CORNERSTONE EARTH GROUP

Date: August 12, 2008
Project No.: 267-1-1

Prepared For: Mr. Paresh C. Khatri
ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
1131 Harbor Bay Parkway, Alameda California

Re: Work Plan for Ground Water Quality Evaluation
And Sub-Floor Air Sampling
2691 Castro Valley Blvd
Castro Valley, California

On behalf of Mr. Anthony Varni, we are pleased to present this work plan for evaluation of ground water quality and sub-floor air qualty at 2691 Castro Valley Blvd in Castro Valley, California (Site). This work plan is based on our review of information available on the Alameda County Health Care Services Agency (ACHCSA) web-site, the June 6, 2008 letter from the ACHCSA and our July 17, 2008 meeting with ACHCSA staff.

1.0 PROJECT BACKGROUND

The Site currently is occupied by an approximatley 3,500 square feet, one-story office building. The building was constructed in 1988 with a perimeter foundation and a raised wood floor.

In June 1988, prior to the construction of the building, a 1,000-gallon underground storage tank (UST) was removed. The approximate location of the former UST is shown on Figure 2, based on an approximate sketch of the tank location obtained from the ACHCSA web-site. The former UST was reportedly used for storing diesel. No UST removal report appears to have been submitted to the ACHCSA. However, limited information available indicates that laboratory analyses of two soil samples collected following removal of the UST reportedly detected low concentrations of petroleum hydrocarbons (maximum of 6 parts per million (ppm)). The depth and location of the soil samples is not known. Laboratory analyses of water samples detected relatively elevated concentrations of petroleum hydrocarbons (5,500 parts per billion (ppb) total petroleum hydrocarbons (TPH) in the gasoline range, 6,200 ppb TPH in the diesel range, 11 ppb benzene, 30 ppb toluene, 7.6 ppb ethylbenzene, and 620 ppb xylene) (ACHCSA, 1996). There does not appear to be adequate documentation describing whether the water was collected from inside the tank or from the excavation.

Based on correspondence from ACHCSA and our July 17, 2008 meeting with ACHCSA staff, we understand that evaluation of ground water qualty beneath the property is required in order to finalize case closure. In order to evaluate the potential for vapor migration from soil into the on-site building, the ACHCSA staff also requested the collection of soil vapor samples from beneath the building. Because of the building has a raised wood floor with a perimeter foundation, we propose collecting a sub-floor crawl space air sample instead of a soil vapor sample. This approach is supported by the Department of Toxic Subtances Control (DTSC) in

their February 7, 2005 "Interim Final Guidance to Evaluation and Mitigation of Subsurface Vapor Intrusoin to Indoor Air."

2.0 PURPOSE

The purpose of this work plan is to evaluate ground water and crawl-space air quality to support ACHCSA staff in evaluating case closure for the Site.

3.0 PROJECT TEAM

This project will be managed by Peter Langtry, C.HG., C.E.G. Ron Helm, R.E.A.II and C.E.G., will perform quality assurance review.

4.0 HYDROGEOLOGY

To help evaluate ground water depth and flow direction beneath the Site, information available on the state GeoTracker database for the former Shell service station at 2724 Castro Valley Boulevard was reviewed. The former Shell station is located on the opposite side of Castro Valley Boulevard approximately 150 feet north of the Site.

Based on exploratory borings and monitoring well data, ground water was reported beneath the former Shell site at a depth of approximately 8 to 10 feet. Ground water flow was reported toward the south to southwest (Pacific Environmental Group, December 20, 1994; ACHCSA, 1995).

5.0 SCOPE OF WORK

We propose the following scope of work to assist ACHCSA staff in evaluating the Site for case closure.

5.1 Pre-Field Activities

Prior to performing the investigation, we will submit a drilling permit application and permit fee to the Alameda County Department of Public Works (ACDPW). In addition, we will contact Underground Service Alert (USA) to notify them of the approximate drilling locations. We also will use a private utility locator to help locate utilities, if any, in the exploration area.

