RO 184

Tetra Tech EM Inc.

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May 23, 2003
Via Federal Express

Mr. Barney M. Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-9335

Subject: **Responses to Technical Comments and Observations**
444 Hegenberger Loop, Oakland, California
Fuel Leak Case RO00000184
Tetra Tech Project Number P1389.01

Dear Mr. Chan:

Your letter of February 24, 2003, regarding the subject site and addressed to Ms. Mary Schroeder of McMorgan & Company (McMorgan), was forwarded to us by our client for follow-up response to the nine technical comments and observations listed therein. The responses that follow are ordered as in your letter to McMorgan, preceded by the original comment or observation in bold type.

Comment 1: Please clarify and document the disposal of all soil and groundwater waste generated and/or previously existing at this site. This should include the original 350-400 cubic yards of soil at the site and any other generated waste from tank removal and subsurface investigations.

Response: As a precursor to this response, Tetra Tech attempted to contact Northwest Envirocon, Inc. (NEI), formerly of Sacramento, California, to acquire as complete a set of available and relevant historical documents as possible regarding disposal of investigation-derived waste (IDW) from the subject site. However, NEI could not be reached and appears to be no longer in business. Nevertheless, McMorgan was able to provide Tetra Tech a copy of a letter report, dated May 5, 1999, prepared by NEI and documenting the sampling and analysis for two stockpiles of soil (about 5 cubic yards each) and the disposal of drums of soil and water purged from groundwater monitoring wells during previous investigations at the subject site. The letter report was copied to the Alameda County Health Care Services Agency, Environmental Health Services (ACHCSA), as documented in a letter to McMorgan dated May 18, 1999.

So far as is known by Tetra Tech, the soil and groundwater waste generated at the site, whether by excavation or investigation, falls into four categories: (1) the original 350- to 400-cubic-yard stockpile of soil and debris; (2) material removed during excavation of the site's former waste-oil tank (WOT) and oil-water separator (OWS), the subject of the May 5, 1999, NEI letter report; (3) soil cuttings, developed and purged groundwater, and decontamination liquids (IDW) associated with investigations conducted by consultants prior to Tetra Tech (also documented in the May 5, 1999, NEI letter report); and (4) IDW associated with Tetra Tech's off-site installation of two groundwater monitoring wells (MW-7 and MW-8) and monitoring of the five remaining on-site groundwater monitoring wells.

The latest documented information made available to Tetra Tech regarding the original stockpile was included in a letter by NEI, dated February 28, 1997, that discussed soliciting bids for transporting and disposing of the material off site as opposed to spreading the material on site. Despite approval from the ACHCSA and the lack of actual documentation for removal and disposal of the stockpile (copies of loading tickets, manifests or bills of lading, and/or disposal/gate tickets), it appears that the option of on-site disposal was precluded due to the nature of the debris within the stockpile and that plans were underway to effect its removal from the site for off-site disposal. Approval for disposal of the stockpiled material on site was granted by the ACHCSA in a letter dated August 12, 1996. Absent the specific documentation, Tetra Tech deems it reasonable to conclude that the original, large stockpile of soil and debris was removed from the site. Activities conducted by Tetra Tech at the site would likely have revealed some evidence of disposal of this material on site, but no such evidence was observed.

In the same February 28, 1997, NEI letter referenced above is a discussion of the excavation and removal of the former WOT and OWS. These activities were further documented by NEI in a report ("Tank Removal Results Report and Work Plan for Soil and Groundwater Sampling"), dated July 23, 1996. A subsequent NEI report ("Soil and Groundwater Assessment"), dated December 19, 1997, discusses exploratory trenching conducted at the site and mentions that the trenches were backfilled, but does not discuss the nature or source of the backfill material or whether the trench spoils were removed and disposed of off site. As indicated above, the removal and disposal of the former OWT/OWS excavation material (under uniform hazardous waste manifests) was documented by NEI. Drummed soil and purged groundwater were transported from the site by Safety-Kleen, Inc., to its facility in San Jose, California, on April 16 and 21, 1999.

The available documentation regarding disposal of IDW generated by consultants prior to Tetra Tech appears to be limited to (1) the May 5, 1999, report cited above; (2) another letter report by NEI, dated December 18, 1998, wherein it is stated that soil and groundwater IDW from soil borings and monitoring well installation (soil cuttings, well development water, and well purge water) were placed into DOT-approved 55-gallon drums prior to disposal; and (3) the May 18, 1999, ACHCSA letter referenced above wherein conditional approval was granted for use of the 10 cubic yards of soil from the WOT/OWS excavations as fill material on site. The copy of the December 1998 NEI report does not address decontamination water and does not contain copies of loading tickets, manifests or bills of lading, and/or disposal/gate tickets that would document the disposition of that IDW. However, it appears that the May 5, 1999, NEI report is the documentation for the disposal of the drummed soil and water IDW. Tetra Tech is not aware of documentation actually confirming that the 10 cubic yards of excavated soil was used as fill on site, but assumes that the soil was used to backfill the excavations.

The IDW generated as a result of the investigation activities conducted by Tetra Tech included, soil cuttings and development water from drilling and installing, respectively, the off-site monitoring wells MW-7 and MW-8. Additional IDW included purge water from the monitoring of these wells and the remaining five on site wells. Based on field observations and PID/OVM readings, the soil cuttings from MW-7 and MW-8 were deemed to be free of constituents of concern (COCs) and were disposed of by spreading the soil on site. However, and as a matter of course, Tetra Tech placed the resulting well development water and purge water from the monitoring into DOT-approved 55-gallon drums pending proper off-site disposal. The documentation (hazardous waste manifest) of the transport and disposal of the liquid IDW is attached (Attachment 1) and refers to a total of seven 55-gallon drums containing water IDW generated over the period of December 2000 to October 2001 that included the three quarters of groundwater monitoring conducted by Tetra Tech. The monitoring is documented in three quarterly groundwater monitoring reports, dated March 9, 2001, June 8, 2001, and December 4, 2001.

Comment 2: Please submit a signed and stamped signature page or cover letter attesting to the contents of the October 18, 2002 Tier 2 Risk-Based Corrective Action Evaluation as required under the Business and Professional Code sections 6735 and 7835.1.

