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

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
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June 29, 2009

George Lockwood
State Water Resources Control Board
Division of Water Quality
P.O. Box 2231
Sacramento, CA 95812

Subject: Response to Petition for Case Closure for Fuel Leak Case No. RO0000161 and GeoTracker Global ID T0600101922, American Auto Wreckers, 3744 Depot Road, Hayward, CA 94545

Dear Mr. Lockwood:

Alameda County Environmental Health (ACEH) has prepared this letter in response to the "Petition for Case Closure Review," dated March 30, 2009, which was prepared by PIERS Environmental Services, Inc. (PIERS), and received by ACEH as an attachment via e-mail correspondence from the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) on April 9, 2009. In their petition, PIERS, the consultant for Mr. Eric Freeberg (a responsible party), requests case closure review for the subject site based on "previous conversations with Mr. Dennis Parfitt," who indicated "that there is a precedent for closure for this site," based on the Mathew Walker Petition case in Napa County.

ACEH has reviewed the data for the subject site and PIERS's request for closure review and finds that adequate technical justification for case closure was not presented and that arguments stated to justify case closure in their petition contradict statements in PIERS's "Additional Soil and Groundwater Investigation Report," dated December 30, 2008. Additionally, although there are some similarities between the subject case and the Walker case, there are stark differences as well, which differentiates this case from the Walker case. Our responses below identify that the site does not meet the "Low Risk" criteria listed in the San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB) January 5, 1996 Memorandum termed "Supplemental Instructions to State Water Board December 8, 1995 Interim Guidance on Required Cleanup at Low-Risk Fuel Sites." The case closure evaluation includes adequately addressing the following six criteria.

1. *The leak has stopped and ongoing sources, including free product, have been removed or remediated.*

   Similar to the Walker case, the subject site utilized two underground storage tanks (UST) at the property. In this case, one 1,000-gallon capacity UST utilized to store gasoline, located in the northern portion of the site, and one 200-gallon capacity UST utilized to store waste oil, located in the southern portion of the site, were removed from the site in 1992. Apparently, the USTs were removed without permits and no soil samples were collected at the time of the UST removals. In the Walker case, petroleum hydrocarbon affected soils were excavated from the tank pit, whereas in this case, no petroleum hydrocarbon affected soil were removed or over-excavated from either of the UST excavations at the subject site.

Gasoline UST

As mentioned above, the gasoline UST was removed in 1992. Three years later in 1995, confirmation soil samples were collected from borings that were hand-augered approximately 5 feet from the perimeter of the former gasoline UST excavation pit. Soil sample analytical results from the gasoline UST pit detected total petroleum hydrocarbons (TPH) as gasoline (g) and benzene at concentrations of 7.0 mg/kg and 0.012 mg/kg, respectively. A "grab" groundwater sample collected from a boring detected TPH-g and benzene at concentrations of 43,000 µg/L and 300 µg/L, respectively.

In February 2004, a subsurface investigation consisting of three borings in the vicinity of the gasoline UST were installed at the site. Soil and groundwater sample analytical results from the borings installed in the vicinity of the gasoline UST yielded non-detect concentrations of petroleum hydrocarbons in soil and only MTBE was detected at a concentration of 6.0 µg/L in a groundwater sample collected from boring EB-3. Therefore, based on the analytical results, there does not appear to be any ongoing sources or free product and hence no further investigation relating to the gasoline UST is warranted at this time.

Waste Oil UST

The waste oil UST was also removed sometime in 1992. During the same subsurface investigation conducted in 1995, two borings were hand-augered approximately 5 feet from the perimeter of the former waste oil UST. Soil sample analytical results detected total recoverable petroleum hydrocarbons (TRPH) at a maximum concentration of 3,300 mg/kg in a soil sample collected from approximately 9.5 feet bgs. However, unlike the Walker case, no petroleum hydrocarbon affected soils were removed or over-excavated from the waste oil UST excavation pit at the subject site.

