STID 4428

ALCO HAZMAT
94 JAN 12 PH 3:21

2/2/94 talked to Charles Wren re:

2/2/94

needs:
1) site map showing tentative locations for 2 MWs to be installed
2) TPHg TPHd BTEX TOG quarterly PCBs
3) wells surveyed to a common bench mark
4) target date for installing remedial system. 12-15 mos
5) target complete for soil
6) 72 hr advance notice

DMJM

January 6, 1994

Susan Hugo, Senior Hazardous Materials Specialist
Alameda County Health Care Services
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Subject: Site Cleanup
United States Postal Service (USPS)
Emeryville Branch Site, 1505 62nd Avenue
Emeryville, California 94608

Dear Ms. Hugo:

Please review the attached January 5, 1994 work plan by Lowney Associates. It is respectfully submitted in accordance with your October 14, 1993 letter and the December 8, 1993 request for extension.

Hopefully, the generators of the recently characterized on-site hydrocarbon contamination reported by the United States Postal Service (USPS) in the April 16, July 20 and September 8, 1993 studies and of the possible off-site hydrocarbon contamination to be studied by the USPS as part of the attached work plan, will be involved in any additional remedial efforts.

Thank you for your continued attention.

Charles W. Wren,
Project Manager

cc: Clair Kenaston, Contracting Officer, USPS
Rafat A. Shahid, Asst. Agency Director, Environmental Health
Rich Hiett, San Francisco Bay RWQCB
Gil Jensen, Alameda County District Attorney's Office
Edgar B. Howell, Cheif, Hazardous Materials Division
Stason Foster, Lowney Associates
cc:

Daniel, Mann, Johnson, & Mendenhall
San Francisco Division

153 Kearny Street
Suite 600
San Francisco, California 94108-4815
Telephone: 415/986-1373
Fax: 415/986-4886

Planning
Architecture
Engineering
Program/Construction
Management

DMJM

December 8, 1993

Susan Hugo, Senior Hazardous Materials Specialist
Alameda County Health Care Services
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Subject: Site Cleanup
United States Postal Service (USPS)
Emeryville Branch Site, 1505 62nd Avenue
Emeryville, California 94608

Dear Ms. Hugo:

This letter serves to record the agreement made during our telephone conversation of yesterday to extend the December 1, 1993 deadline stated in your October 14, 1993 letter to January 7, 1993.

Given that the on-site hydrocarbon contamination of concern dates back fifty years and more, additional coordination activities are necessary. The United States Postal Service appreciates your consideration in this matter.

Thank you.

Charles W. Wren,
Project Manager

cc: Clair Kenaston, Contracting Officer, USPS
Rafat A. Shahid, Asst. Agency Director, Environmental Health
Rich Hiett, San Francisco Bay RWQCB
Gil Jensen, Alameda County District Attorney's Office
Edgar B. Howell, Cheif, Hazardous Materials Division
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Planning
Architecture
Engineering
Program/Construction
Management

LOWNEY ASSOCIATES
Environmental / Geotechnical / Engineering Services

January 5, 1994
864-17B, MV122903

Mr. Charles W. Wren
UNITED STATES POSTAL SERVICE
c/o DANIEL, MANN, JOHNSON & MENDENHALL
222 Kearny Street, Suite 500
San Francisco, California 94108

RE: WORK PLAN FOR ENVIRONMENTAL ENGINEERING SERVICES EMERYVILLE POSTAL FACILITY EMERYVILLE, CALIFORNIA

Dear Mr. Wren:

We are pleased to present this work plan to perform environmental engineering services at the referenced site, located at 6121 Hollis Street in Emeryville, California. This work plan also addresses the Alameda County Department of Environmental Health's (ACDEH) comments in their letter dated October 14, 1993.

Site Description/ Background

The site currently consists of approximately 1.7 acres of undeveloped land located in a primarily industrial area. The site was historically used as an oil distribution facility. Fourteen storage tanks, presumably aboveground, were reportedly used to store petroleum fuels. In addition, two approximately 500-gallon underground storage tanks (USTs) were located on-site. Currently, construction activities for a new United States Postal Service facility are in progress.

