LW

Environmental Services, Inc.

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WORK PLAN
for
BECK ROOFING
21123 Meekland Avenue
Hayward, California

Prepared for:
Charlie and Mary Beck
21123 Meekland Avenue
Hayward, CA 94541

L&W Project Number 2116
October 10, 1991

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INTRODUCTION

Scope of Work

This Work Plan describes the work that is to be carried out at Beck Roofing in order to comply with the "Requirement for Soil and Groundwater Investigation at Former Underground Fuel Tank Storage Site" as described in the Alameda County Health Care Services Agency letter dated August 5, 1991. Because evidence of a leaking tank was found at the site this Work Plan is presented for:

- Horizontal and vertical exploration of the contaminant spread,
- Installation of three groundwater wells,
- Sampling and analyses of the wells to determine if there has been any impact on the groundwater below the site,
- Development of data to be used in remediation and abatement of any contamination in the soil or groundwater.

Site Location

The site is located at 21123 Meekland Avenue, Hayward, California. The location of the site is shown on the Area Map, Figure 1 of Appendix A.

Background

Beck Roofing had an underground gasoline storage tank removed from the property on May 20, 1990. Upon excavation and tank removal, soil samples were analyzed and found to contain Total Petroleum Hydrocarbons as Gasoline (TPH-G) in excess of 1000 parts per million (ppm). Under local and state regulations further work is required and was described in the letter dated August 5, 1991, from the Alameda County Health Care Services Agency.

Site History

Beck Roofing is a commercial roofing business that installed an underground gasoline tank as part of their operations to refuel roofing trucks. The only tank at the site was a 1000 gallon metal underground gasoline tank. There are no other tanks associated with the site.

SITE DESCRIPTION

Vicinity & Site

The site is located in the province of San Francisco Bay with bay sediments and alluvial deposits resulting from the nearby Berkeley Hills. In general the site is within alluvial and bay sediments underlain at depth by basement rocks. Groundwater is anticipated to first occur at relatively shallow depths, less than 50 feet. Groundwater will probably be contained in granular deposits layered by various fine grained deposits at depths of about 20 feet below ground surface. A vicinity map showing nearby significant features is shown as Figure 2 of Appendix A.

Excavation & Removal Results

Details of sampling procedures and methods used during the tank removal are discussed in the Blaine Tech Services "Tank Removal Sampling Report" dated June 4, 1991. Based on recent observations, the soil encountered was essentially sandy silty clays. No water was noted in the excavation during tank removal. The results of the analyses on the soil samples obtained by Blaine Tech Services are tabulated below:

Sample Identification	TPH-G (ppm)	BTEX (ppm)	Lead (ppm)
#1	1,300	64/77/28/230	0.22
#2	1,800	5.8/75/33/2107	0.66
#3 A-D	11	ND/ND/ND/ND	ND

Notes:

TPH-G	Total Petroleum Hydrocarbons as Gasoline
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
ND	Non Detectable
ppm	parts per million

The soil excavated during the tank removal was placed on plastic sheeting. The excavation was left open and barricaded for safety purposes.

PLANNED WORK

A series of borings and monitoring well installation is planned to obtain soil and water samples which will be analyzed in the laboratory for gasoline related contamination. The results of the analyses will be used in defining the limits of contamination.

The initial exploration will consist of:

Drilling three borings with eight inch diameter hollow stem augers beyond the first encountered groundwater from five to ten feet. The proposed boring locations are shown on Figure 2 of Appendix A.

Sample each boring at five foot intervals or at lithographic changes and retaining the soil samples taken above the water table for analyses.

Analyzing all soil samples in a California Certified Laboratory for Total Petroleum Hydrocarbons as Gasoline (TPH-G), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), and Lead.

Immediately after drilling, converting the three borings to two inch diameter monitoring wells. After development and stabilization, the wells will be surveyed, measured and sampled.

Analyzing the three water samples in a California Certified Laboratory for Total Petroleum Hydrocarbons as Gasoline (TPH-G), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), and Lead.

All drilling equipment will be steam cleaned prior to use and before leaving the site. Sampling equipment will initially be steam cleaned and then decontaminated between samples by washing with TSP and clear water rinses. The borings will be logged under the supervision of a Registered Civil Engineer. Soils will be classified in accordance with the Unified Soil Classification System. Samples will be taken using a California split barrel sampler in accordance with ASTM test procedures. All soil generated during the exploration will be stored in 55 gallon drums and kept on site until analyses are complete and proper methods of disposal are determined.

The soil borings will be drilled to between five and ten feet below first encountered groundwater and immediately converted to groundwater monitoring wells. Final construction details will depend on the actual conditions encountered during drilling, but the preliminary design details are present on Figure 3 of Appendix A. Each well will be surveyed to the nearest 0.01 foot after installation is complete. After completion each well will be developed by removing at least eight well volumes and until the water remains clear.

