Western Operations

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ALCO
HAZMAT

94 DEC -6 PM 3:42

Clayton
ENVIRONMENTAL
CONSULTANTS

STID 1184

November 23, 1994

Mr. John D. Skalbeck, C.E.G
Associate Hydrogeologist
PES Environmental, Inc.
1682 Novato Boulevard, Suite 100
Novato, California 94947

Clayton Project No. 47616.01

Subject: Apparent Groundwater Mound Issue/Leak Investigation for Powell Street Plaza

Dear Mr. Skalbeck:

This letter is in response to your letter of September 28, 1994 in which you requested our cooperation in the investigation of *suspected* surface or near surface water sources around the southernmost portion of the main parking area on the Powell Street Plaza property. It provides information that you and I have discussed by telephone in several conversations beginning in June 1994 when we discussed methods of investigating for possible leaks.[1]

In your letter of June 3, 1994 ("Groundwater Mounding Discussion," Attachment 1) you discussed the presence of an "anomalous groundwater mound that appears to be present around the southernmost portion of the main parking area on the Powell Street Plaza property." Further, you stated "This mound is present in all available historical groundwater monitoring records and appears to be caused by some source of surface or near-surface infiltration of water." You expressed concern about the presence of the apparent groundwater mound because you believed that the apparent mound is

[1] On June 28, you and I discussed using EBMUD personnel to locate leaks in the water supply and sanitary lines at the property. On June 30, Robert Creps of PES and I discussed the status of the leak investigation and PES's other investigations. On July 5, you and I discussed the irrigation leak rate estimated by Trimacs personnel, the American Leak Detection findings indicating that there was no leaks in the apparent groundwater mound area, and performing conductance measurements that could be conducted by PES during the upcoming quarterly monitoring. On August 5, you and I discussed PES's conductivity results, and I requested well logs and survey data for the site. On October 3, you and I discussed the general contents of this letter.

producing steeper hydraulic gradients and a stronger southward flow towards Temescal Creek than would occur under "natural" conditions. PES offered two possible explanations for the apparent presence of the groundwater mound. One possibility you identified was leaks from damaged landscape irrigation lines; in this case you suggested that a lawn area periodically overrun by delivery trucks could be the location of a damaged sprinkler head. The other possible source of the infiltration you identified was leaks from the water supply main, laterals and water valves that supply the facilities at Powell Street Plaza. Lastly, PES recommended that the water lines be thoroughly inspected for leaks, and if damage was detected, that repairs be made.

Clayton investigated all of these concerns. As an initial issue, we are not convinced that the apparent groundwater mound is an actual phenomenon at all. We believe that there are errors and inconsistencies in the groundwater monitoring well survey data that place the existence of the mound into question. Even if the apparent groundwater mound is subsequently shown to be real, the results of our investigation leads us to conclude that there is not a source of surface or near-surface infiltration of water that is causing it. We found nothing indicating that the operations at the shopping center have had any affect on groundwater elevations or flow directions.

Although we did not and do not acknowledge that the existence of the apparent groundwater mound was or is proven, Clayton proceeded with a detailed investigation of the site and historical data as if the PES assumption were correct. We performed the following investigation:

- We conducted a leak investigation of the irrigation system at the site.
- We inspected the fire suppression water supply system.
- We examined as-built drawings and inspected the site for information regarding the location of the domestic water supply and sanitary discharge systems.
- We suggested that specific conductivity measurements be made of the groundwater in the area of question, which you performed on July 12, 1994.

Our findings are as follows:

PES originally requested that each well's top-of-casing (TOC) be resurveyed because you thought that the apparent groundwater mound may have been due to incorrect TOC elevations. You have said that well TOC elevations were inconsistent between surveys, but also said that the apparent groundwater mound was still in evidence. However, there still exists confusion regarding the groundwater monitoring well TOC values. PES's June 3, 1994 Quarterly Monitoring Report, documenting field measurements made on February 23, 1994 notes that Cullen Engineering resurveyed all of the monitoring wells at the Powell Street Plaza and Shellmound III Sites. New TOC elevations differed from old values from 0 for MW-1 to 0.86 feet for MW-13 However, on the table where the new values are stated to be reported, we note no

difference from the values reported in your March 21, 1994 report for measurements made on November 10, 1993, or in PES's August 8, 1994 report for measurements made on June 2, 1994 (Tables are provided in Attachment 2). Therefore, we do not know which survey data you are relying on to define the groundwater surface elevations and form your conclusions with respect to the existence of an apparent groundwater mound.

A one unit per day leak (about 750 gallons per day, or 0.5 gpm) in the landscape irrigation system was identified by Mr. Jeff McAuliffe of Trimacs - Maintenance and Landscape Construction, Inc. The location of the leak was investigated by American Leak Detection (ALD) on July 5. The site was also inspected to ascertain the location of meters and supply lines. ALD's report is provided as Attachment 3. Four valves were found to be leaking or not closing fully, thus allowing water to be released to the heads. A valve located at the south side of the Trader Joe's store at the northern end of the Powell Street Plaza property was leaking into the valve box. This leak was near MW-6. The remaining leaking valves, which allowed water to pass to the heads, were located near Trader Joe's, between Circuit City and New York Fabric, and Copeland Sports, all near the northern end of the property. The valves found to be leaking or by-passing were all located no closer than 500 feet from the apparent groundwater mound area described by PES. Therefore, these leaks would not have had any effect on the groundwater table elevation in the area of the apparent groundwater mound. These valves were subsequently repaired.

