BLYMYER
ENGINEERS, INC.

December 18, 1991
BEI Job No. 91175

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

12/18 WP.

Subject: Lanaidor, Inc.
925 89th Avenue
Oakland, California

STATUS = SA
date SA = 12/18/91

Dear Mr. Chan:

Blymyer Engineers is submitting the enclosed Work Plan on behalf of Lanaidor, Inc. The Work Plan was requested by Ms. Cynthia Chapman of the Alameda County Heath Care Services Agency. Your prompt review and approval will enable the site investigation to go forward in a timely manner.

If you have any questions about this project please do not hesitate to call me at (510) 521 - 3773.

Cordially,

Blymyer Engineers, Inc.

Craig Drizin

Craig Drizin
Environmental Engineer

cc: Lester Feldman, Regional Water Quality Control Board
William Raymond, Lanaidor, Inc.

\cdrizin\91175\BC1

(510) 521-3773 • 1829 Clement Avenue, Alameda, California 94501-1395 • FAX (510) 865-2594

Work Plan
for an
Initial Subsurface Investigation

Lanaidor, Inc.

925 89th Avenue, Oakland, California

December 16, 1991

BEI Job No. 91175

Prepared by:

Blymyer Engineers, Inc.
1829 Clement Avenue
Alameda, California 94501

Site:

Lanaidor, Inc.
925 89th Avenue
Oakland, California

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1.0 SITE HISTORY AND DESCRIPTION

1.1 Background

Lanaidor, Inc. retained Blymyer Engineers, Inc. to prepare this Work Plan for an Initial Subsurface Investigation at its fabrication facility, located at 925 89th Avenue, Oakland, California. The purpose of the investigation is to determine if soil or groundwater has been impacted by petroleum hydrocarbons at Lanaidor's facility. The Work Plan was requested by the Alameda County Health Care Services Agency, Department of Environmental Health, after that agency reviewed reports documenting soil sampling activities that followed the removal of a 550-gallon gasoline underground storage tank at the Lanaidor facility.

Prior to 1965 the site was used as farmland. From 1965 to June, 1977, Keehner Manufacturing occupied the site. Keehner built a single metal and concrete block structure in 1965, and fabricated light gauge industrial sheet metal at the site. A single-walled, 550-gallon, metal underground storage tank was installed at the site in 1965. Lanaidor, Inc. has occupied the site since June, 1977. Lanaidor fabricates aluminum and glass sliding doors at the site. This tank was used exclusively to store gasoline until it was taken out of service in 1986.

No other types of hazardous materials, besides gasoline, are believed to have been used or stored at the site by Keehner or Lanaidor.

On August 14, 1990, the underground storage tank was removed by Fuel Oil Polishing Company and transported to LMC Metals of Richmond, California for scrap/recycling. Prior to removal the tank was rinsed and the rinsate was disposed of at Demano Kerdoon in Compton, California. Copies of the Uniform Hazardous Waste Manifest (#90010220) for the tank, the bill of lading for the tank, and the receipt for the tank from LMC Metals are presented in Appendix A. The Uniform Hazardous Waste Manifest (#90095180) for the tank rinsate is also provided in Appendix A.

On August 14, 1990, two soil samples (1A, 1B) were collected from the excavation by Clayton Environmental Consultants. Clayton also collected two soil samples (1C, 1D) from the excavated soil. These samples were composited into a single sample prior to laboratory analyses. On November 14, 1990, Fuel Oil Polishing Company enlarged the excavation to an area of approximately 15 by 7 feet, and extended it to a depth of approximately 11 feet below the ground surface to remove soil potentially contaminated with petroleum hydrocarbons. The soil was stockpiled on site and the

excavation was filled with pea gravel. Clayton Environmental Consultants also collected four soil samples (1/North, 2/South, 3/East, and 4/West) from the side-walls of the extended excavation, and four soil samples (5, 6, 7, 8) from the excavated soil on November 14, 1990. These latter four samples were composited at the laboratory prior to analysis. The composite soil samples collected from the excavated soils were used to characterize the soils for disposal. The depth the soil samples were collected from, the analyses performed, and the results of the analyses are presented in Table I.

Copies of the Laboratory Reports are presented in Appendix B.

On April 29, 1991 the excavated soil was disposed of at the Redwood Sanitary Landfill in Novato, California. Copies of the disposal receipts for 36 cubic yards of material from the Redwood Sanitary Landfill are also presented in Appendix A.

The information presented in Appendix A was specifically requested by the Alameda County Health Care Services Agency (ACHCSA), Department of Environmental Health in a letter dated July 31, 1991.

1.2 Site Conditions

The Lanaidor facility is located in a commercial area of southwestern Oakland (Figure 1). A single concrete block and metal building occupies approximately two thirds of the site, with the remaining third of the site, adjacent to 89th Avenue, serving as a parking area. The parking area directly adjacent to the building is covered with concrete, while the remainder is covered in asphalt. The underground storage tank was located at the eastern end of the asphalt parking area. Refer to Figure 2 for the locations of structures at the site.

The southwestern portion of the structure serves as an office, while the remainder of the building is used in the fabrication of sliding aluminum and glass doors.

1.3 Hydrogeologic Setting

The Lanaidor facility is located in the East Bay Plain of the San Francisco Bay Area, approximately one and one half miles east of San Leandro Bay (which is part of San Francisco Bay) at an approximate elevation of 20 feet, based on the National Geodetic Vertical Datum (NGVD). The San Francisco Bay Area is a northwest-southeast trending region enclosed in the Coast Range Province of California. Rocks in the region range from a Jurassic sedimentary, metamorphic, and plutonic basement up

through unconsolidated deposits and end in the Holocene alluvium which makes up the East Bay Plain. The topography of the region is dominated by a major fault system which includes the San Andreas Fault on the west side of San Francisco Bay and the Hayward Fault at the base of the Berkeley Hills on the east side of the Bay. These faults are a reflection of the forces which have uplifted the Coast Range and dropped the section now covered by the open water of San Francisco Bay and Quaternary alluvium (Goldman, 1967).

The groundwater reservoir of the East Bay is found in the unconsolidated deposits below the East Bay Plain.

The generalized local stratigraphy of the unconsolidated deposits from the surface down is described as follows: The Holocene and younger alluvium up to 50 feet thick is composed of unconsolidated sand and silt. The younger alluvium has been brought down by streams from the nearby hills, and yields little water. The Pleistocene and older alluvium, approximately 650 feet thick, is composed of clay, silt, sand, and gravel. The regional aquifer is contained in the older alluvium and is confined. The site is located at the north end of the San Lorenzo Cone and local groundwater flow is generally directed toward the west. Groundwater recharge for the regional aquifer is along the Hayward fault to the east (Hickenbottom and Muir, 1988).

2.0 DETERMINATION OF THE EXTENT OF SOIL CONTAMINATION

2.1 Available Information

Blymyer Engineers believes that the analytical data collected at the time the underground storage tank was removed, indicate that some petroleum hydrocarbons were present in the soil from the excavation of the removed underground storage tank. Blymyer Engineers also believes that the data collected when additional soil was removed from the excavation in November 1990 indicates that the majority of the soil containing petroleum hydrocarbons was removed at that time.

Analyses of the soil samples collected from the November 1990 excavation indicate that Total Petroleum Hydrocarbons (TPH) were present at a maximum concentration of 2.3 parts per million (ppm), benzene was present at a maximum concentration of 18 parts per billion (ppb) and total xylenes were present at a concentration of 11 ppb. Concentrations of Total Recoverable Petroleum Hydrocarbons (TRPH) in the same samples ranged from 20 to 330 ppm. A letter, dated July 31, 1991, from the Alameda County Health Care Services Agency, Department of Environmental Health, seems to indicate that the concentrations of TRPH are what prompted the Department of Environmental Health to request a further investigation at this site.

Blymyer Engineers believes that the concentrations of TRPH reported for these samples are inconsistent with the concentrations reported for TPH. The concentrations reported in the TRPH analyses may be false positives that may be attributable to non-petroleum organic constituents, such as polar fatty acids associated with plant and animal tissues, that occur naturally in the soil at this site. Conversations with the present and former owners of the site, the only two people to own and occupy the site since the underground storage tank was installed, indicated that only gasoline has been stored in the tank. For this reason, Blymyer Engineers believes that the concentrations of TRPH are false readings that do not indicate the presence of heavier petroleum hydrocarbons in the soil.

In light of the possible false positives, Blymyer Engineers believes that the most prudent way to proceed with the investigation at this site is to install a single soil bore, within 10 feet of the former tank location, in a downgradient direction from the tank, collect soil samples at approximately 5-foot intervals from this soil bore, and then convert the bore into a 2-inch diameter groundwater monitoring well from which a groundwater sample will be collected. To confirm the supposition that the TRPH concentrations are false positives the soil sample from approximately 10 feet below the ground surface will be analyzed for TRPH differentiated into polar and non-polar fractions.

An investigation of this scope will provide sufficient information to determine if petroleum hydrocarbons (TPH) have spread laterally or vertically in the soil surrounding the former tank emplacement, and determine whether the groundwater at the site has been impacted by petroleum hydrocarbons, as well as determine if the previous concentrations reported for TRPH may be false positives. As detailed in section 3.1, below, Blymyer Engineers believe that there is sufficient information available to establish the downgradient direction at this site.

2.2 Soil Sample Collection

All field work will be conducted in accordance with a site specific Health and Safety Plan. The Health and Safety Plan is presented as Appendix C.

Undisturbed soil samples for laboratory analyses will be collected from the site by American Society for Testing Materials (ASTM) Method D 1586. A continuous flight, hollow-stem auger will be employed to drill the bore. Three soil samples will be collected from the bore by a Modified California Split-Spoon Sampler in accordance with ASTM Method 1586. The soil samples will be collected at 5 feet below the ground surface, 9 feet below the ground surface, and at the groundwater interface. Records maintained by the Alameda County Flood Control and Water Conservation District (ACFCWCD) indicate that the groundwater table in the vicinity of the site lies at a depth of approximately 13 feet below the ground surface.

ASTM Method D 1586 calls for the sampler to be driven into undisturbed soil ahead of the auger drill bit by a 140 pound hammer falling through a 30-inch free fall. The number of blows required to advance the sampler 6 inches will be recorded as the "blow count" on the bore log. The sampler will be retrieved after it has been advanced 18 inches. After retrieval, the sampler will be disassembled and one of the three sample sleeves will be retrieved from the sampler, capped with aluminum foil and plastic end caps secured with duct tape, labelled, and placed in an ice chest with blue ice to chill it until the soil samples can be delivered to a California-certified testing laboratory with proper chain-of-custody procedures.

Soil samples will be field screened with a photoionization detector for volatile organic compounds when the sampler is opened. The photoionization detector reading for each sample will be recorded on the bore log.

Soil cuttings from the bore and soil samples collected but not packaged for laboratory analyses will be visually and manually inspected according to ASTM Method D 2488. All soils encountered will be classified according to the Unified Soil Classification

System. A bore log will be prepared which indicates the depth at which each sample was collected, blow counts, the soil type and classification, a description of the soil, the photoionization detector reading, the depth where groundwater was first encountered, and the stabilized groundwater level.

The sampler will be decontaminated between sampling events by washing in a three bucket wash consisting of tap water and detergent, a tap water rinse, and a distilled water rinse; to prevent cross contamination of samples. The auger will be steamed clean prior to drilling the bore.

Soil cuttings will be stored on site in DOT approved, 55-gallon drums pending soil analyses. After receipt of the analyses the drums will be disposed of properly.

2.3 Soil Analytical Methods

In accordance with the LUFT Manual and the Tri-Regional Board Staff Recommendations, the soil samples will be analyzed for Total Petroleum Hydrocarbons as gasoline by GCFID (5030), and benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020. These are the only analyses required, since only gasoline was stored in this underground storage tank. However, the soil sample collected from approximately 10 feet below the ground surface will also be analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) differentiated into polar and non-polar fractions by EPA Method 413.1 for total oil and grease and EPA Method 418.1 for non-polar petroleum hydrocarbons to determine if the concentrations of TRPH reported for the soil samples collected from the extended excavation may have been false positives.

3.0 DETERMINATION OF GROUNDWATER QUALITY

3.1 Groundwater Gradient Information

The downgradient groundwater flow direction at the Lanaidor site can be determined from a site investigation conducted at Barrett's Metal Finishing, 910 89th Avenue, which is directly across the street from the Lanaidor site. Three groundwater monitoring wells were installed and surveyed at this address in August of 1989. The groundwater gradient was determined to be to the south-southeast. This is as expected, since that is the direction to San Leandro/San Francisco Bay. Information on the Barrett's site was obtained from the Alameda County Flood Control and Water Conservation District records, and is presented in Appendix D. The locations of the wells at 910 89th Avenue used to establish this gradient are shown on Figure 2.

3.2 Groundwater Sample Collection

After the completion of soil sampling, the soil bore will be converted to a 2-inch diameter, 25-foot deep groundwater monitoring well. The conversion will be accomplished by overdrilling the bore with a 6¾ inch inside diameter hollow-stem auger to a depth of approximately 25 feet below the ground surface. This depth will give a penetration of approximately 10 feet into the water bearing zone.

Two-inch diameter PVC slotted casing (0.010 inch slots) will be set through the center of the hollow-stem auger, with blank casing completing the well from a depth of 10 feet below the ground surface to the surface. The annular space around the casing from 1 foot below the bottom of the well to 2 feet above the slotted casing will be filled with number 2 sand to serve as a filter pack. A bentonite seal will be placed in the annular space for 2 feet above the filter pack. The annular space from the bentonite seal to the ground surface will be filled with cement grout, and a flush-to-grade traffic bearing well box will be set at the surface. The well box will be set so that surface run-off drains away from the well. A locking cap will be placed on the top of the casing. All casing joints will be flush threaded. A well construction diagram is presented as Figure 3.

The well will be developed by bailing and surging after installation. All purge and development water will be stored on-site in DOT-approved, 55-gallon drums. The water will be properly disposed of after laboratory analyses of the groundwater samples is completed.

The well will be allowed to equilibrate for at least 48 hours after development. The depth to groundwater will be measured (and the free product thickness, if any is present) prior to purging the well for sampling. The well will be purged of approximately 5 well volumes of water, and the temperature, conductivity, and pH of the purged water will be monitored to insure that these parameters have stabilized (are within 20 percent of the previous reading) prior to sampling. A groundwater sample will be collected using a clean Teflon™ bailer. A bailer blank will be collected from the distilled water rinse after cleaning the bailer.

Because only a single monitoring well is being installed, the top of the well casing will not be surveyed to a known benchmark.

3.3 Groundwater Analytical Methods

In accordance with the LUFT Manual and the Tri-Regional Board Staff Recommendations, the groundwater sample and bailer blank will be analyzed for Total Petroleum Hydrocarbons as gasoline by GCFID (5030), and benzene, toluene, ethylbenzene and xylenes, (BTEX) by EPA Method 602. These are the only analyses required, since only gasoline was stored in the underground storage tank at this site.

4.0 REPORTING

A technical report will be prepared documenting the results of the initial investigation. The report will present and interpret the information gathered during the initial subsurface investigation. The report will include:

- Site history information.
- The bore log and well construction diagram.
- Records of field observations and data.
- Chain-of-custody forms.
- Depth to groundwater data.
- Tabulations of soil and groundwater contaminant concentrations.
- Status of the soil contamination characterization.
- Laboratory-originated analytical results for all soil and groundwater samples collected.
- Any recommendations for additional investigative or remedial work.

Water-level contour maps and contaminant plume maps will not be included because only one monitoring well/soil bore is being installed at the site.

A groundwater sample will be collected and analyzed monthly for two months following the initial investigation and quarterly for the remainder of one year to monitor the status of the groundwater at the site. Technical reports presenting the results of the additional groundwater monitoring and analyses will be prepared and forwarded to ACHCSA and the Regional Water Quality Control Board.

5.0 CONSULTANT QUALIFICATIONS

Soil bore logging, monitoring well installation, and technical report preparation will take place under the direction of Harry W. Short, Senior Geologist for Blymyer Engineers, Inc. Mr. Short is a Registered Geologist and Certified Engineering Geologist in the state of California.

6.0 REFERENCES

Goldman, Harold B., 1967. *Geology of San Francisco Bay*; California Division of Mines and Geology, prepared for the San Francisco Bay Conservation and Development Commission, 58 p.

Hickenbottom, Kelvin, and Kenneth Muir, 1988. *Geohydrology and Groundwater Quality Overview of the East Bay Plain Area, Alameda County, California, 205(J) Report*, submitted to the San Francisco Bay Regional Water Quality Control Board.

