



PACIFIC
ENVIRONMENTAL
GROUP, INC.

✓
10/22/92

92007 10 15 09:28

October 15, 1992

Mr. Paul Hayes
Shell Oil Company
P.O. Box 5278
Concord, California 94520

Re: Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California
WIC No 204-2277-0105

Dear Mr. Hayes:

At the request of Shell Oil Company (Shell), Pacific Environmental Group, Inc. (PACIFIC) has performed the following tasks related to the referenced site: (1) conducted a review of regional Leaking Underground Fuel Tank (LUFT) related activities near the referenced site (Figure 1), (2) performed a review of a 1988 Remedial Action Plan prepared for the former Shell site (Shell RAP) by Ensco Environmental Services, Inc. (ENSCO) to determine how implementation of the Shell RAP will impact LUFT related activities at adjacent sites, and (3) prepare recommendations for future environmental activities at the Shell site based on the results of tasks 1 and 2. This work was performed in response to a Shell letter to the Alameda County Department of Environmental Health (ACDEH) dated September 4, 1992.

REGIONAL BACKGROUND INFORMATION

Leaking Underground Fuel Tank (LUFT) related activities are in progress at five sites: a former Shell service station (currently occupied by Oil Changers), a former Dutch Pride Dairy (DPD) facility, a UNOCAL service station, a BP/former Mobil Oil service station, and an ARCO service station. Figure 2 presents the location and layout of these sites. The regional groundwater gradient is predominantly to the east-southeast. Environmental investigations have been conducted at each of these locations. The following summarizes the findings from these investigations.

Former Shell Service Station - 7194 Amador Valley Boulevard

The site is currently occupied by Oil Changers, but was previously occupied by a Shell service station. Four underground storage tanks (UST) were removed from the former Shell site on August 3, 1987. Soil sample data for the tank excavation is currently unavailable. *up to 1,900 ppm TPH-G, 31 ppm benzene at 11' in soil*

There are currently twelve groundwater monitoring wells (MW-1 through MW-9, MW-11, and MW-12) and one groundwater recovery well (RW-1) associated with the former Shell site. One well, MW-13, is located off-site, near the former DPD UST complex. The most recent quarterly groundwater monitoring data (August 12, 1992) indicates constituent concentrations as high as 660 parts per billion (ppb) total petroleum hydrocarbons calculated as gasoline (TPH-g) and 140 ppb benzene in site associated wells.

Former Dutch Pride Dairy - 7400 Amador Valley Boulevard

The site is currently a vacant lot adjacent to Oil Changers. Two USTs were removed from the DPD site on January 11, 1990. Separate-phase petroleum hydrocarbons were encountered. The ACDEH confirms that this release has impacted the former Shell site. Soil samples taken from the tank excavation indicated concentrations as high as 6,000 parts per million (ppm) TPH-g and 0.019 ppm benzene. Over-excavation was performed up to the former Shell site property line.

There is currently one groundwater monitoring well (MW-13, installed by Shell) located on-site. The most recent quarterly groundwater monitoring data (August 12, 1992) indicates constituent concentrations up to 400 ppb TPH-g and 140 ppb benzene.

UNOCAL Service Station - 7375 Amador Valley Boulevard

The site is currently an operating UNOCAL service station. One waste-oil tank was removed from the UNOCAL site in December 1987. Soil samples taken from the tank excavation revealed concentrations as high as 1,700 ppm total oil and grease (TOG) and 300 ppm total petroleum hydrocarbons calculated as diesel (TPH-d). The tank pit was over-excavated. In February 1988, three USTs were removed from the UNOCAL site (two gasoline tanks and one diesel tank). Holes were observed in the tanks. The tank pit was overexcavated and the groundwater was pumped out (excavation was not performed under the pump island). Soil samples taken after overexcavation revealed constituent concentrations as high as

1,700 ppm TPH-g and 83 ppm TPH-d. Groundwater sample analysis indicated constituent concentrations up to 91,000 ppb gasoline and 8,200 ppb benzene.

