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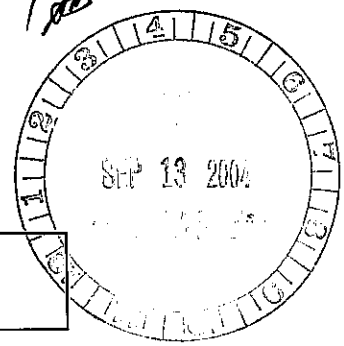

REVISED WORK PLAN

PROPOSED SUBSURFACE INVESTIGATION FORMER AL PHILLIPS THE CLEANERS SITE MARYLAND SQUARE SHOPPING CENTER LAS VEGAS, NEVADA

Submitted to:

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1 INTRODUCTION

URS Corporation (URS) has prepared this draft Work Plan (WP) at the request of Al Phillips the Cleaners, Inc. (Al Phillips) to conduct further soil and groundwater assessment and monitoring of tetrachloroethylene (PCE) at the former Al Phillips facility located in the Maryland Square Shopping Center, Las Vegas, Nevada. Al Phillips recently took over control of assessment activities at the site from the Herman Kishner Trust.

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). It is situated on the west side of Maryland Parkway, north of Twain Avenue, and across the street from The Boulevard Mall.

1.2 PRIOR INVESTIGATIONS AND MEETING WITH NDEP

Converse Consultants (Converse) performed several subsurface assessments and groundwater sampling at the former Al Phillips facility from August 2000 through March 2004. Converse's findings indicate that PCE was detected in soil beneath the former Al Phillips facility and in groundwater adjacent to, and down gradient from, the facility. URS reviewed eleven 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 for the groundwater plume, the lateral and vertical extent of the groundwater plume, the geology of the site, and the nature of PCE concentrations in the groundwater plume was characterized. Based upon Converse's reports, concentrations of PCE above regulatory levels are present in soil beneath the former Al Phillips facility and in groundwater. Al Phillips and URS met with NDEP on April 29, 2004 to discuss the turning over of the site to Al Phillips from the Herman Kishner Trust. Future characterization of the source area, the main body of the groundwater plume, and the down gradient area of the plume was discussed. This WP discusses proposed additional site characterization activities that should to be performed prior to selection of remedial approach.

1.3 PURPOSE AND SCOPE OF WORK

The purpose of the scope of work (SOW) outlined in this WP is to investigate existing environmental soil and groundwater conditions in the immediate area of the former Al Phillips facility and the PCE groundwater plume beyond that which has been previously performed. The intent of the proposed SOW is to more accurately characterize the soil and groundwater conditions beneath the former Al Phillips facility located at the Maryland Square Shopping Center, beneath The Boulevard Mall, and beneath the residential neighborhood east of the mall, so that an appropriate remedial method can be selected for future implementation. The SOW will be accomplished by performing the following tasks:

- Drill five to seven boreholes inside and/or around the former Al Phillips facility
- Install four to six new groundwater monitoring wells near the down gradient edge of the groundwater plume

- Survey proposed groundwater monitoring wells after installation
- Quarterly groundwater monitoring of existing and proposed monitoring wells including remedial parameters and biological testing
- Evaluate remedial alternatives (including biological methods) targeted on the source area and/or near the center of the groundwater plume

1.4 TOPOGRAPHY, GEOLOGY, AND HYDROGEOLOGY

The US Geological Survey 7.5-minute Las Vegas SW, Nevada quadrangle (1983 modified) indicates that the site elevation is approximately 1,990 feet above mean sea level. The topography on the subject property is generally gently sloped toward the east.

The site is located ~~on or~~ near the center of the Las Vegas Valley sedimentary basin. The mountains surrounding Las Vegas Valley are composed primarily of marine sedimentary and volcanic bedrock units. Alluvial sediments generally become finer-grained from west to east within the valley. Based on the assessments performed by Converse, the area beneath the former Al Philips facility consists of fine silty sands, caliche, and some clay. These predominately sands and caliche beneath the facility, phase into clay toward the east. On the east side of the mall, and likely the residential area east of the mall, layered silty sands, gravels, and clays have been encountered, with the sands and gravels being underlain by clay.

The Las Vegas Wash is the principal hydrologic feature in the Las Vegas Valley. Groundwater bearing sediments are present within the basin fill sediments of the Las Vegas Basin. These sediments may be as much as 2,000-feet thick in some areas. Based on the results of groundwater assessments conducted by Converse, the depth to groundwater near the subject site is approximately 16-feet below ground surface (bgs) on the west to 25-feet bgs on the east, and the direction of groundwater flow is toward the east.

2 PROJECT RATIONAL AND SCOPE OF WORK

This section presents the rationale for selecting the location of boreholes and the depth and number of soil samples, for placement and construction of groundwater monitor wells, collecting groundwater samples, and the methods for analyzing soil and groundwater samples.

