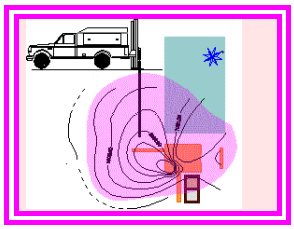
Franklin J. Goldman
Environmental and Hydrogeological Consulting
PO BOX 224, Roseville, CA 95661
Phone: (916) 676-2677
fjgoldmanchg@yahoo.com



November 18, 2011

George Lockwood 916 341-5752
SWRCB
P.O. Box 2231
Sacramento, CA 95812

SUBJECT: PETITION FOR UST SITE CLOSURE FOR THE FORMER UNDERGROUND STORAGE TANK INVESTIGATION AREA (I.E. THE GLOVATORIUM) LOCATED AT 3820 MANILA Ave., Oakland, California 94611

Mr. Lockwood,

We appreciate the opportunity to have this UST case reviewed and evaluated by the SWRCB Petition Unit. This technical report, which requests UST site closure, is submitted on behalf by the property owner, Stuart Depper, of the former Glovatorium.

To date, approximately two million dollars ($2,000,000) has been expended on corrective action for this site over the past 14 years. The site is comprised of a 20,000 square foot commercial property situated on a main thoroughfare in the City of Oakland.

A commercial property situated on a main thoroughfare in the City of Oakland should have provided leases for small businesses and jobs for local citizens. Furthermore, the City has had no benefit of the additional tax revenue from commercial activity for 14 years, during which time, the site was not leased.

Continued corrective action will merely prolong the economic underutilization this property imposes on the local community.

Although the Stoddard solvent discharged from the UST onsite is not a significant health threat, PCE has also been identified in the subsurface. It has been long since established that the groundwater has had no beneficial uses to date which would impact human health. In summary, dissolved PCE has exhibited low and decreasing concentrations over many years in representative groundwater monitor wells at this UST site due to aggressive and effective cleanup actions. Residual PCE in soil has been greatly reduced by remediation efforts to the extent that it is not contributing significantly to the dissolved plume and does not pose a significant health threat to workers in a commercial zoning scenario. A soil vapor survey performed at the residential properties down gradient of the site demonstrated that the chlorinated solvents beneath these properties are not likely to be a threat due to the intrusion to indoor air of PCE vapors due to a shallow cap of clayey soils which lies above the PCE contamination and below the slab of the houses. Dissolved benzene and MTBE have not been demonstrated to be significant constituents of concern because the concentrations have always been relatively low. This is due to the fact that the USTs at the site were primarily used to store Stoddard solvent and not fuels such as gasoline.

The stoddard solvent range organics (SSROs) and gasoline range organics (GROs) are not considered to be carcinogenic. They are only toxic to humans at very high concentrations during direct and prolonged exposure.

Of special note is the likelihood that some portion of the PCE that was identified beneath the subject site, that was ultimately cleaned up, may have come from offsite sources through storm drain and sewer lines and or other subsurface utility lines. For instance, the 1936, 1951, and 1969 Sanborn maps clearly show a dry cleaning operation located at the Earl Thompson property, located immediately adjacent to the Glovatorium on Manila Avenue (See Evaluation of Offsite Potential Point Sources of Solvent Discharges Related to THE FORMER UNDERGROUND STORAGE TANK INVESTIGATION AREA [I.E. THE GLOVATORIUM], SEPTEMBER 04, 2011, GOLDMAN & ASSOCIATES). It wasn't until 2008, eleven (11) years after the UST abandonment at the Glovatorium, that the leaking solvent tanks at the Earl Thompson site were addressed. These Sanborn maps show numerous other past dry cleaning, auto repair and auto painting operations up gradient and up flow of the Glovatorium that were never investigated by a regulatory agency.

Four representative groundwater monitor wells have been evaluated in this technical report for decreasing trends of dissolved concentrations of PCE in groundwater beneath the site. Estimates for these wells indicate that water quality objectives for PCE will be reached in two (2) to six (6) years. In addition, it appears that the dissolved TCE is most likely a break down product of the PCE and should therefore decrease in concentration soon after the parent chemical, PCE, has diminished.

Sincerely,

Franklin J. Goldman
Certified Hydrogeologist No. 466

GENERAL SITE DESCRIPTION

This UST case has been open since the USTs associated with the site were abandoned in place in June of 1997 (i.e. 14 years ago).

Approximately two million dollars ($2,000,000) has been expended on corrective action for this site to date. In addition, this income producing property has not been useable for most of that time.

The site is located between Manila Avenue and Broadway, near the intersection with 38th Street in Oakland, California.

A 54-inch inside-diameter storm drain culvert runs under the property, from Manila Avenue on the west to 38th Street to the south. It has been demonstrated in past technical reporting that contaminants are likely migrating from properties upflow of the site via this storm drain.

The site is a commercial property. The surrounding properties are predominantly commercial businesses, many of which use to be dry cleaners. A few residential properties are located down gradient of the site.

REMEDIATION ACTIVITIES COMPLETED TO DATE

A significant release of TPH-ss is reported to have occurred in the late 1970s when a new piping system was installed. The source area for the TPH-ss appears to have been from the former indoor USTs and their associated piping system, as well as from the washing machine operation.

Two of the four USTs located within the building footprint of the former dry cleaning operation were documented to have holes which very likely released Stoddard solvent to the subsurface. Residual liquid extracted from the four USTs located inside the building area was analyzed. Although the composited lab sample of residual liquid implies that six USTs were sampled, the report by H2K/Semco states that samples were composited from USTs T-1 thru T-4. The main constituents of concern reported by the lab as follows; 25 ppb benzene, 430 ppb PCE, and 180 ppb TCE (*H2K/Semco, Tank Closure Report, August 01, 1997*). The six (6) USTs were abandoned in place in August of 1997.

In January 2001, Levine-Fricke (LFR) initially identified strong anaerobic biodegradation activities and dechlorination of PCE beneath the Site. On April 26 to 27, 2001, SOMA began its initial groundwater monitoring events at the Glovatorium. Results of the Second Quarter 2001 monitoring event indicated a strong occurrence of the dechlorination of PCE in the subsurface (*First Semi-Annual 2008 Groundwater Monitoring Report May 28, 2008 by SOMA, page 3*). Through the years, bioattenuation parameters have been monitored and evaluated. Results of the bioattenuation study indicated that subsurface conditions are favorable for occurrence of intrinsic bioremediation processes in soil and groundwater. Results of this study indicated that PCE and other dissolved organic compounds are biodegrading beneath the site (*First Semi-Annual 2011 Groundwater Monitoring and Interim Remedial Action Report May 5, 2011 by SOMA, page 9*).

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On January 28, 2004, free product (e.g. predominantly stoddard solvent) was removed from SOMA-4 with a skimmer pump. On February 6, 2004, SOMA installed a flexible axial peristaltic pump (FAP system) in SOMA-4 to remove free product. In August 2004, SOMA converted borings B-3 and B-8 into wells for removal of free product. By May 1, 2008, approximately 1,895 gallons of free product and contaminated groundwater had been removed (*First Semi-Annual 2008 Groundwater Monitoring Report May 28, 2008 by SOMA, pages 11 & 12*). Since October 2002 to 2009 the thickness of free product has dropped in SOMA-4 from 6.98 feet to no measureable thickness. Since October 2001 to late 2008, the thickness of free product has dropped in B-8 from 2.10 feet to no measureable thickness. Since late 2008, B-10 and SOMA 2 have also shown no measureable thickness of free product. The most recent groundwater monitoring event has also shown no measureable thickness of product in MPE-2 and MPE-3 (*First Semi-Annual 2011 Groundwater Monitoring and Interim Remedial Action Report May 5, 2011 by SOMA, Table 7 & Figure 18*).

Beginning in December of 2008 thru the end of 2010, the influent concentrations drawn into the Multi-Phase Extraction (MPE) system of TPH-ss ranged from 100s to 1000s of PPMV. From January 05, 2011 thru March 11, 2011, the influent concentrations, drawn into the MPE system, of TPH-ss were relegated to 100s of PPMV (First Semi-Annual 2011 Groundwater Monitoring and Interim Remedial Action Report May 5, 2011 by SOMA, Table 8). As of March 31, 2011, the total mass of VOCs (as TPH-ss) extracted by MPE from extraction wells is 4,544.48 lbs (*First Semi-Annual 2011 Groundwater Monitoring and Interim Remedial Action Report May 5, 2011 by SOMA, Table 9*). The MPE system has been very successful at removing Stoddard solvent from the subsurface.

DECREASING TRENDS OF PCE IN GROUNDWATER

Four (4) representative groundwater monitor wells were evaluated to determine the impact that various remediation efforts had on reducing the concentrations of dissolved PCE in groundwater. SOMA-3 (Figure 1) was used as the source well, SOMA-1 (Figure 2) and GW3 (Figure 3) were used as intermediate down gradient wells, and LFR-3 (Figure 4) was used as the down gradient point of compliance well (See Attachment 1 for map of well locations).

The Figure 1 graph for SOMA-3 shows a dramatic decrease in PCE concentrations immediately after the initiation of free product removal activities in adjacent groundwater monitor and extraction wells located close to the main source of the solvent discharge beginning in mid 2004. Just prior to the termination of free product removal activities in March of 2008, a dramatic increase in PCE concentrations occurred during a dramatic decrease in water level elevation. Between 2002 and mid 2003 a similar pattern can be noted where an increase in water level elevation is associated with a decrease in PCE concentrations and a decrease in water level elevation is associated with an increase in PCE concentrations. After initiation of the MPE system in September of 2008, PCE concentrations decreased. Another interpretation could be that the PCE concentrations may have decreased in association with an increase of the water table elevation in SOMA-3 at that time. According to the decreasing trend line established for this graph (Figure 1), the water quality objective for PCE in SOMA-3 should be reached in 3 to 4 years.

In Figure 2, the removal of product from extraction wells appears to have no significant impact on decreasing the concentrations of PCE in SOMA-1; most likely because it is located down gradient and relatively far from the source and higher concentrations of PCE have migrated further down gradient as seen in GW3. After the implementation of MPE in September of 2008, the concentrations of PCE began to drop in SOMA-1. This, however, was also associated with an increase in water level elevation which may have also been a contributing factor related to the drop in PCE. According to the decreasing trend line established for this graph (Figure 2), the water quality objective for PCE in SOMA-1 should be reached in 2 to 3 years.

In Figure 3, the removal of product from GW3 appears to have had some impact on decreasing the concentrations of PCE, however, it should be noted that PCE concentrations began to decrease significantly beginning in mid 2003, a full six months prior to the initiation of free product removal. In the graph for figure 3, sharp changes in water level elevations are accompanied by sharp changes in concentrations of PCE. After the implementation of MPE in September of 2008, the concentrations of PCE began to drop. This, however, was also associated with an increase in water level elevation which may have also been an associated contributing factor related to the drop in PCE. According to the decreasing trend line established for this graph (Figure 3), the water quality objective for PCE in GW-3 should be reached in 5 to 6 years.

The Figure 4 graph for down gradient monitor well LFR-3 shows an increase in PCE concentrations for most of the period during which free product removal was performed at source area extraction wells. It was only during the last nine (9) months of free product removal that PCE concentrations finally dropped in LFR-3. This delay is most likely due to the large distance between LFR-3 and the source extraction wells or that there is no relationship between the removal of free product and a decrease in PCE concentrations. This would imply that the residual free Stoddard solvent product does not contain chlorinated solvents.

After initiation of the MPE system in September of 2008, PCE concentrations decreased. According to the decreasing trend line established for this graph (Figure 4), a sustained water quality objective for PCE in SOMA-3 should be reached in 1 to 2 years.

According to State Board Resolution No. 2009-0042, the main constituent of concern (i.e. dissolved PCE) does not have to reach water quality objectives to attain UST site closure. If the water quality objectives can be reached within a reasonable period of time, the site can be closed with respect to the residual dissolved contaminant.

RESIDUAL PCE IN SOIL

Between 1997 and 2001, seven (7) locations were identified with significantly high concentrations of PCE in soil beneath the site (Figure 5) & (Table 1). In 2009, numerous confirmation soil borings were drilled throughout the site, many of which, were adjacent to the soil borings drilled between 1997 and 2001 (Figure 6).

The PCE identified at 0.05 ppm at 9 feet bgs in GW-8 and at 0.71 at 7 feet bgs in GW-1 is located outside of the site's building footprint and won't likely pose a threat of PCE vapor intrusion to indoor air in the existing building.

In 1998, 0.62 ppm PCE was identified in E-15 at a depth of 4 ½ feet bgs. Later, in 2009 soil borings B-8 and B-9 identified 4.5 ppm at 8 feet bgs and 1.9 ppm at 5 feet bgs, respectively. Although these two soil borings still had high concentrations of PCE in shallow soil, they are overlain by clayey soils which will impede the migration of PCE vapor to indoor air (Table 1).

On August 16, 2004, SOMA conducted a soil gas survey in the vicinity of the residential homes located immediately down gradient of the subject site. The soil gas sampling rods were advanced to five (5) feet bgs. No soil gas was extractable due to the low permeability of the unsaturated soils (*Human Health Risk Assessment and Request for Closure, September 30, 2004, by SOMA, pages 25 thru 27*). Groundwater monitor wells GW-2, GW-3, GW-4, and GW-5, which surround the residential properties, installed by Levine Fricke in July of 1999, all have clayey soils which range from 5 to 13 feet thick from the surface to depth (See Appendix A for soil Boring logs). The Figure 6 cross section B-B' (See Appendix A for cross section), *produced by SOMA, and included in their August 17, 2009 Site Investigation Report*, shows the shallow clayey soil cap which extends from the residential area in LFR-2 to near the center of the subject site.

In 1997, 1.3 ppm PCE was identified at 15 feet bgs and 5.5 ppm at 15 ½ feet bgs, in B-10. In an adjacent soil boring, in 1998, 0.026 ppm PCE was identified at 2 ½ feet bgs, 0.029 ppm at 14 feet bgs, and 0.85 ppm at 15 feet bgs in E-17. In another adjacent soil boring, in 1998, 2.1 ppm PCE was identified at 4 ½ feet bgs and 0.03 ppm at 15 ½ feet bgs in E-19. Finally, in 2001, 1.4 ppm PCE was identified at a depth of 10 feet bgs in SOMA-3. In 2009, soil boring SB-10 was drilled in between all of these four soil borings and identified no detectable concentrations of PCE at 5, 8, and 11 feet bgs and only 0.69 ppm at 12 ½ feet bgs (Figure 6). Although 0.026 ppm PCE was identified at 2 ½ feet bgs, it is a concentration that it is most likely low enough to pose no significant health threat to humans.

