the 2957 this report.

ADDITIONAL SITE CHARACTERIZATION REPORT 744 EAST 12th STREET, OAKLAND

Introduction: The site is located at the northeast corner of the intersection of East 12th Street and 8th Avenue in Oakland, California (Figure 1). This report discusses the additional site characterization, which included installation of three groundwater monitoring wells, two hydropunch borings, and collecting soil and groundwater samples at the site. The additional site characterization was conducted to determine the extent of petroleum contamination at the site.

Site History: One 500-gallon underground storage tank (UST) was previously located at the site. The UST reportedly contained gasoline and was removed in April 1996. Based on drawings provided in the Tank Closure Report, the physical size of the former tank is estimated to be 5 feet long by 4 feet in diameter. The tank was reportedly empty and had not been used for 10-years prior to being removed. During removal of the UST, it was noted that the single-walled steel tank had rusted through and had leaked. The approximate surface area of the removal excavation was 11 feet by 6 feet and the UST was located in the southwestern end of the excavation. Approximately 20 cubic yards of soil was over-excavated and transported off site for disposal. The bottom of the excavation was approximately 8 to 12 feet below the ground surface (bgs). The exact depth to the bottom of the UST was not recorded during the removal activities; the estimated depth to the bottom of the former UST is 6 feet bgs.

Five soil samples were collected from the sidewalls and bottom of the removal excavation. The soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH) as gasoline (TPH-g), and total lead. The highest concentrations of BTEX and TPH-g were detected in the southwestern end of the excavation. Groundwater was not encountered during removal of the UST.

Monitoring Well Installation: Three monitoring wells, identified on Figure 2 as MW-1, MW-2, and MW-3, were installed at the site during the additional site characterization. The monitoring well completion forms are presented in Appendix A. The location of MW-3 was moved northeast (closer to the former location of the UST) from the proposed location in the Work Plan. The change in the location of MW-3 was due to underground and overhead utility lines present at the site. The monitoring wells were advanced by using a continuous-flight, hollow-stem auger (HSA) drill rig. One soil sample was collected from each of the monitoring well borings at depths ranging from 10.5 to 12.5 feet bgs.

Soil cores were collected with a continuous core sampling tool for lithologic logging and analytical sampling purposes. The soil samples were collected in the vadose zone of each monitoring well boring and analyzed for BTEX, methyl tertiary-butyl ether (MTBE), and TPH-g.

The three monitoring wells were constructed of 2-inch-diameter, flush-joint, threaded, schedule 40 polyvinyl chloride (PVC) casing installed through the hollow stem auger. The bottom 10 feet of each monitoring well consisted of 0.010-inch (10 slot), machine-slotted well screen and was plugged with a

threaded end PVC cap. The casing joints formed water-tight unions, and no chemical cements, glues, oils, or solvents were used during the drilling activities or during construction of the wells.

The filter pack between the screened casing and the boring for each well was backfilled with clean, well-rounded, number 2\12 Monterey kiln-dried sand. The sand layer was placed to extend above the monitoring well screen for a distance of 1 foot for each of the wells. A seal of 3/8-inch bentonite chips (the annular seal) approximately 1-foot thick was placed above the filter pack. Distilled water was added to the annular seal and hydrated for at least 30 minutes prior to emplacement of the grout seal for each well. From the top of the bentonite seal to the ground surface, the annular space was filled with a cement-bentonite slurry (grout seal) consisting of neat cement grout with approximately 7 percent powdered bentonite.

The monitoring wells were completed with waterproof, traffic-rated, flush-mount protective boxes (Christy boxes). Each well head was equipped with an expandable, locking well cap.

