

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



RO#979

August 19, 1997

ENVIRONMENTAL HEALTH SERVICES

ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

StID# 4175

Mr. Jack Rubino
c/o Cummings Engine Co. Inc.,
500 Jackson St.,
Columbus, IN 47202

Citicorp Del Leasing
P.O. Box 1007,
Harrison, NY 10528

**Re: Fuel Leak Site Case Closure for the Cummings West
Facility, at 1061Aurora Drive., San Leandro 94577**

To Whom it may concern:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Protection Division is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- o 250 parts per billion (ppb) of diesel, 19 ppb of acetone, and 180 ppb of MEK remain in the ground water in the area of the former underground tanks.
- o If a change in the land use is proposed, then an evaluation of risk from exposure to contaminated soil/groundwater must be made.

If you have any questions, please contact this office at (510) 567-6737.

Brian P. Oliva, REHS, REA,
Hazardous Materials Specialist

enclosure:

1. Case Closure Letter
2. Case Closure Summary

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August 19, 1997

STID #4175

REMEDIAL ACTION COMPLETION CERTIFICATION

Citicorp Del Lease,
P.O. Box 1007,
Harrison, NY 10528

Jack Rubino,
c/o Cummings Engine Co. Inc.,
500 Jackson St.,
Columbus, IN 47202

Subject: Cummings West, 1601 Aurora Drive, San Leandro, CA 94577
Removal of Two (2) 1,000 gallon waste oil, and Five
(5) 12,000 gallon gasoline/diesel underground storage tanks

To Whom it may concern:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank are greatly appreciated.

Based upon the available information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required.

This notice is issued pursuant to a regulation contained in Section 2721(e) of Title 23 of the California Code of Regulations.

Please contact Brian P. Oliva, at (510) 567-6737 if you have any questions regarding this matter.

Sincerely,


Mee Ling Tung
Director of Environmental Health Services

enclosure

c: Chief, Hazardous Materials Division - files
Brian P. Oliva, ACDEH
Kevin Graves, RWQCB
Lori Casias, SWRCB
Cheryl Gordon, State Cleanup Fund
Mike Bakaldin, San Leandro Fire Dept.

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: June 20, 1997

Agency name: **Alameda County-HazMat**
City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **D. Klettke**

Address: **1131 Harbor Bay Pkwy**
Phone: **(510) 567-6700**
Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **Cummins West**

Site facility address: **1601 Aurora Drive, San Leandro, CA 94577**

RB LUSTIS Case No: **N/A**

Local Case No./LOP Case No.: **4175**

URF filing date:

SWEEPS No: **N/A**

Responsible Parties:

Addresses:

Phone Numbers:

Citicorp Del Lease, P. O. Box 1007, Harrison, NY 10528

Jack Rubino, c/o Cummins Engine Company, Inc.

(812)377-3831

500 Jackson Street, Columbus, IN 47202

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	1,000	waste oil	removed	8/14/90
2	1,000	waste oil	removed	8/14/90
3	12,000	diesel	removed	8/14/90
4	12,000	diesel	removed	8/14/90
5	12,000	diesel	removed	8/14/90
6	12,000	gasoline	removed	8/14/90
7	12,000	gasoline	removed	8/14/90

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **unknown**

Site characterization complete? **Yes**

Date approved by oversight agency: **undocumented**

Monitoring Wells installed? **Yes** Number: **3**

Proper screened interval? **Yes, 6-11' bgs**

Highest GW depth below ground surface: **6.72' (MW-2) on 2/25/97**

Lowest depth: **7.34' (MW-3) on 5/2/91**

Flow direction: **generally southwest as per regional flow**

Most sensitive current use: **commercial**

Are drinking water wells affected? **No** Aquifer name: **San Leandro Cone**

Is surface water affected? **Undetermined** Nearest affected SW name: **N/A**

Off-site beneficial use impacts (addresses/locations): **N/A**

Report(s) on file? **Yes** Where is report(s) filed? **Alameda County**
1131 Harbor Bay Pkwy
Alameda, CA 94502

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal w/destination)</u>	<u>Date</u>
Tanks &Piping	(2) 1,000-gallon & (5) 12,000-gallon	disposal/H & H Ship Service S. San Francisco, CA	8/14/90
Soil	250 cubic yards	unknown	unknown
Groundwater	unknown	unknown	unknown

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before¹</u>	<u>After²</u>	<u>Before³</u>	<u>After⁴</u>
TPH (Gas)	<0.5		<50	NA
TPH (Diesel)	350	2500	15,000	250*
TPHmo (Motor oil)	29		370	NA
O&G (oil & grease)	58		NA	NA
Benzene	<0.005	0.71	<0.5	<1
Toluene	<0.005	0.019	<0.5	<3
Ethylbenzene	<0.005	0.019	<0.5	<3
Xylenes	<0.005	6.9	0.74	<3
Heavy metals-See Table 2				
MTBE	NA	NA	NA	<5
Semi-volatiles	NA	ND	NA	NA
Acetone	NA	0.77	NA	19
2-Butanone (MEK)	NA	<0.500	NA	180

ND = Not detected at respective detection limits

NA=Not analyzed

* Heavier hydrocarbons were found in the range of diesel, but do not resemble a diesel fingerprint. Possible motor oil.

"Before" TPHd and O&G sample results were revealed in sample A, collected at a depth of 9' bgs from the east sidewall of the east UST excavation. TPHmo sample results were revealed in sample C, collected at a depth of 8' bgs from the west sidewall of the west UST excavation.

"After" TPHd and BTEX were revealed in final confirmatory soil samples collected from the west excavation, at concentrations of 2500 mg/kg (WT3-25 at 9.1' bgs), 0.71 mg/kg (WT3-20 at 9.6' bgs), 0.019 mg/kg (T3-5 at 9' bgs), 0.019 mg/kg (T3-5 at 9' bgs) and 6.9 mg/kg (WT3-20), respectively (See Table 4).

"Before" TPHd sample results were revealed in the water sample (W-3) collected from the east UST excavation. TPHmo and xylene results were revealed in the water sample (W-4) collected from the west UST excavation.

"After" sample results were revealed in MW-1, on 2/25/97. Initial positive detection of MTBE (20 ug/L), revealed in groundwater sample collected from MW-1 on 8/12/96, was not confirmed with EPA method 8240 analysis.

Comments (Depth of Remediation, etc.):

Two 1,000-gallon underground storage tanks (USTs), which previously held waste oil were removed, from separate excavations (east and west) by Ramcon, on August 14, 1990. In addition, five 12,000-gallon USTs, three of which previously held diesel and two which previously held gasoline, were removed from a common excavation (See Figure 1).

Soil samples collected from the east and west waste oil excavations were analyzed for TPHg, TPHd, TPHmo, BTEX, and O & G. Soil samples collected from the diesel and gasoline UST excavation were analyzed for TPHg, TPHd, TPHmo and BTEX. Analytical results indicate petroleum hydrocarbon-contamination in the east and west sidewalls of the eastern waste oil UST excavation, at maximum concentrations of 350 mg/kg-TPHd, 58 mg/kg-O&G, and 29 mg/kg-TPHmo. Maximum levels of minor TPHmo contamination was revealed in the west sidewall of the west waste oil excavation, at a concentration of 29 mg/kg. TPHg and BTEX were not detected in soil samples from either excavation. Unremarkable concentrations of TPHg, TPHd, TPHmo and BTEX were revealed in soil samples collected from the diesel and gasoline UST excavation (See Table 1)

TABLE 1
CONCENTRATIONS IN PPM (MG/KG)

Sample	benzene	toluene	ethyl benzene	total xylenes	TPHg	TPHd	TPHmo	O&G
1	<0.005	<0.005	<0.005	<0.005	<0.5	<10	12	NA
2	<0.005	<0.005	<0.005	<0.005	<0.5	<10	10	NA
3	<0.005	<0.005	<0.005	<0.005	<0.5	NA	NA	NA
4	<0.005	<0.005	<0.005	<0.005	<0.5	<10	20	NA
5	<0.005	<0.005	<0.005	<0.005	<0.5	NA	NA	NA
A	<0.005	<0.005	<0.005	<0.005	<0.5	350	<30	58
B	<0.005	<0.005	<0.005	<0.005	<0.5	<10	18	<30
C	<0.005	<0.005	<0.005	<0.005	<0.5	<10	29	<30
D	<0.005	<0.005	<0.005	<0.005	<0.5	<10	<10	<30
W-1	<0.0005	0.0022	<0.0005	<0.0005	<0.05	<0.05	<0.05	NA
W-2	<0.0005	<0.0005	<0.0005	0.00051	<0.05	<0.05	<0.05	NA
W-3	<0.0005	<0.0005	<0.0005	0.00069	<0.05	15	<1	NA
W-4	<0.0005	<0.0005	<0.0005	0.00074	<0.05	<0.05	0.37	NA

NA=Not Analyzed

“Grab” groundwater samples (W-1 through W-4) collected from the three separate excavations were analyzed for TPHg, TPHd, TPHmo and BTEX. TPHd and xylenes were detected in sample W-3, at a concentration of 15,000 and 0.69 ug/L, respectively, in the east waste oil excavation. TPHmo and xylenes were detected at

concentrations of 370 and 0.74 ug/l, respectively in the water sample collected from the west waste oil excavation. TPHg and BTE were not detected in "grab" groundwater samples collected from either waste oil excavation. Toluene was detected in "grab" groundwater sample W-1, at a concentration of 2.2 ug/L, from the gasoline and diesel UST excavation (See Table 1).

Based on the analytical data gathered during tank removal, additional over-excavation was performed within the east waste oil excavation on November 29, 1990. No additional soil removal or soil sampling was performed within the west waste oil excavation or the diesel and gasoline excavation. The objective of the additional excavation was to remove concentrations of impacted petroleum hydrocarbons that exceeded 100 mg/kg.

The initial dimensions of the east excavation, approximately 8' by 15' by 8' deep, were extended to final dimensions of 15' by 20' by 9' deep. Approximately 40 cubic yards of soil was removed along the north, east and south sidewalls of the east excavation. Groundwater was pumped continuously from the excavation bottom throughout soil removal operations and was stored in an on-site Baker* tank.

After the additional soil was removed, two soil samples (green silt and EEX-SW) were collected from the east excavation sidewalls. The soil sample "green silt" was collected from discolored soil along the north sidewall at approximately 8 feet bgs, while sample EEX-SW was collected from the east sidewall at an approximate depth of 6 feet bgs. Laboratory results of soil sample "green silt" revealed TPHd, TPHg and BTEX at concentrations of 490, 6.0, 0.010, 0.034, <0.005, 0.020 mg/kg, respectively. In addition, soil samples were analyzed for the metals cadmium chromium, nickel, lead, and zinc (See Table 2). "Grab" groundwater samples (GW-1 and GW-2), collected from both the east and west excavations, respectively, were analyzed for TPHg, TPHd, VOCs (including BTEX) and SVOCs. *Note: The analytical laboratory stated that the constituents detected in groundwater collected from the west excavation, which were characterized as diesel, actually may consist of mineral spirits and motor oil.* Laboratory results of groundwater samples are summarized in Table 2.

Exploratory trenching was performed at both east and west excavations from January 21 through January 24, 1990 by Ramcon, at locations selected by Geomatrix.

East Excavation

Three trenches were advanced from the east excavation; trench 1 to the east, trench 2 to the north and trench 3 to the south, as shown in Figure 4. Each trench was extended approximately ten feet laterally and to a depth of approximately ten feet (1.5 feet below the groundwater surface).

West Excavation

Visual and olfactory observation at time of initial UST removal indicated the possible presence of petroleum-impacted soil along the west excavation sidewalls. Before proceeding with side soil sampling and exploratory trenching, an additional 1.5' of soil was removed along the north, west and south sidewalls of the west excavation. Subsequently, three soil samples were collected (EX2-1, EX2-2 and EX2-3) and analyzed for TPHd and BTEX (See Table 4).