5.2 Subsurface Exploration and Ground Water Grab Sampling

Our field geologist or engineer will direct a subsurface investigation to a depth of up to approximately 20 feet using a limited access geoprobe. Two exploratory borings will be drilled between the building and the creek channel. The approximate boring locations are shown on Figure 2. If encountered, ground water grab samples will be collected from each boring using a disposable Teflon bailer.

Following drilling, the exploratory borings will be filled with neat cement to the ground surface in accordance with ACDPW permit requirements. The approximate locations of the exploratory borings will be recorded using GPS.

5.3 Ground Water Laboratory Analyses

The two ground water grab samples will be submitted to a state-certified laboratory and analyzed for total petroleum hydrocarbons in the gasoline range (TPHg), plus benzene, toluene, ethylbenzene and xylene (BTEX) and MTBE (EPA Test Method 8015/8260), and total petroleum hydrocarbons in the diesel range (TPHd) (EPA Test Method 8015). A silica gel cleanup will be performed for the TPHd analysis to help remove naturally occurring organic compounds that can be picked up in the diesel scan, potentially providing false positive results.

We will request a standard one-week laboratory response. Actual laboratory response will depend on the laboratory's workload.

5.4 Equipment Decontamination

All sampling equipment will be cleaned in a solution of laboratory grade detergent and rinsed with distilled water or steam cleaned prior to use at each sample point.

5.5 Soil Cuttings and Rinsate

Soil cuttings and rinsate will be stored on-Site in 5-gallon containers. To evaluate disposal alternatives of this material, one 4-point composite sample of the soil cuttings will be collected and analyzed for the same constituents described above. If petroleum hydrocarbons are not detected, the soil could be spread on-Site in landscape areas. If petroleum hydrocarbons are detected, we will evaluate appropriate disposal alternatives for the soil.

5.6 Crawl-Space Air Sampling

To evaluate the presence of volatile petroleum hydrocarbons in the air beneath the floor of the on-Site building, we will collect one air sample from the crawl space. The air sample will be collected using a 6-liter SUMA canister the same day as our on-Site ground water grab sampling. An 8-hour flow regulator will be used. In addition, we will temporarily seal readily accessible sub-floor vents during the air sampling. The air sample will be analyzed for total petroleum hydrocarbons in the gasoline range plus benzene, toluene, ethylbenzene, xylene (EPA Method TO-15). We will request a standard one-week response. Actual response will depend on the laboratory's workload.

5.7 Report

We will prepare a report summarizing the analytical data and presenting our conclusions and recommendations. The report will include a site map showing the sample locations and copies of the analytical reports.

5.8 GeoTracker Submittal

The report, analytical data (EDF), and GPS survey data will be submitted to the State Water Resources Control Board's GeoTracker website.

CORNERSTONE EARTH GROUP

6.0 SCHEDULE

Performance of the ground water quality evaluation and preparation of the report will take approximately four weeks to complete after receiving approval of the work plan by ACEH staff.

