desert petroleum inc.

Mr. Scott Seery.
Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6783
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January 28, 2004

RE: Revision to 4035 Park Boulevard, Oakland, CA 94602 Work Plan, dated May 1, 2003 to 1) investigate impacted soil contamination both above and below the groundwater table, 2) investigate the vertical extent of contamination in groundwater and 3) update the RBCA Tier II to evaluate remediation options. This revision expands on the bullet items you e-mailed Western Geo-Engineers Friday, October 24, 2003.

Dear Mr. Seery:

I have reviewed the enclosed work plan that I contracted Western Geo-Engineers to prepare and

1. I agree ~~disagree~~ with the scope and findings.

Sincerely,

William Thompson, Desert Petroleum, Inc.

5/24/04
date

-WEGE-

WESTERN
GEO-ENGINEERS
CALIF. CONTRACTOR #513857
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
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October 28, 2003

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RE: Revision to 4035 Park Boulevard, Oakland, CA 94602 Workplan, dated May 1, 2003; 1) investigate impacted soil contamination both above and below the groundwater table, 2) investigate the vertical extent of contamination in groundwater, and 3) update the RBCA Tier II to evaluate remediation options. This revision expands on the bullet items you e-mailed Friday, October 24, 2003.

Dear Mr. Seery:

The following discussion expounds on the e-mailed bullet items presented in you e-mail, dated October 24, 2003.

1. *Review of on-site boring logs failed to reveal a cobbly backfill material that you felt may cause a problem should a GeoProbe be used to complete this phase of work. You mentioned that the R1 and R2 trenches exposed that material. See if you can find some info in your records that might help how where this fill should be anticipated, depths, etc.*

I reviewed the Over-Excavation and Quarterly Ground Water Sample Report, dated November 24, 1995. Appendix E - Field Notes, show the cobble layer beneath the then present station building, exposed by over-excavation at the now present well R3. The depth varied from 1 foot at the southeast corner of the building to 3 feet at the southwest corner of the building. Upon removing the hoist inside the building, the fill rock "cobble" was found to be as deep as 5 feet below the surface. Exploration trench (well R2-west of building) exposed the cobble to the 8.5 foot depth and exploration trench (waste oil UST area, R1-north of building) exposed the cobble to the 7 foot depth. I have included a revised Figure 3 that outlines (heavy dash line) what I feel is the extent of the cobble fill with bold numbers indicating depth to base of fill.

2. *If the 3" ID HSA is determined to be the drilling method of choice (based on the presence of the noted cobbly fill), please provide an SOP for the methodology.*

STANDARD OPERATING PROCEDURES (SOP)

Conventional Hollow Stem Auger with - Hydropunch

Using a truck mounted drilling rig, eight inch hollow stem augers would be used to advance the boring past the anticipated surface fill (cobble zone) as outlined on Figure 3. Once past the cobble zone, 3 inch ID by 3 foot or 5 foot long core barrels would be used to continuously core the boring. Where discrete groundwater samples are to be obtained, the core barrel would be removed and the hydropunch probe would be driven 3 feet past the core interval to obtain a water sample, see section on hydropunch water sampling for further details. Once the water sample had been obtained, coring would proceed past the hydropunch point until the next water sample interval has been achieved. The core barrels are California Split Spoon producing 3 inch diameter cores. The barrels are opened and the entire core is examined for lithology, staining, odor and volatile organic compounds (VOC's) using a 10.6 ev photoionizing detector (PID). Samples to be preserved for laboratory analysis are collected by driving a clean, 1 inch diameter by 3 inch long, aluminum sleeve into the relatively undisturbed soil, completely filling the sleeve of soils to be tested. Placing plastic caps over the sleeve ends then seals the sleeve ends, see sample labeling and preserving for further details.