There are currently four groundwater monitoring wells (MW-1 through MW-4) located on-site. The most recent quarterly groundwater monitoring data (May 22, 1992) indicates constituent concentrations as high as 2,500 ppb TPH-g and 120 ppb benzene.

BP Service Station - 7197 Amador Valley Boulevard

The site is currently an operating BP service station (former Mobil service station). In December 1988, one 280 gallon waste-oil tank was removed from the former Mobil site. Holes were observed in the tank (up to 3/8 inch in diameter). Soil samples taken from the excavation revealed concentrations as high as 550 ppm TOG. The tank pit was overexcavated. Soil samples analyzed after the overexcavation contained up to 79 ppm TOG.

There are currently six groundwater monitoring wells (MW-1 through MW-3 and AW-4 through AW-6) located on-site. The most recent quarterly groundwater monitoring data (November 13, 1991) indicates no detectable concentrations of petroleum hydrocarbons in any of the monitoring wells except 200 ppb TPH-g and 0.94 ppb xylenes in Well AW-6, and 100 ppb TPH-g in Well AW-5. Monitoring well AW-6 is constructed in a shallower water-bearing zone not encountered by the other wells on-site.

ARCO Service Station - 7249 Village Parkway

The site is currently an operating ARCO service station. In June 1990, one 550 gallon waste-oil tank was removed from the ARCO site. No holes or cracks were observed in the tank. A soil sample taken from the limit of excavation revealed no detectable concentrations of petroleum hydrocarbons or TOG. Composite soil samples from the pit stockpile indicated constituent concentrations of 110 ppm TOG, 10 ppm TPH-g, and 180 ppm TPH-d.

In September 1990, a small release of gasoline was reported at the station (approximately 10 gallons of gasoline). The spill was a result of a station customer not removing the pump fill nozzle from the automobile prior to departure. The pea gravel immediately beneath the spill was monitored with a portable Organic Vapor Meter (OVM). The OVM showed a reading of 750 ppm.

There are currently three groundwater monitoring wells (MW-1 through MW-3) located on-site. The most recent quarterly groundwater monitoring data

(March 16, 1992) indicates constituent concentrations as high as 780 ppb TPH-g and 130 ppb benzene.

SHELL REMEDIAL ACTION PLAN REVIEW

PACIFIC reviewed the 1988 Remedial Action Plan prepared by ENSCO for the former Shell service station. The remedial action strategy developed for this site includes: (1) extracting groundwater from recovery well RW-1 using conventional pump and treat technology, (2) providing monthly remedial system monitoring and zone of capture evaluations, and (3) conducting monthly groundwater sampling and monitoring.

PACIFIC has reviewed the ENSCO aquifer pump test data and concurs with the results. A flow rate of approximately 3 to 5 gallons per minute (gpm) should yield a radius of influence of approximately 200 feet. Pumping groundwater from recovery well RW-1 at approximately 3 gpm should achieve remedial objectives stipulated in the Shell RAP. A 200-foot radius of influence will create a zone of capture capable of encompassing Shell's plume.

RECOMMENDATIONS FOR FUTURE ACTIVITIES AT THE FORMER SHELL SERVICE STATION SITE

Based on the review of regional LUFT related activities near the former Shell service station, and the Shell RAP, PACIFIC has developed recommendations for future environmental activities at the former Shell service station.

The former Shell, former DPD, UNOCAL, and ARCO sites all have LUFT related groundwater problems. It appears that a significant portion of the petroleum hydrocarbons present on the former Shell site may be due to off-site migration, particularly from the DPD site. In addition, petroleum hydrocarbon impacted groundwater from the UNOCAL and ARCO sites potentially may be influenced by the pump and treat system proposed in the Shell RAP. Therefore, it is PACIFIC's opinion that Shell should not implement the Shell RAP until Remedial Action Plans are developed for the DPD, UNOCAL and ARCO sites. PACIFIC recommends that these Remedial Action Plans address the following issues:

- o The implementation of the proposed Shell RAP will most likely hydraulically influence the DPD, UNOCAL, and ARCO hydrocarbon plumes causing these plumes to migrate further off-site. How do DPD, UNOCAL, and ARCO plan to halt

further off-site migration of their individual plumes if the Shell RAP is implemented?