Response: Please find enclosed with this letter a signed and stamped signature page, with wet ink signatures and California Registered Geologist stamp, to replace the page that was originally included with the October 18, 2002, report submitted by Tetra Tech.

Comment 3: The utilities survey provided is insufficient. Please provide cross-sectional diagrams indicating the depth to utilities and depth to groundwater. We request that you evaluate the potential for contamination migration along preferential pathways. A utilities map has been provided for the area near 451 Hegenberger Rd. (Chevron Station) indicating that this information is available. Based upon the shallow soil and groundwater contamination at the site, both vapor and dissolved phase migration appear possible.

Response: Tetra Tech notes with interest that information appears to be available regarding buried utilities in the neighborhood of the subject site. Thus, Tetra Tech hereby formally requests that the ACHCSA make this information available to Tetra Tech and trusts that the documentation will include the needed information, in sufficient detail, to provide the requested cross-sections and support further evaluation of potential preferential pathways at and near the subject site.

Comment 4: The elimination of the exposure pathway of groundwater ingestion cannot be assumed. Physical or chemical data or other reasonable justification should be provided to support this conclusion.

Response: In eliminating the groundwater beneath the subject site as a source of drinking water, thereby eliminating ingestion of groundwater as an exposure pathway, Tetra Tech is not basing its arguments on an assumption. Instead, Tetra Tech believes there is ample justification to conclude that the groundwater beneath the site will not be used as a source of water, for either irrigation or consumption. Consumable water in the area of Oakland that includes the subject site is provided by municipal service and there is no logical reason to expect that whatever future enterprise occupies the subject site would derive its water from any other source, particularly via groundwater wells drilled on site.

In addition, the subject site is located near enough to San Francisco Bay and its arms that it is also reasonable to expect the shallow groundwater beneath the site is not of sufficient quality, or would be producible in sufficient quantities, to qualify it as a source of drinking water. Moreover, recent conversations with personnel at the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) suggest to Tetra Tech that the groundwater beneath the region of the San Francisco Bay Area, west of Interstate 880 (I-880), where the subject site is located is generally viewed by that agency as non-potable primarily due to its brackish conditions.

On this issue, as well as others related to closure of the subject, Tetra Tech continues to recommend that discussions with the SFBRWQCB and the other interested parties ensue so as to define and clarify the closure requirements that specifically apply to the subject site and whether those requirements have been met by the data, information, RBCA results, and various responses submitted to the ACHCSA, including these.

Comment 5: Soil type application of the Oakland ULR document recommends that this be determined by soil sieve analysis. An alternative is to determine the risk based screening level (RBSL) for the three soil types found in the Oakland ULR document and compare the most conservative RBSL with the site contamination.

Response: In Tetra Tech's experience, the Merrit Sand (one of the three soil types considered in the Oakland ULR document) is a distinct and easily-recognizable unit. As such, it was not observed as having been encountered during the borings drilled by either Tetra Tech or the previous consultants working at the project site. Nevertheless, in the absence of sieve analysis data, Tetra Tech ran the three soil types found in the Oakland URL document through the Oakland RBCA model, as indicated, including the Merrit Sand, sandy silt, and clayey silt (the latter is the predominant soil type encountered in the site's shallow subsurface). These runs were for the site's COCs that directly correspond with those COCs that are available for evaluation using the model and compared the sample analytical results with the most conservative RBSLs.

The results of the Oakland Tier 2 RBCA model runs are based on the following key points: (1) as discussed above in response to Comment 4, the shallow groundwater beneath the subject is not and will not be a source of useable water, either for human consumption or irrigation; and (2) as indicated below in response to Comment 7, the subject site located within a section of Oakland that is and may be reasonably expected to continue to be zoned as a commercial district. Thus, in running the Tier 2 RBCA, Tetra Tech was justified in eliminating both ingestion of groundwater as an exposure pathway and residential as a land use for the site. This resulted in the model being run for the site's corresponding set of COCs in each the three soil types, under the exposure pathways, commercial/industrial land use, and carcinogenic hazard risk, as shown in the spreadsheet included as Table 1. not provided

The model results are summarized in Table 1 (Attachment 2) and show that the three soil types vary as to most conservative depending on the "medium" as defined in the model. Clayey silt is the most conservative under the "surficial soil scenario for ingestion, dermal contact, and inhalation of COC vapors, whereas the Merrit Sand is the most conservative under the "subsurface soil" and "groundwater" scenarios for inhalation of COC vapors in both indoor and outdoor settings.

However, based on the highest analytical results detected at the site during previous investigations, only benzene and benzo(a)pyrene were found to have exceeded the respective RBSLs and both of these were limited to the soil medium. A concentration of benzene was found in soil at 13 milligrams per kilogram (mg/kg) in NEI's soil boring sample SB13-3 (collected from soil boring SB-13 at 3 feet below ground surface in October 1997) and this value slightly exceeded the RBSL of 11 mg/kg for inhalation of vapors in indoor settings for the Merrit Sand as the subsurface soil. Again, the Merrit Sand was not encountered at the subject site. (commercial)

In addition, a concentration of benzo(a)pyrene was found in soil at 1.1 mg/kg in NEI's oil-water separator excavation sample OWS@5' (collected at 5 feet below ground surface in June 1996) and this value slightly exceeded the RBSL of 0.79 mg/kg for sandy silt and 0.43 mg/kg for clayey silt, both as surficial soil under the ingestion, dermal, and inhalation pathways. However, this excavation sample was not a surficial soil. Moreover, the location where the excavation sample was collected was subsequently backfilled and no longer provides the direct exposure pathways used in the model under the applied scenario.

As a further check, Tetra Tech compared the highest detected values for benzene in groundwater samples collected from wells and as grab samples. In neither case did the detected concentrations of benzene exceed the RBSLs. (no table)

Thus, Tetra Tech is of the opinion that the corresponding COCs detected at the site in both soil and groundwater do not exceed the listed RBSLs, do not constitute a significant threat to human health or the environment, and do not preclude the closure of the site.

Comment 6: All constituents of concern (COCs) found at the site are to be included in your risk evaluation. These constituents include those chemicals besides benzene, toluene, ethyl benzene, and xylenes mentioned in the Tier 2 RBCA. The other COC concentrations are to be evaluated with appropriate cleanup levels.