Based on analytical results which indicated that petroleum-impacted soil is present directly above the groundwater surface, three trenches were advanced: trench 1 to the south, trench 2 to the west, and trench 3 to the north. Trenches 1 and 2 were extended 10 feet from the excavation boundary and to a depth of approximately 11 feet. Trench 3 was extended 25 feet north of the west excavation (see Figure 4). TPHd and BTEX were revealed in final confirmatory soil samples at concentrations of 2500 mg/kg (WT3-25 at 9.1' bgs), 0.71 mg/kg (WT3-20 at 9.6' bgs), 0.019 mg/kg (T3-5 at 9'bgs), 0.019 mg/kg (T3-5 at 9' bgs) and 6.9 mg/kg (WT3-20), respectively. Laboratory results of soil samples collected during the trench operations are summarized in tables 3 and 4.

Approximately 50 cubic yards of soil was removed from the east excavation during the initial UST removals. An additional 250 cubic yards of soil was removed from the two excavations and associated trenching operations. Laboratory results of soil samples collected from the soil stockpiles are summarized in table 5.

Geomatrix performed a site characterization which included the advancement of six exploratory borings (B1 through B6), and the installation of 3 groundwater monitoring wells (W-1 through W-3) during April 1991 (see Figure 6). During the site characterization, groundwater was observed at approximately 8 feet bgs. Laboratory analysis of soil sample collected from boring B2, at a depth of 8' bgs, revealed TPH as mineral spirits at a concentration of 1500 mg/kg. The analytical results indicate that the presence of diesel generally correlates with the presence of mineral spirits in the soil samples. The highest concentration of diesel was detected in soil sample B6-2 (800 mg/kg), collected at 8 feet bgs, from boring B6. *Note: The laboratory qualified the results reported as diesel as primarily due to a combination of diesel and mineral spirits or mineral spirits and motor oil.* Complete laboratory results of soil samples are summarized in Table 6.

Laboratory results of groundwater samples collected from well W-2 revealed TPHms, TPHd, BTEX at maximum concentrations of 98, <50, <0.5, <0.5, 1.1 and 2.8 ug/L. No TPHms, TPHd or BTEX was detected in groundwater samples collected from wells W-1 and W-3 (see Table 7).

Between April 24 and April 26, 1996, SECOR performed a soil and groundwater investigation which resulted in the advancement of thirty-two boreholes to depths ranging from 5 to 15 feet bgs (see Figure 9). In addition to investigating the former USTs, SECOR investigated other areas of potential environmental impact. These areas included the former gasoline and diesel fuel dispenser islands, the former steam cleaning room, the two hydraulic lifts, the former mineral spirits subsurface investigation area and the area near a former hazardous waste drum storage area. Groundwater samples were collected from 12 selected boreholes and from the 3 existing groundwater monitoring wells. Groundwater samples collected from the 12 selected boreholes were analyzed for TRPH, TPHg, TPHd, TPHms, BTEX and VOCs. Groundwater monitoring well samples collected in July 1996 were analyzed for TPHd, TPHms and BTEX. Laboratory results of groundwater samples collected from the geoprobe borings are summarized in Table 9.

Thirty-three soil samples were analyzed for TPHg, TPHd, TPHms, TRPH, BTEX, VOCs and select metals (cadmium, chromium, organo-lead and total lead. TPHg and BTEX compounds were not detected in any of the 33 analyzed soil samples. Laboratory results of soil samples are summarized in Table 8.

See Section VII, Additional Comments, etc...

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? **Undetermined**

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? **Undetermined**

Does corrective action protect public health for current land use? **Yes**

Site management requirements: **None**

Should corrective action be reviewed if land use changes? **Yes**

Monitoring wells Decommissioned: **None, pending closure**

Number Decommissioned: **None** Number Retained: **3**

List enforcement actions taken: **None**

List enforcement actions rescinded: **N/A**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Dale Klettke** Title: **Hazardous Materials Specialist**

Signature: *Dale Klettke* Date: *6/27/97*

Reviewed by

Name: **Barney Chan** Title: **Hazardous Materials Specialist**

Signature: *Barney Chan* Date: *6/25/97*

Name: **Thomas Peacock** Title: **Supervising HazMat Specialist**

Signature: *Thomas Peacock* Date: *6-28-97*

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response:

RWQCB Staff Name: **Kevin Graves** Title: **AWRCE**

Signature: Date:

VII. ADDITIONAL COMMENTS, DATA, ETC.

During the initial excavation and sampling program of November 1990, groundwater was encountered in the east excavation at a depth of approximately 8' bgs. During the exploratory trenching program performed in January 1991, groundwater was present in the east excavation at a depth of approximately 8.5 feet bgs, and in the west excavation at approximately 9.5' bgs.

Drilling the initial 1991 installation of the groundwater monitoring wells, groundwater was observed at approximately 8 feet bgs. The water levels measured on 10 April and 2 May 1991 indicated a water table at approximately 7 feet bgs.

Since the groundwater monitoring program was reestablished in April 1996, the groundwater monitoring wells have been sampled for four consecutive quarters. The water levels measured on 11/26/96 and 2/25/97 also indicated a water table at approximately 7 feet bgs.

This site warrants closure as a "Low-Risk Groundwater Case" for the following reasons:

- a) The source has been sufficiently removed or has been remediated.

Laboratory analysis of soil samples collected from the former east and west waste oil UST excavations indicate that the majority of soil containing elevated levels of TPHd and TPHmo were removed. Although, 2500 mg/kg TPHd was detected in final confirmatory soil sample WT3-25, no BTE and only 0.69 ppm-xylenes were revealed in sample WT3-25, which was collected at a depth of 9.1' bgs, from the west waste oil UST excavation.

- b) The site has been adequately characterized.

Laboratory analysis of soil and groundwater samples collected during site investigations document that the previous release is small in extent and waste oil contamination appears to be limited to soils remaining in place in the vicinity of the west UST excavation, as documented by soil samples T3-5, T3-10, WT3-20 and WT3-25. SECOR's findings during their March 1996 Preliminary Site Assessment (PSA) investigation adequately characterized the extent of the petroleum-hydrocarbon contamination.

- c) The dissolved hydrocarbon plume appears to be stable and is not migrating.

The 1991 groundwater sampling of the three monitoring wells resulted in detection of total recoverable petroleum hydrocarbons (TRPH) in MW2 at a concentration of 98 mg/L, ethylbenzene at a concentration of 1.1 mg/L, and xylene at a concentration of 0.0028 mg/L. The April 29, 1996 groundwater monitoring well sampling revealed non-detectable levels for VOCs and TRPH. However, 2-butanone was detected in all nine of the "grab" groundwater sample collected from the geoprobe borings, at a maximum concentration of 180 ug/L (samples SB15 and SB30). Acetone was revealed in groundwater samples collected from geoprobe borings SB15 and SB30, at concentrations of 14 and 18 ug/L, respectively.

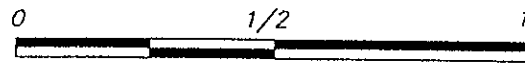
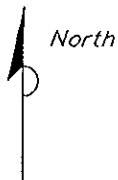
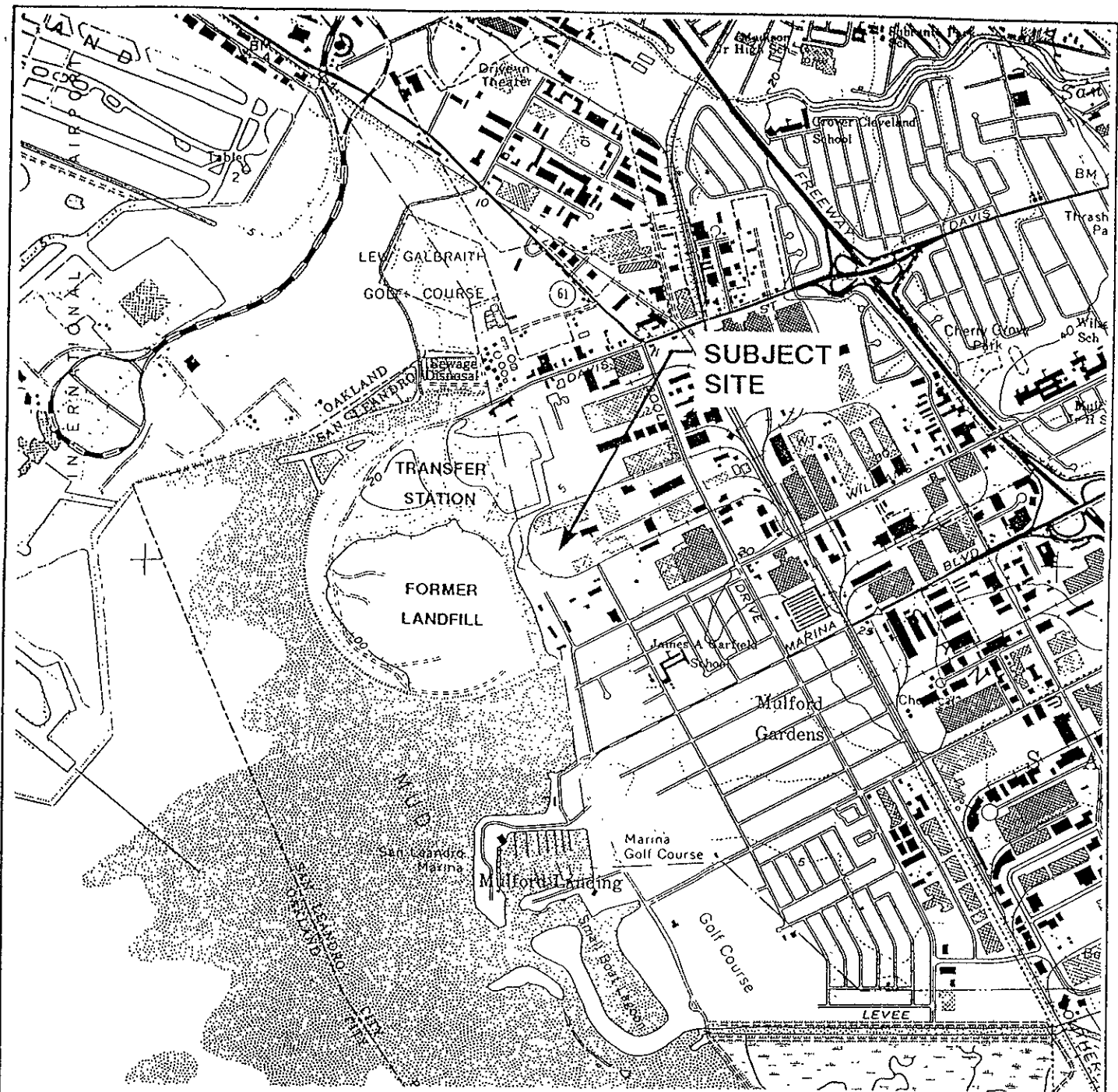
- d) No water wells, deeper drinking water wells, surface water or other sensitive receptors are likely to be impacted.

The petroleum hydrocarbon groundwater contamination appears to be localized in the vicinity of the monitoring well MW-2, located near the western waste oil UST excavation. Due to the low mobility, solubility, and toxicity of waste oil constituents, the concentrations historically detected in the three monitoring wells should not impact the quality of groundwater down gradient of the site.

- e) The site presents no significant risk to human health or the environment.