- o During overexcavation activities at the DPD site, excavation activities were terminated at the former Shell/Oil Changers property line even though the limits of petroleum hydrocarbon impacted soils had not been reached. How does DPD plan on defining the vertical and horizontal limits of impacted soils? More specifically, the DPD RAP should address how to mitigate impacted vadose zone soils on the Oil Changer property that are attributable to DPD LUFT related activities. This action will eliminate a potential source of future groundwater contamination.

A revised Shell RAP implementation schedule can not be developed until DPD, UNOCAL, and ARCO issue their respective RAPs. A modified RAP (if appropriate) will be submitted once these RAP's are reviewed.

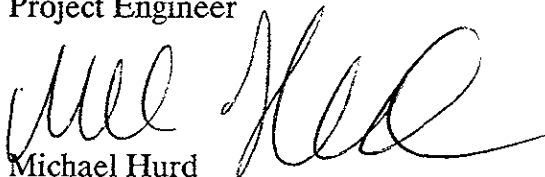
If you have any questions regarding the contents of this letter, please call.

Sincerely,

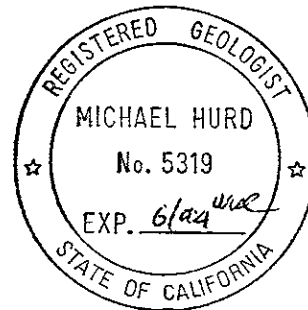
Pacific Environmental Group, Inc.



Justin L. Hawkins
Project Engineer



Michael Hurd
Project Geologist
RG 5319



REFERENCES

Alton Geoscience, Inc., January 4, 1991, *Site Investigation Report for Mobil Oil Corporation*

Alton Geoscience, Inc., January 15, 1992, *Fourth Quarter 1991 Groundwater Monitoring and Sampling Report for Mobil Oil Corporation*

Aqua Terra Technologies, Inc., March 5, 1991, *Soil Report for Dutch Pride Dairy*

Ensco Environmental Services, Inc., December 15, 1989, *Shallow Groundwater Aquifer Pump test for Shell Oil Company*

Ensco Environmental Services, Inc., November 30, 1988, *Supplemental Soil and Groundwater Investigation for Shell Oil Company*

Kaprealian Engineering, Inc., June 30, 1992, *Second Quarter 1992 Groundwater Monitoring Report for Unocal Corporation*

Kaprealian Engineering, Inc., May 11, 1988, *Subsurface Investigation Report for Unocal Corporation*

Pacific Environmental Group, Inc., October 6, 1992, *Third Quarter 1992 Groundwater Monitoring Report for Shell Oil Company*

Resna Industries, Inc., May 1, 1992, *First Quarter 1992 Groundwater Monitoring Report for ARCO Products Company*

Resna Industries, Inc., February 12, 1992, *Subsurface Environmental Investigation Report for ARCO Products Company*