In February 2004, a subsurface investigation consisting of three borings in the vicinity of the waste oil UST were installed at the site. Soil and "grab" groundwater sample analytical results from the borings installed in the vicinity of the former waste oil UST, detected TRPH in soil at concentrations of 1,600 mg/kg in boring EB4 at 11.5 feet bgs and 2,000 mg/kg in boring EB6 at 11.5 feet bgs. "Grab" groundwater sample analytical results detected TPH-d at a concentration of 350,000 µg/L in a groundwater sample collected from EB4 and 260,000 µg/L in a groundwater sample collected from EB-5, identifying that residual source and "free product" exist in the vicinity of the former waste oil UST.

To verify current subsurface conditions in the vicinity of the former waste oil UST, PIERS installed a direct-push boring (EB4A) in November 2008 in the vicinity of previously installed boring EB4. The previously elevated concentrations detected at the site were analyzed without silica gel cleanup. Therefore, to obtain results without the potential of organic material interference, PIERS had the soil and "grab" groundwater samples analyzed with silica gel cleanup. Even with silica gel cleanup, concentrations of hydrocarbon contaminants in soil and groundwater were detected at greater concentrations than previously detected in 2004. TRPH was detected in soil samples at a concentration of 3,300 mg/kg with silica gel cleanup and 3,700 mg/kg without silica gel cleanup. During monitoring well MW4 installation,

TPRH was detected at a concentration of 8,900 mg/kg in a soil sample collected at 8 feet bgs confirming that significant residual source exists in the vicinity of the waste oil UST pit.

"Grab" groundwater sample analytical results detected TPH-d at a concentration of 490,000 µg/L with silica gel cleanup and 580,000 µg/L without silica gel cleanup and TPH-mo was detected at 1,200,000 µg/L with silica gel cleanup and 1,300,000 µg/L without silica gel cleanup. The current analytical data confirms that a source (impacted soil) still exists and "free product" remains in the vicinity of the former waste oil UST with no apparent signs of attenuation or degradation. This is further evidence that distinguishes this case from the Walker case. Remedial excavation of the most heavily impacted soils and "free product" in the area of the waste oil tank pit is feasible and readily implemented at this time.

2. *The site has been adequately characterized.*

As mentioned above, soil samples that detected hydrocarbon contamination were collected at a maximum depth of 11.5 feet bgs. Specifically, in 2004 TRPH was detected in soil at concentrations of 1,600 mg/kg in boring EB4 at 11.5 feet bgs and 2,000 mg/kg in boring EB6 at 11.5 feet bgs. In a confirmation boring installed in November 2008, higher TRPH was detected in soil samples at a concentration of 3,300 mg/kg with silica gel cleanup and 3,700 mg/kg without silica gel cleanup, all collected at 11.5 feet bgs. No soil samples below 11.5 feet bgs have been collected and analyzed. Based on the analytical data, the vertical extent of soil contamination in the source area is undefined at this time. Although, this appears to be an unaddressed data gap, ACEH believes that additional investigation is not necessary since there is sufficient monitoring well analytical data to conclude that the vertical extent of the source area is adequately assessed, as discussed below. However, the same data leads us to conclude that monitoring wells MW4 and MW5 may not be yielding analytical results from the shallow zone of interest.

"Free product" concentrations of hydrocarbons have been verified in "grab" groundwater samples collected from borings installed in the vicinity of the former waste oil UST. In their December 30, 2008, "Additional Soil and Groundwater Investigation Report," PIERS states that:

> "Significant concentrations of diesel and oil range hydrocarbons are present in grab groundwater samples at the perimeter of the former waste oil tank pit, and a sheen was observed in the water from EB4 and 4A. In monitoring well samples, including MW4 directly down-gradient of the waste oil tank pit, these constituents were not detected at or above method detection limits. Based on the low permeability of the soils, and consistent with the analytical results to date, the extent of these constituents in groundwater appears to be limited to the up-gradient vicinity of the former tank pit."