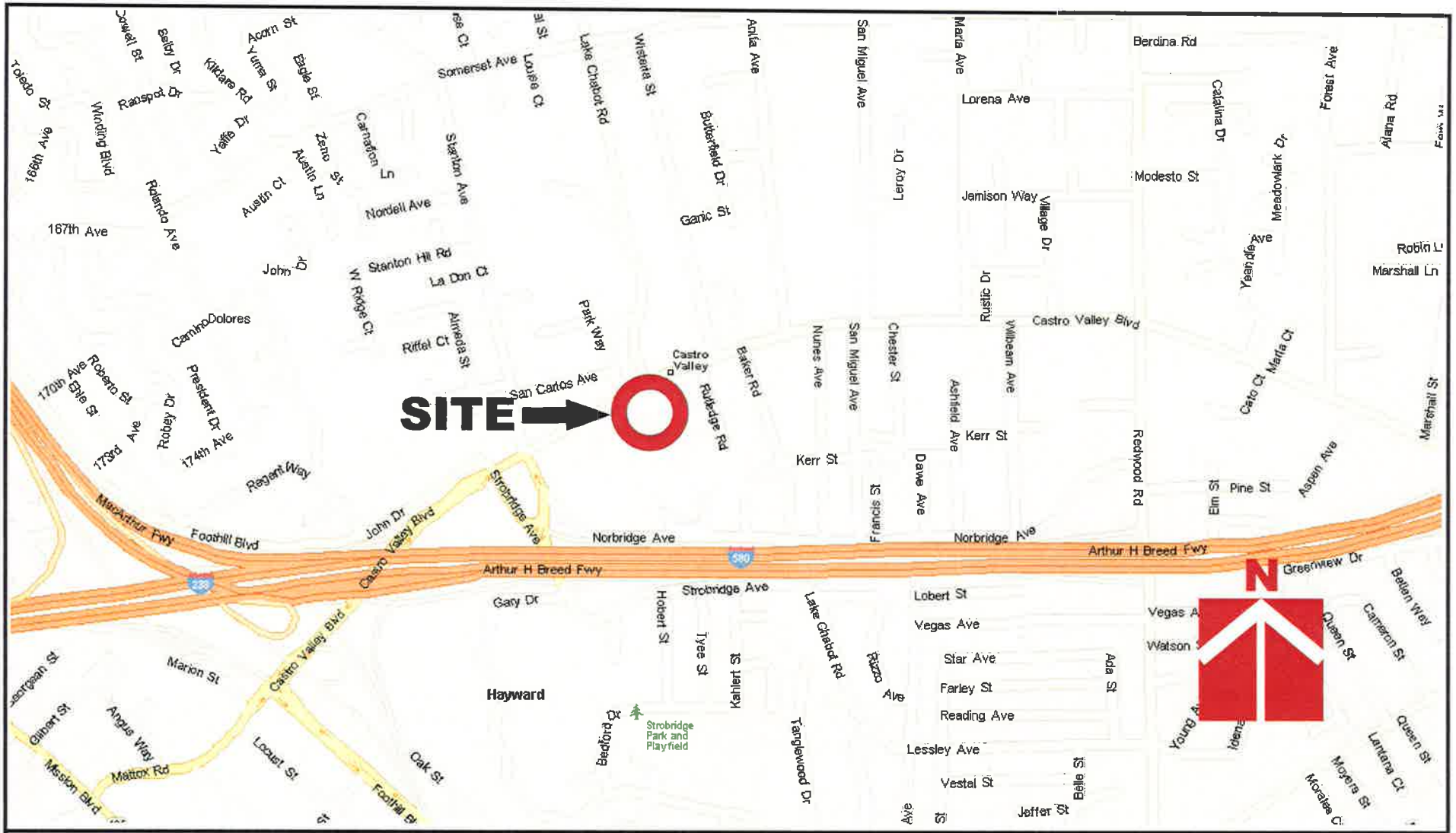
We look forward to your approval of this work plan. Should you have any questions regarding this work plan, please contact us at your convenience.

Sincerely,

Cornerstone Earth Group, Inc.

Peter M. Langtry, C.HG., C.E.G.
Principal Geologist

Copies: Addressee (1 by email)