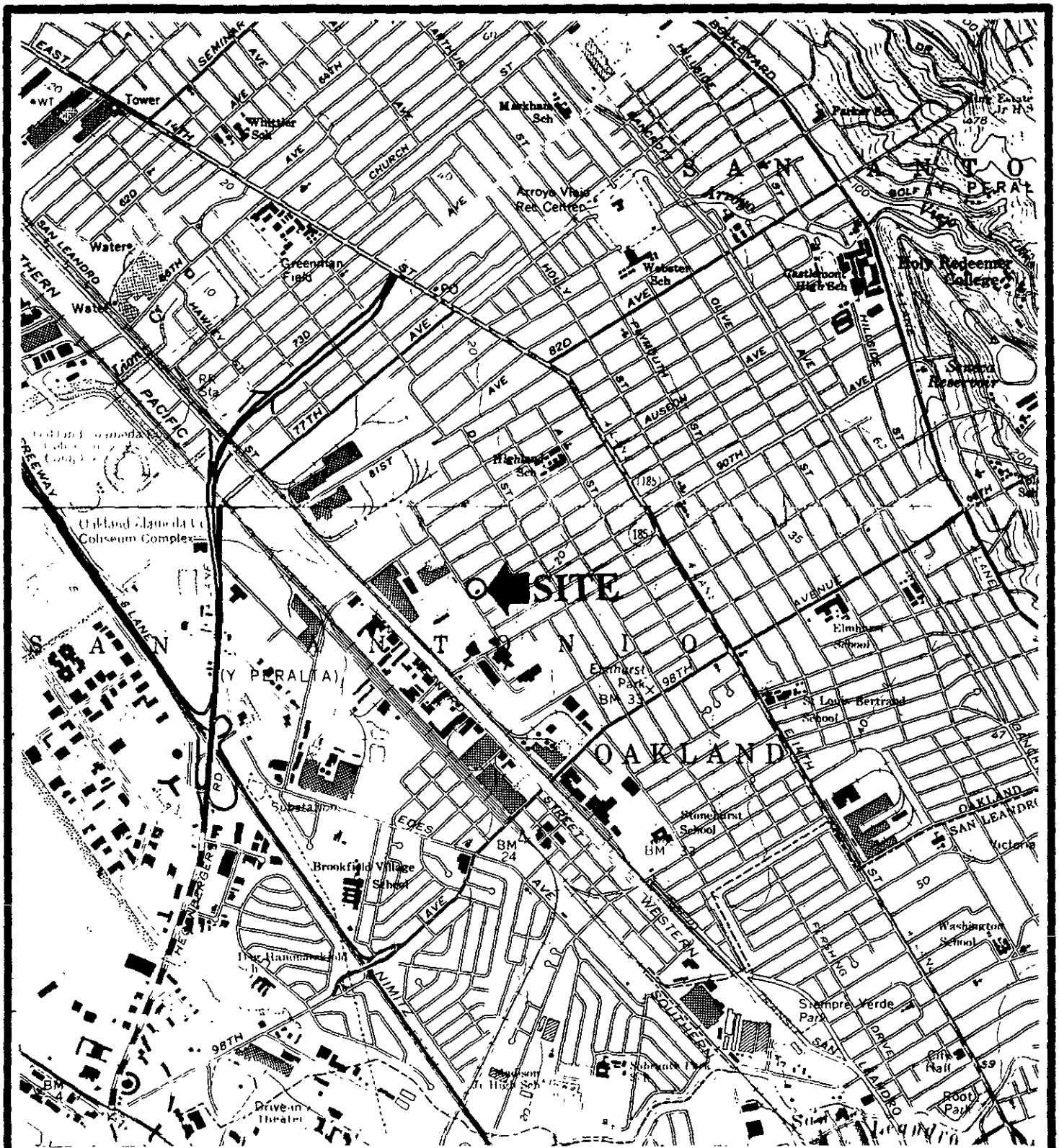
Tables

Table 1. Summary of Soil Sample Analytical Results
Lanaidor, Inc., 925 89th Avenue, Oakland, Ca.

Sample	Depth (feet)	TRPH by EPA Method 418.1 (ppm)	TPH-g by EPA Method 8015 (ppm)	Volatile Organic Compounds by EPA Method 8020 (ppm)			
				B	T	E	X
1A	2	NA	220	<0.005	<0.005	3.1	1.4
1B	2	NA	48	<0.005	0.08	0.88	0.26
Composite	-	NA	400	<0.005	<0.005	<0.005	0.007
1/North	10	40	<0.3	<0.005	<0.005	<0.005	<0.005
2/South	10	330	1.9	<0.005	<0.005	<0.005	<0.005
3/East	10.5	20	<0.3	<0.005	<0.005	<0.005	<0.005
4/West	10	20	2.3	0.018	<0.005	<0.005	0.011
Composite	-	NA	20	<0.005	0.014	<0.005	0.55

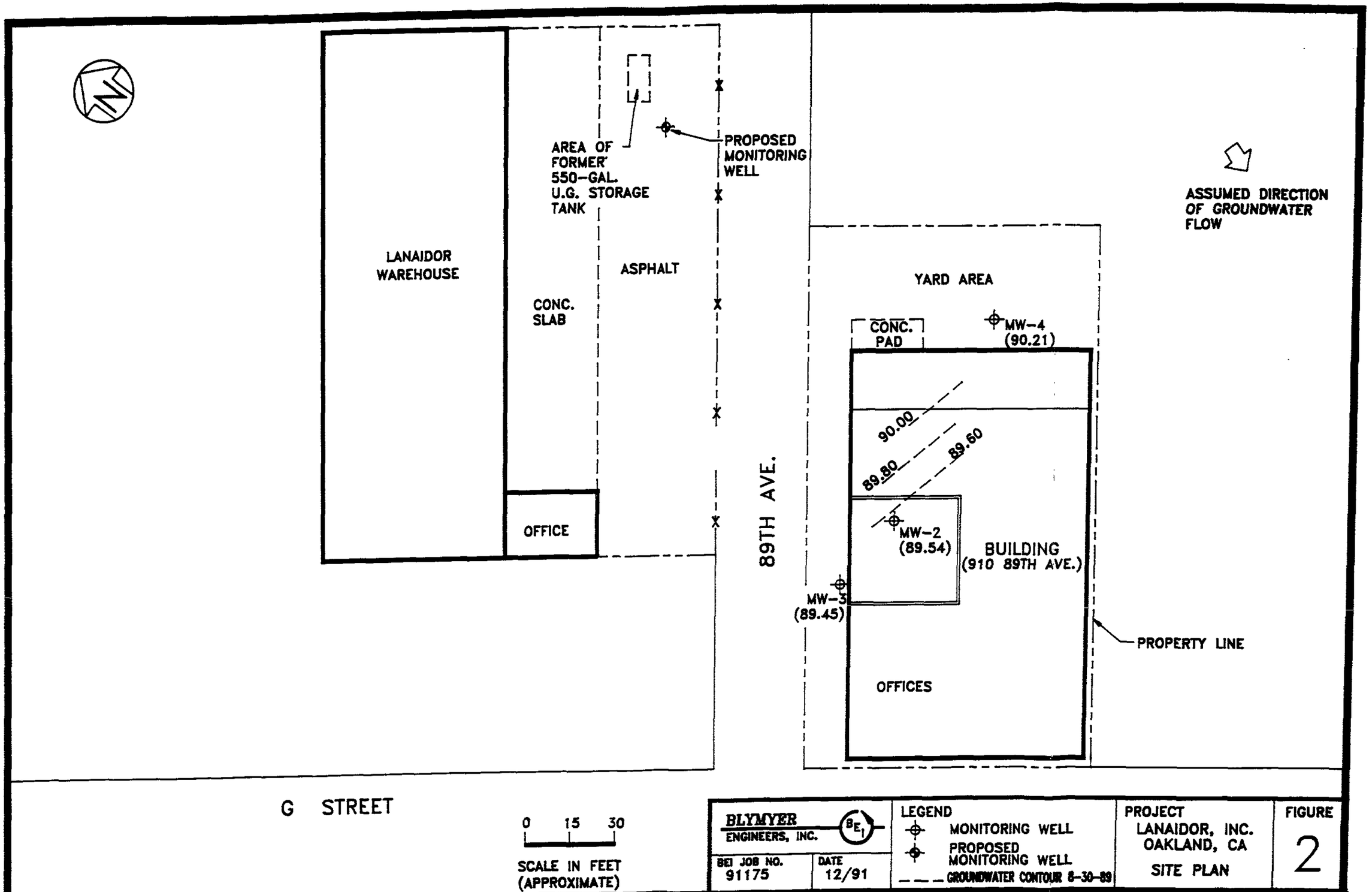
TRPH = Total Recoverable Petroleum Hydrocarbons. TPH-g = Total Petroleum Hydrocarbons as gasoline. B = Benzene, T = Toluene, E = Ethylbenzene, X = Xylenes. NA = Sample Not Analyzed by this Method. ppm = parts per million.

Figures



SOURCE: UNITED STATES GEOGRAPHICAL SURVEY QUAD. "Oakland East, CA" & "San Leandro, CA" PHOTOREVISED 1980.

BLYMYER ENGINEERS, INC.	0 1000 2000 SCALE IN FEET	**SITE LOCATION MAP** LANAIDOR, INC. 925 89TH AVE. OAKLAND, CA	FIGURE **1**
BEI JOB NO. 91175	DATE 12/10/91		



BLYMYER ENGINEERS, INC.

BEI JOB NO. 91175

DATE 12/91

LEGEND
- MONITORING WELL
- PROPOSED MONITORING WELL
- GROUNDWATER CONTOUR 6-30-89

PROJECT
LANAIDOR, INC.
OAKLAND, CA
SITE PLAN

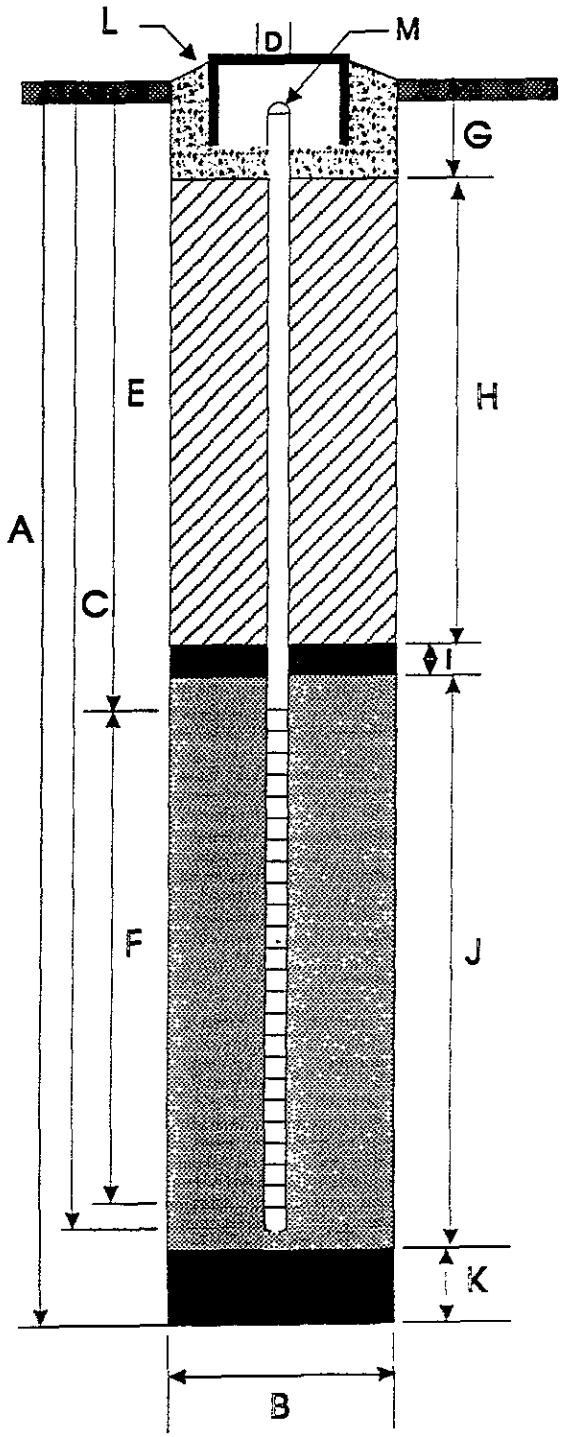
FIGURE 2

BLYMYER ENGINEERS, INC.

CLIENT: LANAIDOR, INC.
SITE: 925 89TH AVE.

JOB# 91175
DRILLER:
LOGGED BY:

BORING/WELL NO.: PROPOSED WELL
TOP OF CASING ELEV.:
GROUND SURFACE ELEV.:
DATUM:



WELL CONSTRUCTION

A. Total Depth 25'

B. Diameter 6-1/4"

Drilling Method HOLLOW STEM AUGER

C. Casing Length 25'

Material SCH. 40 PVC

D. Casing Diameter 2"

E. Depth to Top Perforations 10'

F. Perforated Length 15'

Perforated Interval from 10' to 25'

Perforation Type MACHINE SLOT

Perforation Size 0.010"

G. Surface Seal 6'

Seal Material CEMENT GROUT

H. Backfill

Backfill Material

I. Seal 2'

Seal Material BENTONITE

J. Gravel Pack 17'

Pack Material NO. 2 SAND

K. Bottom Seal NONE

Seal Material

L. FLUSH MOUNT TRAFFIC BOX

M. LOCKING CAP

FIGURE 3

Appendix A

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).)

72625

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000294460 Manifest Document No

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
925 - 39th Ave, Oakland, CA 94601

4. Generator's Phone (415) 562-4450

A. State Manifest Document Number 90010220

B. State Generator's ID

5. Transporter 1 Company Name: Fuel Oil Polishing Co

6. US EPA ID Number: CAD981382669

C. State Transporter's ID

D. Transporter's Phone

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: CAD009466392

H. Facility's Phone: 415-235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank California Regulated Waste only	001	TP	00600	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
1-Empty, Unleaded Gasoline Tank #4196 Iced with 50 lbs Dry Ice. 550 gal capacity

K. Handling Codes for Wastes Listed Above
a. 01
b.
c.
d.

15. Special Handling Instructions and Additional Information

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 international and national government regulations.

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

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year 12 18 1990

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space
11A) Waste Empty Storage tanks. Non-RCRA Hazardous Waste Solid

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Donald H. Kesson Jr. | Signature | Month Day Year 08 14 90

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

Parker

Shipper's No. _____

kt

CARRIER: Erickson Trucking, Inc. SCAC

Carrier's No. _____ Date

TO: Consignee LMC Corp. Street 600 S. 4th St. Destination Richmond, CA 94805 Zip	**FROM:** Shipper Erickson, Inc. Street 255 Parr Blvd. Origin Richmond, CA 94801 Zip

Route:

Vehicle Number

No. Shipping Units	HM	Kind of Packages, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUI (or exemption)
		Non-Dot regulated material gas free triple rinsed underground tanks for scrap					
		72576/4180 —	None	N/A	N/A	N/A	None
		72525/4133 — 72574/4469					
		72527/4177 — 72524/4143					
		Fusoil 4196 —					

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE
Prepaid ☐
Collect ☐

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

FREIGHT CHAR
☐ PREPAID ☐

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per S. Lowry

PLACARDS REQUIRED None

PLACARDS SUPPLIED ☐ YES ☐ NO — FURNISHED BY CA-

DRIVER SIGNATURE:

SHIPPER: Erickson, Inc.
PER: Shannan Lowry
DATE: 8/16/90

CARRIER:
PER:
DATE:

EMERGENCY RESPONSE TELEPHONE NUMBER: 415 235 1393

Manned 24 hours/day by a person with knowledge of the hazards of the mate emergency response information or who has access to a person with that knowl

(R

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK,
FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster whose signature is on this certificate who is a recognized authority of accuracy as pres Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and A

LMC METALS
A DIVISION OF SIMSMETAL USA CORPORATION
600 SOUTH 4th STREET
RICHMOND, CALIFORNIA 94804
(415) 236-0606

TICKET# 15[illegible]

MATL. [illegible] UNIP
PRICE / TON: $ PAY WEIGHT: 8760
TOTAL PRICE: $
WEIGHT ADJUSTMENT: 0 PERCENT: *****%
INBOUND WEIGHT: 26900 Lbs.

ACCOUNT: 22168801
ERICKSON INC.

CASH I.D.: TRUCK NO. LICENSE NO. 3F76[illegible]
DRIVER:

26900	(M)	Gross Weight Lbs.	8/16/90-	9:15	FRT. CODE: 1 COST: $	0.00
18140		Tare Weight Lbs.	8/16/90-	9:45		
8760		Net Weight Lbs.				

Steve Dito
SIGNATURE OF SELLER OR AGENT

№ 4196 —

Fuel oil Polishing

CERTIFICATE

Certified Services Company
255 Parr Boulevard
Richmond, California 94801

Day or Night
Telephone
(415) 235-1393

For: Erickson, Inc. Tank No (s) 4196 Location: Richmond Date: 8-16-90 Time: 8:00 a.m.

Test Method: ~~Visual Gastech/1314 SMPN~~ Last Product: Unleaded Gas

This is to certify that I have personally determined that the tank(s) in the following list are in accordance with the American Petroleum Institute and have found the condition of each to be in accordance with its assigned designation This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Tank(s)	Condition
1- 550 Gal. Tank	Safe for Fire ~~Oxy 20.9%~~ LEL- Less than 0.1%

Remarks:

In the event of any physical or atmospheric changes affecting the gas-free condition of the above tanks, or if in any doubt immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

Standard Safety Designation:

Safe for Men: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19 5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

Safe for Fire: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration than permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

Representative Jim Cox Title Supv. Inspector

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *(Form designed for use on elite (12-pitch typewriter).*

Department of Health Services
Toxic Substances Control Division
Sacramento, California

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	CAR000294467
Manifest Document No.	0180
2. Page 1 of 1	1 of 1
Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address	LANAIDER % BILL RAYMOND, 925 - 59th AVE, OAKLAND CAL 94621
4. Generator's Phone ( )	415 5624450
A. State Manifest Document Number	900[illegible]
B. State Generator's ID	CAC 000 294 467
5. Transporter 1 Company Name	[illegible]
6. US EPA ID Number	CAD [illegible]
C. State Transporter's ID	[illegible]
D. Transporter's Phone	[illegible] 2750
7. Transporter 2 Company Name	ODYSSEY
8. US EPA ID Number	CAD087210019
E. State Transporter's ID	101122
F. Transporter's Phone	(213) 420-3901
9. Designated Facility Name and Site Address	DEMENNO KERDOON, 2000 N ALAMEDA, [illegible] CA
10. US EPA ID Number	CAT080013352
G. State Facility's ID	[illegible]
H. Facility's Phone	213 537 7100

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. PETROLEUM OIL N.O.S (WASTE OIL) COMBUSTIBLE LIQUID NA 1270	001	TT	1130	G	State 221; EPA/Other
b.					State; EPA/Other
c.					State; EPA/Other
d					State; EPA/Other

J. Additional Descriptions for Materials Listed Above

a. 1,0 / WASTE OILS (MOTOR FUELS)

K. Handling Codes for Wastes Listed Above

a. 01 R b. c. d.