Response: As mentioned above, Tetra Tech ran the full range of the site's corresponding COCs in the Oakland RBCA model, including the COCs found during confirmation sampling of the original 350- to 400-cubic-yard stockpile, excavation of the WOT and OWS, and grab groundwater samples. These COCs and their concentrations are summarized in the attached Tables 1 through 4 (Attachment 2). (no CO level stated)

In addition, because they are not accounted for in the Oakland RBCA model, the detected concentrations of cobalt and lead were compared, respectively, to EPA Region IX Preliminary Remediation Goals (PRGs) and the 99-percentile PRG under the Department of Toxic Substances Control (DTSC) "Lead Spread Model" (LSM). Total petroleum hydrocarbon constituents do not have associated clean-up or risk-based levels, or RBSLs, and have not been considered further. X

SB-3

The highest concentration of cobalt detected at the site was found at 12 mg/kg in NEI's stockpile soil boring sample SB-3 (collected from the 350- to 400-cubic-yard stockpile in April 1996). This value is significantly below the PRG of 1,900 mg/kg for industrial soil, the applicable scenario for the subject site. Regardless, the cobalt detected in the soil previously stockpiled at the site does not constitute an environmental concern because the soil stockpile is deemed to have been removed, as discussed above in response to Comment 1.

The highest concentration of lead detected at the site was found at 94 mg/kg in the NEI excavation sample OWS@5' (see above). This value was evaluated using the DTSC LSM, with default values for lead in air, water, and dust. The result of the LSM run for the detected concentration of lead indicates that the ? 99-percentile PRG is 3,475 mg/kg. Thus, the lead detected at the subject site does not constitute an environmental concern and, as discussed above, the location where the excavation sample was collected has been backfilled and no longer provides a direct exposure pathway. (Spread sheet not provided)

Comment 7: When evaluating the potential exposure pathways, residential exposure should be also be evaluated even if this pathway is not intended at the present time. A deed restriction or closure for current land use may be used to eliminate this exposure pathway evaluation.

Response: Tetra Tech has been advised by our client, Ms. Mary Schroeder (McMorgan) that the section of Oakland where the subject site is located is zoned for commercial use. [redacted]" Therefore, residential exposure pathways are inappropriate for consideration in dealing with the present environmental issues.

While it is not an absolute certainty that at some distant point in the future the City of Oakland (City) would not re-zone the vicinity of the subject site for residential development, there is no logical justification to consider such an ambiguous eventuality in terms of the present issues and the likelihood of the City transforming an established commercial district into a residential one would seem to be extremely remote.

However, to alleviate concerns relative to future development of the subject site, McMorgan will entertain either a deed restriction or land-use controls.

Comment 8: All existing soil and groundwater data must initially be evaluated in your Human Health Risk Assessment (HHRA). This includes "grab" groundwater samples. Evidence must be provided to exclude this data.

Response: See response to Comment 6.

However, Tetra Tech reiterates its position with respect to grab groundwater samples that such samples and their analytical results are intended for use as screening tools to help in optimizing subsequent site investigations, including locating groundwater monitoring wells. The analytical results from grab groundwater samples are poor substitutes for the more reliable well data that should be used for evaluation of risks to human health.

Comment 9: Please note the Oakland ULR document states that if a chemical of concern is capable leaching to groundwater and groundwater at the site is considered a source of drinking water, you should consider the chemical to be present in the subsurface even if it is not there currently or has yet not been determined to be there. Because there is a lack of subsurface soil data (>1 meter) and indication that subsurface contamination exists (elevated PID screening values), subsurface RBSLs must be evaluated. As an alternative, additional soil sampling, limited soil excavation or soil gas samples are options to address this concern.

Response: The actual text of the Oakland ULR Program Guidance Document (January 1, 2000) that the comment draws upon reads as follows: "if a chemical of concern capable of leaching to groundwater is present in the surficial soil (top one meter of soil) *and* groundwater at your site is considered a source of drinking water, you should – for purposes of the RBCA analysis – consider the chemical to be present in the subsurface soil (all soil deeper than one meter and above groundwater) even if it not detected there currently."

In reading the comment, Tetra Tech believes the actual Oakland ULR guidance language on this point has been misstated. The guidance calls for both of the stated conditions to be extant for the direction to hold. As has been argued above in response to Comment 4, the groundwater beneath the subject site and its surrounding area to the west of I-880 is non-potable, is degraded by the brackish groundwater conditions in proximity to San Francisco Bay, and is generally not considered to be a source of drinking water by the SFBRWQCB. Therefore, constituents detected in the surficial soil (as defined above) at the site are not required to be analyzed as part of the RBCA.

We appreciate the interest of the ACHCSA in this matter and trust that the provided responses are sufficient to move the current request for site closure forward.

We look forward to receiving the additional information on utilities as requested above. Following receipt of this information, Tetra Tech will submit a response to Comment 3, including cross-sections and an evaluation of the potential for contaminant migration along these possible preferential pathways, as a final step to securing closure for the site. In the event that the ACHCSA does not grant the requested site closure, Tetra Tech, on behalf of McMorgan, respectfully reiterates the request that a meeting be called between the ACHCSA, McMorgan, Tetra Tech, and the SFBRWQCB to resolve any remaining issues.

Sincerely,
TETRA TECH EM INC.

Douglas I. Sheeks, R.G.
Senior Geologist
CRG No. 5211

Enclosure/Attachments

cc: M. Schroeder, McMorgan & Company
R. M. Hirsch, Esq., McMorgan & Company
W. H. Kim, Tetra Tech
File

Use of this report by third parties shall be at their sole risk. This report was prepared under the direct supervision of the California Registered Geologist whose signature appears below.

We appreciate the opportunity to provide McMorgan & Company with geologic, engineering, and environmental consulting services and trust that this letter report meets your needs. If you have any questions or concerns, please call Mr. Walter Kim at (916) 853-4505.

Sincerely,

TETRA TECH EM INC.