After development and at least 48 hours to allow for stabilization, each well will be monitored and sampled. The depth from the well head to the water surface will be measured with an electronic depth probe to the nearest 0.01 foot. A clear PVC bailer will be lowered to just below the water surface and then observed for free product or sheen. Each well will then be purged of at least four well volumes or until the groundwater, temperature, pH, and conductivity, are measured and found to be approximately stable on three successive readings. The three wells will be purged using either an air lift pump or a teflon bailer. The bailer, all measuring and sampling equipment will be decontaminated before use in each well by cleaning in soapy water, a trisodium phosphate (TSP) rinse, and two clear water rinses. Samples will be recovered from each well using a disposable bailer.

Each water sample will be decanted into appropriate containers, labeled, entered on a Chain of Custody form and placed in a cooled environment until delivery to a State Certified Laboratory.

After the field exploration and receipt of the laboratory analytical results, all data will be reviewed to determine the effects of the leaking tank. A report will be prepared and forwarded to the Alameda County Public Health Care Services Agency. The report will contain the methodologies used in drilling sampling and analyses and will include appropriate drawings and illustrations showing the lateral and vertical spread of any contaminants in

the soil and groundwater. Original signed certificates of all analytical results with accompanying Chain of Custody documentation will be included as well as the DWR Water Well Drillers reports.

The report will contain our conclusions, recommendations addressing the site conditions, future exploration and remedial tasks which should lead to site closure.

Schedule

Once the Work Plan and boring locations are approved, we anticipate that the drilling should take place during October or November 1991, with a report issued as a Quarterly Report for the Quarter ending December 31, 1991.