2.1 ANALYTES OF CONCERN

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

2.2 BOREHOLE LOCATIONS AND DEPTHS

Five to seven soil-sampling boreholes will be drilled using a track mounted hollow stem auger drill rig in order to gain access inside and behind the former Al Phillips facility. Figure 2 shows the locations of the proposed soil sampling boreholes. These boreholes will be drilled to further evaluate the nature of the source area. These boreholes will be drilled so as not to encounter groundwater. Prior sampling performed by Converse at the building identified PCE in soil at a depth of four feet below the concrete floor near the area where the dry cleaning equipment was located (Figure 2). Three of the proposed boreholes (B-6, B-7 and B-8) will be located in this area. Boreholes B-6 and B-7 are intended to confirm the findings of previous boreholes B-1 and B-2 and to further investigate soil conditions and PCE concentrations at greater depths. One or two boreholes (B-9 and B-10) will be located adjacent to the floor drain trench and in the general area of the former dry cleaning unit inside the building. One or two additional boreholes (B-11 and B-12) will be located near the back of the facility, either in or adjacent to the alleyway, on the north side of the building. As with boreholes B-6 and B-7, boreholes B-8 through B-12 are intended to further investigate the character of the source area at the former Al Phillips facility. Based on prior groundwater data, the depth to groundwater beneath the former Al Phillips facility is approximately 16 feet bgs on the west and 20 feet bgs on the east. As such, the proposed soil sampling boreholes (Figure 2) will be drilled to a depth of approximately 13 to 17 feet to avoid intercepting groundwater. Soil samples will be collected approximately every five feet beginning at 5 feet bgs. In addition to soil sampling boreholes B-6 through B-12, the borehole drilled for monitor well MW-17, located on the east side of the former Al Phillips facility between monitor wells MW-7 and MW-1/MW-9, will be sampled for soil to further investigate the character of the source area on the east side of the former Al Phillips facility where the highest concentration of PCE in groundwater is suspected. Additional soil sampling boreholes on the east side of the former facility are not planned at this time as the suspect source area is believed to be beneath the building where the dry cleaning equipment and associated floor drains are located (Figure 2).

2.3 GROUNDWATER MONITORING WELLS AND DEPTHS

Five to eight new groundwater monitoring wells will be installed using a truck mounted hollow stem auger drill rig near the down gradient edge of the groundwater plume. Figure 3 shows the approximate locations of these proposed monitoring wells. The rational for placement of these wells is to further evaluate the source area of the plume, the groundwater PCE concentrations, and the eastern extent of the plume. These monitoring wells will also be utilized to measure the depth to groundwater across the area so that the direction of groundwater flow and gradient beneath the area

can be calculated. Five of these wells would be located in the following approximate locations:

MW-17 – in the parking lot on the east side of the former Al Phillips facility between existing wells MW-1 and MW-7,

MW-18 – in Algonquin Drive and north of Ottawa Drive (360 feet east of the mall),

MW-22 – in Seneca Lane south of Cherokee Lane (600 feet east of the mall),

MW-23 – in Seneca Lane north of Ottawa Drive (750 feet east of the mall), and

MW-24 – in Seneca Circle south of Ottawa Drive (620 feet east of the mall).

Additional Down Gradient Wells:

Installation of additional down gradient monitoring wells further to the east of wells MW-22, MW-23, or MW-24 will be based on specific analytical results from these wells. If analytical results from a well(s) indicate that PCE concentrations are equal to or above the Nevada Drinking Water Standards Maximum Contaminant Level (MCL) of 5.0 µg/L, then an additional monitoring well(s) will be installed (see wells "A" on Figure 3). If PCE is detected at or above the MCL in wells MW-22, MW-23, and/or MW-24, then a well(s) will be installed 300 to 500 feet further east in Ottawa Drive, Seneca Lane, and/or Cherokee Lane. For example, if PCE were detected at or above the MCL in well MW-23 and not in wells MW-22 or MW-24, then only one additional well (MW-25) would be sited 300 to 500 feet further east on Seneca Lane. If PCE is subsequently detected in an additional well(s) then one or more additional wells will be installed 500 to 600 feet further east along one or all of these three roads. Following the example given above, if PCE is detected in additional well MW-25 located on Seneca Lane, then one additional well (MW-26) would be sited 500 to 600 feet further east along Seneca Lane.

Additional Cross-Gradient Wells:

If PCE is not detected at or above the MCL in monitoring wells MW-22, MW-23, and MW-24, then none of the additional down gradient ("A") monitoring wells further to the east will be installed. If this situation occurs, then an additional cross gradient well(s) might be installed (wells "B" on Figure 3) along Algonquin Drive. In this situation, the placement of a well(s) along Algonquin Drive will primarily be based upon the concentration of PCE detected in proposed wells MW-18 and MW-22 through MW-24 and the most recent concentrations detected in the existing wells on the east side of the mall (MW-16 and MW-19 through MW-21). If PCE is detected at or above the MCL in well MW-22, then an additional well would be installed further north along Algonquin Drive. The distance north of well MW-22 would depend on the concentration of PCE detected.

The proposed monitor wells will be constructed of 4-inch diameter PCV casing, will be installed to approximate depth of 30 to 35 feet so that they intersect the groundwater table, and will have 15 to 20 feet of slotted screen extending about 5 feet above the groundwater level.

2.4 SOIL SAMPLING

Soil samples will be collected, at 5-foot vertical intervals, from the boreholes drilled at the former Al Phillips facility in an effort to evaluate the horizontal and vertical extent and concentration of soil volatile organic compound (VOC, specifically PCE) in soil near the source area. Logs of the soils

encountered will be prepared to better characterize the geology beneath the facility. In addition, grab soil samples will be collected from borehole cuttings at the locations were monitoring wells will be installed to characterize the geology near the down gradient edge of the groundwater plume.

2.5 GROUNDWATER SAMPLING

Groundwater samples will be collected from the proposed and existing monitoring wells to evaluate the potential presence and extent of VOC (specifically PCE) in groundwater beneath the former Al Philips facility, The Boulevard Mall, and the residential neighborhood east of the mall.