Clayton subsequently inspected the site to verify that the leaks had been repaired and did confirm this; however, at that time, a leaking sprinkler head was found in the landscaping in the parking lot area in front of Circuit City, and two puddles, cause undetermined, were noted in landscaped areas also near the Circuit City store. The leaking sprinkler head was discharging to the surface of the parking lot and draining to a storm water catch basin about 20 feet away. The sprinkler head is being repaired. Neither this new leak nor the puddles are any closer than 775 feet from the location of the apparent groundwater mound. Therefore, these waters would not have any effect on the groundwater table elevation in the area of the apparent groundwater mound.

As noted on the Cullen Engineering Associates drawing labeled Plate 3 of your June 3, 1994 letter, an 8-inch water main and associated valving runs beneath the area of the apparent groundwater mound. This line is part of the fire suppression supply loop which runs along the front and rear sides of the buildings and supplies the various fire hydrants at the site. Two meters register usage of the fire suppression system. According to East Bay Municipal Utility District (EBMUD) billing records, over the four month period February 2, 1994 to June 6, 1994, only one unit of water was used at each, consistent with the amount consumed in testing. Therefore, the fire suppression system is not a source of infiltration water.

Our site inspection also showed that there is no damaged sprinkler head in the landscaped parking area which you speculated might be damaged by delivery trucks, adjacent to MW-13. The puddle of water shown in your photograph (Plate 4 of your June 3 letter) is due to irrigation water draining from the lawn area to that low point in the curbed area. The amount of water applied at any point in the watered areas is sufficient to wet the soil to just below the root line. Therefore, although there is a small puddle of water intermittently present in this area, our investigation does not indicate that it is a source of infiltration.

Our examination of the as-built drawings and our site inspection indicated that the domestic water supply piping is routed along interior walls above the suspended ceilings in the buildings. Sanitary drain lines run to the rear of each unit, to a lateral that drains to the street. This indicates that the domestic supply and sanitary lines are not a potential source of fresh water infiltration.

PES performed specific conductance, or conductivity, measurements of the wells in the area of the apparent groundwater mound and vicinity (these results are presented in Attachment 4). PES shows the location of the apparent groundwater mound to be elliptical in shape, with the highest water table elevations centered near MW-13 and MW-14. Monitoring wells MW-5, MW-6, MG-1 and MG-2 are shown by PES to be beyond the area influenced by the apparent groundwater mound. As you know, groundwater in the near-Bay environment, such as at Powell Street Plaza, is typically somewhat brackish due to its proximity to seawater. The more brackish the water, the higher the conductivity it has. Low conductivity values of 50 to 1500 micromhos per centimeter, or microSeimens per centimeter (µS/cm), are typical of potable water. If the apparent groundwater mound is due to infiltration of fresh water, with a correspondingly low conductivity, we would expect to see low conductivity values in the area of the apparent mound and higher conductivity values in monitoring wells with "undiluted" groundwater.

Your results indicate that the groundwater near monitoring wells MW-13 and MW-14 have relatively high conductivity, i.e., that there are significant concentrations of dissolved solids in the groundwater. The groundwater in MW-6, near the Trader Joe's store, exhibited much lower conductivity (almost two orders of magnitude lower than the readings for MW-5, MW-13, MW-14, MG-1 and MG-2). This finding is consistent with a source of fresh water relatively near MW-6, and may be explained by the leaking irrigation system components discovered by ALD about 150 feet northwest from MW-6 (about 500 ft north of the apparent groundwater mound) Monitoring well MW-6 is approximately 375 feet from the centerline of the apparent groundwater mound as described by a line drawn between MW-14 and MW-13. The consistency of conductivity readings between MW-5, MG-1, and MG-2, which you show to be outside the area of the apparent groundwater mound, to the readings from MW-13 and MW-14, which you show as being in the highest area of the apparent groundwater mound.

suggests that fresh water is **not** being introduced to the groundwater in that area. If a significant infiltration of fresh water were occurring in the area of the apparent groundwater mound, we would expect to see much lower conductivity values. Therefore, the leaks found are not considered a possible source of the apparent groundwater mound.

PES modelled the groundwater elevations observed on November 1993 using the USGS aquifer simulation computer model "MODFLOW." In your "Summary Report - Numerical Simulation of Groundwater Flow, Powell Street Plaza and Shellmound III Sites" dated June 3, 1994 you concluded the following:

> "Flow in the southwest corner of the Powell Street Plaza site appears to be controlled by the presence of a recharge mound. The source of the recharge mound is believed to result from a leaking water distribution system."

You calibrated the model on your observed November 1993 groundwater elevations. The addition of four hypothetical injection wells with a combined flowrate of 1.5 gallons per minute was required to produce an apparent groundwater table mound similar to PES's observed groundwater elevations. Clayton notes that this flowrate is three (3) times the rate found for the landscape irrigation system leak, which discharged over 500 feet away from the apparent groundwater mound. In addition, PES's model shows that the infiltration would have to occur from four injection wells directly above the location of the apparent groundwater mound. As discussed in this letter, the irrigation leaks were all located no closer than 500 feet from the apparent groundwater mound area, and were far smaller in magnitude.

