LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

Mountain View
Fairfield
Oakland
San Ramon
Fullerton

September 11, 2003
1731-2G

Mr. Amir Gholami
ALAMEDA COUNTY HEALTH AGENCY
1131 Harbor Bay Parkway
Alameda, California 94502

RE: WORK PLAN
2901 GLASCOCK STREET
SOIL AND GROUND WATER SAMPLING
OAKLAND, CALIFORNIA

Dear Mr. Gholami:

We are pleased to present this work plan for soil and ground water sampling at 2901 Glascock Street in Oakland, California (Figure 1). During our August 18, 2003 meeting, ACDEH staff requested the collection and analyses of additional ground water samples to evaluate current ground water quality. In addition, soil samples collected from the ground water bearing zone also were requested to evaluate the presence of residual free product. Our August 29, 2003 work plan included the collection of soil and ground water samples at two locations. On September 9, 2003, you requested collection of soil samples within the shallow ground water zone at additional locations. This work plan incorporates the additional sample locations. In addition, near-surface soil samples will be collected from the borings, in accordance with the September 2, 2003 soil sampling work plan. This work plan, therefore, combines the August 29 and September 2, 2003 work plans.

SCOPE OF SERVICES

Soil and Ground Water Sampling

We will drill five exploratory borings to a depth of approximately 15 feet at the locations shown on the attached site plan. The exploratory borings were selected at locations where suspected petroleum product was observed in soil pores during previous investigations and/or locations where total petroleum hydrocarbons (gasoline, diesel, and oil range) were detected above 1,000 parts per million (ppm). Analytical results were summarized on Figures 2 through 9 of the August 29, 2003 letter.

Pre-Field Activities

Prior to beginning work, a drilling permit application will be submitted to Alameda County Public Works (ACPW) for their approval. We also will prepare a health and safety plan for our proposed work. To attempt to locate public underground utilities in the area of our exploratory borings, we will contact Underground Service Alert (USA).

Subsurface Exploration

Our field engineer or scientist will direct a subsurface exploratory program, supervise, log, and sample five exploratory borings to a depth of approximately 15 feet. The subsurface investigation will be performed using a limited access rig equipped with Direct Push Technology equipment. The borings will be advanced by hydraulically driving a 2-inch-diameter outer casing with an inner split spoon sampler, which contains a clear acetate sample liner. As the tools are advanced, the soil sample will be collected within the inner split spoon sampler. The split spoon sampler will be withdrawn to the surface while the outer casing remains in-place. The new sampler then will be lowered into place and the tools advanced further to collect the next soil sample.

Near-Surface Soil Sample Collection
One soil sample will be collected from the upper approximately 3 feet of soil from each boring, depending on field observations. The five soil samples will be analyzed for total petroleum hydrocarbons in the gasoline range (TPHg) plus benzene, toluene, ethylbenzene, and xylene (BTEX) and MTBE (EPA Test Method 8020/8015), total petroleum hydrocarbons in the diesel range (TPHd) (EPA Test Method 8015), lead, arsenic, cadmium, and copper (EPA Test Method 6010). Two of the soil samples will be randomly selected and analyzed for PAHs (EPA Test Method 8310) and PCBs (EPA Test Method 8080).

Soil Sample Collection from Ground Water Yielding Zone
Previous investigations encountered the top of the silty sand ground water bearing zone at depths of approximately 10 to 14 feet. Based on observations of recent exploratory pits, the top of the capillary fringe is approximately 7 to 8 feet below grade. One soil sample will be collected from within the approximate upper foot of the ground water bearing zone. A second soil sample will be collected approximately 2 to 5 feet deeper, depending on field observations and organic vapor meter (OVM) measurements.

The soils will be logged using the Unified Soil Classification System (ASTM D-2487). Soil vapors from each sample will be monitored with an OVM. The soil will be placed in a Ziplock™ bag for several minutes; the bag then will be pierced with the OVM probe in order to record the organic vapor levels present. Soil samples for laboratory analysis will be collected in brass or acetate liners. The ends of the liners will be covered in aluminum foil or Teflon film, fitted with plastic end caps, taped, and labeled with a unique identification number. The samples then will be placed in an ice-chilled cooler and transported to a state-certified analytical laboratory with chain of custody documentation.

Ground Water Sampling
After the borings are advanced to the desired depths, ¾- inch I.D. flush-threaded, PVC casing will be lowered down the center of the drive rods. The lower portion of the casing will have factory machined slots to allow for the infiltration of ground water. The drive rods then will be extracted leaving the PVC casing in-place. Ground water, if encountered, will be collected using a small diameter bailer and placed in appropriate sample bottles labeled with a unique identification number. The samples then will be placed in an ice-chilled cooler and transported to a state-certified analytical laboratory with chain of custody documentation.

Laboratory Analyses
The ten soil samples and five ground water samples will be analyzed at a state-certified laboratory TPHg, BTEX, and MTBE (EPA Test Method 8015/8020); TPHd (EPA Test Method 8015M); and total petroleum hydrocarbons in the bunker oil range (TPHbo) (EPA Test Method 8015M).