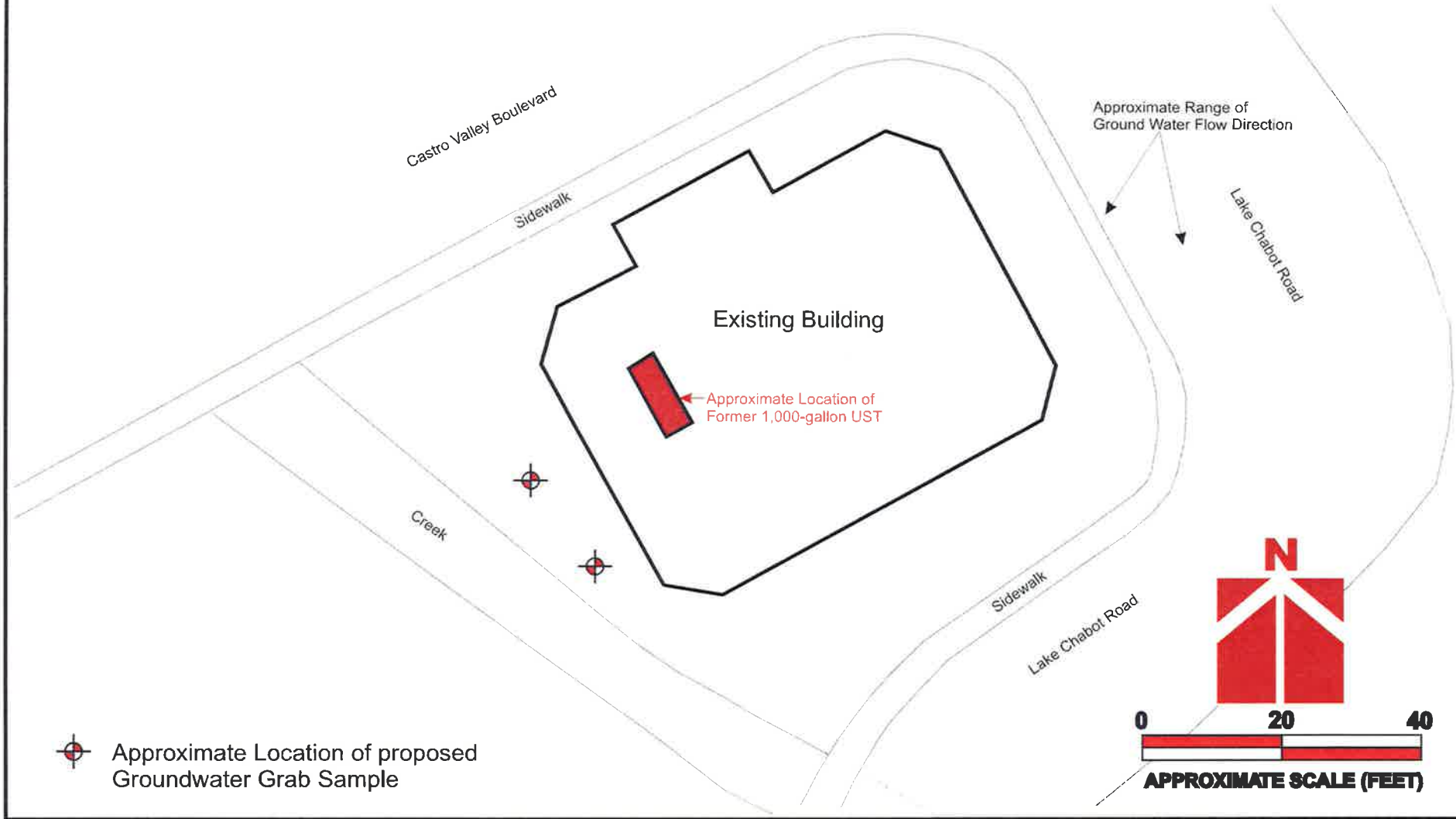


CORNERSTONE EARTH GROUP

Vicinity Map

2691 Castro Valley Boulevard
Castro Valley, CA

Project Number	267-1-1
Figure Number	Figure 1
Date	August 2008
Drawn By	FLL

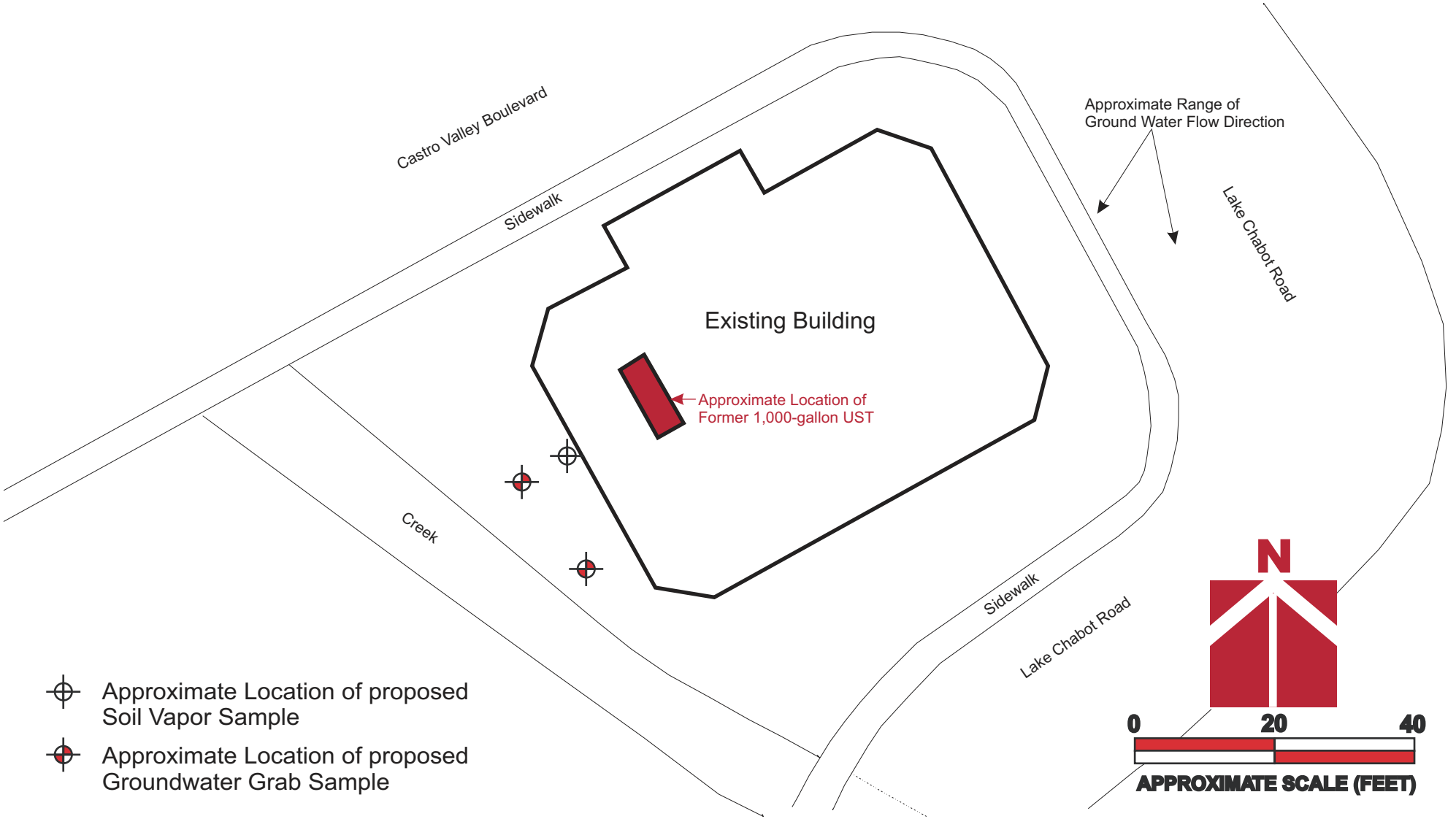


CORNERSTONE EARTH GROUP

Site Plan

2691 Castro Valley Boulevard
Castro Valley, CA

Project Number	267-1-1
Figure Number	Figure 1
Date	August 2008
Drawn By	FLL



CORNERSTONE EARTH GROUP

Site Plan

2691 Castro Valley Boulevard
Castro Valley, CA

Project Number	267-1-1
Figure Number	Figure 1
Date	September 2008
Drawn By	FLL