establish a preliminary cost-benefit analysis that will be reevaluated after completion of the additional soil assessment that will be performed at the site. Once a revised cost-benefit analysis has been prepared, Al Phillips will submit this information to NDEP and seek approval of a cost effective SSCL for the site.

3 ADDITIONAL SOIL ASSESSMENT

3.1 PURPOSE AND SCOPE

The purpose of the scope of work (SOW) for the additional soil assessment in the immediate area of the former dry cleaning equipment and the floor drains at the former facility is four fold: 1) further evaluate the vertical and lateral extent of PCE soil contamination; 2) further evaluate the concentrations of PCE in the source area; 3) evaluate the extent and cost of potential source removal; and 4) evaluate strategic locations for installation of a future groundwater remediation system at the site. The immediate intent of the proposed SOW is to more accurately characterize the soil and contaminant conditions beneath the former Al Phillips facility so that cost effective source removal can be performed. The soil assessment SOW will be accomplished by performing the following tasks:

- Drill fifteen hollow-stem auger boreholes around the perimeter of the previously identified soil impact located under the former building location.
- Collect continuous soil samples (to the extent possible) from the ground surface to approximately 15 feet bgs in each borehole to evaluate the subsurface lithology and perform field screening of site soils for the presence of PCE
- Select specific soil samples for submittal to a stationary analytical laboratory for analysis
- Based on field observations and analytical results, estimate the vertical and lateral extent of and the quantity (cubic yards – cyd) of in-situ and excavated PCE-contaminated soil at or above an interim remedial goal of 100 µg/kg, the U.S. Environmental Protection Agency's (EPA) residential Primary Remediation Goal (PRG) of 480 µg/kg, and the EPA industrial PRG of 1,300 µg/kg
- Revise a cost/benefit analysis for source removal at the former facility.
- Prepare a CAP Soil Assessment Report that identifies a proposed SSCL and obtain approval from NDEP to proceed to the soil remediation SOW.

3.2 RATIONALE AND SCOPE OF WORK

This section presents the rationale for selecting the location of boreholes and the depth and number of soil samples, and the method for analyzing soil samples.

3.2.1 Analytes of Concern

Based on the results of investigations performed by Converse and URS, the contaminant of concern is PCE.

3.2.2 Borehole Locations and Depths

Fifteen soil-sampling boreholes will be drilled near the location of boreholes B-1 thought B-12 at the former Al Phillips facility using a truck-mounted hollow stem auger drill rig. Figure 2 shows the locations of the proposed soil sampling boreholes. These boreholes will be drilled to further evaluate

the extent of the source area. These boreholes will be drilled so as not to encounter groundwater that is anticipated to be at 17 feet bgs. Boreholes B-13 thought B-25 will be located in and around the prior boreholes to further delineate the vertical and lateral extent of PCE soil contamination, to further evaluate the concentrations of PCE in soil, and to revaluate the quantities of PCE-contaminated soil. The proposed soil sampling boreholes (Figure 2) will be drilled to a depth of approximately 15 feet bgs to avoid intercepting groundwater.

3.2.3 Soil Sampling

Soil samples will be collected continuously from the ground surface to the target depth in each borehole. These samples will be field screened using an FID or PID to evaluate which soil samples will be submitted to the laboratory for analysis. Borehole logs of the soils encountered will be prepared to better characterize the geology beneath the facility.

3.2.4 Soil Analysis

Soil samples will be analyzed for VOC (specifically PCE) by EPA method 8260B, as PCE is the target compound of concern at the site.

3.3 FIELD METHODS AND PROCEEDURES

URS personnel will perform the field SOW following specific field methods and procedures. This section outlines the field equipment that will be used, discusses the soil sampling procedures that will be followed, presents the field documentation that will be performed, and describes sample documentation and transport.

3.3.1 Field Equipment

URS field personnel will have appropriate sampling materials, field screening equipment, and personal protective equipment onsite during the subsurface investigation. This shall include but not be limited to:

Paper towels	De-ionized water
Soil sampling sleeves	Sampling sleeve end caps
Teflon sheets	Sealing plastic bags
Cooler and ice	Sample containers
FID or PID	First aid kit
Chain-of-custody forms	Borehole logs
Telephone	Health and safety equipment

The FID or PID will be calibrated using a standard calibration gas prior to use. First, a supply of zero air, which contains no ionizable gases or vapors, is used to set the zero point. Then calibration gas, containing a known concentration of gas or vapor, is used to set the sensitivity. URS personnel will keep records of the FID or PID calibrations.

3.3.2 Underground Utility Clearance

Call Before You Dig will be notified approximately one week prior to performing field activities.

3.3.3 Soil Sampling

Continuous soil sampling will be performed from the ground surface to the target depth of the boreholes. A truck-mounted hollow stem auger drill rig will be used to drill the boreholes and collect the soil samples. Soil samplers will be driven ahead of the augers and the augers will be advanced at five-foot intervals. The drive samplers, loaded with 6-inch stainless steel sleeves, will be placed on the drive rod and lowered into the hollow stem auger. The drive head will then be advanced approximately 1.5 feet to 2 feet into the ground using an approximate 140-pound drive hammer. The sampling head will then be removed from the borehole, the soil samples will be taken from the sampling head, and the borehole will be advanced another 5 feet. This sampling procedure will continue until soil samples are collected to the bottom of the borehole or until refusal. Boreholes will be backfilled to near ground surface using a neat cement grout or hydrated bentonite pellets and the borehole will be capped with concrete that is flush with the ground surface.

Soil collected in the sampling sleeves, and grab soil samples from the augers, will be observed by the URS field personnel and logged in accordance with the Unified Soil Classification System (USCS). One portion of the sleeved soil samples will be sealed, labeled, placed in a self-sealing plastic bag, and stored in a cooler with ice. Another portion of the sleeved soil samples, and the grab soil samples, will be placed in a self-sealing plastic bag, the bag will be marked with the borehole number and sampling depth, and the bag will be placed in the sun for at least 15 minutes to allow soil vapors to off-gas into the bag. URS field personnel will field-screen these bagged soil samples for the presence of VOCs using an FID or PID. The results of the field screening will be recorded on the borehole log.

Sleeved soil samples will be numbered by borehole number, a dash, then the depth the sample was collected. For example, a soil sample collected from 5 feet bgs in Borehole BH-1 would be labeled, BH-1-5. Sleeved soil samples will be labeled with the date and time the sample was collected, the sample and borehole number, and name for the firm and signature of the individual collecting the sample. A chain-of-custody seal will be placed on both ends of the sleeved sample. A chain-of-custody from will be filled out with all the appropriate sample information and it will accompany the sleeved soil samples to the analytical laboratory.

Excess soil from drilling and soil sampling will be placed in Department of Transportation (DOT)-approved 55-gallon drums. URS field personnel will label the drum identifying it as soil and will include the date, well number, firm, and signature of the URS personnel.

3.3.4 Decontamination Procedures

Decontamination of sampling or field measurement equipment must be conducted consistently to assure the quality of samples collected. All equipment that comes into contact with potentially contaminated soil will be decontaminated. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment.

All sampling devices will be decontaminated by the following steps.