So, in summary there are ten (10) locations where significantly high concentrations of residual PCE could still remain in the soil. It is more than likely that the remediation efforts and natural bioattenuation were responsible for the apparent decreases of residual PCE in soil between 2001 and 2009 at the locations discussed. Regardless, residual PCE contamination in soil is generally located beneath a clay cap, which for all practical purposes, is laterally continuous from a depth of approximately 4 ½ to 14 ½ feet thick (Table 1) in the vicinity of the site. This clay cap has been shown to impede soil gas from migrating to the surface.

Residual Free Floating Product in Soil

Although there has been no free floating Stoddard solvent product identified in the latest groundwater monitoring report, the position that the County holds is that it could reappear in more than one well at some time in the future. In August of 2010, free product was identified in MPE-2 and MPE-3. The depth of free product was measured in MPE-2 and MPE-3, at 12.13 and 11.67 feet below the surface and beneath approximately nine (9) and eleven (11) feet of clayey soils, respectively. This depth is likely too deep, beneath a very thick clayey layer for free floating Stoddard solvent, to be a significant human health threat (Table 2) and (See Appendix A for well development data sheets).

Free product has been removed to the extent "practicable." According to the water code

and State Board Resolution 92-49, the cost of cleanup should bear a reasonable relationship to the benefit to the safety of the people of California. Continued subsurface assessment of a small volume of mobile free floating Stoddard solvent product overlain by thick clayey soils, with low permeability, is a futile effort that should be abandoned.

SENSITIVE RECEPTOR SURVEY

There have been no water supply wells, identified to date, within 2,000 feet of the site. Therefore it is unlikely that there is anyone in the vicinity of the site that is going to be drinking chlorinated solvent contaminated water. There are no other sensitive receptors in the area that will be coming into contact with the contaminated water from beneath the site (*Human Health Risk Assessment and Request for Closure, September 30, 2004, by SOMA, pages 16 thru 18*).

CONCLUSIONS

The criterion for site closure as per State Water Board Water Quality Orders are satisfied according to the following rationale:

1. Dissolved PCE, the main constituent of concern, has been decreasing and will reach Water Quality Objectives in two to six years in the four representative groundwater monitor wells evaluated in this report. It is expected that the dissolved PCE in the remaining wells will reach water quality objective within a similar time span.

2. The dissolved PCE plume is stable. Dissolved PCE in down gradient well GW-3 reached its water quality objective by August 05, 2010.

3. The dissolved PCE plume and PCE in soil has been defined through numerous subsurface investigations by three different consultants.

3. The USTs were properly abandoned in place and past solvent discharges from the washing machine area and associated piping was terminated when the tanks were abandoned in place in 1997. Discharges of solvents from other potential point sources such as drums and or offsite sources were not identified in the past technical reporting reviewed and evaluated to date.

4. Free floating Stoddard solvent has been removed to the extent practicable through free product removal and MPE. Recent appearances of residual free product indicates that it lies beneath a thick and relatively impermeable clayey soil cap.

5. According to SOMA's Sensitive Receptor Survey, there are no sensitive receptors which could be impacted from residual contamination emanating from the subject site. In addition, the clayey soils, which overlay the residual free floating Stoddard solvent product, are of sufficient thickness and impermeability, as measured in SOMA's 2004 soil gas survey, to not be a significant health threat to humans via intrusion of vapors to indoor air.

6. Residual PCE identified in soil appears to have been remediated by numerous, and aggressive remediation events. Confirmation soil borings have

confirmed that PCE in soil has been greatly reduced and that clayey soils which overlay the residual contamination in soil is of sufficient thickness and impermeability, as measured in SOMA's 2004 soil gas survey, to not be a significant health threat to humans via intrusion of PCE vapors to indoor air. In addition to the removal of PCE vapors by MPE, it has been demonstrated that bioattenuation has been occurring beneath the site, assuring continued reductions of PCE in soil.

7. Closure of this site would be consistent with the maximum benefit to the people of the State by limiting the expense to the taxpayer and the responsible party, by allowing the site owner to make the most of his income producing property, and it would not diminish access to useable drinking water.

RECOMMENDATIONS

According to State Board Resolution No. 2009-0042, it states,
"*It is the responsibility of Regional Water Boards, LOP agencies, and other local agencies to close UST case that are ready for closure. State Board Resolution No. 2009-0042 directs that water affected by an unauthorized release attain either background water quality or the best water quality that is reasonable if background water quality cannot be restored. Any alternative level of water quality less stringent than background must be consistent with the maximum benefit to the people of the state, not unreasonable affect current and anticipated beneficial use of affected water, and not result in water quality less than that prescribed in the water quality control plan for the basin within which the site is located. State Board Resolution No. 92-49 does not require, however, that the requisite level of water quality be met at the time of site closure. No. 92-49 specifies compliance with cleanup goals and objectives within a reasonable time frame. Therefore, even if the requisite level of water quality has not yet been attained, a site may be closed it the level will be attained with a reasonable period. In previous decisions, the State Water Board, when determining a reasonable period, has considered all relevant factors including, but not limited to, existing and anticipated beneficial uses of water. If, for example, it will take 50 years to meet the requisite level of water quality, that may be a reasonable period if neither existing nor anticipated beneficial uses would be impacted during that time.*"

In the case of the subject site, it has been demonstrated that the dissolved concentrations of the key constituent of concern, PCE, will be reached in two (2) to six (6) years, as estimated from four representative groundwater monitor wells. As such, this is well within the criteria established to justify site closure as outlined in SBR No. 2009-0042 (i.e. the concentrations will diminish to WQOs in a reasonable period of time).

Given that water quality objectives will be reached within a reasonable period of time, that the groundwater beneath the site has never had a known beneficial use, as evaluated in the past technical reporting reviewed to date, and that there is no known anticipated beneficial use of groundwater, it is the responsibility of the Alameda County LOP to close this site.

According to State Board Resolution No. 92-49 under Water Code Section 13304, it

states, "*It states that:*
III. The Regional Water Board shall implement the following procedures to ensure that dischargers shall have the opportunity to select cost-effective methods for detecting discharges or threatened discharges and methods for cleaning up or abating the effects thereof. The Regional Water Board shall:
B. Consider whether the burden, including costs, of reports required of the discharger during the investigation and cleanup and abatement of a discharge bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports;

Given that the cost of this corrective action has been in excess of $2,000,000, that sporadic appearances of free product has been remediated to the extent practicable, and that a clay cap mitigates human exposures to solvent vapors, additional investigation and or cleanup will not serve the public by exhausting the responsible party's financial resources.

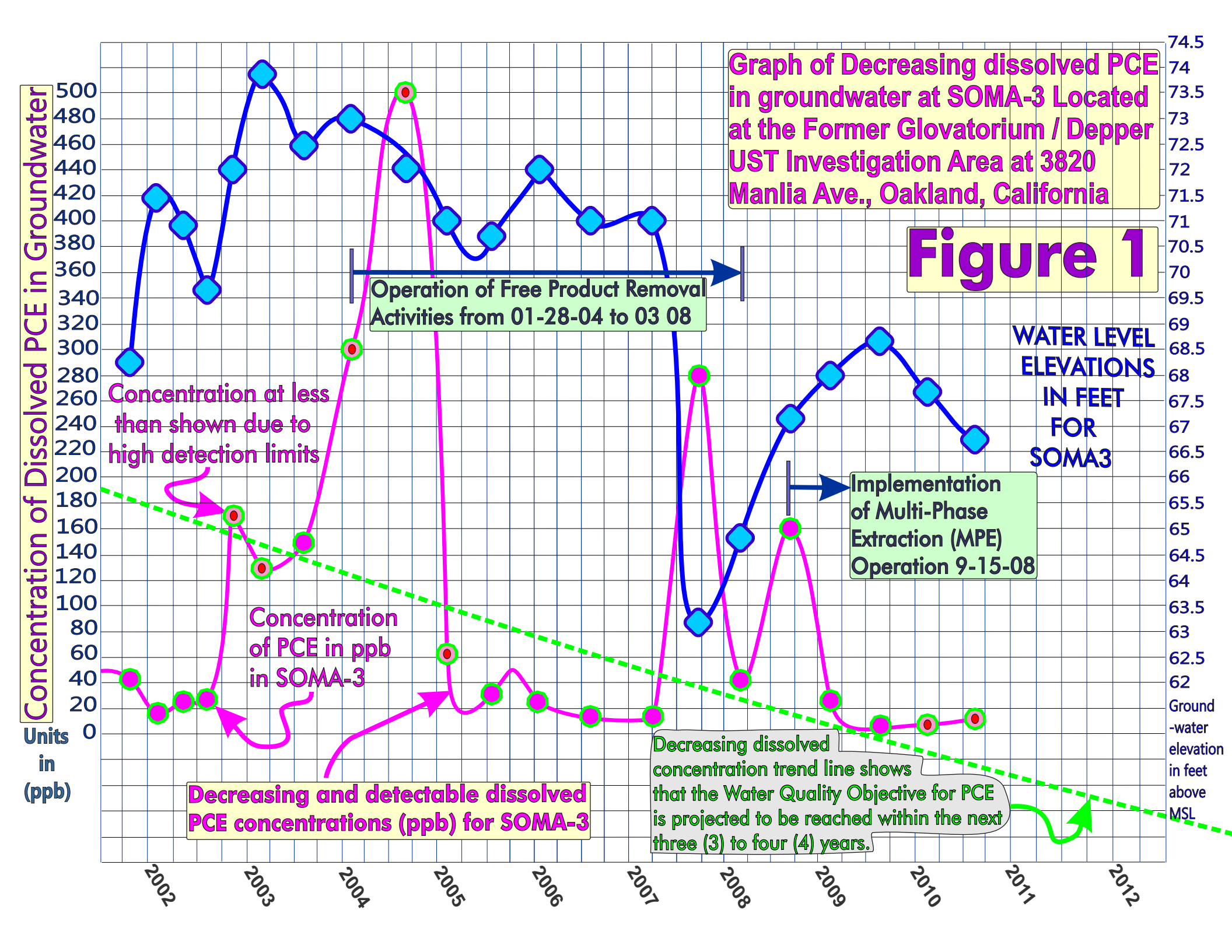
It is therefore recommended that the site be closed and that the monitor wells be abandoned as per the California Well Standards.

REFERENCES

The environmental status of this technical report is based upon technical reporting provided in the State Geotracker data base and the Alameda County ftp Website for the addresses specified in this report only which was available on the internet, prior to September 2011. In addition, Sanborn maps for 1936, 1951, and 1969, obtained from the City of Oakland Planning Department, were also evaluated.

LIMITATIONS

This report has been prepared in accordance with generally accepted environmental, geological and engineering practices. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analyses, conclusions and recommendations contained in this report are based upon site conditions as they existed at the time of the investigation and they are subject to change. The conclusions presented in this report are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this report. Franklin J. Goldman, recognizes that the limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other state agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein, is done so at the sole risk of the said user.


Graph of Decreasing dissolved PCE in groundwater at SOMA-3 Located at the Former Glovatorium / Depper UST Investigation Area at 3820 Manlia Ave., Oakland, California
Figure 1
Concentration of Dissolved PCE in Groundwater
Units in (ppb)
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
74.5
74
73.5
73
72.5
72
71.5
71
70.5
70
69.5
69
68.5
68
67.5
67
66.5
66
65.5
65
64.5
64
63.5
63
62.5
62
Ground -water elevation in feet above MSL
Operation of Free Product Removal Activities from 01-28-04 to 03 08
WATER LEVEL ELEVATIONS IN FEET FOR SOMA3
Concentration at less than shown due to high detection limits
Implementation of Multi-Phase Extraction (MPE) Operation 9-15-08
Concentration of PCE in ppb in SOMA-3
Decreasing and detectable dissolved PCE concentrations (ppb) for SOMA-3
Decreasing dissolved concentration trend line shows that the Water Quality Objective for PCE is projected to be reached within the next three (3) to four (4) years.
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

