Environmental Engineering, Consulting & Remediation, Inc.

September 8, 2016

Mr. Scott Reisch, Partner
Hogan Lovells US LLP
One Tabor Center, Suite 1500
1200 Seventeenth Street
Denver, CO 80202

Mr. William F. Tarantino, Partner
Morrison & Foerster LLP
425 Market Street
San Francisco, CA 94105

Subject: Workplan to Perform Batch Pumping
Lake Tahoe Laundry Works
1024 Lake Tahoe Boulevard
South Lake Tahoe, California

Dear Mssrs. Reisch and Tarantino:

E_2C Remediation (E_2C) is pleased to present this workplan for the Lake Tahoe Laundry Works Site in South Lake Tahoe, California (Site). This workplan was prepared to comply to a request from the Lahontan Regional Water Quality Control Board.

We look forward to working with you. Please contact Aiguo Xu or Philip Goalwin at 916-782-8700, if you have any questions or if any further information is needed.

Respectfully Submitted,
E_2C Remediation

Philip Goalwin, P.G. #4779
Principal Geologist

PROFESSIONAL GEOLOGIST
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cc: Ms. Lisa Dernbach, C.H.G.
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EVALUATION OF POLISHING REMEDIATION OPTIONS
AND
WORKPLAN TO PERFORM
BATCH PUMPING

Lake Tahoe Laundry Works
1024 Lake Tahoe Boulevard
South Lake Tahoe, California

September 8, 2016
Project Number: 1950BK27

Prepared For:

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1.0 INTRODUCTION

Extremely low mass removal rates indicate that the operation of the soil vapor extraction and groundwater air sparge system (SVE/GASS) at the site appears to be approaching its limit of effectiveness. The persistent detection of low-moderate dissolved phase PCE concentrations at MW-1S and MW-5S warrants consideration of polishing remediation options in combination with ongoing operation of the SVE/GASS. In letter dated May 24, 2016, The Lahontan Regional Water Quality Control Board (LRWQCB) encouraged consideration of alternative technologies to “polish” or achieve final cleanup of residual contaminants. In the 2016 First Quarter Groundwater Monitoring Report and Current Site Remediation Status Report, dated May 27, 2016, it was recommended that alternative options such in-situ thermal treatment and in-situ chemical oxidation be evaluated to polish or achieve final cleanup at the site. This work plan has been prepared for review and approval by LRWQCB before its implementation.

1.1 Site Description

The Site is located approximately 9,000 feet south of Lake Tahoe in the City of South Lake Tahoe, El Dorado County (see Figure 1). The Site is situated in the northwest corner of the South Y Shopping Center, along Lake Tahoe Boulevard between U.S. Highway 50 and Tata Lane and is cross-corner from the dead-end intersection of Glorene Avenue with Lake Tahoe Boulevard (see Figure 2).

1.2 Rationale for Evaluation of Polishing Remediation Options

As of August 2016, site conditions are as follows:

1) Extremely low mass removal rates indicate that the operation of the air sparge and vapor extraction system appears to be approaching its limit of effective operation; and
2) The persistent detection of low-moderate dissolved phase PCE concentrations at LW-MW-1S and LW-MW-5S warrants consideration of polishing remediation options in combination with ongoing operation of the SVE/GASS.

2.0 EVALUATION OF POLISHING REMEDIATION OPTIONS

This Section compares three alternative polishing remediation options for the final cleanup of residual contaminants at the site. The three alternative remediation options are:

1) Batch pumping at wells with significant PCE concentration fluctuations;
2) In-Situ Thermal Treatment; and
3) In-Situ Chemical Oxidation

2.1 Batch Pumping

Batch pumping using a vacuum trailer is a relatively non-intrusive method for removal of vapor-phase and dissolved-phase contaminants of concern. Batch pumping with vacuum consists of extracting groundwater with dissolved contaminants and vapors from the smear zone while lowering the water table in an existing well. A vacuum trailer is used to accomplish this. In general, a vacuum is applied to the selected well by extending a hose from the vacuum trailer to the well. The hose is fitted with a stinger, which is lowered through a vacuum-tight boot, or grommet, slowly into the impacted well until the stinger is primarily below the air-water interface. The applied vacuum then removes vapors from the interface zone and extracts impacted groundwater. Water removal rate depends on the rate of lateral groundwater recharge. If recharge is relative slow, only a limited volume of impacted water can be extracted.

Batch Pumping Advantages: The advantages of batch pumping using a vacuum trailer are:

- Minimal disruption of business;
- Removes contaminants;
- Discharge of treated groundwater to land is allowable under a General Permit;
- Does not require the immediate installation of a permanent remediation system (including wells and infrastructure) that would require maintenance, as existing site monitoring wells can be used for the batch pumping operations;
- Batch pumping using a vacuum trailer would require no utility connections;
- Reduces the toxicity, volume and mobility of contaminants beneath the affected area and does not entail relocating contamination. The extracted water is treated to non-detect concentrations with liquid-phase activated carbon prior to being discharged to land; and
- Is cost-effective for short-term remedial action as no additional infrastructure is needed.

Batch Pumping Disadvantages:

- Extracted water needs off-site disposal or a General Waste Discharge Permit for on-site discharge; and
- Multiple events may be necessary at each monitoring well.

2.2 In-Situ Thermal Treatment

In-situ thermal treatment methods (ISTT) move or “mobilize” contaminants in soil and groundwater using heat. The contaminants move through soil and groundwater toward wells where they are captured and routed via pipes to the ground surface to be treated using other cleanup methods before discharge to the atmosphere. Some contaminants may be destroyed underground during the heating process. ISTT is described as “in situ” because the heat is applied underground directly to the contaminated area. ISTT can be particularly useful for chemicals present in the form of “non-aqueous phase liquids” or “NAPLs,” which do not dissolve readily in groundwater and can be a source of groundwater contamination for a relatively long time if not treated. ISTT can also be effective in “tight soils” where other remedial methods are less effective. Examples of NAPLs include solvents, petroleum, and creosote (a wood preservative).