Based on these findings, we draw the following conclusions:

- The landscape irrigation system is not a source of freshwater infiltration in the area near MW-13 and MW-14. The leaks found were remote from the area of the apparent groundwater mound.
- The fire suppression water supply system is not a source of freshwater infiltration.
- The domestic water supply and sanitary discharge systems are not a source of freshwater infiltration.
- Groundwater conductivity measurements suggest no freshwater infiltration in the area near MW-13 and MW-14. The measurements are consistent with the leaking valve box discovered by ALD near monitoring well MW-6.

We conclude that there is not a source of surface or near-surface infiltration of water that could have caused the apparent groundwater mound. A definitive cause for the apparent groundwater mound has not been determined. No evidence was found

indicating that the operation of the shopping center has affected groundwater elevations or flow directions.

Again, we are not convinced that the apparent groundwater mound is real. Even if the apparent groundwater mound is found to be actual, the entire issue should be evaluated in light of whatever effect it may or may not have on the proposed remedial action.

If you have any questions regarding this letter, please call me at (510) 426-2616.

Sincerely,

Anthony S. McElligott, P.E.
Manager, Environmental Engineering
San Francisco Regional Office

ASM/tm

c: Ms. Katherine M. Burgi, Aetna Realty Investors
Barry S. Sandals, Esq.
Ms. Susan Hugo, Alameda County Health Care Services Agency
Mr. Thomas Gram, Former Eastshore Partners
David Cooke, Esq. Beveridge & Diamond

Attachments:

1. PES letter of June 3, 1994
2. PES TOC elevations Tables
3. American Leak Detection Report
4. PES conductivity measurements

ATTACHMENT 1

PES LETTER OF JUNE 3, 1994

PES Environmental, Inc.
Engineering & Environmental Services

June 3, 1994

241.0102.010

Clayton Environmental Consultants
1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566

Attn: Mr. Tony McElligott

GROUNDWATER MOUNDING DISCUSSION
POWELL STREET PLAZA AND SHELLMOUND VENTURES III
EMERYVILLE, CALIFORNIA

Dear Tony:

As you know, PES Environmental, Inc. ("PES") conducts quarterly groundwater sampling at the Powell Street Plaza and Shellmound Ventures Parcel III properties on behalf of the former Eastshore Partners. As part of the sampling activity, water-level elevation measurements are collected from 23 onsite and nearby monitoring wells (Plate 1). Water-level elevation contours based on water-level data collected on November 10, 1993 are shown on Plate 2. As shown on Plate 2, an anomalous groundwater mound appears to be present around the southernmost portion of the main parking area on the Powell Street Plaza property. This mound is present in all available historical groundwater monitoring records and appears to be caused by some source of surface or near-surface infiltration of water.

Regional groundwater flow in the area occurs from east to west towards San Francisco Bay. The groundwater mound has a dramatic effect on local groundwater flow conditions at the Powell Street Plaza and Shellmound Ventures III properties. The groundwater mound produces steeper hydraulic gradients and a stronger southward component of flow towards Temescal Creek than would occur under natural regional flow conditions. For these reasons, the source of recharge water needs to be identified and eliminated.

PES offers two possible explanations of the source of water infiltrating to groundwater. On several occasions, delivery trucks have been observed driving over the curbed island indicated on Plate 3. A lawn area in the island is irrigated by a lawn sprinkler with water supplied by an underground irrigation line. The grass area has been depressed by the truck tires. Standing water in the depressed area has been observed by PES on a regular basis (Plate 4). PES suggests that damage to the irrigation water supply line or to the sprinkler itself may be providing a source of water which infiltrates to groundwater and causes the observed groundwater mound.

Another possible source of infiltration water is the water supply main, laterals and water valves "w.v." which supply the facilities at Powell Street Plaza. As shown on Plate 3, a water main runs directly through the middle of the observed groundwater mound with several

valves located at laterals to the water main. A small leak in the water main, a lateral and/or a valve would create a source of water which could cause the groundwater mound.

A source of water due to damage of the irrigation system at the curbed island, could be eliminated by: (1) repairing damage to the sprinkler or irrigation water supply line; (2) shutting off the irrigation water to the area at the source and capping the small landscaped area with concrete or asphalt; or (3) removing the island in this area up to the parking stall. Option (3) is recommended since trucks will likely continue to damage the curbed area of it is not removed. A source of water coming from a leak or break in the water supply main, laterals or valves could be eliminated by repairing any damage to the water supply system.

PES recommends that the sprinkler and related irrigation water supply line at the curbed area be thoroughly checked for leaks. If damage is detected, repair of the damage and alterations to the curbed area should be made. In addition to the repair of any leaking irrigation lines at the curbed area, East Bay Municipal Utilities District ("EBMUD") should be asked to perform a leak detection survey of the water main, laterals and valves in the vicinity of the observed groundwater mound. Appropriate repairs should be made to stop any leaks detected by the EBMUD survey.

If you have any questions or comments, please do not hesitate to call either of the undersigned.

Yours very truly,

PES ENVIRONMENTAL, INC.