Benzene concentrations detected in final confirmatory soil sample WT3-25 (0.71 mg/kg) collected during the 1991 additional exploratory trenching operations, on the west waste oil UST excavation, are in exceedance of the ASTM RBCA CA-modified Tier 1 RBSL value (0.49 ppm) for a 1E-04 (1 in 10,000 excess cancer risk) for soil-vapor intrusion from soil to buildings, for a commercial/industrial receptor scenario. In addition, soil samples collected during the April 1991 Geomatrix site characterization, revealed non-detectable concentrations of benzene in exploratory boring B2 (collected approximately 10' from sample WT3-25 and next to the outbuilding) and boring B4 (collected approximately 10' from the west waste oil UST excavation and immediately adjacent to the engine maintenance building). The concentration of acetone (0.77 mg/kg), revealed in soil sample SB26-5, is well below the established preliminary remedial goal (PRG) of 8,400 mg/kg, for industrial soils. Finally, all current buildings are built on concrete slabs with the remainder of the surface area being capped (paved parking, etc.), which greatly reduces the potential for soil-vapor intrusion from soil to buildings.

Non-detectable concentrations of VOCs, including benzene, were revealed in groundwater samples collected from the three on-site monitoring wells during the 1991, 1996 and 1997 groundwater sampling events. In addition, maximum concentrations of 2-butanone (MEK) and acetone (180 ug/L and 18 ug/L, respectively), were revealed in the "grab" groundwater samples collected during the 1996 Preliminary Site Assessment (PSA) investigation. These documented MEK and acetone groundwater concentrations are well below the established PRGs of 1900 ug/L and 610 ug/L, respectively, for tap water.



SCALE (MILES)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; SAN LEANDRO, CALIFORNIA; 1980

SECOR
International Incorporated

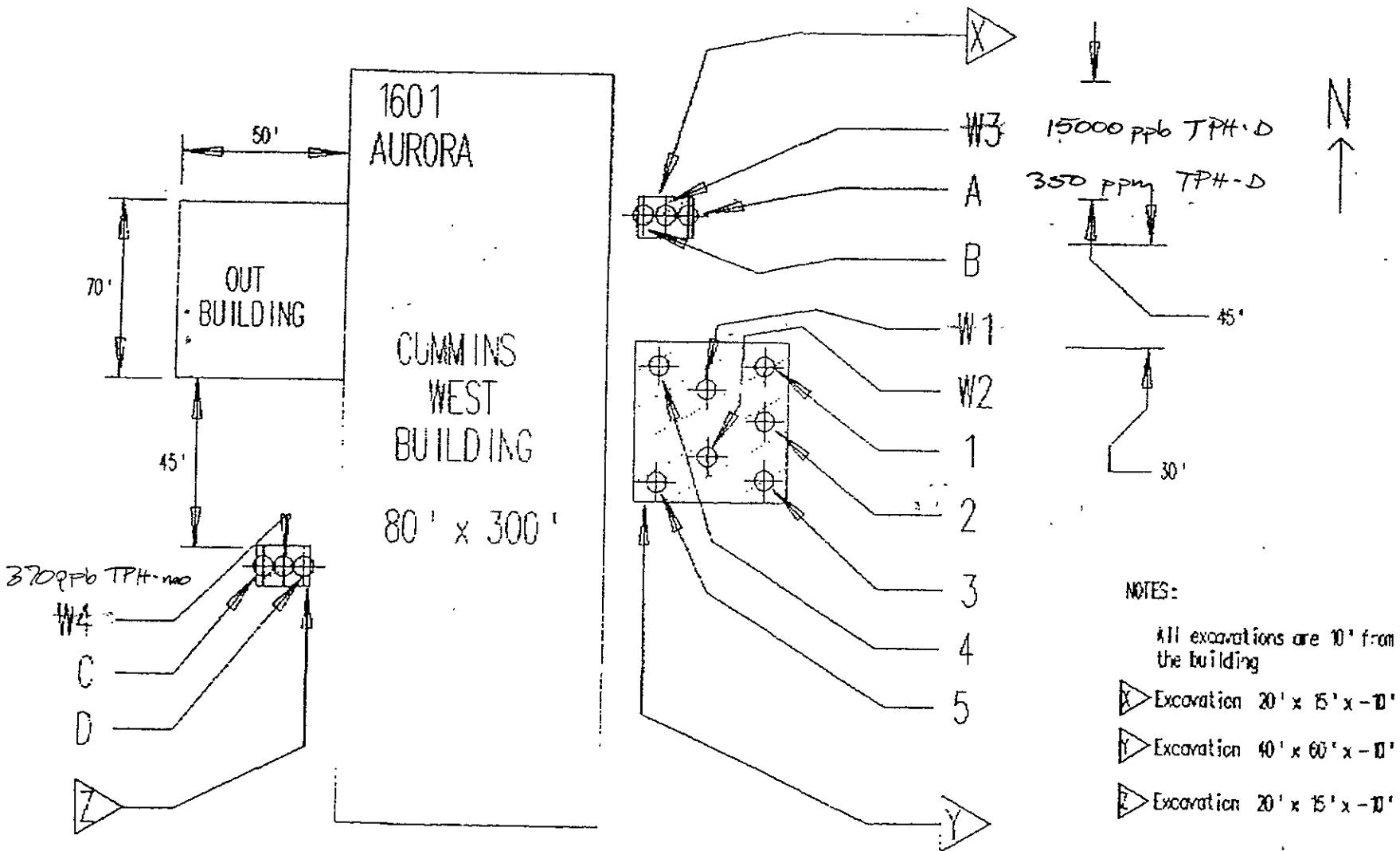
SITE LOCATION MAP
CUMMINS WEST INC.
1601 AURORA DRIVE
SAN LEANDRO, CALIFORNIA

FIGURE:

1

JOB#: F0131-021-01 APPR: DKO DWN: KPW DATE: 4/16/88

DWG: USGS-P



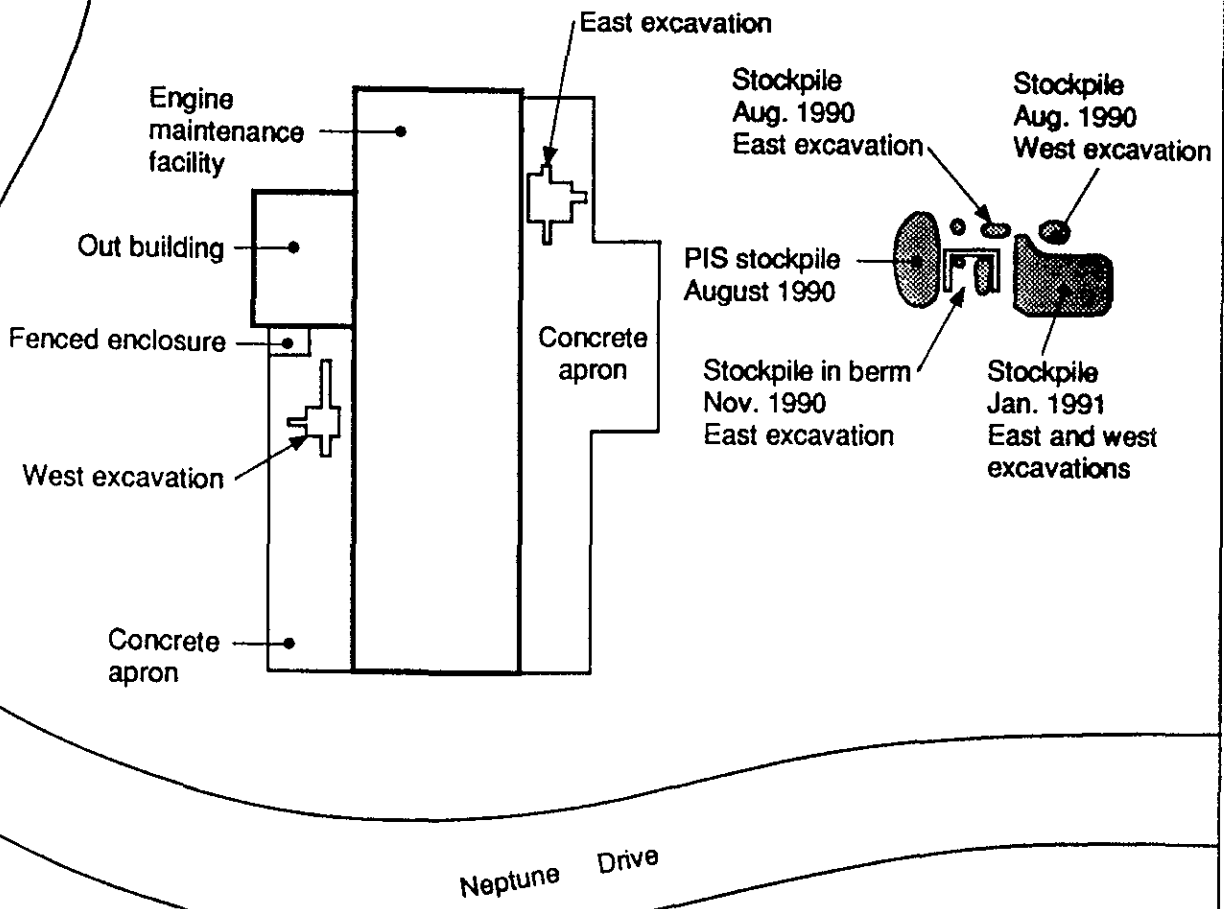
- NOTES:
- All excavations are 10' from the building
 - X Excavation 20' x 15' x 10'
 - Y Excavation 40' x 60' x 10'
 - Z Excavation 20' x 15' x 10'

CUMMINS WEST COMPANY (RANDOM)
 1601 AURORA WAY
 SAN LEANDRO, CALIFORNIA

SLOG #: 1725
 DATE: 8/14/1990

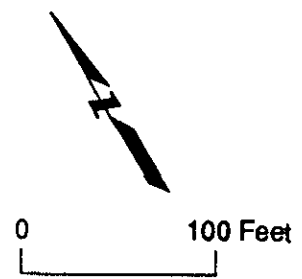
W. E. S. T. **FIGURE 1***
 1046 Clive Drive #3, Davis, CA 95616
 (916)753-9500 Drawn By: TGT

Site entrance



Notes

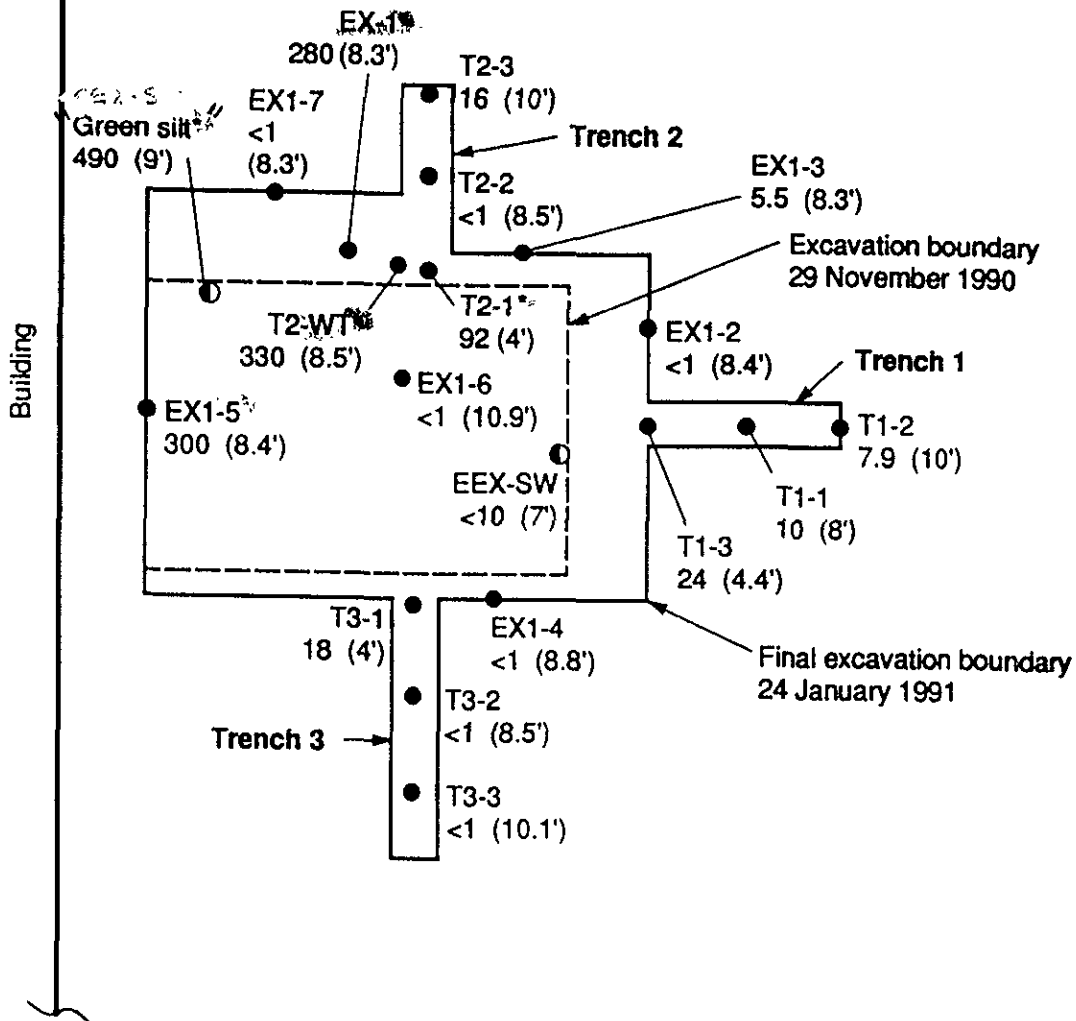
- 1. August 1990 stockpiles generated during tank removal.
- 2. November 1990 stockpile associated with initial east excavation and sampling.
- 3. January 1991 stockpile generated during exploratory trenching and excavation program.