Robert Schumann
Staff Geologist

Douglas I. Sheeks, R.G.
Senior Geologist
CRG No. 5211

REGISTERED GEOLOGIST
DOUGLAS I. SHEEKS
No. 5211
★ STATE OF CALIFORNIA ★

Attachments

cc: B. M. Chan, ACHCSA
W. H. Kim, Tetra Tech

State of California—Environmental Protection Agency
Form Approved OMB No. 2050–0039 (Expires 9-30-99)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: [illegible] — Manifest Document No.: [illegible]
2. Page 1 of 1

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

A. State Manifest Document Number: 21348123

3. Generator's Name and Mailing Address: [illegible] AND COMPANY / [illegible]
4. Generator's Phone: [illegible] CA [illegible]

B. State Generator's ID:

5. Transporter 1 Company Name: [illegible] TRANSPORTATION AND — Benedetti N, Inc.
6. US EPA ID Number: CAR000[illegible]
C. State Transporter's ID [Reserved.]
D. Transporter's Phone: (800) 947-7701

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID [Reserved.]
F. Transporter's Phone: ( )

9. Designated Facility Name and Site Address: [illegible] ENVIRONMENTAL, INC. KENT / [illegible] AVENUE SOUTH / KENT, WA [illegible]
10. US EPA ID Number: WA[illegible]
G. State Facility's ID:
H. Facility's Phone: (253) 872-8030

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. X HAZARDOUS WASTE, LIQUID, N.O.S. ([illegible]) 9 NA3082 PG III [illegible]	006	DM	00300	G	State: 343; EPA/Other: D018
b. Hazardous waste, liquid, NOS. (Benzene) 9 NA3082 PG III ERG# 171	001	DF	00050	G	State: 341; EPA/Other: D018
c.					State: ; EPA/Other:
d.					State: ; EPA/Other:

J. Additional Descriptions for Materials Listed Above
a) [illegible] WATER WITH [illegible]

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

15. Special Handling Instructions and Additional Information
DISPOSAL [illegible] SITE ADDRESS: [illegible] ROAD, OAKLAND CA. (TETRA TECH EM, INC.)

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
X Robert Schumann	[signature]	[illegible]	[illegible]	[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials

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

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR / TRANSPORTER / FACILITY

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

21348123

DO NOT WRITE BELOW THIS LINE.

+ charges to overpack 1 drum

DTSC 8022A (1/99)
EPA 8700—22

Yellow: GENERATOR RETAINS

PHILIP SERVICES CORP
RCRA Land Disposal Restriction Notification Form EZ

Generator: MCMORGAN AND COMPANY **US EPA ID No.** CAC002372911

Philip Profile No. 180817-00 **Manifest No.** 21348123

The wastes identified on this form are subject to the land disposal restrictions of 40 CFR Part 268. The wastes do not meet the treatment standards specified in Part 268, Subpart D or do not meet the applicable prohibition levels specified in 268.32. Pursuant to 40 CFR 268.7(a), the required information applicable to each waste is identified below (check all boxes that apply):

Treatability Group: ☐ Wastewater X Nonwastewater
(Wastewaters contain less than 1% filterable solids and less than 1% Total Organic Carbon)

- ☐ **D001 Ignitable (except for High TOC) managed in non-CWA/non-CWA-equivalent/non Class I SDWA systems**
- ☐ D001 Ignitable (except for High TOC) managed in CWA/ CWA-equivalent/Class I SDWA systems
- ☐ D001 High TOC Ignitable (greater than 10% total organic carbon)
- ☐ **D002 Corrosive managed in non-CWA/non-CWA-equivalent/non Class I SDWA systems**
- ☐ D002 Corrosive managed in CWA/ CWA-equivalent/Class I SDWA systems
- ☐ D003 Reactive Sulfides based on 261.23(a)(5)
- ☐ D003 Reactive Cyanides based on 261.23(a)(5)
- ☐ **D003 Water Reactives based on 261.23(a)(2),(3) and (4) managed in non-CWA/non-CWA-equivalent/non Class I SDWA systems**
- ☐ D003 Water Reactives based on 261.23(a)(2),(3) and (4) managed in CWA/ CWA-equivalent/Class I SDWA systems
- ☐ D003 Other Reactives based on 261.23(a)(1)

If D004-43 boxes are checked, complete and attach Form UC to address underlying hazardous constituents (unless these wastes are to be managed in CWA/CWA-equivalent/Class I SDWA systems):

- ☐ D004 Arsenic ☐ D005 Barium ☐ D006 Cadmium ☐ D006 Cadmium-containing batteries
- ☐ D007 Chromium ☐ D008 Lead ☐ D008 Lead acid batteries
- ☐ D009 High mercury inorganic (>260 mg/kg total), including incinerator residue and residues from RMERC
- ☐ D009 High-mercury organic (>260 mg/kg total), not including incinerator residue
- ☐ D009 Low-mercury (<260 mg/kg total) ☐ D009 All D009 wastewaters
- ☐ D010 Selenium ☐ D011 Silver

☐ **D012 Endrin**	☐ **D023 *o*-Cresol**	☐ **D033 Hexachlorobutadiene**
☐ **D013 Lindane**	☐ **D024 *m*-Cresol**	☐ **D034 Hexachloroethane**
☐ **D014 Methoxychlor**	☐ **D025 *p*-Cresol**	☐ **D035 Methyl ethyl ketone**
☐ **D015 Toxaphene**	☐ **D026 Cresols (Total)**	☐ **D036 Nitrobenzene**
☐ **D016 2,4-D**	☐ **D027 *p*-Dichlorobenzene**	☐ **D037 Pentachlorophenol**
☐ **D017 2,4,5-TP (Silvex)**	☐ **D028 1,2-Dichloroethane**	☐ **D038 Pyridine**
☒ **D018 Benzene**	☐ **D029 1,1-Dichloroethylene**	☐ **D039 Tetrachloroethylene**
☐ **D019 Carbon tetrachloride**	☐ **D030 2,4-Dinitrotoluene**	☐ **D040 Trichloroethylene**
☐ **D020 Chlordane**	☐ **D031 Heptachlor**	☐ **D041 2,4,5-Trichlorophenol**
☐ **D021 Chlorobenzene**	☐ **D032 Hexachlorobenzene**	☐ **D042 2,4,6-Trichlorophenol**
☐ **D022 Chloroform**		☐ **D043 Vinyl chloride**

Note: If any bolded entries are checked, form UC must be completed to address underlying hazardous constituents, unless the material is treated in a Clean Water Act (CWA) treatment process.