1. Wash with non-phosphate detergent
2. Tap water rinse
3. De-ionized/distilled water rinse

Equipment will be decontaminated in a pre-designated area on pallets or plastic sheeting, and clean large equipment will be stored on plastic sheeting in uncontaminated areas. Cleaned small equipment will be stored on plastic. Decontamination water will be placed in DOT-approved 55-gallon drums. URS field personnel will label the drums identifying them and will include the date, firm, and signature of the URS personnel.

3.3.5 Field Documentation

Field activities will be documented in writing and photographs taken. URS personnel will complete daily field logs and borehole logs. These logs will include all the information discussed in this section. Each daily field log will be dated and signed by URS personnel. Photographs will be taken to record field activities and to be used in reports as appropriate.

3.3.6 Sample Documentation and Shipment

Samples will be labeled with the date and time the sample was collected, the sample number, location where the sample was collected, and name for the firm and signature of the individual collecting the sample. Chain-of-custody seals will be placed over the ends of the sample container and the container will be placed in a self-sealing plastic bag, and stored in a cooler with ice. All samples will be recorded on the field logs and/or the field daily log.

Chain-of-custody forms are used to document sample collection and shipment to laboratories for analysis. All sample shipments for analyses will be accompanied by a chain-of-custody form. Form(s) will be completed and sent with the samples to the laboratory for each shipment. If multiple coolers are sent to a single laboratory on a single day, form(s) will be completed and sent with each cooler. The chain-of-custody form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of URS personnel. URS field personnel will sign the chain-of-custody form in the "relinquished by" box and note date and time. The chain-of-custody form will be signed by the laboratory representative.

The laboratory will provide URS field personnel with sturdy coolers for containment and transport of the samples. Chain-of-custody forms will be enclosed in a large plastic bag and affixed to the underside of the cooler lid. Empty space in the cooler will be filled with bubble wrap or Styrofoam peanuts to prevent movement and breakage during transport to the laboratory.

3.3.7 Site Restoration

Areas of the work site that are disturbed or adversely impacted during the field investigation will be restored at the completion of field activities.

3.4 SOIL SAMPLES

Soil sampling sleeves will be provided by the driller. Table 3-1, below, lists the type of sample, type, number, and size of container, chemical preservative, analytical method, and holding times for soil samples.

Table 3-1. Summary of Sample Containers, Analytical Methods and Preservation

Sample Type	Type and Number of Container	Size of Containe	Chemical Preservatio	EPA Analytical Method	Holding Time
Soil	Stainless steel sleeve	Minimum 6 inch length	None	VOC by SW 8260B (1)	14 days
QC Water Samples	Clear glass	40 milliliter VOA vials	HCl	VOC by SW 8260B (2)	14 days

Notes:
(1) Six duplicate soil sample will be collected for analysis of VOC.
(2) One laboratory trip blank sample will used each day for analysis of VOC.
VOA = volatile organic analysis

3.4.1 Soil Samples

Soil samples obtained from boreholes will be collected in 6-inch stainless steel sleeves using a drive sampler. The ends of the sample tube will be covered with Teflon sheets and sealed with end caps. The samples will be placed in sealed plastic bags, and stored in a cooler with ice to chill the sample to 4°C after collection.

3.4.2 Field Rinsate and Trip Blank Samples

Field rinsate and trip blank samples to be analyzed for VOCs are decanted or supplied, respectively in a 40-milliliter clear glass VOA vial that is pre-preserved with hydrochloric acid. The water samples will be placed in sealed plastic bags, and stored in a cooler all day with ice to chill the sample to 4°C.

3.5 QUALITY CONTROL

The type and number of field quality control samples collected during the proposed investigation will be limited. Quality control samples consist of field duplicates, equipment or rinsate blanks, and trip blanks. Duplicate soil samples collected in the field provide precision information for the entire measurement system including sample acquisition, homogeneity, handling, shipping, storage, preparation, and analysis. The identity of duplicate samples is not revealed to the analysts and laboratory personnel. Duplicate samples are typically collected at a frequency of approximately 10 percent of the total investigative samples for each matrix.

Contamination of samples potentially introduced by reuse of equipment can be detected by means of analyzing an equipment or rinsate sample. Rinsate blanks are typically collected at a frequency of approximately 10 percent of the total investigative samples. Rinsate blanks consisting of the final rinse water are typically collected for non-disposable or non-dedicated sampling equipment after decontamination has been performed. Trip blanks are used to investigate the integrity of the transport of samples to and from the laboratory. Typically, one trip blank per cooler per day is used.

Laboratory QA samples are called Laboratory Control Samples (LCS) and include method blank and matrix spikes. The LCS is based on the use of a standard, control matrix to generate precise and accurate data that are compared daily to the control limits. LCS information, in conjunction with method blank data, is used to assess daily laboratory performance. Matrix Spikes (MS) use an actual environmental sample to generate precision and accuracy that may be affected by the matrix. Typically, the MS is performed in duplicate as an MS/MS duplicate pair. MS/MS duplicate precision and accuracy information, supplemented with field blank results, are used to assess the effect of the matrix and field conditions on analytical data.

3.5.1 Duplicate Samples

The SOW includes collection and analysis of six duplicate soil samples during the assessment at the former Al Phillips facility. These soil samples will be analyzed for VOC.

3.5.2 Rinsate/Equipment Blank

One rinsate or equipment blank per day (approximately four to five) will be collected during the soil assessment at the former Al Phillips facility as the sample drive heads will be cleaned and reused.

3.5.3 Field Trip Blanks

URS anticipates that four to five trip blanks will be used and analyzed, as soil sampling will occur over a period of several days.

3.6 DISPOSAL OF RESIDUAL MATERIAL

The EPA's National Contingency Plan (NCP) requires that management of investigative-derived waste (IDW) generated during sampling activities comply with all applicable or relevant and appropriate requirements (ARARS) to the extent practicable. The SOW will follow the *Office of Emergency and Remedial Response (OERR) Directive 9345.3-02* (May 1991), which provides the guidance for the management of IDW. During the field activities, different types of IDW will be generated, including used personal protective equipment (PPE), disposable sampling equipment, decontamination fluids, soil cuttings from soil boreholes, and purge water for development of monitoring wells.

Used PPE and disposable equipment will be double-bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE and disposable equipment that is to be disposed of which can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Decontamination fluids that will be generated during the field investigation will consist of de-ionized water, residual contaminants and water with non-phosphate detergent. These types of IDW will be contained in 55-gallon DOT-approved drums and stored in an area adjacent to the former Al Phillips facility. The drums will be labeled and temporarily stored prior to transport and disposal.

Analytical results from the soil will be used as a minimum basis for disposal of the wastes. PCE and non-PCE soils as well as water will be disposed of at a permitted disposal facility. Waste characterization documentation and manifests (if required) will be prepared by URS for signature by Al Phillips if required.

3.7 CAP SOIL ASSESSMENT REPORT

After completion of the soil assessment, receipt of the final laboratory data, and disposal of IDW, a CAP Soil Assessment Report will be prepared and submitted to NDEP. This report will summarize the results of the previous soil investigation at the former Al Phillips facility, the fieldwork that was performed during this further soil assessment, investigation results, field data, boring logs, tables, figures, cross sections, laboratory results, photos, a scaled site map depicting soil borehole locations, and a revised remedial cost/benefit analysis. Analytical results will be tabulated and compared against the interim remedial goal, and the EPA residential and industrial PRGs. Based on the results and the revised cost/benefit analysis a proposed SSCL and remedial alternative will be recommended for approval by NDEP.