In-situ thermal treatment methods heat contaminated soil, and sometimes nearby groundwater, to very high temperatures. The heat vaporizes (evaporates)/volatilizes the chemicals and groundwater converting them into vapors/gases. These vapors/gases can move more easily through soil. The heating process can make it easier to remove NAPLs from both soil and groundwater. High temperatures also can destroy some chemicals in the area being heated.

In situ thermal methods generate heat in different ways:

Electrical resistance heating (ERH) delivers an electrical current between metal rods called “electrodes” installed underground. The heat generated as movement of the current meets resistance from soil converts groundwater and water in soil into steam, vaporizing contaminants

Steam enhanced extraction (SEE) injects steam underground by pumping it through wells drilled in the contaminated area. The steam heats the area and evaporates contaminants.

Thermal conduction heating (TCH) uses heaters placed in underground steel pipes. TCH can heat the contaminated area hot enough to destroy some chemicals.

In-Situ Thermal Treatment Advantages:

- An effective in-situ method for cleaning up NAPLs;
- Advantageous for silty or clayey soil where other cleanup methods do not perform well; and
- Applied to situations where access is very limited, such as at large depth below ground surface or beneath buildings.

In-Situ Thermal Treatment Disadvantages:

- Very high initial infrastructure cost for the heating element installation;
- Heating of the sub-surface can damage underground utilities and remediation infrastructure;
- Disruption to normal business operation and may cause indoor air concerns;
- Need large power sources/fuel sources and power/fuel consumption. The electrical power requirements are not available from the local utility purveyor at this site;
- Not economical for large area; and
- Not cost effective for low concentration conditions.

2.3 In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) methods involve delivery of oxidants to impacted media (soil and/or groundwater) to chemically oxidize or destroy harmful contaminants into non-harmful substances.

Two oxidants have been evaluated for the proposed ISCO pilot test. They are PersulfOx and potassium permanganate. PersulfOx (manufactured by Regenesis) is a catalyzed formulation of sodium persulfate ($Na_2S_2O_8$) designed to oxidize organic contaminants in groundwater and soil. In addition to sodium persulfate, this product contains a patented silica and silicate-based catalyst to optimize oxidative destruction of contaminants. Consultation with the product provider indicated that the persistence time is relatively short (1-3 weeks) and the product is not highly effective with low concentrations. As a result of the short persistence time, PersulfOx requires a relatively large mass ratio of chemical to contaminants.

Potassium permanganate is widely used in water purification and treatment applications. As the permanganate reaction time is relatively slower than other oxidants, it is safer to use and application requires reasonable safety precautions.

The persistence of the oxidant in the subsurface is an important factor in preferring potassium permanganate since this affects the contact time for advective and diffusive transport and ultimately the delivery of oxidant to targeted areas/zones in the subsurface. Permanganate persists for long periods of time (up to > 3 months), and diffusion into low-permeability materials and greater transport distances through porous media are possible. The site aquifer material is predominantly silty sand and groundwater flow gradient is moderate (from 0.01 ~ 0.06). In addition, potassium permanganate has excellent amenability for destruction of chlorinated ethenes, which are the residual contaminants at the site. The chemical reactions for PCE, TCE, DCE and vinyl chloride for the pH range of 3.5 to 12 are:

$$4\ KMnO_4 + 3\ C_2Cl_4 + 4\ H_2O \Rightarrow 6\ CO_2 + 4\ MnO_2 + 4\ K^+ + 8\ H^+ + 12\ Cl^- \quad (1)$$

$$2\ KMnO_4 + C_2HCl_3 \Rightarrow 2\ CO_2 + 2\ MnO_2 + 2\ K^+ + H^+ + 3\ Cl^- \quad (2)$$

$$8\ KMnO_4 + 3\ C_2H_2Cl_2 \Rightarrow 6\ CO_2 + 8\ MnO_2 + 8\ K^+ + 2\ OH^- + 6\ Cl^- + 2\ H_2O \quad (3)$$

$$10\ KMnO4 + 3\ C_2H_3Cl \Rightarrow 6\ CO_2 + 10\ MnO_2 + 10\ K^+ + 7\ OH^- + 3\ Cl^- + H_2O \quad (4)$$

From the above equations, it can been seen that the primary by-products are carbolic acid and MnO_2. MnO_2 is a solid precipitate in the pH range of 3.5 to 12.

With consideration of ease of application, persistence time, worker's safety, as well as limited by-product production of metals, potassium permanganate is considered as the more preferred oxidant, if ISCO is chosen.

Oxidant will be introduced by a one-time application through temporary borings using an injection tool. The injection will be conducted at elevated pressure to assure oxidant delivery. The temporary injection locations and injection intervals can be chosen to best deliver the oxidant to the targeted groundwater plume and/or possible residual contaminant in soil based on historical soil and groundwater analytical data.

In-Situ Chemical Oxidation Advantages:

- Fast treatment (weeks to months);
- Injections can be targeted to treat volatile organic compounds (VOC) sources above and below the water table;
- Temporary facilities;
- Effectively treats towards low-very low concentrations (non-detectable levels);
- Effective on some hard to treat compounds; and
- Low total life cycle costs

In-Situ Chemical Oxidation Disadvantages:

- Fast treatment requires a large capital outlay;
- Multiple injections may be required;
- Involves handling strong oxidants and may require special safety measures;
- Possible side effects, such as generation of metals; and
- May have delivery limitations

2.4 Selection of Remedial Option

The Lake Tahoe Laundry Works site has been remediated by SVE/GASS since 2010. Groundwater contamination of chlorinated solvents has been remediated to relatively low concentrations. Shallow soil vapor concentrations have declined to below the Environmental Screening Levels (ESLs) for commercial/industrial land use. Nine (9) shallow groundwater monitoring wells are in place for active quarterly monitoring. All site wells except two monitoring wells have already achieved concentrations below the maximum contaminant level for PCE. The estimated residual dissolved phase mass is less than 0.1 pounds and the estimated residual contaminant mass in shallow soil vapor is less than 0.01 pounds. In summary, the residual mass beneath the site is a very small amount, and is distributed across a fairly wide area with limited concentrated areas. The selection of a remedial option should be based on the current site condition and the applicability to the site.

