RESP-NDED to 9/17/99

geo - logic *geotechnical and environmental consulting services*
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GL-99-110.P1
July 9, 1999

stid 1149

Mr. Norman Albert
Creek, California 94596 Patterson Ranch, Inc.
211 Newell Avenue
Walnut Creek, California

RE: Work Plan/Proposal
Further Assessment of Groundwater
Downtown Toyota
4145 Broadway
Oakland, California 94611

with sample 40ft away
3 not down gradient
7/14/99

Dear Mr. Albert:

Per the request of the Alameda County Environmental Health Services (ACEHS), in their letter to Messrs. John and Frank Sabatte dated June 21, 1999, Geo-Logic is pleased to provide this workplan/proposal for further assessment of groundwater conditions at the subject site.

This work plan/proposal for the installation of exploratory borings is based on the soil and groundwater analytical results from previous investigative work performed by Burlington Environmental, Inc., summarized in their report dated March 11, 1994. Also, at the request of Mr. Amir K. Gholami of ACEHS, the direction of groundwater flow at the subject site was further investigated by performing a file review of nearby sites at the ACEHS offices. The following is a summary of the groundwater flow direction obtained from the file review (completed on July 9, 1999):

4100 Broadway, 7-11 Store (closed underground storage tank case)
The direction of groundwater flow on eight quarterly monitoring events between April, 1994 and May 1996, was to the southwest on five occasions, to the west-southwest on two occasions, and to the west on one occasion.

4101 Broadway (closed underground storage tank case)
No wells were constructed at the site, no groundwater flow data was produced.

4045 Broadway, Accutune (underground storage tank case)
In a report by Gong Associates dated January 21, 1999, it is stated that over three monitoring events, the groundwater flow direction was between south and southwest.

4266 Broadway (closed underground storage tank case)
No wells were constructed at the site, no groundwater flow data was produced.

The groundwater flow direction at the closest site for which data was available (4100 Broadway) is reported as to the southwest. The reported groundwater flow direction at the further site (4045 Broadway) varied from south to southwest. Site observations indicate a significant topographic slope to the southwest, along Broadway. Based on these data, the groundwater flow direction at the subject site is assumed to be to the southwest, consistent with the regional topography, and towards San Francisco Bay.

INTRODUCTION

The proposed scope of work includes: obtaining the necessary encroachment and street excavation permits from the City of Oakland Public Works Department and soil boring permits from the Alameda County Public Works Agency (ACPWA) - Water Resources Section; preparing a site specific health and safety plan; advancing soil borings using a GeoProbe® or similar direct-push technology; collecting soil and grab groundwater samples from the borings; submitting selected soil samples and groundwater samples for chemical analysis; and preparing a report which presents the findings of the investigation.

The scope of work described in this Work Plan is intended to comply with the State of California Water Resources Control Board's *Leaking Underground Fuel Tanks (LUFT) Manual* and *California Underground Storage Tank Regulations, 1994*, the California Regional Water Quality Control Board (CRWQCB) *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites*, and ACEHS guidelines.

SCOPE OF WORK

To further evaluate petroleum hydrocarbon impacts to groundwater at the site, Geo-Logic proposes to advance two exploratory soil borings, as shown on the attached Site Plan, Figure 1. Grab groundwater samples will be collected from each of the borings. In addition, soil samples will be obtained and screened with a photo-ionization detector (PID). It is anticipated that a minimum of one capillary fringe soil sample from each boring will be submitted for analyses, unless other soil contamination is encountered above the capillary

fringe.
To implement the proposed scope of work, the following tasks are proposed:

Task 1. Pre-field Activities

Following review and approval of the workplan by the ACEHS, a site specific health and safety plan will be prepared. An encroachment permit and a street excavation permit will be obtained from the City of Oakland Public Works Department, and soil boring permits will be obtained from the ACPWA. As required by law, the boring locations will be marked in white paint, and Underground Service Alert (USA) will be notified 48 hours in advance of the scheduled work.