2.6 WELL SURVEY

The wellheads will be surveyed by a Nevada licensed Land Surveyor to a vertical datum so that water level measurements can be used to establish local groundwater flow direction and gradient.

2.7 SOIL ANALYSIS

Based on our review of the results of soil analysis during prior investigations conducted by Converse, soil samples will be analyzed for VOC (specifically PCE) by EPA method 8260B, as PCE is the target compound of concern at the site.

2.8 GROUNDWATER ANALYSIS

Based on results of groundwater analysis during the prior investigations conducted by Converse, groundwater samples collected from the proposed and existing monitoring wells will be analyzed for VOC by EPA method 8260b. In addition, groundwater samples collected from monitoring wells MW-1, MW-6, MW-9, MW-12, MW-13, MW-19, MW-23 and at leased one of the additional down gradient wells ("A", Figure 3), located near the center of the groundwater plume, will be sampled to evaluate a linear profile of water quality from the source area to the down gradient limit of the plume. These samples will be analyzed for dissolved iron and manganese, chloride, nitrate and sulfate, alkalinity, and total organic carbon (TOC), by U.S. EPA methods SW6020, E300, 310.1, and SW9060/415.1/SM5310C, respectively. Selection of down gradient well(s) ("A") from Algonquin Drive east, for collection of groundwater samples to be analyzed by these methods will be based on analytical results from several down gradient wells. Groundwater samples will be selected so that ample water quality data are available for evaluation of potential future remediation activities. Groundwater samples to be analyzed for dissolved iron and manganese will be filtered and preserved in the laboratory prior to analysis. One or two groundwater samples will be analyzed for microbial characterization.

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3 FIELD METHODS AND PROCEDURES

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 and groundwater sampling procedures that will be followed, outlines the method of well installation, presents the field documentation that will be performed, and describes sample documentation and transport.

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
- String
- Water level, DO, and ORP meters
- PID
- Chain-of-custody forms
- Telephone
- Deionized water
- Sampling sleeve end caps
- Sealing plastic bags
- Clear bailers
- Sample containers
- pH, conductivity, and temperature meter
- First aid kit
- Borehole logs
- Health and safety equipment

The 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 photoionizable gas or vapor, is used to set the sensitivity. URS personnel will keep records of the PID calibrations.

A water quality meter will be used to measure water quality parameters during well purging. The meter will be calibrated using an auto calibration solution. The probe of the meter is immersed in the auto calibration solution and the mode on the instrument changed to auto calibration. The meter will calibrate itself and will be ready to use. URS field personnel will record the meter calibration. URS personnel will also use a dissolved oxygen and oxidation-reduction potential meter during groundwater sampling. URS field personnel will record the meter calibration for these instruments.

3.2 UNDERGROUND UTILITY CLEARANCE

Call Before You Dig will be notified approximately one week prior to performing field activities. Prior to commencement of drilling, a private utility locator will locate and mark underground utilities near the target borehole locations at the on-site and off-site areas.

3.3 SOIL SAMPLING

Soil samples will be collected from boreholes at the former Al Phillips facility at 5-foot vertical intervals beginning at 5-feet bgs and continuing until full depth of the boreholes. A track mounted hollow stem auger drill rig will be used to collect the soil samples. After advancing the augers to a

depth of 5-ft bgs, a sampling drive head, 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 into the ground using an approximate 140-pound drive hammer. The sampling head will then be removed from the borehole, the soil sample 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.

Grab soil samples will be collected from drill cuttings at groundwater monitoring boreholes at 10-foot intervals beginning at 10-feet bgs, because the vadose zone at these locations is not suspected of containing contaminants. These soil samples will be collected for geologic logging and field screening purposes only and will not be containerized or submitted to an analytical laboratory for chemical analysis.

Soil collected in the sampling sleeves, and the grab soil samples, 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, 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 a photo ionization detector (PID). The results of the PID field screening will be recorded on the borehole log.

Sleeved soil samples will be numbered by borehole number, a dash, then the depth the samples was collect at. For example, a soil sample collected from 5-ft 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 form 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 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.

3.4 GROUNDWATER MONITOR WELL INSTALLATION

Four-inch inside diameter, Schedule 40 PVC groundwater monitor wells will be installed in boreholes MW-17, MW-18, MW-22 through MW-24 and possibly additional wells if they are drilled. Boreholes MW-22 through MW-24 will be drilled first, the wells installed, developed, sampled, and the samples analyzed on a rush basis to evaluate if PCE is detected above the MCL of 5 µg/L in groundwater at these locations. If PCE is detected above the MCL in the groundwater collected from one or all of these three proposed monitoring wells, then an additional monitoring

well(s) will be drilled and installed further to the east and/or north as described per Section 2.3 as soon as possible. Following installation of wells MW-22 through MW-24, boreholes MW-17 and MW-18 will be drilled and wells installed. Drilling and installation of wells MW-17 and MW-18 will be performed subsequent to installation of wells MW-22 through MW-24 thus allowing additional time to receive analytical results for groundwater samples from the later wells and make decisions for location of an additional well(s) further down gradient. If PCE is detected at or above the MCL in an additional down gradient monitoring well(s) installed east or north of wells MW-22 through MW-24, then an additional well(s) will be installed further east and/or north as described per Section 2.3. This process will allow flexibility in the WP. If PCE is not detected above the MCL in monitoring wells MW-22 through MW-24, then additional monitoring wells further east or north will not be drilled or installed. If additional monitoring wells are not installed east and/or north of wells MW-22 through MW-24 because PCE is not detected at or above the MCL, then an additional well(s)might be installed along Algonquin Drive closer to the monitoring wells on the east side of the mall property as described per Section 2.3.