3.8 SOIL ASSESSMENT SCHEDULE

The CAP will be submitted to the property owner for review and then will be submitted to NDEP for review and approval. Once approved by NDEP Al Phillips will perform the SOW for additional soil assessment. The CAP Soil Assessment Report will first be submitted to the property owner and then NDEP for review and approval of the proposed SSCL. The report will be submitted to NDEP after completion of fieldwork. The following schedule is proposed:

- Completion of Additional Soil Assessment – December 22, 2006 or 28 days of approval
- Submittal of CAP Soil Assessment Report – January 19, 2007 or 28 days of assessment

4 SOIL REMEDIATION

4.1 PURPOSE AND SCOPE OF SOIL REMEDIATION

The purpose of the SOW for soil remediation is to remove from the site PCE-contaminated soil above a Site Specific Cleanup Level (SSCL) that will be cost effective and that will protect the environment. The selected SSCL will be proposed by Al Phillips after completion of the additional soil assessment discussed in Section 1.8. It is Al Phillip's intent to remove as much PCE-contaminated soil from the site as is economically possible. The soil remediation SOW will be accomplished by performing the following tasks:

- Based on the results of a revised cost/benefit analysis, and an approved SSCL, implement source removal and disposal of PCE-contaminated soil.
- Based on the approved SSCL, plan and implement other forms of source removal in the vadose zone if necessary.

These tasks will be performed after the CAP Soil Assessment Report has been reviewed by NDEP and a SSCL approved.

4.2 RATIONAL AND SCOPE OF WORK

The primary rationale for source removal is to twofold: 1) remove PCE contaminated soil from the site to eliminate the potential for additional PCE to reach groundwater; and 2) decrease potential conflicts with site development. This section discusses the tasks that will be performed during source removal.

4.2.1 Soil Excavation

Based on the selection of a SSCL, soil will be excavated from the former Al Phillips facility. Soil will be excavated and handled using a track hoe, loader, and water truck. A dust permit will be obtained by the excavation contractor and the area will remain fenced. Excavation will likely take three to five days to complete based upon how much soil requires removal and site and weather conditions. Soil to be transported and disposed of will be temporarily stockpiled, sprayed with water to reduce VOC emissions, and covered with plastic until it is transported to a permitted disposal facility. Soil that is excavated but will not be transported to the disposal facility will be stock piled, sprayed with water and covered with plastic to reduce VOC emissions and dust.

4.2.2 Field Screening of Soil Samples

Soil samples will be collected during excavation activities to screen for VOC using an FID or PID to assess when the limits of the target excavation have been reached. These samples will be field screened in the same way as that presented in Section 2.2.3.

4.2.3 Confirmation Soil Sampling

Confirmation soil samples will be collected from the bottom and sides of the excavation to confirm that the limits of the target excavation have been reached. These samples will also be field screened in the same way as that presented in Section 2.2.3. Soil samples will be submitted to an onsite analytical laboratory for quick turnaround analysis. In this way, additional soil can be excavated if necessary, until the SSCL is reached. This method will also limit the potential for excavation of soil that can stay in place in accordance with the approved SSCL. Several duplicate confirmation soil samples will be submitted to a stationary laboratory for analysis to confirm the analytical results from the on-site mobile laboratory.

4.2.4 Soil Analysis

Confirmation soil samples will be analyzed for VOC (specifically PCE) by EPA method 8260B at the on-site mobile laboratory, as PCE is the target compound of concern at the site.

4.2.5 Soil Profile for Disposal

Soil profile samples will be submitted to a stationary laboratory for chemical analysis that will be dictated by the selected soil disposal facility. This data will be submitted to the disposal facility in preparation of transport of PCE contaminated to the facility.

4.2.6 Transport of Soil to Disposal Facility

PCE-contaminated soil in excess of the approved SSCL will be transported by an approved and licensed contractor to an approved and licensed disposal facility. The transport contractor will obtain all permits required to transport PCE-contaminated soil from the former Al Phillips facility the selected disposal facility.

4.2.7 Backfilling of Excavation

The excavation contractor will import clean backfill material from a known source area to the site and fill the excavation to the ground surface. Analytical results for the backfill material will be provided to Al Phillips by the excavation contractor. Black plastic will be placed in and across the excavation prior to backfilling as a marker to signify the extent of the excavation during future land development activities at the site. Backfill material will not be compacted to a specific density unless required by the property owner. Backfill material will be moisture conditioned using a water truck only to meet requirements of the dust permit. The excavation contractor will compact backfill material using a track hoe, or by wheel rolling to reduce the amount of settlement of the backfill. Additional backfill material will be placed on the excavation area above the surrounding ground to account for future settlement.

4.3 FIELD METHODS AND PROCEEDURES

URS personnel will perform the excavation SOW following specific field methods and procedures. This section outlines the field equipment that will be used, discusses the soil sampling procedures that will be followed, presents the field documentation that will be performed, and describes sample documentation and transport.

4.3.1 Field Equipment

URS field personnel will have appropriate sampling materials, field screening equipment, and personal protective equipment onsite during the subsurface investigation. This shall include but not be limited to:

- Paper towels
- Soil sampling sleeves
- Teflon sheets
- Cooler and ice
- FID or PID
- First aid kit
- Borehole logs
- Health and safety equipment
- De-ionized water
- Sampling sleeve end caps
- Sealing plastic bags
- Sample containers
- Personal protective equipment
- Chain-of-custody forms
- Telephone

The FID or PID will be calibrated using a standard calibration gas prior to use. First, a supply of zero air, which contains no ionizable gases or vapors, is used to set the zero point. Then calibration gas, containing a known concentration of gas or vapor, is used to set the sensitivity. URS personnel will keep records of the FID or PID calibrations.

4.3.2 Underground Utility Clearance

Call Before You Dig will be notified approximately one week prior to performing field activities.

4.3.3 Excavation Method

The excavation subcontractor will have the latitude to perform excavation of PCE contaminated soil in the most efficient manner. It is anticipated that excavation of soil can be performed using an extend-a-hoe backhoe or a track hoe with the capability of excavating to a depth of approximately 16-feet to 17-feet bgs. PCE contaminated soil above the SSCL will be excavated and stock piled on thick plastic sheeting. If clean uncontaminated soil is excavated, it will also be placed on plastic sheeting in a separate stockpile. Using analytical and field data from the additional soil assessment, onsite FID/PID field soil screening, and mobile laboratory analytical data, the onsite manager will work with the excavation contractor to segregate contaminated and uncontaminated soil so that uncontaminated soil can be utilized as backfill material. A water truck will be utilized to spray down the excavation area and the stockpiled soil (both contaminated and uncontaminated) to provide dust control and reduce off-gassing of VOC. Both contaminated and uncontaminated stockpiles will be covered at the end of each day to help prevent off-gassing of VOC.

4.3.4 Transportation of PCE Contaminated Soil

The excavation subcontractor will load and transport PCE-contaminated soil from the former Al Phillips site to an approved disposal facility. The subcontractor will be licensed and bonded transporter of hazardous waste and have all the necessary permits and approvals to transport hazardous waste in Nevada. The contractor will cover soil to be transported to the disposal facility in accordance with Clark County regulations. Al Phillips will make a finial decision regarding selection of the disposal facility and will sign all required waste manifest forms.