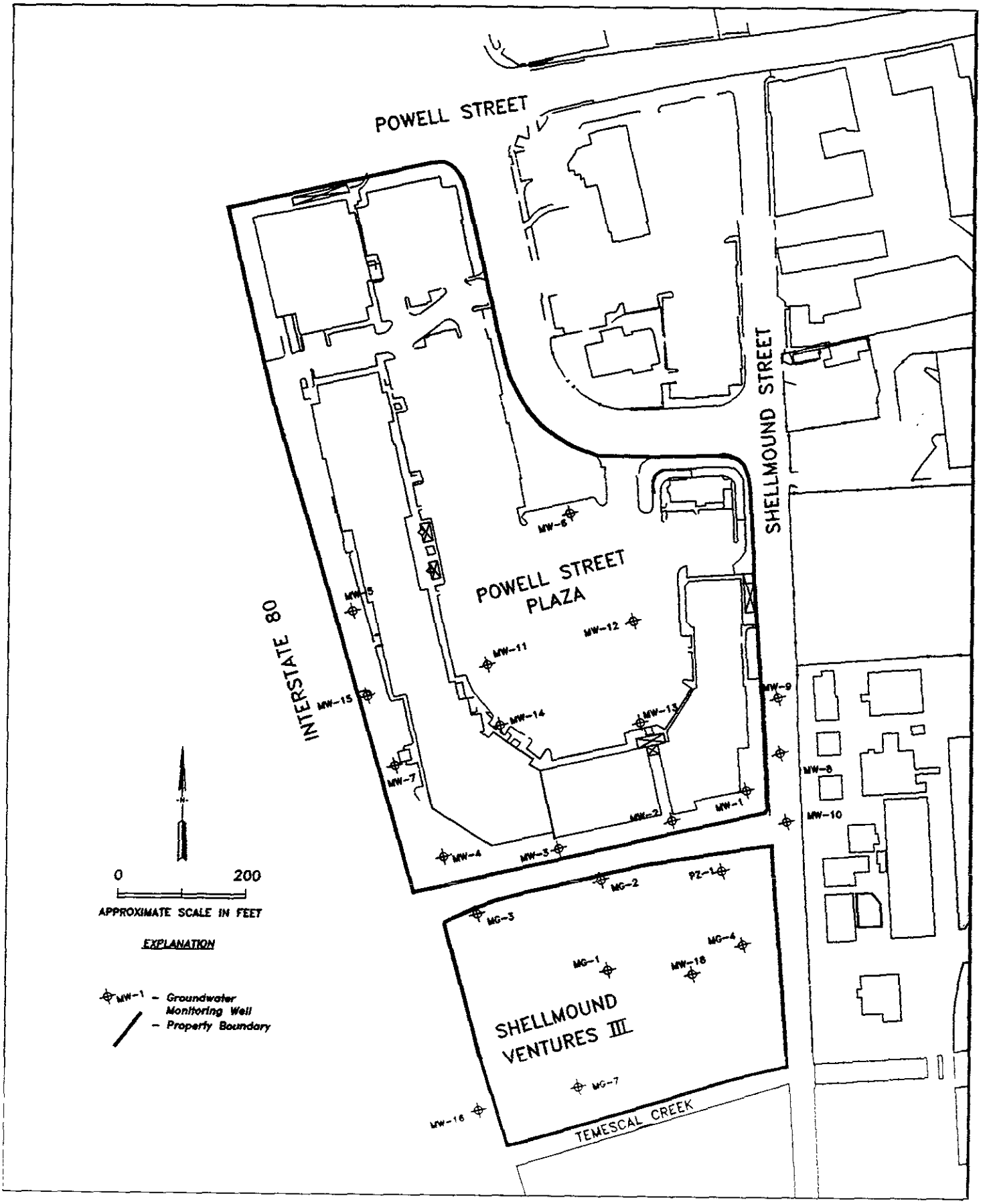
James Chapense for
Bryan J. Smith
Staff Engineer

John D. Skalbeck
John D. Skalbeck, C.E.G.
Associate Hydrogeologist

Plate 1	Site Map
Plate 2	Site Map with Water-level Elevation Contours
Plate 3	Locations of Possible Water Infiltration Sources
Plate 4	Photographs of Curb Area

cc: Mr. Tom Gram, Former Eastshore Partners
David Cooke, Esq., Beveridge and Diamond
Barry Sandals, Esq., Morrison & Foerster