ACEH concurs that petroleum hydrocarbon concentrations in groundwater samples collected from MW4 were not detected above laboratory detection limits. However, data suggests that the groundwater samples from monitoring wells MW4 and MW5 may not be representative of the shallow zone of interest. Monitoring wells MW4 and MW5 were installed to a depth of 14 feet bgs with screened intervals from 12 to 14 feet bgs. According to the boring log from MW4, depth to groundwater on November 13, 2008 was encountered at approximately 7 feet

bgs, with "strong odor of hydrocarbons" noted at 8 feet bgs. Soil sample analytical results detected TPRH at a concentration of 8,900 mg/kg in a soil sample collected at 8 feet bgs. Depth to groundwater measured on November 21, 2008 typically ranged from 6 to 7 feet bgs in site monitoring wells, except for MW4 which was measured at 12.48 feet bgs. According to PIERS the anomalous depth to water in MW4 is attributed to poor recharge following monitoring well development. However, this may also suggest that stabilized groundwater conditions may not have been reached prior to groundwater sampling. Therefore, since depth to groundwater is typically 6 to 7 feet bgs, which is above the screened intervals for site monitoring wells MW4 and MW5, and petroleum hydrocarbons have a specific gravity that is lower than water (therefore, float on water); ACEH believes that concentrations of contaminants detected may not be representative of the zone of interest. This is further supported by PIERS in their December 30, 2008, "Additional Soil and Groundwater Investigation Report," which states:

> "Groundwater is confined or semi-confined and has varied historically in the monitoring wells from 5.17 to 7.11 feet below grade, but is generally 5 to 6 feet below grade. Both tank pits were apparently backfilled with aerated soils that also appear to be of low permeability and appear to be identical to the native soils."

Therefore, the groundwater samples from monitoring wells may be reflecting contaminant concentrations from a second water bearing zone and not the shallower zone of interest, specifically in groundwater monitoring wells MW4 and MW5. Therefore, the extent of the impact to the shallow water bearing zone of interest does not appear to be adequately characterized at this time.

3. *The dissolved hydrocarbon plume is not migrating.*

Until December 2008, there were no down-gradient monitoring points located at the site. Monitoring wells MW4 and MW5 were installed in the vicinity of the former waste oil UST and approximately 35 feet down-gradient of the former waste oil UST, respectively. To date, only one groundwater monitoring event has been conducted for monitoring wells MW4 and MW5 and the monitoring well construction may not be yielding groundwater sample analytical results that are representative of the zone of interest, as mentioned above. Therefore, it is difficult to evaluate groundwater contaminant plume stability at this time.

4. *No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.*

According to the San Francisco Bay RWQCB's Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, "the term 'groundwater' includes all subsurface waters, whether or not these waters meet the classic definition of an aquifer or occur within identified groundwater basins." It is also stated in the Basin Plan that "all groundwaters are considered suitable, or potentially suitable, for municipal or domestic water supply (MUN)." The site is located in Hayward and overlies the East Bay Plain sub-basin. Therefore, the groundwater beneath the subject site is considered beneficial for these uses unless shown to be non-beneficial using criteria presented in the Basin Plan.

In their petition, PIERS states that "there is no essentially no groundwater plume, the underlying groundwater is not of beneficial use, and there is no feasible technology to remediate the residual oil-range hydrocarbons except for excavation and disposal at a landfill." However, in their December 30, 2008, "Additional Soil and Groundwater Investigation Report," PIERS states that the current beneficial uses for shallow groundwater in the area are industrial process supply, industrial service supply, and municipal and domestic supply. An evaluation of the water quality at the site conducted by PIERS confirmed that "[t]he highest concentration of TDS was found in well MW-2, at a concentration of 959 ppm. Conductivity readings after purging in MW1, MW2 and MW5 ranged from 1,027 to 1,553 microseimens per cubic centimeter." PIERS then concluded that "[b]oth of these parameters are within the range for consideration of groundwater for potential beneficial use."

The beneficial uses of groundwater at the site are confirmed by the existence of an onsite domestic well located approximately west of the former waste oil UST pit (Attachment B). In August 1995, the well was sampled and analyzed for waste oil constituents. According to the ACEH Inspector's field notes, "a heavy scum of black material with odors of petroleum (?)" was noted. Groundwater sample analytical results detected total recoverable petroleum hydrocarbons at a concentration of 2,900 µg/L indicating that the groundwater has been contaminated impacting the beneficial uses of the groundwater at the site. Therefore, not only has the future potential beneficial use of groundwater been compromised, the existing current beneficial use of groundwater has also been compromised at the site.