4.3.5 Soil Sampling

Confirmation soil sampling will be performed on the sidewalls and bottom of the excavation using the track hoe bucket or on foot, whichever is appropriate under the site conditions. Soil samples will be collected using a hand drive sampler and sampling sleeves. Soil from the excavation will be observed by the URS field personnel and logged in accordance with the Unified Soil Classification System (USCS). The sleeved soil samples will be sealed, labeled, placed in a self-sealing plastic bag and transported to the on-site mobile laboratory or stored in a cooler with ice to be transported to a stationary laboratory for analysis. Soil from the foot of the drive sampler will be placed in a self-sealing plastic bag, the bag will be marked with the confirmation sample number and sampling depth, then the bag will be placed in the sun for at leased 15 minutes to allow soil vapors to off gas into the bag. URS field personnel will field-screen these bagged soil samples for the presence of VOCs using an FID or PID. The results of the field screening will be recorded on a field log.

Sleeved soil samples will be numbered by wall or bottom, confirmation sample number, a dash, then the depth the samples was collected. For example, the first confirmation soil sample collected from 10-ft bgs on the west wall of the excavation would be labeled W1-10. Sleeved soil samples will be labeled with the date and time the sample was collected, the sample number, and name for the firm and signature of the individual collecting the sample. A chain-of-custody seal will be placed on both ends of the sleeved sample. A chain-of-custody form will be filled out with all the appropriate sample information and it will accompany the sleeved soil samples to the analytical laboratory.

4.3.6 Decontamination Procedures

Decontamination of sampling or field measurement equipment must be conducted consistently as to assure the quality of samples collected. All equipment that comes into contact with potentially contaminated soil will be decontaminated. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment.

All sampling devices will be decontaminated by the following steps.

1. Wash with non-phosphate detergent
2. Tap water rinse
3. De-ionized/distilled water rinse

Equipment will be decontaminated in a pre-designated area on pallets or plastic sheeting, and clean large equipment will be stored on plastic sheeting in uncontaminated areas. Cleaned small equipment will be stored on plastic. Decontamination water will be placed in DOT-approved 55-gallon drums. URS field personnel will label the drums identifying them and will include the date, firm, and signature of the URS personnel.

4.3.7 Field Documentation

Field activities will be documented in writing and photographs taken. URS personnel will complete daily field logs and excavation logs. These logs will include all the information discussed in this

section. Each daily field log will be dated and signed by URS personnel. Photographs will be taken to record field activities and to be used in reports as appropriate.

4.3.8 Sample Documentation and Shipment

Samples will be labeled with the date and time the sample was collected, the sample number, location where the sample was collected, and name for the firm and signature of the individual collecting the sample. Chain-of-custody seals will be placed over the ends of the sample container and the container will be placed in a self-sealing plastic bag, and stored in a cooler with ice. All samples will be recorded on the field logs and/or the field daily log.

Chain-of-custody forms are used to document sample collection and shipment to laboratories for analysis. All sample shipments for analyses will be accompanied by a chain-of-custody form. Form(s) will be completed and sent with the samples to the laboratory for each shipment. If multiple coolers are sent to a single laboratory on a single day, form(s) will be completed and sent with each cooler. The chain-of-custody form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of URS personnel. URS field personnel will sign the chain-of-custody form in the "relinquished by" box and note date and time. The chain-of-custody form will be signed by the laboratory representative.

The laboratory will provide URS field personnel with sturdy coolers for containment and transport of the samples. Chain-of-custody forms will be enclosed in a large plastic bag and affixed to the underside of the cooler lid. Empty space in the cooler will be filled with bubble wrap or Styrofoam peanuts to prevent movement and breakage during transport to the laboratory.

4.3.9 Site Restoration

The excavation will be backfilled as discussed in Section 3.1.7. Other areas of the work site that are disturbed or adversely impacted during the field investigation will be restored at the completion of field activities.

4.4 SOIL SAMPLES

Confirmation soil sampling sleeves will be provided by URS. Table 4-1, below, lists the type of sample, type, number, and size of container, chemical preservative, analytical method, and holding times for soil samples.

Table 4-1. Summary of Sample Containers, Analytical Methods and Preservation

Sample Type	Type and Number of Container	Size of Containe	Chemical Preservatio	EPA Analytical Method	Holding Time
Soil	Stainless steel sleeve	Minimum 3 inch length	None	VOC by SW 8260B (1)	14 days
QC Water Samples	Clear glass	40 milliliter VOA vials	HCl	VOC by SW 8260B (2)	14 days

Notes:
(1) Duplicate soil sample will be collected for analysis of VOC.
(2) One laboratory trip blank sample will used each day for analysis of VOC.
VOA = volatile organic analysis

4.4.1 Soil Samples

Soil samples obtained from the excavation will be collected in 3-inch stainless steel sleeves using a hand drive sampler. The ends of the sample tube will be covered with Teflon sheets and sealed with end caps. The samples will be placed in sealed plastic bags, and transported to the on-site mobile laboratory or the stored in a cooler with ice to chill the sample to 4°C after collection for transport to a stationary laboratory.

4.4.2 Field Rinsate and Trip Blank Samples

Filed rinsate and trip blank samples to be analyzed for VOCs are decanted or supplied, respectively in a 40-milliliter clear glass VOA vial that is pre-preserved with hydrochloric acid. These samples will be placed in sealed plastic bags, and stored in a cooler all day with ice to chill the sample to 4°C.

4.5 QUALITY CONTROL

Quality control samples and procedure will be followed in accordance with the discussion in Section 2.4.

4.6 DISPOSAL OF RESIDUAL MATERIAL

Disposal of IDW will be in accordance with the information provided in Section 2.5.

4.7 SOURCE REMOVAL AND CONFIRMATION SAMPLING REPORT

After completing excavation and disposal of PCE-contaminated soil in excess of the approved SSCL , backfilling of the excavation, receipt of the final laboratory data, and disposal of IDW, a Source Removal and Confirmation Sampling Report will be prepared and submitted to NDEP. This report will summarize the results of the previous soil investigations at the former Al Phillips facility, the excavation and backfilling fieldwork that was performed during remediation activities, remediation results, field data, excavation logs, tables, figures, cross sections, laboratory results, photos, a scaled site map depicting excavation limits, and location of confirmation soil samples. Analytical results will be tabulated and compared against the approved SSCL.

4.8 SOURCE REMOVAL SCHEDULE

The CAP Soil Assessment Report will be submitted to the property owner for review and then will be submitted to NDEP for review and approval of the SSCL. Once approved by NDEP Al Phillips will initiate source removal tasks. The Source Removal and Confirmation Sampling Report will first be submitted to the property owner and then NDEP for review. The report will be submitted to NDEP after completion of fieldwork. The following schedule is proposed:

- Approval of SSCL by NDEP – February 2, 2007 or 14 days after CAP report submittal
- Initiation of PCE impacted soil – February 16, 2007 or 14 days after approval of SSCL
- Completion of excavation of PCE-impacted soil – February 23, 2007 or 7 days after beginning of excavation
- Completion of transport and disposal of PCE-impacted soil – March 2, 2007 or 7 days after completing excavation
- Submittal of Source Removal and Confirmation Sampling Report – April 6, 2007 or 35 days after completion of excavation and backfilling.