A truck mounted hollow stem auger drill rig will be used to install the monitoring wells. Boreholes will be advanced or drilled to a target depth ranging from 30 to 35-feet bgs. A 15 to 20-foot section of 0.02 inch slotted well screen and solid well casing will be screwed together and lowered into the borehole through the hollow stem augers. Monterey No. 2 (or equivalent) filter pack sand will be placed inside the drill augers and the drill augers will be slowly pulled back allowing the sand to fill the annular space between the well screen and the alluvium. This process will continue until filter pack sand is placed from the bottom of the borehole to three feet above the well screen. Approximately 1-foot of bentonite pellets or slurry will be place on top of the filter pack sand. Water will be added to the borehole to hydrate the bentonite pellets. A neat cement grout will be placed on top of the bentonite seal to within 2-feet bgs. The depth of well materials will depend on the depth groundwater is encountered and will be measured using a tape to make sure they are placed at the correct depth. Boreholes that remain open after they have been advanced will be covered with a metal plate and traffic cone until backfilled. The monitor wells will be finished at the surface using a traffic-rated well vault surrounded by concrete from 2-feet bgs to the ground surface.

Excess soil from well placement will be placed in 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.

3.5 WELL DEVELOPMENT

Development of the proposed wells will be performed a day or two after placement of the wells. This will give the well materials time to set up so that the wells are not damaged during development. The wells will be developed to remove suspended sediment and prepare for groundwater sampling. The screened section of the wells will be surged using a surge block. After surging, a purge pump and/or bailer will be lowered into the wells and groundwater will be extracted until a minimum of three well volumes have been removed, or until obtaining a reading of 2 Nephelometric Turbidity Units (NTU) on the turbidity meter, or until the well goes dry. URS field personnel will monitor water quality parameters during well development. URS will periodically monitor and record temperature, pH, specific conductance, turbidity, DO, and ORP of the

development water. The surge block, pump and/or bailer will be decontaminated before use and after each well is purged. Development water and decontamination water will be placed in DOT approved 55-gallon drums. URS field personnel will label the drums identifying them as well development water and will include the date, well number, firm, and signature of the URS personnel.

3.6 GROUNDWATER SAMPLING

Field water quality meters will be calibrated according to manufacturer's specifications and guidelines before use. A clean electronic water level sounder, accurate to the nearest +/- 0.01 feet, will be used to measure depth to water in each well. The electronic sounder will lowered down the well casing to the top of the water column; the graduated markings on the probe tape are used to measure the depth to water from the surveyed point on the rim of the well casing. Typically, the measuring device emits a constant tone when the probe is submerged in standing water and most electronic water level sounders have a visual indicator that turns on when the probe encounters water. Total well depths will be measured by lowering the weighted probe to the bottom of the well and recording the depth to the nearest 0.1 feet.

Monitor wells will be purged prior to sampling. A minimum of three casing volumes of water will be purged using a submersible pump and/or a bailer. The pump and/or bailer will be decontaminated before and after use in each well. Casing volumes will be calculated based on total well depth, standing water level, and casing diameter. Water quality parameters will be monitored during well purging to evaluate when stable values have been attained. Stable temperature, pH and specific conductance measurements indicate a representative groundwater sample is obtainable. Water quality is considered stable if for three consecutive readings the temperature difference is no more than 2° C, the pH varies by no more than 0.2 pH units, and the specific conductance readings are within 10% of the average value. If water quality parameters are not stable after five casing volumes or 30 minutes, purging will cease, which will be noted in the logbook and groundwater samples will be collected. The depth to water, water quality measurements and purge volumes will be entered in the purge log. If a well dewaters during purging and three casing volumes are not purged, that well will be allowed to recharge up to 80% of the static water column and dewatered once more. After water levels have recharged to 80% of the static water column, groundwater samples will be collected.

Purge water and decontamination water will be placed in DOT approved 55 gallon drums. URS field personnel will label the drums identifying them as well purge water and will include the date, well number, firm, and signature of the URS personnel.

Monitoring wells will be sampled using a clean disposable bailer. At each sampling location, all bottles designated for a particular analysis will be filled sequentially before bottles designated for the next analysis are filled (e.g., TPH). If a duplicate sample is to be collected at this location, all bottles designated for a particular analysis for both sample designations will be filled sequentially before bottles for another analysis are filled. Groundwater samples will be transferred from the disposable bailer directly into the appropriate sample containers with preservative, if required, filtered if appropriate, and processed for shipment to the laboratory. Vials preserved with Hydrochloric Acid (HCl) for VOC analysis will be filled first to minimize the effect of aeration on the water sample.

The pre-preserved vials will be filled directly from the bailer and capped. The vial will be inverted and checked for air bubbles to make sure there is zero headspace. If a bubble appears, the vial will be discarded and a new sample will be collected. The type, size, and number of groundwater containers, along with the preservative (if applicable), and analytical methods is discussed in Section 4.0 and listed in Table 1.