Batch pumping with subsequent treatment and infiltration at the LTLW site or recycling at properly licensed facility appears to be the most feasible option because it is easy to implement and is cost competitive with ISTT and ISCO. The site has numerous horizontal and vertical vapor wells which can serve as an infiltration gallery for on-site discharge of the extracted water after treatment with liquid phase activated carbon vessels. The knock-out transfer pump and on-site water storage tank for SVE system can also be utilized for water storage and transfer of water for on-site discharge.

In-situ thermal treatment methods would work for the site by expediting the volatilization of contaminants, however, a completely new set of heating infrastructure would need to be installed. The site power supply is inadequate to accommodate the extreme power supply requirements. There are also concerns that heating the sub-surface would damage site underground utility infrastructure including the sub-surface remediation infrastructure. In addition, there are concerns of mobilizing soil vapors into the occupied buildings in the shopping center. Finally, the thermal treatment method is ill-suited to site conditions due to low distributed concentrations and small amount of residual contaminant mass.

In-situ chemical oxidation appears to be an appealing option for this site. Chemical oxidants are readily available and can be delivered via temporary injection borings or existing wells. In addition, chemical oxidant demand is low due to the small residual contaminant mass and low organic content of the subsurface soils. Therefore, by choosing a suitable oxidant, ISCO may be an alternative option. ISCO is retained as a supplemental technology if augmentation beyond batch pumping is required

In summary, batch pumping is the preferred polishing option; ISTT is ill-suited to the site conditions; and ISCO is reserved as an option for further polishing needs, if they arise.

3.0 BATCH PUMPING WORKPLAN

This Section describes the methods and procedures that will be used to conduct batch pumping (polishing remedial action) at LW-MW-1S, LW-MW-5S, LW-MW-9S and LW-MW-11S.

3.1 Batch Pumping Methods and Procedures

E_2C proposes to perform batch pumping using a vacuum trailer (VacStar). Observations made during batch pumping will supply data regarding radii of influence for vapor extraction and groundwater extraction, both key elements in evaluation of the polishing remedial action. The method removes a combination of vapor and water, even though the primary function is to extract contaminated groundwater. The extracted soil vapor will be directly discharged to the atmosphere and the contaminant discharge will be de minimis (less than 2 lbs/day). The El Dorado County Air Quality Management District Rule 501.1.N exempts soil and groundwater remediation operations that emit less than 2 pounds of pollutants in any 24 hour period without the benefit of air pollution control devices.

3.1.1 Batch Pumping Operation Description

Batch pumping will be conducted at well LW-MW-1S, LW-MW-5S, LW-MW-9S, and/or LW-MW-11S for up to 8 hours per event, one event per week for a 2-month period.

Data collected during batch pumping will be used to evaluate trends (chemical and groundwater elevation). It is expected that batch pumping using a vacuum trailer on wells LW-MW-1S, LW-MW-5S, LW-MW-9S, and LW-MW-11S will draw impacted water from the area around the pumping wells and enhance volatilization of residual PCE.

3.1.2 Batch Pumping Monitoring

Prior to the start of batch pumping operations, depths to water will be measured in all shallow monitoring wells (LW-MW-1S, LW-MW-2S, LW-MW-5S, LW-MW-9S, and LW-10SR through LW-MW-13S). During each event, field data will be collected on an hourly basis, as summarized below:

- Applied vacuum (expected to be approximately above 18 inches of mercury) at the monitoring well where batch pumping is occurring;
- Induced vacuums at monitoring wells and vapor sampling points will be used to observe the effects of the applied vacuum;
- Influent vapor flow rate at the monitoring well where batch pumping is occurring;
- VOC concentration of the influent vapor stream to the VacStar using a Photo Ionization Detector (PID);

- Groundwater level measurements in the monitoring well where batch pumping is occurring and monitoring wells that are being used for observational purposes; and
- Groundwater removal rate.

These data will allow for calculation of the following parameters:

- Radius of influence (Vapor phase)
- Radius of influence (groundwater phase); and
- Mass removal (vapor and groundwater phases).

3.1.3 Groundwater Monitoring

Prior to initial batch pumping operations and upon completion of the batch pumping operation period, groundwater samples will be collected from wells LW-MW-1S, LW-MW-5S, LW-MW-9 and LW-MW-11 used for batch pumping. During the batch pumping operation period, a minimum of two additional sampling events will be performed to monitor the effectiveness and progress of the batch pumping operation.

The pre- and post-batch pumping sampling will be attempted to coincide with regular quarterly sampling event, if feasible. On the day after completion of each batch pumping event, depths to groundwater will be measured at all wells. The first progress sampling event will occur no longer than three weeks from the start of batch pumping and the second progress sampling event will occur no longer than three weeks from the first progress sampling event.

Groundwater samples will be transported to and chemically analyzed at ProVera Laboratories, Inc. (ProVera), of Roseville, California, State of California-certified analytical laboratory (DHS ELAP Certification #2606), for VOCs including PCE using EPA Method 8260b.

3.1.4 Extracted Water Discharge

Water extracted during batch pumping operations will be stored on site in a storage tank. The stored water will be treated with liquid-phase granular activated carbon before on-site discharge under an appropriate General Waste Discharge Permit or off-site recycling at a properly licensed facility. For on-site discharge, the treated water will be fed either by gravity or by a transfer pump to the existing soil vapor extraction wells (Figure 4) for discharge through existing plumbing with control values at the on-site equipment compound. Samples of the treated water will be collected and analyzed to comply with the Waste Discharge Permit requirements before discharge begins. The pre-batch pumping water quality analytical data will be used as the influent data for liquid GAC treatment system sizing and will be used to calculate mass of contaminants removed in the dissolved phase.