In addition, the following wastes are included in this shipment:

☐ F001-F005 spent solvents. *(If this box is checked, complete the F001-F005 section on the back of this form. Check the hazardous waste number(s) that applies, and identify the constituents likely to be present in the waste.)*

If this shipment carries additional waste codes that are not addressed above, identify them here:

EPA Waste Code	Subcategory (if applicable)	EPA Waste Code	Subcategory (if applicable)

F001-F005 Spent Solvents

Check the box(es) that applies; identify the individual constituents likely to be present.

Hazardous waste description	Regulated hazardous constituents	
☐ F001 Spent halogenated solvents used in degreasing	Carbon tetrachloride Tetrachloroethylene Trichloroethylene Trichloromonofluoromethane	Methylene chloride 1,1,1-Trichloroethane 1,1,2-Trichloro-1,2,2-trifluoroethane
☐ F002 Spent halogenated solvents	Chlorobenzene Methylene chloride 1,1,1-Trichloroethane Trichloroethylene Trichloromonofluoromethane	*o*-Dichlorobenzene Tetrachloroethylene 1,1,2-Trichloroethane 1,1,2-Trichloro-1,2,2-trifluoroethane
☐ F003 Spent non-halogenated solvents	Acetone Cyclohexanone* Ethyl benzene Methanol* Xylenes (total)	*n*-Butyl alcohol Ethyl acetate Ethyl ether Methyl isobutyl ketone
☐ F004 Spent non-halogenated solvents	*m*-Cresol *p*-Cresol Nitrobenzene	*o*-Cresol Cresol-mixed isomers (cresylic acid)
☐ F005 Spent non-halogenated solvents	Benzene 2-Ethoxyethanol Methyl ethyl ketone Pyridine	Carbon disulfide* Isobutyl alcohol 2-Nitropropane Toluene

**The treatment standards for carbon disulfide, cyclohexanone, and methanol nonwastewaters are based on the TCLP and apply to spent solvent nonwastewaters containing only one, two, or all three of these constituents. The treatment standards for these three constituents do not apply when any of the other F001-F005 constituents are present in the waste.*

PHILIP SERVICES CORP
RCRA Land Disposal Restriction Notification Form UC

Generator: MC MORGAN AND COMPANY **US EPA ID No.** CAC002372911

Philip Profile No. 180817-00 **Manifest No.** 21348123

In accordance with 40 CFR 268.7(a), the underlying hazardous constituents must be addressed in this waste. Per 268.2(i), "underlying hazardous constituent" means any constituent listed in 268.48, Table UTS—Universal Treatment Standard which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standard. Refer to Form-EZ (attached) for the waste code(s), treatability group, and subcategory applicable to this waste.

In order to address underlying hazardous constituents in characteristic wastes, please check the appropriate box:

☐ I have reviewed the UTS list of 268.48, and per 268.7(a), I have determined that there are no underlying hazardous constituents reasonably expected to be present in this waste.

☒ I have reviewed the UTS list of 268.48, and per 268.7(a), I have determined that underlying hazardous constituents are present in this waste. The underlying hazardous constituents are identified as follows:

BENZENE

The determination of underlying hazardous constituents was based on:

☒ Generator's knowledge of the waste

☐ Analysis

I certify that I personally have examined and am familiar with the waste through analysis and testing, or through knowledge of the waste to support this certification. I certify that as an authorized representative of the generator named above, all the information submitted in this notification is true and correct to the best of my knowledge.

Rob Schumann — Printed Name
[signature] — Signature
10/23/01 — Date

List of Underlying Hazardous Constituents 40 CFR 268.48

Circle or otherwise identify the underlying hazardous constituents present in the waste:

Organic Constituent

A2213
Acenaphthylene
Acenaphthene
Acetone
Acetonitrile
Acetophenone
2-Acetylaminofluorene
Acrolein
Acrylamide
Acrylonitrile
Aldicarb sulfone
Aldrin
4-Aminobiphenyl
Aniline
Anthracene
Aramite
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC
Barban
Bendiocarb
Bendiocarb phenol
Benomyl
Benzene
Benz(a)anthracene
Benzal chloride
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzo(a)pyrene
Bromodichloromethane
Bromomethane/Methyl bromide
4-Bromophenyl phenyl ether
n-Butyl alcohol
Butylate
Butyl benzyl phthalate
2-sec-Butyl-4,6-dinitrophenol/Dinoseb
Carbaryl
Carbenzadim
Carbofuran
Carbofuran phenol
Carbon disulfide
Carbon tetrachloride
Carbosulfan
Chlordane (alpha and gamma isomers)
p-Chloroaniline
Chlorobenzene
Chlorobenzilate
2-Chloro-1,3-butadiene
Chlorodibromomethane
Chloroethane
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
Chloroform
bis(2-Chloroisopropyl)ether
p-Chloro-*m*-cresol
2-Chloroethyl vinyl ether
Chloromethane/Methyl chloride
2-Chloronaphthalene

Organic Constituent

2-Chlorophenol
3-Chloropropylene
Chrysene
o-Cresol
m-Cresol
p-Cresol
m-Cumenyl methylcarbamate
Cyclohexanone
o,p'-DDD
p,p'-DDD
o,p'-DDE
p,p'-DDE
o,p'-DDT
p,p'-DDT
Dibenz(a,h)anthracene
Dibenz(a,e)pyrene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane/Ethylene dibromide
Dibromomethane
m-Dichlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
trans-1,2-Dichloroethylene
2,4-Dichlorophenol
2,6-Dichlorophenol
2,4-Dichlorophenoxyacetic acid/2,4-D
1,2-Dichloropropane
cis-1,3-Dichloropropylene
trans-1,3-Dichloropropylene
Dieldrin
Diethylene glycol, dicarbamate
Diethyl phthalate
p-Dimethylaminoazobenzene
2,4-Dimethyl phenol
Dimethyl phthalate
Dimetilan
Di-*n*-butyl phthalate
1,4-Dinitrobenzene
4,6-Dinitro-*o*-cresol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-*n*-octyl phthalate
Di-*n*-propylnitrosamine
1,4-Dioxane
Diphenylamine
Diphenylnitrosamine
1,2-Diphenylhydrazine
Disulfoton
Dithiocarbamates (total)
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
EPTC