3. *Provide a soil, sampling SOP for use with the 3" ID HSA, and/or for the other methods contemplated, in case another is chosen ultimately.*

SUBSURFACE INVESTIGATION METHODS

VERTICAL AND LATERAL EXTENT DOCUMENTATION SAMPLING PROCEDURES

Drilling and Sampling Methods and Procedures

To obtain discrete groundwater samples from different water zones (elevations) four methods of drilling/probing were found to be acceptable. All four methods use the "hydropunch" method for obtaining water samples;

1. Conventional hollow stem auger drilling method using a three inch ID X three foot long California Split Spoon sampler to core and direct push water sampler, i.e. "Hydropunch" to obtain water samples;
2. Power probe direct push method (PPDPM);
3. Sonic drilling direct push vibrate drilling method using similar direct push water sampling device and
4. Cone Penetrometer testing/sampling using direct push method and hydropunch water sampling procedure to obtain discrete water samples.

Cone Penetrometer Testing (CPT)

Using a 25 ton CPT rig the dead weight of the CPT rig is used to push the cone penetrometer using a hydraulic ram. Soil parameters such as cone bearing, sleeve friction ratio, friction ratio and pore water pressure are measured as the cone penetrometer is advanced. These measurements are sent uphole through the cone rods to the support rig's on-board data acquisition system. All data is processed in the field in real time. The resulting log can then be compared to continuous core borings (used to normalize the CPT and to obtain soil and water samples that will be sited within a couple of feet of selected CPT holes. The CPT holes will indicate subsurface continuity.

Using a 25 ton Cone Penetrometer Testing (CPT) rig, direct push rod with core sleeves (acrylic sample tubes) are advanced in four foot intervals adjacent to the CPT hole, producing a 2 inch diameter boring. A sequence of 1-1/2 inch diameter by 4 foot long cores are produced. These cores are used to normalize the CPT log and to obtain soil samples for certified laboratory analysis. Once the interval is reached where water, soil gas, or vacuum measurements are wanted, the hydropunch sampler is used, see below. Once a hydropunch sampling has been performed, that core/boring is terminated and if further (deeper) investigation is warranted, a new probe hole is advanced to the deeper interval. This new hole is required due to the none recoverable drive point, which is left in the bottom of the sampled hole.

Sonic Drilling - Hydropunch

A dual casing drilling system that employs the use of high frequency mechanical vibration to take continuous core samples (acrylic sample tubes) or drives direct push rods. Water samples are obtained using the sonic direct push-sampling probe. This sampling probe is similar to the hydropunch, where a screen is attached to the drive point and once the sample depth has been reached the probe rod is retracted exposing the screen allowing groundwater to infiltrate the sampler. The drive point is recovered with the water sample probe and coring continues on to the next water sample point.

Power probe direct push method - Hydropunch

Using a truck mounted drilling rig, six inch hollow stem augers would be used to advance the boring past the anticipated surface fill (cobble zone) as outlined on Figure 3. Once through the cobble zone dual tube direct push continuous cores would be obtained. The outer tube consists of a 2 3/8" diameter protective casing while the inner core barrel collects cores in 1.5" X 4' acrylic sample tubes. Cores would be obtained from just below the cobble layer (surface - 8 foot depth) to final depth of boring (50 feet below the surface). To obtain water samples, the core sampler is removed. Any groundwater that entered through the outer casing would be removed by bailing and the "hydropunch"

would then be pushed three feet past the cored interval to obtain the water sample from beneath the 50- foot depth. Other water sample points would be evaluated from the soil core samples and individual probes would be necessary to obtain discrete water samples.

Selection

The CPT and PPDPM, methods would require additional holes to be driven/drilled adjacent to the initial core boring to obtain multiple discrete water samples. The hollow stem auger - continuous core method would produce a large enough core diameter that allows for coring over the drive point(s) left by the hydropunch sampler, thus allowing multiple discrete water sample points from the same boring. The Sonic Drilling method also has a recoverable point. Cost comparison between the Sonic Drilling Method and the Auger Continuous Core method in the past have shown that the Auger method is more cost effective. The Auger core method would save time and money and would provide suitable cores to examine the subsurface conditions and obtain discrete soil samples.