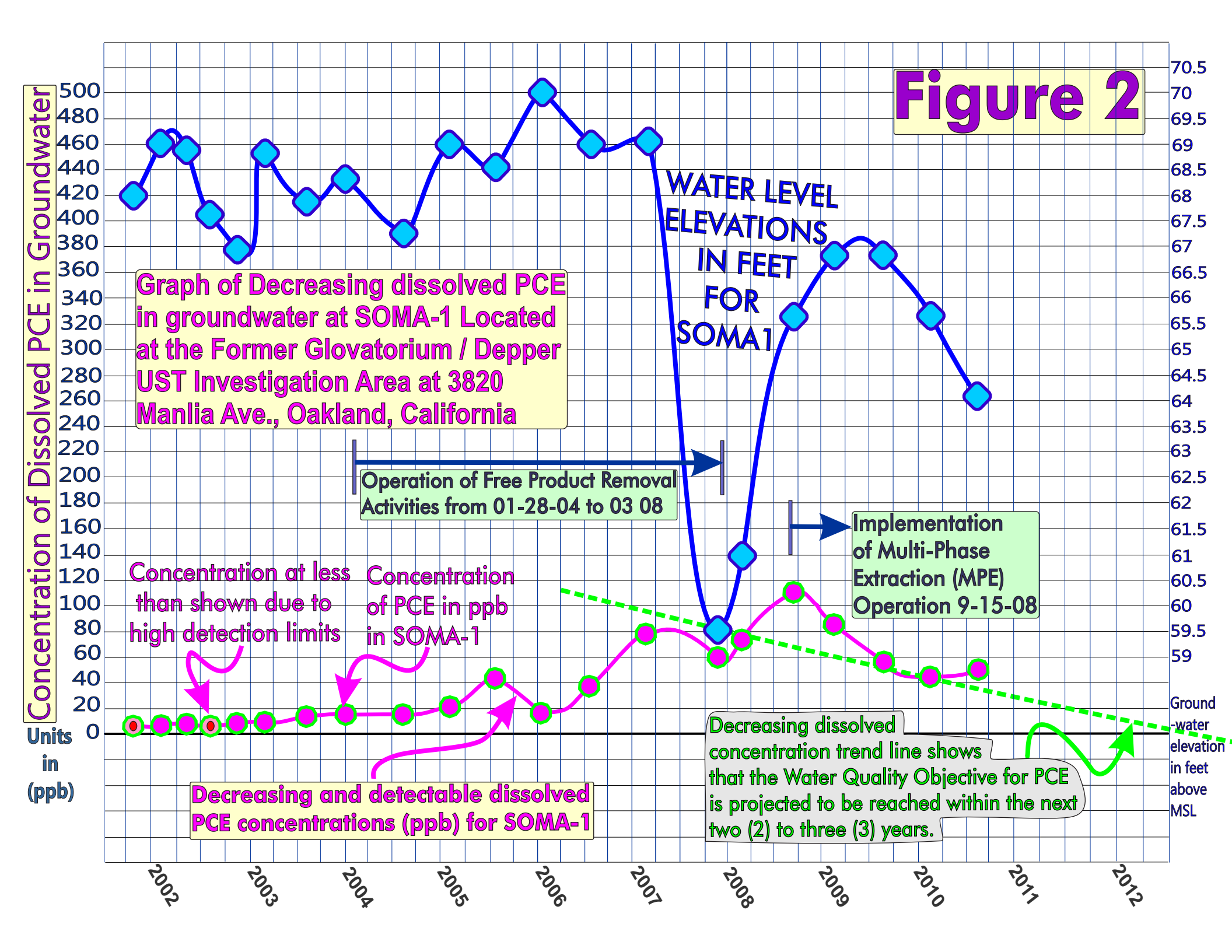


Figure 2
Concentration of Dissolved PCE in Groundwater
Units in (ppb)
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
70.5
70
69.5
69
68.5
68
67.5
67
66.5
66
65.5
65
64.5
64
63.5
63
62.5
62
61.5
61
60.5
60
59.5
59
Ground -water elevation in feet above MSL
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Graph of Decreasing dissolved PCE in groundwater at SOMA-1 Located at the Former Glovatorium / Depper UST Investigation Area at 3820 Manlia Ave., Oakland, California
WATER LEVEL ELEVATIONS IN FEET FOR SOMA1
Operation of Free Product Removal Activities from 01-28-04 to 03 08
Implementation of Multi-Phase Extraction (MPE) Operation 9-15-08
Concentration at less than shown due to high detection limits
Concentration of PCE in ppb in SOMA-1
Decreasing and detectable dissolved PCE concentrations (ppb) for SOMA-1
Decreasing dissolved concentration trend line shows that the Water Quality Objective for PCE is projected to be reached within the next two (2) to three (3) years.

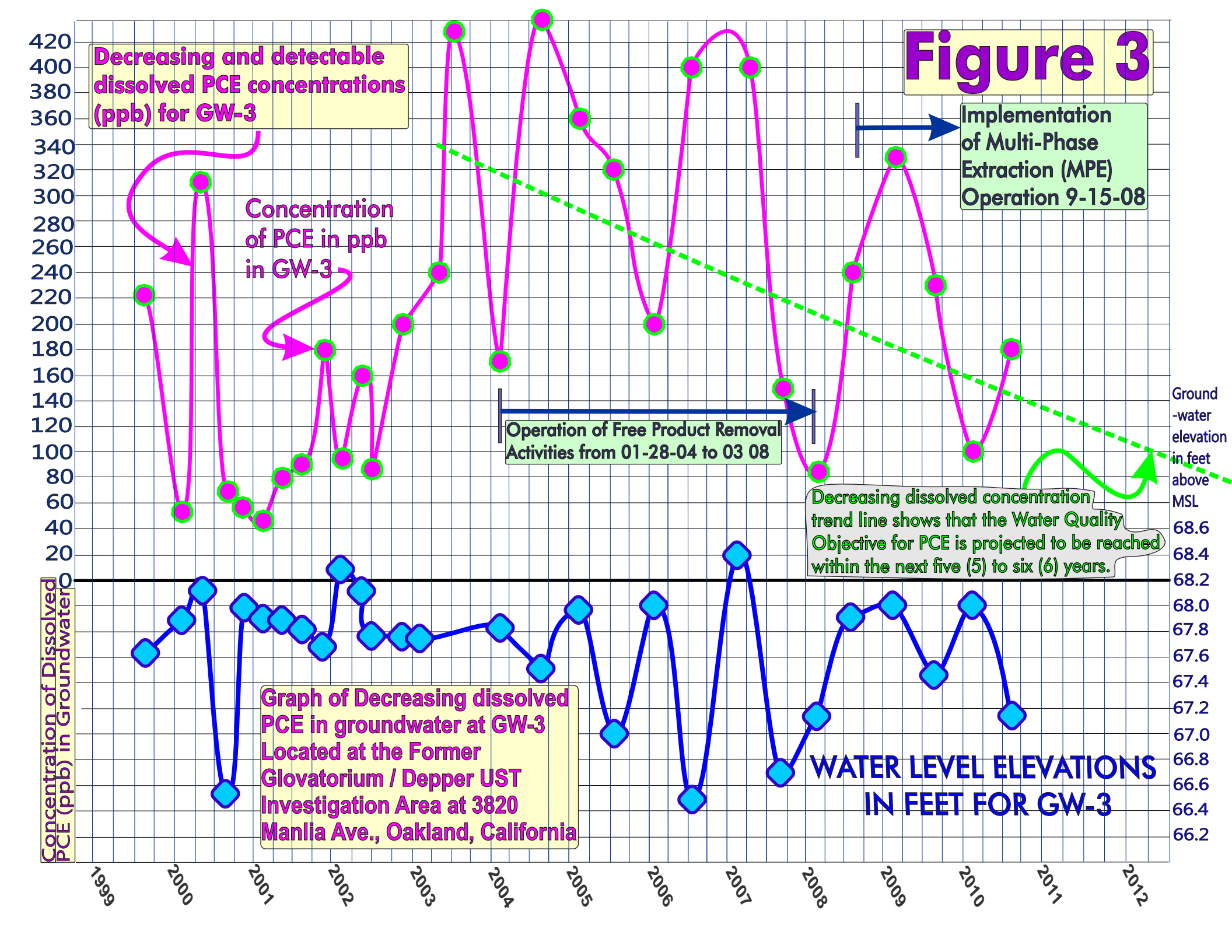


Figure 3
Decreasing and detectable dissolved PCE concentrations (ppb) for GW-3
Concentration of PCE in ppb in GW-3
Implementation of Multi-Phase Extraction (MPE) Operation 9-15-08
Operation of Free Product Removal Activities from 01-28-04 to 03 08
Decreasing dissolved concentration trend line shows that the Water Quality Objective for PCE is projected to be reached within the next five (5) to six (6) years.
Concentration of Dissolved PCE (ppb) in Groundwater
Graph of Decreasing dissolved PCE in groundwater at GW-3 Located at the Former Glovatorium / Depper UST Investigation Area at 3820 Manlia Ave., Oakland, California
WATER LEVEL ELEVATIONS IN FEET FOR GW-3
Ground -water elevation in feet above MSL
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
68.6
68.4
68.2
68.0
67.8
67.6
67.4
67.2
67.0
66.8
66.6
66.4
66.2
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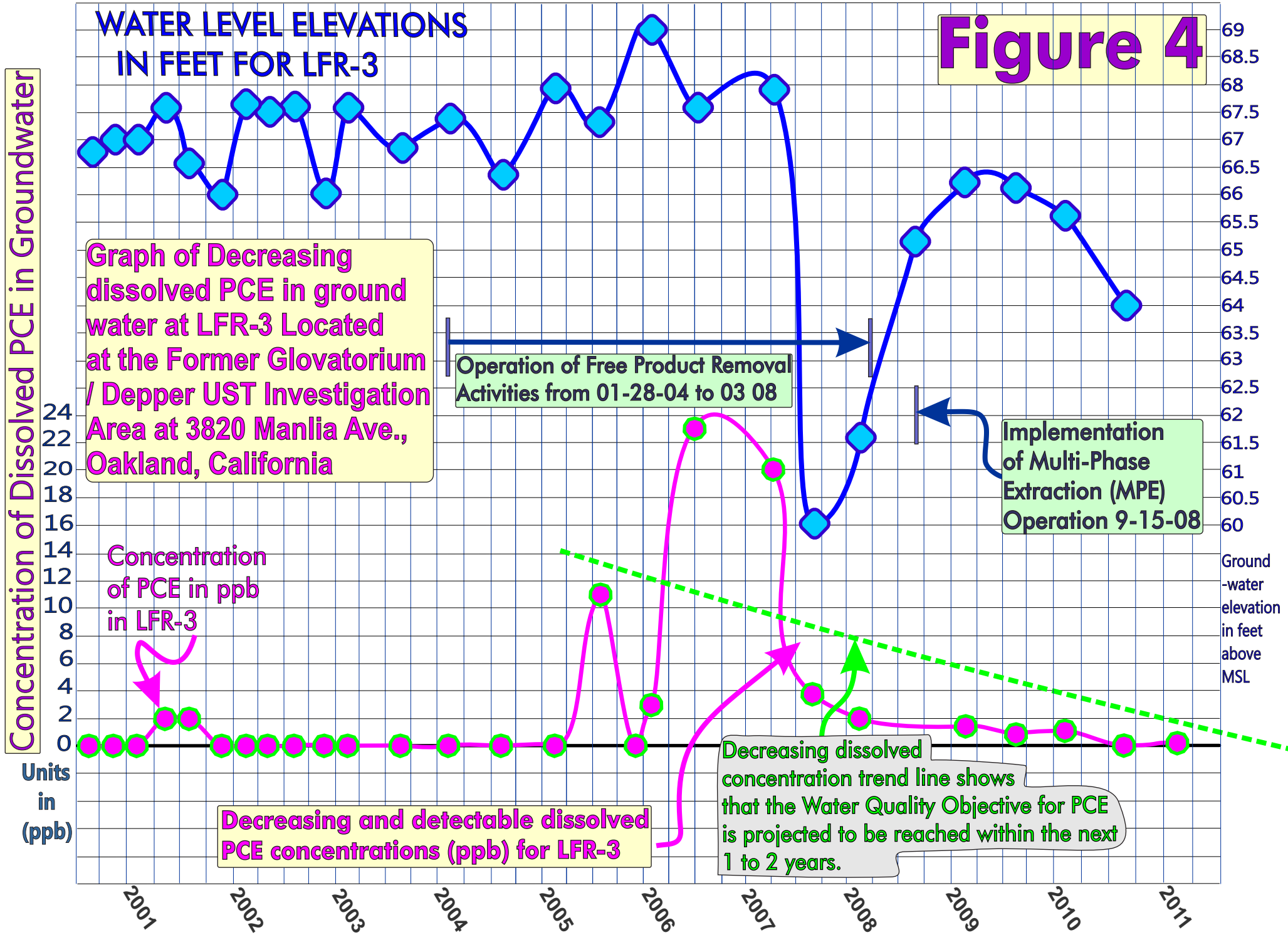
2011
2012


WATER LEVEL ELEVATIONS IN FEET FOR LFR-3
Figure 4
Graph of Decreasing dissolved PCE in ground water at LFR-3 Located at the Former Glovatorium / Depper UST Investigation Area at 3820 Manlia Ave., Oakland, California
Operation of Free Product Removal Activities from 01-28-04 to 03 08
Implementation of Multi-Phase Extraction (MPE) Operation 9-15-08
Concentration of PCE in ppb in LFR-3
Decreasing and detectable dissolved PCE concentrations (ppb) for LFR-3
Decreasing dissolved concentration trend line shows that the Water Quality Objective for PCE is projected to be reached within the next 1 to 2 years.
Concentration of Dissolved PCE in Groundwater
Units in (ppb)
0
2
4
6
8
10
12
14
16
18
20
22
24
Ground -water elevation in feet above MSL
60
60.5
61
61.5
62
62.5
63
63.5
64
64.5
65
65.5
66
66.5
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68.5
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2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

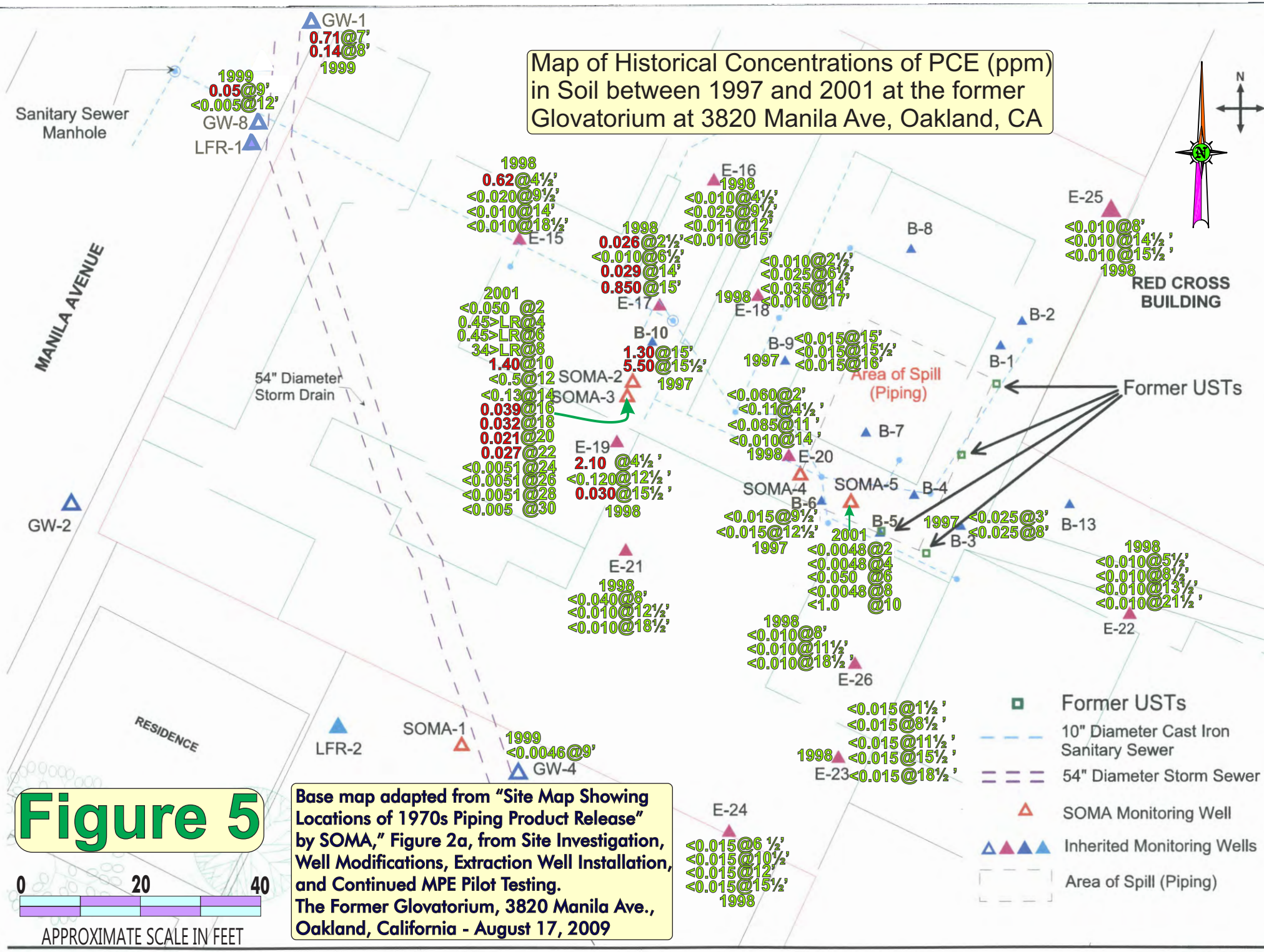


Figure 5

Base map adapted from "Site Map Showing Locations of 1970s Piping Product Release" by SOMA," Figure 2a, from Site Investigation, Well Modifications, Extraction Well Installation, and Continued MPE Pilot Testing.
The Former Glovatorium, 3820 Manila Ave., Oakland, California - August 17, 2009