15. Special Handling Instructions and Additional Information

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 international and national government regulations.

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
W K RAYMOND	[signature]	[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
[illegible]	[signature]	[illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Jim Gregory	[signature]	08 14 90

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
ROLLY PAREDES JR.	[signature]	08 17 90

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

[illegible] TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

REDWOOD SANITARY LAND FILL, INC.

P.O. BOX 793 • 101 HIGHWAY NORTH
NOVATO, CALIFORNIA 94948
PHONE: (415) 892-2851

- PERSONS USING THESE PREMISES DO SO AT THEIR OWN RISK.
- CHILDREN AND PETS ARE NOT ALLOWED OUT OF VEHICLES.
- NO RUMMAGING IN DUMP AREA.
- NO SMOKING ON DUMP SITE.
- PLEASE NOTIFY OFFICE OF ANY COMPLAINT.

DRIVER'S SIGANTURE

LZ.BV
RECEIVED BY

ACCOUNT NUMBER: 0 CUSTOMER: Fuel Oil Polishing Company
JOB NUMBER: OAKLAND DESC: 12TH&46TH
VEHICLE: CAM'S TIME: 10:14:48 DATE: 4/29/91

COMMODITY: O.C./P. C. DIRT YARDS: 18.00 LOAD # : 119

PER YARD 5.00 FEE 90.00

CPO

TOTAL 90.00
INVOICE: 96651

82/S2-2 ***CUSTOMER COPY***

REDWOOD SANITARY LAND FILL, INC.

P.O. BOX 793 • 101 HIGHWAY NORTH
NOVATO, CALIFORNIA 94948
PHONE: (415) 892-2851

- PERSONS USING THESE PREMISES DO SO AT THEIR OWN RISK.
- CHILDREN AND PETS ARE NOT ALLOWED OUT OF VEHICLES.
- NO RUMMAGING IN DUMP AREA.
- NO SMOKING ON DUMP SITE.
- PLEASE NOTIFY OFFICE OF ANY COMPLAINT.

DRIVER'S SIGANTURE

BV.LZ.
RECEIVED BY

ACCOUNT NUMBER: 0 CUSTOMER: Fuel Oil Polishing Company
JOB NUMBER: OAKLAND DESC: 89TH
VEHICLE: CY CAMP TIME: 7:32:58 DATE: 4/30/91

COMMODITY: O.C./P. C. DIRT YARDS: 18.00 LOAD # : 68

PER YARD 5.00 FEE 90.00

CPO

TOTAL 90.00
INVOICE: 96763

82/S2-2 ***CUSTOMER COPY***

Appendix B

Western Operations

1252 Quarry Lane
Pleasanton, CA 94566
(415) 426-2600
Fax (415) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

September 19, 1990

Mr. Mike Holbrook
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. No. 30710.00
Work Order No. 9008120
Lab Client Code INT_EEP

Dear Mr. Holbrook:

Attached is our analytical laboratory report for the samples received on August 14, 1990 from Fuel Oil Polishing Company for their site at Lanaidor, 925 89th Avenue, Oakland California. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/dt
Attachments

Clayton
ENVIRONMENTAL
CONSULTANTS

EPA METHOD 8015/8020
GASOLINE/BTEX

Sample I.D.: SAMPLE 1A 2'
Client: FUEL OIL POLISHING CO.
Sample Received: 08/14/90
Client Ref. No.: 30710.00
Sample Analyzed: 08/27/90
Lab Client Code: INT_EEP
Sample Matrix: SOIL
Lab No.: 9008120-01A

WEST END OF EXCHO

Compound	CAS #	Concentration ug/kg	Limit of Detection ug/kg
Benzene	71-43-2	ND	500
Toluene	108-88-3	ND	500
Ethylbenzene	100-41-4	3,100	500
Xylenes	1330-20-7	1,400	500
Gasoline	----	220,000	30000

ND = Not detected at or above limit of detection

EPA METHOD 8015/8020
GASOLINE/BTEX

Sample I.D.: SAMPLE 1B 2' Client: FUEL OIL POLISHING CO.

Sample Received: 08/14/90 Client Ref. No.: 30710.00

Sample Analyzed: 08/27/90 Lab Client Code: INT_EEP

Sample Matrix: SOIL Lab No.: 9008120-02A

EAST End of Excav

Compound	CAS #	Concentration ug/kg	Limit of Detection ug/kg
Benzene	71-43-2	ND	50
Toluene	108-88-3	80	50
Ethylbenzene	100-41-4	880	50
Xylenes	1330-20-7	260	50
Gasoline	-----	48,000	3000

ND = Not detected at or above limit of detection

EPA METHOD 8015/8020
GASOLINE/BTEX

Sample I.D.: SAMPLE 1C
Client: FUEL OIL POLISHING CO.
Sample Received: 08/14/90
Client Ref. No.: 30710.00
Sample Analyzed: 08/27/90
Lab Client Code: INT_EEP
Sample Matrix: SOIL
Lab No.: 9008120-03A

Stockpile Composite

Compound	CAS #	Concentration ug/kg	Limit of Detection ug/kg
Benzene	71-43-2	ND	5
Toluene	108-88-3	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes	1330-20-7	7	5
Gasoline	-----	400	300

ND = Not detected at or above limit of detection

EPA METHOD 8015/8020
GASOLINE/BTEX

Sample I.D.: METHOD BLANK
Client: FUEL OIL POLISHING CO.

Sample Received: 08/14/90
Client Ref. No.: 30710.00

Sample Analyzed: 08/24/90
Lab Client Code: INT_EEP

Sample Matrix: SOIL
Lab No.: 9008120-04A

Stockpile Composite

Compound	CAS #	Concentration ug/kg	Limit of Detection ug/kg
Benzene	71-43-2	ND	5
Toluene	108-88-3	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes	1330-20-7	ND	5
Gasoline	-----	ND	300

ND = Not detected at or above limit of detection

INORGANIC LABORATORY ANALYSES

Sample I.D.:	See below	Client:	FUEL OIL POLISHING CO.
Sample Received:	08/14/90	Client Ref. No.:	30710.00
Sample Analyzed:	08/23/90	Lab Client Code:	INT_EEP
Sample Matrix:	Soil	Lab No.:	9008120

Batch Sub. No.	Sample Identification	Organic Lead (mg/kg)
-01	Sample 1A 2'	<1
-MB	Method Blank	<1
Limit of detection:		1
Method Reference:		DHS LUFT

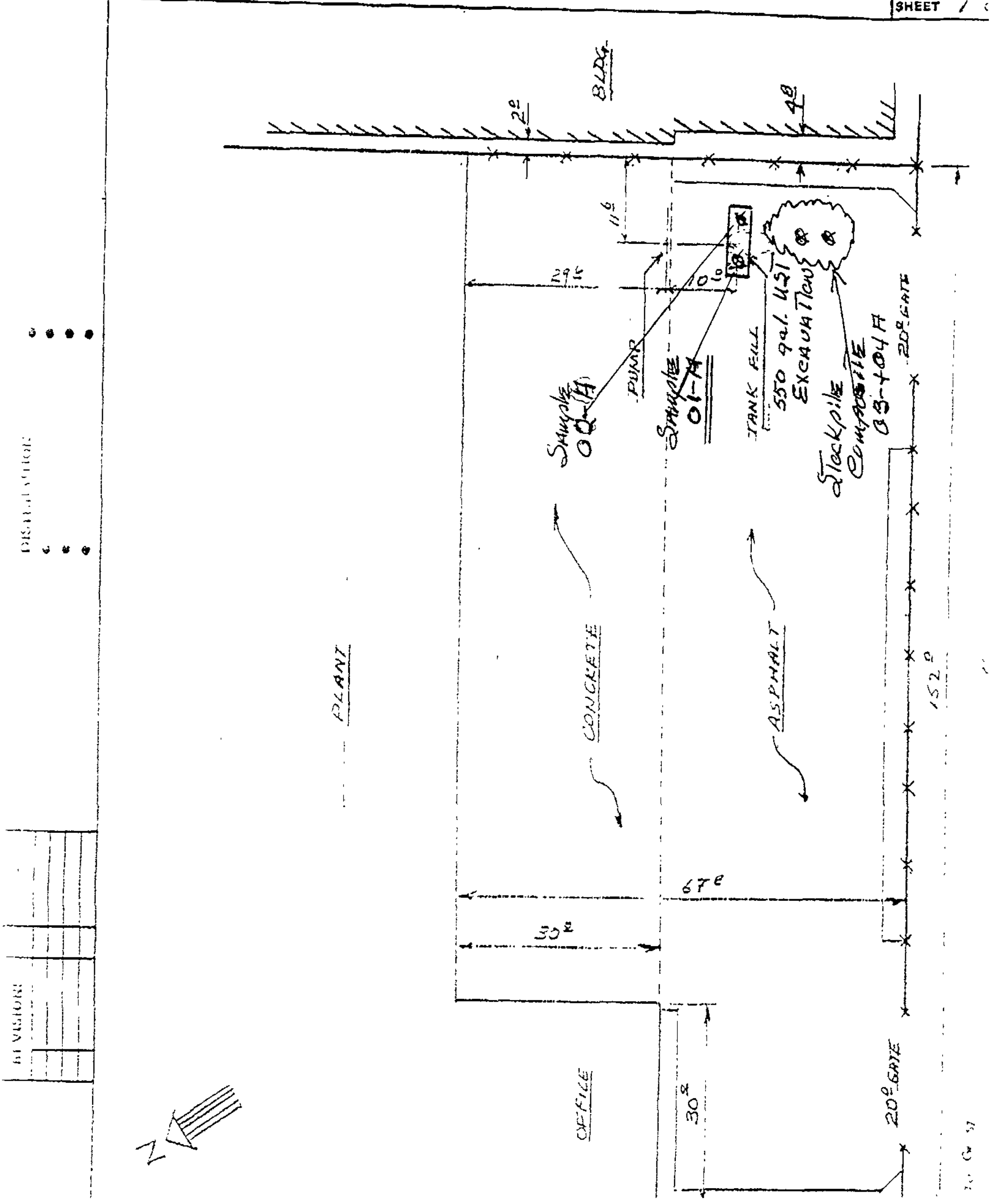
< = less than, below limit of detection

Plat Plan

LANAIDOR, INC. 925 59th AVE.

5-31-

SHEET 1



Western Operations

252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(415) 426-2600
Fax (415) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

February 7, 1991

Clayton Project No. 31763.00

Mr. Bill Raymond
LANAIDOR
925 89th Avenue
Oakland, California 94621

Subject: Soil Excavation at Lanaidor
925 89th Avenue
Oakland, California

Dear Mr. Raymond:

Clayton is pleased to submit the enclosed laboratory analytical report and a site map for the subject site. The soil samples were collected on November 14, 1990 from the walls of the excavated pit (Figure 1). Four soil samples were collected from the excavated soils for disposal purposes and composited at the laboratory.

Thank you for your cooperation. If you have any questions or further environmental needs and services, please call me at (415) 426-2670 or Mr. Alan D Gibbs, Clayton's supervisor, at (415) 426-2676.

Sincerely,

Richard Silva
Geologist

Enclosures

cc: Ms. Cynthia Chapman, ACHCSA

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	1 10'BELOW GROUND/NORTH	Date Sampled:	11/14/90
Lab Number:	9011157-01A	Date Received:	11/16/90
Sample Matrix/Media:	SOIL	Date Prepared:	11/21/90
Preparation Method:	EPA 5030	Date Extracted:	11/21/90
Extraction Method:	EPA 5030	Date Analyzed:	11/21/90
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline	-----	ND	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Clayton
ENVIRONMENTAL
CONSULTANTS

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	2 10'BGS-SOUTH WALL	Date Sampled:	11/14/90
Lab Number:	9011157-02A	Date Received:	11/16/90
Sample Matrix/Media:	SOIL	Date Prepared:	11/21/90
Preparation Method:	EPA 5030	Date Extracted:	11/21/90
Extraction Method:	EPA 5030	Date Analyzed:	11/21/90
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline	-----	1.9[a]	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

[a] Unidentified petroleum hydrocarbon in the C4-C12 range quantitated as gasoline.

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	3 10.5' BGS-EAST WALL	Date Sampled:	11/14/90
Lab Number:	9011157-03A	Date Received:	11/16/90
Sample Matrix/Media:	SOIL	Date Prepared:	11/21/90
Preparation Method:	EPA 5030	Date Extracted:	11/21/90
Extraction Method:	EPA 5030	Date Analyzed:	11/21/90
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline	-----	ND	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	4 10' BGS-WEST WALL	Date Sampled:	11/14/90
Lab Number:	9011157-04A	Date Received:	11/16/90
Sample Matrix/Media:	SOIL	Date Prepared:	11/21/90
Preparation Method:	EPA 5030	Date Extracted:	11/21/90
Extraction Method:	EPA 5030	Date Analyzed:	11/21/90
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	0.018	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	0.011	0.005
Gasoline	-----	2.3	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	COMPOSITE SAMPLE 5,6,7,8	Date Sampled:	11/14/90
Lab Number:	9011157-09A	Date Received:	11/16/90
Sample Matrix/Media:	SOIL	Date Prepared:	11/21/90
Preparation Method:	EPA 5030	Date Extracted:	11/21/90
Extraction Method:	EPA 5030	Date Analyzed:	11/21/90
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.014	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	0.55	0.005
Gasoline	-----	20	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9011157-10A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	11/21/90
Preparation Method:	EPA 5030	Date Extracted:	11/21/90
Extraction Method:	EPA 5030	Date Analyzed:	11/21/90
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline	-----	ND	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	See below	Date Sampled:	11/14/90
Lab Number:	9011157	Date Received:	11/16/90
Sample Matrix/Media:	Soil	Date Analyzed:	11/19/90
Analytical Method:	EPA 418.1 (Modified)		

Laboratory No.	Sample Identification	Total Recoverable Petroleum Hydrocarbons (mg/kg)
-01	1 10' Below Ground/North	40
-02	2 10' BGS-South Wall	330
-03	3 10.5' BGS-East Wall	20
-04	4 10' BGS-West Wall	20
-MB	Method Blank	<10
Limit of detection:		10

< Less than the indicated below limit of detection (LOD)

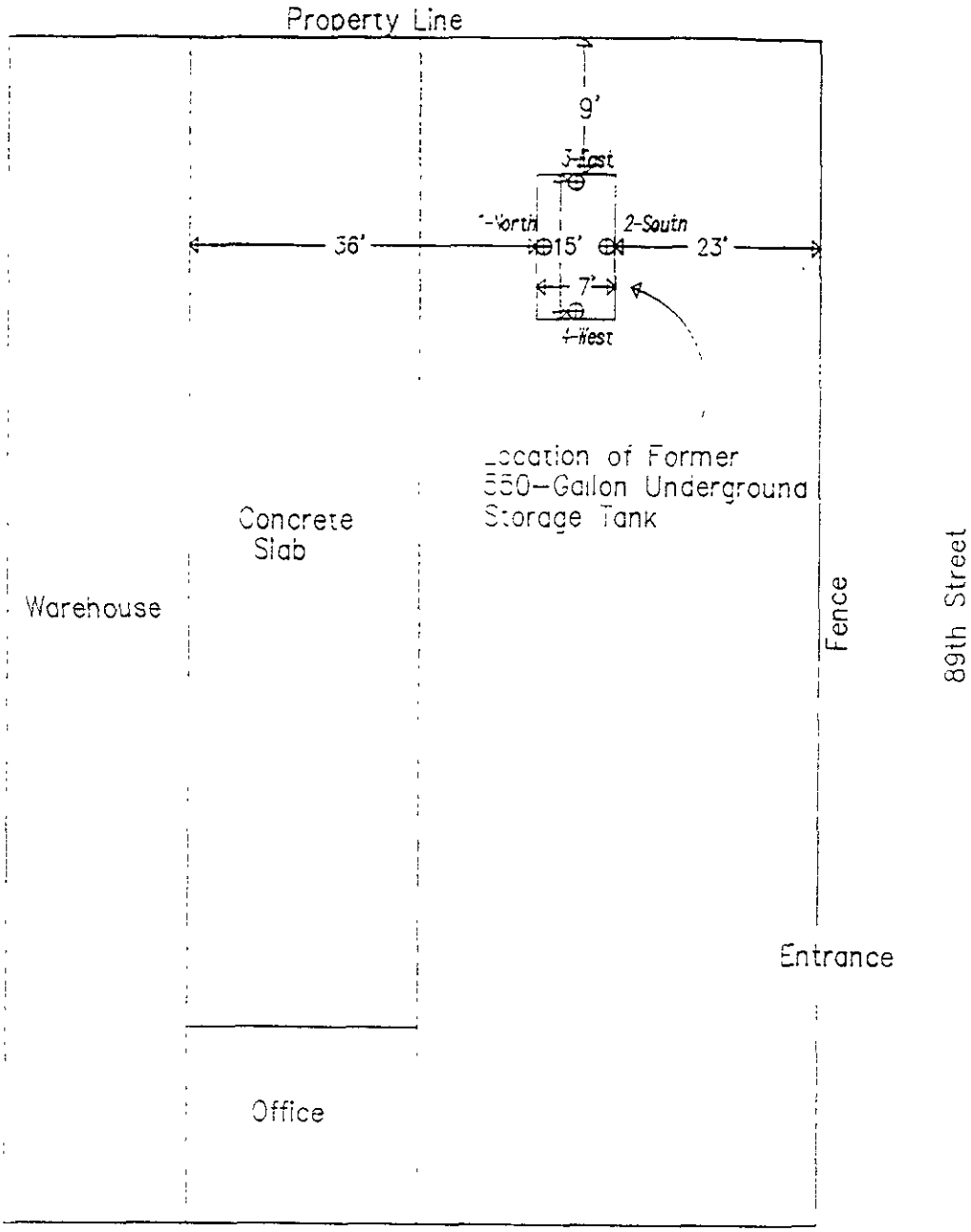
Results of Analysis
for
Fuel Oil Polishing Co.