5 QUALIFICATIONS AND SIGNATURES

This CAP was prepared by URS for Al Phillips and submitted to NDEP. The qualifications of the individuals involved in the preparation of this report are known to Al Phillips and NDEP.

Prepared by:

Scott Ball, C.E.M.
Project Environmental Manager

Reviewed by:


for

Dennis Connair
Senior Technical Reviewer

5.1 CERTIFIED ENVIRONMENTAL MANAGER STATEMENT

The following statement is required by NDEP for Environmental Managers who practice in Nevada:

"I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein."

I, Scott Ball, hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances.

Scott Ball
Certified Environmental Manager No. 1316
(Expires October 15, 2007)

6 REFERENCES

Converse Consultants, 2000. Offsite Investigation, Maryland Square Shopping Center, Las Vegas, NV dated November 28, 2000.

-----, 2001. A through K Data Research Report, dated August 22, 2001.

-----, 2002a. Work Plan – Additional Site Investigation, dated January 11, 2002.

-----, 2002b. Additional Soil and Groundwater Investigation, dated November 13, 2002.

-----, 2003a. Additional Soil and Groundwater Investigation, dated May 16, 2003.

-----, 2003b. Preliminary Corrective Action Plan (CAP), dated June 27, 2003.

-----, 2003c. Work Plan – Additional Site Activities, dated September 12, 2003.

-----, 2003d. Groundwater Monitoring Report – 3rd Quarter 2003, dated October 31, 2003.

-----, 2004. Well Installation/Slug Testing/Groundwater Monitoring Report – 4th Quarter 2003 and 1st Quarter 2004, dated March 2004.

URS, 2004. Revised Work Plan, Proposed Subsurface Investigation, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated September 10, 2004.

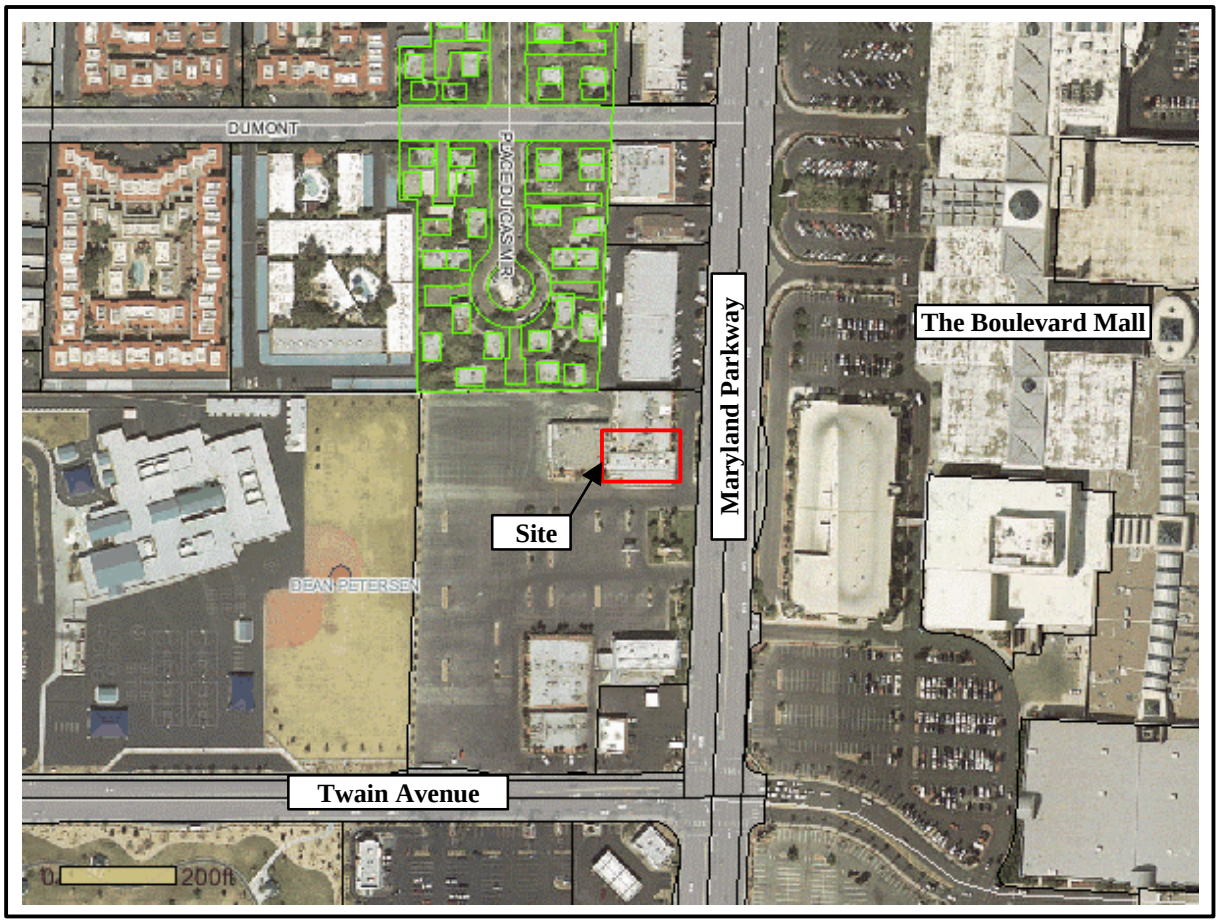
URS, 2005. Subsurface Investigation, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated July 11, 2005 .

URS, 2005. Quarterly Groundwater Sampling, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated September 26, 2005.

URS, 2005. Proposed Remedial Pilot Study, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated December 27, 2005.

US Geological Survey 7.5-minute Las Vegas SW, Nevada Quadrangle, 1983 modified.