approximate scale in feet

Figure 2a: Site Map Showing Locations of 1970s Piping Product Release

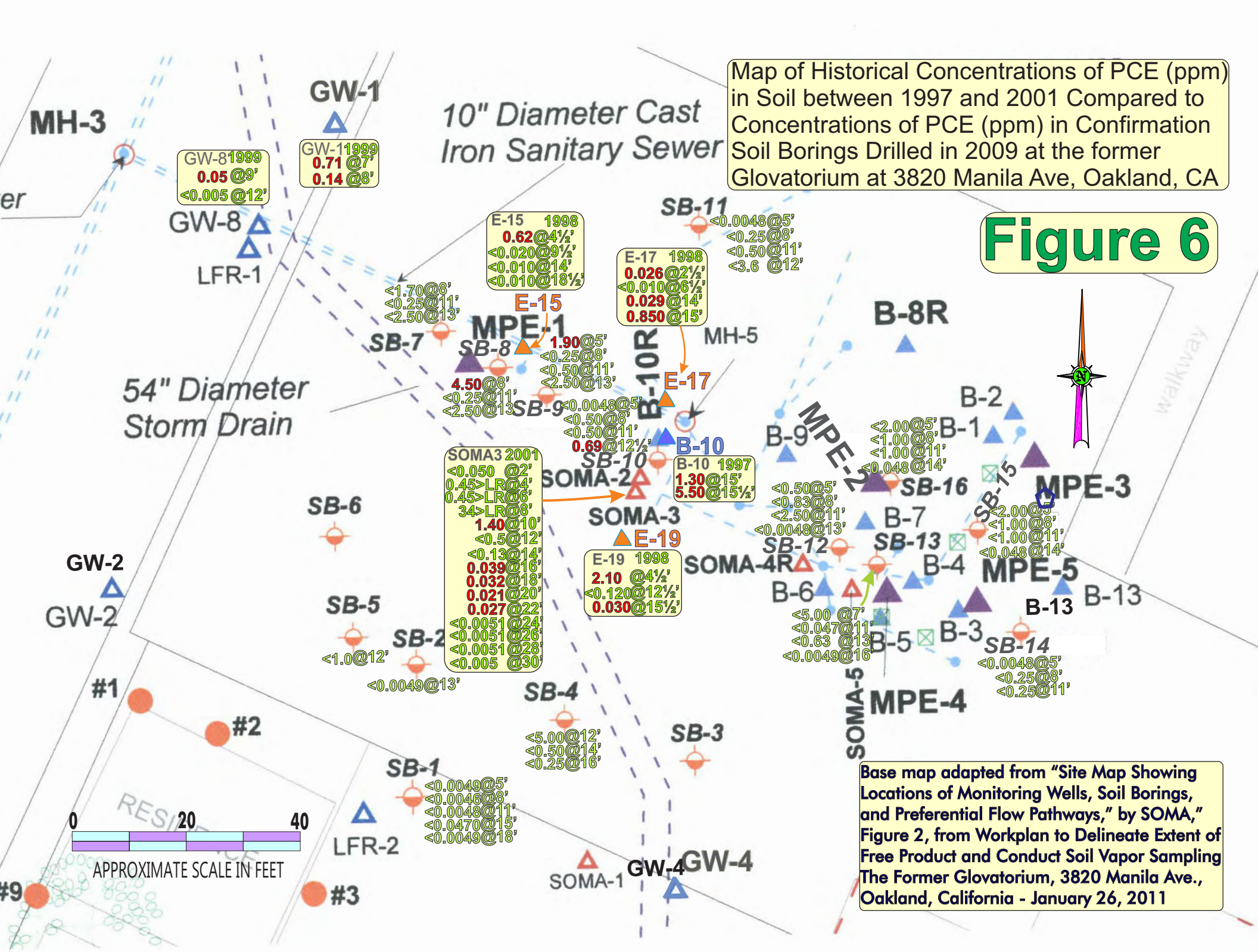

Map of Historical Concentrations of PCE (ppm) in Soil between 1997 and 2001 Compared to Concentrations of PCE (ppm) in Confirmation Soil Borings Drilled in 2009 at the former Glovatorium at 3820 Manila Ave, Oakland, CA
Figure 6
10" Diameter Cast Iron Sanitary Sewer
54" Diameter Storm Drain
MH-3
GW-1
GW-8 1999 0.05 @9' <0.005 @12'
GW-11 1999 0.71 @7' 0.14 @8'
LFR-1
E-15 1998 0.62@4½' <0.020@9½' <0.010@14' <0.010@18½'
E-17 1998 0.026@2½' <0.010@6½' 0.029@14' 0.850@15'
SB-11 <0.0048@5' <0.25@8' <0.50@11' <3.6 @12'
<1.70@8' <0.25@11' <2.50@13'
SB-7
E-15
MPE-1
SB-8
1.90@5' <0.25@8' <0.50@11' <2.50@13'
4.50@8' <0.25@11' <2.50@13'
SB-9
<0.0048@5' <0.50@8' <0.50@11' 0.69@12½'
B-10R
MH-5
E-17
B-8R
B-10
B-10 1997 1.30@15' 5.50@15½'
SB-10
SOMA-2
SOMA3 2001 <0.050 @2' 0.45>LR@4' 0.45>LR@6' 34>LR@8' 1.40@10' <0.5@12' <0.13@14' 0.039@16' 0.032@18' 0.021@20' 0.027@22' <0.0051@24' <0.0051@26' <0.0051@28' <0.005 @30'
SB-6
SOMA-3
E-19
E-19 1998 2.10 @4½' <0.120@12½' 0.030@15½'
B-9
MPE-2
B-2
B-1
<2.00@5' <1.00@8' <1.00@11' <0.048@14'
SB-16
SB-15
MPE-3
<0.50@5' <0.83@8' <2.50@11' <0.0048@13'
B-7
SB-12
SB-13
SOMA-4R
B-4
MPE-5
B-6
B-13
<5.00 @7' <0.047@11' <0.63 @13' <0.0049@16'
B-5
B-3
SB-14 <0.0048@5' <0.25@8' <0.25@11'
GW-2
GW-2
SB-5
<1.0@12'
SB-2
<0.0049@13'
#1
#2
SB-4
<5.00@12' <0.50@14' <0.25@16'
SB-3
SOMA-5
MPE-4
SB-1 <0.0049@5' <0.0046@8' <0.0048@11' <0.0470@15' <0.0049@18'
LFR-2
SOMA-1
GW-4
GW-4
#9
#3
0 20 40
APPROXIMATE SCALE IN FEET
Base map adapted from "Site Map Showing Locations of Monitoring Wells, Soil Borings, and Preferential Flow Pathways," by SOMA," Figure 2, from Workplan to Delineate Extent of Free Product and Conduct Soil Vapor Sampling The Former Glovatorium, 3820 Manila Ave., Oakland, California - January 26, 2011

TABLE – 1

Thickness of Clayey Soils Which Overlay Shallowest PCE Contamination in Soil

Well/Boring Designation	Depth in feet below ground surface of PCE identified in Soil	Concentration of PCE Identified in Soil (ppm)	Thickness of clayey soils in feet between the ground surface and PCE identified in soil	Reference source for thickness of clayey soils	Date that field data was collected
GW-1	7	0.71	(1 to 5'bgs) Silty Clay (5' to 7' bgs) Sandy clay 6' thick	Soil Boring Log	7-16-99
GW-8	9	0.05	(1 to 7 ½ 'bgs) Silty clay (7 ½ to 9' bgs) Sandy clay 8' thick	Soil Boring Log	7-16-99
E-15	4 ½	0.62	(0 to 4 ½' bgs) 4 ½' thick	Soil Boring Log	9-9-98
E-17	2 ½	0.026	(0 to 2 ½' bgs) 2 ½' thick	Soil Boring Log	9-9-98
B-10	15	1.3	(0 to 3 ½' bgs) Silty clay (3½' to 14½' bgs) Sandy clay 14½' thick	Soil Boring Log	8-22-97
SOMA 3	10	1.4	(½ to 10' bgs) 9 ½' thick	Soil Boring Log	10-11-01
E-19	4 ½	2.1	(0 to 4 ½' bgs) 4 ½' thick	Soil Boring Log	9-9-98
SB-8	8	4.5	0 to 5' clay Silty clay (6 ½' to 8'bgs) Sandy clay 6 ½' thick	Interpretation by SOMA 8-17-09 Fig 5 X sec A-A' & soil boring log	5-5-09
SB-9	5	1.9	0 to 5' clay Silty clay 5' thick	Interpretation by SOMA 8-17-09 Fig 5 X sec A-A'	5-5-09
SB-10	12 ½	0.69	0 to 5' clay Silty clay 5' thick	Interpretation by SOMA 8-17-09 Fig 5 X sec A-A'	5-5-09

TABLE – 2

Thickness of Clayey Soils Which Overlay Free Floating Product

Well/Boring Designation	Depth in feet below ground surface to the top of the free product	Thickness of free product in feet as measured in well	Thickness of clayey soils in feet between the ground surface and PCE identified in soil	Reference source for thickness of clayey soils	Date that field data was collected
MPE-2	**12.13**	**0.84**	**0 to 5' clay Silty clay (5' to 9'bgs) Sandy clay 9' thick**	**Interpretation by SOMA 8-17-09 Fig 5 X sections A-A' and B-B' & soil boring log**	**8-1-10**
MPE-3	**11.67**	**2.44**	**0 to 5' clay Silty clay (5' to 11'bgs) Sandy clay 11' thick**	**Interpretation by SOMA 8-17-09 Fig 5 X sec B-B' & soil boring log**	**8-1-10**

Attachment 1

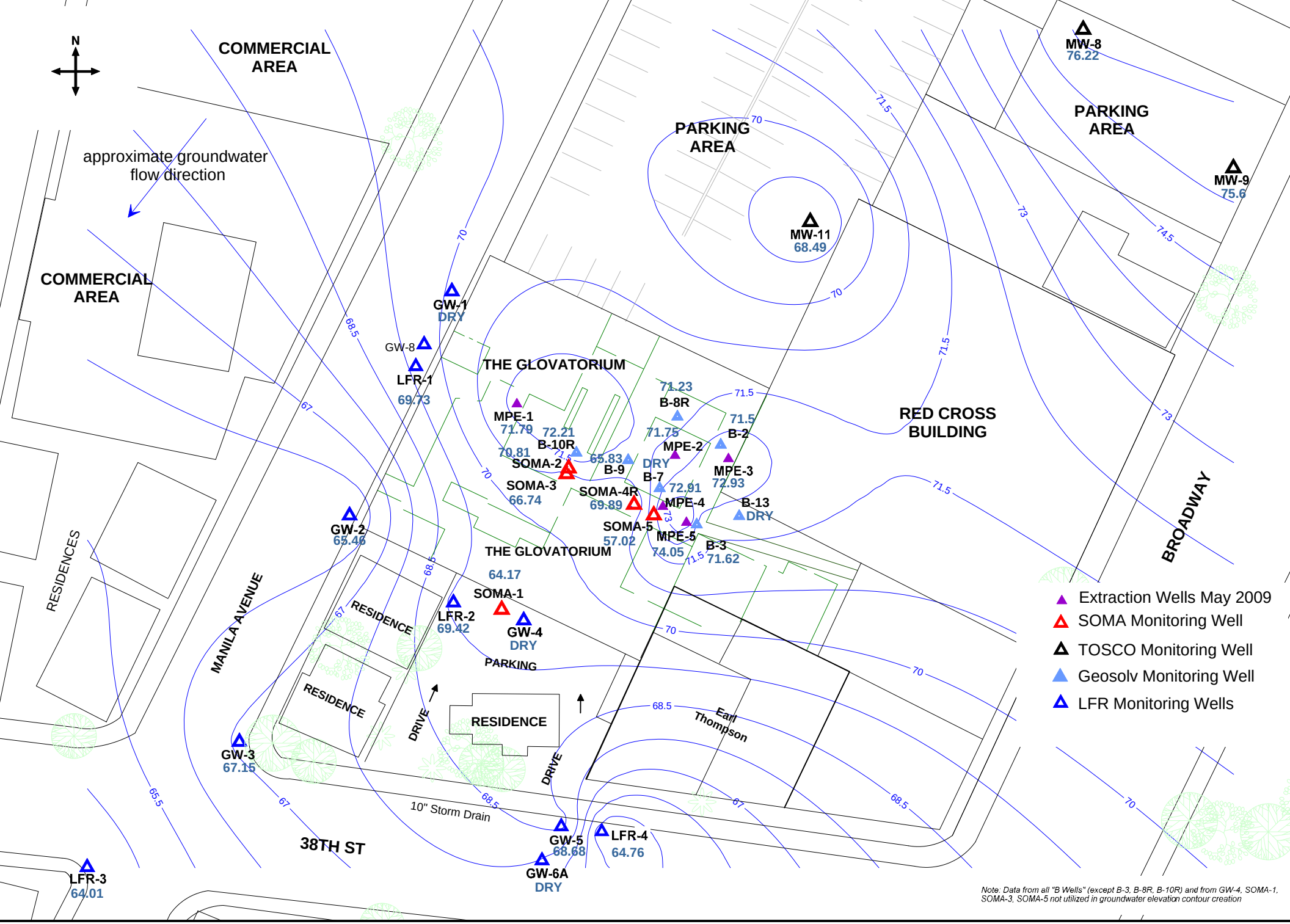
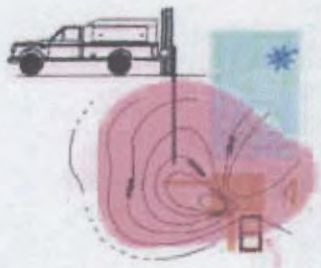


Figure 3: Groundwater elevation contour map in feet August 4, 2010

ENVIRONMENTAL ENGINEERING, INC.