SITE PLAN
 Cummins West Site
 1601 Aurora Way
 San Leandro, California

Figure
 2
 Project No.
 1725

M. VIGNATI, INC.

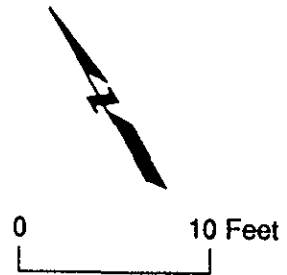


EXPLANATION

- EEX-SW ○ Approximate location of November 1990 soil sample
- T2-3 ● Approximate location of January 1991 soil sample
- 16 (10') Petroleum hydrocarbon concentration, in mg/kg, followed by sample depth, in feet
- * Soil at and near sample collection location was removed

Note

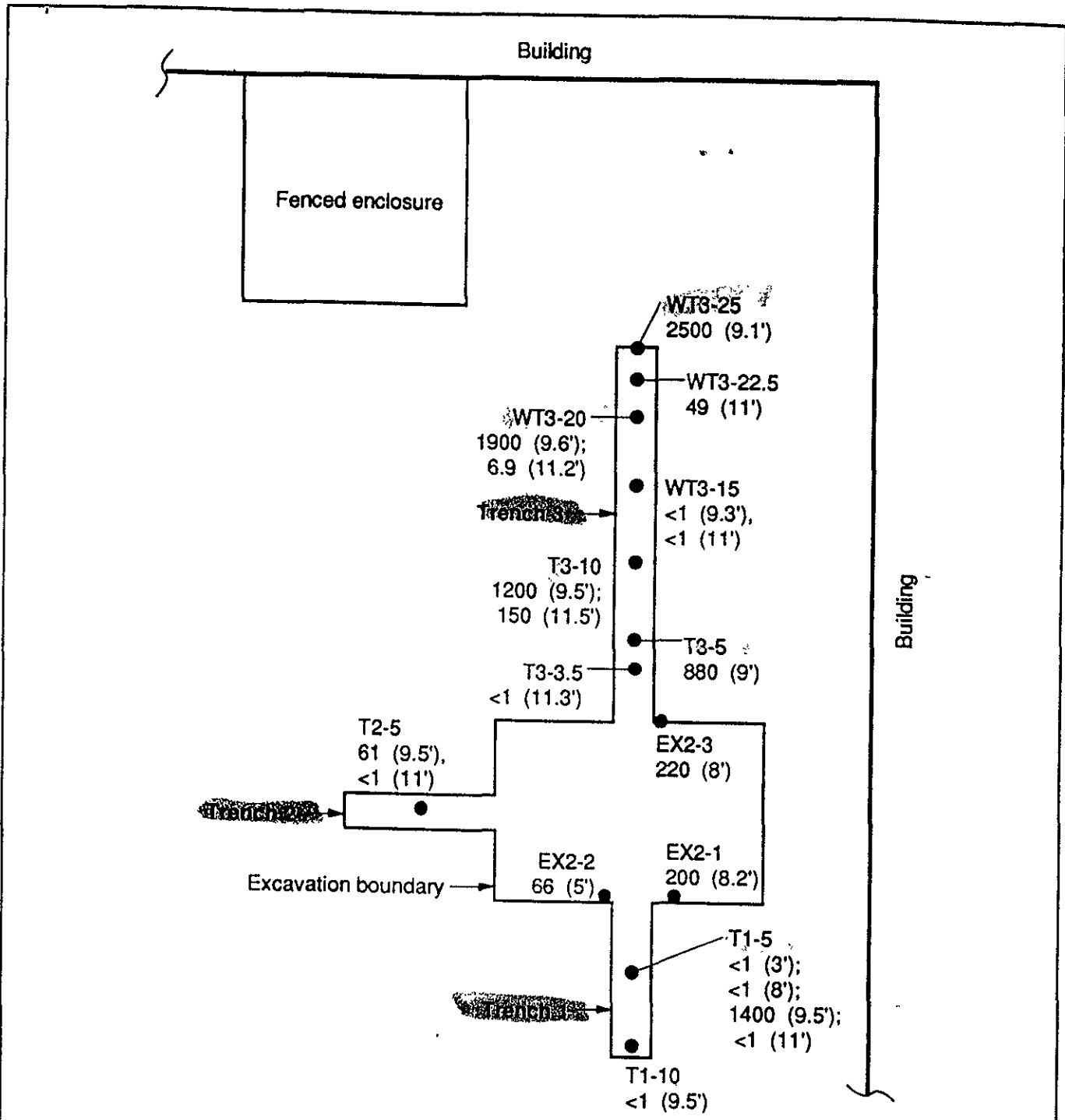
On 21 January 1991, depth of groundwater in excavation was observed to be 9 feet below ground surface.



EAST EXCAVATION
 Cummins West Site
 1601 Aurora Way
 San Leandro, California

Figure
 3

Project No.
 1725

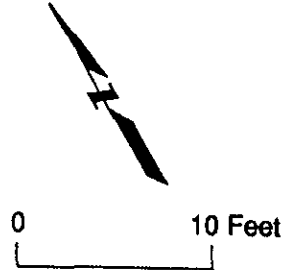


KEY

T3-3.5 ● Approximate location of soil sample, followed by petroleum hydrocarbon concentration, in mg/kg and sample depth, in feet
 <1 (11.3')