Summary of Previous Work

We have recently performed investigations at the site to evaluate soil and ground water quality and presented the results in the April 16, and July 30, 1993 reports. A third report, dated September 8, 1993, was also prepared discussing the removal of two USTs and impacted soil from the site. Based on the site data collected and as required by the ACDEH, a remedial system was subsequently designed for the property to reduce petroleum hydrocarbon concentrations in the soil and ground water. Installation of the remedial system, consisting of soil vapor and ground water extraction and treatment technologies, is being performed by the U.S. Postal Service's

selected contractor concurrently with the construction of the new postal service facility.

Purpose

As requested, the purpose of our work is to provide construction surveillance services during installation of the on-site remedial system and also to provide system permitting, operation, and monitoring services. A secondary purpose is to address the ACDEH comments presented in their October 14, 1993 letter which include further evaluation of down-gradient plume boundaries and the implementation of a quarterly sampling program.

As requested by the ACDEH, copies of the Certificate of Remediation for the excavated soil and tank disposal manifest for the 500- and 600-gallon USTs are attached. The tanks and impacted soil were removed from the site in August 1993. Also attached are corrected copies of monitoring well logs which show the screened interval for wells MW-1 and MW-2.

SCOPE OF WORK

Task A: Construction Surveillance

During installation of the remedial system by the U.S. Postal Service's contractor, we will observe the work on a part time basis so that compliance with the system specifications can be evaluated. The focus of our observation services will be on critical steps in the system installation such as extraction well installation, trenching, piping connection and testing, and equipment connection and testing. For documentation purposes, portions of the work will be photographed.

Task B: BAAQMD Permits and Monitoring

A permit to discharge treated soil vapor will be obtained from the Bay Area Air Quality Management District (BAAQMD).

Task C: EBMUD Permits and Monitoring

A permit to discharge the treated ground water to the sanitary sewer system will be obtained from the East Bay Municipal Utility District (EBMUD).

Task D: Monitoring Well Installation and Quarterly Sampling

To further evaluate plume boundaries, as required by the ACDEH, two additional ground water monitoring wells will be installed west (off-site) of the property. We understand that the U.S. Postal Service will coordinate access with the property owners. The wells will be installed within the railroad right-of-way

that borders the site and/or to the west of the railroad tracks, in the parking area of the neighboring commercial property. Prior to installation of the wells, we will review regulatory agency files for the neighboring Westinghouse facility to evaluate the possible existence of any wells in the vicinity that may alternatively be used to evaluate plume boundaries.

Subsurface Exploration

Our field engineer or geologist will direct a subsurface exploration program, supervise, log, and sample two exploratory borings to maximum depths of approximately 20 feet. Soil samples will be obtained at approximately 5-foot depth intervals and monitored with an organic vapor meter (OVM). The borings will be converted to 2-inch diameter "permanent" monitoring wells and will be permitted and constructed according to regulatory guidelines. The wells will be completed with locked watertight well caps and either steel stove pipe security boxes extending approximately 3 feet above grade or flush mounted christy boxes, as appropriate.

Soil cuttings and purged ground water will be stored on-site in EPA approved drums.

Surveying/Gradient Evaluation

The lateral locations of the monitoring wells will be approximately established using a metered wheel. To evaluate the ground water flow direction at the site, the relative elevations of the new wells and each of the five existing wells (since the existing well elevations will be modified during installation of the remedial system) will then be surveyed. Ground water depths will be measured using an electronic depth sounder. The survey will consist of a two-person crew using a Leitz level and an engineer's graduated rod. All elevations will be measured to the nearest hundredth of a foot.

Well Development and Quarterly Sampling

Approximately 48 hours after well completion, the static water levels will be measured, and the wells will be checked for floating product. The wells will then be developed by pumping to flush fine-grained material from the well and surrounding soil. Development will be accomplished by pumping several well volumes of ground water.

As required by the ACDEH, a quarterly sampling program will be implemented at the site which will include sampling of the two new off-site wells, the five existing wells, and the five wells that are to be installed during installation of the remedial system.

Prior to sampling, several additional well casing volumes of ground water will be purged using a submersible pump or Teflon bailer so that samples collected will be representative. Field water quality tests will consist of measuring the pH, conductivity, and temperature of the ground water. After purging a minimum of three well volumes and after stabilization of measured parameters is observed, ground water samples will be collected. Ground water samples from the wells used for ground water extraction, after start up of the remedial system, will be collected directly from the inline sampling ports. The wells will be sampled on a quarterly basis for a period of one year.