Client Reference: 31763.00
Clayton Project No. 90111.57

Sample Identification:	See below	Date Sampled:	11/14/90
Lab Number:	9011157	Date Received:	11/16/90
Sample Matrix/Media:	Soil	Date Digested:	11/27/90
Digestion Method:	DHS/LUFT	Date Analyzed:	11/27/90
Analytical Method:	DHS/LUFT		

Laboratory No.	Sample Identification	Organic Lead (mg/kg)
-09	Composite Sample 5,6,7,8	<1
-MB	Method Blank	<1
Limit of detection:		1

< Less than the indicated limit of detection (LOD)



LEGEND

⊕ Sample Location

Sample Location Schematic
Lanaidor
925 89th Street
Oakland, California

Clayton Project No. 31763.00

not to scale

Figure
1

31763-00-16

Clayton
ENVIRONMENTAL
CONSULTANTS

Appendix C

SITE HEALTH & SAFETY PLAN

925 89th Avenue, Oakland, California

Prepared for

Lanaidor, Inc.

December 9, 1991

Prepared By

Blymyer Engineers, Inc.
1829 Clement Avenue
Alameda, CA 94501

Project #91175

BLYMYER ENGINEERS, INC.
TAILGATE SAFETY MEETING CHECKLIST

Project Number: 91175 Site Address: 925 89th Avenue, Oakland, California

Date: December 9, 1991 Project Safety Officer: Craig Drizin

ITEMS TO BE DISCUSSED WITH ALL PROJECT PERSONNEL:

_____ Head and eye Protection required on job - (Hard hat, safety glasses).

_____ Other protective equipment required - (steel toed boots, earplugs, gloves, chemicals suits, etc.)

_____ Respiratory protective equipment.

_____ Discuss materials expected to be encountered on job and exposure limits (gasoline, benzene, toluene, ethylbenzene and xylenes and their respective TLV's).

_____ Air monitoring procedures (PID)

_____ Work zones and methods of security (show sketch of proposed drilling sites showing how barricades, tape, and cones will keep public out).

_____ Decontamination procedures (cleaning of all contaminated equipment, and personnel hygiene).

_____ General safe work practices.

_____ Emergency procedures (fire extinguishers, first aid, gas detectors, hospital directions, emergency numbers).

The following personnel were present for discussion of the topics listed above:

NAME	SIGNATURE	COMPANY	DATE

CONTENTS

SITE HEALTH & SAFETY PLAN

1.0 INTRODUCTION

A. Overview

A 550-gallon underground storage tank was removed from the site on August 14, 1990. An additional 36 cubic yards of soil were removed from the excavation and the excavation was backfilled with pea gravel on November 14, 1990.

On the day the tank was removed, August 14, 1990, two soil samples (1A, 2A) were collected from the excavation by Clayton Environmental Consultants. Clayton Environmental Consultants also collected four soil samples (1/North, 2/South, 3/East, and 4/West) from the side walls of the excavation when it was extended to 11 feet below the ground surface on November 14, 1990. The depth the soil samples were collected from, the analyses performed, and the results of the analyses are presented in Table I.

Table I. Soil Sample Analytical Results
Lanaidor, Inc., 925 89th Avenue, Oakland, Ca.

Sample	Depth (feet)	TRPH by EPA Method 418.1 (ppm)	TPH-g by EPA Method 8015 (ppm)	Volatile Organic Compounds by EPA Method 8020 (ppm)			
				B	T	E	X
1A	2	NA	220	ND	ND	3.1	1.4
2A	2	NA	48	ND	0.08	0.88	0.26
1/North	10	40	ND	ND	ND	ND	ND
2/South	10	330	1.9	ND	ND	ND	ND
3/East	10.5	20	ND	ND	ND	ND	ND
4/West	10	20	2.3	0.018	ND	ND	0.011

TRPH = Total Recoverable Petroleum Hydrocarbons. TPH-g = Total Petroleum Hydrocarbons as gasoline. B = Benzene, T = Toluene, E = Ethylbenzene, X = Xylenes NA = Sample Not Analyzed by this Method. ND = Not Detected. ppm = parts per million.

2.0 PROJECT SAFETY AUTHORITY

A. On-Site Project Safety

Personnel responsible for the project safety are:

Craig Drizin
Project Safety Officer
Blymyer Engineers, Inc.

Roman S. Worobel
Corporate Safety Officer
Blymyer Engineers, Inc.

The Project Safety Officer has the authority to suspend work anytime he or she determines that the provisions of the plan are inadequate to ensure worker safety. The Project Safety Officer shall also inform individuals whose conduct is not consistent with the requirements of the plan. In addition, the Project Safety Officer shall be responsible for the following:

- Safety Supplies & Equipment Inventory for the Project Site
- Medical Surveillance Program/Physical Examination Compliance
- Training Programs/Hazard Communication Compliance
- Accident/Incident Reporting
- Decontamination/Contamination Reduction Procedures

B. Blymyer Engineers, Inc. Safety Officer

The Corporate Safety Officer reports to the Blymyer Engineers, Inc. Senior Management and is responsible for on-site safety and injury/illness prevention functions.

Responsibilities include:

- Health surveillance of all Blymyer Engineers, Inc. employees.
- Assuring that safety procedures in effect are in compliance with all appropriate federal, state, and local regulations (following the most stringent of the standards).

- Maintenance of personnel exposure monitoring records.
- Assuring appropriate personal protective equipment is adequate for actual hazards of on-site conditions.
- Assuring appropriate hazard areas are identified and marked.
- Assuring all personnel entering hazard area are in appropriate levels of protection.

3.0 JOB HAZARD ANALYSIS

A. Chemical Hazards

The possible major chemical hazards of contaminants to be encountered on the project are:

CHEMICAL	PEL/TLV	ROUTE(S) OF EXPOSURE	SOLUBILITY IN WATER	VAPOR PRESSURE	LEL, UEL
Gasoline	300 ppm	Inh, Ing, Con	Insoluble	760 mm Hg	1.3%, 6.0%
Benzene	1 ppm	Inh, Ing, Con	0.0007 g/ml @ 68°F	75 mm Hg @ 68°F	1.3%, 7.9%
Toluene	100 ppm	Inh, Ing, Con	0.0005 g/ml @ 61°F	20 mm Hg @ 65°F	1.2%, 7.1%
Ethylbenzene	100 ppm	Inh, Ing, Con	0.0001 g/ml @ 68°F	10 mm Hg @ 79°F	1.0%, 6.7%
Total Xylenes	100 ppm	Inh, Ing,Con	Insoluble	9mm Hg @ 68°F	1.1%, 7.0%

Inhalation, ingestion, skin absorption and, skin and/or eye contact are the main routes of entry regarding the exposure to potentially hazardous substances. Results of animal and human toxicological studies are detailed in "Handbook of Toxic and Hazardous Chemicals" by M. Sittig (1981), and "Dangerous Properties of Industrial Materials" by N. Irving Sax (1984). An additional reference source used for the development of this Site Safety Plan is "Threshold Limit Values and Biological Exposure Indices" published by the American Conference of Governmental Industrial Hygienists.

B. Physical Hazards

Physical hazards of concern are those associated with drilling soil bores with a hollow-stem auger drill rig. The main concern is injury due to unfamialarity with this type of equiment. Standard precautions for operating heavy machinery are to be followed while working with or near the drill rig. Underground Services Alert will be contacted for guidance regarding the location(s) of underground utilities prior to drilling at the site.

Existing utilities on the site must be avoided in the process of normal site work. Overhead power lines which may be located throughout the site present a potential for electrical contact. All overhead lines located in the work area will be noted prior to starting work. A minimum distance of 15 feet from power lines will be maintained at all times.

Additionally, there is a potential for physical hazards resulting from falling objects such as tools or equipment, from falls from elevations, or from tripping over pipes, tools, hoses, and other equipment laying on the ground. Improper use and/or maintenance of equipment and tools is another potential source of physical hazards on site. These sorts of physical hazards must be avoided through proper site management and control of the work area by the Site Safety Officer.

4.0 JOB HAZARD SUMMARY

The overall job hazard at the site is low if proper work practices regarding heavy equipment and construction site obstacles are followed. Chemical hazard risk at the site is low because the suspected contaminants are located below grade and are suspected to occur only in low concentrations.

5.0 EXPOSURE MONITORING PLAN

A. Airborne Contaminants

An air quality monitoring program shall be implemented to provide baseline and on-going air quality data for site operations. This program shall include an on-going evaluation of on-site airborne contaminant concentrations during work site activities that involve significant surface disturbances using direct reading instruments, detector tubes and/or NIOSH air sampling methods. In addition, a determination will be made by the site safety officer whether perimeter monitoring of downwind air

quality conditions will be performed during significant surface disturbances.

B. Heat Stress

The following table details work procedures under high temperatures:

Permissible Heat Exposure Threshold Limit Values
(Values are given in °F)

	Work Load		
Work-Rest Regimen	**Light**	**Moderate**	**Heavy**
Continuous Work	86	80	77
75% Work-25% Rest, each hour	87	82	79
50% Work-50% Rest, each hour	89	85	82
25% Work-75% Rest, each hour	90	88	86

The Threshold Limit Values are based on the assumption that nearly all acclimatized, fully clothed workers with adequate water and salt intake should be able to function effectively under the given working conditions without exceeding a deep body temperature of 100 °F. The Threshold Limit Values do not apply if special clothing is required to perform the job and this clothing impedes sweat evaporation.

During extremely hot temperatures, drinking water will be made available to the workers such that one cup is drunk every 15-20 minutes.

C. Noise

A potential for elevated noise exposure exists when operating or working around heavy equipment. The use of hearing protection such as ear plugs and/or ear muffs will be required, as necessary.

6.0 PERSONAL PROTECTIVE EQUIPMENT

A. Introduction

It is important that personal protective equipment and safety requirements be appropriate to protect against the potential hazards at the site. Protective equipment will be selected based on the contaminant type(s), concentration(s), and route of entry. In situations where the type of materials and possibilities of contact are unknown or the hazards are not clearly identifiable, a more subjective determination must be made of the personal protective equipment.

A minimum of Level D safety equipment and clothing will be required for all workers and visitors on the site. All personnel must be prepared to step up to higher levels of protective equipment as conditions warrant.

B. Levels of Protection

The work at the site is to be performed in Level D protection; the protective gear will include:

- hardhat
- long sleeve button down shirt
- neoprene or PVC steel toed boots or overboots of the same material worn over steel toed work style shoes
- safety glasses
- inner gloves (polyvinyl) for handling soil or liquid samples
- overgloves (neoprene, nitrile) for handling augers or other contaminated items
- polycoated Tyvek coveralls for working with wet materials
- uncoated Tyvek coveralls for working with dry materials (optional)

If Level C protection is deemed necessary by the Project Safety Officer based on field conditions, the protective equipment will include:

- Level D equipment including gloves and polycoated Tyvek coveralls

- respiratory protection which may include half or full face respirator with organic vapor cartridges depending on respiratory action levels listed above in section 3.0, A.

The Project Safety Officer may modify the level of protection at any time during the project.

7.0 WORK ZONES AND SECURITY MEASURES

A. General

A site must be controlled to reduce the possibility of exposure to any contaminants present and their transport by personnel or equipment from the site.

The possibility of exposure or translocation of contaminants can be reduced or eliminated in a number of ways, including:

- Setting up security or physical barriers to exclude unnecessary personnel from the general area
- Minimizing the number of personnel and equipment on-site consistent with effective operations
- Establishing work zones within the site
- Establishing control points to regulate access to work zones
- Conducting operations in a manner to reduce the exposure of personnel and equipment
- Minimizing the airborne dispersion of contaminants
- Implementing the appropriate personnel and equipment decontamination procedures

B. Field Operations Work Area

Work area (zones) will be established based on anticipated contamination and provided on a site map (Figure 1). Within these zones prescribed operations will occur utilizing appropriate personal protective equipment. Movement between areas will be controlled at checkpoints. The planned zones are:

1. Exclusion Area (contaminated):
   The actual areas where work is being performed are considered to be the exclusion areas. Access to these areas will be strictly limited to the personnel needed to conduct the work being performed.

2. Contamination Reduction Area:
An area adjacent to each active work zone will be designated as the contamination reduction area. Disposable protective gear will be removed and placed in garbage bags prior to leaving the reduction zone. Heavy equipment and non-disposable gear will be cleaned at a decontamination area within this zone.

3. Support Area (non-contaminated):
Areas located away from active work areas and out of the zone of potential impact of hazards will be used for staging and support of the work being performed on site. Any materials, equipment, or clothing of personnel must be fully decontaminated prior to entering these areas.

8.0 DECONTAMINATION PROCEDURES

A. Introduction

As part of the system to prevent or reduce the physical transfer of contaminants by people and/or equipment from on-site, procedures will be instituted for decontaminating anything leaving the Exclusion Area and Contamination Reduction Area. These procedures include the decontamination of personnel, equipment, monitoring equipment, clean-up equipment, etc. Unless otherwise demonstrated, everything leaving the Exclusion Area should be considered contaminated and appropriate methods established for decontamination shall be followed. In general, decontamination at the site consists of rinsing equipment, personnel, etc., with copious amounts of water and washing with detergent water solutions.

B. Procedure

1. Personnel equipment worn into the Exclusion Area will be decontaminated upon leaving the Contamination Reduction Area. All equipment decontaminated will be air dried.

2. The decontamination of equipment, material, and personnel used or working in the Contamination Reduction Area may be somewhat less complex than that used in the Exclusion Area.

3. The spent solution, brushes, sponges, containers, stands, etc., used in the decontamination process must be properly disposed.

9.0 GENERAL SAFE WORK PRACTICES

The project operations shall be conducted with the following minimum safety requirements employed:

1. Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of materials is prohibited in any area where the possibility of contamination exists.

2. Hands must be thoroughly washed upon leaving a contaminated or suspected contaminated area before eating, drinking, or any other activities transpire.

3. Thorough washing of the entire body should be accomplished whenever decontamination procedures for outer garments are in effect. The washing should occur as soon as possible after the final wearing of protective garments.

4. Legible and understandable precautionary labels shall be prominently affixed to containers of raw materials, intermediates, products, mixtures, scrap, waste, debris, and contaminated clothing.

5. Contaminated protective equipment shall not be removed from the regulated area until it has been cleaned or properly packaged and labeled.

6. Removal of materials from protective clothing or equipment by blowing, shaking, or any other means which may disperse materials into the air is prohibited.

7. Personnel on-site must use the "buddy" system when wearing any respiratory protective devices. Communications between members must be maintained at all times. Emergency communications shall be prearranged in case of encountering unexpected situations. Visual contact must be maintained between "pairs" on-site, and each team should remain in closed proximity to assist each other, if necessary.

8. Personnel should be cautioned to inform each other of subjective symptoms of chemical exposure such as headache, dizziness, nausea, and irritation of the respiratory tract.

9. No excessive facial hair which interferes with a satisfactory fit of the facepiece-to-face seal, will be allowed on personnel required to wear respiratory protective equipment.

10. All respiratory protection selection, use, and maintenance shall meet the requirements of established Blymyer Engineers' procedures, recognized

consensus standards (ANSI, NIOSH), and shall comply with the requirements set forth in 29 CFR 1910.134.

11. Blymyer Engineers' personnel on-site are to be thoroughly briefed on the anticipated hazards, equipment requirements, safety practices, emergency procedures, and communications methods, initially and in daily briefings.

13. Contact with surface and groundwater shall be minimized.

14. Steel-toed boots will be work on-site at all times.

In addition, the following precautions shall be implemented for all personnel working on the project:

- Gross decontamination and removal of all personal protective equipment shall be performed prior to exiting the facility. Contaminated clothing will be removed and collected in a drum for disposal.

- Field operations personnel shall be cautioned to inform each other of non-visual effects of the presence of toxics, such as:

  - Headaches
  - Dizziness
  - Nausea
  - Blurred Vision
  - Cramps
  - Irritation of eyes, skin, or respiratory tract
  - Changes in complexion or skin discoloration
  - Changes in apparent motor coordination
  - Changes in personality or demeanor
  - Excessive salivation or changes in pupillary response
  - Changes in speech ability or pattern

15. During trenching operations field personnel shall maintain a safe distance from the excavation to preclude injury.

16. Personnel shall maintain an adequate distance from operating drilling rigs.

10.0 SANITATION

Sanitation facilities will be available in the office at the site.

11.0 STANDARD OPERATING PROCEDURES

Standard Operating Procedures (SOPs) will be followed by BEI employees to reduce risks associated with using field equipment and with handling hazardous materials. The SOPs are divided into three sections: traveling, decontamination and respiratory protection.

A. Traveling

1. Seat belts shall be worn by all occupants in BEI vehicles and occupants of personal vehicles in use for BEI.

2. BEI vehicles will not be operated while under the influence of drugs or alcohol. No alcoholic beverages, beverage containers, illegal drugs or drug paraphernalia will be carried in vehicles or possessed on job sites.