4.Please clarify expected depths of each boring…. We expect that is should be a 50' depth.

Examination of soil sample results from past assessments indicate that RS-5 bottom soil sample obtained at the 40 foot depth contained trace amounts of gasoline range hydrocarbons. It is proposed that the initial borings/cores (C1 through C5) be performed to the 50 foot depth. Based on field evaluations the remaining cores would be performed at somewhat of a lesser depth. Field evaluations will be evidence of staining, odor and PID response.

Once a boring/core has been completed, it will be tremie grouted with a 5% bentonite neat cement mix.

5. *Please clarify protocol for determining where soil samples would be retained for chemical analyses)e..g, every 5' advanced, changes in lithologies, areas of evident impacts, etc.)*

Once the selected drilling method has advanced past the cobble/fill, continuous cores will be obtained. If acrylic liners are used to contain the cored interval, and inspection of the materials looking through the liner will be attempted, if no obvious staining, lithology change are noted the bottom 4 inches of the core will be sawed off, screened with a PID, capped, labeled and preserved on ice for retention for probable laboratory analysis.

If the 3" ID split spoon sampler is used, the core barrel is placed horizontally, so as the core can be exposed without any spillage, the upper split is removed and the entire core is examined with the PID and for evidence of lithology changes and hydrocarbon impacts. The 6 inch length of the core that exhibits the highest PID response, will be collected by driving a clean 1" diameter X 3" length aluminum sleeve horizontally through the middle of the core, capping the ends with plastic end caps labeled and preserved on ice for

retention for probable laboratory analysis. If the same core segment shows a change in lithology that is independent of the high PID response and/or visual hydrocarbon impacted zone(s) these will also be retained for probable laboratory analysis. At the minimum, one soil sample will be obtained from each cored section, (3 or 5 foot length).

6. *Please clarify how depth discrete GW sampling will be accomplished while ensuring complete isolation of each sampling interval to prevent cross contamination from "dirty" zones into "clean" zones.*

Hydropunch Water Sampling Method

The boring or direct push probe hole is advanced to within three feet of the interval for water sampling. The drilling assembly is removed. Any water that has entered the outer drilling assembly (augers, outer tube) is removed by bailing. The hydropunch is attached to drill rod that will push the hydropunch to the desired depth to be sampled, at a minimum of three feet past the core hole. The hyropunch is connected to the drive point. Once the sample depth has been achieved, the drive rods (1.75 inch diameter hollow rods) are retracted, exposing the filter screen, thus allowing for groundwater infiltration. A small diameter bailer is then used to collect groundwater samples through the hollow rod. The drive point is left in the hole as the hydropunch screen/sample assembly is removed. To insure against vertical leakage, the core is advanced at least five feet past the depth of the last hydropunch water sample. If CPT or PPDPM is used a new hole is driven to within three feet of the desired water sample point and the above procedures are again employed. If CPT or PPDPM are the methods chosen, the original hole is cored the entire depth (i.e. 50 feet) prior to obtaining the vertical extent water sample. After examination of the core is completed additional water sample points are determined and individual probe holes are performed to each of the sample depths.

Labeling and Preservation of Soil and Water Samples

All samples collected will be labeled with the following information:

Site location
Sample ID#
Date and Time sample was obtained
Samplers Name
Preservative Used
Laboratory Method(s) to be used
Analytes to be tested.

Preservation of soil samples

Collect in clean aluminum sleeve completely filling the sleeve to void any headspace or sawing off section of acrylic liner containing portion of soil to be tested.
Capping the sleeve ends with clean plastic end caps
Placing labeled, capped sleeve into ziplock baggie
Placing ziplock baggie containing soil sample into an ice chest containing ice.