Laboratory Analysis

Two soil samples collected from each boring drilled during installation of the off-site wells, in addition to one ground water sample from each of the 12 wells, will be analyzed at a Department of Health Services certified analytical laboratory for total petroleum hydrocarbons (TPH) as gasoline with benzene, toluene, ethylbenzene, and xylene (BTEX) (EPA Test Method 8015/8020) and TPH as diesel (EPA Test Method 8015M). Ground water from well MW-1A and each of the seven new wells also will be initially analyzed for total oil and grease (TOG) (Standard Test Method 5520EF). Ground water from the seven new wells also will be analyzed initially for polychlorinated biphenyls (PCBs) (EPA Test Method 8080). These analyses are shown in Table 1. Analyses for TOG and PCBs will be performed only during subsequent quarters on samples from wells in which these compounds are initially detected. All analyses will be performed on a standard two-week laboratory response time.

TOG must be tested quarterly & maybe PCB's

TABLE 1. Laboratory Analyses
Emeryville Postal Facility
Emeryville, California

Type of Sample	Source	Number of Samples	Analyses	Test Method
Soil	2 off-site wells	2/well	TPHg/BTEX and TPHd	8015/8020
Ground water	12 wells	1/well	TPHg/BTEX and TPHd	8015/8020
	MW-1 and 7 new wells	1/well	TOG	5520EF
	7 new wells	1/well	PCBs	8080

Sampling Protocol

All sampling equipment will be thoroughly cleaned with an aqueous solution of tri-sodium phosphate and distilled water or steam cleaned. All soil samples will be collected in brass liners, the ends covered with aluminum foil and plastic end caps, securely taped, and placed on ice for transportation to the laboratory. Ground water samples will be collected in the appropriate bottles, labeled, and also placed on ice for transportation to the laboratory. Chain of custody documentation will be maintained for all samples.

Task E: System Performance Monitoring

To optimize and monitor system performance and aid in evaluating effectiveness, we will measure air and water flow rates from each extraction point on a weekly basis during the first month of operation and monthly thereafter for a one-year period. Vacuum and pressure readings at the various monitoring points throughout the system will also be recorded. These measurements will be used so that extraction rates from the various wells can be optimally adjusted.

In addition, to evaluate the effectiveness of soil vapor extraction, soil vapor samples will be collected from each of the nine extraction wells (twice during the first week of operation, weekly for the next three weeks, and monthly thereafter for a period of one year). The samples collected will be monitored for volatile hydrocarbons using an organic vapor meter (OVM).

A sample of the combined system vapor influent will also be collected during these sampling periods and

monitored using gas detection tubes for oxygen, carbon dioxide, and moisture content. These analyses will be used to evaluate the expected increase in natural biological activity. The increase in subsurface oxygen availability caused by the greater subsurface air flow during soil vapor extraction typically enhances natural biodegradation of contaminants. After volatilization of the lower molecular weight hydrocarbons, we expect biodegradation to be an important factor in the reduction of the heavier diesel and oil range compounds which are present on-site.

To establish a baseline of biological activity at the site and evaluate the potential need for nutrient addition, three soil and two ground water samples collected during the well installation/sampling will be analyzed for colony forming units using a heterotrophic plate count, and for nutrients including nitrate, nitrite, total nitrogen, phosphorus, and potassium.

In addition, a general system operation check and simple maintenance tasks, such as cleaning of filters, will be performed during these monthly site visits.

Task F: Reports

As typically required by BAAQMD and EBMUD permits, brief reports will be presented to these agencies on a periodic basis as required, presenting the results of influent and effluent sampling performed. In addition, reports will be prepared on a quarterly basis for submittal to the ACDEH and CRWQCB presenting the results of the quarterly ground water sampling and system performance monitoring. The quarterly reports will include a discussion of system effectiveness, tabulate monitoring results and operational parameters, and present our conclusions and recommendations. Our conclusions and recommendations will be based on available information, observations of existing conditions, and our interpretation of the analytical data. The quarterly reports will be forwarded to the ACDEH and the CRWQCB.

TENTATIVE SCHEDULE

The installation of the additional on-site extraction wells is not expected to be possible over the next few months. We understand that your contractor is

prepared to initiate the system installation work as soon as it becomes practical. Runoff from adjacent properties recently has been diverted around the project site, thus minimizing impacts from future rains.