3. Company and company-supported vehicles must be kept in safe operating condition which includes periodic inspection and maintenance of lights, brakes, tires and performance of a tune-up.

4. All applicable traffic rules and regulations shall be obeyed.

5. In the event of an accident, report the incident to the Corporate Safety Officer as soon as possible. Collect all the pertinent information detailing the accident, such as other party's state driver's license number, automobile license plate number, home and work phone number, police report number, and location of accident.

B. Decontamination

1. Level D Decontamination Procedure

Level D decontamination consists of boot and glove wash and rinse, washing face and hands and showering off-site as soon as practicable. If disposable suits are used, they may be disposed of as general use. If coveralls are used,

they should be removed and washed separately from street clothes at an off-site facility.

When disposable protective clothing is ripped, it shall be immediately discarded and replaced. All disposable clothing shall be double bagged and disposed of as required by applicable regulations.

2. If Level C personal protective equipment is required at the site, all personnel shall follow decontamination procedures described below. Figure 2 contains the minimum decontamination layout for Level C protection.

Station 1: Equipment Drop

Deposit equipment used on-site (tools, containers, etc.) onto visqueen, which has been layed on the ground. Segregation of the equipment will help reduce potential for cross-contamination. A warming station will be provided for cold weather conditions and a shaded area for hot weather conditions.

Station 2: Outer Garment, Boot Cover, Glove Wash

Scrub boot covers, outer gloves and chemical resistant suit with appropriate detergent wash.

Station 3: Outer Garment, Boot Cover, Glove Rinse

Rinse off decontamination solution from Station 2 using copious amounts of water.

Station 4: Boot Cover and Glove Removal

Remove boot covers, outer gloves, and tape. Dispose of tape in a plastic bag. Place gloves and boot covers on plastic sheeting for reuse or disposal, depending on physical conditions.

Station 5: Cartridge Change

If worker leaves Exclusion Zone to change canister, this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, and joints taped. Worker returns to duty.

Station 6: Garment and Safety Boot Removal

Remove and place chemical suits and safety boots in plastic bag.

Station 7: Inner Glove Wash and Rinse

Wash inner gloves with the decontamination solution and rinse with water.

Station 8. Mask Removal

Remove mask for decontamination with detergent and then rinse with water. Remove inner gloves and dispose. Wash hands.

Station 9. Field Wash

Shower in field decontamination trailer. Segregate site clothing and wash separately. Redress with clean clothes.

C. Respiratory Protection Program

BEI maintains the following program governing the selection and use of respirators. The program follows the respiratory protection guidelines as presented in 29 CFR Part 1910.134:

1. Use accepted engineering control measures to reduce or eliminate air contamination by dust, fogs, mist, gases, smoke, sprays, or vapor. Control measures may include enclosures, general and local ventilation, surface wetting and operation modification.

2. If control measures cannot ensure adequate air quality, employees will use appropriate respirators, provided conditions are suitable for their use. Respirators will be provided by BEI and the employee shall use the provided respiratory protection in accordance with instructions and training received.

3. Respirators and cartridges will be selected on the basis of available information concerning contamination at the work site. Information on the contaminants present or expected to be at the site will be found in a site-specific health and safety plan.

   Note: Information regarding contaminants may be found in the following sources: "NIOSH Pocket Guide to Chemical Hazards" and the ACGIH "Threshold Limit Value and Biological Indices".

4. All employees using a respirator will be instructed and trained in the proper use of respirators and their limitations. This includes a qualitative respirator fit tested to determine an adequate face-to-mask seal.

5. Respirators shall be regularly cleaned and disinfected. During cleaning, the respirators shall be inspected for wear and tear. Worn or deteriorated parts shall be replaced.

6. Respirators shall be stored in a convenient, clean, and sanitary location.

7. The Corporate Safety Officer will monitor the respirator program on a regular basis and modify as necessary to provide maximum protection to all employees.

8. All employees expected to work under conditions requiring respirators will undergo an annual medical examination to verify fitness to perform such work while wearing a respirator.

9. Respirators shall not be worn when conditions prevent a facepiece-to-face seal such as facial hair, scars and dentures removal.

12.0 EMERGENCY RESPONSE

A. Site Emergency Warning System

Several warning systems may be utilized depending on the work site conditions or emergency involved:

1. Verbal Communications
2. Vehicle Horns
3. Portable hand-held compressed gas horns

Verbal instructions with or without assistance are used to deal with specific incidents. Horn signals are used to signify emergency warning.

One long blast is used on-site to signify emergency evacuation of the immediate work area to a predetermined location upwind, where a headcount will be taken and further instructions given.

Repeated short blasts are used on-site or from off-site to signify evacuation of all

personnel from the site to the hot line where further instructions will be given after a headcount is taken.

B. Emergency Equipment

The following equipment comprises the basic elements for emergency preparedness. All or some of these items will be available at the work site:

1. Fire extinguishers - dry chemical
2. First aid kits (including chemical burn kit)
3. Combustible gas and oxygen detector analyzers
4. Inorganic vapor detector tubes and air supply pumps--Draeger and/or MSA, or equivalent

C. General Emergency Procedures

In case of an emergency or hazardous situation, the team member that observes this condition shall immediately sound the alarm.

1. Upon hearing an alarm, all non-emergency communications will cease and the member giving the alarm will proceed to give the Project Safety Officer all pertinent information.

2. Actions to be taken will be dictated by the emergency condition.

3. Power equipment will be shut down and operators will stand by for instruction.

4. Injured personnel will be transported to the Contamination Reduction Line.

5. Blymyer Engineers' office will be notified immediately.

6. In case of a fire, explosion, or hazard alarm, personnel will immediately proceed to assigned pre-arranged safe locations.

7. Upon arrival at the safe locations, a complete head count will be given to the Project Safety Officer and personnel will stay at the safe locations until the area is secured.

D. Personal Injury

If an injury occurs due to an accident or exposure to a hazardous substance, the Blymyer Engineers' office will be notifed. The Corporate Safety Officer will be given all appropriate information concerning the nature and cause of the injury so that treatment preparations can be initiated. The injured person will be transported to the Contamination Reduction line where appropriate first aid and treatment can begin. The Project Manager will be informed and will investigate the cause of the injury and make any necessary changes in work procedures.

In the event of an accident resulting in physical injury, first aid will be administered, and the injured worker will be transported to a local hospital for emergency treatment.

Hospital: Humana Hospital, 13855 East 14th Street, San Leandro, California

Directions to Humana Hospital:

Exit site on to 89th Avenue, turn left (east). Proceed five blocks to East 14th Street, turn right (south). Proceed south along East 14th Street approximately three miles to 136th Avenue. Humana Hospital is located at 136th Avenue and East 14th Street. See Figure 2.

EMERGENCY CONTACT LISTING:

Nature of Emergency	Phone Number	Alternate Phone Number
Ambulance	911	
Fire	911	
Police	911	
Poison Control Center	911	
Agency Contact (ACHCSA)	(510) 271 - 4320	
Laboratory		
Humana Hospital	(510) 357 - 6500	
Other Contingencies	Blymyer Engineers, Inc.	(510) 521-3773

13.0 TRAINING REQUIREMENTS

All personnel assigned to this project will be required to demonstrate that they have completed the Initial Training Requirements (40 hours), according to Federal OSHA Standards under 29 CFR 1910.120.

Field personnel from Blymyer Engineers and their sub-contractors will attend a project-specific training program for safety issues and project work task review before beginning work. In addition, fit-testing of respiratory protective devices will be conducted as part of the safety/orientation training.

All Blymyer Engineers' site personnel shall have completed training relative to the project operations plans, and the materials to be encountered during the project. This training shall be conducted by the Blymyer Engineers' Corporate Safety Officer, and shall include classroom and practical application exercises regarding the hazards to be expected and the protective equipment to be utilized.

This formal training is supplemented as required by daily safety briefings and site specific training. All subcontractor personnel will be required to complete the same basic training, and to attend all safety briefings.

14.0 MEDICAL SURVEILLANCE

Blymyer Engineers' personnel and subcontractors engaged in project operations shall be participants in the Medical Surveillance program, and must be cleared by the examining physician(s) to wear respiratory protection devices and protective clothing for working with hazardous materials. The applicable requirements under Federal OSHA, 29 CFR 1910 will be observed.

A. Examination Requirements

All Blymyer Engineers' personnel on-site shall have successfully completed a pre-placement or periodic medical examination in accordance with established Blymyer Engineers' policies and procedures, and consistent with the provisions of the OSHA carcinogen standards. This examination shall include a complete medical and occupational history, physical examination, and selected biological sampling. Laboratory studies include a complete blood count (CBC), urinalysis, chemistry panel (SMAC), pulmonary function (FEV and FVC), chest X-ray, audiometry, and vision screening.

14.0 MEDICAL SURVEILLANCE

Blymyer Engineers' personnel and subcontractors engaged in project operations shall be participants in the Medical Surveillance program, and must be cleared by the examining physician(s) to wear respiratory protection devices and protective clothing for working with hazardous materials. The applicable requirements under Federal OSHA, 29 CFR 1910 will be observed.

A. Examination Requirements

All Blymyer Engineers' personnel on-site shall have successfully completed a pre-placement or periodic medical examination in accordance with established Blymyer Engineers' policies and procedures, and consistent with the provisions of the OSHA carcinogen standards. This examination shall include a complete medical and occupational history, physical examination, and selected biological sampling. Laboratory studies include a complete blood count (CBC), urinalysis, chemistry panel (SMAC), pulmonary function (FEV and FVC), chest X-ray, audiometry, and vision screening.

15.0 RECORDKEEPING

A. General

Recordkeeping shall be consistent with OSHA regulations in all respects. The following permanent records will be maintained in the Blymyer Engineers' offices:

1. Safety Inspection Reports

2. Personnel Exposure Monitoring Records
   (spiral or bound permanent log books will be used)

3. OSHA 200-Current to within 5 days

B. Medical Records

Permanent medical records shall be maintained in confidential files by the contract physician/medical clinic and Blymyer Engineers office. The physician will supply Blymyer Engineers with a medical status document, certifying that the personnel assigned to the project are physically capable of performing their individual work

tasks.

16.0 SIGNATURES

Site Health & Safety Plan Approved By:

Signature:_____ Date_____

Name: Roman S. Worobel

Title: Director of Health and Safety Planning

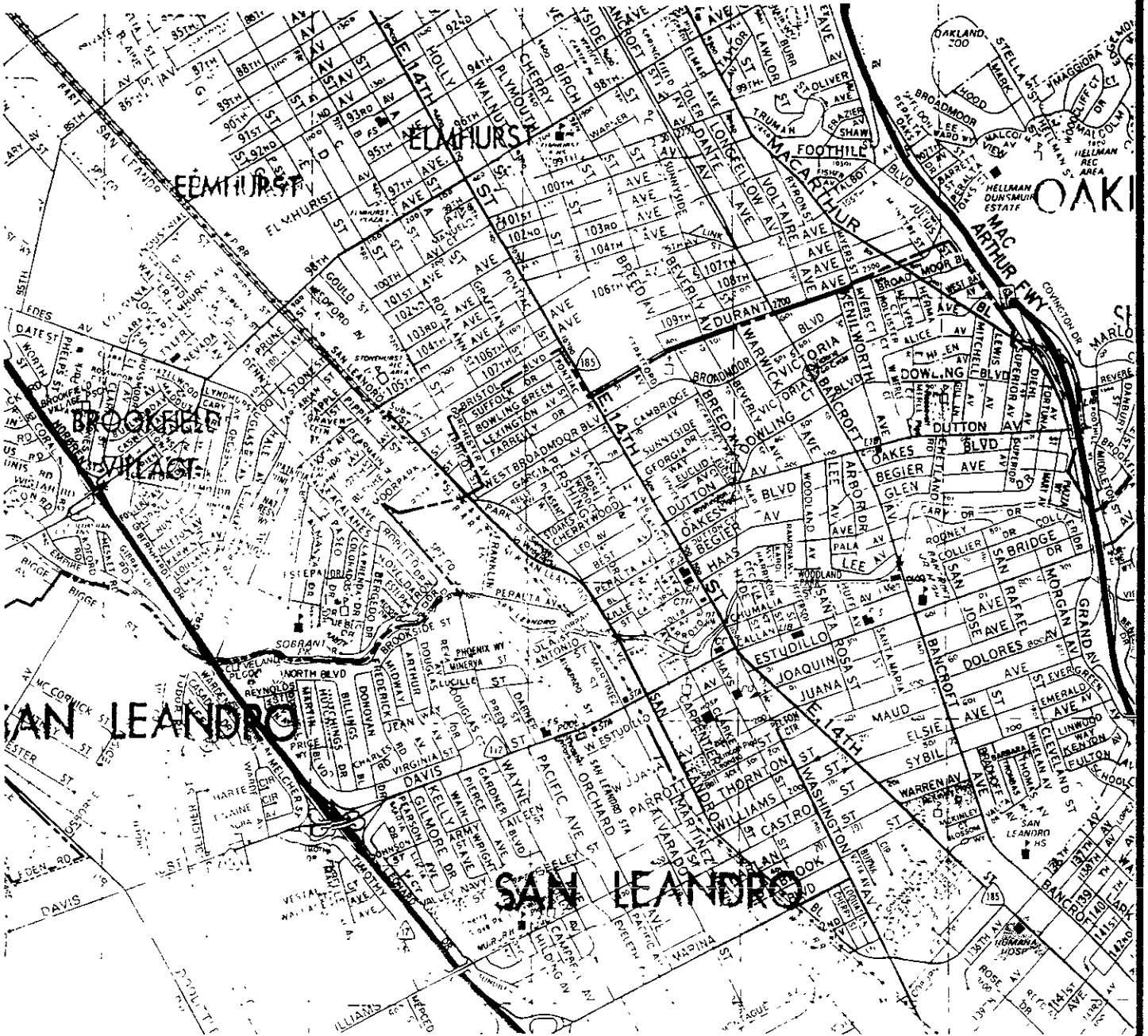
CONTRACTOR AND SUB-CONTRACTOR AGREEMENTS

1. Contractor certifies that the following personnel to be employed on the subject project have met the following requirements of the OSHA Hazardous Waste Operator Standard (29 CFR 1910.120) and other applicable OSHA standards.

2. Contractor certifies that in addition to meeting OSHA requirements, it has received a copy of this site Health & Safety Plan and will ensure that its employees are informed and will comply with both OSHA requirements and the guidelines in this site Health & Safety Plan.

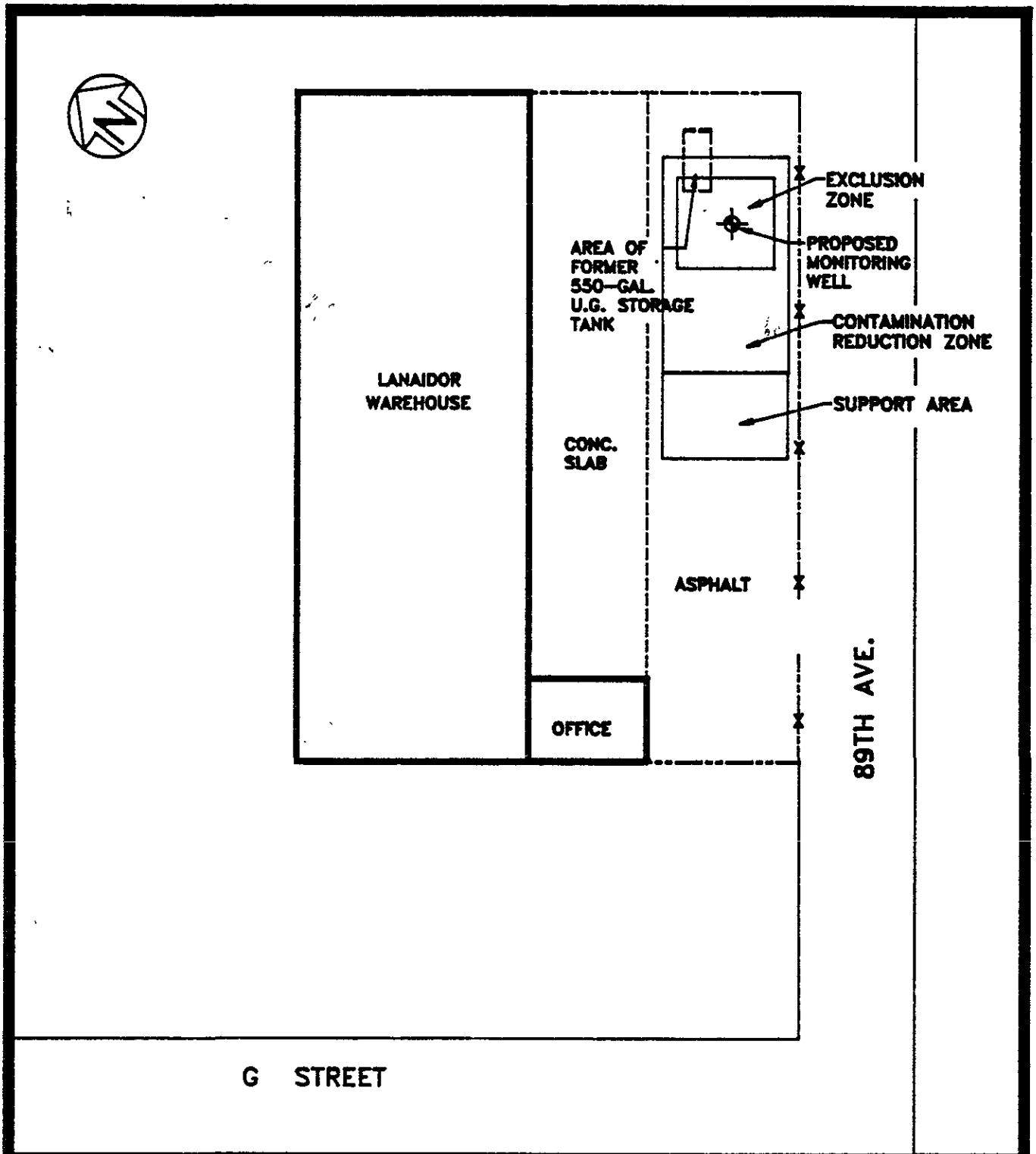
3. Contractor further certifies that it has read and understands and will comply with all provisions of this Health & Safety Plan and will not hold Blymyer Engineers, Inc. responsible or liable for any injury or health problems that may arise.