Attachments: Figure 1 - Site Location Map

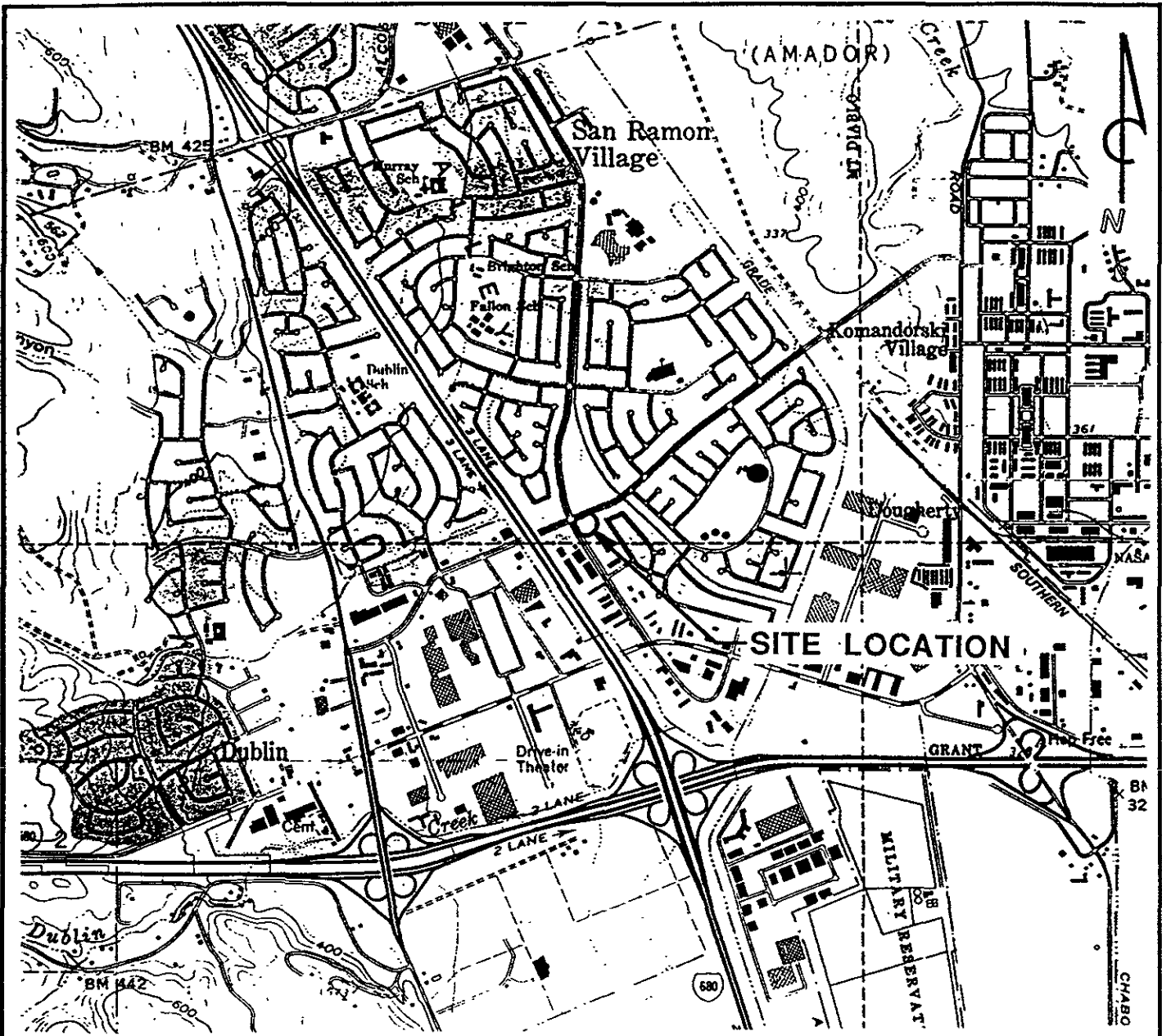
Figure 2 - Extended Site Map - TPH-g/Benzene Concentration Map

cc: Mr. Craig Mayfield, Alameda County Flood Control and Water Conservation District