We anticipate that the review of regulatory agency files to attempt to locate any potentially useful existing wells in the site vicinity would take approximately one week (see Table 2). The subsequent negotiation of access agreements by the U.S. Postal Service to allow for the sampling of existing wells or the installation of down-gradient wells on adjacent properties could take approximately three weeks. Permitting, installation, development, surveying, and sampling of the off-site wells will take approximately three weeks. Report completion will take approximately one additional week after receipt of the analytical results. We anticipate that this report will be completed near the end of March.

TABLE 2. Project Schedule
Emeryville Postal Facility
Emeryville, California

Week #1	Review of regulatory files
Weeks #2 - 4	Negotiation of access agreements
Weeks #5 - 8	Permitting, installation, developing, surveying, and sampling of off-site wells
Weeks #10 - 12	Receipt of analytical results and report completion

WARRANTY

We make no warranty, expressed or implied, except that our services will be performed in accordance with geoenvironmental engineering principles generally accepted at this time and location.

Very truly yours,

LOWNEY ASSOCIATES

Stason I. Foster
Environmental Engineer

Ron L. Helm, C.E.G.
Environmental Geologist

REGISTERED GEOLOGIST
RON L. HELM
No. EG1808
Exp. 7-31-95
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

RLH:SIF:TJR

Copies: Addressee (4)

Attachments: Soil Certificate of Remediation
Storage Tank Waste Manifest
Monitoring Well Logs

Certificate of Remediation

This is to certify that REMCO, in accordance with Title 22 CDOHS, has accepted and has caused 1278 Yards Soil / 198 Yards Concrete of H.C. material to be recycled under the guidelines of federal, state and local laws and regulations.

The H.C. material was received 8 / 13 / 93. In receiving and processing the H.C. material and in providing this certificate, REMCO has relied upon and is relying upon (a) the representation of the generator that the H.C. material does not contain any materials classified as, and is not classified as "Hazardous Waste" under the applicable provisions of federal and California law and has been managed and may be treated as other than Hazardous Waste, and (b) the generator has independent written certifications from applicable governmental agencies of certified independent testing laboratories that the H.C. material does not contain any materials classified as, and is not classified as, "Hazardous Waste" under said applicable law.

REMCO shall indemnify, defend and hold harmless the generator from and against any enforcement actions by any governmental authority in the event that any of the representations by REMCO set forth in this certificate are materially inaccurate. Provided however that his indemnity shall be limited to a maximum of the amount paid to REMCO by the generator for processing this H.C. material.

SUPPLIER:
Gettler Ryan, Inc.
2150 West Winton Ave.
Hayward, Ca. 94545

GENERATOR:
U.S. Postal Service
62nd & Overland
Emeryville, Ca.

Remco
Recycling For The Future

2717 Goodrick Avenue
Richmond, CA 94804
(510) 237-5866

BY: Steve Thompson
Project Coordinator

DATE: 9/13/93

CERTIFICATE #: 93-0111-158

State of California—Environmental Protection Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-94)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC001015840	Manifest Document No. 15984	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number 93231434

3. Generator's Name and Mailing Address: U.S. Postal Service, 62nd + Overland, EMERYVILLE CA 94608

B. State Generator's ID

4. Generator's Phone (510) 742-4601

5. Transporter 1 Company Name: Erickson Inc.

6. US EPA ID Number: CAD009466392

C. State Transporter's ID 40296

D. Transporter's Phone 510-235-1393

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address:
Erickson, Inc.
255 Parr Blvd.
Richmond, Ca. 94801

10. US EPA ID Number: CAD009466392

G. State Facility's ID

H. Facility's Phone (510) 235-1393

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Waste Empty Storage Tank NON-RCRA Hazardous Waste Solid.	2	TP	1600	P	State 512 EPA/Other NONE
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
[illegible] Empty Storage Tank(s) #1076/1077
Tank(s) have been [illegible]
[illegible] Per 1000 Gallon Capacity.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.G.S.T.'s 24 Hr. Contact Name Charles Wm & Phone 415-742-4601

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state and international laws.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
JAMES P. REED FOR U.S. POSTAL SERVICE	James P. Reed	08	04	93

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
STAN WILES	Stan Wiles	08	04	93