Organic Constituent

Ethyl acetate
Ethyl benzene
Ethyl cyanide/Propanenitrile
Ethyl ether
bis(2-Ethylhexyl)phthalate
Ethyl methacrylate
Ethylene oxide
Famphur
Fluoranthene
Fluorene
Formetanate hydrochloride
Formparanate
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
HxCDDs(All Hexachlorodibenzo-*p*-dioxins)
HxCDFs(All Hexachlorodibenzofurans)
Hexachloroethane
Hexachloropropylene
Indeno(1,2,3-c,d)pyrene
Iodomethane
Isobutyl alcohol
Isodrin
Isolan
Isosafrole
Kepone
Methacrylonitrile
Methanol
Methapyrilene
Methiocarb
Methomyl
Methoxychlor
3-Methylcholanthrene
4,4-Methylene-bis(2-chloroaniline)
Methylene chloride
Methyl ethyl ketone
Methyl isobutyl ketone
Methyl methacrylate
Methyl methansulfonate
Methyl parathion
Metolcarb
Mexacarbate
Molinate
Naphthalene
2-Naphthylamine
o-Nitroaniline
p-Nitroaniline
Nitrobenzene
5-Nitro-*o*-toluidine
o-Nitrophenol
p-Nitrophenol
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitroso-di-*n*-butylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopiperidine
N-Nitrosopyrrolidine

Organic Constituent

Oxamyl
Parathion
Total PCBs(sum of all isomers, or all Aroclor
Pebulate
Pentachlorobenzene
PeCDDs(All Pentachlorodibenzo-*p*-dioxins)
PeCDFs(All Pentachlorodibenzofurans)
Pentachloroethane
Pentachloronitrobenzene
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
o-Phenylenediamine
Phorate
Phthalic acid
Phthalic anhydride
Physostigmine
Physostigmine salicylate
Promecarb
Pronamide
Propham
Propoxur
Prosulfocarb
Pyrene
Pyridine
Safrole
Silvex/2,4,5-TP
1,2,4,5-Tetrachlorobenzene
TCDDs(All Tetrachlorodibenzo-*p*-dioxins)
TCDFs(All Tetrachlorodibenzofurans)
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
2,3,4,6-Tetrachlorophenol
Thiodicarb
Thiophanate-methyl
Tirpate
Toluene
Toxaphene
Triallate
Tribromomethane/Bromoform
2,4,6-Tribromophenol
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Trichloromonofluoromethane
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T
1,2,3-Trichloropropane
1,1,2-Trichloro-1,2,2-trifluoroethane
Triethylamine
tris-(2,3-Dibromopropyl)phosphate
Vernolate
Vinyl chloride
Xylenes-mixed isomers
(sum of o-,m-, and p-xylene concentrations)

Inorganic Constituent

Antimony
Arsenic
Barium
Beryllium

Inorganic Constituent

Cadmium
Chromium (Total)
Cyanides (Total)
Cyanides (Amenable)

Inorganic Constituent

Lead
Mercury-Nonwastewater from Retort
Mercury-All Others
Nickel

Inorganic Constituent

Silver
Sulfides
Thallium

TABLE 1
HISTORIC SOIL ANALYTICAL DATA
444 HEGENBERGER LOOP
OAKLAND, CALIFORNIA
Results In Milligrams Per Kilogram
(Page 1 of 2)

Sample ID	[illegible]	Date	[illegible]	Toluene	[illegible]	Xylenes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	ND	330	---
2-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	ND	440	---
3-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	ND	170	---
4-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	ND	110	---
5-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	ND	240	---
6-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	37	320	---
7-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	21	280	---
8-A-E	0	2/16/1996	ND	ND	ND	ND	---	ND	ND	180	---
WOT@8'	8	6/10/1996	6.7	0.68	8.1	7.6	---	560	<200	---	360
OWS@5'	5	6/10/1996	1.0	0.24	0.17	0.68	---	65	<350	---	1800
STKP	0	6/10/1996	0.019	0.0063	0.015	0.022	---	2.6	<50	---	540
SB1A	5	4/4/1997	0.037	ND	ND	ND	ND	ND	ND	---	ND
SB1B	10	4/4/1997	1.1	0.54	5.1	2.4	ND	260	120	---	93
SB2A	5	4/4/1997	0.33	0.065	0.13	0.18	ND	41	19	---	220
SB2B	10	4/4/1997	0.34	ND	0.87	0.24	ND	16	2.1	---	ND
SB3A	5	4/4/1997	0.18	ND	0.31	0.062	ND	24	7.8	---	ND
SB3B	10	4/4/1997	ND	ND	ND	ND	ND	ND	ND	---	ND
SB4A	5	4/4/1997	0.019	ND	0.052	ND	ND	1.7	ND	---	ND
SB4B	10	4/4/1997	ND	ND	ND	ND	ND	ND	ND	---	ND
SB05-3	3	10/6/1997	ND	ND	ND	ND	ND	ND	ND	---	ND
SB06-3	3	10/6/1997	0.055	0.053	0.11	0.11	ND	39	ND	---	61
SB07-3	3	10/6/1997	0.015	0.011	ND	ND	ND	1.3	ND	---	130
SB08-3	3	10/7/1997	1.1	ND	2.2	7.6	ND	160	ND	---	20
SB09-3	3	10/7/1997	0.017	ND	ND	0.015	ND	1.1	ND	---	120
SB10-3	3	10/6/1977	4.7	ND	2.8	2.5	ND	750	ND	---	25
SB11-3	3	10/7/1997	2.3	0.73	6.1	11	ND	260	ND	---	37
SB12-3	3	10/7/1997	0.036	0.007	ND	0.025	ND	1.2	ND	---	42
SB13-3	3	10/7/1997	13	0.85	5.8	4.2	ND	930	ND	---	780
SB14-3	3	10/7/1997	0.81	0.36	0.087	0.38	ND	62	ND	---	61
SB15-3	3	10/8/1998	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB15-6	6	10/8/1998	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB16-3	3	10/8/1998	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB16-6	6	10/8/1998	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	10	11/23/1998	ND	ND	ND	ND	---	ND	ND	ND	---

TABLE 1
HISTORIC SOIL ANALYTICAL DATA
444 HEGENBERGER LOOP
OAKLAND, CALIFORNIA
Results In Milligrams Per Kilogram