Preservation of water samples

Collect water using clean bailer

Slowly decanting, with no headspace, collected water into 3 40 ml VOA vials with HCl preservative

Capping VOA vials with teflon septum plastic caps making sure no air bubbles are contained in the sealed vial.

Placing the labeled VOAs into a ziplock baggie

Placing the ziplock baggie containing the 3 VOAs into an ice chest containing ice.

Sample Point Siting Determination

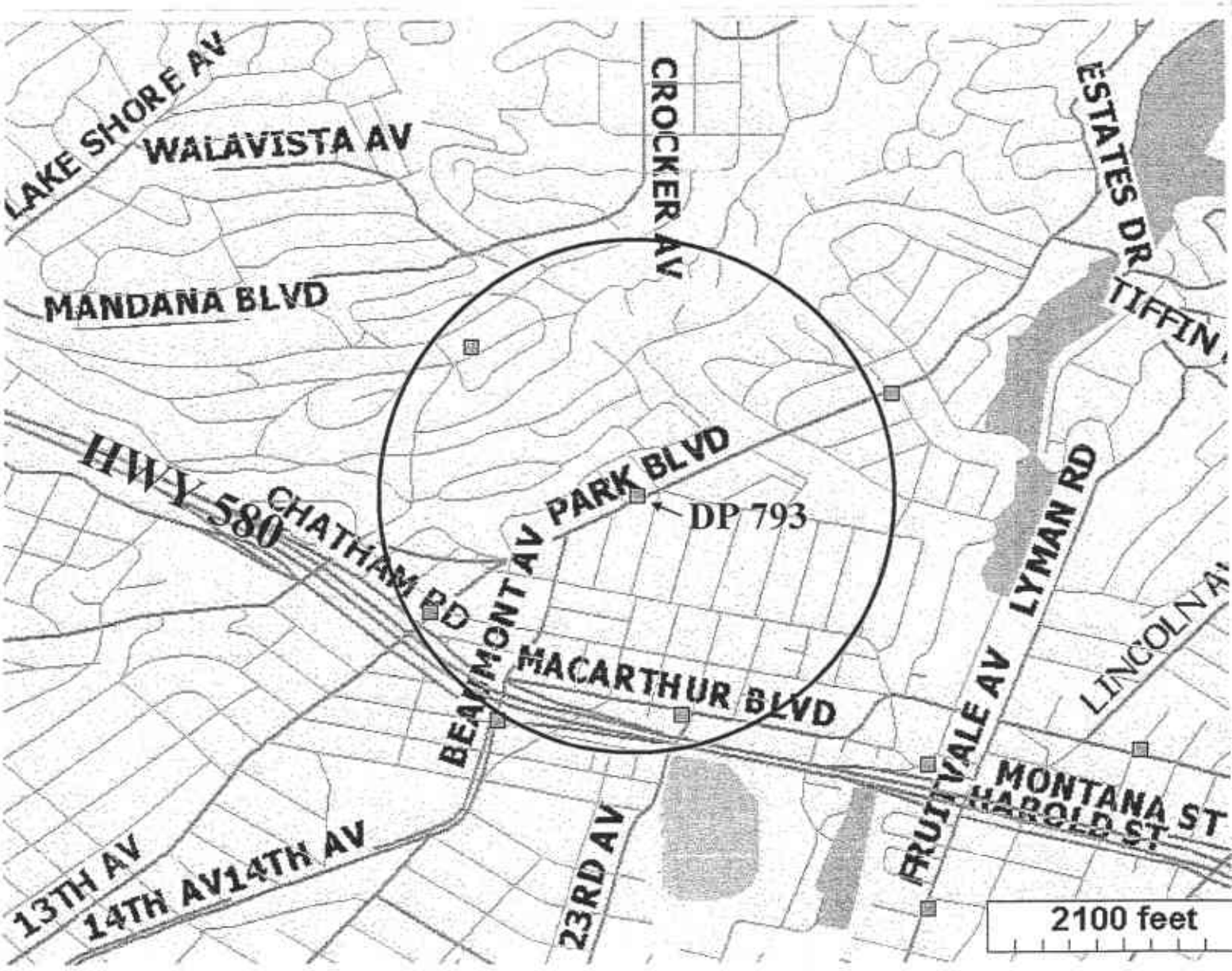
The property structures have been demolished to allow for the construction of residential buildings on this property. To evaluate the best means to further the remediation of gasoline contaminants associated with this site and the risk these residual soil and groundwater contaminantes may have on the future development of this property, soil and groundwater samples are necessary. Figure 3 shows the locations of the former gasoline station building, the areas that were over-excavated (removing the majority of gasoline contaminated soils), the locations of the groundwater monitoring wells and the proposed building locations. Test holes for obtaining soil and groundwater samples will be placed at approximately 15 foot spacing in the northwest corner of the lot.