Contractor Personnel	Training/Certification Medical Examination	Signature	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



SOURCE: THOMAS BROS. MAPS "ALAMEDA/CONTRA COSTA COUNTIES", 1985 ED.

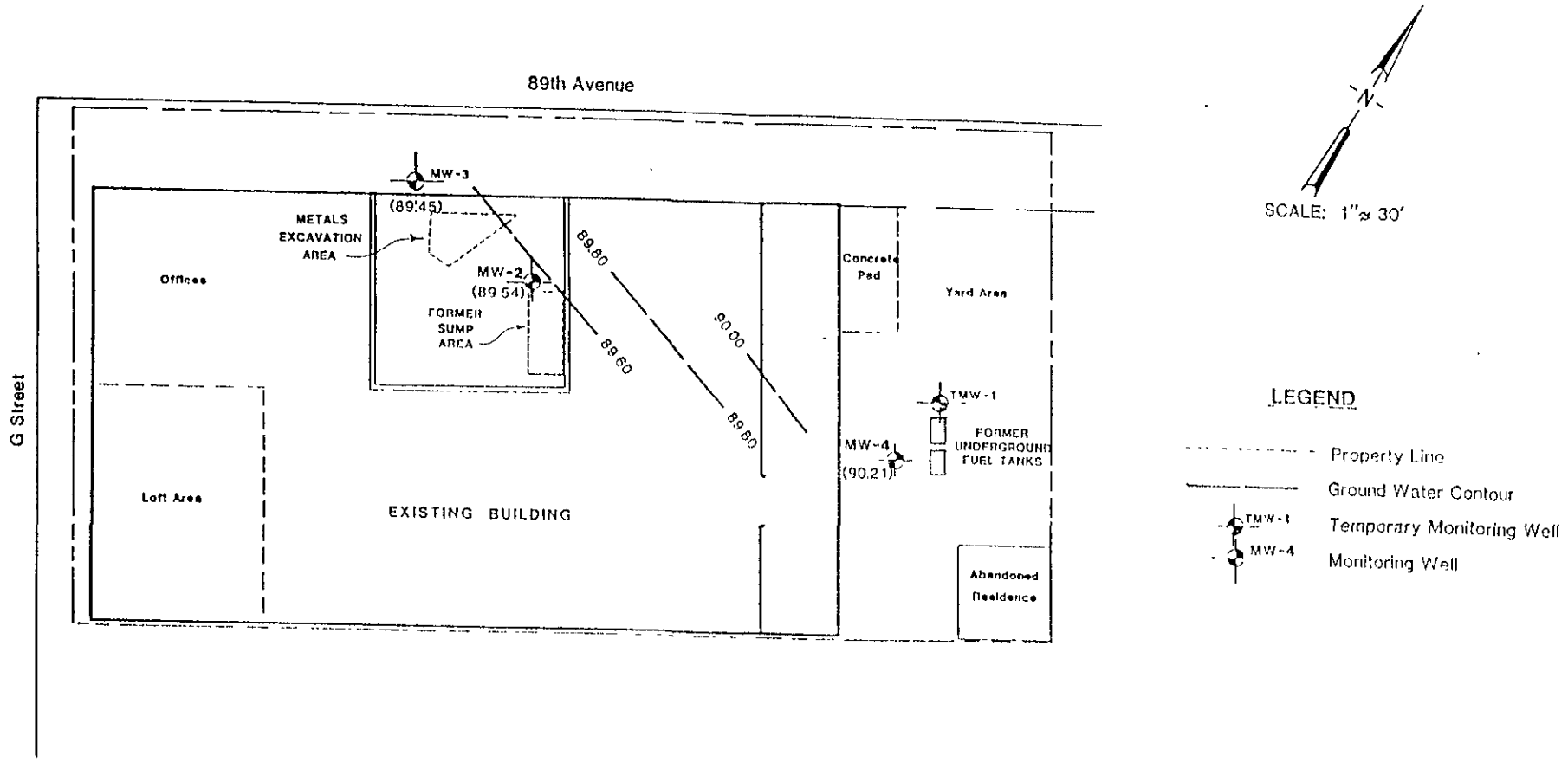
BLYMYER ENGINEERS, INC. (BEI)	0 1100 2200 SCALE IN FEET	N	**HEALTH AND SAFETY PLAN** **HOSPITAL LOCATION** LANAIDOR, INC. HUMANA HOSPITAL	FIGURE 1
BEI JOB NO. 91175	DATE 12/12/91			



BLYMYER ENGINEERS, INC. (BEI)	LEGEND	PROJECT	FIGURE
		LANAIDOR, INC. OAKLAND, CA	
BEI JOB NO. 91175 / DATE 12/1	NOT TO SCALE	HEALTH AND SAFETY PLAN WORK ZONES	1

Appendix D

STATE OF CALIFORNIA
EDMUND G. BROWN, GOVERNOR
HARVEY O. BANKS, DIRECTOR OF WATER RESOURCES



REF. DATUM = TOP OF CASING MW-3 = 100'

TERRATECH

SAN JOSE BLUEPRINT CO

SITE PLAN

GROUND WATER GRADIENT 8-30-89

BARRETT'S METAL FINISHING

910 89th Avenue

Oakland, California

FIGURE 1

PROJECT 4368/1

25/3W 22C4

EXPLORATION DRILL HOLE LOG

HOLE No. MW-4

PROJECT BARRETT'S FUEL TANK | DATE 8/11/89 | LOGGED BY BMK

DRILL RIG CME 55 - Hollow Stem | HOLE DIA. 8" | SAMPLER X = Modified Calif.

GROUNDWATER DEPTH INITIAL 17' | FINAL 14' | HOLE ELEV. ——

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	TORVANE (tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
SILT W/SAND; brown, dry, stiff; fine grained; odorless.	ML	1–5											
CLAY; dark brown, damp, stiff; trace fine sand; odorless.	CI	6–7	X	15									
SILT W/SAND; brown, dry, stiff; fine grained; odorless.	ML	8–10											
LEAN CLAY W/SAND; brown, damp, stiff; fine to medium sand; odorless.	CL	11–12	X										
CLAY; gray w/mottled brown, moist to very moist, stiff; odorless.		13–16	X				▼						
POORLY GRADED SAND; wet; odorless.	SP	17					▽						
CLAY; gray w/mottled brown, moist to very moist, stiff; odorless.	CI	18–19											
POORLY GRADED SAND; wet; odorless.	SP	20											

Lic # C57-500139

EXPLORATION DRILL HOLE LOG

HOLE No. MW-4

PROJECT BARRETT'S FUEL TANK DATE 8/11/89 LOGGED BY BMK

DRILL RIG CME 55 - Hollow Stem HOLE DIA 8" SAMPLER X = Modified Calif.

GROUNDWATER DEPTH INITIAL 17' FINAL 14' HOLE ELEV ---

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	TORVANE (tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
FAT CLAY; blue-gray, very moist w/wet pockets, stiff; odorless.		21	X	10									
POORLY GRADED SAND; brown, wet		22											
FAT CLAY; blue-gray, very moist w/wet pockets, stiff; odorless.		23											
		24											
		25											
BOTTOM OF HOLE @ 25' Monitoring Well Constructed		26											
		27											
		28											
		29											
		30											
		31											
		32											
		33											
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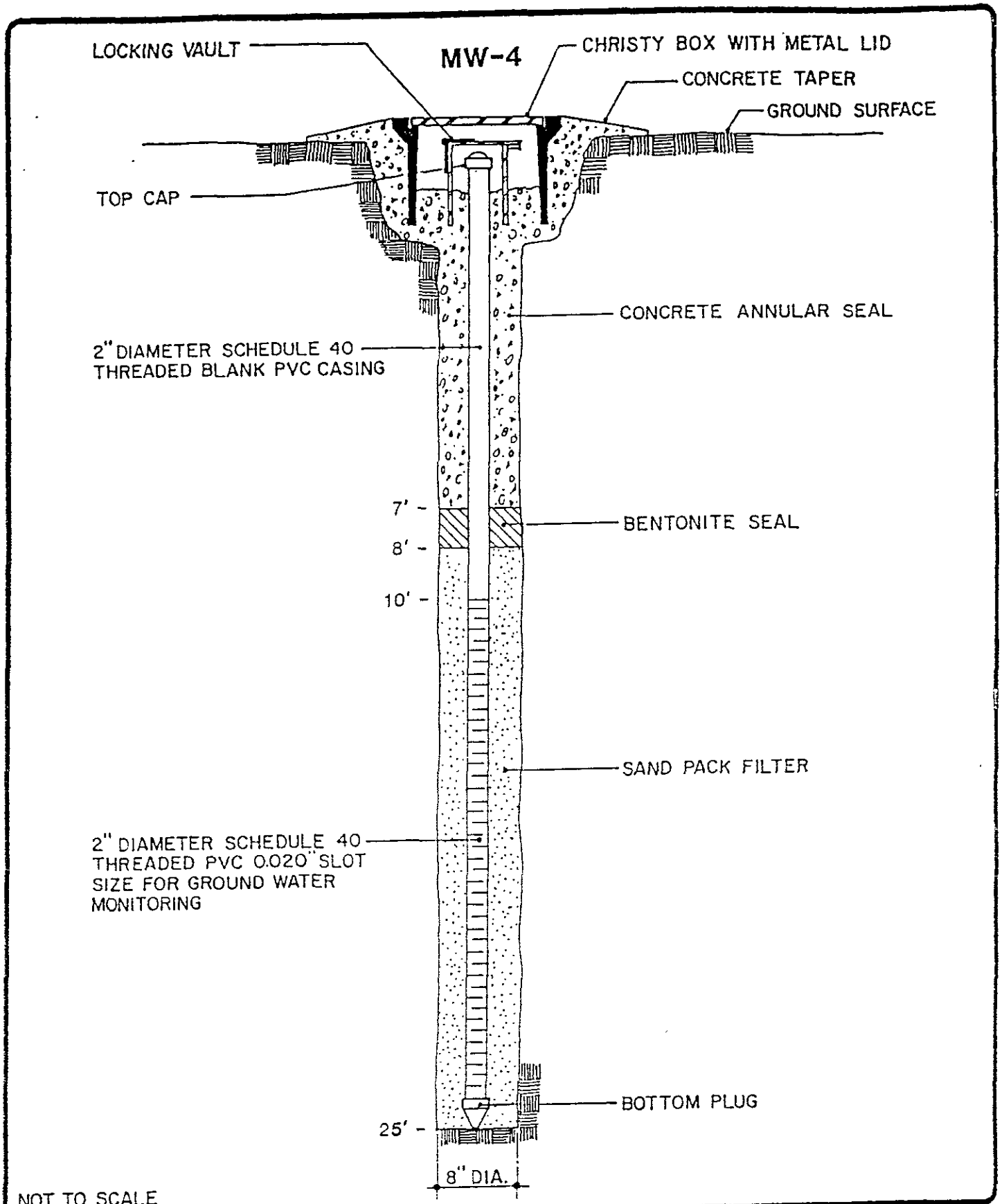
		40											