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

Blue: GENERATOR SENDS THIS COPY TO DTSC WITHIN 30 DAYS.
To: P.O. Box 400, Sacramento, CA 95812-0400

DTSC 8022A (7/92)
8700—22

DRILL RIG: Mobile B-40

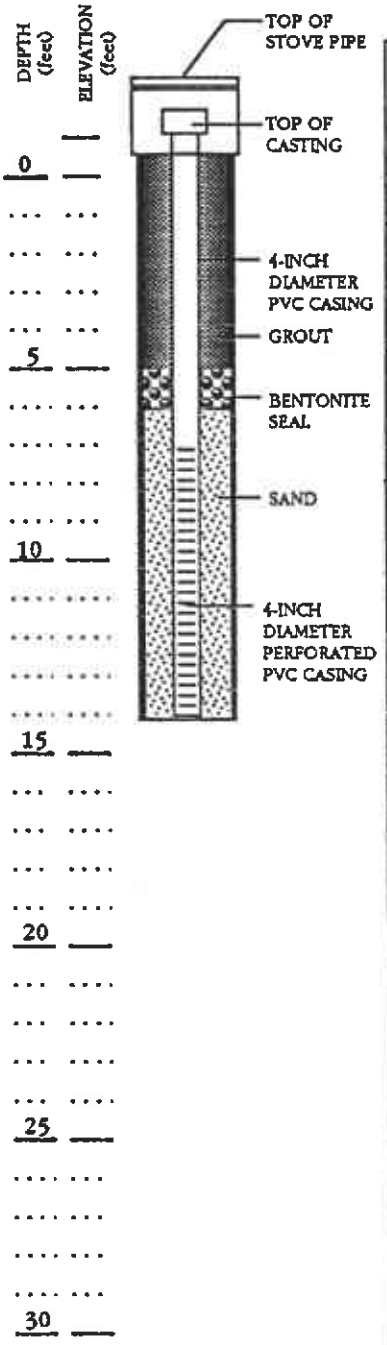
SURFACE ELEVATION: –

LOGGED BY: TR

DEPTH TO GROUNDWATER: 9.0 feet
(From Surface Elevation)

BORING DIAMETER: 12 inches

DATE DRILLED: 6/8/93



DESCRIPTION	SYMBOL	CONSISTENCY	SOIL TYPE	LEGEND	DEPTH (feet)	SAMPLER	WATER CONTENT (%)	PENETRATION RESISTANCE (BLOWS/FT.)	ORGANIC VAPORS (ppm)
Silty gravel, minor sand	Af		GM						
Clayey silt fill, black, moist, trace coarse sand, glass and wood bits FILL	Af	Very stiff	ML					24	800
Silty clay, brown and light gray mottled, low plasticity, moist, trace coarse sand and fine gravel Minor gravel at 7.0 feet	B	Hard	CL		5			63	150
Sandy clay, brown, fine to medium grained sand, moderate plasticity, moist to wet More coarse sand, wet to saturated at 9.0 feet	C	Hard	CL		10		▽	63	1.5
Interbedded layers of sandy silt, moist at 13.0 feet									9
Bottom of Well = 14.0 feet					15				
					20				
					25				
NOTE: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.					30				

864-17A, 6/29 TR*EB

MONITORING WELL LOG - MW-1

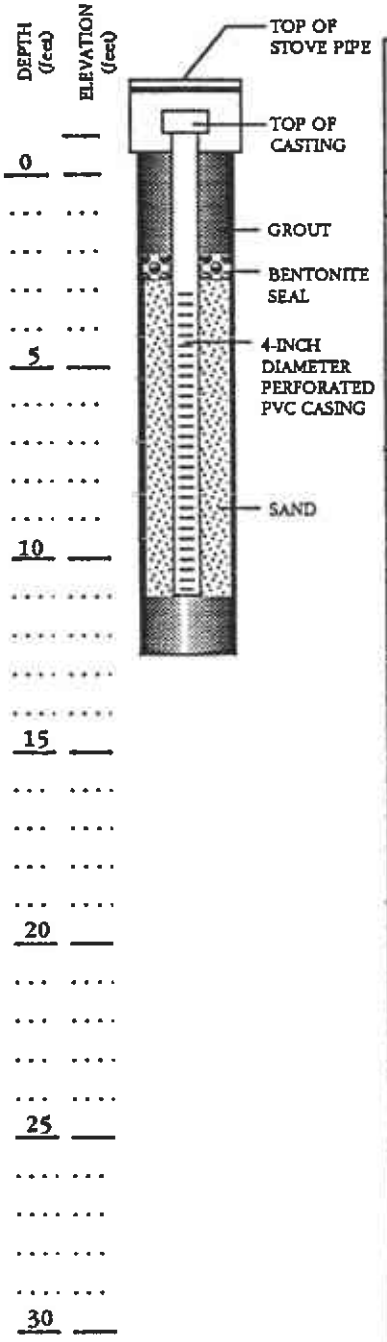
EMERYVILLE POST OFFICE
Emeryville, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