Monitoring Well Development: The monitoring wells were developed by mechanical surging and pumping of the groundwater. Mechanical surging equipment consisted of a vented surge block attached to drill rod, of sufficient weight to cause the block to drop rapidly on the down stroke, forcing water contained within the well and the filter pack around the well into the surrounding aquifer. The initial surging action was relatively gentle to prevent blockage of the well screen. As water began to move easily both into and out of the screen, the surge block was lowered incrementally to the bottom of the well. The surge block was then gently raised and lowered inside the well casing below the groundwater surface for a minimum of 10 minutes for each well. Periodically during surging, a pump was used to remove dislodged sediment and/or well sand that had accumulated at the bottom of the well during the surging process. The pH, temperature, electrical conductivity, and turbidity of the development water were monitored to assess the physical properties of the groundwater; development was complete when the physical properties of the groundwater had stabilized.

Hydropunch Sampling: As part of the additional site characterization, two hydropunch borings, shown as SB-1 and SB-2 on Figure 2, were advanced at the site. An underground cable and pipe locator was used to find the metallic pipeline that exited the UST excavation; this pipeline was used to transport gasoline from the former UST to a former gas pump within the building next to the former UST. The pipeline runs approximately 40 feet into the building, then turns 90 degrees toward the southwestern wall of the building, approximately 17 feet away from this wall of the building. SB-1 was completed near the corner of this pipeline. The Work Plan called for the location of SB-2 to be located in the area of the former gas pump. SB-2 was relocated (to the location shown on Figure 2) in order to determine the extent of soil and groundwater contamination southwest of the former UST location because the soil cuttings from MW-3 showed signs of contamination.

A macro-core soil sampler, a 2-inch outside-diameter by 48-inch long continuous sampling tool, was used to collect soil from the borings for lithologic logging and analytical sampling purposes. Soil samples were collected in a 1.5-inch-diameter clear acetate sleeve. One soil sample was collected from the vadose zone in each boring and analyzed for BTEX, MTBE, and TPH-g.

Each hydropunch boring was advanced at least 5 feet into the saturated groundwater zone. A grab groundwater sample was collected from each boring and analyzed for BTEX, MTBE, and TPH-g.

The Work Plan called for only one groundwater sample to be collected from the hydropunch location near the underground pipeline (SB-1). However, a grab groundwater sample was also collected from SB-2 in order to determine the extent of contamination southwest of MW-3.

Site Lithology: Boring logs for the additional site characterization monitoring wells and hydropunch borings show that the soil underlying the site consists primarily of low plasticity clay from the surface to about 9 to 14 feet bgs. The clay overlies a sand and gravel zone. Hydrocarbon staining on the soil was detected in the boring for MW-3 at 8 to 11 feet bgs, and in SB-2 at 4 to 7 feet bgs. The sand and gravel zone is primarily where groundwater was encountered at the site. Groundwater was first encountered in the borings at depths from about 12 to 18 feet bgs. The groundwater appears to be slightly confined by the upper clay zone. After installation of the monitoring wells, the static water level was measured at depths ranging from 4.8 to 6.7 feet bgs. The boring logs are presented in Appendix B.

Groundwater Flow Direction and Gradient: Groundwater elevations were measured in the groundwater monitoring wells on June 7, 1999 during the additional site characterization sampling activities. The depth to groundwater from the top of casing at each well, the top of casing elevations for each well, and the groundwater elevations measured at the site are shown in Table 1. The groundwater flow direction and gradient were calculated using these data.. The groundwater flow direction is south 70 degrees west (S70W), as shown on Figure 3; this flow direction follows the site topography. MW-3 is downgradient from the location of the former UST, and MW-1 and MW-2 are slightly upgradient to the north and southeast (respectively) of the former UST location. The groundwater gradient was calculated to be 0.005 feet/foot (ft/ft).