Appendix 1

GeoSolv, LLC
Environmental and Hydrogeological Consulting
643 Oregon Street, Sonoma, CA 95476
Phone: (707) 996-4227 Fax: (707) 996-7882



We Don't Just Work on Your Environmental Problems. We Solve Them!

January 20, 1998

Tom Peacock, Director
Alameda County Health Care Agency
Environmental Protection Division, Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor, Room 250
Alameda, CA 94502
(510) 567-6700 Phone, (510) 337-9335 Fax

98 JAN 2[illegible]

SUBJECT: **Transmittal of Subsurface Investigation Report of Waste Discharges from USTs and Other Point Sources at the Former Glovatorium/The Leather Cleaners Site Located at: 3815 BROADWAY , OAKLAND, CA 94611**

Dear Mr. Peacock,

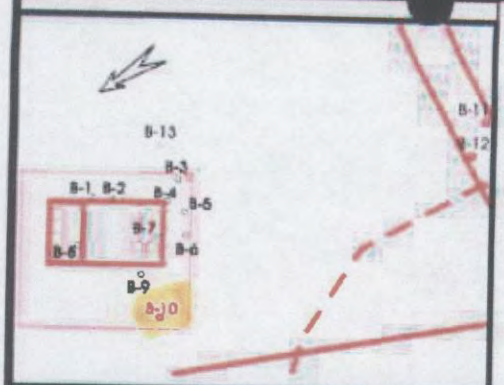
GeoSolv, LLC is pleased to submit the attached subsurface investigation report. As I stated during our recent phone conversation, it was completed over a month ago and has since undergone legal review by the Depper's attorney. A cursory review of the attached report reveals that this case involved more than just discharges from USTs and therefore required some additional time for completion. I would also like to reiterate that I have not received any formal due date in writing for the submittal of this report. The last reference to a due date was from Stuart Depper who stated that the report had to be completed approximately one week prior to a January 26th court hearing so that Scott Seary would have enough time to review the report. According to my calender, since Monday, January 19th is a holiday, and this report has been submitted on Tuesday, I am right on time.

I appreciate your concern during our recent phone conversation and would welcome any dialogue you may want to initiate with regard to this case.

Sincerely,

Franklin J. Goldman

Franklin J. Goldman
CEO/GeoSolv, LLC
Registered Geologist No. 5557
Certified Hydrogeologist No. 466



DRILLING LOG

BORING NO. **B10**

PROJECT NAME:	Depper	PROJECT NO.	
ADDRESS:	3815 Broadway, Oakland, California		
FIELD GEOLOGIST:	Frank Goldman	DATE:	08/22/97
DRILLING COMPANY:	Precision	SAMPLER:	
DRILLING METHOD:		TOTAL DEPTH:	19'
BORING DIAMETER:	2.5"		

DEPTH	SAMPLE RECOVERY	BLOW COUNT	PID [ppm]	BORING CONSTR.	LITHOLOGIC LOG	USCS SYMBOLS	LITHOLOGIC DESCRIPTION Description, Grain Size, Sorting, Color, Moisture, Mechanical Properties
						CL	Silty clay, brown, firm, moist;no odor.
						CL	Silty clay, black, firm, moist; organics.
						CL	Sandy clay, brown, stiff to hard, moist; no odor.
							End of 2.5" borehole due to hard clay. Resume with 1" split spoon.
10							Sandier with depth.
15						SW	Sand, coarse, gray, dense, wet; solvent odor.
						CL	Silty clay, brown, hard, moist; no odor.
20							End of boring at 19 feet. Groundwater encountered at 15'. Boring converted into a well.
25							
30							
35							
40							

GeoSolv, LLC

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Phone: (707) 996-4227 Fax: (707) 996-7882
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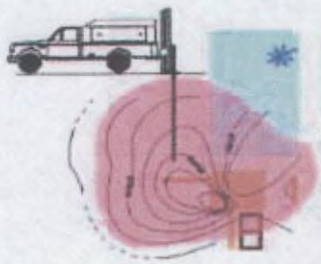

October 13, 1998

Scott Seery
Alameda County Health Care Agency
Environmental Protection Division, Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor, Room 250
Alameda, CA 94502
(510) 567-6774 Phone, (510) 337-9335 Fax

SUBJECT: **Second (2nd) Phase Subsurface Investigation Report of Hydrocarbons at the Former Glovatorium/The Leather Cleaners Site Located at: 3815 BROADWAY, OAKLAND, CA 94611**

Dear Mr. Seery,

This report summarizes the subsurface soil and groundwater investigation performed at the above site from September 09, 1998 through September 15, 1998. The purpose of the field investigation was to fill in data gaps left by the original subsurface investigation performed last year. The work was performed in accordance with the May 22, 1998 GeoSolv, LLC workplan, the July 18, 1998 GeoSolv, LLC response letter, and the August 27, 1998 GeoSolv, LLC letter as approved by Alameda County Health correspondence letters dated June 19, 1998, August 06, 1998 and September 08, 1998.

Sincerely,

Franklin J. Goldman

Franklin J. Goldman
State Registered Geologist No. 5557
State Certified Hydrogeologist No. 466
CEO/GeoSolv, LLC

EXPLORATORY BORING LOG

DRILL COMPANY: Precision	SURFACE ELEVATION:	LOGGED BY: Frank Goldman
DEPTH TO GROUNDWATER:	BORING DIAMETER: 2 3/4"	DRILLING METHOD: Envirocore

LITHOLOGIC DESCRIPTION	SAMPLE INTERVALS	LITHOLOGIC LOG	DEPTH	WATER LEVEL	WELL CONSTRUCTION DETAIL	USCS SYMBOLS
silty clay, black, soft, moist			1			
silty clay, med brn, firm moist; no odor, hand sample	X	4½-5	2, 3, 4, 5			
9/10/98 Resume w/ Envirocore @ 5' no odor	X	6½-7	6, 7			
Sandy clay, Grey & rust, firm, moist odor begins @ 8			8, 9			
mod hydro carbon odor @ 10	X	9½-10	10			
~~Clayey sand, green, med dense, coarse, moist; mod odor~~ mod or mod	X	11-11½	11			
Sandy clay, green, firm, moist; mod odor	X	12½-13	12, 13			
capillary fringe Strong Hydrocarb odor @ 14'	X	14-14½	14			
very moist @ 15', water zone? to wet (clayey sand) No odor @ 16'	X	15½-16	15, 16			
Silty clay, yel-brn, firm to stiff, moist no odor from 16' to 19'			17, 18			
No odor, @ 18½	X	18½-19	19, 20			

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Environmental and Hydrogeological Consulting
643 Oregon Street, Sonoma, CA 95476
Phone: (707) 996-4227 Fax: (707) 996-7882

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PROJECT NAME: Depper/Glovatorium
ADDRESS: 3815 Broadway, Oakland, CA

BORING NO. E-15
DATE: Sept. 9 1998

EXPLORATORY BORING LOG

DRILL COMPANY: Precision	SURFACE ELEVATION:	LOGGED BY: Frank Goldman
DEPTH TO GROUNDWATER:	BORING DIAMETER: 2 3/4"	DRILLING METHOD: Envirocore

LITHOLOGIC DESCRIPTION	SAMPLE INTERVALS	LITHOLOGIC LOG	DEPTH	WATER LEVEL	WELL CONSTRUCTION DETAIL	USCS SYMBOLS
Stiff to hard from 19-25' ~~No odor~~ no odor	X	21½-22	21-22-23-24-			
Hard no odor	X	24½-25	25-			
End @ 25' Casing set @ 10:45 AM 10' of screen, 15' of blank Recharge Rate Depth of 24' @ 10:45 Depth of 12' @ 12:45 6"/hr.			26-27-28-29-30-			
			31-32-33-34-35-			
			36-37-38-39-40-			

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PROJECT NAME: Depper/Glovatorium
ADDRESS: 3815 Broadway, Oakland, CA
BORING number E-15
DATE: Sept. 1998

EXPLORATORY BORING LOG

DRILL COMPANY: Precision	SURFACE ELEVATION:	LOGGED BY: Frank Goldman
DEPTH TO GROUNDWATER:	BORING DIAMETER:	DRILLING METHOD: Envirocore

LITHOLOGIC DESCRIPTION	SAMPLE INTERVALS	LITHOLOGIC LOG	DEPTH	WATER LEVEL	WELL CONSTRUCTION DETAIL	USCS SYMBOLS
Silty clay, Yel brn, soft, moist; hand sample no odor			1			
no odor	X	2½-3	2			
			3			
Siltly clay, ~~black~~, ~~soft~~ to firm moist; Hand sample, no odor some organics			4			
no odor	X	4½-5	5			
9/10/98						
no odor	X	5½-6	6			
Silty clay, grey, firm to ~~stiff~~, moist, ~~mod odor~~	X	6½-7	7			
			8			
			9			
~~mod~~	X	9½10	10			
Red; ~~gravel~~ chert cobble @ 11'			11			
mild hydrocarbon odor 10-13'			12			
~~Sandy @ 13'~~			13			
Sandy clay, grey to green, firm, moist; red ~~gravel~~ chert cobble mod odor	X	14-14½	14			
Silty clay, yel brn, stiff, moist no odor	X	15-15½	15			
no odor	X	16-16½	16			
clayey sand layer 14-14½'			17			
			18			
no odor	X	18½-19	19			
End @ 19' 12²⁰-2³⁰ recharge 1ft.			20			

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Environmental and Hydrogeological Consulting
CA 95476
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PROJECT NAME: Depper/Glovatorium
ADDRESS: 3815 Broadway
Oakland, CA

BORING NO. EW-3
DATE: Sept. 1998

EXPLORATORY BORING LOG

DRILL COMPANY: Precision	SURFACE ELEVATION:	LOGGED BY: Frank Goldman
DEPTH TO GROUNDWATER:	BORING DIAMETER:	DRILLING METHOD: Envirocore

LITHOLOGIC DESCRIPTION	SAMPLE INTERVALS	LITHOLOGIC LOG	DEPTH	WATER LEVEL	WELL CONSTRUCTION DETAIL	USCS SYMBOLS
Silty clay, yel brn, soft, moist			1			
Silty clay, black, soft, moist; high organics, crumbly texture; Hand Sample, no odor			2			
no odor	X	4½-5	3			
Begin 9/10/98 w/ Envirocore			4			
Silty clay, med brn, firm, s/moist to moist no odor	X	6½-7	5			
Silty clay, green grey, firm, moist; moderate odor			6			
Sandy clay, green grey, firm, moist, red chert pebbles. Strong odor	X	9½-10	7			
Sandier w/depth			8			
Silty clay, green grey, firm to stiff, moist			9			
possible odor	X	12½-13	10			
Mild hydrocarbon odor @ ~~½~~ 14'			11			
			12			
Silty clay, yel ~~brown~~ olive, Stiff to hard, moist no odor	X	15½-16	13			
			14			
			15			
			16			
Color change to yel brn @ 17½ no odor	X	18-18½	17			
			18			
End @ 19'			19			
			20			

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PROJECT NAME: Depper/Glovatorium
ADDRESS: 3815 Broadway, Oakland, CA

BORING NO. E-19
DATE: Sept. 9, 1998

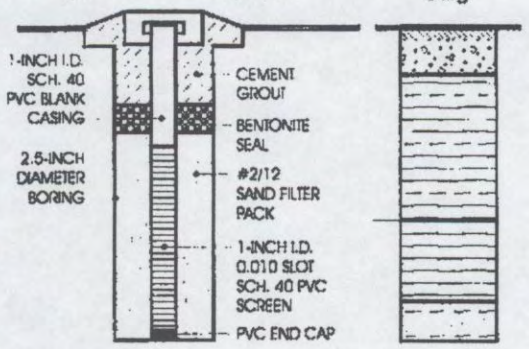
Soil and Groundwater Investigation Report
Former Glovatorium
Oakland, California

6895.00-026
March 20, 2000

Prepared for
Smiland & Khachigian
601 West Fifth Street, 7th Floor
Los Angeles, California 90071-2004

LFR
LEVINE • FRICKE

WELL CONSTRUCTION	LITHOLOGY	SAMPLE DATA	HEADSPACE MEASUREMENTS



Description	Core Recovery	PID (ppm)
ASPHALT and aggregate base.		
SILTY CLAY (CL), black (10YR 4/1), damp, soft, non-plastic.		Hand auger to 3 feet
	5	No recovery
SANDY CLAY (CL), brown (10YR 5/4), damp, soft, non-plastic, 20% medium to fine sand.	GW-1-7	20.9
SILTY SAND (SM), brown (10YR 5/4), damp, loose.	GW-1-8	13.0
BOTTOM OF BORING AT 8 FEET.	10	
	15	
	20	

Well Permit No. 99WR340
Date Well Drilled: July 16, 1999
Drilling Company: Precision
Driller: Ken Perez
Drilling Method: Direct push
Sampling Method: Hydraulic, continuous core
LFR Geologist: Christopher J. Vocl

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using continuous core barrel
- Soil sample collected for analysis