If you should have any questions concerning the above procedures please feel free to call me at (530) 668-5300.

Sincerely yours,

George L Converse
Project Geologist

Cc: Mr. Bill Thompson, Desert Petroleum, Inc.
Mr. Kin Man Li, property owner
Mr. Leroy Griffin, Oakland Fire Dept.



N
W E
S

LUST SITES

WELLS

FIGURE 1
GEOTRACKER
AREA WELL & LUST MAP
DP 793
4035 PARK BLVD.
OAKLAND, CA

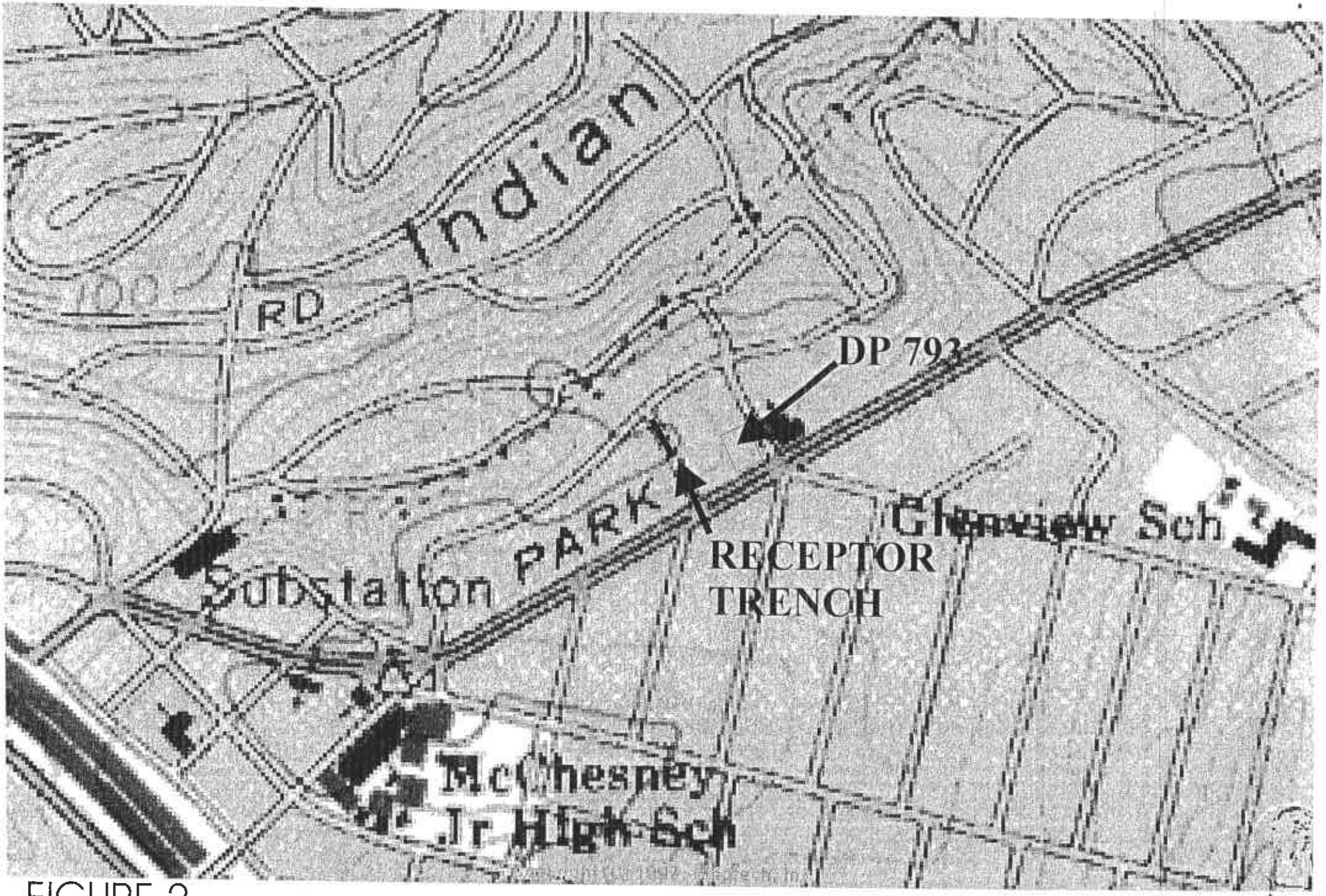
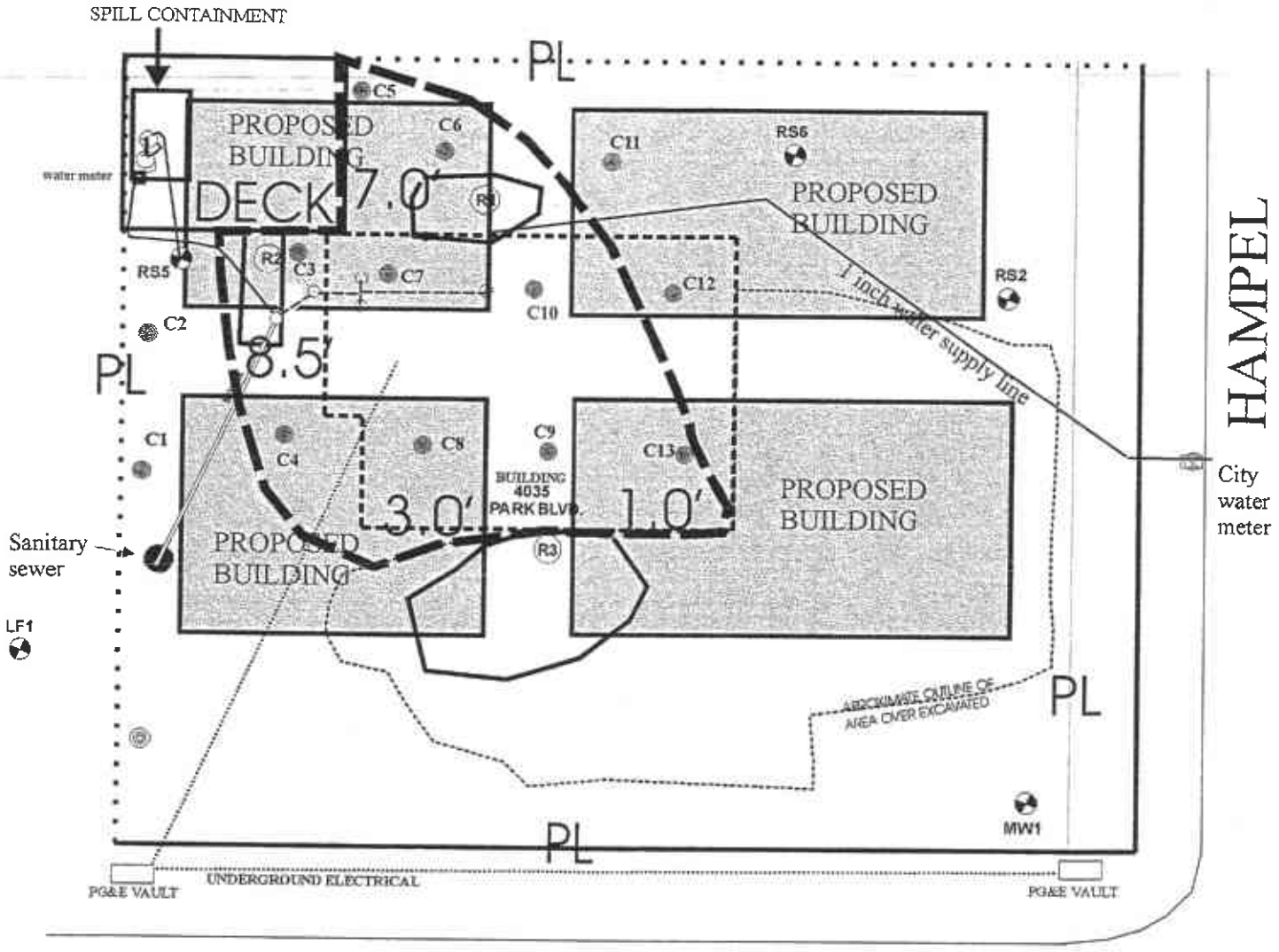