It is also stated in the Basin Plan that "[a]t a minimum, groundwaters designated for use as domestic or municipal supply shall not contain concentrations in excess of the secondary maximum contaminant levels (Secondary MCLs) specified in Tables 64449-A (Secondary MCLs-Consumer Acceptance Limits) and 64449-B (Secondary MCLs-Ranges) of Section 64449 of Title 22 of the California Code of Regulations, which is incorporated by reference into this plan." Currently, concentrations of contaminants in groundwater are significantly above the secondary MCLs as well as RWQCB's ESLs, as mentioned above. "Grab" groundwater sampling analytical results have indicating an increasing concentration trend based on analytical data collected in 2004 as compared to analytical data collected in 2008, suggesting that water quality objectives will not be met in a reasonable time.

Unlike the Walker case, no remedial action has been initiated to abate the elevated hydrocarbon concentrations in soil or "free product" that has been confirmed at the site to date. Petroleum hydrocarbons in the mid- to high-carbon range, which are adsorbed to soil and are also present as "free product" in the area of the former waste oil tank pit, will dissolve and desorb into shallow groundwater for decades to hundreds of years. This long-term degradation will violate the basin plan's water quality objectives in the area of the waste oil tank pit for decades to hundreds of years. Also, the free phase hydrocarbons, sorbed hydrocarbons, and contaminated groundwater pose a potential risk to human health through ingestion of water from the domestic well and nuisance due to uncontrolled exposure during future utility work or other excavation at the site. Therefore, it does not appear that the concentrations of contaminants will reach water quality objectives in a reasonable time in accordance with the Basin Plan and corrective action, in accordance with Title 23, California Code of Regulations, Section 2725, appears warranted to protect the potential beneficial uses of the waters of the State.

Remedial excavation of the most heavily impacted soils in the area of the waste oil tank pit is feasible and readily implemented. ACEH believes that excavation of the most heavily impacted soils is to the maximum benefit to the people of the state because it will allow natural attenuation processes to restore water quality within a significantly shorter time period and will remove a long-term nuisance that would remain at the site for decades to hundreds of years and avoid transferring the liability for dealing with the contamination to future owners, nearby inhabitants, and workers. Given the readily implemented remedial alternative for the site, leaving free product and high concentrations of sorbed petroleum hydrocarbons at the site does not appear to be consistent with the maximum benefit to the people of the state.

5. *The site presents no significant risk to human health.*

The existence of a domestic well has been verified at the site. Therefore, ingestion of contaminated water from the well is plausible. Also, since it is established that groundwater can be considered a potential beneficial resource, it is conceivable that another well may be installed in the vicinity of the site or that existing City of Hayward water supply wells may pump groundwater in the future. This scenario becomes more likely in years of prolonged drought. In this case, groundwater ingestion may be a completed exposure pathway in the future, which PIERS has not considered.

6. *The site presents no significant risk to the environment.*

In this case, environmental risk does not appear to have been evaluated by PIERS. However, should hydrocarbon contamination be limited to the former waste oil UST, there does not appears to be appreciable risk to the environment.

Conclusion

In considering the above-mentioned evaluation, this case does not meet several of the "Low Risk" criteria listed in the Regional Board's "Supplemental Instructions to State Water Board December 8, 1995 Interim Guidance on Required Cleanup at Low-Risk Fuel Sites," is not as similar to the Walker case as PIERS contends, nor has PIERS demonstrated that contaminants confirmed in groundwater will reach water quality objectives in a reasonable time, in accordance with the Regional Board's Basin Plan. Additionally, PIERS has not offered any rationale for why the readily available remedial alternative of excavation should not be implemented.

Case Closure denial and a request for a corrective action plan to abate "free product" is consistent with regulatory actions taken at similar underground storage tank cases in the Bay Area. To date, no remediation has occurred at this site and increasing concentration of contaminants has been verified in the two subsurface investigations conducted in 2004 and 2008. To obtain an unrestricted case closure for this site, remedial action consisting of source removal appears to be the most cost-effective remedial alternative for the site with the maximum benefit to the people of the state.