3.2 Batch Pumping Report of Findings

Upon completion of the above-described batch pumping at LW-MW-1S, LW-MW-5S, LW-MW-9S and LW-MW-11S, a report of findings (ROF) will be prepared, which will detail the pumping methods and procedures. The ROF will be prepared under the supervision of, be reviewed by, and be certified by a State of California Registered Professional Geologist or Engineer and will include at a minimum the following:

- Description of methods and procedures for batch pumping;

- Descriptions of vapor sampling and groundwater sampling methods and procedures;
- Tabular summaries of batch pumping field data;
- Tabular summaries of vapor and groundwater analytical data;
- Tabular summaries of vapor and groundwater extraction flow rates;
- Estimates of chlorinated hydrocarbon mass removed, both vapor and dissolved-phase;
- Interpretation of testing results (including radii of influence for both vapor- and dissolved-phase components); and
- Evaluation of remedial option effectiveness.

4.0 QUALITY ASSURANCE PLAN

This section describes field and analytical quality-assurance procedures to be followed during the batch pumping remedial option and verification monitoring.

4.1 Sample Collection and Handling Protocol

Proper sample collection and handling are essential to assure quality of data obtained from a sample. Each sample, therefore, will be collected in clean containers, preserved correctly for the intended analysis and stored for no longer than permissible holding time prior to analysis.

4.2 Sample Identification and Chain-of-Custody Documentation

Sample identification and Chain-of-Custody procedures are designed to assure sample quality and to document sample possession from collection time to the time of ultimate disposal.

The container for each sample submitted for analysis will have a label affixed with the identifying number or the number will be inscribed directly on the container. The analytical laboratory will assign a separate sample number unique to that sample for internal sample coordination and identification. A description of the sample including the sample number and other pertinent information regarding its collection and/or geologic significance will be written in field notes and/or a geologic boring log being prepared by the site geologist. These field documents will be kept in a permanent project file. All samples will be analyzed by a state certified laboratory for the analyses requested.

A properly completed Chain-of-Custody Form will be submitted to the analytical laboratory along with sample. The laboratory's assigned number will be properly entered on the form. A quality control officer at the lab will verify integrity of sample submitted; proper sample volume, correctness of containers used, and properly executed Chain-of-Custody Form. Pertinent information will be entered into a logbook kept by the laboratory.

4.3 Analytical Quality Assurance

In addition to routine calibration of analytical instruments with standards and blanks, the analyst is required to run duplicates and spikes on 10 percent of analyses to assure an added measure of reliability and precision. Accuracy is verified through the following:

1. U.S. EPA and State certification of results;
2. Participation in inter-laboratory round robin program;
3. The quality control officer on a weekly basis submits “Blind” samples for analysis. These are prepared from National Bureau of Standards specifications of EPA reference standards; and
4. Verification of results with an alternative method.

5.0 SITE SAFETY PLAN

Introduction:

This Site Safety Plan (SSP) is designed to address safety provisions needed during the remedial batch pumping work. Its purpose is to provide established procedures to protect all on-site personnel from direct skin contact, inhalation, or ingestion of hazardous materials and/or potentially hazardous materials that may be encountered at the site. The SSP establishes personnel responsibilities, personal protective equipment standards decontamination procedures, and emergency action plans.

The SSP describes means for protecting all on-site personnel from deleterious contamination or personal injury while conducting on-site activities. As described below all requirements promulgated by the California Department of Health Services will be met.

Scope of Services

E_2C seeks to enter property described above for the purpose of performing batch pumping including groundwater sampling.

Responsibilities of Key Personnel:

All personnel on site will have assigned responsibilities. Mr. Aiguo Xu, P.E. of E_2C Remediation will be the Project Manager and serve as the Site Safety Officer (SSO). As SSO, Mr. Xu will distribute copies of the SSP to on-site personnel. Personnel will be required to document their full understanding of the SSP before admission to the site. Compliance with the SSP will be monitored at all times by the SSO. Appropriate personnel will conduct a training session to assure that all are aware of safe work practices. In the training session, personnel will be made aware of hazards at the site and will utilize Material Safety Data Sheets for information on compounds to be encountered.

Mr. Xu will also be responsible to verify that field personnel keep proper field notes, collect and secure samples, and assure sample integrity by adherence to Chain-of-Custody protocol.

On-site employees will take reasonable precautions to avoid unforeseen hazards. After documenting understanding of the SSP, each on-site employee will be responsible for strict adherence to all points contained herein. Any deviation observed will be reported to the SSO and corrected. On-site employees are held responsible to perform only those tasks for which they believe they are qualified. Provisions of this SSP are mandatory and personnel associated with on-site activities will adhere strictly hereto.

Job Hazard Analysis:

Hazards likely to be encountered on site include those commonly encountered when operating any mechanical equipment, such as the danger of falling objects or moving machinery. Simple precautions will reduce or eliminate risks associated with operating such equipment.

Qualified personnel only will have any contact with this equipment. All on-site personnel, including the drilling contractor and his employees, are required to wear hard hats and steel-toed shoes when in close proximity to drilling equipment. Latex gloves will be worn by persons collecting or handling samples to prevent exposure to contaminants. Gloves will be changed between samples, and used ones discarded, to avoid cross-contamination. Proper respiratory equipment will be worn if vapor contamination levels on site exceed action levels as determined using a PID or FID. Action levels requiring respiratory apparatus will be 5 ppm, in the breathing space. Furthermore, no on-site smoking, open flame, or sparks will be permitted in order to prevent accidental ignition.

Risk Assessment Summary**:**

Exposure to chemicals anticipated on site are Tetrachloroethene (PCE).