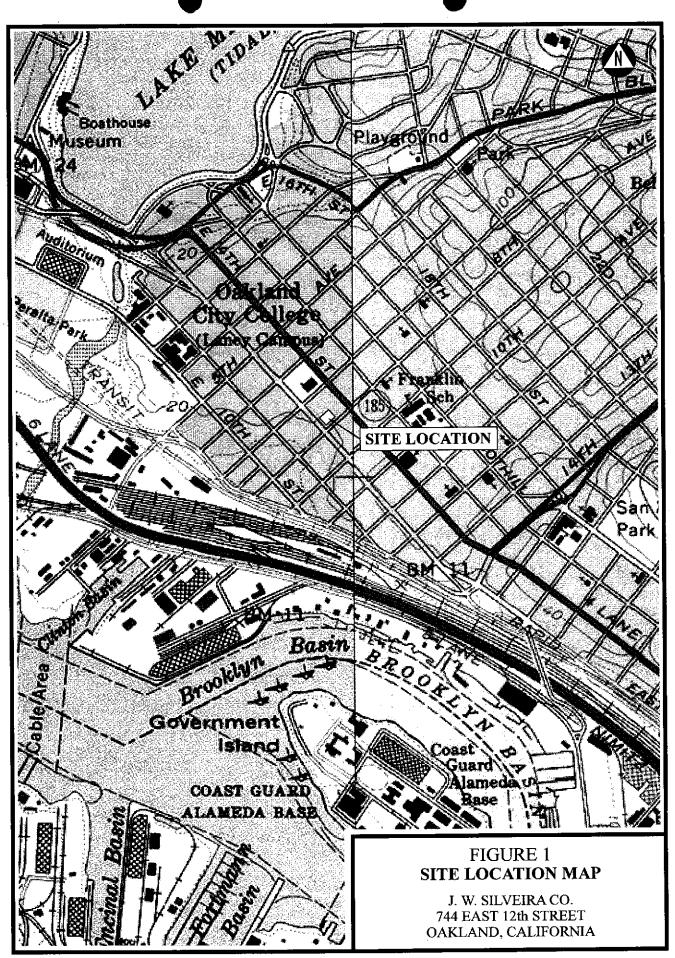
Laboratory Analytical Program: For the additional site characterization, the soil and groundwater samples were sent to Curtis & Tompkins Analytical Laboratories (C&T), in Berkeley, California for analysis. C&T is a California state-certified laboratory. Analyses for BTEX and MTBE were conducted using U.S. Environmental Protection Agency (US EPA) Method 8021B. Analyses for TPH-g were conducted using US EPA Method 8015M.

Groundwater Sample Analytical Results: Benzene was only detected in the groundwater sample collected from MW-3 at a concentration of 14 micrograms per liter (ug/L). Toluene and xylene compounds were only detected in the grab groundwater sample collected from SB-2 at concentrations of 0.63 and 2.2 ug/L, respectively. Ethylbenzene and TPH-g were not detected in the groundwater samples collected from the site. MTBE was detected in four of the five groundwater samples at concentrations ranging from 3 to 250 ug/L; MTBE was not detected in the groundwater sample collected from SB-1. Table 2 presents the analytical results of the groundwater samples. Figure 4 shows the concentrations of MTBE detected in groundwater at the site. The highest concentration of MTBE (250 ug/L) was detected in the groundwater sample collected from MW-3. The complete laboratory analytical package is provided in Appendix C.