7 FIGURES



Source: Clark County Assessors Web Site
Scale: 200 feet

N

SITE LOCATION MAP

Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

URS

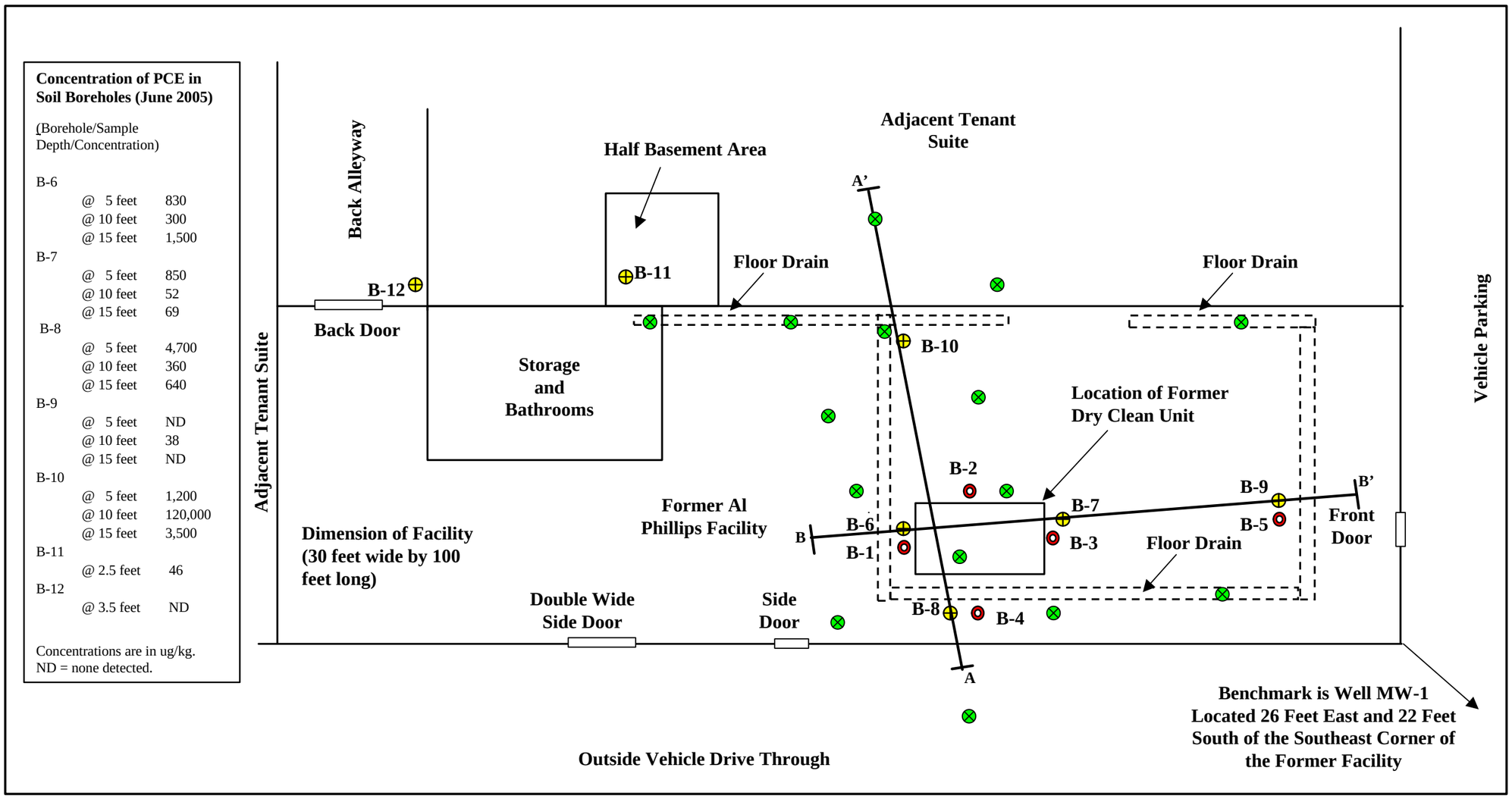
November 2006
Job No. 26698724
MS Source Removal CAP Fig 1.ppt FIGURE 1

Concentration of PCE in Soil Boreholes (June 2005)

(Borehole/Sample Depth/Concentration)

B-6		
	@ 5 feet	830
	@ 10 feet	300
	@ 15 feet	1,500
B-7		
	@ 5 feet	850
	@ 10 feet	52
	@ 15 feet	69
B-8		
	@ 5 feet	4,700
	@ 10 feet	360
	@ 15 feet	640
B-9		
	@ 5 feet	ND
	@ 10 feet	38
	@ 15 feet	ND
B-10		
	@ 5 feet	1,200
	@ 10 feet	120,000
	@ 15 feet	3,500
B-11		
	@ 2.5 feet	46
B-12		
	@ 3.5 feet	ND

Concentrations are in ug/kg.
ND = none detected.



Source: Field Site Sketch
Scale: 0 — 10 Feet

N

Legend:

- Approximate Location of Borehole Installed by URS 2005.
- Approximate Location of Borehole Installed by Converse.
- Proposed Borehole Locations for Soil Source Removal Investigation.
- A – A' Approximate Location of Lithologic Cross-Section Figure 3 and 4.

URS

SITE PLAN

Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

November 2006
Job No. 26698724

MS Source Removal CAP Fig 2.ppt FIGURE 2

Groundwater Elevations in Monitoring Wells (October 2006)

Well	Elevation
MW-1	1973.74
MW-7	1973.75
MW-12	1981.79
MW-17	1973.01

Source: Clark County Assessors Web Site
Scale: 0Feet — 30Feet

URS

N

Legend:

MW-17 1973.01 — Approximate Location of Monitoring Well Installed by URS Showing Well Number and Groundwater Elevation.

MW-12 1961.79 — Approximate Location of Monitoring Well Installed by Converse Showing Well Number and Groundwater Elevation.

Approximate Groundwater Contour and Elevation (showing direction of groundwater flow).

Approximate Location of Sanitary Sewer.

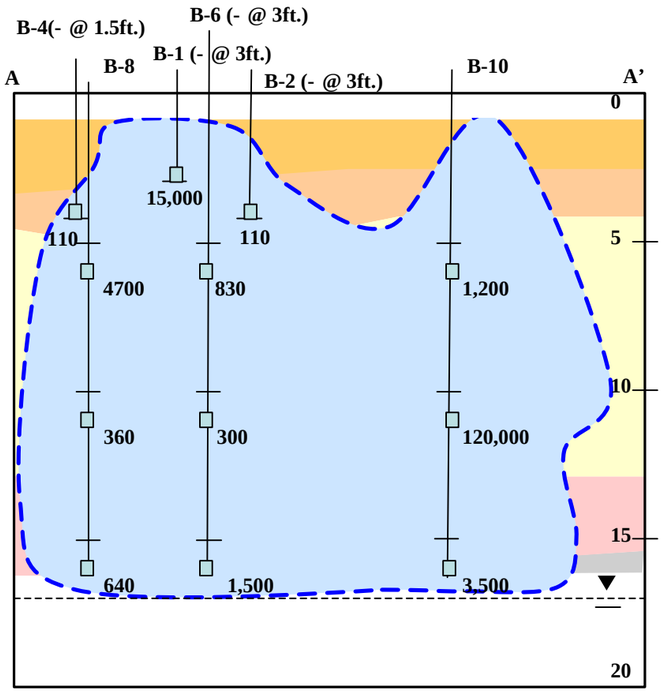
GROUNDWATER CONTOUR MAP

Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

November 2006
Job No. 26698724

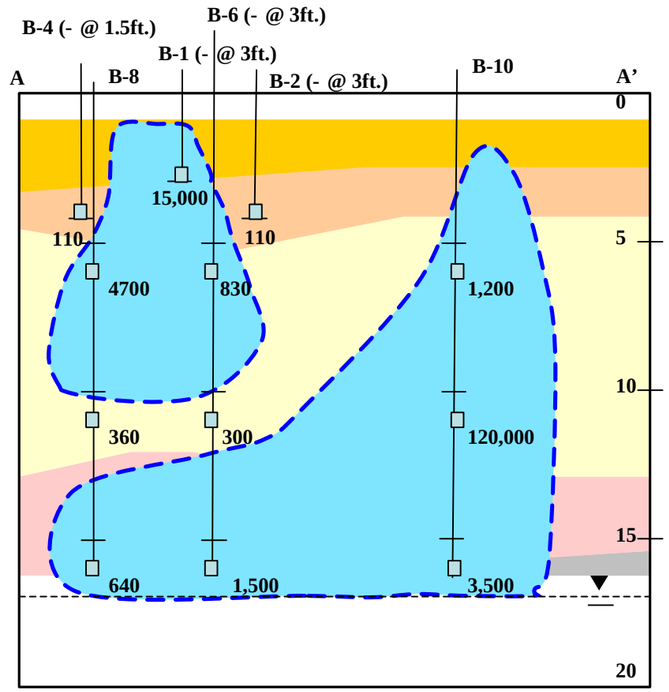
MS Source Removal CAP Fig 3.ppt FIGURE 3