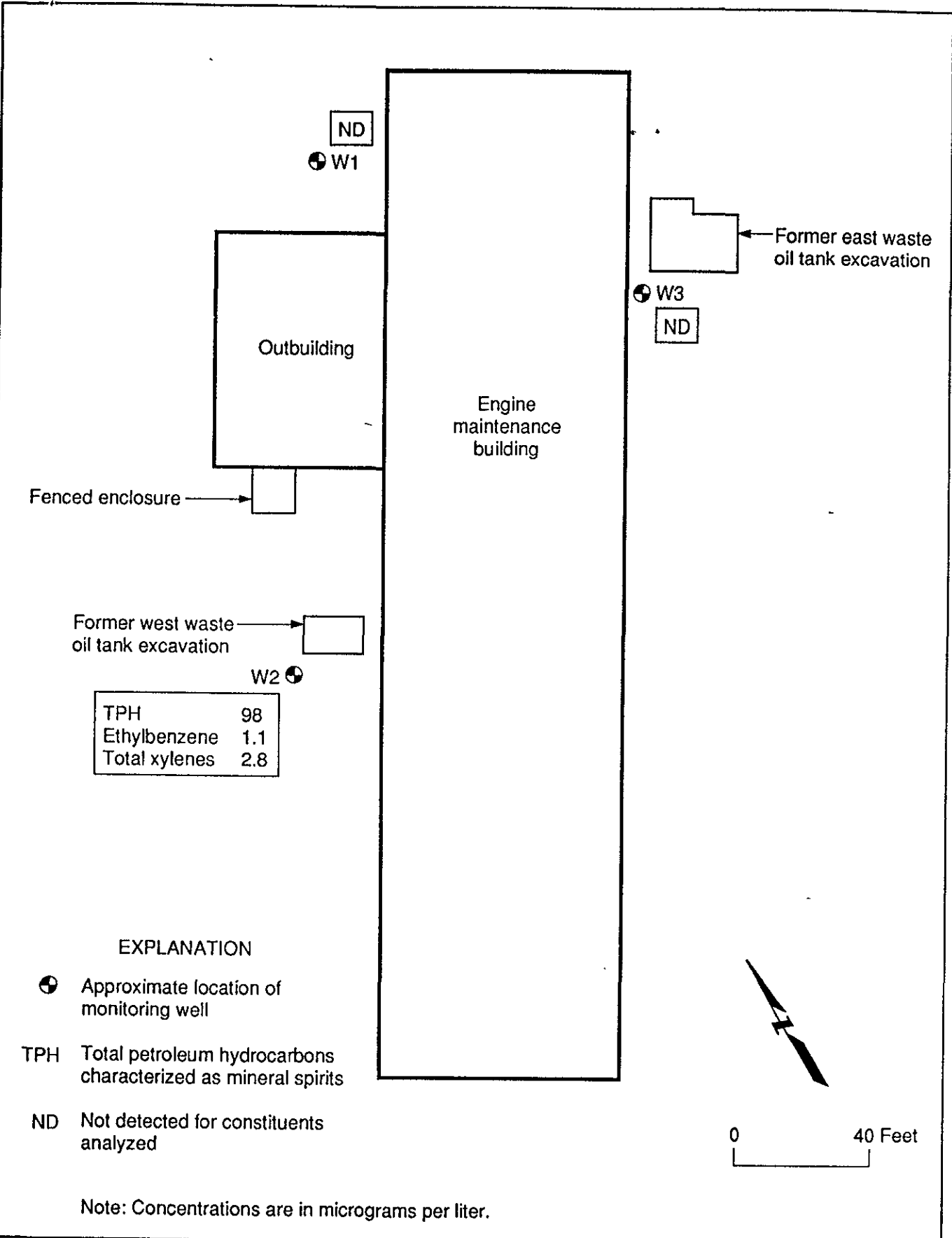
Note

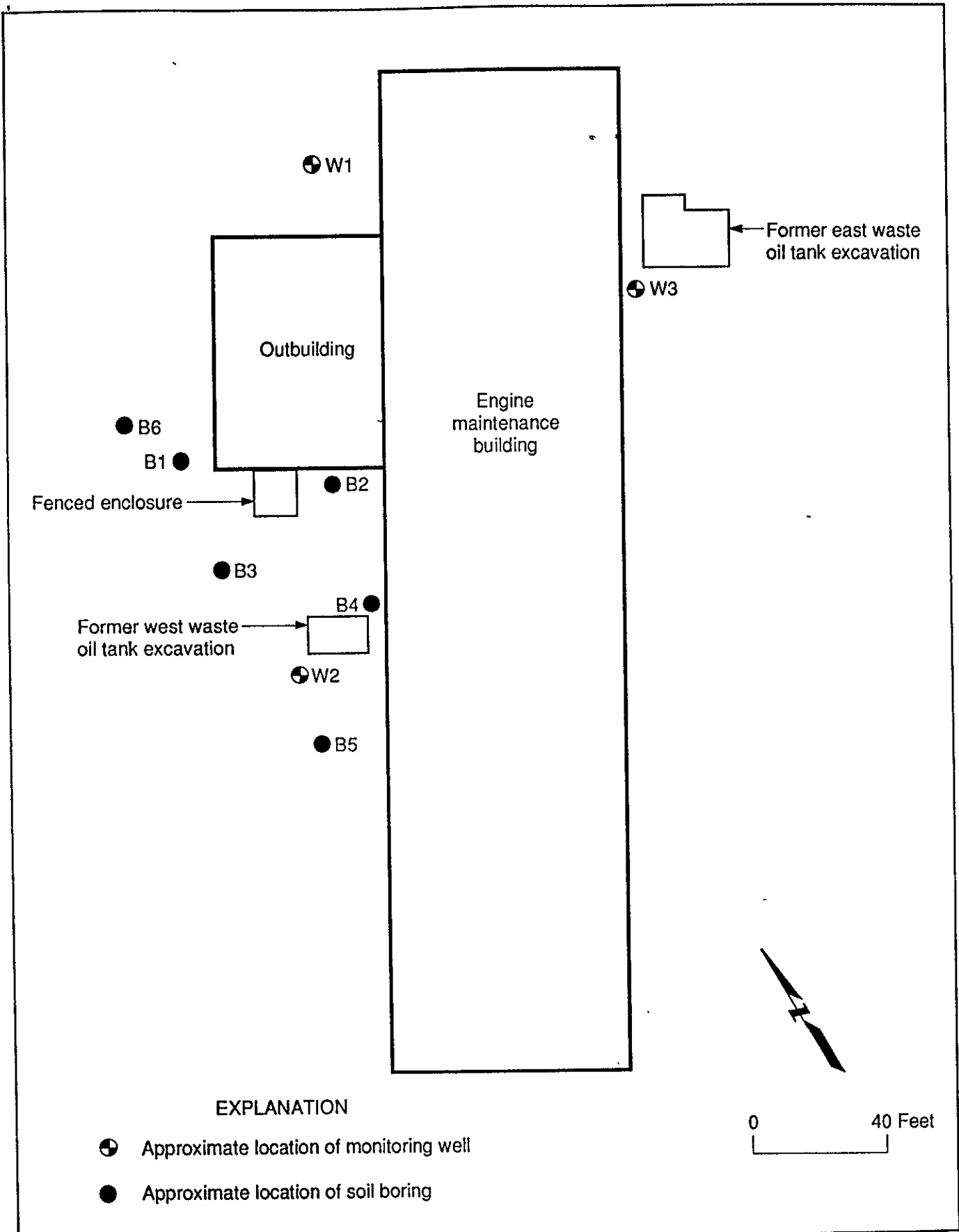
On 21 January 1991, depth of groundwater in excavation was observed to be 10 feet below ground surface.



WEST EXCAVATION
 Cummins West Site
 1601 Aurora Way
 San Leandro, California

Figure
 4
 Project No.
 1725





EXPLANATION

- ⊕ Approximate location of monitoring well
- Approximate location of soil boring



SOIL BORING AND WELL LOCATIONS
 Cummins West
 1601 Aurora Drive
 San Leandro, California

Figure
 6
 Project No.
 1725.01

TABLE 2

ANALYTICAL RESULTS FOR SOIL SAMPLES FROM EAST EXCAVATION

November 1990
 Cummins West Site
 1601 Aurora Way
 San Leandro, California

(Concentrations in milligrams per kilogram)

<u>Sample</u>	<u>Approximate Depth (feet)</u>	<u>Gasoline</u>	<u>Diesel</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Total Xylenes</u>
EEX-SW	7	<0.5	<10	<0.005	<0.005	<0.005	<0.005
Green-Silt	9	6	490	0.010	0.034	<0.005	0.020

<u>Sample</u>	<u>Approximate Depth (feet)</u>	<u>Cadmium</u>	<u>Chromium (Total)</u>	<u>Nickel</u>	<u>Lead</u>	<u>Zinc</u>
EEX-SW	7	0.35	24.2	27.4	43.6	71.2
Green-Silt	9	<0.25	26.5	42.7	4.2	31.0

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES^{1,2}

(Concentrations in micrograms per liter)

<u>Sample</u>	<u>Origin</u>	<u>Gasoline</u>	<u>Diesel</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl- benzene</u>	<u>Total Xylenes</u>
GW-1	East Excavation	<50	4300	<5	<5	<5	<5
GW-2	West Excavation	1300	330 ³	<5	<5	<5	<5

¹ Samples analyzed by Anametrix, Inc. Analytical results are presented in the laboratory report in Appendix B.

² Each sample also was analyzed for volatile and semi-volatile organics using EPA Methods 8240 and 8270, respectively. None of the analytes were detected, as indicated in the attached analytical reports (Appendix B).

³ As reported by the laboratory, concentrations reported as diesel may represent a combination of lighter petroleum products such as kerosene or mineral spirits and heavier petroleum hydrocarbons such as motor oil.



TABLE 3

**ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED
FROM EAST EXCAVATION AND EXPLORATORY TRENCHES**

January 1991
Cummins West Site
1601 Aurora Way
San Leandro, California

(concentrations in milligrams per kilogram)

<u>Sample</u>	<u>Approx. Depth (feet)</u>	<u>Date Collected</u>	<u>Diesel</u>	<u>Ethyl-benzene</u>	<u>Toluene</u>	<u>Benzene</u>	<u>Xylenes</u>
EXPLORATORY TRENCHES							
T1-1	8	1/21	10	<0.005	<0.005	<0.005	<0.005
T1-2	10	1/21	7.9	<0.005	<0.005	<0.005	<0.005
T1-3	4.4	1/21	24	<0.005	<0.005	<0.005	<0.005
T2-1*	4	1/21	92	<0.005	<0.005	<0.005	<0.005
T2-2	8.5	1/21	<1	<0.005	<0.005	<0.005	<0.005
T2-3	10	1/21	16	<0.005	<0.005	<0.005	<0.005
T3-1	4	1/21	18	<0.005	<0.005	<0.005	<0.005
T3-2	8.5	1/21	<1	<0.005	<0.005	<0.005	<0.005
T3-3	10.1	1/21	<1	<0.005	<0.005	<0.005	<0.005
T2-WT*	8.5	1/22	330	0.0057	<0.005	<0.005	0.0094
EXCAVATION SIDEWALLS AND BOTTOM							
EX-1*	8.3	1/23	280	0.0069	<0.005	<0.005	<0.005
EX1-2	8.4	1/23	<1	<0.005	<0.005	<0.005	<0.005
EX1-3	8.3	1/23	5.5	<0.005	<0.005	<0.005	<0.005
EX1-4	8.8	1/23	<1	<0.005	<0.005	<0.005	<0.005
EX1-5	8.5	1/23	300	<0.005	<0.005	<0.005	<0.005
EX1-6	10.4	1/23	<1	<0.005	<0.005	<0.005	<0.005
EX1-7	8.3	1/24	<1	<0.005	<0.005	<0.005	<0.005

GCFID**

EPA Method No.	using 3550	8020	8020	8020	8020
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Notes:
Samples analyzed on site in a mobile laboratory by NET Pacific. Analytical results and methods are presented in the laboratory report in Appendix B.

* Soil at and near sample location was removed.

**GCFID = gas chromatography using a flame ionization detector.

TABLE 4

**ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED
FROM WEST EXCAVATION AND EXPLORATORY TRENCHES**

January 1991
Cummins West Site
1601 Aurora Way
San Leandro, California

(concentrations in milligrams per kilogram)

<u>Sample</u>	<u>Approximate Depth (feet)</u>	<u>Date Collected</u>	<u>Diesel</u>	<u>Ethyl- benzene</u>	<u>Toluene</u>	<u>Benzene</u>	<u>Xylenes</u>
EXCAVATION SIDEWALLS							
EX2-1	8	1/21	200	<0.005	<0.005	<0.005	0.012
EX2-2	5	1/21	66	<0.005	<0.005	<0.005	<0.005
EX2-3	8	1/21	220	<0.005	<0.005	<0.005	<0.038
EXPLORATORY TRENCHES							
T1-5	3	1/22	<1	<0.005	<0.005	<0.005	<0.005
T1-5	8	1/22	<1	<0.005	<0.005	<0.005	<0.005
T1-5	9.5	1/22	1400	<0.005	<0.005	<0.005	0.36
T1-5	11	1/22	<1	<0.005	<0.005	<0.005	<0.005
T1-10	9.5	1/22	<1	<0.005	<0.005	<0.005	<0.005
T2-5	9.5	1/22	61	<0.005	<0.005	<0.005	<0.005
T2-5	11	1/22	<1	<0.005	<0.005	<0.005	<0.005
T3-3.5	11.3	1/22	<1	<0.005	<0.005	<0.005	<0.005
T3-5	9	1/22	880	0.019	0.019	0.029	1.0
T3-10	9.5	1/22	1200	<0.005	<0.005	0.12	1.7
WT3-10	11.5	1/22	150	<0.005	<0.005	0.006	0.16
WT3-15	9.3	1/23	<1	<0.005	<0.005	<0.005	<0.005
WT3-15	11	1/23	<1	<0.005	<0.005	<0.005	<0.005
WT3-20	9.6	1/23	1900	<0.005	<0.005	0.71	6.9
WT3-20	11.2	1/23	6.9	<0.005	<0.005	<0.005	<0.005
WT3-22.5	11	1/24	49	<0.005	<0.005	<0.005	<0.005
WT3-25	9.1	1/24	2500	<0.005	<0.005	<0.005	0.69
EPA Method No.			GCFID* using 3550	8020	8020	8020	8020

Notes:

Samples analyzed on site in a mobile laboratory by NET Pacific. Analytical results and methods are presented in the laboratory report, in Appendix B.

*GCFID = Gas chromatography using a flame ionization detector.

TABLE 5

ANALYTICAL RESULTS FOR STOCKPILE SAMPLES¹

Cummins West Site
1601 Aurora Way
San Leandro, California

(concentrations in milligrams per kilogram)

Sample	Cadmium	Chromium (Total)	Nickel	Lead	Zinc	Semi-Volatile Organics
OESD	0.54	27.5	35.7	60.8	82.7	ND ²
EPA Method No.	6010/7000	6010/7000	6010/7000	6010/7000	6010/7000	8270

Sample	Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes
SP-1	88	ND	ND	ND	ND
SP-2	59	0.017	0.037	ND	0.047
SP-3	ND	ND	ND	ND	ND
SP-4	160	ND	ND	ND	ND
SP-5	63	ND	ND	ND	ND
EPA Method No.	GCFID* using 5030	Modified 8020	Modified 8020	Modified 8020	Modified 8020

¹ Samples analyzed by Anamatrix, Inc., except SP-1, which was analyzed by NET Pacific in a mobile laboratory on site. Analytical results are presented in the laboratory report in Appendix B.

² Not detected.

*GCFID = Gas chromatography using a flame ionization detector.