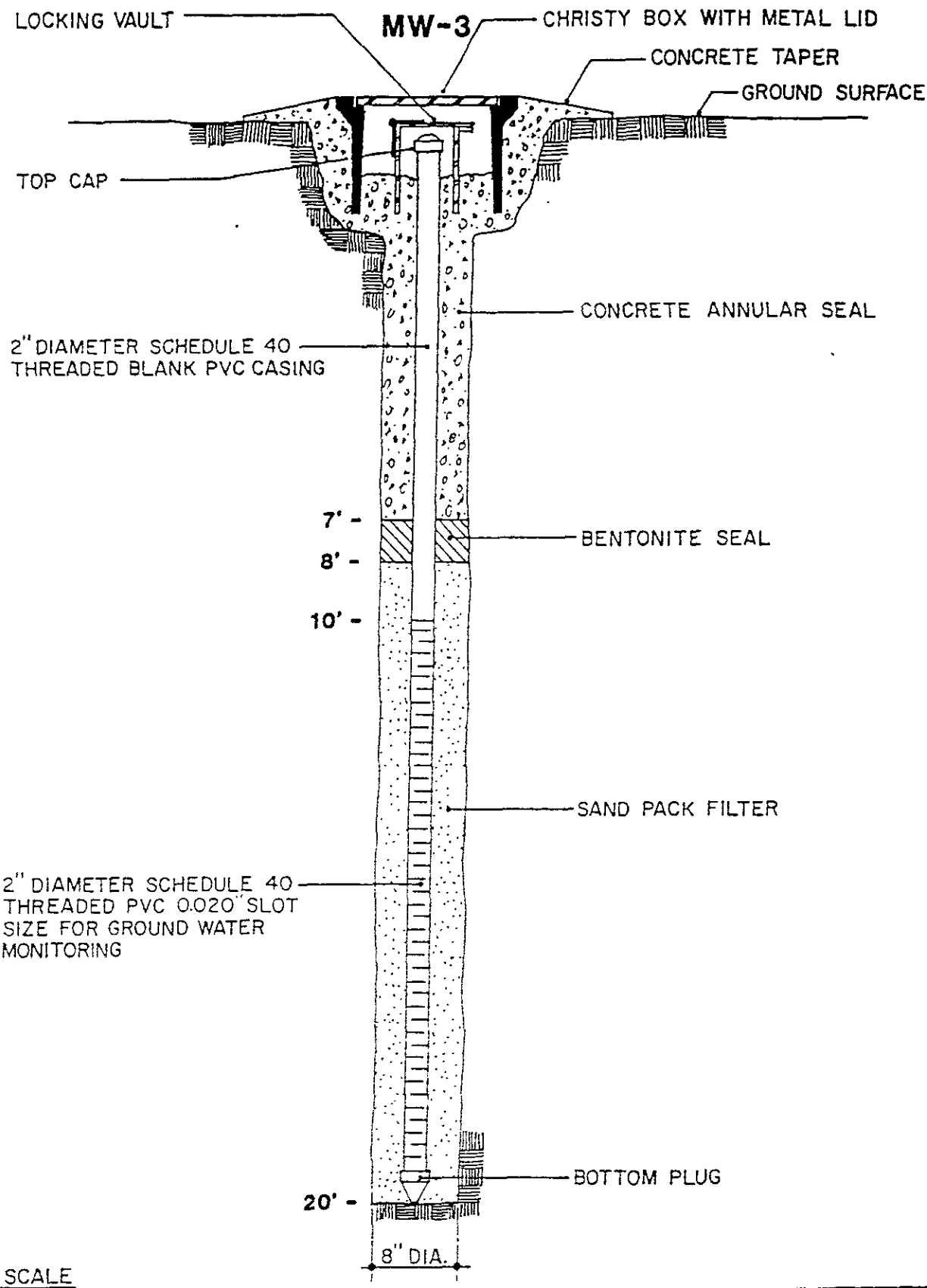
TERRATECH

AS-BUILT WELL DIAGRAM

BARRETT'S METAL FINISHING
OAKLAND, CALIFORNIA

FIGURE 2

PROJECT 4368/1



NOT TO SCALE

TERRATECH

AS-BUILT WELL DIAGRAM

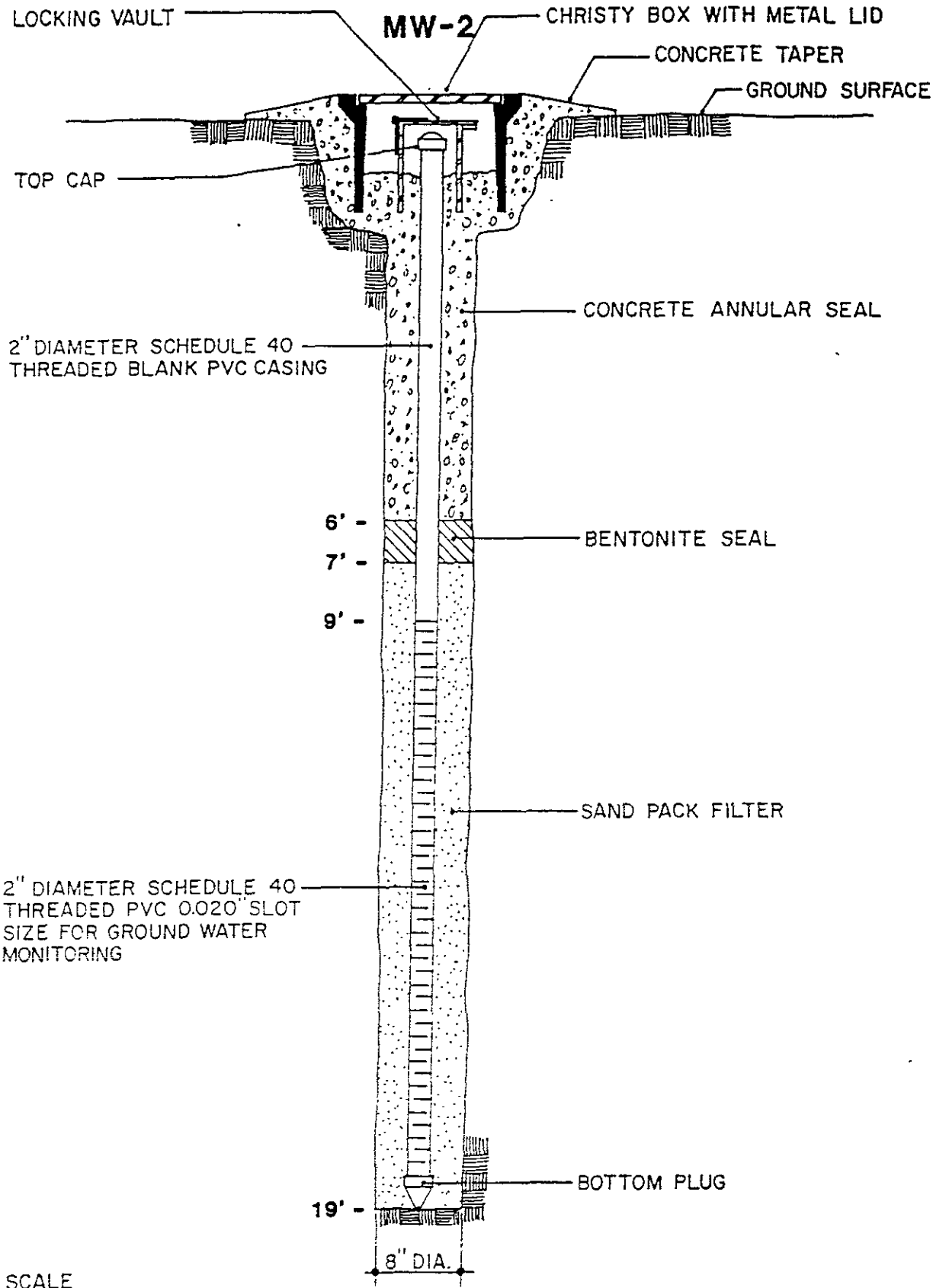
BARRETT'S METAL FINISHING

OAKLAND, CALIFORNIA

FIGURE 3

PROJECT 4368/1

22C2



NOT TO SCALE

TERRATECH

AS-BUILT WELL DIAGRAM

BARRETT'S METAL FINISHING
OAKLAND, CALIFORNIA

FIGURE 2

PROJECT 4368/1

EXPLORATION DRILL HOLE LOG

HOLE No. MW-3

PROJECT BARRETT'S METAL FINISHING | DATE 12/19/88 | LOGGED BY BMK

DRILL RIG SKID RIG - Continuous Flight Auger | HOLE DIA 6" | SAMPLER Modified Calif.

GROUNDWATER DEPTH INITIAL 13' | FINAL 9'8" | HOLE ELEV. —

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	TORVANE (tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
FILL: SILT W/SAND; brown, damp, stiff; fine-ground; odorless.		1											
SILTY SAND; brown, dry, loose; odorless; fine-ground.	SM	2											
		3											
		4											
		5											
		6											
		7											
		8											
		9											
FAT CLAY; brown, moist, stiff; odorless.	CH	10											
		11											
		12											
CLAY W/SAND; gray/mottled brown; moist, stiff; trace fine sand; odorless.	CL	13					▽						
		14											
		15											
		16											
		17											
		18											
		19											
		20											

BORING TERMINATED AT 20'

EXPLORATION DRILL HOLE LOG

HOLE No. MW-2

PROJECT: BARRETT'S METAL FINISHING | DATE: 12/19/88 | LOGGED BY: BMK

DRILL RIG: SKID RIG - Continuous Flight Auger | HOLE DIA.: 6" | SAMPLER: Modified Calif.

GROUNDWATER DEPTH INITIAL: 13' | FINAL: 9'8" | HOLE ELEV.: —

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf) / TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
CONCRETE SLAB FILL - SILT W/SAND; brown, damp, firm; fine grained, odorless.	ML	1									
SILTY SAND; brown, damp-moist, loose; fine-grained, odorless.	SM	2 3 5 6 7 8									
CLAY; black, moist, stiff, trace silt; odorless.	CI	9 10 11 12									
CLAY; gray w/mottled brown, moist stiff; odorless.	CI	13 14 15 16 17 18 19 20									

BORING TERMINATED AT 20'

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94566 • (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

1) LOCATION OF PROJECT Barrett's Metal Finishing
910 89th Avenue
Oakland, CA

2) CLIENT
Name Barrett's Metal Finishing
Address 910 89th Ave. Phone 569-6539
City Oakland Zip 94621

3) APPLICANT
Name Terratech, Inc
Address 1365 Vander Way Phone (408) 297-6964
City San Jose Zip 95112

4) DESCRIPTION OF PROJECT
Water Well Construction X Geotechnical ___
Cathodic Protection ___ Well Destruction ___

5) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring X Other ___

6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

WELL PROJECTS
Drill Hole Diameter 8 in. Depth 20 ft.
Casing Diameter 2 in. Number MW-3
Surface Seal Depth 10 ft.
Driller's License No. 484203

GEOTECHNICAL PROJECTS
Number ___
Diameter ___ in. Maximum Depth ___ ft.

ESTIMATED STARTING DATE 12/13/88
ESTIMATED COMPLETION DATE 12/14/88

7) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 12/5/88

FOR OFFICE USE

PERMIT NUMBER 88610
LOCATION NUMBER ___

Approved [signature] Date 8 Dec 88
Todd N. Wendler

PERMIT CONDITIONS

Circled Permit Requirements Apply

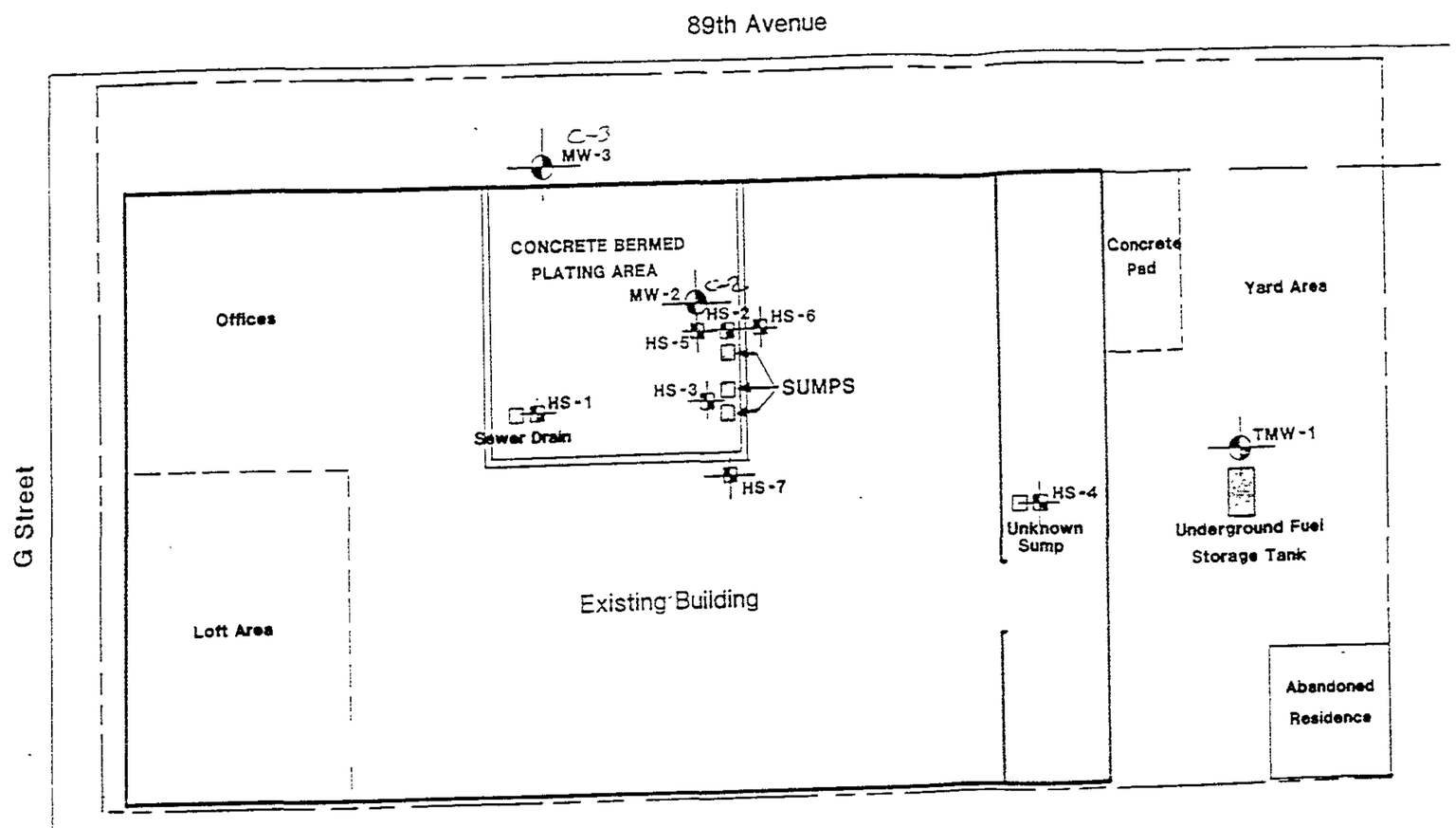
(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Notify this office (484-2600) at least one day prior to starting work on permitted work and before placing well seals.
3. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed.
4. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie, or equivalent.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie, or equivalent.

E. WELL DESTRUCTION. See attached.



SCALE: 1" = 28'

LEGEND

- Property Line
- HS-7 Hand Sample
- TMW-1 Temporary Monitoring Well
- MW-3 Monitoring Well

JANUARY 1989

TERRATECH

SITE PLAN

BARRETT'S METAL FINISHING
910 89th Avenue
Oakland, California

FIGURE 1
PROJECT 4368/1

Noted E. P. SO. FEB 20 1992

R0554

GW DP = 10.3'

BLYMYER
ENGINEERS, INC.

February 14, 1992
BEI Job No. 91175

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Subject: Work Plan for an Initial Subsurface Investigation
Lanaidor, Inc.
925 89th Avenue
Oakland, California

Dear Mr. Chan:

As I informed you in our telephone conversation today, the groundwater gradient shown on the Figure in Blymyer Engineers letter of February 6, 1992 for the subject site is incorrect. The correct groundwater gradient is shown on the attached Figure 1.

The groundwater gradient was determined by measuring the depth to groundwater in the three monitoring wells located at 910 89th Avenue, which is across the street form the subject site. The current groundwater gradient is 0.03 in a N 23° W direction. Those measurements, along with the top-of-casing (TOC) elevations surveyed by Terratech, and the computed groundwater elevations are presented in Table I. This gradient is almost 180° different than the gradient measured by Terratech at this site in August 1989.

Table I. Groundwater Data
January 28, 1992, 910 89th Avenue, Oakland, California

Well I.D. #	TOC Elevation (assumed datum) (feet)	Depth to Groundwater (feet)	Computed Groundwater Elevation (feet)
MW-2	100.72	11.20	89.52
MW-3	100.00 (assumed)	11.00	89.00
MW-4	100.69	10.34	90.35

(510) 521-3773 • 1829 Clement Avenue, Alameda, California 94501-1395 • FAX (510) 865-2594

been impacted. This issue should be addressed in the Final Report described in Task 5 of the workplan. Please include a site map in the final report, as I have no information at what depth the original samples were taken, or the size of the stockpile soils.

If you have any questions, please call me at 415/271-4320.

Sincerely,

Cynthia Chapman

Cynthia Chapman
Hazardous Materials Specialist

c: Steven LuQuire, RWQCB
Bill Raymond, Lanaidor
Tom Ramsey, Fuel Oil Polishing

Please note that Terratech's measurements were made in August and the current gradient was computed with measurements taken in January. The topographic map of the vicinity shows a buried stream channel just west of the site. Both of these factors may affect the local groundwater gradient.

Blymyer Engineers has arranged to measure the depths to groundwater in the three wells at 910 89th Avenue again to confirm the current gradient. Another measurement will be taken in March, prior to the initiation of field work at the site. During well installation Blymyer Engineers will survey the top-of-casing elevations of the wells at 910 89th Avenue to further clarify the local groundwater gradient calculations.

The ultimate goal of determining the local groundwater gradient is to locate the well at Lanaidor downgradient of the former tank emplacement to provide information that will lead to closure of this site. As you pointed out, if there is a question as to the downgradient direction at the site, or if the gradient varies seasonally, three on-site wells may be necessary to assure that sufficient downgradient groundwater information is collected to allow a decision on closure of the site to be made.

If you have any questions about the information presented, or any aspect of this project, please do not hesitate to call me at (510) 521 - 3773.

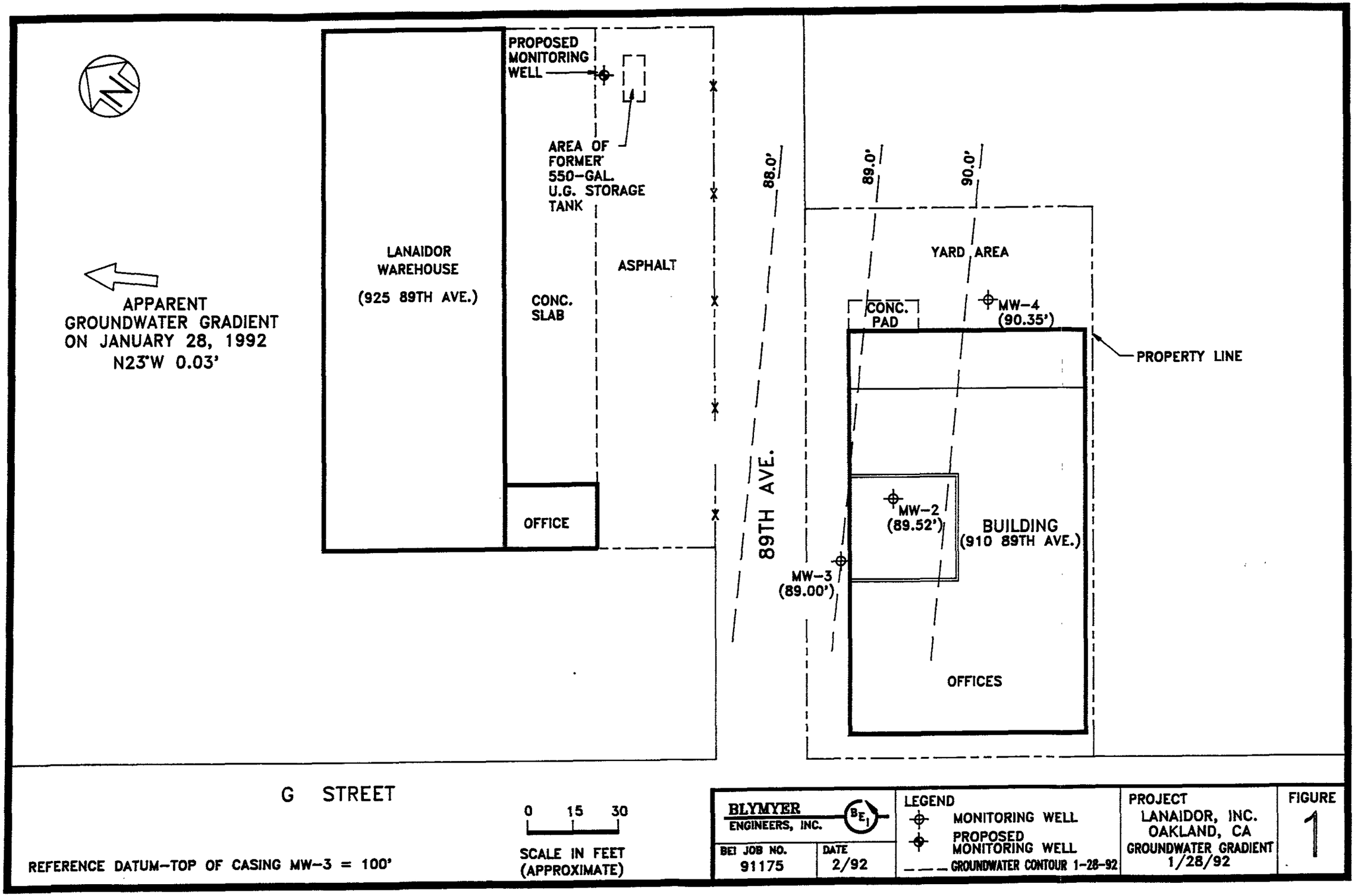
Cordially,

Blymyer Engineers, Inc.

Craig Drizin
Environmental Engineer

cc: Lester Feldman, San Francisco Bay Regional Water Quality Control Board
William Raymond, Lanaidor, Inc.

\cdrizin\91175\BC4



BLYMYER ENGINEERS, INC.

BEI JOB NO.	DATE
91175	2/92

LEGEND
- MONITORING WELL
- PROPOSED MONITORING WELL
- GROUNDWATER CONTOUR 1-28-92

PROJECT
LANAIDOR, INC.
OAKLAND, CA
GROUNDWATER GRADIENT
1/28/92

FIGURE
1

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RAFAT A. SHAHID, Assistant Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

Noted E. P. SO. FEB 20 1992

February 11, 1992

Mr. Bill Raymond
925- 89th Ave.
Oakland CA 94621

Re: Comment on Work Plan for an Initial Subsurface Investigation at Lanaidor, Inc., 925- 89th Ave., Oakland 94621

Dear Mr. Raymond:

Our division has reviewed the work plan for initial subsurface investigation at the above referenced site. As you are aware, this investigation was requested after soil samples from the gasoline tank removal indicated a release of gasoline of 220 ppm (parts per million). To a large extent overexcavation has removed most of the petroleum hydrocarbon conatamination with the exception of the west wall of the pit which had residual benzene and xylenes at 0.018ppm and 0.011ppm respectively.