Tetrachloroethene (PCE)

Tetrachloroethene (PCE) is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal degreasing. It is also used to make other chemicals and is used in some consumer products. It is a nonflammable liquid at room temperature. PCE evaporates easily into the air and has a sharp, sweet odor. Most people can smell PCE when it is present in the air at a level of 1 ppm, although some can smell it at even lower levels. High concentrations of PCE (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Irritation may result from repeated or extended skin contact with it. Results of animal studies, conducted with amounts much higher than those that most people are exposed to, show that PCE can cause liver and kidney damage. The chemical is known to the State of California to cause cancer.

- The OSHA PEL is listed as 100 ppm.
- The Cal/OSHA PEL is listed as 25 ppm.
- The TLV is listed as 25 ppm.
- The IDLH is listed as 500 ppm.

Exposure Monitoring Plan:

A hydrogen-fired Flame-Ionization Detector (FID), or Photo Ionization Detector (PID), will be used to monitor vapor concentrations around the site.

Personal Protective Equipment:

Personnel on site will have access to respirators with organic vapor and particulate cartridges. Replacement cartridges will be available on site as needed. When handling samples, the on-site geologist and technicians will wear latex gloves.

Hard hats and steel-toed shoes will be worn by all personnel at the Site when in proximity of heavy equipment.

Work Zones and Security Measures**:**

Access to the site will be restricted to authorized personnel. A set of cones, placards, or wide yellow tape, surrounding the site will define the perimeter. The On-Site technician will be responsible for site security.

Decontamination Measures:

Avoidance of contamination whenever possible is the best method for protection. Common sense dictates that on-site personnel avoid sitting, leaning, or placing equipment on possibly contaminated soil. All personnel will be advised to wash their hands, neck, and face with soap and water before taking a break or leaving the site. An eye wash station will be available at the site during chemical handling. Respirators will be washed with soap and water following each day's use. Chemical handling equipment used will be decontaminated by soap water. Sampling equipment will be decontaminated before and after each sample is taken.

General Safe Work Practices:

All on-site personnel will be briefed each day in "tailgate" meetings as to the day's goals and equipment to be used. Anticipated contaminants and emergency procedures will be reviewed. Personal protective equipment (PPE), if necessary, will be put on and verified correct by SSO, including respirator fit.

Sampling equipment will be new disposable equipment or will be steam-cleaned before being brought on site.

The Project Manager will oversee operations. The Sample Coordinator will assure that proper protocol is used at all times in collecting and handling samples.

Training Requirements:

The SSO will conduct a pre-site training session which will include all points of MSDS forms, contaminant properties, warning signs, health hazard data, risk from exposure, and emergency first aid. The SSO will assure that everyone fully understands site hazards.

Medical Surveillance Program:

According to CFR 29, 1910.120, Paragraph (f), employees who wear respirators 30 days or more during one year or who have been exposed to hazardous substances or health hazards above established permissible exposure limits are required to be monitored medically. All site personnel will be required to have had a complete physical examination within the past year.

Record Keeping:

Documentation will be kept on personnel exposed to contaminant hazards on the job site according to OSHA regulations. These will include documentation that employees received training on the SSP, respiratory protection, MSDS forms, and all emergency procedures. These will be reviewed during the pre-site training meeting.

Exposure records on each job will be kept for 30 years to meet requirements. Included will be names and social security number of employees, medical evaluation, on-the-job logs from entry to exit, first aid administered, visits on site by outside persons, and personal air monitoring records.

Contingency Plans:

In the event of accident, injury, or other emergency, Project Manager, or other person will notify appropriate government agencies or individuals as follows:

Police, Fire, or Ambulance Emergency 911 from pay/local phone (other for cellular)

Nearest Emergency Hospital
(See below for directions)

Nearest Hospital: (530) 541-3420

Barton Memorial Hospital
2170 South Ave
South Lake Tahoe, CA

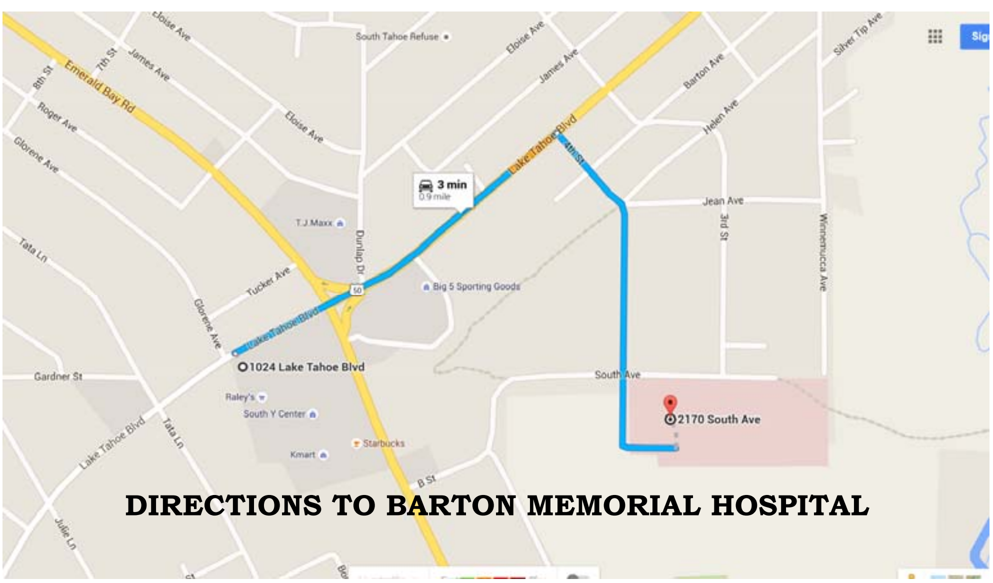
DIRECTIONS TO HOSPITAL:

From Site travel northeast on Lake Tahoe Blvd toward Emerald Bay Rd and go 0.4 miles; turn right onto 4th St to hospital on left.