Groundwater samples will be numbered by well number. For example, a groundwater sample collected from well MW-5 would be labeled MW-5. A groundwater sample will be labeled with the date and time the sample was collected, the sample and well number, and name for the firm and signature of the individual collecting the sample. The sample containers will be sealed, labeled, placed in a self-sealing plastic bag, and stored in a cooler with ice. A chain-of-custody seal will be placed on the lid. A chain-of-custody form will be filled out with all the appropriate sample information and it will accompany the samples to the analytical laboratory. Field meter probes will be decontaminated before and after use at each well. Purge water and decontamination water will be placed in DOT approved 55 gallon drums. URS field personnel will label the drums identifying them as well purge water and will include the date, well number, firm, and signature of the URS personnel.

3.7 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 and groundwater 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 used, including pumps and augers, will be decontaminated by the following steps.

1. Wash with non-phosphate detergent
2. Tap water rinse
3. Deionized/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 as well purge water and will include the date, well number, firm, and signature of the URS personnel.

3.8 FIELD DOCUMENTATION

Field activities will be documented in writing and photographs taken. URS personnel will complete field logs including borehole logs, well construction logs, development logs, and sample purge logs. These logs will include all the information discussed in this section. In addition, a daily field log will be kept to record field activities. 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.

3.9 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 or lid 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.

3.10 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. The work area will be swept and sprayed down to remove soil/material, depressions in the asphalt made by the drill rig will be repaired, and spare materials will be removed.

3.11 MONITOR WELLHEAD SURVEY

The wellheads of the proposed monitoring wells will be surveyed by a Nevada licensed Land Surveyor to a vertical datum so that water level measurements can be used to establish local groundwater flow direction and gradient. URS field personnel will measure all the sampling locations and groundwater monitor wells with respect to at least two permanent features.

4 SAMPLE CONTAINERS, PRESERVATION, AND STORAGE

Soil sampling sleeves will be provided by the driller. The laboratory will supply water sample containers. These sample containers are pre-cleaned and will not be rinsed prior to sample collection. Preservatives placed in the water sampling containers (if required) will be added by the contracted laboratory prior to sample collection. Table 1, below, lists the type of sample, type, number, and size of container, chemical preservative, analytical method, and holding times for soil and groundwater samples.

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

Sample Type	Type and Number of Container	Size of Container	Chemical Preservation	EPA Analytical Method	Holding Time
Soil	Stainless steel sleeve	Minimum 6 inch length	None	VOC by SW 8260B (1)	14 days
Groundwater	Clear glass	Three 40 milliliter VOA vials	HCl	VOC by SW 8260B (2)	14 days
	Amber glass	500 milliliter	H_2SO_4	TOC by SW 9060/415.1/ SM-5310C	7 days
	Clear plastic	1 liter	None	Dissolved Iron and Manganese by SW 6020 (filtered and preserved by laboratory)	6 months
	Clear plastic	1 liter	None	Chloride, nitrate and sulfate by 300.0/9056	28 days, 48 hours, 28 days, respectively
	Clear plastic	1 liter (3)	None	Alkalinity by 310.1	14 days

Notes: (1) Two duplicate soil sample will be collected for analysis of VOC.
(2) Two duplicate groundwater sample will be collected for analysis of VOC each sampling event.
(3) Same sample bottle that chloride, nitrate and sulfate sample is collected in.
VOA = volatile organic analysis, HCl = hydrochloric acid, NHO_3 = nitric acid.

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.

4.2 GROUNDWATER SAMPLES

Groundwater samples will be collected in four different types of containers based on the selected analysis. Water samples to be analyzed for VOCs will be collected in three 40-milliliter clear glass VOA vials that are pre-preserved with hydrochloric acid. Three VOA vials will be collected in case one breaks during transport. The VOA vials will be filled so that there is no headspace. Water samples to be analyzed for TOC will be collected in 500-millileter amber glass bottles that are pre-preserved with sulfuric acid. Two bottles will be collected from each monitor well just in case one

breaks during transport. Groundwater samples to be analyzed for dissolved iron and manganese will be collected in one liter clear plastic bottles that contain no preservative. These samples will be filtered and preserved with nitric acid by the laboratory prior to analysis. Groundwater samples to be analyzed for chloride, nitrate, sulfate, and alkalinity will be collected in one liter clear plastic bottles that contain no preservative. The groundwater samples will be placed in sealed plastic bags, and stored in a cooler with ice to chill the sample to 4°C after collection.

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 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 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/MSD pair. MS/MSD precision and accuracy information, supplemented with field blank results, are used to assess the effect of the matrix and field conditions on analytical data.

5.1 DUPLICATE SAMPLES

The SOW includes collection and analysis of two duplicate soil samples during the assessment at the former Al Phillips facility, and collection and analysis of two duplicate groundwater sample from groundwater monitor wells during each groundwater sampling event during 2004. These soil and groundwater samples will be analyzed for VOC.

5.2 RINSATE/EQUIPMENT BLANK

Two equipment blanks will be collected during the soil assessment at the former Al Phillips facility as the sample drive heads will be cleaned and reused. Rinsate and equipment blanks will not be collected during the proposed groundwater assessment because groundwater samples will be collected using disposable bailers.

5.3 TRIP BLANKS

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

6 DISPOSAL OF RESIDUAL MATERIAL

The EPA's National Contingency Plan (NCP) requires that management of 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 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. In addition, purge water from development of monitoring wells and soil from boreholes will be generated. These three 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 and groundwater samples 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.