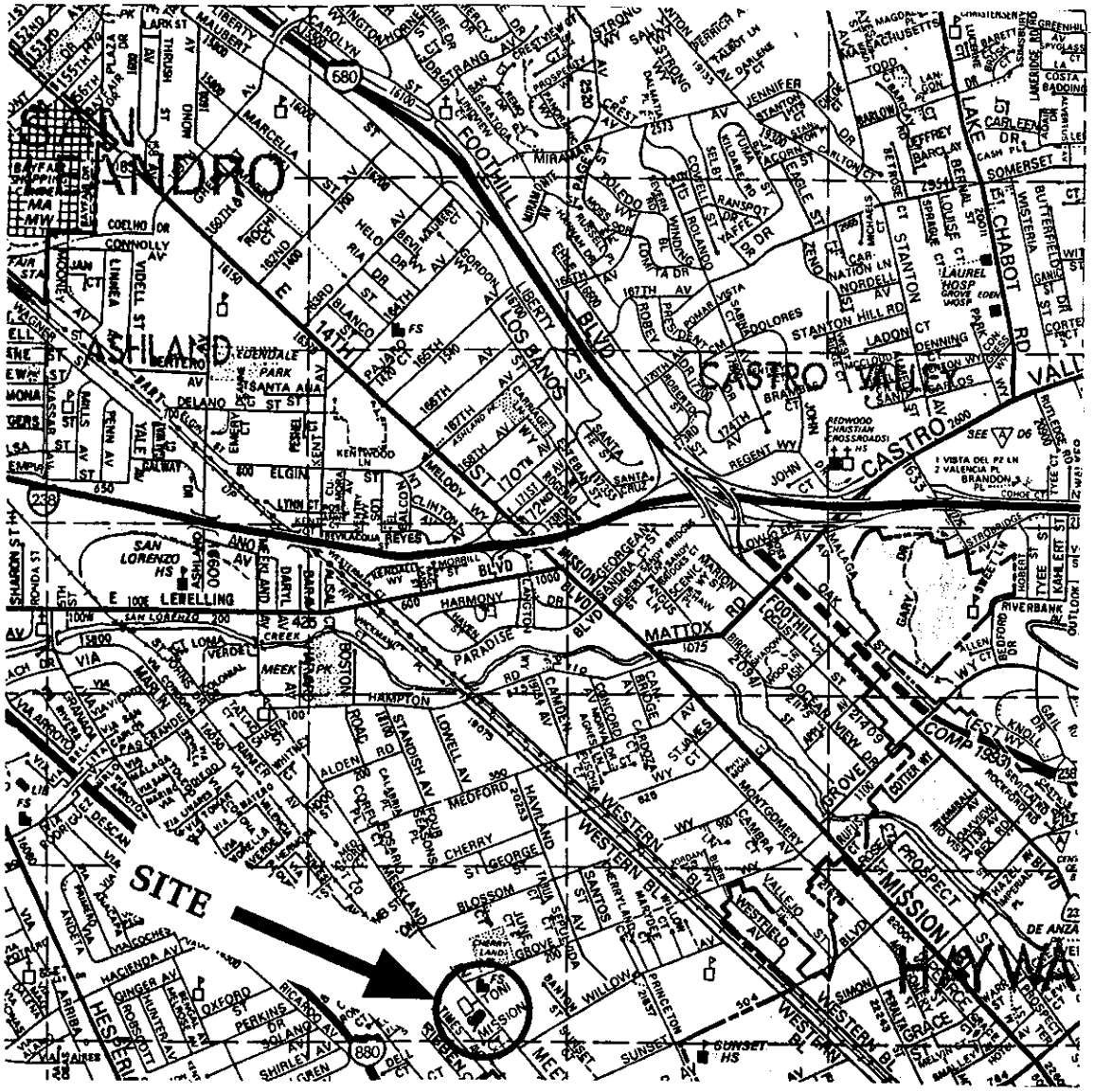
APPENDIX A

FIGURES

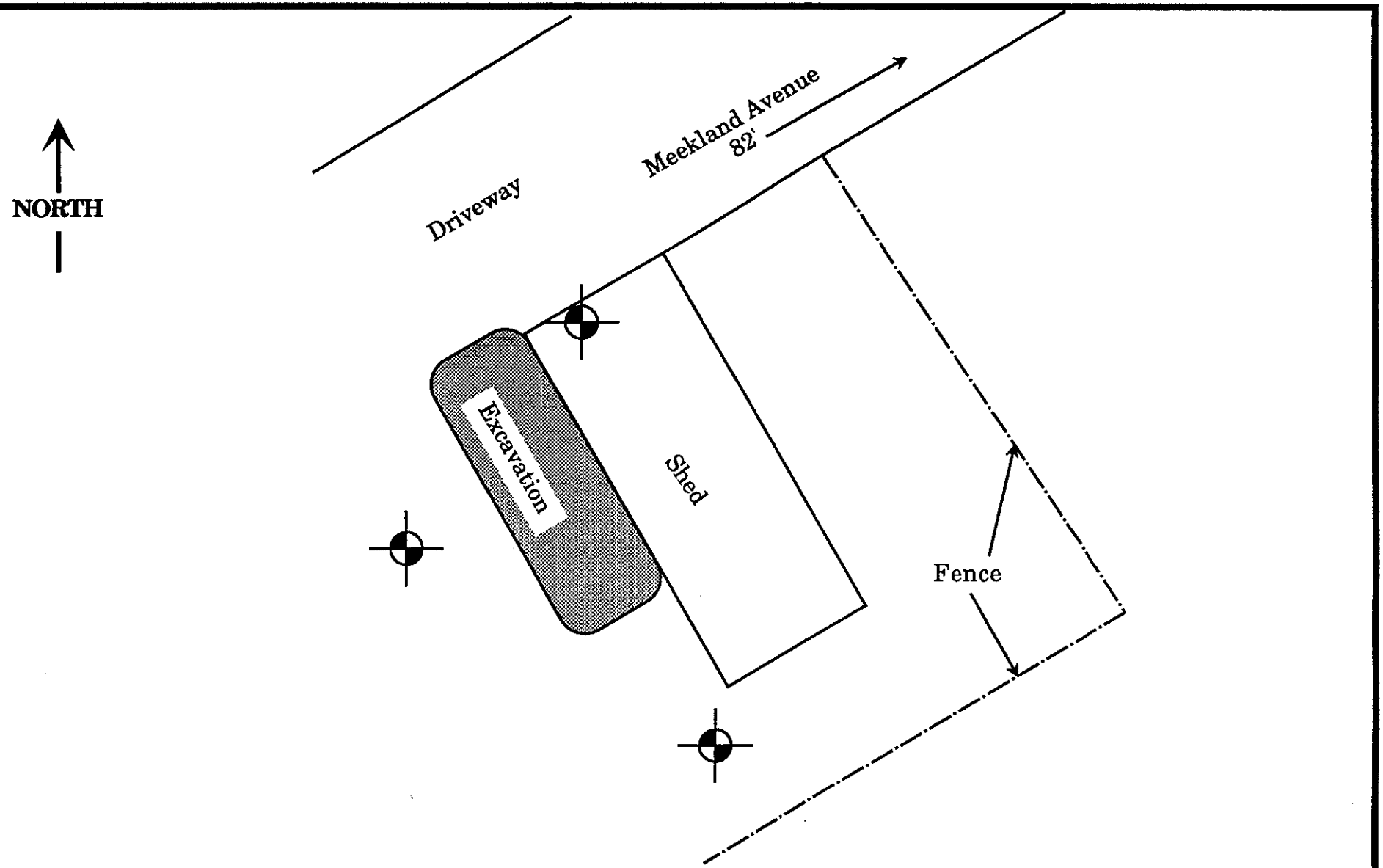
BECK ROOFING
21123 Meekland Avenue
Hayward, California