Mr. Eddy So, Regional Water Quality Control Board

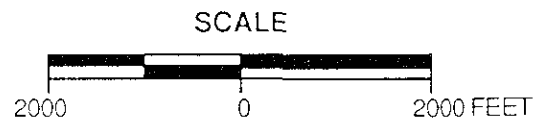
Mr. Larry Turner, Shell Oil Company

Mr. Scott Seery, Alameda County Health Care Services



QUADRANGLE LOCATION

REFERENCES:
 USGS 7.5 MIN TOPOGRAPHIC MAP
 TITLED DUBLIN, CALIFORNIA
 DATED 1961 REVISED 1980

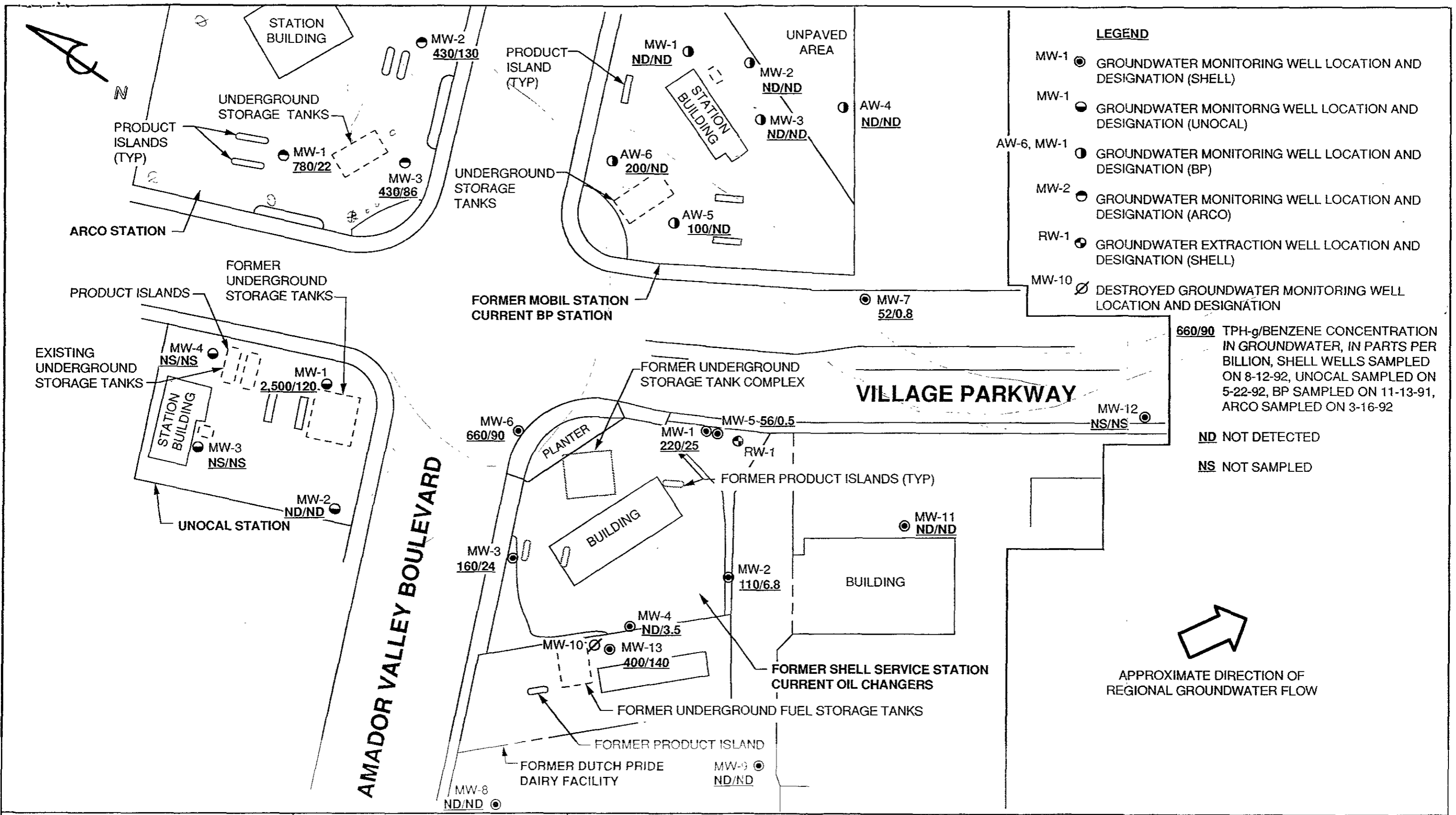


PACIFIC ENVIRONMENTAL GROUP INC

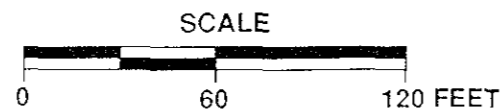
FORMER SHELL SERVICE STATION
 7194 Amador Valley Boulevard at Village Parkway
 Dublin, California

SITE LOCATION MAP

FIGURE 1
 PROJECT 305-87.01



PACIFIC ENVIRONMENTAL GROUP, INC.



FORMER SHELL SERVICE STATION
7194 Amador Valley Boulevard at Village Parkway
Dublin California

EXTENDED SITE MAP - TPH-g/BENZENE CONCENTRATION MAP

FIGURE
2
PROJECT
305-87 01