MW-1
864-17A, July 1993

DRILL RIG: Mobile B-40 | SURFACE ELEVATION: -- | LOGGED BY: TR

DEPTH TO GROUNDWATER: 4.0 feet (From Surface Elevation) | BORING DIAMETER: 12 inches | DATE DRILLED: 6/8/93



DESCRIPTION	SYMBOL	CONSISTENCY	SOIL TYPE	LEGEND	DEPTH (feet)	SAMPLER	WATER CONTENT (%)	PENETRATION RESISTANCE (BLOWS/FT.)	ORGANIC VAPORS (ppm)
Gravelly sand, minor silt	Af		SM						
Clayey silt fill, black, moist to wet	Af	Stiff	ML					11	90
Saturated at 4.0 feet					5				
Moderate kerosene odor at 5.5 feet Moist to wet at 6.0 feet FILL								12	1000
Silty clay to clayey silt, brown with light gray mottling, moderate plasticity, minor fine to coarse sand, trace fine gravel, saturated	B	Hard	CL/ ML					37	NA
Less sand and no gravel at 11.0 feet, moist					10			50	5
Bottom of Well = 12.5 feet					15				
					20				
					25				
NOTE: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.					30				

864-17A, 6/29 TR*ES

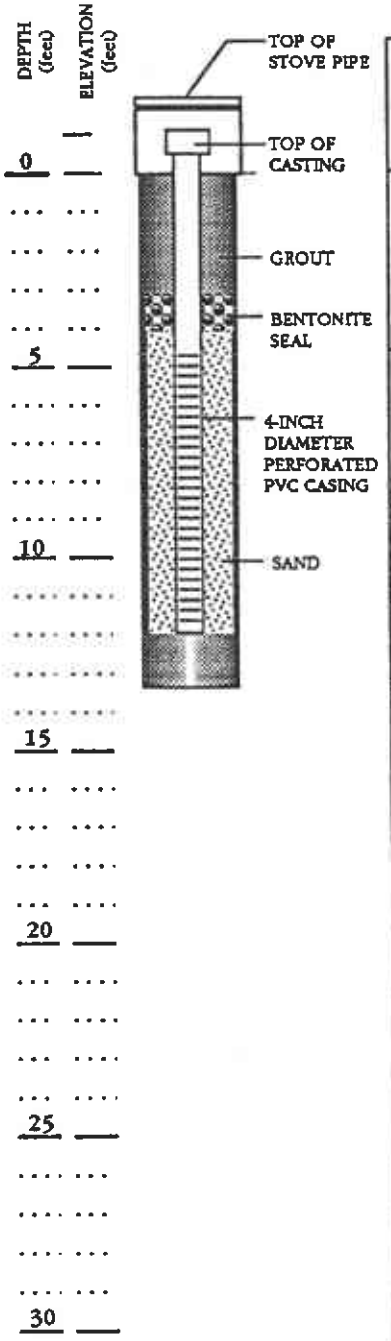
MONITORING WELL LOG - MW-2

EMERYVILLE POST OFFICE
Emeryville, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

DRILL RIG: Mobile B-40 | SURFACE ELEVATION: -- | LOGGED BY: TR

DEPTH TO GROUNDWATER: 9.5 feet (From Surface Elevation) | BORING DIAMETER: 12 inches | DATE DRILLED: 6/8/93