Project Number 2116
October 10, 1991

NORTH



L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California		Area Map Beck Roofing 21123 Meekland Avenue Hayward, California	
Project Number: 2116	Drawn by: JNC	Date: October, 1991	Figure Number: 1



Approximate boring location

Scale 1"=20"

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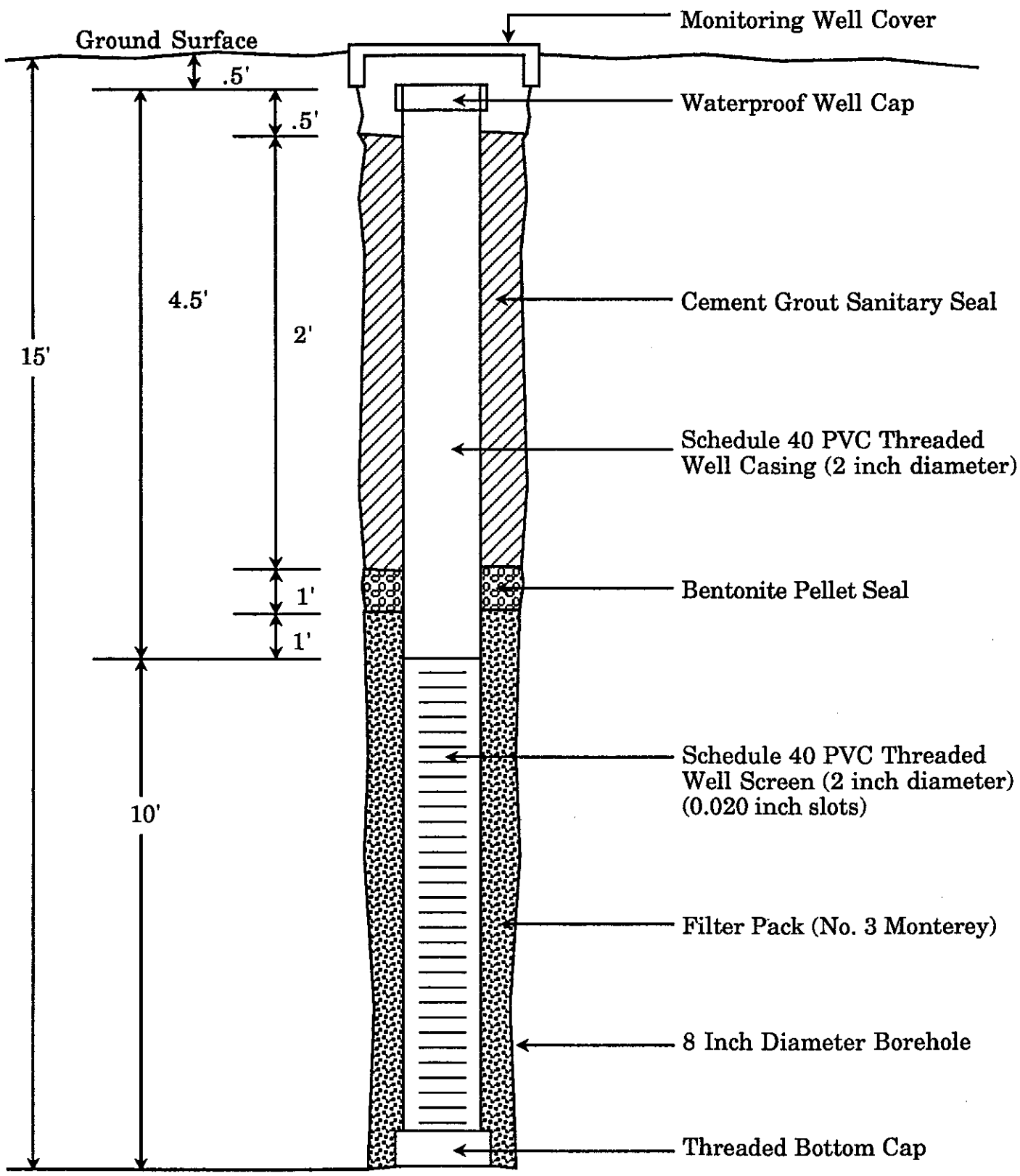
2111 Jennings Street
San Francisco, California

Site Plan
Beck Roofing
Hayward, California

Project Number: 2116	Drawn by: JNC	Date: October, 1991	Figure Number: 2



L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California	**Monitoring Well Installation Detail**	Proposed Well Details
	Beck Roofing Hayward	Date: October, 1991