Report
We will prepare a soil and ground water evaluation report presenting the results of our investigation and summarizing our conclusions and recommendations. The report will include a site plan showing sampling locations and copies of permits and laboratory data sheets.

Schedule
The subsurface exploration is scheduled for September 12, 2003.

If you have any questions, please call and we will be glad to discuss them with you.

Very truly yours,

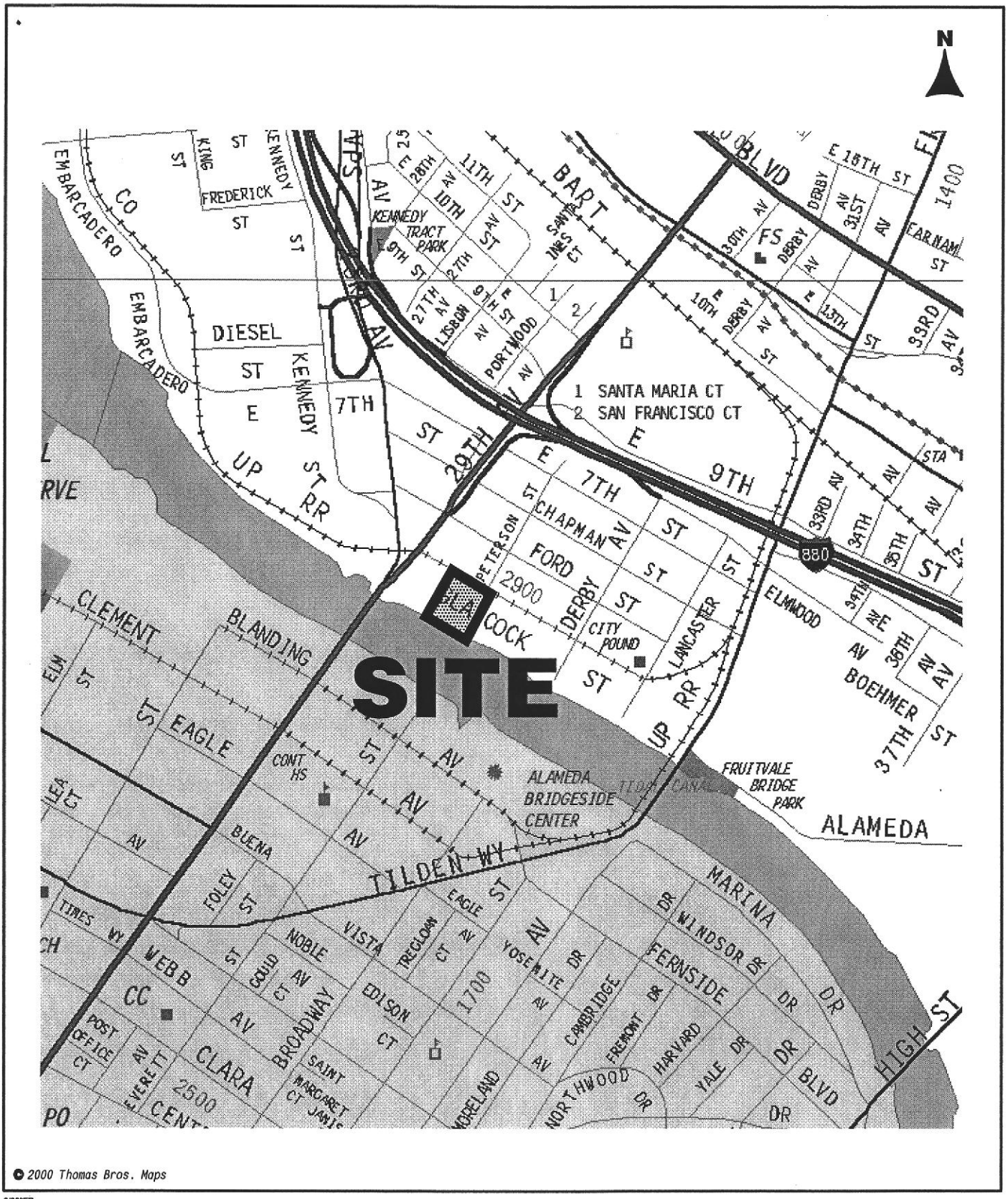
Lowney Associates

Peter M. Langtry, R.G., C.E.G.
Principal Environmental Geologist

Copies: Addressee (1)
Signature Properties (1)
Attn: Ms. Mary Grace Houlihan

Attachments: Figure 1, Vicinity Map
Figure 2, Site Plan

OK, P:\Projects\1700\1731-2 Derby-Glascock\1731-2G remediation\1731-2G Glascock GW sampling work plan 091003.doc