Task 2. Exploratory Borings

The uppermost five feet of each boring location will be hand-augered as a precaution for underground utility conflicts. The exploratory borings will be completed using a GeoProbe® or similar direct-push technology at the locations shown on Figure 1. Drilling will be performed by a California-licensed well driller. A California-registered geologist will monitor the drilling activities and prepare a log of the boring. The exploratory soil boring will be advanced 2 feet into groundwater, which is anticipated at approximately 10 feet below grade.

Soil samples for description and possible chemical analysis will be obtained from the boring at five-foot intervals, at a minimum. Soil samples will be collected in a split-spoon sampler lined with stainless steel liners. Soil from each sampled interval will be screened in the field for the presence of volatile organic compounds using a PID.

Soil samples to be submitted for analyses will be removed from the sampler and retained in the stainless steel liners. The liners will be sealed with Teflon-lined plastic caps and placed in individually sealed plastic bags. They will then be labeled and stored in a cooler, on crushed ice or "blue ice," for delivery to a state-certified laboratory. Properly executed Chain of Custody documentation will accompany all soil samples.

A grab groundwater sample will be collected from each boring using a clean teflon or stainless steel bailer. If water is slow to come in the boreholes, small-diameter PVC casings may be installed to facilitate sample collection.

The water samples will be decanted into 40 ml VOA vials or one-liter amber bottles, as appropiate. The vials and/or bottles will be sealed with Teflon-lined screw caps,

labeled, and stored, on ice, for delivery to a state-certified laboratory. Properly executed Chain of Custody documentation will accompany all water samples.

The sampling bailer will be cleaned with non-phosphate soap and clean water rinses between uses. Following sample collection, the borings will be backfilled with neat cement to 5 feet bgs. Bentonite will be used to seal the portion of the boring within the saturated zone. Cuttings generated during hand-augering will be placed in the upper five feet of the boring and compacted. The boring will be completed at the surface with concrete.

Task 3. Laboratory Analyses

Soil and groundwater samples will be submitted for chemical analysis to a California state-certified Hazardous Material Testing Laboratory. Selected soil samples and all groundwater samples will be analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, and TPH as Motor Oil by EPA Method 8015 (Modified), and for benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl-tert-butyl ether (MTBE) by EPA Method 8020.

Task 4. Report Preparation

Following receipt and analysis of all data, a report will be prepared which summarizes the procedures and findings associated with this investigation, and makes additional recommendations, as appropriate. Finalized Boring Logs will be prepared from the field logs and included in this report.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this study will be based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We will analyze this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance

with generally accepted professional principles and practices existing for such work.

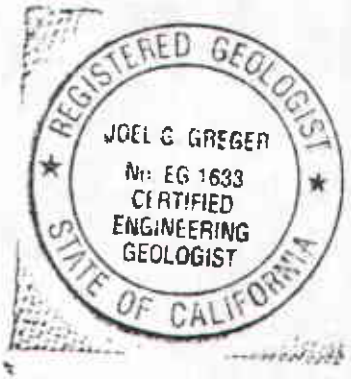
If you have any questions regarding this work plan/proposal, please do not hesitate to call me at (510) 787-6867.