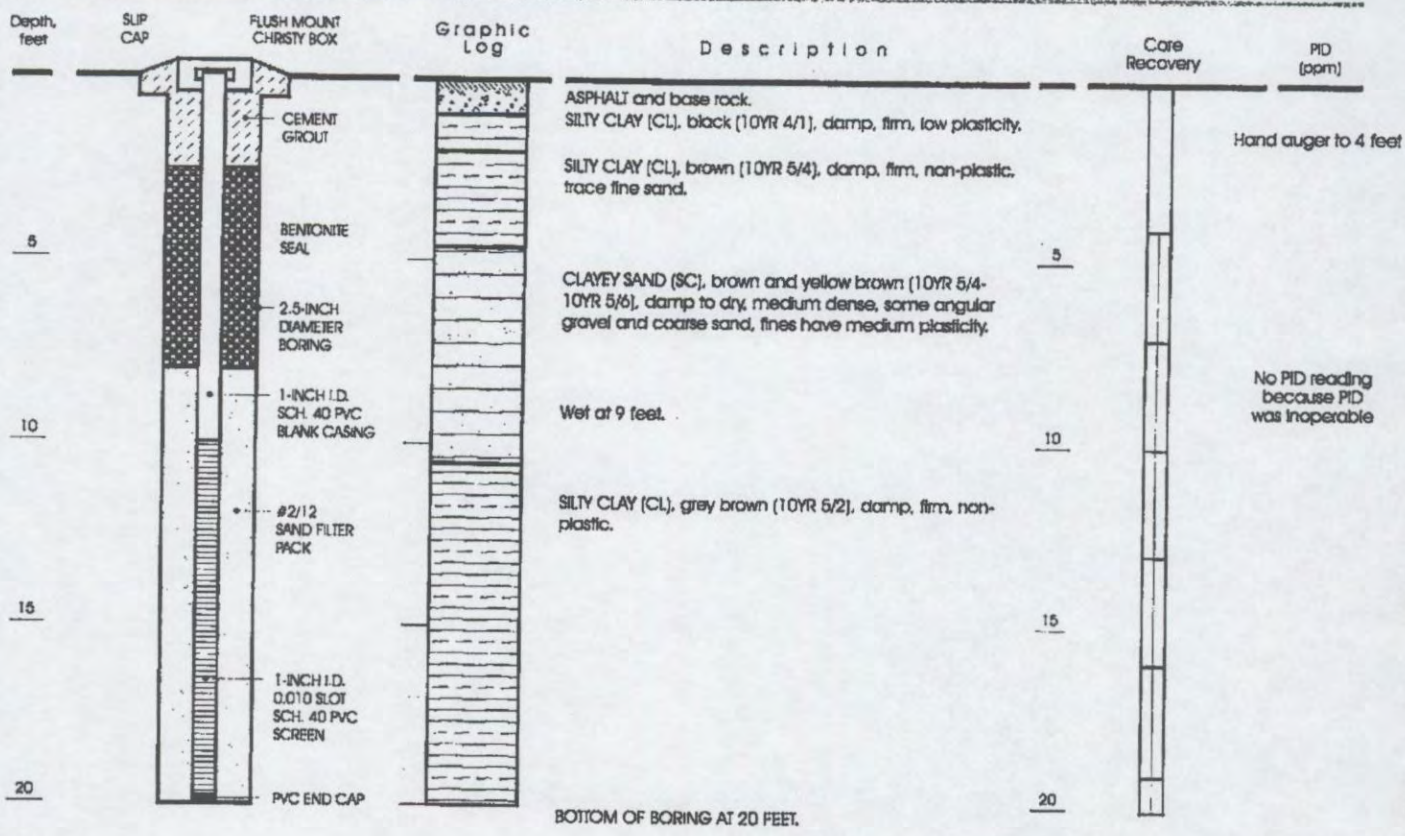
Approved by: Taylor Bennett R.G. #6595

CONSTRUCTION AND LITHOLOGY FOR GW-1

LFR LEVINE • FRICKE

FORMER GLOVATORIUM

6895L100.CDR 030600



Well Permit No.	99WR340
Date Well Drilled:	July 16, 1999
Drilling Company:	Precision
Driller:	Ken Perez
Drilling Method:	Direct push
Sampling Method:	Hydraulic, continuous core
LFR Geologist:	Chris Voci

EXPLANATION

Clay

Silt

Sand

Gravel

Interval sampled using continuous core barrel

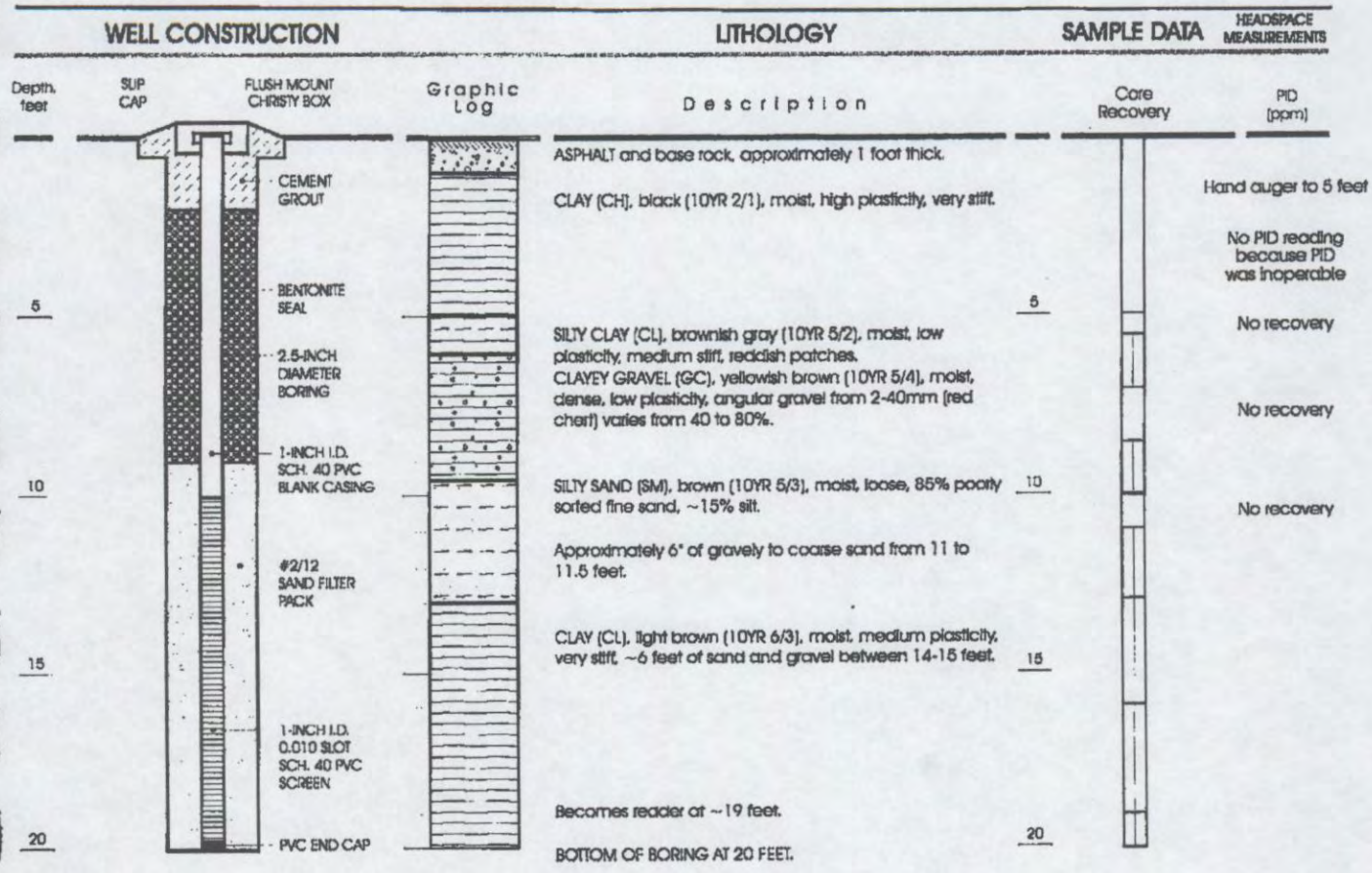
Approved by: Taylor Bennett R.G. #6595

CONSTRUCTION AND LITHOLOGY FOR GW-2

LFR LEVINE • FRICKE

FORMER GLOVATORIUM

6895L101.CDR 030600



Well Permit No.	99WR340
Date Well Drilled:	July 15, 1999
Drilling Company:	Precision
Driller:	Ken Perez
Drilling Method:	Direct push
Sampling Method:	Hydraulic, continuous core
LFR Geologist:	Jim Burke

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using continuous core barrel

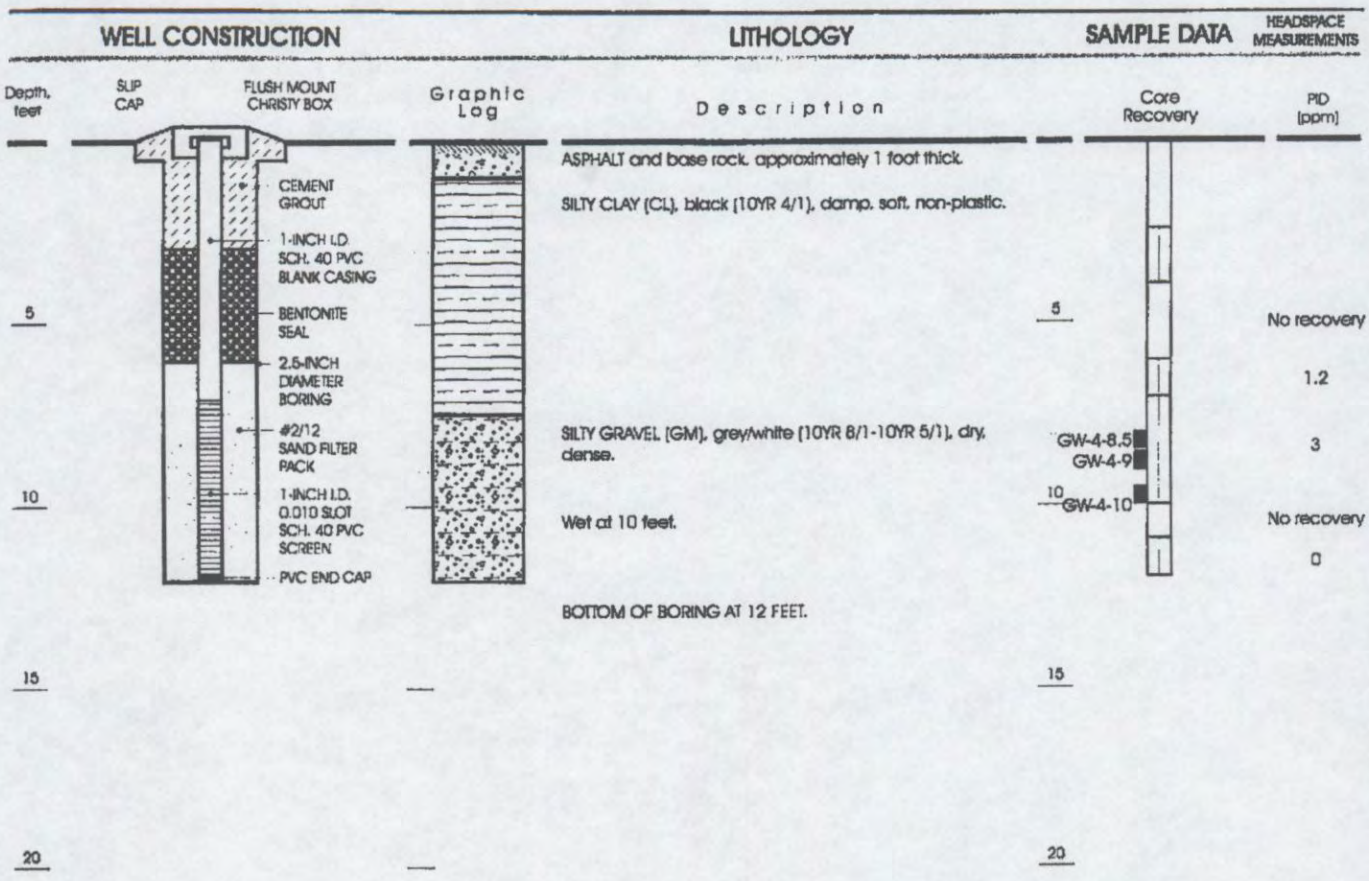
Approved by: Taylor Bennett R.G. #6595

CONSTRUCTION AND LITHOLOGY FOR GW-3

LFR LEVINE•FRICKE

FORMER GLOVATORIUM

6895L102.CDR 030600



Well Permit No.	99WR342
Date Well Drilled:	July 16, 1999
Drilling Company:	Precision
Driller:	Ken Perez
Drilling Method:	Direct push
Sampling Method:	Hydraulic, continous core
LFR Geologist:	Chris Vocl

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using continuous core barrel

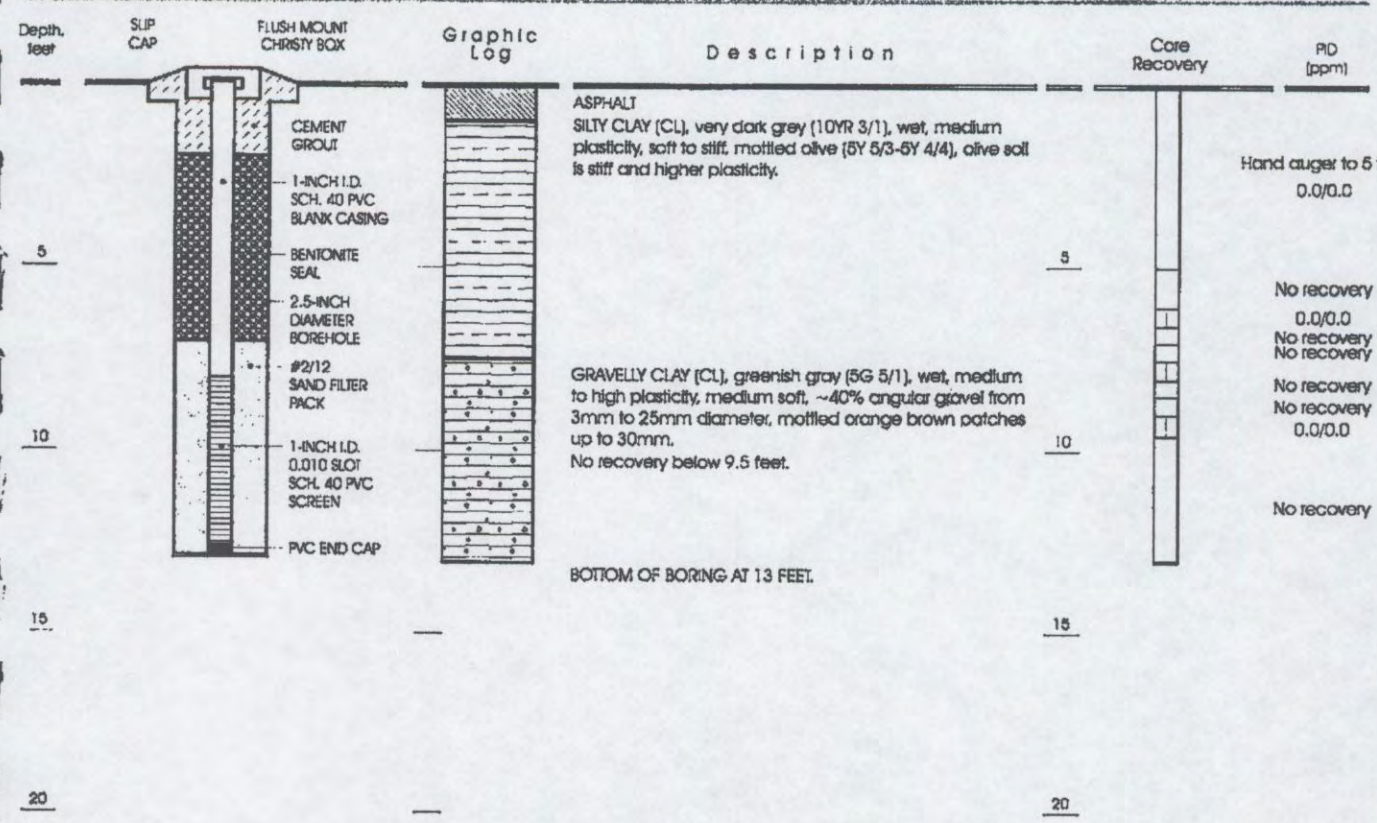
Approved by: Taylor Bennett R.G. #6595

CONSTRUCTION AND LITHOLOGY FOR GW-4

LFR LEVINE • FRICKE

FORMER GLOVATORIUM

6895L103.CDR 030600



Well Permit No.	99WR341
Date Well Drilled:	July 15, 1999
Drilling Company:	Precision
Driller:	Ken Perez
Drilling Method:	Direct push
Sampling Method:	Hydraulic, continous core
LFR Geologist:	Jim Burke