Sample ID	Depth (ft bgs)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TPH-[illegible]	[illegible]	[illegible]	Oil & Grease
MW-1	15	11/23/1998	ND	ND	ND	ND	---	ND	ND	ND	---
MW-2	10	11/23/1998	1.5	1.7	3.0	5.2	---	47	ND	4.8	---
MW-2	15	11/23/1998	ND	ND	ND	ND	---	ND	ND	ND	---
MW-3	10	11/24/1998	0.18	0.032	0.078	0.062	---	3.1	ND	ND	---
MW-3	15	11/24/1998	ND	ND	ND	ND	---	ND	ND	ND	---
MW-4	10	11/23/1998	0.0064	0.16	0.077	0.096	---	6.4	ND	6.7	---
MW-4	15	11/23/1998	0.013	0.039	0.013	0.026	---	1.7	ND	2.1	---
MW-5	10	11/24/1998	0.51	0.15	0.50	0.12	---	6.8	ND	ND	---
MW-5	15	11/24/1998	ND	ND	ND	ND	---	ND	ND	ND	---
MW-6	11	3/30/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	5	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-7	10	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-7	15	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-7	20	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-8	5	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-8	10	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-8	15	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---
MW-8	20	12/12/2000	ND	ND	ND	ND	ND	ND	ND	---	---

--- Not available/not anayzed
MTBE Methyl tertiary butyl ether
ND Not detected at or above indicated laboratory reporting limit
TPH-d Total petroleum hydrocarbons as diesel
TPH-g Total petroleum hydrocarbons as gasoline
TPH-m Total petroleum hydrocarbons as motor oil

TABLE 2
HISTORIC SOIL SVOC & METAL ANALYTICAL DATA
444 HEGENBERGER LOOP
OAKLAND, CALIFORNIA
Results In Milligrams Per Kilogram
(Page 1 of 1)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Depth (Ft bgs)	8	5	0				
Date	6/10/1996	6/10/1996	6/10/1996	4/30/1996	4/30/1996	4/30/1996	4/30/1996
Napthalene	1.7	0.36	ND	---	---	---	---
Fluoranthene	ND	0.68	ND	---	---	---	---
Pyrene	ND	0.99	ND	---	---	---	---
Benzo(a)anthracene	ND	0.88	ND	---	---	---	---
Chrysene	ND	1.11	ND	---	---	---	---
Benzo(b)fluoranthene	ND	1.7	ND	---	---	---	---
Benzo(k)fluoranthene	ND	0.46	ND	---	---	---	---
Benzo(a)pyrene	ND	1.1	ND	---	---	---	---
Indeno(1,2,3-c,d)pyrene	ND	0.97	ND	---	---	---	---
Dibenz(a,h)anthracene	ND	0.41	ND	---	---	---	---
Benzo(g,h,i)perylene	ND	1.1	ND	---	---	---	---
Arsenic	---	---	---	7.4	5.2	5.3	6.8
Barium	---	---	---	140	130	150	130
Beryllium	---	---	---	0.61	0.61	0.61	0.64
Cadmium	ND	ND	5	ND	ND	ND	ND
Chromium	46	41	35	38	37	37	36
Cobalt	---	---	---	11	12	9.8	11
Copper	---	---	---	54	36	59	42
Lead	11	96	32	38	32	55	39
Mercury	---	---	---	0.094	0.12	0.11	0.1
Molybdenum	---	---	---	ND	ND	ND	ND
Nickel	61	51	43	46	45	47	45
Selenium	---	---	---	ND	ND	ND	ND
Silver	---	---	---	ND	ND	ND	ND
Thalium	---	---	---	ND	ND	ND	ND
Vanadium	---	---	---	44	43	44	44
Zinc	54	150	66	110	100	130	92

--- Not available/not anayzed

ND Not detected at or above indicated laboratory reporting limit

TABLE 3
QUARTERLY GROUNDWATER ANALYTICAL DATA
444 HEGENBERGER LOOP
OAKLAND, CALIFORNIA
Results In Micrograms Per Liter
(Page 1 of 2)

WELL I.D.	DATE	TPH-d	TPH-g	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	FUEL ADDITIVES	TPH-m
MW-1	12/02/98(a)	ND(50)	ND(50)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	---	---
	03/08/99	190	ND(50)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	---	---
	07/01/99	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---	---
	09/15/99	ND(50)	3,100	ND(0.5)	9.6	7.8	12	---	---
	12/27/99	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---	---
	12/27/99	WELL DESTROYED							
MW-2	12/02/98(a)	99	ND(50)	**29**	0.78	0.38	1.1	---	---
	03/08/99	210	180	**200(a)**	0.74	1.3	2.3	---	---
	07/01/99	ND(50)	1,100	**190**	13	33	36	---	---
	09/15/99	100*	990	**330**	9.7	11	19	---	---
	12/27/99	ND(50)	1,000	**260**	7.2	1.3	10	---	---
	03/29/00	31,000	1,900	**110**	4.8	9.5	12	---	---
	06/09/00	NOT SAMPLED: WELL CONTAINED FLOATING HYDROCARBONS							
	12/14/00	470	1,600	**450**	18	61	26	ND(2/20)	---
	05/08/01	300	950	**120**	5.8	8.5	32	---	---
	10/04/01	170*	370	**55**	2.8	17	4.2	---	---
MW-3	12/02/98(a)	300	970	**160**	6.5	16	9	---	---
	03/08/99	1,400	2,600	**1,800(b)**	30(c)	67(c)	26(c)	---	---
	07/01/99	150*	3,000	**1**	ND(0.5)	32	36	---	---
	09/15/99	110*	1,100	**350**	8.3	5.4	10	---	---
	12/27/99	70	560	**170**	2.1	7.6	3.1	---	---
	03/24/00	1,000	8,400	**4,100**	71	190	75	---	---
	06/09/00	320	2,700	**1,100**	17	18	ND(10)	---	---
	14/14/00	ND(100)	710	**140**	2.2	3.3	1.2	ND(0.5/5)	---
	05/08/01	ND(400)	1,500	**270**	7.9	11	5.6	---	---
	10/04/01	ND(50)	140	**45**	ND(0.3)	1.3	ND(0.6)	---	---
MW-4	12/02/98(a)	620	ND(50)	**1.1**	0.37	<0.3	2	---	---
	03/08/99	ND(50)	1,300	**1,900(b)**	9.4	1.2	11	---	---
	07/01/99	ND(50)	610**	**120**	ND(0.5)	<0.5	<0.5	---	---
	09/15/99	59*	830	**320**	6.5	1.7	<2.0	---	---
	12/27/99	ND(50)	55	**5.8**	ND(0.5)	<0.5	<0.5	---	---
	03/24/00	77	430	**240**	3.3	0.98	1.5	---	---
	06/09/00	ND(50)	220	**91**	0.93	ND(0.5)	ND(0.5)	---	---
	14/14/00	ND(50)	96	**15**	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---
	05/07/01	ND(100)	380	**130**	2.5	1.7	2.5	---	---
	10/04/01	ND(50)	76	**21**	ND(0.3)	ND(0.3)	ND(0.6)	---	---