2410102L.007

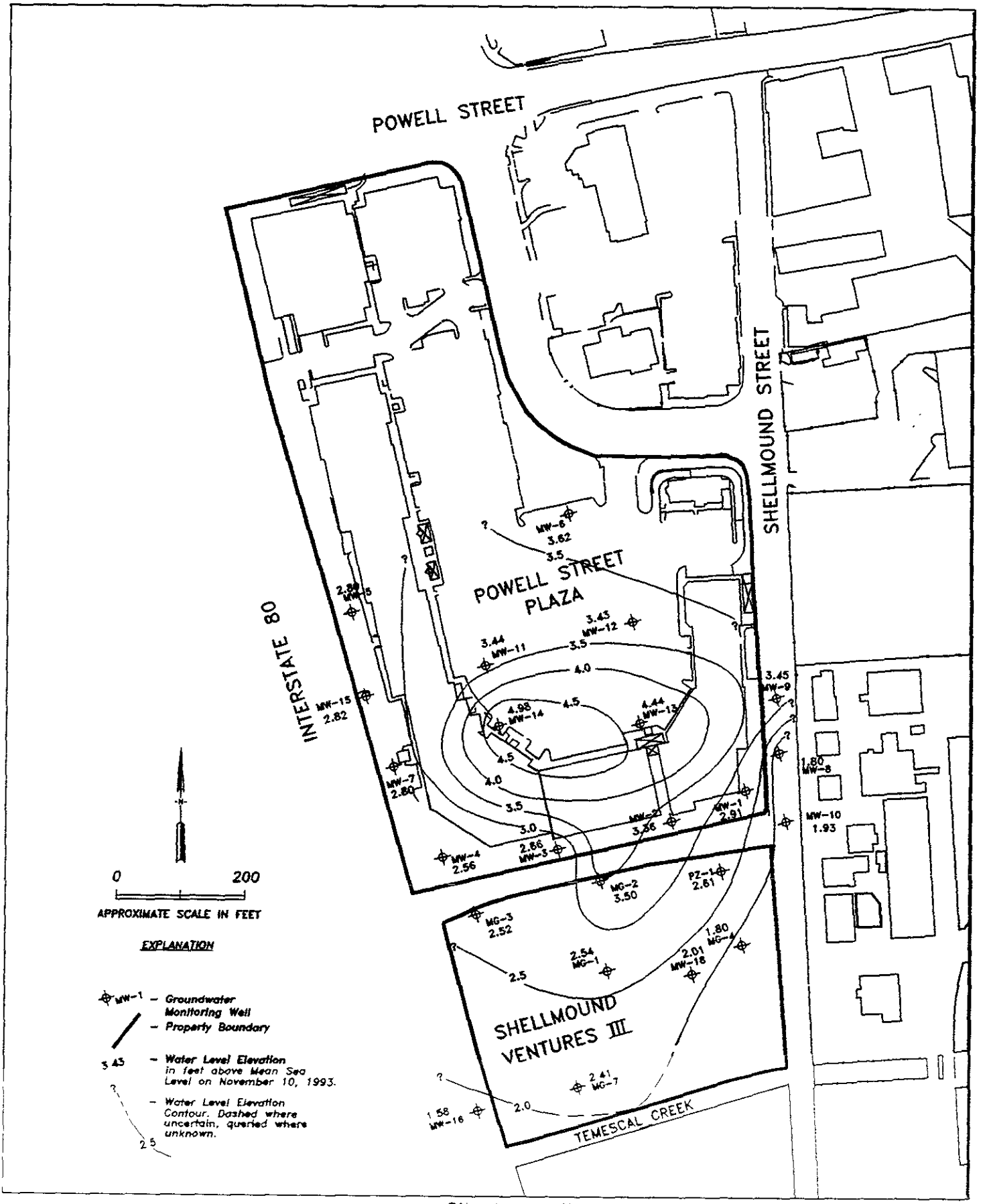


PES Environmental, Inc.
Engineering & Environmental Services

Site Map
Powell Street Plaza and Shellmound Ventures III
Emeryville, California

PLATE 1

241.0102.010	241BASE	6/94
JOB NUMBER	DWG NUMBER/DRAWN BY	DATE

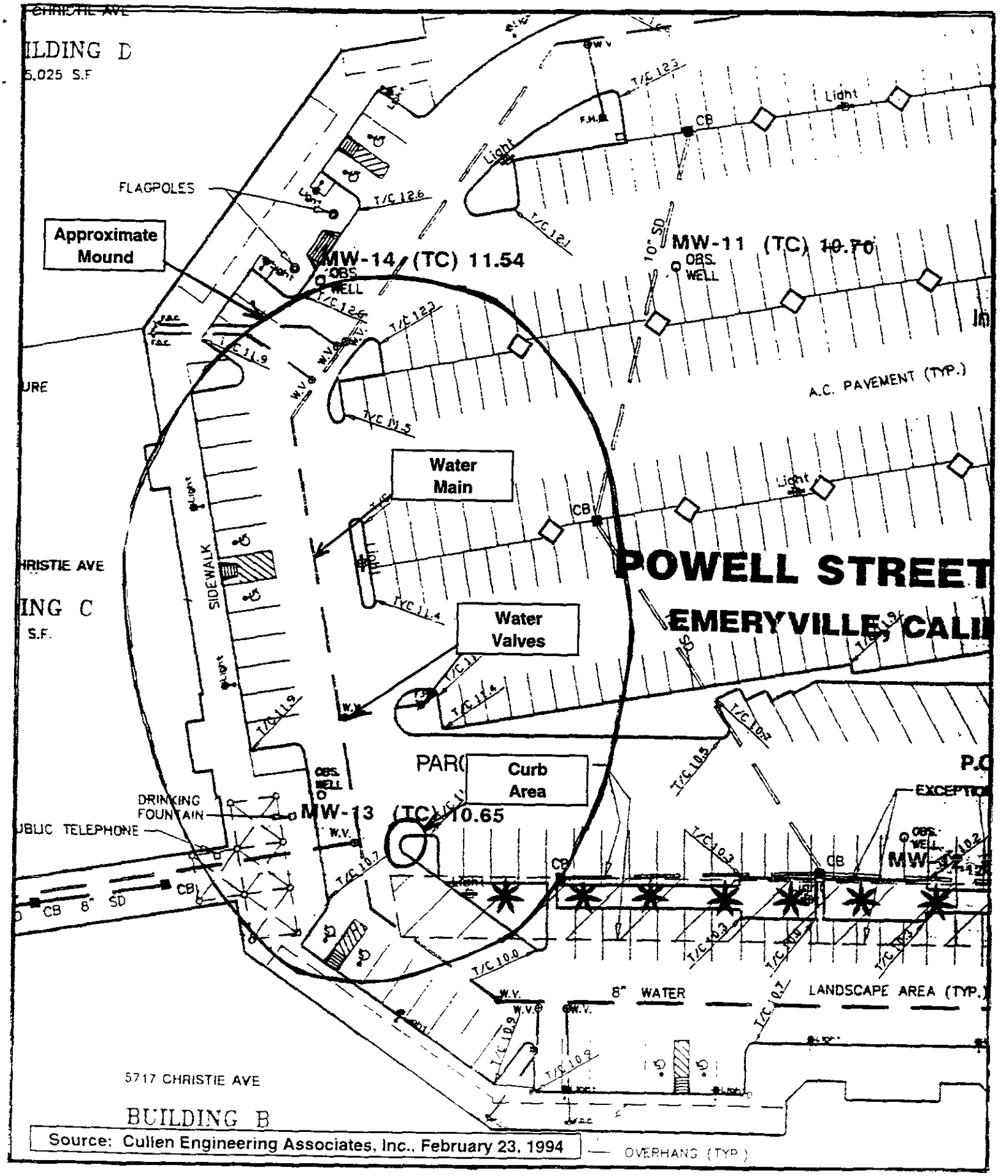


PES Environmental, Inc.
Engineering & Environmental Services

Site Map with Water-level Elevation Contours-
November 10, 1993
Powell Street Plaza and Shellmound
Ventures III
Emeryville, California

PLATE
2

241.0102.010	241BASE	6/94
JOB NUMBER	DWG NUMBER/DRAWN BY	DATE