Emergency Numbers for E_2C Remediation Personnel:

Mr. Aiguo Xu, P.E. of E_2C will serve as the Project Manager and SSO. He may be contacted by calling the following number: Cell Phone: (916) 580-9113.

In case of an emergency, you may contact Mr. Phil Goalwin, P.G. (President) of E_2C at the following number: Office Phone: (916) 782-8700.



DIRECTIONS TO BARTON MEMORIAL HOSPITAL

6.0 LIMITATIONS AND WORKPLAN CERTIFICATION

This Workplan has been prepared under the professional supervision of the registered professional whose seal and signatures appear herein. The conclusions of this Work Plan are based solely on the Scope of Services outlined and the sources of information referenced in this Work Plan. Any additional information that becomes available concerning the Site should be submitted to E_2C so that our conclusions may be reviewed and modified, if necessary. This Workplan was prepared for the sole use of Fox Capital Management and/or agent(s), Seven Springs Limited Partnership and/or agents, the LRWQCB, the EDCEM.

E_2C Remediation will perform the elements of the Workplan in accordance with the generally accepted standards of care that exists in California at this time. It should be recognized that definition and evaluation of geologic conditions is a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with limited knowledge of subsurface conditions present. No warranty, expressed or implied, is made.

Prepared By:

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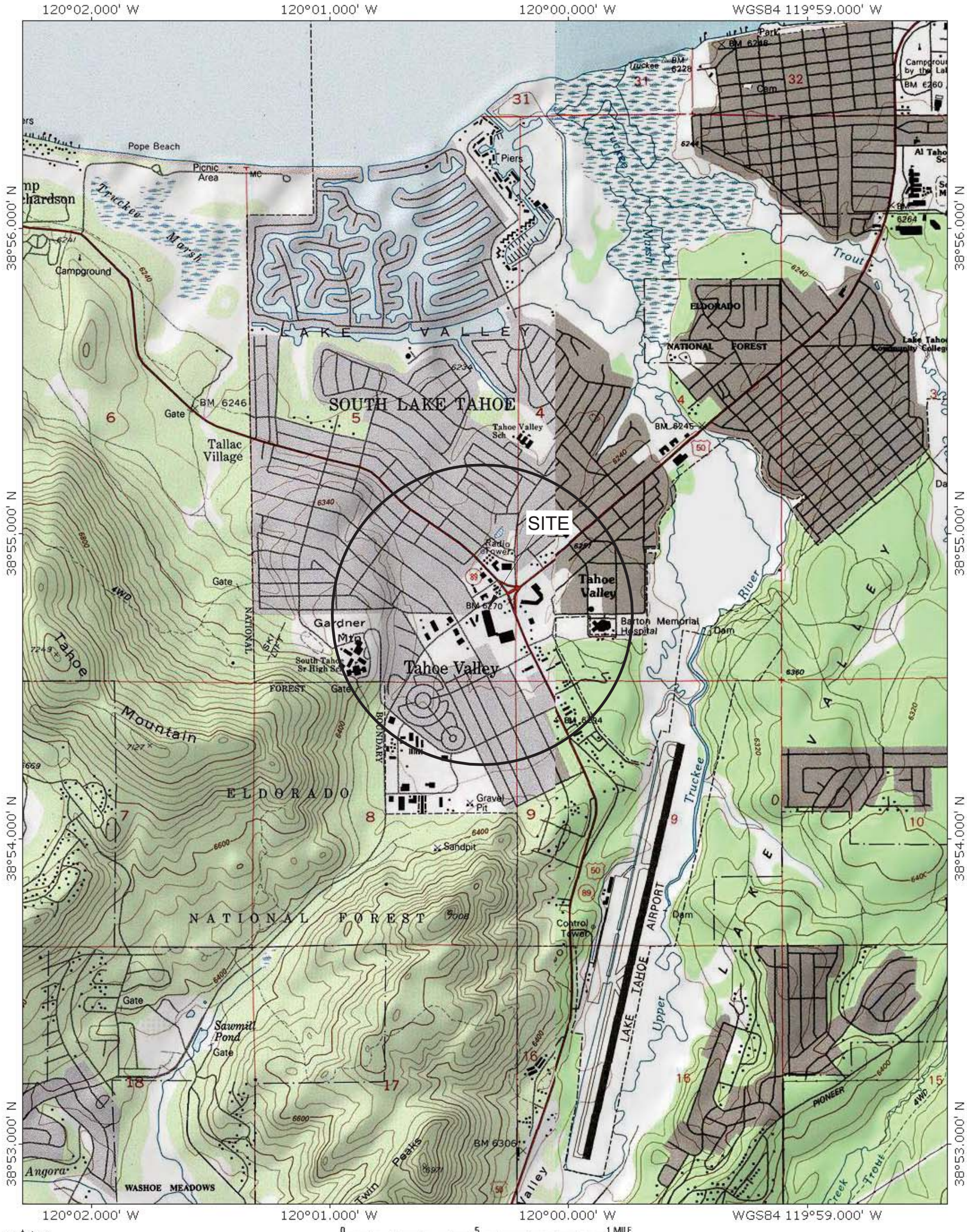
FIGURES

TOPO! map printed on 04/24/08 from "Untitled.tpo"



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E2C REMEDIATION
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Phone: (916) 782-8700 Fax: (916) 782-8750