Sincerely,

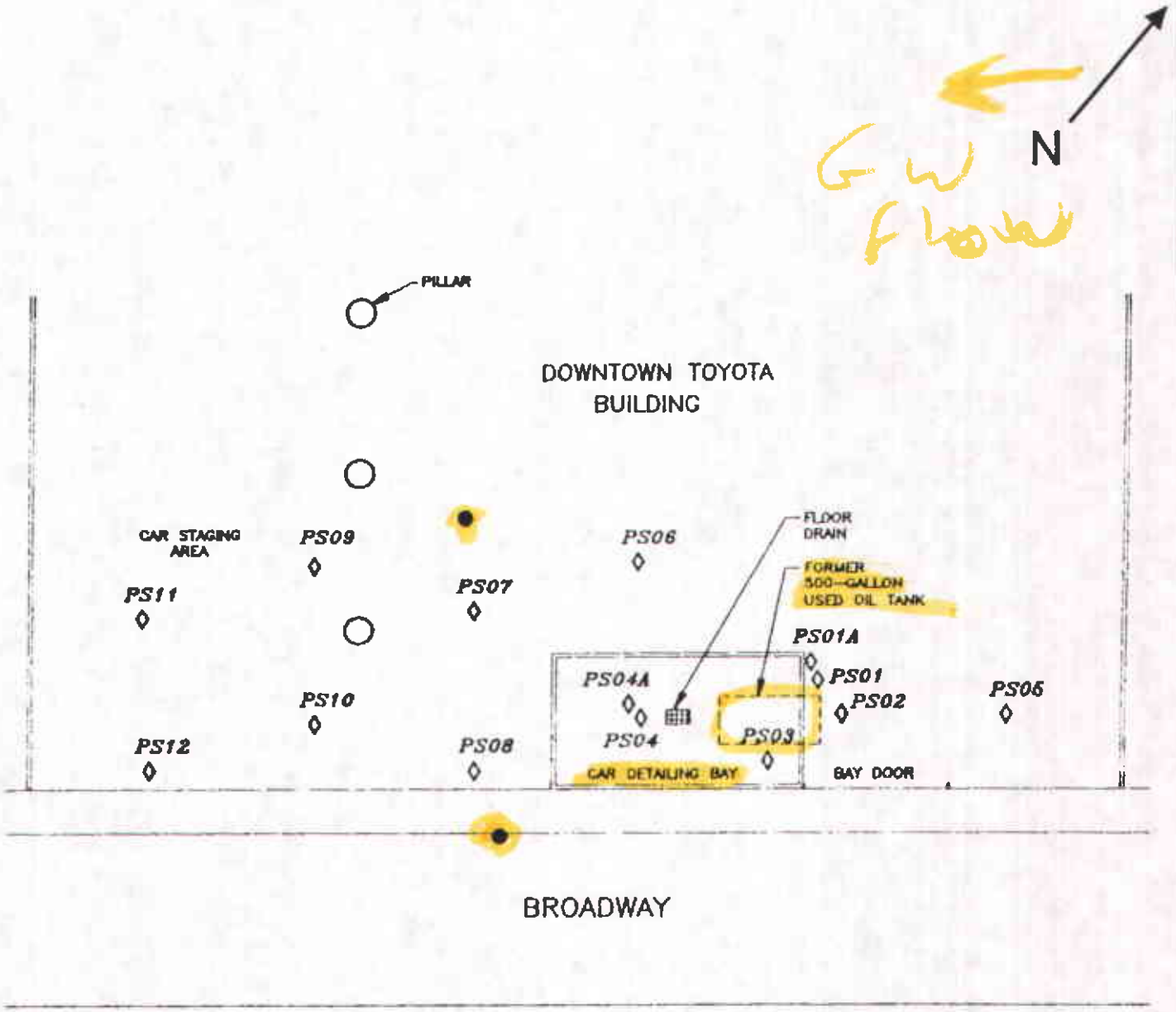
Geo-Logic

Joel G. Greger, C.E.G.
Certified Engineering Geologist

License No. EG 1633
Exp. Date 8/31/2000



Attachments: Site Plan - Figure 1



LEGEND

PS12 ◊ Exploratory boring, previous investigation

● Exploratory boring, proposed

Approx. Scale: 1" = 20"

Site plan after Burlington Environmental, Inc., 1994

DOWNTOWN TOYOTA 4145 BROADWAY OAKLAND, CA	Figure No: 1	Date: June 8, 1999 Drawn By: JG/Geo-Logic

SITE PLAN