TABLE 3
QUARTERLY GROUNDWATER ANALYTICAL DATA
444 HEGENBERGER LOOP
OAKLAND, CALIFORNIA
Results In Micrograms Per Liter
(Page 2 of 2)

WELL I.D.	DATE	TPH-d	TPH-g	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	FUEL ADDITIVES	TPH-m
MW-5	12/02/98(a)	620	ND(50)	**1.1**	0.37	ND(0.3)	2	---	---
	03/08/99	ND(50)	58	**23**	0.31	ND(0.3)	1.8	---	---
	07/01/99	64*	1,900	**160**	10	13	22	---	---
	09/15/99	ND(50)	410	**64**	2.1	1.3	2.7	---	---
	12/27/99	ND(50)	130	**15**	0.73	ND(0.5)	ND(0.5)	---	---
	03/24/00	460	2,500	**560**	57	18	87	---	---
	06/09/00	140	2,600	**770**	63	15	71	---	---
	12/14/00	ND(50)	220	**17**	0.63	1.7	1.1	ND(0.5/5)	---
	05/07/01	ND(200)	3,200	**450**	44	54	66	---	---
	10/04/01	ND(50)	ND(50)	**3.6**	ND(0.3)	ND(0.3)	ND(0.6)	---	---
MW-6	03/24/00	470	2,400	**430**	16	340	73	---	---
	06/09/00	ND(50)	540	**190**	1.2	3.7	4.5	---	---
	12/14/00	ND(50)	ND(50)	0.51	ND(0.5)	ND(0.5)	0.94	ND(0.5/5)	---
	05/07/01	ND(50)	ND(50)	**4.4**	ND(0.5)	ND(0.5)	ND(0.5)	---	---
	10/04/01	ND(50)	ND(50)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	---	---
MW-7	12/14/00	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5/5)	---
	05/07/01	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---	---
	10/04/01	ND(50)	ND(50)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	---	---
MW-8	12/14/00	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	0.52 MTBE***	---
	05/07/01	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	---	---
	10/04/01	ND(50)	ND(50)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	---	---
	MCLs	NE	NE	1	100	680	1750	MTBE - 5 ALL OTHER - NE	NE

Notes:
Bold values exceed MCLs
(a) Reporting limit for this monitoring event are elevated 10 times due to matrix interference.
(b) Reporting limit is elevated 100 times due to matrix interference.
(c) Reporting limit is elevated 5 times due to matrix interference.
* Analytical results within quantitation range for diesel; however, chromatographic pattern not typical of fuel
** Analytical results within quantitation range for gasoline; however, chromatographic pattern not typical of fuel
*** Remaining fuel additives were not detected at or above respective laboratory reporting limits
--- Not available/not analyzed
MCL Maximum Contaminant Levels per State Office of Drinking Water Standards
ND Not detected at or above indicated laboratory reporting limit
NE No MCL or Action Level has been established.
TPH-d Total petroleum hydrocarbons as diesel
TPH-g Total petroleum hydrocarbons as gasoline
TPH-m Total petroleum hydrocarbons as motor oil
Fuel Additives include methyl tertiary butyl ether (MTBE), di-isopropyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether, and tertiary butyl alcohol

TABLE 4
HYDROPUNCH GROUNDWATER ANALYTICAL DATA
444 HEGENBERGER LOOP
OAKLAND, CALIFORNIA
Results In Micrograms Per Liter

WELL I.D.	DATE	TPH-d	TPH-g	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	MTBE	TPH-m	Oil & Grease
W-1+	04/04/97	620	3,400	35	10	140	37	ND(13)	ND(200)	ND
W-2	04/04/97	ND(100)	19,000	1,600	160	2,500	2,200	ND(130)	---	2,800
W-3	04/04/97	ND(50)	2,000	54	71	170	220	ND(13)	---	ND
W-4	04/04/97	ND(100)	4,400	230	17	220	110	ND(25)	---	ND
SB05-W	10/06/97	ND(50)	190	4.5	1.1	ND(0.5)	1.4	ND(5.0)	ND(100)	---
SB06-W	10/06/97	180	15,000	620	ND(50)	800	ND(50)	ND(250)	130	---
SB07-W	10/06/97	ND(100)	3,900	45	ND(5.0)	210	ND(5.0)	ND(5.0)	ND(100)	---
SB08-W	10/06/97	ND(200)	52,000	12,000	540	6,000	7,400	ND(500)	360	---
SB09-W	10/06/97	ND(100)	1,600	55	3.5	40	4.5	ND(5.0)	130	---
SB10-W	10/06/97	ND(100)	5,400	280	15	400	120	ND(5.0)	110	---
SB11-W	10/06/97	ND(50)	16,000	2,100	1,800	1,300	4,800	ND(100)	ND(100)	---
SB12-W	10/06/97	ND(700)	13,000	460	42	2,100	230	ND(100)	890	---
SB13-W	10/06/97	ND(350)	11,000	3,200	67	180	100	ND(250)	440	---
SB14-W	10/06/97	ND(100)	2,700	95	3	120	8.9	ND(5.0)	110	---
SB15-W	10/06/97	ND(50)	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)	ND(100)	---
SB16-W	10/06/97	ND(50)	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)	ND(100)	---

--- Not available/not analyzed
+ W-1 was also analyzed for Napthalene (47 micrograms per Liter) and 2-Methyl Napthalene (28 micrograms per Liter)
MTBE Methyl tertiary butyl ether
ND Not detected at or above the repoorted detection limit
TPH-d Total petroleum hydrocarbons as diesel
TPH-g Total petroleum hydrocarbons as gasoline
TPH-m Total petroleum hydrocarbons as motor oil