TABLE 6

SOIL ANALYTICAL RESULTS¹
2 AND 3 APRIL 1991
Cummins West

TABLE 6

Concentrations in milligrams per kilogram

Boring Number	Sample Depth (feet, bgs)	TPH ² as Mineral Spirits	-TPH as Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes
B1-1	7.5	<0.5	<10	<0.005	<0.005	<0.005	0.018
B1-2	11	200	21 ⁴	<0.005	<0.005	6.2	39
B1-3	14	<0.5	<10	<0.005	<0.005	0.009	0.061
B1-4	15	<0.5	<10	<0.005	<0.005	0.018	0.15
B2-1	7	<0.5	<10	<0.0005	<0.005	<0.005	<0.005
B2-2	8	1500	200 ⁴	<0.0005	<0.005	48	200
B2-3	10	10	<10	<0.0005	<0.005	0.20	0.88
B3-1 ³	7.5	<0.5	39 ⁵	<0.005	<0.005	<0.005	<0.005
B3-2	9	160	320 ⁵	<0.25	<0.25	0.79	3.8
B3-3	10	10	36 ⁵	<0.01	<0.01	0.50	0.21
B4-1	8	<0.5	<10	<0.005	<0.005	<0.005	<0.005
B4-2	10.5	280	140 ⁶	<0.005	<0.005	0.56	2.6
B4-3	13	<0.5	<10	<0.005	<0.005	<0.005	<0.005
B5-1	8.5	410	270 ⁶	<0.005	<0.005	1.4	3.1
B5-2	12.5	<0.5	<10	<0.005	<0.005	<0.005	<0.005
B6-1 ³	7	<0.5	37 ⁵	<0.005	<0.005	<0.005	0.048
B6-2	8	1000	800 ⁵	<0.5	<0.5	8.9	42
B6-4	11.5	5	36 ⁵	<0.01	0.026	0.019	0.12
W1-1 ³	8.5	<0.5	42 ⁵	<0.005	<0.005	<0.005	<0.005
W1-2	11	<0.5	39 ⁵	<0.005	<0.005	<0.005	<0.005
W2-1 ³	9	110	220 ⁵	<0.25	<0.25	0.29	1.9
W2-2	10	450	230 ⁵	<0.25	<0.25	2.1	6.8
W3-1 ³	8	<0.5	37 ⁵	<0.005	<0.005	<0.005	<0.005
W3-2	11	<0.5	37 ⁵	<0.005	<0.005	<0.005	<0.005

² TPH = total petroleum hydrocarbons.

³ The soil samples from this boring, collected on 3 April 1991, were extracted by the analytical laboratory on 24 April 1991, past the normal 14-day holding time. As a result, the reported concentrations are not considered reliable, and may be lower than actual soil concentrations.

⁴ As reported by the laboratory, this concentration primarily reflects a lighter petroleum product, possibly mineral spirits.

⁵ As reported by the laboratory, this concentration reflects a combination of a lighter petroleum product, possibly mineral spirits, and a heavier petroleum product, possibly motor oil.

⁶ As reported by the laboratory, this concentration reflects a combination of diesel and a lighter petroleum product possibly mineral spirits.

TABLE
7
GROUNDWATER ANALYTICAL RESULTS¹
10 APRIL 1991
Cummins West
1601 Aurora Drive
San Leandro, California

Concentrations in micrograms per liter

Well Number	TPH ² as Mineral Spirits	TPH as Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Dissolved Solids ³
W-1	<50	<50	<0.5	<0.5	<0.5	<0.5	1738
W-2	98	<50	<0.5	<0.5	1.1	2.8	2178
W-3	<50	<50	<0.5	<0.5	<0.5	<0.5	1956
Analytical Method	GCFID ⁴ using EPA Method 5030	GCFID using EPA Method 3510	Modified EPA Method 8020	Modified EPA Method 8020	Modified EPA Method 8020	Modified EPA Method 8020	EPA Method 160.1

¹ Samples analyzed by Anametrix, Inc., of San Jose, California, unless noted otherwise.

² TPH = total petroleum hydrocarbons.

³ Total dissolved solids analysis performed by McIntosh Laboratories of San Jose, California.

⁴ GCFID = gas chromatography with a flame ionization detector.

TABLE 8
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

Area of Concern	Sample Location and Depth*	Date Collected	TRPH (mg/Kg)	TPH-g (mg/Kg)	TPH-d (mg/Kg)	TPH-ms (mg/Kg)	Total Metals (mg/Kg)	VOCs (mg/Kg)
Former Used Oil UST	SB1-6	4/24/96	ND	NA	ND	1.0	Total Lead 15 Total Chromium 28 Total Cadmium 0.53	ND
	SB2-3	4/24/96	97	NA	11	ND	Total Lead 56 Total Chromium 33	NA
Former Fuel Island	SB3-2.5	4/24/96	ND	NA	1.0	ND	Total Lead 5.4 Total Chromium 37	NA
Former Gasoline/Diesel USTs	SB4-5.5	4/24/96	ND	ND	ND	NA	Organo Lead ND	NA
	SB5-5	4/24/96	ND	ND	NA	NA	Organo Lead ND	NA
	SB7-6	4/24/96	ND	ND	ND	NA	NA	NA
Former Used Oil UST	SB8-4	4/25/96	87	NA	20	ND	Total Lead 11 Total Chromium 28	ND
	SB9-7	4/25/96	ND	NA	ND	ND	Total Lead 41 Total Chromium 34	ND
	SB9-8.5	4/25/96	98	NA	52	43	Total Lead 7.5 Total Chromium 49	ND
Steam Cleaning Area	SB10-3	4/24/96	47	NA	NA	NA	Total Lead 6.6 Total Chromium 29	NA
	SB11-5	4/26/96	25	NA	NA	NA	Total Lead 9.3 Total Chromium 45	NA
	SB12-2.5	4/24/96	ND	NA	NA	NA	Total Lead 49 Total Chromium 43	ND
	SB12-5.5	4/24/96	19	NA	NA	NA	Total Lead 36 Total Chromium 11	ND
Used Oil UST	SB13-4.5	4/26/96	64	NA	NA	NA	Total Lead 170 Total Chromium 31 Total Cadmium 1.6	ND
Oil/Water Separator	SB14-4	4/24/96	76	NA	NA	NA	Total Lead 67 Total Chromium 32	NA
	SB15-5	4/24/96	36	ND	NA	NA	Total Lead 50 Total Chromium 33	NA
Hydraulic Lift Area	SB16-7	4/26/96	ND	NA	NA	NA	NA	NA
	SB17-7	4/26/96	ND	NA	NA	NA	NA	NA

TABLE 7
(Continued)
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
Cummins West, Inc.
San Leandro, California

Area of Concern	Sample Location and Depth*	Date Collected	TRPH (mg/Kg)	TPH-g (mg/Kg)	TPH-d (mg/Kg)	TPH-ms (mg/Kg)	Total Metals (mg/Kg)	VOCs (mg/Kg)
Former Hazardous Waste Drum Storage	SB18-4	4/26/96	ND	NA	ND	ND	Total Lead 9.1 Total Chromium 32	NA
	SB19-7	4/26/96	ND	NA	ND	ND	Total Lead 7.2 Total Chromium 41	NA
	SB20-4.5	4/26/96	ND	NA	ND	ND	Total Lead 6.0 Total Chromium 32	NA
Estimated Mineral Spirits Subsurface Investigation Area	SB22-7	4/25/96	ND	NA	1.0	ND	NA	NA
	SB23-7	4/25/96	NA	NA	ND	ND	NA	NA
	SB24-7	4/25/96	ND	NA	3.7	ND	NA	NA
	SB25-7	4/25/96	ND	NA	2.8	ND	NA	NA
Landfill Property Boundary	SB26-5	4/26/96	ND	NA	2.7	ND	Total Lead 8.4 Total Chromium 32	Acetone 0.77
	SB27-5	4/26/96	ND	NA	ND	ND	Total Lead 6.7 Total Chromium 31	NA
	SB28-7	4/26/96	ND	NA	1.8	ND	Total Lead 7.4 Total Chromium 34	NA
Steam Cleaning Area	SB29-1	4/26/96	110	NA	NA	NA	Total Chromium 27 Cadmium ND	ND
	SB29-7.5	4/26/96	ND	NA	NA	NA	Total Lead 5.8 Total Chromium 33	ND
Landfill Property Boundary	SB30-5	4/26/96	ND	NA	1.6	ND	Total Lead 9.9 Total Chromium 28	NA
	SB31-6	4/26/96	ND	NA	1.3	ND	Total Lead 12 Total Chromium 27	ND
	SB32-4	4/26/96	ND	NA	2.6	ND	Total Lead 33 Total Chromium 34	ND

* Depths are in feet below ground surface.
TRPH Total petroleum hydrocarbons by EPA Method 418.1.
TPHd TPH as diesel (TPH-D) by EPA Method 8015.
VOC Volatile organic compounds by EPA Method 8240.
NA Not analyzed.
ND Not detected at or above method detection limits

TABLE 9
 SUMMARY OF GEOPROBE GROUNDWATER SAMPLE ANALYTICAL RESULTS
 Cummins West, Inc.
 San Leandro, California

Area of Concern	Sample Location	Date Collected	TRPH (mg/L)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-ms (µg/L)	VOCs (µg/L)
Former Used Oil UST	SB1	4/24/96	ND	NA	53	ND	2-Butanone 77
Former Fuel Island	SB3	4/24/96	2.5	ND	64	ND	NA
Former Gasoline/Diesel USTs	SB5	4/24/96	ND	ND	120	ND	NA
	SB7	4/24/96	ND	ND	56	ND	NA
Former Used Oil UST	SB8	4/25/96	3.7	NA	890	660	2-Butanone 26
Steam Cleaning Area	SB12	4/25/96	ND	NA	610	400	2-Butanone 85
Oil/Water Separator	SB15	4/26/96	1.3	NA	74	ND	2-Butanone 180 Acetone 14
Former Hazardous Waste Drum Storage	SB18	4/26/96	ND	NA	1300	790	2-Butanone 52
	SB19	4/26/96	ND	NA	1200	770	2-Butanone 96
Landfill Property Boundary	SB26	4/26/96	9.2	NA	160	ND	2-Butanone 16
	SB28	4/26/96	1.7	NA	140	ND	2-Butanone 100
	SB30	4/26/96	4.1	NA	340	ND	2-Butanone 180 Acetone 19

TRPH Total petroleum hydrocarbons (TPH) by EPA Method 418.1.
 TPHg TPH as gasoline (TPH-g) by EPA Method 8015.
 TPHd TPH as diesel (TPH-d) by EPA Method 8015.
 TPHms TPH as mineral spirits by EPA Method 8015.
 VOC Volatile organic compounds by EPA Method 8240.
 NA Not analyzed.
 ND Not detected at or above method reporting limits.

Table 10
February 1997 Groundwater Analytical Results
Cummins West, Inc.
San Leandro, California

Sample Location	Sample Date	VOCs (µg/L)	TPH-D (µg/L)	
			Mineral Spirits	Diesel
MW-1	02/25/97	ND	NO	250 ¹
	11/26/96	ND	ND	70
	07/30/96	ND	ND	ND
	04/29/96	ND	ND	400
MW-2	02/25/97	ND	NO	100 ¹
	11/26/96	ND	ND	210
	07/30/96	ND	ND	110
	04/29/96	ND	83	530
MW-3	02/25/97	ND	NO	130 ¹
	11/26/96	ND	ND	90
	07/30/96	ND	ND	ND
	04/29/96	ND	ND	81

ND = Not detected at method reporting limit.

NA = Not Analyzed.