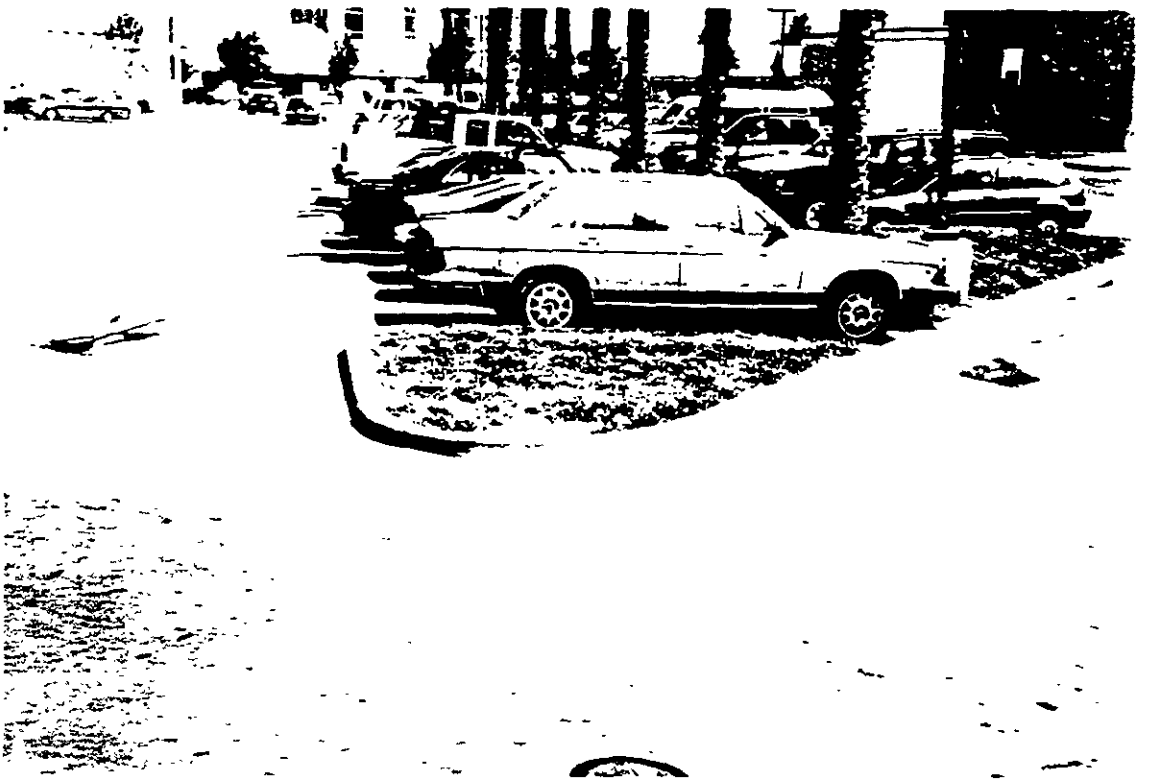
Source: Cullen Engineering Associates, Inc., February 23, 1994

PES Environmental, Inc.
Engineering & Environmental Services

Locations of Possible Water Infiltration Sources
Powell Street Plaza
Emeryville, California

PLATE 3

241.0102.010	0201007D	6/3/94
JOB NUMBER	DWG NUMBER	DATE



Photograph 1. View from south end of Powell Street Plaza parking lot looking north toward Christie Avenue and Powell Street. Curb with standing water is shown in foreground.

Photograph 2. Close-up view looking down on curb area with standing water.