INTERIM REMEDIATION GOAL OF 100 ug/kg



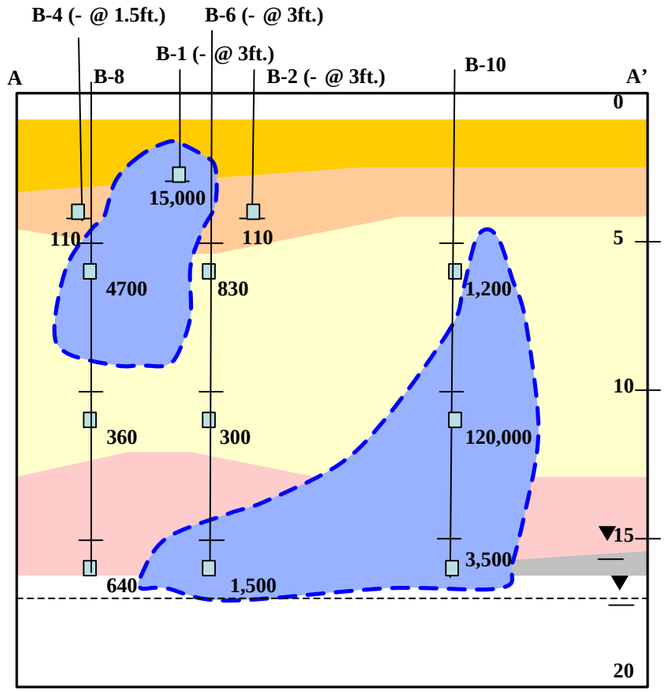
CROSS SECTION A – A'

EPA RESIDENTIAL PRG OF 480 ug/kg



CROSS SECTION A – A'

EPA INDUSTRIAL PRG OF 1,300 ug/kg



CROSS SECTION A – A'

Horizontal Scale: 0 — 10 feet

Vertical Scale: 0 — 5 feet

Note:

Boreholes B-6, B-8, and B-10 have approximate depths of 16.5 feet below ground surface.

URS

Legend:

Approximate Lithologic Boundary Changes

- Concrete
- Fine Sand
- Sandy Silt (Fine)
- Caliche
- Sandy Silt (Fine)
- Sand

Approximate Groundwater Table

Estimated Vertical and Lateral Area of PCE Contaminated Soil at 100 ug/kg, 480 ug/kg, and 1,300 ug/kg (Based on April 2005 Soil Samples, URS).

350 PCE Concentration in ug/mg at Corresponding Depth.

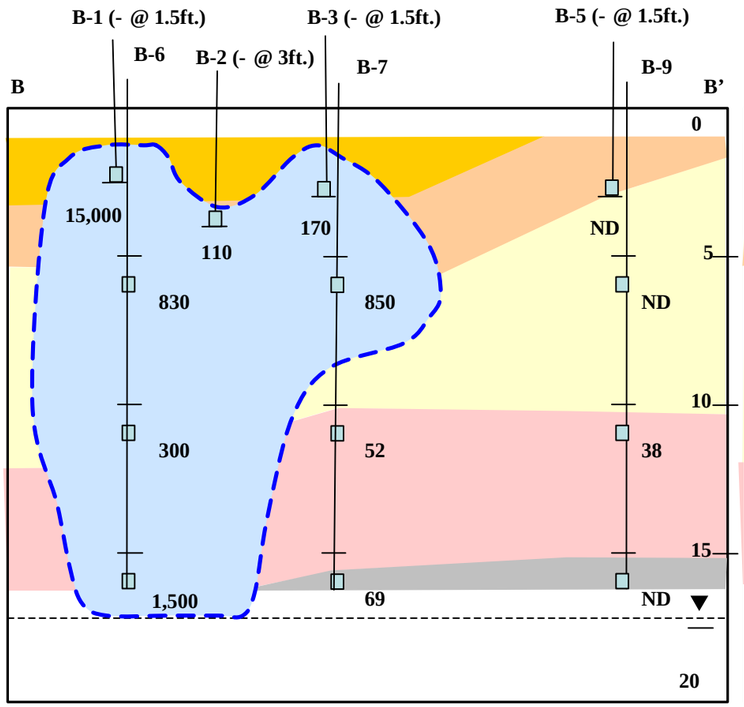
CROSS-SECTION A-A'

Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

November 2006
Job No. 26698724

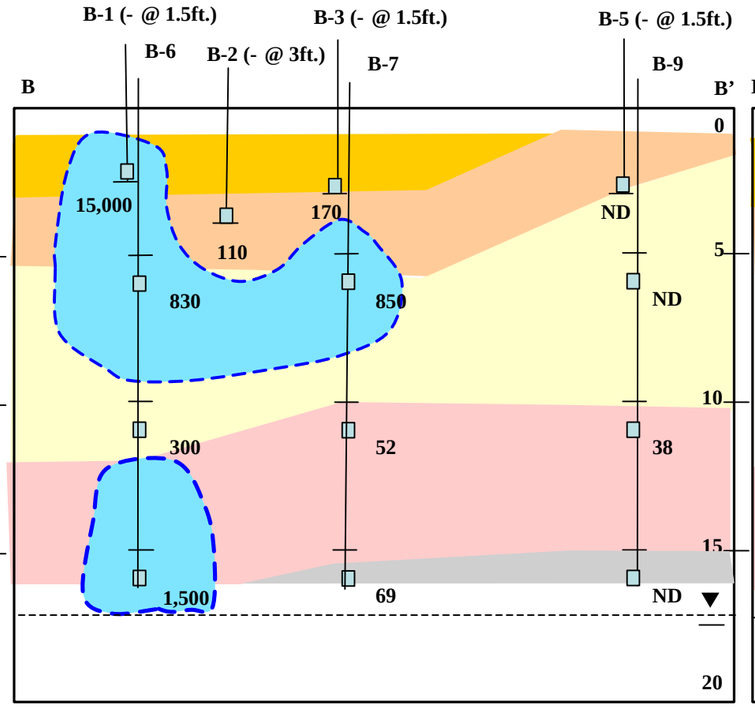
MS Source Removal CAP Fig 4.ppt FIGURE 4