EXPLANATION

Clay

Silt

Sand

Gravel

Interval sampled using continuous core barrel

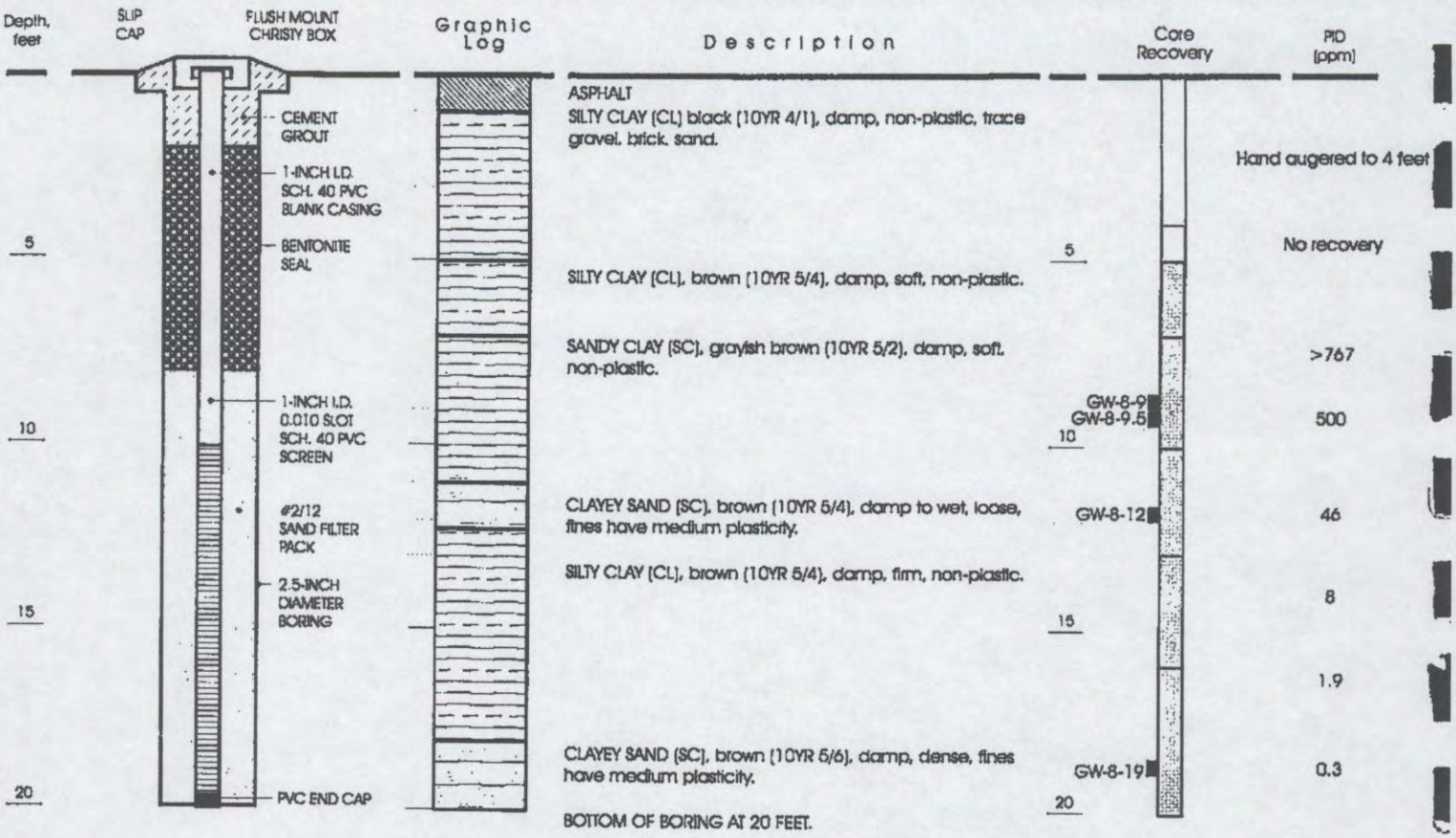
Approved by: Taylor Bennett R.G. #6595

CONSTRUCTION AND LITHOLOGY FOR GW-5

LFR LEVINE • FRICKE

FORMER GLOVATORIUM

6895L104.CDR 030600



Well Permit No.	99WR340
Date Well Drilled:	July 16, 1999
Drilling Company:	Precision
Driller:	Ken Perez
Drilling Method:	Direct push
Sampling Method:	Hydraulic, continous core
LFR Geologist:	Chris Voci

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using continuous core barrel

Soil sample collected for analysis

Approved by: Taylor Bennett R.G. #6595

CONSTRUCTION AND LITHOLOGY FOR GW-8

LFR LEVINE•FRICKE

FORMER GLOVATORIUM

6895L109.CDR 030600

ENVIRONMENTAL ENGINEERING, INC
2680 Bishop Drive • Suite 203 • San Ramon, CA 94583
TEL (925) 244-6600 • FAX (925) 244-6601

REPORT ON CONDUCTING ADDITIONAL FIELD INVESTIGATION TO EVALUATE THE SITE'S CONCEPTUAL MODEL

FORMER GLOVATORIUM SITE

3815 Broadway, Oakland, California

January 3, 2002

Project 01-2512

Prepared for
Smiland and Khachigian
601 West Fifth Street, 7th Floor
Los Angeles, California 90071-2004

Prepared by
SOMA Environmental Engineering, Inc.
2680 Bishop Drive, Suite 203
San Ramon, California 94583

ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF SOMA-3

Boring Location: See Site Map

Project #2512 — Date Drilled: 10/11/2001

Site Location: 3815 Broadway, Oakland, California

Drilling Method: Hollow Stem Auger — Casing Elevation:

Driller: Gregg Drilling & Testing. — Depth to Groundwater:

Logged By: Naser Pakrou — Approved By: Jonathan Hoffman, F

DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	NOTES
			6" concrete	Well construction detail is presented in Appendix B
5		CL	Silty Clay: Dark brown to black; moist; low to med. plasticity; color gets lighter with depth; occ. gravel at depth of 6-8'; high organic content; no petroleum odor.	
10		CL	Silty Clay: Same as above but, no gravel and strong petroleum odor.	
		SC	Clayey Sand: Dark olive to green; wet; fine to coarse poorly sorted sand; 20 to 25% low to medium plasticity fines; strong petroleum odor.	
15		GW	Sandy Gravel:Light brown matrix, dark brown gravel; wet; 20 to 25% fine to coarse poorly sorted sand; 5 to 10% low to med. plastic fines; strong petroleum odor.	
		CL	Silty Clay: Light olive; moist; med. plasticity; low permeabilty; no petroleum odor.	
20		GC	Clayey Gravel: Dark olive; wet poorly sorted 20 to 30% low to med. plasticity fines; no petroleum odor.	
25		CL	Silty Clay: Light brown; moist; med. plasticity; low permeability; no petroleum odor.	
			Drilling terminated at 30', hard to drill	

Site Investigation, Monitoring Well Modifications, Extraction Well Installation, and Continued MPE Pilot Testing

The Former Glovatorium
3820 Manila Avenue
Oakland, California

Project 2512-14

August 17, 2009

Prepared for
Loeb & Loeb LLB
10100 Santa Monica Blvd., Suite 2200
Los Angeles, California 90067-4164

SOMA ENVIRONMENTAL ENGINEERING, INC.
6620 Owens Drive Suite A Pleasanton CA 94588 Ph: 925.734.6400 F: 925.734-6401 www.somaenv.com

SOMA ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: SB-8

PROJECT: 2512

SITE LOCATION: 3820 Manila Ave., Oakland

DRILLER: Gregg Drilling & Testing

DRILLING METHOD: Direct Push

BORING DIAMETER: 3-inch

LOGGED BY: E. Hightower

DATE DRILLED: May 5, 2009

CASING ELEVATION: NA

DEPTH TO GW: 12

T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
				Hand Auger to 5 Ft.					
369.1	5		SC	CLAYEY SAND w/Gravel: Orange-brown, stiff, moist, fine- to coarse sand, fine gravel, no Petroleum Hydrocarbon (PHC) odor					
372.9			CL	SANDY LEAN CLAY: Brown, moist, soft, slight PHC odor, fine- to medium-grained sand		X			
	10			As Above: turns green with strong PHC odor at 10 Ft.					
1651			SC	CLAYEY SAND: Brownish-green, moist, stiff, PHC odor, fine- to coarse-grained sand, gravel at 10.5 Ft.		X	▽		
1179				Becomes very moist to wet at 12 Ft.		X			
628.2	15		CL	SILTY CLAY: Light brown, very stiff, moist, no PHC odor					
221.8	20								
	25								

COMMENTS: TD @ 20 Ft.

SOMA ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: SB-9

PROJECT: 2512

SITE LOCATION: 3820 Manila Ave., Oakland

DRILLER: Gregg Drilling & Testing

DRILLING METHOD: Direct Push

BORING DIAMETER: 3-inch

LOGGED BY: E. Hightower

DATE DRILLED: May 4, 2009

CASING ELEVATION: NA

DEPTH TO GW: 12

T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
				Hand Auger to 5 Ft.					
	5		CL	SANDY LEAN CLAY: Brown, moist, soft, fine- to coarse-grained sand, orange mottling, no Petroleum Hydrocarbon (PHC) odor		X			
			SC	CLAYEY SAND w/Gravel: Orange-brown, stiff, moist, gravel up to 0.5 inch, fine- to coarse-grained sand, no PHC odor		X			
	10		SC	CLAYEY SAND: Greenish-brown, stiff, moist, PHC odor, fine- to medium-grained sand		X	▽		
			SP	POORLY GRADED SAND w/GRAVEL: Greenish-gray, very moist to wet, stiff, gravel up to 1-inch		X			
			CL	SILTY CLAY: Light brown, stiff, moist, some orange mottling, very slight PHC odor					
	15		CL	SANDY LEAN CLAY: Light brown, very stiff, moist, some orange mottling, no PHC odor, fine- to medium-grained sand					
	20								
	25								

COMMENTS: TD @ 20 Ft., PID not functioning

SOMA ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: SB-10

PROJECT: 2512

SITE LOCATION: 3820 Manila Ave., Oakland

DRILLER: Gregg Drilling & Testing

DRILLING METHOD: Direct Push

BORING DIAMETER: 3-inch

LOGGED BY: E. Hightower

DATE DRILLED: May 4, 2009

CASING ELEVATION: NA

DEPTH TO GW: 13.5

T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
				Hand Auger to 5 Ft.					
	5		SC	CLAYEY SAND: Orange-brown, moist, stiff, fine- to coarse-grained sand, no Petroleum Hydrocarbon (PHC) odor		X			
			SC	CLAYEY SAND: Greenish-brown, stiff, moist, PHC odor, fine- to coarse-grained sand. Gravel starts at 9.5 Ft.		X			
	10					X			
			SC	As Above: no gravel, no PHC odor		X			
			SW	WELL GRADED SAND w/Gravel: Greenish-gray, wet, PHC odor, fine- to medium-grained sand, soft			▽		
	15		CL	SILTY CLAY: Light brown, stiff, moist, no PHC odor					
	20								
	25								

COMMENTS: TD @ 20 Ft., PID not functioning

SOMA ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: MPE-2

PROJECT: 2512

SITE LOCATION: 3820 Manila Ave., Oakland

DRILLER: Gregg Drilling & Testing

DRILLING METHOD: Direct Push

BORING DIAMETER: 6-inch

LOGGED BY: E. Hightower

DATE DRILLED: May 21, 2009

CASING ELEVATION:

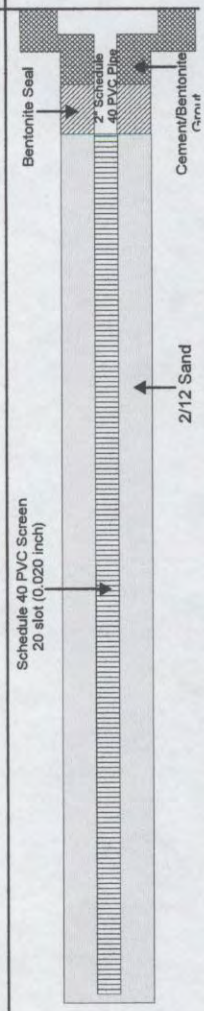
DEPTH TO GW: 15 ft.

T.O.C. TO SCREEN: 2.5 ft.

SCREEN LENGTH: 17.5 ft.