7 SITE ASSESSMENT AND QUARTERLY REPORTS

After completion of the soil assessment, groundwater sampling, receipt of the final laboratory data, and disposal of IDW, URS will prepare and submit a Site Assessment Report. This report will summarize the results of previous reports prepared by Converse, the fieldwork that was performed during this investigation, and investigation results. The report will include field data, boring and well logs, tables, figures, cross sections, laboratory results, and photos. Analytical results will be tabulated and compared against applicable regulatory standards. The report shall include a scaled site map depicting monitoring well and soil borehole locations. In addition, quarterly groundwater reports will be prepared and submitted to NDEP.

8 QUALIFICATIONS AND SIGNATURES

This WP 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: Reviewed by:

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

Albert Ridley, C.E.M.
Senior Technical Reviewer

8.1 CERTIFIED ENVIRONMENTAL MANAGER STATEMENT

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

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, 2005)

9 REFERENCES

Converse Consultants, 2000. Limited Asbestos Survey, Limited Lead-Based Paint Survey and Limited Phase II Subsurface Assessment, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated August 22, 2000.

Converse Consultants, 2000. Offsite Investigation, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated November 28, 2000.

Converse Consultants, 2001. A through K Data Research and Report, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated August 22, 2002.

Converse Consultants, 2002. Work Plan – Additional Site Investigation, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated January 11, 2002.

Converse Consultants, 2002. Additional Soil and Groundwater Investigation, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated November 13, 2002.

Converse Consultants, 2002. Additional Soil and Groundwater Investigation, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated November 13, 2002.

Converse Consultants, 2003. Additional Soil and Groundwater Investigation, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated May 16, 2003.

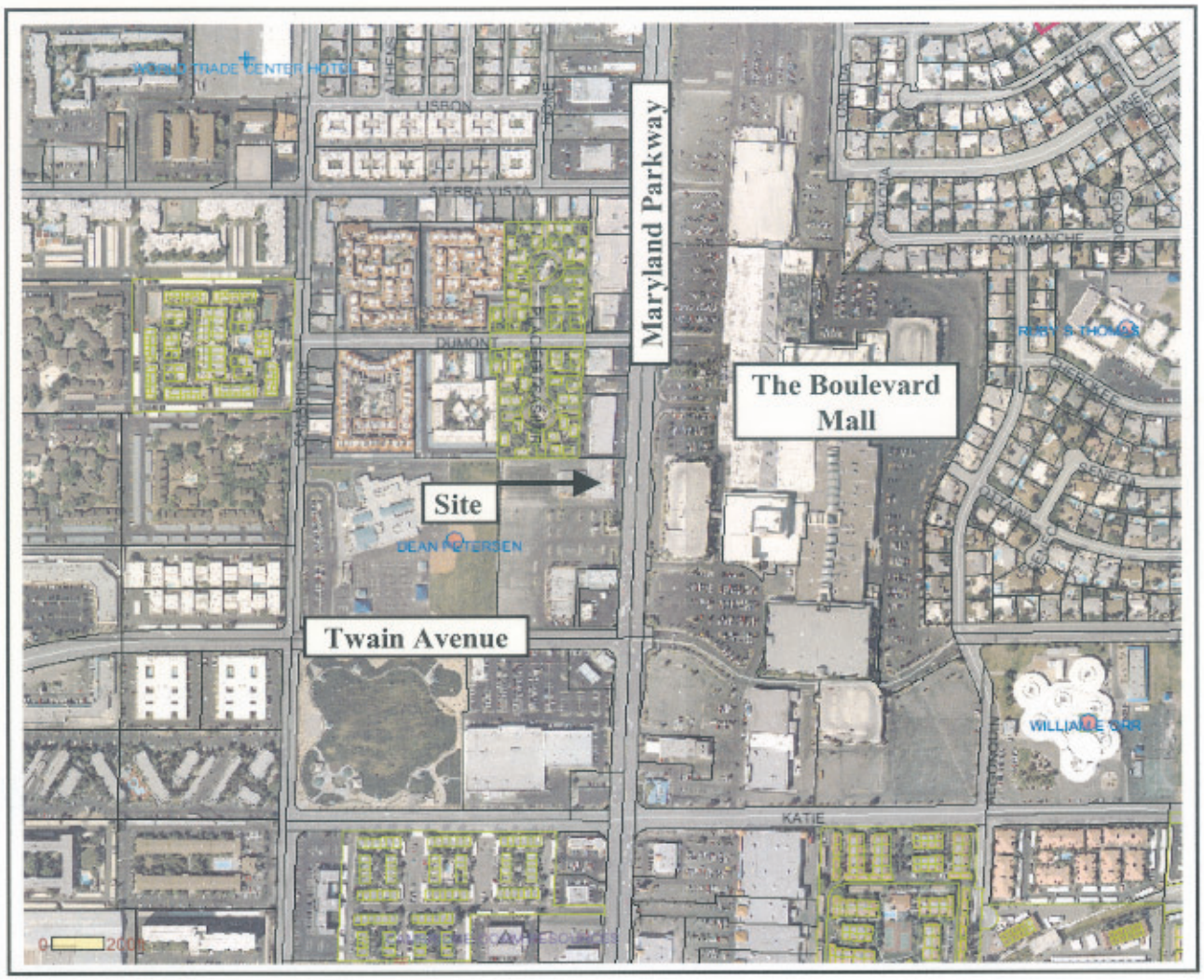
Converse Consultants, 2003. Preliminary Corrective Action Plan (CAP), Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated June 7, 2003.