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VICINITY MAP

2901 GLASCOCK STREET
Oakland, California

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FIGURE 1
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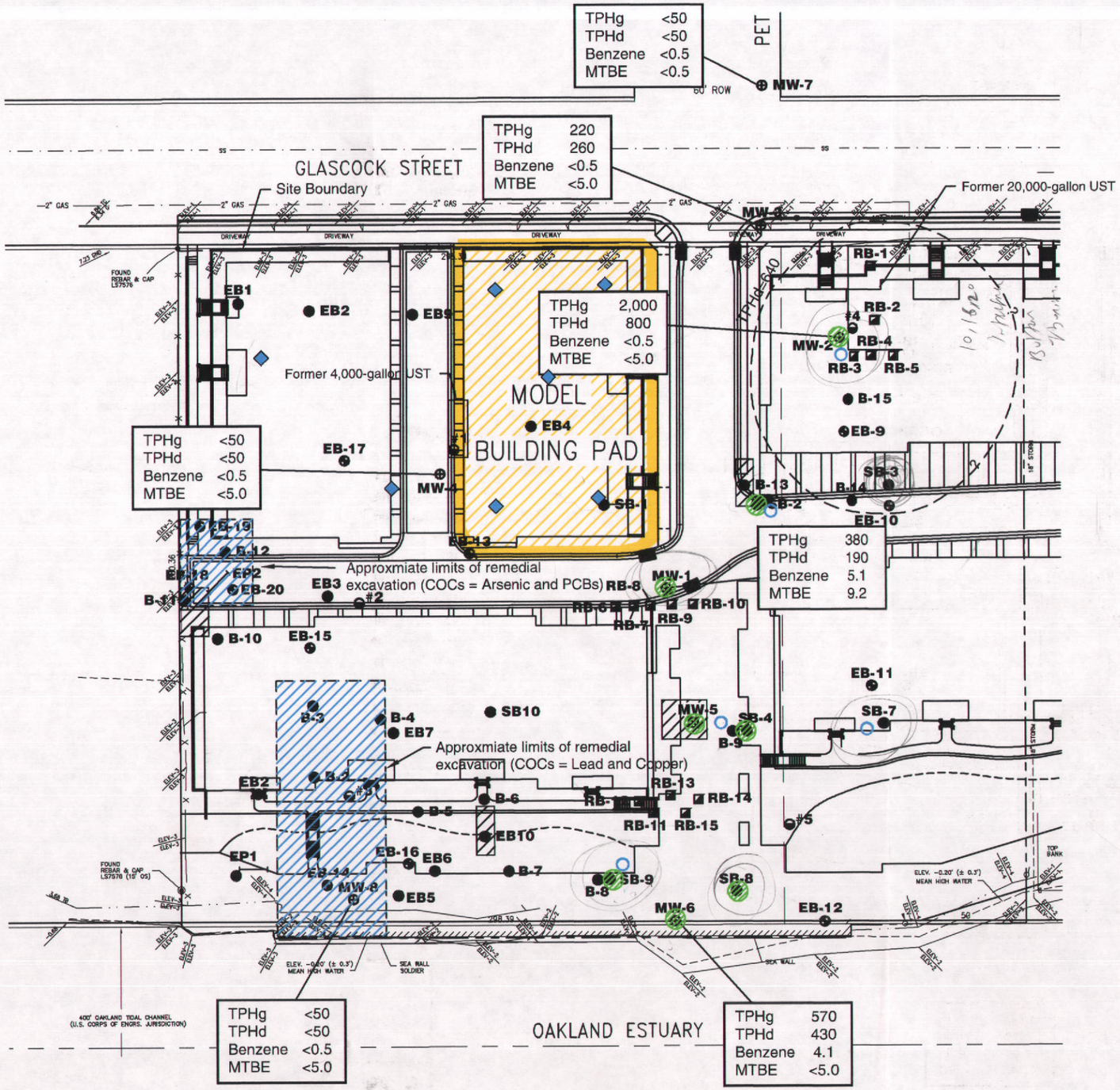

LEGEND

- ◆ - Approximate location of soil sample requested by the ACDEH
- ○ - Approximate location of proposed ground water and soil boring
- ◐ - Approximate location of exploratory boring (Lowney 2002)
- ⊕ - Approximate location of exploratory boring (Lowney 2001)
- ⊕ - Approximate location of extraction/monitoring well
- △ - Approximate location of soil vapor boring
- ◪ - Approximate location of remediation boring (1999)
- ● - Approximate location of soil sample (1995)
- ⊢ - Approximate location of test pit (1995)
- ◒ - Approximate location of soil sample (1993)
- ⊠ - Approximate location of destroyed ground water monitoring well
- ▨ - Soil excavation areas (1996)
- – – – - Ground water concentrations exceeding ecological cleanup goals
- ▨ - Historical (1995) suspected free product in soil pores (approximately 11 to 15 feet)
- ▨ - Approximate extent of soil removal areas

Note:
Analytical results in parts per billion
Ground water results from February 2003 ground water monitoring event

Scale 0 50 feet

Base by KCA Engineers.

SITE PLAN

2901 GLASCOCK STREET
Oakland, California

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FIGURE 2
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