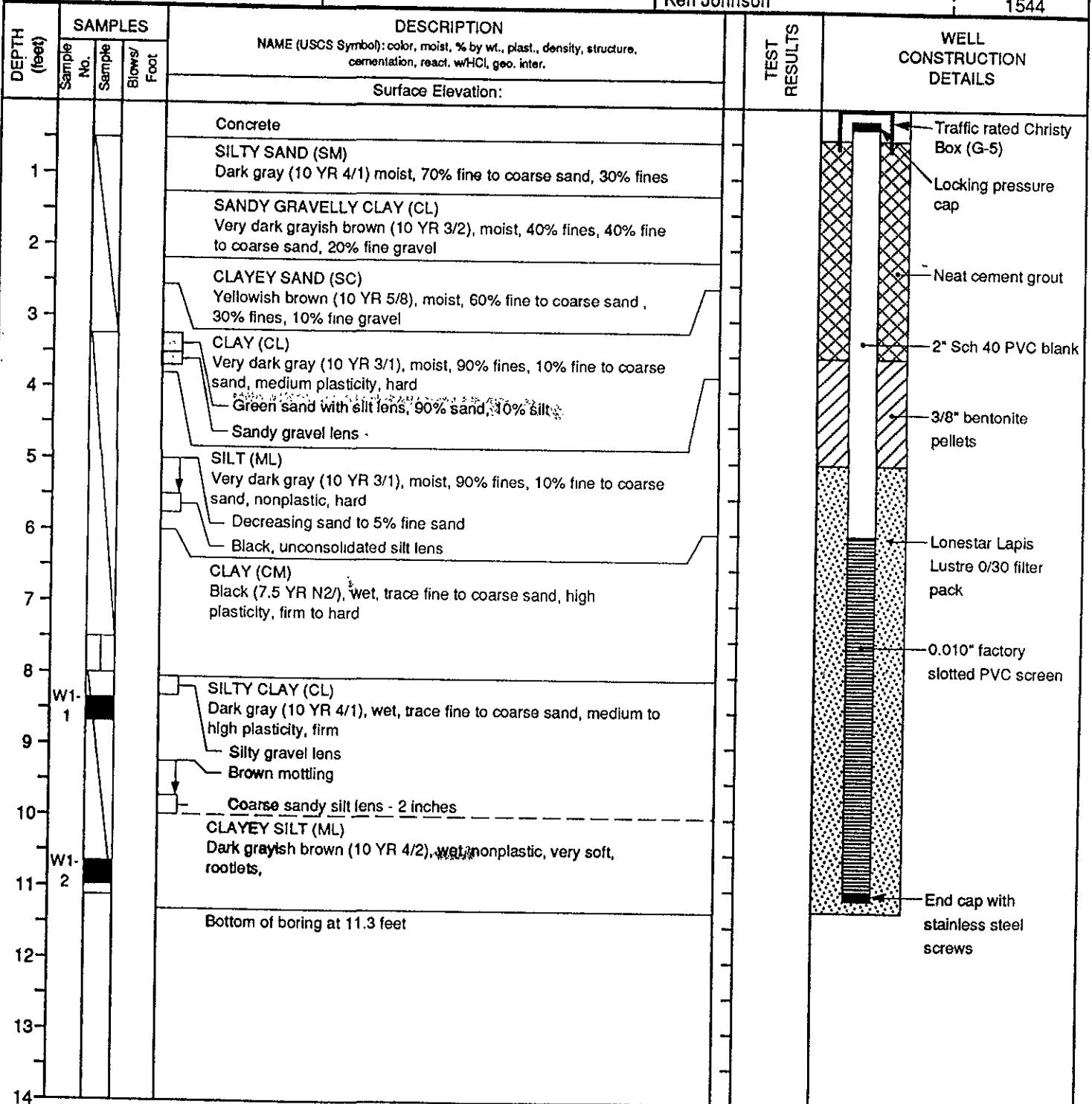
VOCs analysis by EPA Method 8240, 07/30/96 sampling by EPA Method 8020.

TPH-D analysis by EPA Method 8015M.

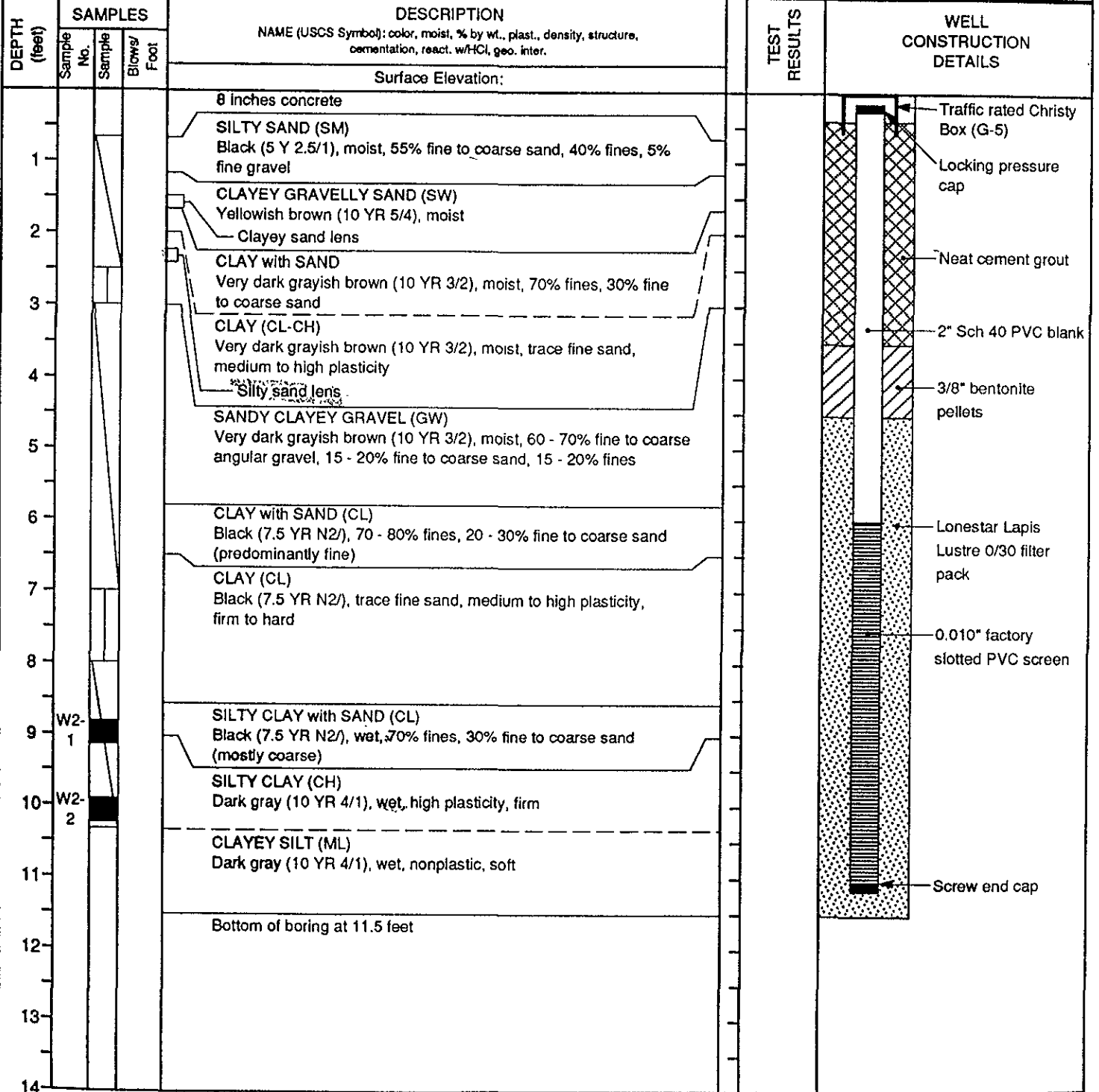
Footnote 1 - Heavier hydrocarbons found in the range of diesel.

NO = None observed by Chemist examination of chromatograms.

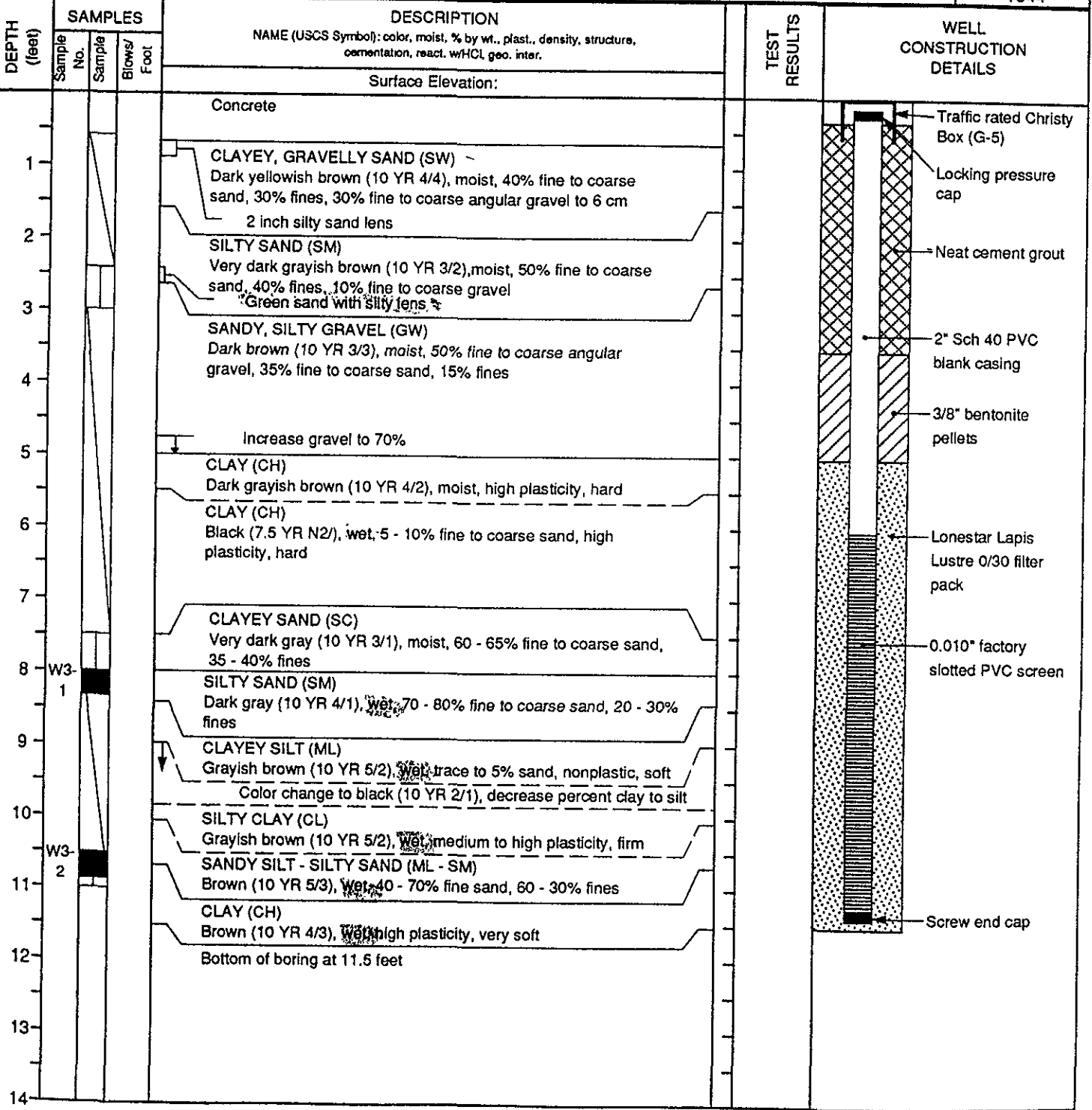
PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Well No. W-1	
BORING LOCATION: Near northwest corner of building		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/3/91	DATE FINISHED: 4/3/91
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 11.3 feet	SCREEN INTERVAL: 6 - 11 feet
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER ATD: 6 feet	CASING: Sch 40 PVC
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause	
HAMMER WEIGHT: ---	DROP: ---	RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544



PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Well No. W-2	
BORING LOCATION: West of bay on west side of building		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/2/91	DATE FINISHED: 4/2/91
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 11.5 feet	SCREEN INTERVAL: 6 - 11 feet
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER ATD: 6.5 feet	CASING: Sch 40 PVC
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause	
HAMMER WEIGHT: ---	DROP: ---	RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544



PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Well No. W-3	
BORING LOCATION: East side of building - 10 feet from excavation		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/3/91	DATE FINISHED: 4/3/91
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 11.5 feet	SCREEN INTERVAL: 6 - 11 feet
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER ATD: 6 feet	CASING: Sch 40 PVC
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause	
HAMMER WEIGHT: ---	DROP: ---	RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544



PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Boring No. B-1			
BORING LOCATION: Northwest side of building		ELEVATION AND DATUM:			
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/1/91		DATE FINISHED: 4/1/91	
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 16 feet		MEASURING POINT:	
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER	FIRST 8 feet	COMPL.	24 HRS. ~6 feet
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause			
HAMMER WEIGHT: N/A		DROP: N/A		RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot		
				Surface Elevation:	
				Asphalt	
1				SANDY CLAY (CL) Black (5 YR 2.5/1), dry to moist, 60% clay, 25% fine to coarse sand, 15% gravel	
2				SAND with SILT (SM) Light olive brown (2.5 Y 4/3), dry, 85 - 90% fine to coarse sand, 10 - 15% silt	
3				CLAYEY, SANDY GRAVEL (GW) Very dark grayish brown (10 YR 3/2), dry to moist, 50% fine to coarse subangular gravel, 35 - 40% fine to coarse sand, 10 - 15% fines	
4				Increase to moist	
5				SANDY CLAY (CL) Very dark grayish brown (10 YR 3/2), moist, 60% fines, 40% fine sand, low to medium plasticity, hard	
6				1 inch, sandy gravel lens, wet	
7	B1-1			CLAY (CL) Black (7.5 YR 2/0), moist, trace fine sand, high plasticity, firm	
8				Color change to very dark gray (7.5 YR N3/3), increase in percent silt and fine sand	
9				SILTY CLAY (CL) Dark gray (5 Y 4/1), moist and fine sand, high plasticity, soft	
10				CLAYEY SILT Dark gray (5 Y 4/1) with brown mottling, moist, trace to 5% fine to medium sand	
11	B1-2			Wet, decrease mottling to gray	
12				Increase clay	
13					
14	B1-3				

PROJECT: CUMMINS WEST
San Leandro, California

Log of Boring No. B-1 cont'd.