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
				Hand Auger to 5 Ft.					
	5		CL	SANDY LEAN CLAY: Greenish-brown, stiff, moist, fine- to coarse-grained sand, strong Petroleum Hydrocarbon (PHC) odor					
	10		SC	CLAYEY SAND w/Gravel: Green-brown, moist, medium stiff, strong PHC odor, fine- to coarse-grained sand, fine gravel					
			SC	As Above: green, gravel up to 1-inch					
	15		CL	SILTY CLAY w/SAND: Green, very moist to wet, PHC odor, fine- to coarse-grained sand			▽		
			CL	As Above: Saturated					
			CL	SILTY CLAY: Light brown, very moist, very slight PHC odor					
	20								
	25								



COMMENTS: TD @ 20 Ft.

SOMA ENVIRONMENTAL ENGINEERING, INC.

GEOLOGIC LOG OF BOREHOLE: MPE-3

PROJECT: 2512

SITE LOCATION: 3820 Manila Ave., Oakland

DRILLER: Gregg Drilling & Testing

DRILLING METHOD: Hollow Stem Auger

BORING DIAMETER: 6-inch

LOGGED BY: E. Hightower

DATE DRILLED: May 22, 2009

CASING ELEVATION:

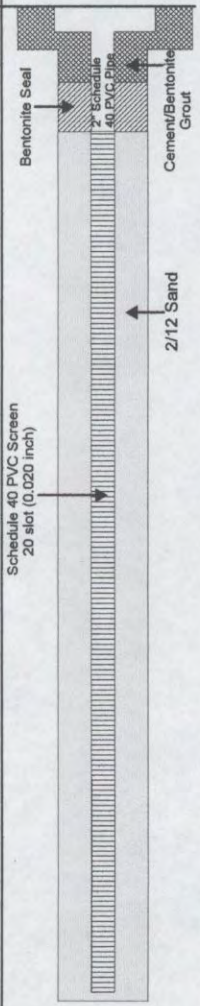
DEPTH TO GW: 11 Ft.

T.O.C. TO SCREEN: 2.5 ft

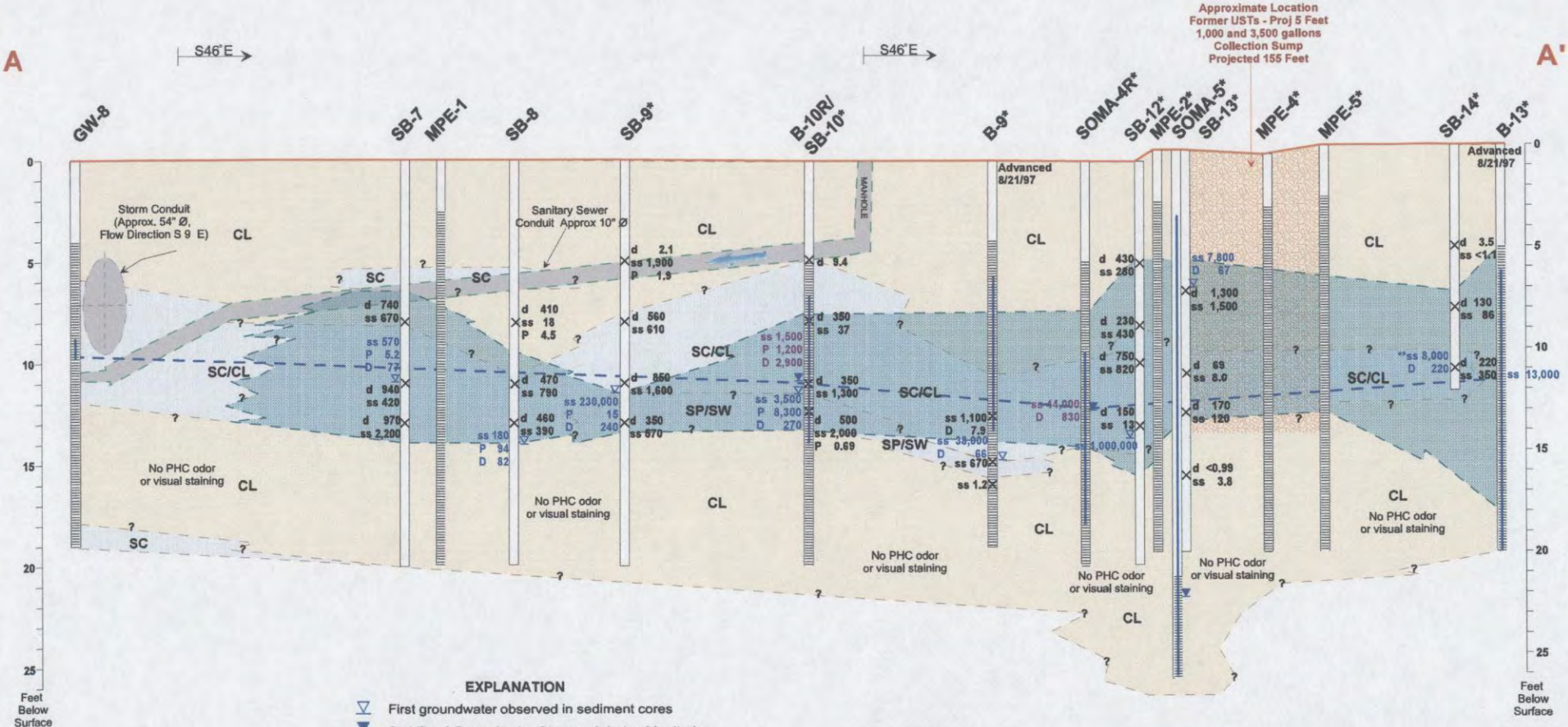
SCREEN LENGTH: 17.5 ft.

APPROVED BY: M. Sepehr

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLED: SPLIT SPOON	SAMPLED: CORE	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
				Hand Auger to 5 Ft.					
	5		CL	SANDY LEAN CLAY: Greenish brown, stiff, moist, fine- to coarse-grained sand, strong Petroleum Hydrocarbon (PHC) odor					
			CL	As Above: very moist					
	10		SC	CLAYEY SAND: Green, wet to saturated, loose, fine- to coarse-grained sand, PHC odor			▽		
			CL	SILTY CLAY: Light brown, stiff, moist, slight PHC odor					
	15		CL	As Above: no PHC odor					
	20								
	25								



COMMENTS: TD @ 20 Ft.



EXPLANATION

- First groundwater observed in sediment cores
- Stabilized Groundwater Observed during Monitoring
- Screened Interval
- Approximate Smear Zone Location
- Silty Clay / Clay
- Clayey Sand/Sandy Clay
- Sand/Gravel
- Static Groundwater Level
- Groundwater Fluctuation

5
0 11
approximate scale in feet

***Projections**

SB-9 - 2 Ft., N 21 E
B-10R/SB-10 - 5 Ft., N 21 E
B-9 - 8 Ft., S 21 W
SOMA-4 - 10 Ft., N 21 E
SB-12 - 5 Ft., N 21 E
MPE-2 - 8 Ft., S 21 W
SOMA-5 - 12 Ft., N 21 E
SB-13 - 6 Ft., N 21 E
MPE-4 - 12.5 Ft., N 21 E
MPE-5 - 22 Ft., S 21 W
SB-14 - 5 Ft., N 21 E
B-13 - 5 Ft., S 21 W

100 Soil Sampling (mg/kg)
100 GW Sampling Data May 09 (ug/L)
100 GW Monitoring Data 2/10/09 (ug/L)

d - TPH-d
ss - TPH-ss
P - PCE
D - cis-1,2-DCA

** Sample collected from open borehole

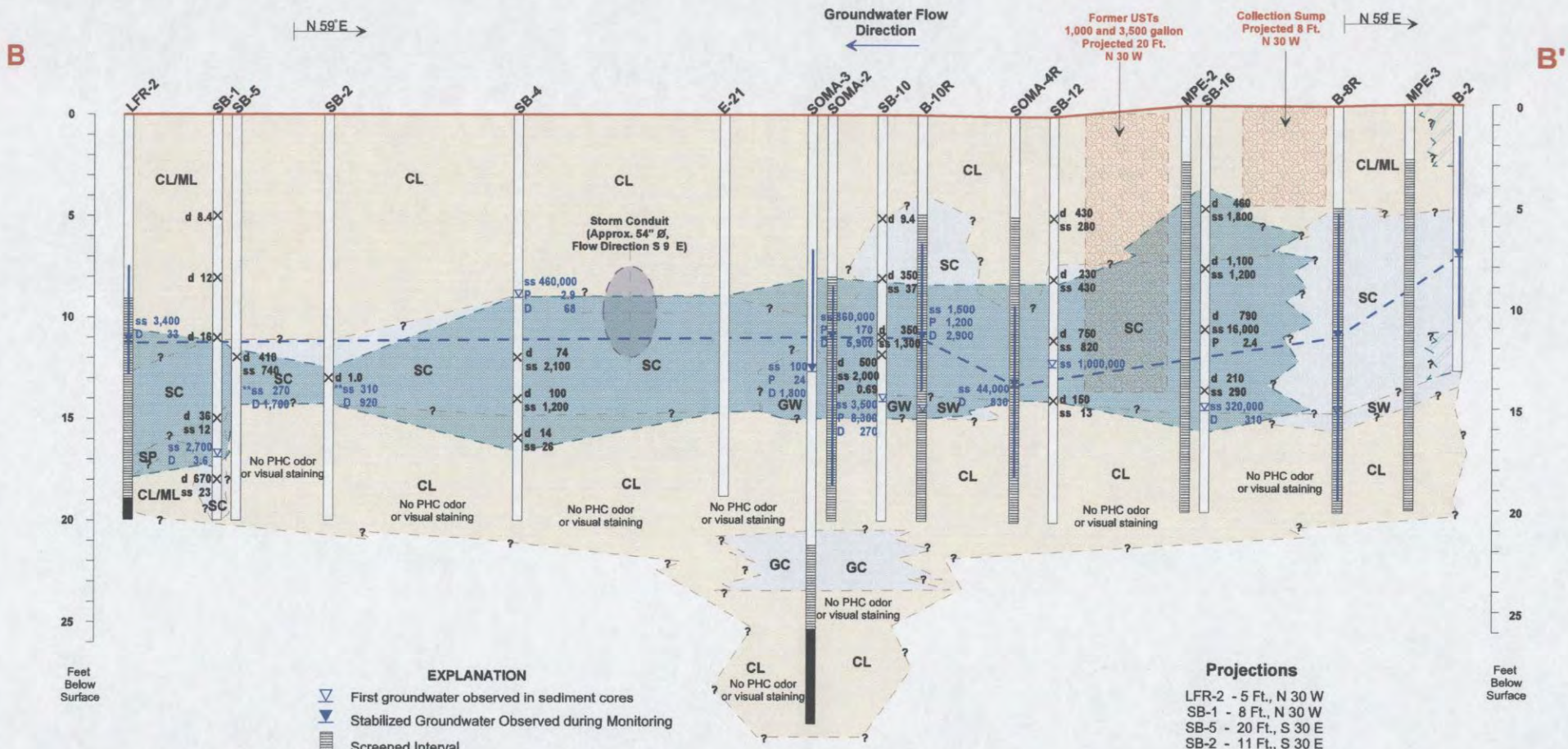


Figure 6: Geologic Cross-section B-B'

Second Semi-Annual 2010
Groundwater Monitoring Report

Former Glovatorium Facility
3820 Manila Avenue
Oakland, California

October 22, 2010

Project 2511

Prepared for:

Loeb & Loeb LLP
10100 Santa Monica Boulevard, Suite 2200
Los Angeles, California 90067-4164

SOMA ENVIRONMENTAL ENGINEERING, INC.
6620 Owens Drive Suite A Pleasanton CA 94588 Ph: 925.734.6400 F: 925.734-6401 www.somaenv.com

ENVIRONMENTAL ENGINEERING, INC

Well Name:	MPE-3	**Project #:**	2511
Casing Diameter:	2 inch	**Address:**	3820 Manila Avenue
Depth of Well:	19.32 feet		Oakland, California
Top of Casing Elevation:	84.87 feet	**Date:**	August 5, 2010
Depth to Groundwater:	12.51 feet	**Sampler:**	Lizzie Hightower
Groundwater Elevation:	72.36 feet		Erica Fisker
Water Column Height:	6.81 feet		
Purged Volume:	— gallons		
	Not purged		

Purging Method:	**Bailer** ☐	**Pump** ☐ UA	
Sampling Method:	**Bailer** ☐	**Pump** ☑ Geotech pump	

Color:	**No** ☐	**Yes** ☐	**Describe:**	Unknown	
Sheen:	**No** ☐	**Yes** ☑	**Describe:**	Free Product	
Odor:	**No** ☐	**Yes** ☑	**Describe:**	Strong Petro	

Field Measurements:

Time	Volume (gallons)	pH	Temp (°C)	D.O. (mg/L)	E.C. (µs/cm)	Turbidity (NTU)	ORP (mV)
16:22	Sampled free product						

Time	Ferrous Iron (mg/L)	Total Iron (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Dissolved Manganese (mg/L)

Notes: 0.84 feet of free product
F.P. depth= 11.67 ft.

ENVIRONMENTAL ENGINEERING, INC

Well Name:	MPE-2	**Project #:**	2511
Casing Diameter:	2 inch	**Address:**	3820 Manila Avenue
Depth of Well:	19.00 feet		Oakland, California
Top of Casing Elevation:	84.66 feet	**Date:**	August 5, 2010
Depth to Groundwater:	14.57 feet	**Sampler:**	Lizzie Hightower
Groundwater Elevation:	70.09 feet		Erica Fisker
Water Column Height:	4.43 feet		
Purged Volume:	– gallons		

Not purged

Purging Method:	Bailer ☐	Pump ☐
Sampling Method:	Bailer ☐	Pump ☑ Geotech

Color:	No ☐	Yes ☐	**Describe:**	Unknown
Sheen:	No ☐	Yes ☑	**Describe:**	Free Product
Odor:	No ☐	Yes ☑	**Describe:**	Strong Petro

Field Measurements:

Time	Volume (gallons)	pH	Temp (°C)	D.O. (mg/L)	E.C. (µs/cm)	Turbidity (NTU)	ORP (mV)
16:10	Sampled free product						

Time	Ferrous Iron (mg/L)	Total Iron (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Dissolved Manganese (mg/L)

Notes: 2.44 feet of free product
F.P. depth = 12.13 ft.