The work plan proposes the installation of one monitoring well in the downgradient location within 10 feet to the former tank pit. Monitoring well data from the property across the street, 910 89th Ave., was used to establish the expected gradient. Please be advised that this proposal is acceptable under the following conditions:

1. The monitoring well boring logs of 910 89th Ave. are made available to our agency. The subsurface soils, groundwater depth, slit width and perforation depth interval must be similar to the well proposed for you to use the ground water elevation data.

2. You must continue to take ground water elevation measurements on the offsite wells as well as on the proposed well until which time this agency agrees that gradient data is reliable and consistent.

3. You should monitor the well for total petroleum hydrocarbons as gasoline & BTEX (benzene,toluene,ethylbenzene and xylenes). The proposal to analyze the soil samples by Methods 413.1 and 418.1 is acceptable and may influence your future ground water sampling requirements.
You may contact me at (510) 271-4320 should you have any questions.

Sincerely,

Barney M. Chan, Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office
C. Drizin, Blymyer Engineers, Inc
E. So, RWQCB 925-89thWP

BLYMYER ENGINEERS, INC.

February 6, 1992
BEI Job No. 91175

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Subject: Work Plan for an Initial Subsurface Investigation
Lanaidor, Inc.
925 89th Avenue
Oakland, California

Dear Mr. Chan:

On December 23, 1991, we discussed the information you considered necessary to establish the groundwater gradient at the subject site. On that occasion you indicated that the single measurement of the gradient at the facility across 89th Avenue (910 89th Avenue), conducted by Terratech in August 1989, was not sufficient to establish the local groundwater gradient. Details of this measurement were presented in Blymyer Engineers, Inc. Work Plan for an Initial Subsurface Investigation - Lanaidor, Inc., dated December 16, 1991.

Determining the local groundwater gradient is necessary before you will approve the installation of a single bore/groundwater monitoring well to define the extent of subsurface petroleum hydrocarbon contamination and determine if groundwater at the subject site is impacted by petroleum hydrocarbons.

In that conversation you also indicated that you will approve the installation of a single bore/groundwater monitoring well at the subject site if the local groundwater gradient can be confirmed by additional measurements. The alternatives for obtaining the additional measurements are:

- additional documented measurements of groundwater depth in the three wells at 910 89th Avenue either in existing reports or by a current round of measurements by Blymyer Engineers, or
- installing piezometers at the Lanaidor site to determine the groundwater gradient.

(510) 521-3773 • 1829 Clement Avenue, Alameda, California 94501-1395 • FAX (510) 865-2594

On January 28, 1992, the owners of 910 89th Avenue allowed a representative of Blymyer Engineers to measure the depth to groundwater in the three monitoring wells at their facility. Those measurements, along with the top-of-casing (TOC) elevations surveyed by Terratech, and the computed groundwater elevations are presented in Table I.

Table I. Groundwater Data
January 28, 1992, 910 89th Avenue, Oakland, California

Well I.D. #	TOC Elevation (assumed datum) (feet)	Depth to Groundwater (feet)	Computed Groundwater Elevation (feet)
MW-2	100.72	11.20	89.52
MW-3	100.00 (assumed)	11.00	89.00
MW-4	100.69	10.34	90.35

Using this data, groundwater contours for the area have been plotted on the attached Figure. If you compare this Figure with Figure 2 of the previously submitted Work Plan you will see that the groundwater flow direction is almost identical to that measured by Terratech in August 1989. The groundwater gradient computed from this data is 0.05 feet/foot in the direction shown on the attached Figure (approximately due south).

Blymyer Engineers believes that the information presented confirms the local groundwater gradient at the Lanaidor Inc. site. Blymyer Engineers request that you approve the proposed Work Plan for the Lanaidor site, which specifies the installation of a single downgradient soil bore/monitoring well to define the extent of subsurface petroleum hydrocarbon contamination and determine if groundwater at the subject site is impacted by petroleum hydrocarbons.

If you have any questions about the information presented, or any aspect of this project please do not hesitate to call me at (510) 521 - 3773.

Cordially,

Blymyer Engineers, Inc.

Craig Drizin
Environmental Engineer

cc: Lester Feldman, San Francisco Bay Regional Water Quality Control Board
William Raymond, Lanaidor, Inc.

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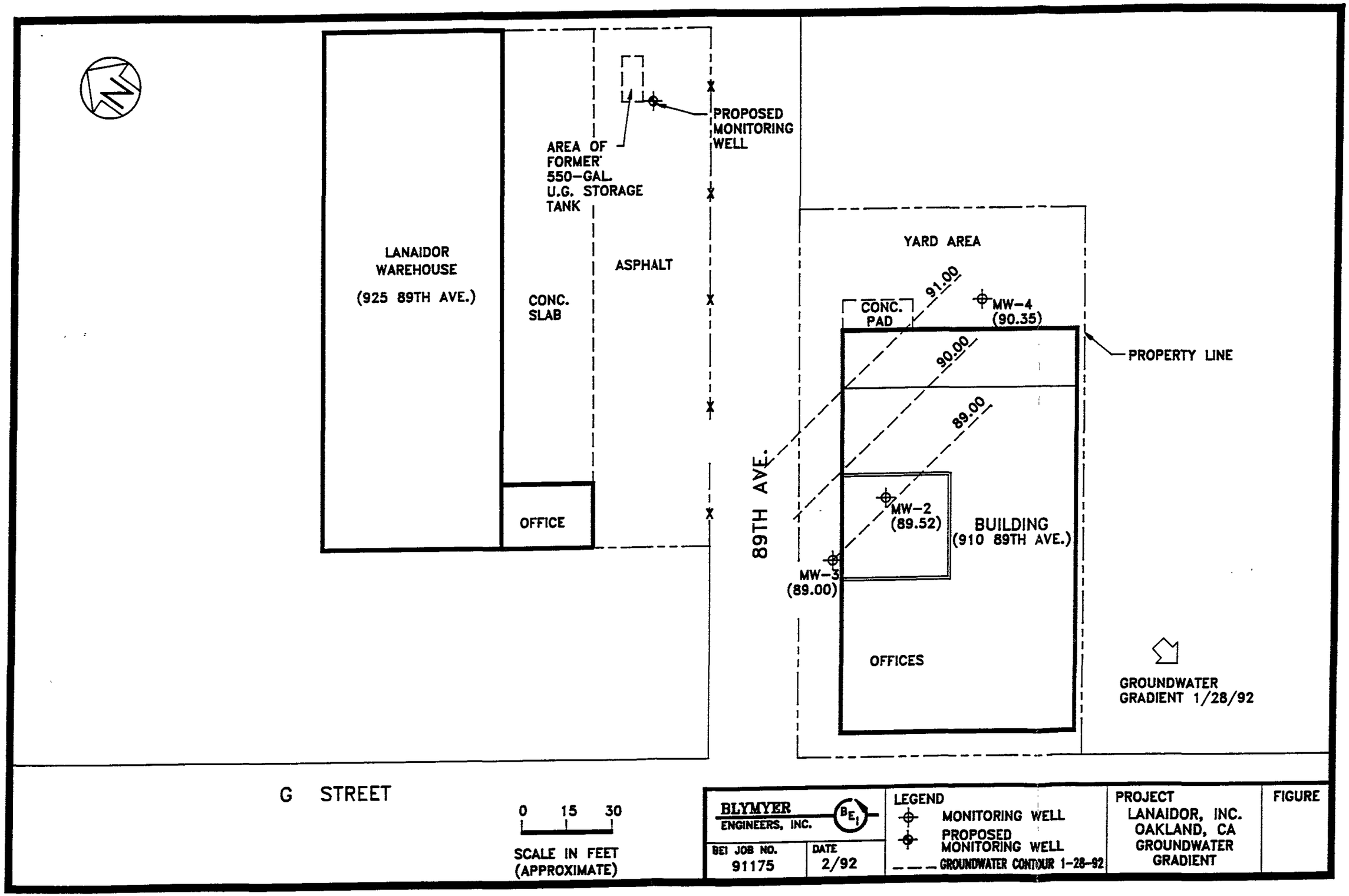
LANAIDOR
WAREHOUSE
(925 89TH AVE.)
CONC.
SLAB
ASPHALT
AREA OF
FORMER
550-GAL.
U.G. STORAGE
TANK
PROPOSED
MONITORING
WELL
OFFICE
YARD AREA
CONC.
PAD
91.00
MW-4
(90.35)
PROPERTY LINE
90.00
89.00
89TH AVE.
MW-2
(89.52)
BUILDING
(910 89TH AVE.)
MW-3
(89.00)
OFFICES
GROUNDWATER
GRADIENT 1/28/92
G STREET
0 15 30
SCALE IN FEET
(APPROXIMATE)
BLYMYER
ENGINEERS, INC.
BEI JOB NO.
91175
DATE
2/92
LEGEND
MONITORING WELL
PROPOSED
MONITORING WELL
GROUNDWATER CONTOUR 1-28-92
PROJECT
LANAIDOR, INC.
OAKLAND, CA
GROUNDWATER
GRADIENT
FIGURE

Noted E. P. SO. DEC 27 1991

BLYMYER ENGINEERS, INC. BEI

December 23, 1991
BEI Job No. 91175

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Subject: Work Plan for a Subsurface Investigation
Lanaidor, Inc.
925 89th Avenue
Oakland, California

Dear Mr. Chan:

Confirming our conversation regarding the establishment of the groundwater gradient at the subject site, you have indicated that the single measurement of the gradient at 910 89th Avenue is not sufficient to establish the local groundwater gradient. Hence, you will not approve the installation of a single bore/groundwater monitoring well at the subject site.

As we discussed, you will approve the installation of a single bore/groundwater monitoring well at the subject site if the local groundwater gradient can be confirmed by additional measurements. The alternatives for obtaining the additional measurements are:

- additional documented measurements of groundwater depth in the three wells at 910 89th Avenue either in existing reports or by a current round of measurements by Blymyer Engineers, or

- installing piezometers at the Lanaidor site to determine the groundwater gradient.

My notes indicate that the next closest site with information on groundwater depth is located at 8717 G Street. Only one groundwater well has been installed at this site.

(510) 521-3773 • 1829 Clement Avenue, Alameda, California 94501-1395 • FAX (510) 865-2594

If you have any questions about this project please do not hesitate to call me at (510) 521 - 3773.

Cordially,

Blymyer Engineers, Inc.

Craig Drizin
Environmental Engineer

cc: Lester Feldman, Regional Water Quality Control Board
William Raymond, Lanaidor, Inc.

\cdrizin\91175\BC2

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

Noted E. P. SO. ES AUG 6 1991

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

01

July 31, 1991

Mr. Bill Raymond
925 - 89th Avenue
Oakland, CA 94621

MXSL=330 ppm

Subject: Initial Soil and Groundwater Investigation at Lanaidor, 925 - 89th Avenue, Oakland, CA

Dear Mr. Raymond:

We have received and reviewed the Clayton Environmental reports of September 19, 1990, and January 30, 1991. These reports document the soil sampling activities that have occurred at the above referenced site. A 550 gallon underground fuel tank was removed from this facility on August 14, 1990. Soil samples taken from the tank pit at the time of the removal had values of 220 ppm total petroleum hydrocarbons as gasoline (TPH-g) and 48 ppm TPH-g. Further excavation was done on November 16, 1990. Four confirmation samples from the sidewalls at a depth of 10 to ~~10.5 feet~~ had total recoverable hydrocarbon values ranging from 20 to 330 ppm.

The next step in this process is to submit a work plan that describes an investigation to determine the lateral and vertical extent of any soil contamination and determine if groundwater has been impacted. This investigative work is to be done by a professional company knowledgeable in conducting underground tank investigations in California. The firm should be familiar with the following documents:

- Leaking Underground Fuel Tank Manual (more commonly known as the LUFT Manual), published by the State Water Resources Control Board; and
- Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites prepared by the North Coast, San Francisco Bay, and Central Valley Regional Water Quality Control Boards, dated August 10, 1990. This supplements the LUFT Manual.

All work and reports which require geologic or engineering expertise must be performed under the direction of an appropriately registered or certified professional. Examples of activities that require this expertise include borehole and monitoring well installation and logging, and impact assessments. The initial work plan is to include a site health and safety plan.

This workplan is to be submitted to our office within 45 days of the date of this letter. The workplan should address the items listed on the following pages.

Site History and Description

This shall include historic site use and ownership information, a description of past activities at the site, and history of the types and locations of any hazardous materials used on site. The date of the tank installation should be provided, and a description of the tank removal activities are to be included in the report. Include a site map and a description of the hydrogeologic setting of the site.

Determination of the vertical and lateral extent of soil contamination.

This shall describe the method(s) that will be used to investigate the extent of contamination.

Sampling is to follow the appropriate guidelines. Borings and wells are to be permitted through Alameda County Flood Control and Water Conservation District, Zone 7. Sample analyses are to be performed by a California certified laboratory. The samples are to be analyzed for the appropriate constituents as outlined in the Tri-Regional Recommendations.

Determination of Ground Water Quality.

Ground water quality must be characterized. To determine groundwater gradient, a minimum of three monitoring wells must be installed. One monitoring well must be installed within 10 feet of the tank in the down-gradient direction. If the verified down-gradient location has been established, then one monitoring well is to be installed; however, complete gradient data must be submitted for review and approval.

Monitoring wells shall be designed and constructed to be consistent with the RWQCB guidelines and to permit entrance of any free product into the wells. The well screen must be situated to intercept any floating product from both the highest and lowest ground water levels. All wells shall be surveyed to mean sea level to an established benchmark to 0.01 foot.

Water level and free product thickness measurements shall be made in all wells before sampling is begun. The wells must be sampled for dissolved nd floating constituents. Sample monitoring wells monthly for the first three consecutive months. Free product thicknesses and water levels shall be measured in all wells for each sampling event before any purging or sampling activities are begun.

A ground water gradient map shall be developed for every water level data set. If the gradient fluctuates, water level measurements must continue to be made monthly until a gradient pattern is established. Fluctuations in ground water levels due to tidal action must also be documented. After three

consecutive months of sampling, we may consider reducing the sampling frequency to every quarter for a minimum of one year, even if no contamination is identified. Water level contour maps showing ground water gradient direction, and free and dissolved product plume definition maps of each contaminant constituent should be prepared routinely and submitted with other sampling results in a technical report.

Reporting

A technical report must be submitted within 45 days of the completion of the investigation that presents and interprets the information generated during the initial subsurface site investigation. At a minimum, the report must include the following items:

* site history information;
* boring and well construction logs;
* records of field observations and data;
* chain-of-custody forms;
* water level data;
* water level contour map showing ground water gradient direction;
* contaminant plume maps;
* tabulations of soil and ground water contaminant concentrations;
* status of soil contamination characterization;
* description of any remedial work performed;
* laboratory-originated analytical results for all soil and ground water samples collected;
* copies of TSDF to Generator manifests for any hazardous wastes hauled off site; and
* any recommendations for additional investigative or remedial work.

The technical report should be submitted with a cover letter from Lanaidor and received in this office by the established due date. The letter must be signed by a principal executive officer or by an authorized representative of that person.

You should be aware that this Division is working in conjunction with the RWQCB and that this is a formal request for technical reports pursuant to California Water Code Section 13267 (b). All proposals, reports and analytical results pertaining to this investigation and remediation must be sent to our office and to:

Lester Feldman
RWQCB
2101 Webster Street, 5th Floor
Oakland, California 94612
(415) 464-1255

Any extensions of agreed-upon time deadlines must be confirmed in writing by either this Division or the RWQCB.

You also need to get information from the contractor who pulled the tank. This information should include a copy of the destruction certificate for the underground storage tank, manifests for any rinsate or other liquid in a tank, and a description of where the excavated soils were disposed.

To cover our costs for remediation oversight, please submit a check, payable to Alameda County, for $670.00. Please reference Account Number 1047A.

Should you have any questions concerning this letter, please contact me at (415) 271-4320.

Sincerely,

Cynthia Chapman

Cynthia Chapman
Hazardous Materials Specialist

c: Lester Feldman, RWQCB

lanaidor

cb

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

New

November 2, 1990

Mr. Richard Silva
Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, CA 94566

Dear Mr. Silva:

Lanaidor

The Alameda County Hazardous Materials Division has reviewed the proposed workplan for Lanaidor, 925 - 89th Avenue, Oakland. This workplan describes the analyses from removal of a 550-gallon underground storage tank. The two samples taken from the excavated pit area indicated TPH-gasoline levels were at 220 ppm and 48 ppm. Clayton proposes that soils around the tank area be excavated and that confirmation samples be collected. Excavated soils will then be aerated on-site.

Task 4 of the workplan describes aeration and monitoring activities that will occur at the site. The report states that one discrete confirmation soil sample will be taken per 50 cubic yards of aerated soil, and once the level of TPH in the soil reaches 100 ppm, the soil will be disposed of at a Class II facility or backfilled into the excavation.

Please be advised that TPH contaminated soils excavated during a tank removal are NOT to be placed back into the excavation unless the following criteria are met:

1. Discrete sampling is taken per 20 cubic yards of soil.

2. TPH values are less than 10 ppm for each analyzed sample.

The activities performed at this site should be modified to accommodate this requirement.

With the 220 ppm TPH value of sample 1A, it appears that an investigation needs to be performed to determine if groundwater has