Thank you for the opportunity to respond to the petition. Should you have any questions regarding this response, please call Paresh Khatri at (510) 777-2478 or Donna Drogos at (510) 567-6721.

Sincerely,

Paresh C. Khatri
Hazardous Materials Specialist

Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

Attachment A: Allegation of Employee "Personality Conflict" as a Justification for Requesting Case Closure from the SWRCB

Attachment B: Photographs and Field notes

cc: Feroz & Masood Baryalai
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Hayward, CA 94545-2720

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ATTACHMENT A

Allegation of Employee "Personality Conflict" as a Justification for Requesting Case Closure from the SWRCB

ALAMEDA COUNTY
HEALTH CARE SERVICES
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(510) 567-6700
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June 18, 2009

Attachment to Petition for Closure Response for 3744 Depot Road, Hayward, CA 94545

To: Mr. George Lockwood, State Water Resources Control Board

Re: Allegation of Employee 'Personality Conflict' as a Justification for Requesting Case Closure from the SWRCB

In response to the comment in paragraph three of the March 30, 2009 PIERS Environmental Services letter to you petitioning for closure for 3744 Depot Road, Hayward, regarding a "...personality conflict between a former principal at PIERS and Ms. Donna Drogos...", I investigated the allegation on April 15, 2009, by telephoning both individuals that signed the letter, Mr. Joel Greger and Ms. Dawn Murray. I spoke with Mr. Greger that day and left a message for Ms. Murray. Ms. Murray in turn left me a voicemail response on April 17, 2009. I communicated my findings to you in emails on April 15 and 21, 2009 as reprinted below:

4/15/09 email from Dan Firth to George Lockwood:

> "... I have spoken with Joel Greger at Piers and have a call in to Dawn Murray, the two folks that signed the PIERS March 30 letter to you. Joel said that his knowledge of the reference to a personality conflict between someone on their staff and Donna Drogos was second hand and he referred me to Dawn..."

4/21/09 email from Dan Firth to George Lockwood:

> "...I received a voicemail on Friday (4/17) from Dawn Murray at PIERS saying, among other things, "...the basis of the petition has nothing to do with Donna and xx--that was one minor complication associated with this case..." (that's a direct quote)...." Note that 'xx' referred to a former employee.

I also reviewed the allegation with Ms. Donna Drogos. She stated that she was unaware of any conflict between her and any staff, present or former, at PIERS. When I mentioned the name of the former employee that Ms. Murray referenced, Ms. Drogos indicated that she had never even met that person.

Allegations such as this are very serious and can have a detrimental effect on the employee and the organization the employee represents. Ms. Drogos is the Program Manager for the Alameda County Local Oversight Program. It is regretful that an apparent unsubstantiated allegation was made in a letter to your agency and that it is now a matter of public record.

I request that the SWRCB ask for a revised petition request from PIERS that excludes this allegation and that their original letter be stricken from the record.

Thank you.

Dan Firth
Chief, Environmental Health
Alameda County Department of Environmental Health

ATTACHMENT B

Photographs, Field notes, and

Laboratory Data (for Onsite Domestic Well)

Aug. 29, 1995 Investigation

Aug 29, 1995 Investigation

3744 Depot Rd Hayward 8/29/95
Gasoline tank pit. Location of soil borings

3744 Depot Rd Hayward 8/29/95
On-site domestic well located approx. west of waste oil tank.

3744 Depot Rd, Hayward 8/29/95
Soil Cutting from the boring at gas pit. Soil had strong petrol. odor

3744 Depot Rd. Hayward 8/29/95
Location of soil borings collected from waste oil tank pit

602857-248 (WC)

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

1131 Harbor Bay Pkwy
Alameda CA 94502
510/567-6700

Hazardous Materials Inspection Form

II, III

Site ID # 2017 Site Name ______ Today's Date 8/29/95

Site Address 3744 Depot Rd

City Hayward Zip 94___ Phone ______

_____ MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

____ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
____ II. Hazardous Materials Business Plan, Acutely Hazardous Materials
_✓_ III. Underground Storage Tanks LOP Investigation

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments: On-site to witness soil and groundwater sampling ~~[illegible]~~ in the area of the gasoline and waste oil pits. See attached map for sampling locations.