INTERIM REMEDIATION GOAL OF 100 ug/kg



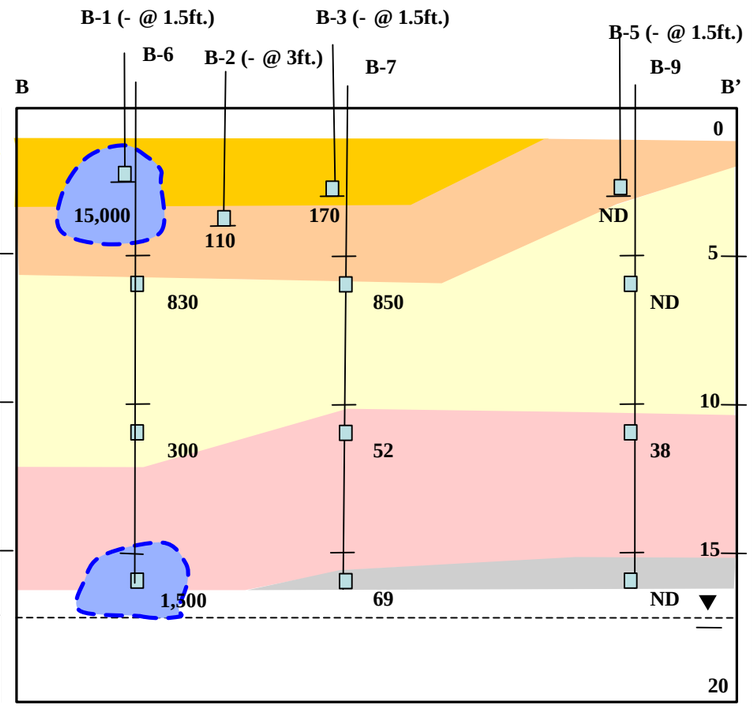
CROSS SECTION B – B'

EPA RESIDENTIAL PRG OF 480 ug/kg



CROSS SECTION B – B'

EPA INDUSTRIAL PRG OF 1,300 ug/kg



CROSS SECTION B – B'

Horizontal Scale: 0 — 10 feet

Vertical Scale: 0 — 5 feet

Note:

Boreholes B-6, B-8, and B-10 have approximate depths of 16.5 feet below ground surface.

URS

Legend:

Approximate Lithologic Boundary Changes

- Concrete
- Fine Sand
- Sandy Silt (Fine)
- Caliche
- Sandy Silt (Fine)
- Sand

Approximate Groundwater Table

Estimated Vertical and Lateral Area of PCE Contaminated Soil at 100ug/kg, 480 ug/kg, and 1,300 ug/kg (Based on April 2005 Soil Samples, URS).

350 PCE Concentration in ug/mg at Corresponding Depth.

CROSS-SECTION B-B'

Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

November 2006
Job No. 26698724

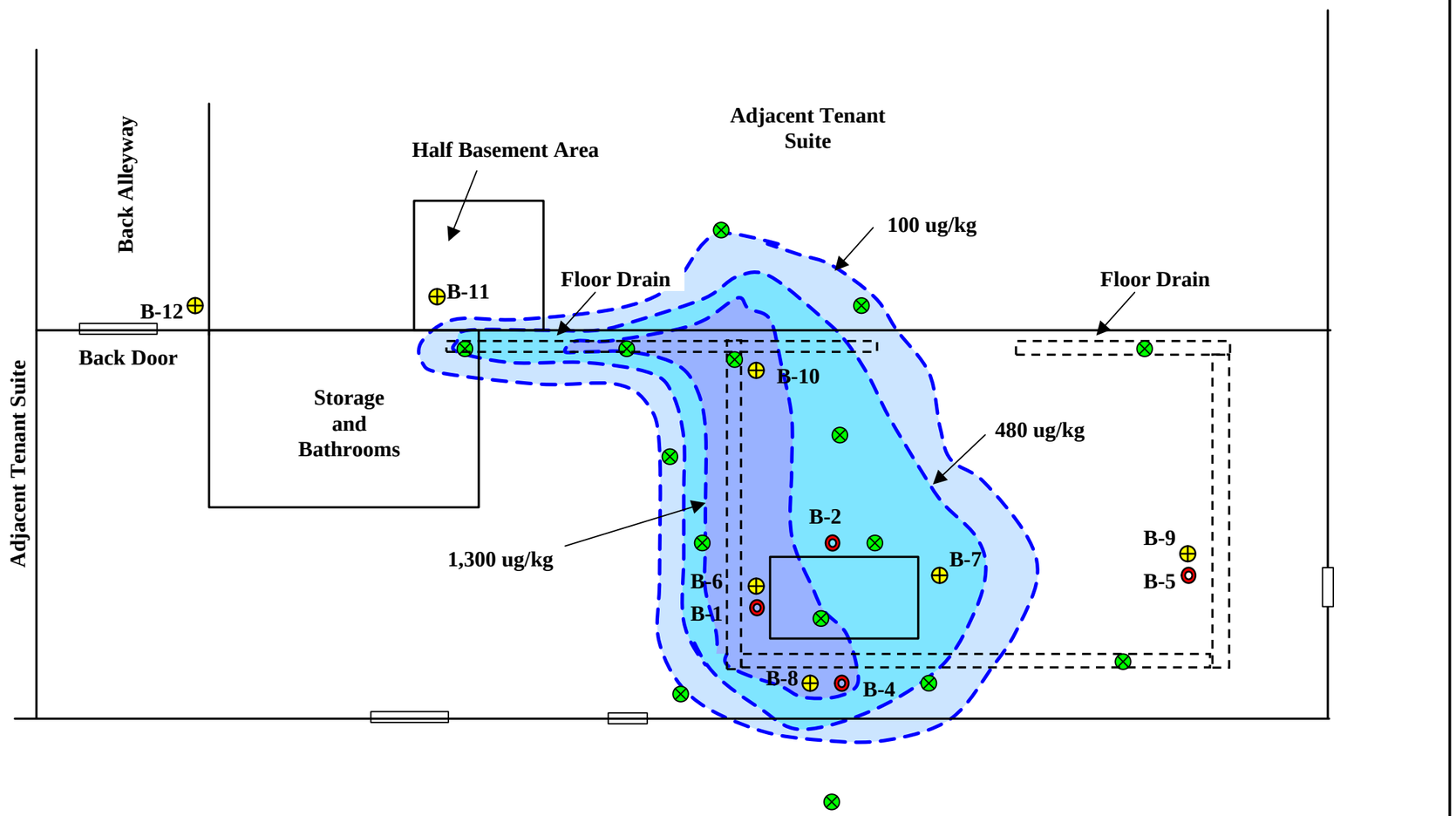
MS Source Removal CAP Fig 5.ppt FIGURE 5

Concentration of PCE in Soil Boreholes (June 2005)

(Borehole/Sample Depth/Concentration)

B-6		
	@ 5 feet	830
	@ 10 feet	300
	@ 15 feet	1,500
B-7		
	@ 5 feet	850
	@ 10 feet	52
	@ 15 feet	69
B-8		
	@ 5 feet	4,700
	@ 10 feet	360
	@ 15 feet	640
B-9		
	@ 5 feet	ND
	@ 10 feet	38
	@ 15 feet	ND
B-10		
	@ 5 feet	1,200
	@ 10 feet	120,000
	@ 15 feet	3,500
B-11		
	@ 2.5 feet	46
B-12		
	@ 3.5 feet	ND

Concentrations are in ug/kg.
ND = none detected.



Source: Field Site Sketch
Scale: 0 — 10 Feet

N

Legend:

- Approximate Location of Borehole Installed by URS 2005.
- Approximate Location of Borehole Installed by Converse.
- Proposed Borehole Locations for Soil Source Removal Investigation.
- Estimated Lateral Extent of PCE Soil Contamination at 100 ug/kg, 480 ug/kg, and 1,300 ug/kg.

URS

ESTIMATED LATERAL EXTENT OF PCE CONTAMINATED SOIL

Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

November 2006
Job No. 26698724

MS Source Removal CAP Fig 6.ppt FIGURE 6