DEPTH (feet)	SAMPLES			DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.</small>	REMARKS
	Sample No.	Sample	Blows/ Foot		
15	B1-4			SILTY SAND (SM) Dark gray (5 Y 4/1), wet, 80% fine sand, 20% silt	
16				CLAY (CH) Very dark gray (5 Y 3/1), moist, high plasticity, firm, some silt Bottom of boring at 16 feet	
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

B-2-89/Modified

PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Boring No. B-2	
BORING LOCATION: West side of building, north of excavation		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/1/91	DATE FINISHED: 4/1/91
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 13 feet	MEASURING POINT:
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER	FIRST 8 feet COMPL. 24 HRS. ~6 feet
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause	
HAMMER WEIGHT: N/A	DROP: N/A	RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544

DEPTH (feet)	SAMPLES			DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot		
				Surface Elevation:	
				8 Inches concrete	
1				SILTY SAND (SM) Olive gray (5 Y 4/2), 80% fine to medium sand, 20% fines, moist	
2				Clayey sand with gravel (SW), strong brown (7.5 YR 4/6), 40% fine to coarse sand, 30% fines, 30% gravel Cobble greater than diameter of core barrel, pale green	
3				SANDY CLAY (CL) Very dark gray (10 YR 3/1), dry, 65% fines, 35% fine to coarse sand, 5% gravel, hard Olive sand lens	
4				SANDY, CLAYEY GRAVEL (GW) Moist, 40% fine to coarse subangular gravel (mostly fine), 30% fines, 30% fine to coarse sand	
6	B2-a			Black sand (SP) lens	
7	B2-1			SILTY CLAY (CL) Very dark gray (10 YR 3/1), moist, trace to 5% fine to medium sand, soft to firm, medium to high plasticity	
8	B2-2			CLAYEY SILT (SM) Dark gray (5 Y 4/1) Trace fine sand, low to medium plasticity, soft to firm	
9	B2-3				
10	B2-4			Increase clay	
13				Bottom of boring at 13 feet	

B-1-89/Modified

PROJECT: CUMMINS WEST SITE
San Leandro, California

Log of Boring No. B-3

BORING LOCATION: West side of building, northwest of excavation

ELEVATION AND DATUM:

DRILLING CONTRACTOR: HEW Drilling Co., Inc.

DATE STARTED:
4/2/91

DATE FINISHED:
4/2/91

DRILLING METHOD: Hollow stem auger

TOTAL DEPTH:
13 feet

MEASURING POINT:

DRILLING EQUIPMENT: CME 55 feet

DEPTH TO WATER

FIRST
8 feet

COMPL. 24 HRS.

SAMPLING METHOD: 5' continuous dry core

LOGGED BY:
Lin Krause

HAMMER WEIGHT: ---

DROP: ---

RESPONSIBLE PROFESSIONAL:
Ken Johnson

REG. NO.
1544

DEPTH (feet)	SAMPLES				DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows	Foot		
					Surface Elevation:	
0					Asphalt	
1					SANDY CLAY with GRAVEL (CL) Very dark gray (10 YR 3/1), moist, 65 - 75% fines, 15 - 25% fine to coarse sand, 10% fine to coarse subangular gravel (mostly fine), medium plasticity, hard	
2					2 inch silty sand lens	
3					Color change to dark grayish brown (10 YR 4/2), increase in sand and gravel to 50% fines, 25% sand, 25% gravel	
4					Color change to very dark gray (10 YR 3/1)	
5					SANDY CLAYEY GRAVEL (GW) Brown (10 YR 4/3), moist, 40% gravel, 30% sand, 30% fines	
6					SILTY CLAY (CL) Very dark gray (10 YR 3/1), moist, 90 - 95% fines, 5 - 10% fine sand, soft	
7					CLAY (CL) Black (7.5 YR N2), moist, 5% fine to coarse sand, medium plasticity, hard	
8	B3-1				Color change to gray	
9	B3-2				SILTY CLAY (CH) Dark gray (5 Y 4/1), wet, high plasticity, firm	
10	B3-3					
11					Increase in silt	
12					CLAYEY SILT (ML) Dark gray (5 Y 4/1), wet, nonplastic, very soft	
13					SILTY CLAY (CM) Dark gray (5 Y 4/1), wet, high plasticity, firm	
13					Bottom of boring at 13 feet	

B-1-89/Modified

PROJECT: CUMMINS WEST SITE
San Leandro, California

Log of Boring No. B-4

BORING LOCATION: West side of building, near bay door

ELEVATION AND DATUM:

DRILLING CONTRACTOR: HEW Drilling Co., Inc.

DATE STARTED:
4/1/91

DATE FINISHED:
4/1/91

DRILLING METHOD: Hollow stem auger

TOTAL DEPTH:
13 feet

MEASURING POINT:

DRILLING EQUIPMENT: CME 55 feet

DEPTH TO
WATER

FIRST
8 feet

COMPL.

24 HRS.
~6 feet

SAMPLING METHOD: 5' continuous dry core

LOGGED BY:
Lin Krause

HAMMER WEIGHT: ---

DROP: ---

RESPONSIBLE PROFESSIONAL:
Ken Johnson

REG. NO.
1544

DEPTH (feet)	SAMPLES				DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot	Foot		
					Concrete	
					Surface Elevation:	
1					CLAYEY SAND (SW) Brown and strong brown (7.5 YR 5/4 and 5/6), moist, 50% fine to coarse sand, 25 - 30% gravel to 5 centimeters, 20 - 25% fines	
2						
3					Color change to very dark grayish brown (10 YR 3/2), increase in clay to 40%, decrease in gravel to 10%	
4					CLAYEY SAND (SW) Very dark grayish brown (10 YR 3/2), moist, 60% fine to coarse sand, 15% fines, 25% fine to coarse subangular gravel (mostly fine) Green silty sand lens, 80% sand, 20% silt	
5						
6					CLAYEY GRAVEL (GC) Very dark grayish brown (10 YR 3/2), moist, 40% fine to coarse gravel (mostly fine), 30% fine to medium sand, 30% fines	
7						
8	B4-1				CLAY with SAND (CL) Black (10 YR 2/1), moist, 85% fines, 15% fine to coarse sand, medium plasticity, hard	
9					CLAYEY SILT (ML) Black (7.5 YR 2/), wet, trace fine to coarse sand, low plasticity, firm	
10	B4-2				SILTY CLAY (CL) Dark gray (2.5 Y N4/), wet, medium to high plasticity, firm	
11						
12					CLAYEY SILT (SM) Dark gray (5 Y 4/1), wet, trace sand, low plasticity, soft	
13	B4-3				Bottom of boring at 13 feet	
14						

PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Boring No. B-5	
BORING LOCATION: West side of building (southernmost boring)		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/1/91	DATE FINISHED: 4/1/91
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 13 feet	MEASURING POINT:
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER	FIRST 8 feet COMPL. 24 HRS. 6 feet
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause	
HAMMER WEIGHT: ---	DROP: ---	RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544

DEPTH (feet)	SAMPLES			DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.</small>	REMARKS
	Sample No.	Sample	Blows/ Foot		
				Surface Elevation:	
				10 inches concrete	
1				SILTY SAND (SM) Very dark gray (10 YR 3/1), 70% fine to coarse sand, 30% fines, moist	
2				SANDY CLAYEY GRAVEL (GW) Yellowish brown (10 YR 5/4), moist, 60 - 70% fine to coarse subangular gravel, 15 - 20% fine to coarse sand, 15 - 20% fines Color change to dark grayish brown (10 YR 4/2)	
3				Green silty sand (SD) lens	
4				CLAY with SAND (CL) Black (10 YR 2/1), moist, 65 - 70% fines, 30 - 35% fine to coarse sand and fine gravel	
5				SANDY CLAYEY GRAVEL (GW) Brown (10 YR 4/3), 60% fine to coarse subangular gravel, 20% fine to coarse sand, 20% fines	
6				CLAY (CL) Very dark gray (10 YR 3/1), moist, 85 - 90% clay, 10% fine to coarse sand, trace to 5% fine gravel, medium to high plasticity, hard	
7					
8				CLAY (CL) Black (7.5 YR 2/0), moist, trace fine to medium sand, medium to high plasticity, hard Color change to very dark gray (10 YR 2/1), wet and gravel	
9	B5-1			SILTY CLAY (CL) Dark gray (7.5 YR N4/), wet, low to medium plasticity, soft	
10				Increase in silt	
11				Silty clay (CH), dark gray (7.5 YR N4/), wet, high plasticity, soft	
12				CLAYEY SILT (SM) Dark gray (5 Y 4/1), wet, non- to low plasticity, very soft	
13	B5-2			Bottom of boring at 13 feet	
14					

PROJECT: CUMMINS WEST SITE San Leandro, California		Log of Boring No. B-6	
BORING LOCATION: Extra boring, northwest side of building		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: HEW Drilling Co., Inc.		DATE STARTED: 4/2/91	DATE FINISHED: 4/2/91
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 13 feet	MEASURING POINT:
DRILLING EQUIPMENT: CME 55 feet		DEPTH TO WATER	FIRST 8 feet COMPL. 24 HRS. 6 feet
SAMPLING METHOD: 5' continuous dry core		LOGGED BY: Lin Krause	
HAMMER WEIGHT: ---	DROP: ---	RESPONSIBLE PROFESSIONAL: Ken Johnson	REG. NO. 1544

DEPTH (feet)	SAMPLES			DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react. w/HCl, geo. inter.</small>	REMARKS
	Sample No.	Sample	Blows/ Foot		
				Surface Elevation:	
1				Asphalt SANDY SILT with GRAVEL (ML) Very dark grayish brown (10 YR 3/2), moist, 45% fines, 40% fine to coarse sand, 15% fine angular gravel	
2				Silty sand lens Increase in clay	
3				SANDY CLAYEY GRAVEL (GW) Very dark grayish brown (10 YR 3/2), moist, 40% fine to coarse, subangular gravel (mostly fine), 30% fines, 30% fine to coarse sand	
4				CLAY (CH) Black (7.5 YR N2/), moist, 85 - 90% fines, 10 - 15% fine to coarse sand, high plasticity, hard	
5				Decrease in sand to trace, firm to hard	
6					
7	B6-1			Color change to very dark gray (10 YR 3/1)	
8	B6-2 B6-3			SILTY CLAY (CL - CH) Dark gray (5 Y 4/1), wet, medium to high plasticity, soft	
9					
10					
11	B6-4				
12					
13				CLAYEY SILT (ML) Dark gray (5 Y 4/1), wet, nonplastic, very soft Bottom of boring at 13 feet	
14					