Gasoline Pit Area → NW soil sample collected in an adjacent boring at ~7 ft bgs

→ Northwest samples collected in the presumed downgradient direction. Pit has been disturbed and left open for many years, therefore, soil samples were collected in areas where it is presumed not to have been disturbed. ~~[illegible]~~ Dark stiff clay and then green/grey clay encountered to ~7-8 ft bgs. Soil had odor of petroleum hydrocarbon and felt slippery. GW encountered at 8' bgs and sampled. GW sample had strong petroleum odor and was dark grey.

→ Southwest boring - collected a soil sample at 7 ft bgs. Soil had petroleum odor

Waste Oil Pit Area

→ Southwest soil sample collected at ~8 ft bgs. Slight organic odor. Stiff dark clay w/some green mottling at sampling point.

→ Northwest soil sample collected at 7' bgs. Very dark plastic clay soil. Proceeded to drill down to 9½' bgs & encountered petrol odor w/ grey green staining. Resampled at 9.5' bgs. GW sampled at 11' bgs. Floating product was present.

Contact ______

Title ______ Inspector ALLeech

Signature ______ Signature [signature]

II, III

ALAMEDA COUNTY ENVIRONMENTAL HEALTH / HAZARDOUS MATERIALS DIVISION
1131 HARBOR BAY PKWY., RM. 250, ALAMEDA, CA 94502-6577 (510)567-6700 FAX (510) 337-9355

LOP Investigation

HAZARDOUS WASTE ~~GENERATOR~~ INSPECTION REPORT

STID #: 2017	FACILITY NAME:	PG. 2 OF 2

SUPPLEMENTAL FORM

On-site well located approximately [redacted] UST pit along property fence was sampled for all waste oil constituents listed under Table 2. Well dtw was 11' bgs. Water was sampled using a bailer. A heavy sheen of black material w/odor of petroleum (?) was coating the rubber piping in well; however, water samples were clear w/slight odor

PRINT NAME: Amy Leech	INSPECTED BY: A Leech
SIGNATURE:	DATE: 8/29/95

GEN/SUPP RPT(REV. 7/94) JNS/ECO

Hull Development Labs, Inc.

CA ELAP# 1369

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/30/95
Date Analyzed:	9/6/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Water Sample Analysis:

Test	*MW-WGS*	*MW-EWS*	*Units*	*MDL*	*EPA Method #*
Sample Matrix	Water	Water			
Sample Date	8/29/95	8/29/95			
Sample Time	230	1230			
Lab #	B9599	B9600			
TRPH	**390**	**2.9**	mg/liter	0.50 mg/l	418.1
Volatile Organics	**141**	**ND**	µg/liter	See Report	8240
Semivolatile Organics	**57**	**ND**	µg/liter	See Report	8270
DF-Diesel	1	1			
TPH-Diesel	**600**	**ND**	µg/liter	50.0 µg/l	8015M
DF-Gas	1000[2]	1			
TPH-Gas	**ND**	**ND**	µg/liter	50.0 µg/l	8015M
Benzene	**103**	**ND**	µg/liter	5.0 µg/l	8240
Toluene	**ND**	**ND**	µg/liter	5.0 µg/l	8240
Ethyl Benzene	**17**	**ND**	µg/liter	5.0 µg/l	8240
Xylenes	**21**	**ND**	µg/liter	5.0 µg/l	8240

1. PQL=DF x MDL
2. Sample diluted for TPH-Gasoline analysis due to matrix interferences
3. EPA 8240 and 8270 analysis performed by Advanced Technology Laboratories (CAELAP #1838); see ATL report for individual compounds and detection limits
4. BTEX analysis performed by EPA method 8240 due to matrix interferences using EPA method 8020
5. Remaining analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above PQL