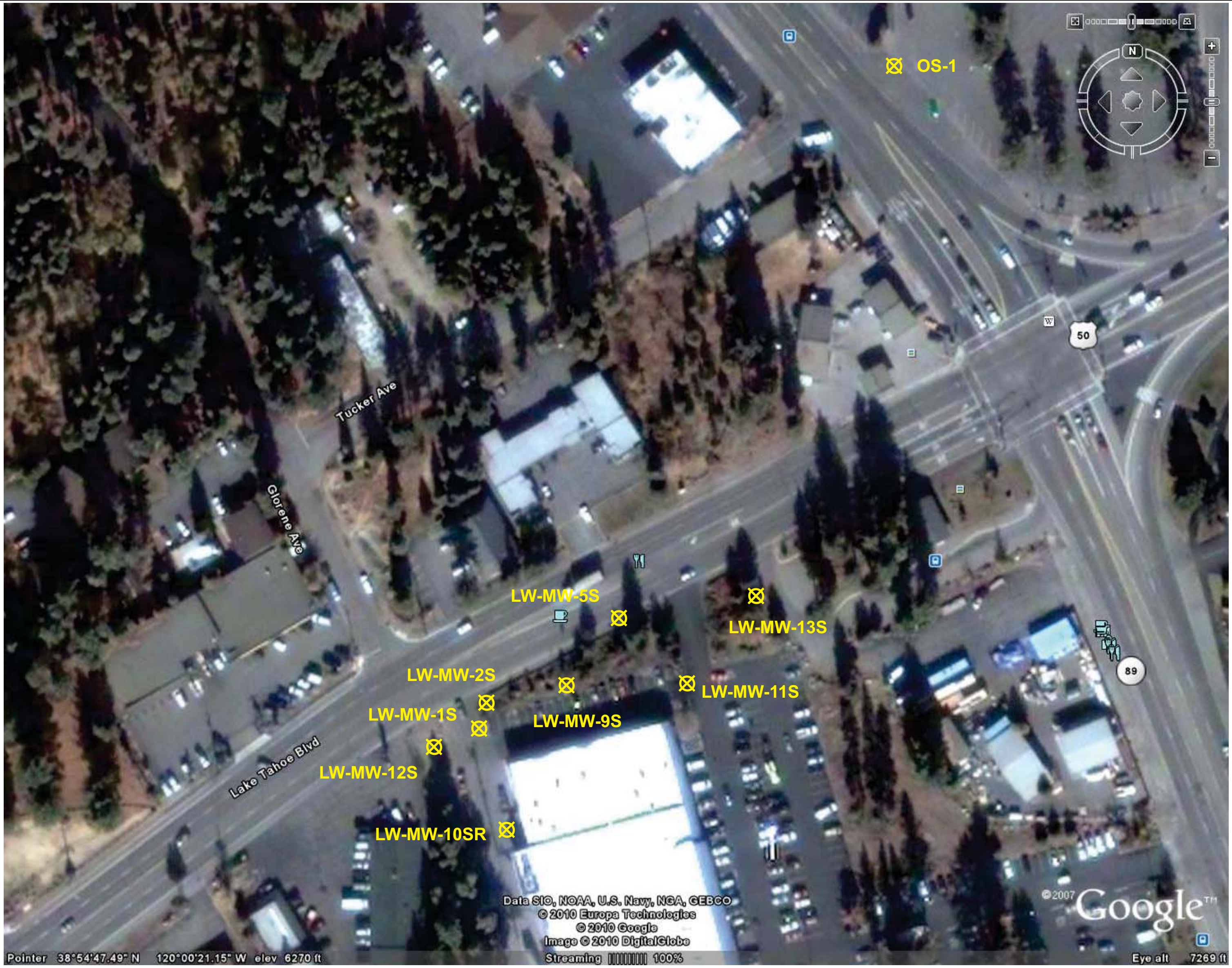
LAKE TAHOE LAUNDRY WORKS
1024 LAKE TAHOE BOULEVARD
SOUTH LAKE TAHOE, CALIFORNIA

SITE LOCATION MAP

FIGURE 1

LEGEND

⊠ Approximate Location of Groundwater Monitoring Well
LW-MW-1S



N

NOT TO SCALE

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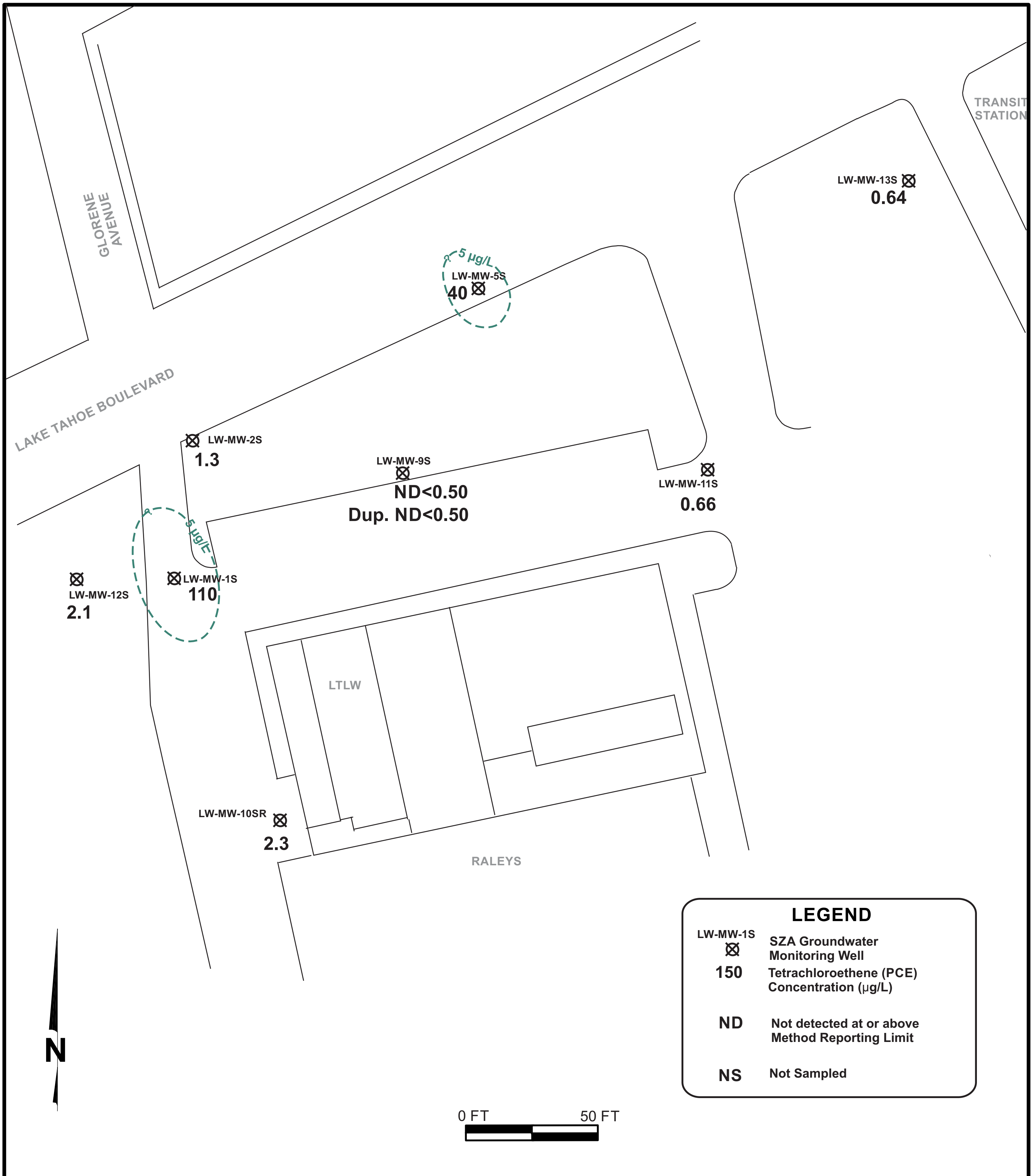
SITE PLAN