PES Environmental, Inc.
Engineering & Environmental Services

Photographs of Curb Area
Powell Street Plaza
Emeryville, California

PLATE
4

241.0102.010
JOB NUMBER

02010079
DWG NUMBER

6/3/94
DATE

ATTACHMENT 2

PES TOC ELEVATIONS TABLES

TABLE 3. WATER-LEVEL ELEVATIONS AND PRODUCT THICKNESS MEASUREMENTS NOVEMBER 10, 1993

Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date	Casing Diameter (inches)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Water-Level Elevation (feet MSL)	Corrected W-L Elevation (feet MSL)
MW-1	11/10/93	4	8.53	NP	5.62		2.91	2.91
MW-2	11/10/93	4	9.64	NP	6.28		3.36	3.36
MW-3	11/10/93	4	10.68	7.99	8.22	0.23	2.46	2.66
MW-4	11/10/93	4	11.44	8.88	8.90	0.02	2.54	2.56
MW-5	11/10/93	2	10.96	NP	8.16		2.80	2.80
MW-6	11/10/93	2	11.22	NP	7.60		3.62	3.62
MW-7	11/10/93	4	11.65	8.82	9.04	0.22	2.61	2.80
MW-8	11/10/93	2	7.26	NP	5.46		1.80	1.80
MW-9	11/10/93	2	7.30	NP	3.85		3.45	3.45
MW-10	11/10/93	2	7.19	NP	5.26		1.93	1.93
MW-11	11/10/93	2	11.69	NP	8.25		3.44	3.44
MW-12	11/10/93	2	9.22	NP	5.79		3.43	3.43
MW-13	11/10/93	2	10.64	6.04	7.10	1.06	3.54	4.44
MW-14	11/10/93	2	11.54	6.52	6.79	0.27	4.75	4.98
MW-15	11/10/93	4	11.66	8.82	8.97	0.15	2.69	2.82
MW-16	11/10/93	2	10.64	NP	9.06		1.58	1.58
MW-18	11/10/93	2	6.02	NP	4.01		2.01	2.01
MG-1	11/10/93	2	11.62	9.03	9.39	0.36	2.23	2.54
MG-2	11/10/93	2	10.62	NP	7.12		3.50	3.50
MG-3	11/10/93	2	9.56	6.97	7.44	0.47	2.12	2.52
MG-4	11/10/93	2	7.19	NP	5.39		1.80	1.80
MG-7	11/10/93	2	9.86	NP	7.45		2.41	2.41
PZ-1	11/10/93	2	7.79	NP	5.18		2.61	2.61

Notes

NP = No free product observed.

W-L = Water-Level

Corrected Water-Level Elevations were calculated as follows.

Water-Level Elevation = Top of Casing - Depth to Water + 0.85 x Product Thickness

TABLE 3

Water-Level Elevations and Product Thickness Measurements
February 23, 1994

Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Measurement Date	Casing Diameter (inches)	Top of Casing [1] (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Water-Level Elevation (feet MSL)	Corrected W-L Elevation (feet MSL)
MW-1	2/23/93	4	8.53		4.30		4.23	
MW-2	2/23/93	4	9.64		5.70		3.94	
MW-3	2/23/93	4	10.68		6.98		3.70	
MW-4	2/23/93	4	11.44		9.15		2.29	
MW-5	2/23/93	2	10.96		7.33		3.63	
MW-6	2/23/93	2	11.22		7.35		3.87	
MW-7	2/23/93	4	11.65	7.32	7.34	0.02	4.31	4.33
MW-8	2/23/93	2	7.26		5.42		1.84	
MW-9	2/23/93	2	7.30		2.34		4.96	
MW-10	2/23/93	2	7.19		5.19		2.00	
MW-11	2/23/93	2	11.69		8.02		3.67	
MW-12	2/23/93	2	9.22		5.78		3.44	
MW-13	2/23/93	2	10.64	Trace	6.35	<0.01	4.29	4.29
MW-14	2/23/93	2	11.54	Trace	6.04	<0.01	5.50	5.50
MW-15	2/23/93	4	11.66	Trace	9.01	<0.01	2.65	2.65
MW-16	2/23/93	2	10.64		7.46		3.18	
MW-18	2/23/93	2	6.02	NM	NM			
MG-1	2/23/93	2	11.62	Trace	7.04	<0.01	4.58	4.58
MG-2	2/23/93	2	10.62		6.14		4.48	
MG-3	2/23/93	2	9.56	5.12	5.14	0.02	4.42	4.44
MG-4	2/23/93	2	7.19		3.60		3.59	
MG-7	2/23/93	2	9.86		6.59		3.27	
PZ-1	2/23/93	2	7.79		3.56		4.23	

Notes:

[1] Revised top of casing elevations based on Cullen Engineering survey

NM = Not Measured (Well under water)

NP = No free product observed

W-L = Water-Level

Trace = Less than 0.01 foot of free-phase product in well

Corrected Water-Level Elevations were calculated as follows

Water-Level Elevation = Top of Casing - Depth to Water + 0.85 x Product Thickness

TABLE 3

Water-Level Elevations and Product Thickness Measurements

Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Measurement Date	Casing Diameter (inches)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Water-Level Elevation (feet MSL)	Corrected W-L Elevation (feet MSL)
MW-1	6/2/94	4	8.53		5.17		3.36	
MW-2	6/2/94	4	9.64		6.31		3.33	
MW-3	6/2/94	4	10.68		NM		NM	
MW-4	6/2/94	4	11.44		8.20		3.24	
MW-5	6/2/94	2	10.96		7.68		3.28	
MW-6	6/2/94	2	11.22		4.48		6.74	
MW-7	6/2/94	4	11.65	8.27	8.28	0.01	3.37	3.38
MW-8	6/2/94	2	7.26		5.96		1.30	
MW-9	6/2/94	2	7.30		3.91		3.39	
MW-10	6/2/94	2	7.19		5.30		1.89	
MW-11	6/2/94	2	11.69		7.46		4.23	
MW-12	6/2/94	2	9.22		5.14		4.08	
MW-13	6/2/94	2	10.64		4.71	<0.01	5.93	
MW-14	6/2/94	2	11.54		5.31	<0.01	6.23	
MW-15	6/2/94	4	11.66		8.36	<0.01	3.30	
MW-16	6/2/94	2	10.64		8.76		1.88	
MW-18	6/2/94	2	6.02		3.75		2.27	
MG-1	6/2/94	2	11.62	8.48	8.57	0.09	3.05	3.13
MG-2	6/2/94	2	10.62		7.46		3.16	
MG-3	6/2/94	2	9.56	6.39	6.47	0.08	3.09	3.16
MG-4	6/2/94	2	7.19		4.75		2.44	
MG-7	6/2/94	2	9.86		8.23		1.63	
PZ-1	6/2/94	2	7.79		4.60		3.19	