Converse Consultants, 2003. Work Plan – Additional Site Activities, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated September 12, 2003.

Converse Consultants, 2003. Groundwater Monitoring Report – 3rd Quarter 2003, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated October 31, 2003.

Converse Consultants, 2004. Well Installation/Slug Testing/Groundwater Monitoring Report – 4th Quarter 2003 and 1st Quarter 2004, Maryland Square Shopping Center, 3661 South Maryland Parkway, Las Vegas, Nevada, dated March 26, 2004.

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



Source: Clark County Assessors Web Site
Scale Shown Above

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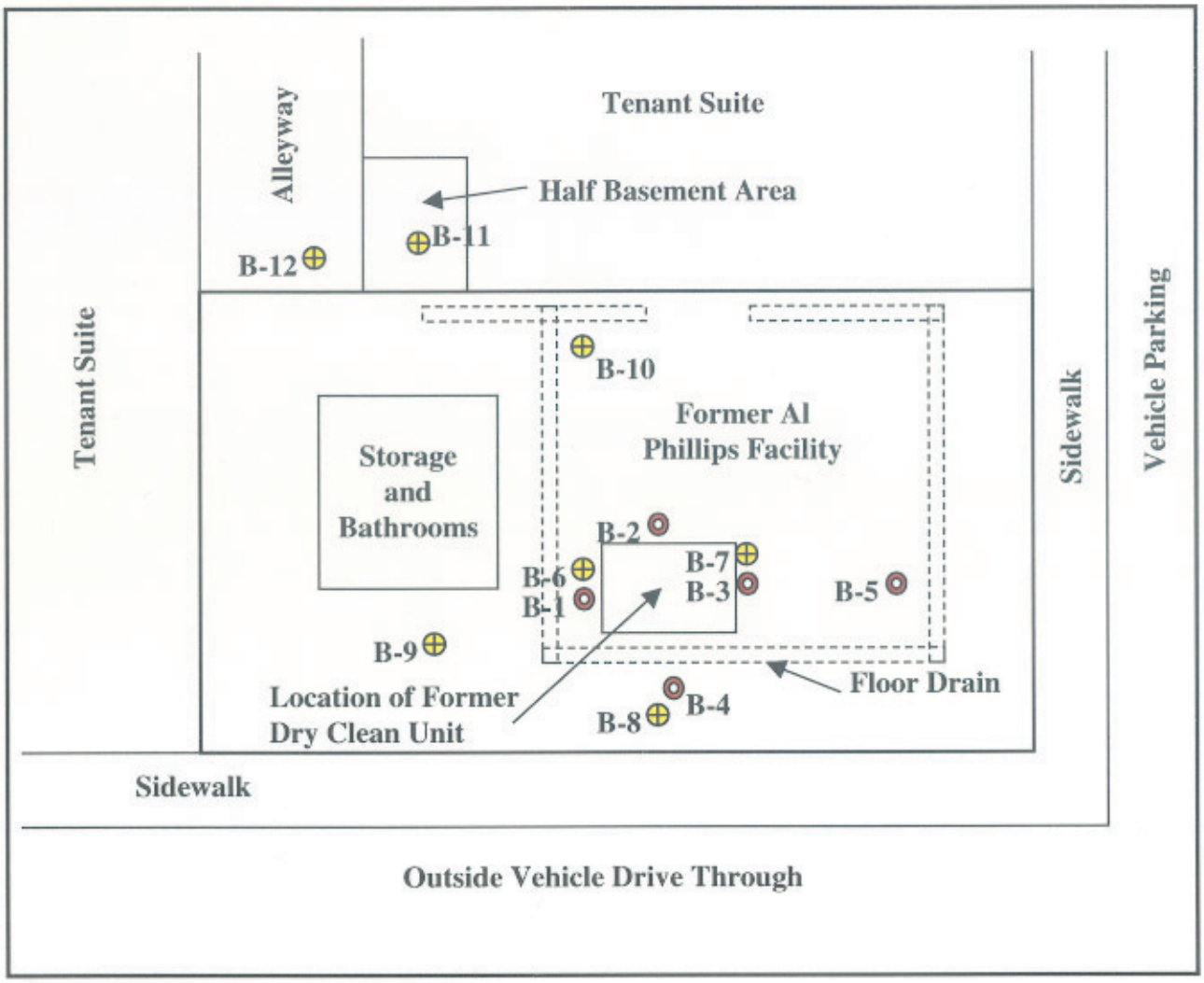
SITE LOCATION MAP

Al Phillips The Cleaners
Work Plan – Proposed Subsurface Investigation
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

URS

September 2004
Job No. 26698724

Maryland Square Fig 1 9-10-04.ppt FIGURE 1



Source: Converse Consultants Drawing 2, Additional Soil and Groundwater Investigation report, dated November 13, 2002. Not to Scale

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Legend:

⊕ Approximate Location of Proposed Al Phillips Soil Boreholes to be drilled by URS.

◎ Approximate Location of Boreholes Drilled by Converse (Nov. 2002).