FIGURE 2



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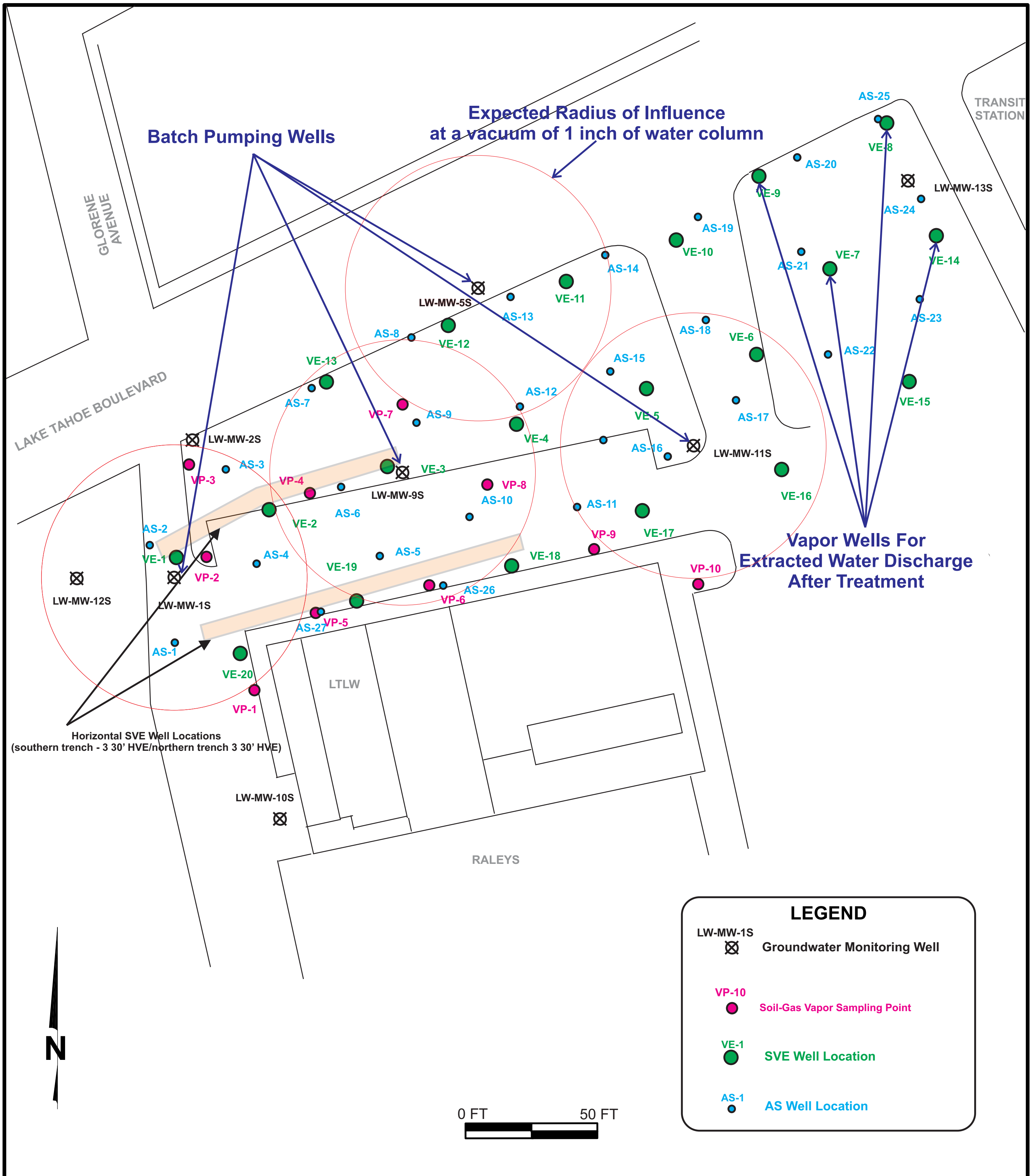
SECOND QUARTER 2016
DISSOLVED-PHASE
PCE DISTRIBUTION PLOT

FIGURE 3



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SITE PLAN WITH PROPOSED BATCH PUMPING AND DISCHARGE LOCATIONS

FIGURE

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