DESCRIPTION	SYMBOL	CONSISTENCY	SOIL TYPE	LEGEND	DEPTH (feet)	SAMPLER	WATER CONTENT (%)	PENETRATION RESISTANCE (BLOWS/FT.)	ORGANIC VAPORS (ppm)
Gravelly silt fill, dark gray with brown and reddish-brown mottling, minor coarse sand, slightly moist ↑ FILL	Af	Hard	ML					80+	NA
Clayey silt, greenish-gray, minor fine sand, moist to wet, moderate to strong petroleum odor More sand at 8.0 feet	B	Hard	ML		5			42	1000+
Silty sand to sandy silt, fine grained sand, greenish-gray, wet, moderate petroleum odor, sand size increase to coarse at 9.5 feet, saturated, trace gravel	C	Hard	SM/ML		10		▽		250
Silty clay, brown, moderate to high plasticity, moist	D	Hard	CL						2
Bottom of Well = 13.5 feet					15				
					20				
					25				
NOTE: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.					30				

864-17A, 6/29 TR*EB

MONITORING WELL LOG - MW-3

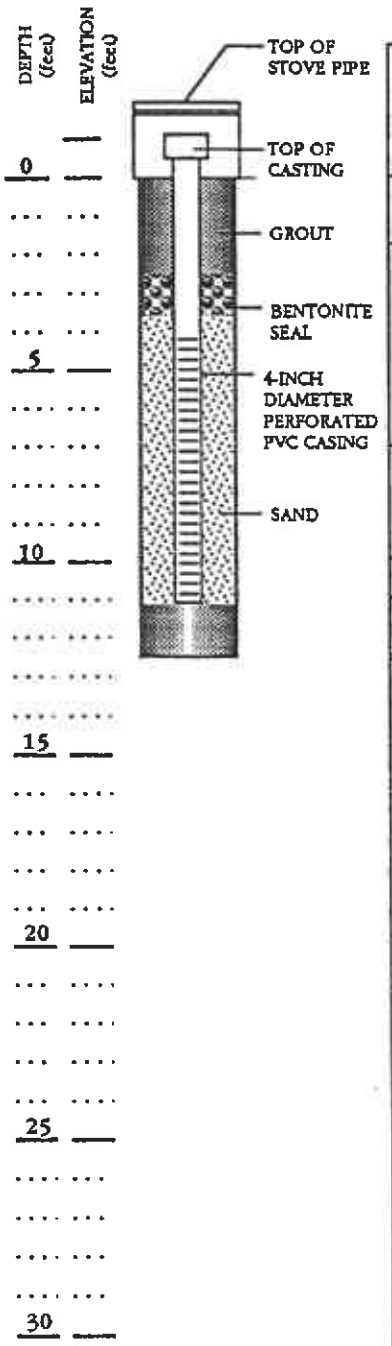
EMERYVILLE POST OFFICE
Emeryville, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

MW-3
864-17A, July 1993

DRILL RIG: Mobile B-40 | SURFACE ELEVATION: -- | LOGGED BY: TR

DEPTH TO GROUNDWATER: 5.5 feet (From Surface Elevation) | BORING DIAMETER: 12 inches | DATE DRILLED: 6/8/93



DESCRIPTION	SYMBOL	CONSISTENCY	SOIL TYPE	LEGEND	DEPTH (feet)	SAMPLER	WATER CONTENT (%)	PENETRATION RESISTANCE (BLOWS/FT.)	ORGANIC VAPORS (ppm)
Gravelly silt, dark gray, moist ▲ FILL	Af		SM						
Clayey silt, brown and light gray mottled, moist	B	Hard	ML					52	NA
Greenish-gray, moderate petroleum odor, saturated at 5.5 feet					5		▽		
More clay and sand at 6.5 feet								44	1000
Sandy silt, greenish-gray, fine to medium grained sand, moderate petroleum odor	C	Hard	ML						
Interbedded layers of sandy clay, moist								43	600
Coarse sand and gravel lense at 9.0 feet, saturated					10				
Sandy clay, moist observed in cuttings	C		CL						
Clayey sand, reddish-brown, fine to medium grained sand, trace fine gravel, saturated, no petroleum odor	C		SC					50 for 6"	20
Bottom of Well = 12.5 feet					15				
					20				
					25				
NOTE: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.					30				

864-17A, 6/29 TR*EB

MONITORING WELL LOG - MW-4

EMERYVILLE POST OFFICE
Emeryville, California

LOVNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

MW-4
864-17A, July 1993