FIGURE 2

PORTION OF OAKLAND EAST 7.5 MINUTE USGS TOPOGRAPHIC MAP



OUTLINE AREA OF COBBLE FILL.

7.0' DEPTH TO BASE OF COBBLE FILL.

MW1 MONITOR WELL

2 in series 55 gallon carbon filters.

C1 - C13 Proposed locations for continuous core borings.

FIGURE 3- PROPOSED HOUSES SEWER DISCHARGE TREATMENT COMPOUND WASTEWAER DISCHARGE PERMIT # 5043550 1

(Revised 10/27/03)

NOTE: THE PROPOSED SOIL/WATER SAMPLE LOCATIONS ARE APPROXIMATELY ON 15 FOOT SPACINGS THAT WOULD ALLOW FOR THE COLLECTION OF SOIL AND GROUNDWATER SAMPLES TO PERFORM A DETAILED RISK ASSESSMENT OF THE AREAS PROJECTED FOR FUTURE HOME SITES. THE 15 FOOT SPACING WOULD HELP IN EVALUATING IF AND WHAT AMOUNTS OF CONTAMINATED SOILS WOULD NEED TO BE EXCAVATED AND WOULD ADD TO THE ASSESSMENT OF WHERE AND HOW THE ORIGINAL PETROLEUM RELEASE LEFT THE SITE AND ENTERED THE SEWER AND BACKYARDS OF ADJACENT PROPERTIES. DRILLING METHODS; SINCE THERE IS A COBBLE BACKFILL, DIRECT PUSH W/AUGER CAPABILITIES METHODS MAY BE NECESSARY TO PENETRATE TO THE DESIRED DEPTHS.

George Converse

From: "Seery, Scott, Env. Health" <sseery@co.alameda.ca.us>
To: "'George Converse'" <wege@cal.net>
Sent: Friday, October 24, 2003 2:43 PM
Subject: RE: 4035 Park Blvd.

George

This previous e-mail was "frozen" for some while as I tried to transmit it. When it finally was freed up, it was sent incomplete. This one is the complete version. Please note that an additional item is added to the bottom.

Scott

==========

Hi George

Briefly, here are a few bullet items to expound on and clarify the WEGE work plan for the onsite assessment work in prep to redevelop the property.

1. Review of on-site boring logs failed to reveal a cobbly backfill material that you felt may cause a problem should a GeoProbe be used to complete this phase of work. You mentioned that the R1 and R2 trenches exposed that material. See if you can find some info in your records that might help show where this fill should be anticipated, depths, etc..
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