Notes:

NM: Not Measured (Well cover jammed)

NP: No free product observed

W-L: Water-Level

Corrected Water-Level Elevations were calculated as follows:

Water-Level Elevation = Top of Casing - Depth to Water + 0.85 x Product Thickness

ATTACHMENT 3

AMERICAN LEAK DETECTION REPORT

AMERICAN LEAK DETECTION
P.O. Box 438
Berkeley, CA 94701-0438
Telephone: 510-935-1160 FAX: 510-704-0331

Invoice Number: 13837-D
Date of Order: 07/05/94

PO#:	408-255-4100	M: HS	H:	Start: 07/05/94
Billing Data	Hunter Properties Melissa Collinan 20725 Valley Green Drive, Ste 100 Cupertion, CA 95014	Code: CIM		Compl: 07/05/94
		Referred By: Prior Refer:		
Site Name Address	Powell Street Plaza In Front Of Burger King Emeryville, CA 94608	Site: 510- - Work: 510- - Alt.: 510- -		Ext.: Ext.: Type:

Commercial irrigation lines (main) detection report:

The irrigation system was isolated and pressurized. The system was found to be leaking. Electronic leak detection indicated problems at four valves. The problem valves were shown to Jeff McAuliffe with Trimacs Landscaping. The problems located are as follows:

1. A valve at the end of the landscape island on the south side of Trader Joe's was leaking into the valve box. This valve is tagged A-25.
2. The upper valve in the box near the dumpster at Trader Joe's was found to be bypassing water because the valve does not close completely close when in an off position.
3. A valve located between Circuit City and New York Fabric on the east side of the parking lot was also found to be bypassing water.
4. A valve located in front of Copeland Sports was also found to be bypassing water.

The minor problems on the irrigation system are not near the south side of the property where the mounding is being experienced. The irrigation leaks appear to be unrelated. Should any further testing be required, please contact our office after the above valves have been repaired.

$

Ordered by: Melissa Collinan | Phone: 408-996-8425 FAX

FEDERAL EMPLOYER IDENTIFICATION NO.
68-0065029

PLEASE INCLUDE INVOICE NUMBERS OR A COPY OF THE INVOICE WITH ALL PAYMENTS. THANK YOU!

REPLICA OF INVOICE 13837-D OF 07/05/94

Each office independently owned and operated

TOTAL AMOUNT DUE $

Date transmitted: 07/08/94. Page 1 of 1.

ATTACHMENT 4

PES CONDUCTIVITY MEASUREMENTS

PES Environmental, Inc.
Engineering & Environmental Services

PES ENVIRONMENTAL, INC.
TEL: (415) 899-1600

FAX: (415) 899-1601

TO: Tony McElligott

COMPANY: Clayton Environmental

FAX NO: 510/426-0106 510 426-0172

PHONE NO: 426-2600

FROM: JOHN SKALBECK

JOB NO: 241.0102.010

RE: Powell Street Plaza ; Shellmound III Sites

DATE: 7/14/94 TIME: 11:00 SENT BY: JS

NUMBER OF PAGES 2 (INCLUDING COVER SHEET) HARD COPY TO FOLLOW: YES ___ NO X

NOTES: Tony, Received your July 13, 1994 Letter, Here is data collected July 12 on E.C. measurements. Will send copies of Survey drawings soon.

IF THIS TRANSMITTAL HAS BEEN RECEIVED IN ERROR
PLEASE CONTACT
PES ENVIRONMENTAL AT YOUR EARLIEST CONVENIENCE (415) 899-1600

PES Environmental, Inc.
Engineering & Environmental Services

SHEET	OF		
JOB NO.			
FILE NAME			
PROJECT Powell Street Plaza	COMPUTED BY BJS	DATE 7-12-94	
SUBJECT Measurements taken 7-12-94	CHECKED BY	DATE	

Using conductance, temperature and pH tester #9107 by CSI

Time	Well	Temp. (°F)	Conductivity (MS/cm)	pH	DTW (feet)	DTP (feet)
10:45	MW-5	78.5	29.1 x 100	6.96	7.90	NP
10:15	MW-6	72.4	73.1	6.78	7.40	NP
11:50	MW-13	82.4	25.7 x 100	7.37	4.98*	NP
12:20	MW-14	81.7	35.4 x 100	6.85	5.45	NP
13:10	MG-1	77.9	27.3 x 100	7.80	8.75	9.02
13:35	MG-3	76.6	13.0 x 100	7.35	6.67	6.88

Meter calibrated at 10:10.

*Product skimmer was in well. Water level rising.

NP: No free-product observed.