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SITE PLAN SHOWING EXISTING AND PROPOSED BOREHOLE LOCATIONS

Al Phillips The Cleaners
Work Plan – Proposed Subsurface Investigation
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

September 2004
Job No. 26698724

Maryland Square Fig 2 9-10-04.ppt FIGURE 2

3/26/04
MW-19 = 710 ppb
20 = 120 ppb
21 = 25 ppb

MW-16 = ND
MW-11 =

B2 must go in B1 if MW-22 ≥ 5
B3 if MW-18 ≥ 5

Conditional Concurrence
label maps & attach to letter

A2 if MW-23 ≥ 5
A3 if MW-24 ≥ 5
A4 if A3 ≥ 5

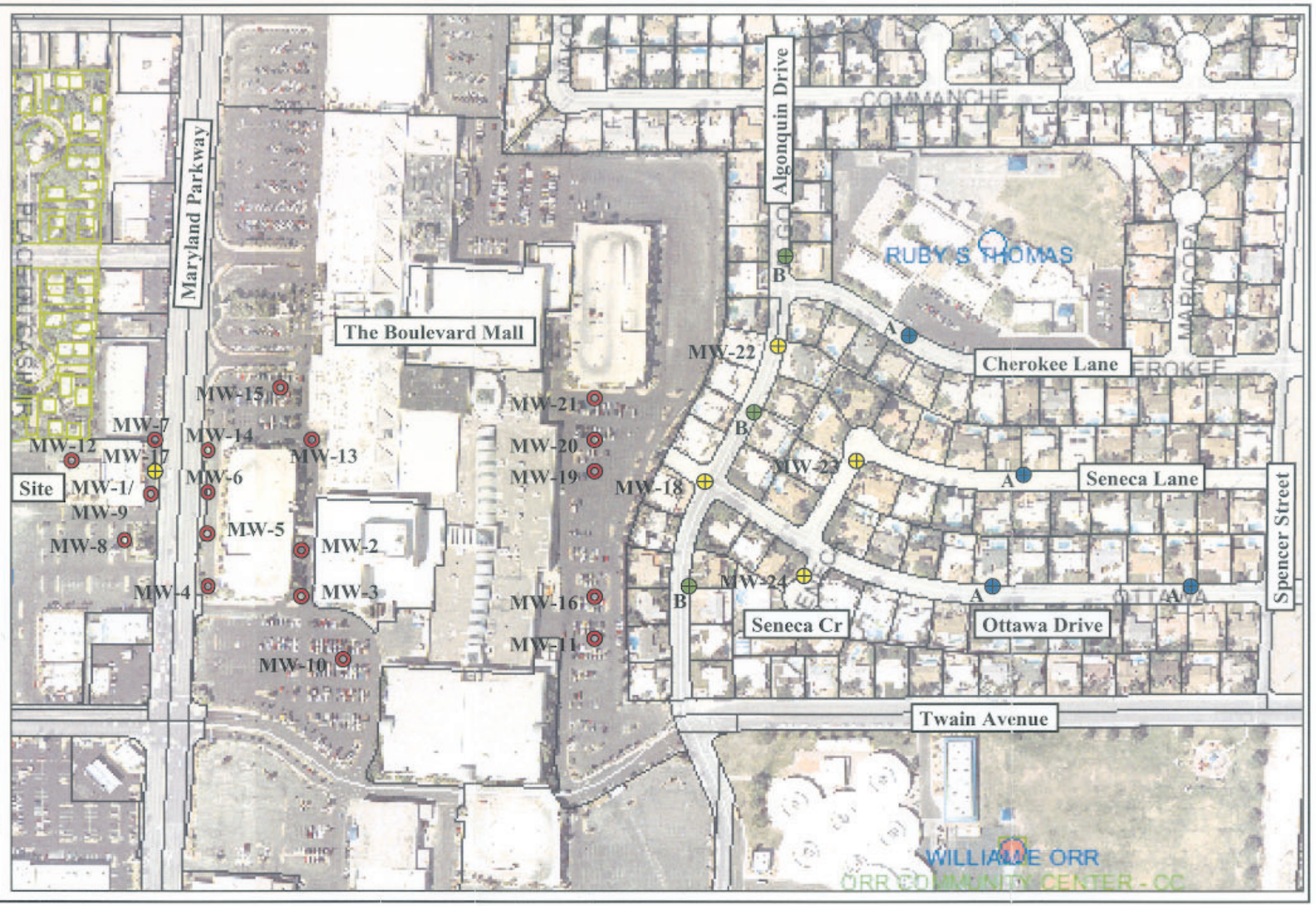
B1 A1
B2 A2
B3 A3 A4

Wells Installed by Converse	Date Installed	Approximate Screen Depth (feet)
MW-1	Aug 00	10-30
MW-11	Sept 02	13.5-33.5

Proposed Monitoring Wells

Well Numbers	Proposed Depth	Proposed Screen Length
MW-17	30-35	15-20
MW-18	30-35	15-20
MW-22	30-35	15-20
MW-23	30-35	15-20
MW-24	30-35	15-20

Additional down gradient wells (blue dots) and/or cross gradient wells (green dots) if installed will be similar in depth and screen length as above.



Source: Clark County Assessors Web Site
Not to Particular Scale

Legend:

- Approximate Location of Proposed Al Phillips Monitoring Well to be Installed by URS.
- A — Approximate Location of Additional Down Gradient Monitoring Well that might be Installed by URS.
- B — Approximate Location of Additional Cross Gradient Monitoring Well that might be Installed by URS.
- Approximate Location of Monitoring Well Installed by Converse (2000-2003).

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SITE PLAN SHOWING EXISTING AND PROPOSED MONITORING WELL LOCATIONS

Al Phillips The Cleaners
Work Plan – Proposed Subsurface Investigation
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

September 2004
Job No. 26698724
Maryland Square Fig 3 9-10-04.ppt

FIGURE 3