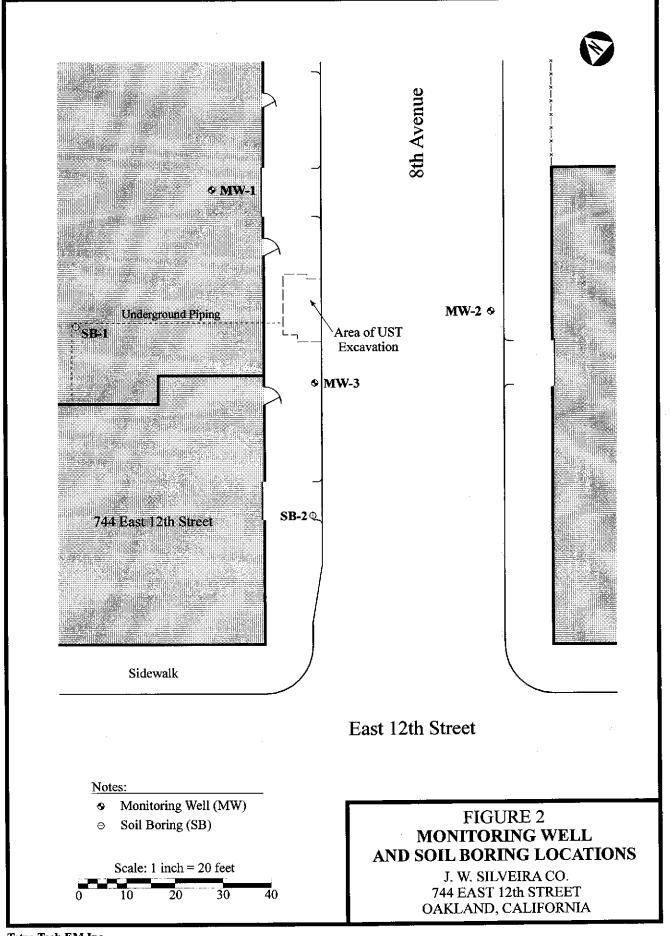
Soil Sample Analytical Results: BTEX and TPH-g were not detected in the soil samples collected during the additional site characterization. MTBE is the only chemical compound that was detected in the soil samples. MTBE was detected in the soil samples collected from SB-2 and MW-3 at concentrations of 32 and 950 micrograms per kilogram (ug/Kg), respectively; MTBE was not detected in the remaining soil samples. Table 3 presents the analytical results of the additional site characterization soil samples. The complete laboratory analytical package is provided in Appendix C.

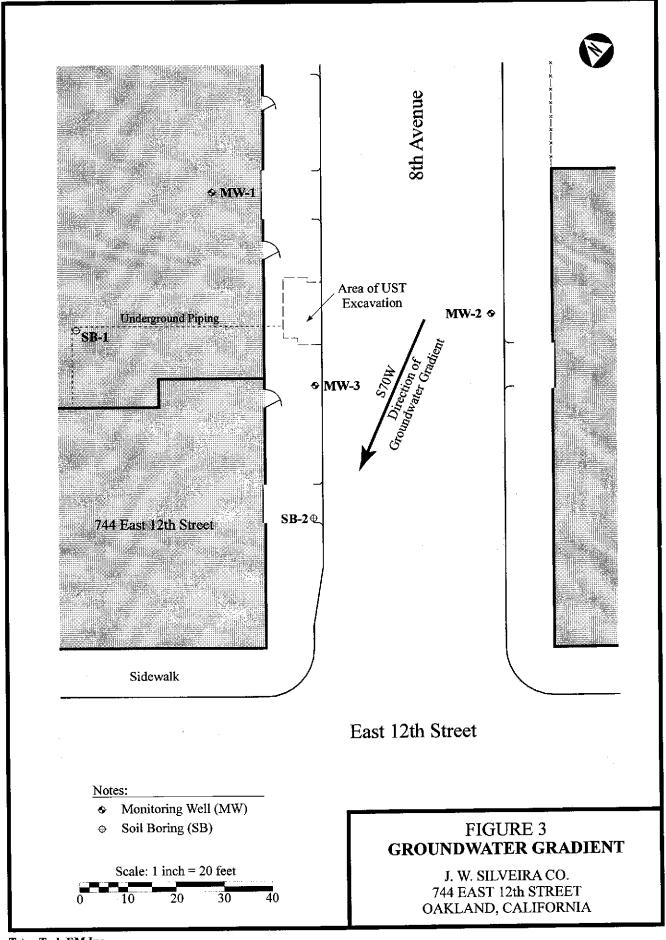
Tetra Tech EM Inc. 3 744 East 12th Street

Conclusions and Recommendations: The analytical results of the additional site characterization samples and visual observation of the soil conditions during drilling activities show that some contamination is present at the site. Most of the contamination in the soil and groundwater is localized around MW-3. No mobile or potentially mobile free product appears to be present at the site. It is recommended that quarterly sampling should be started at the site. However, TtEMI recommends that the analytical data for the site be scrutinized by the Alameda County Health Care Services Agency to determine if 4 quarters (or less) of analytical data will be required for site closure. It is also recommended that the site be compared against the City of Oakland risk-based corrective action guidelines to determine if it is suitable for closure.



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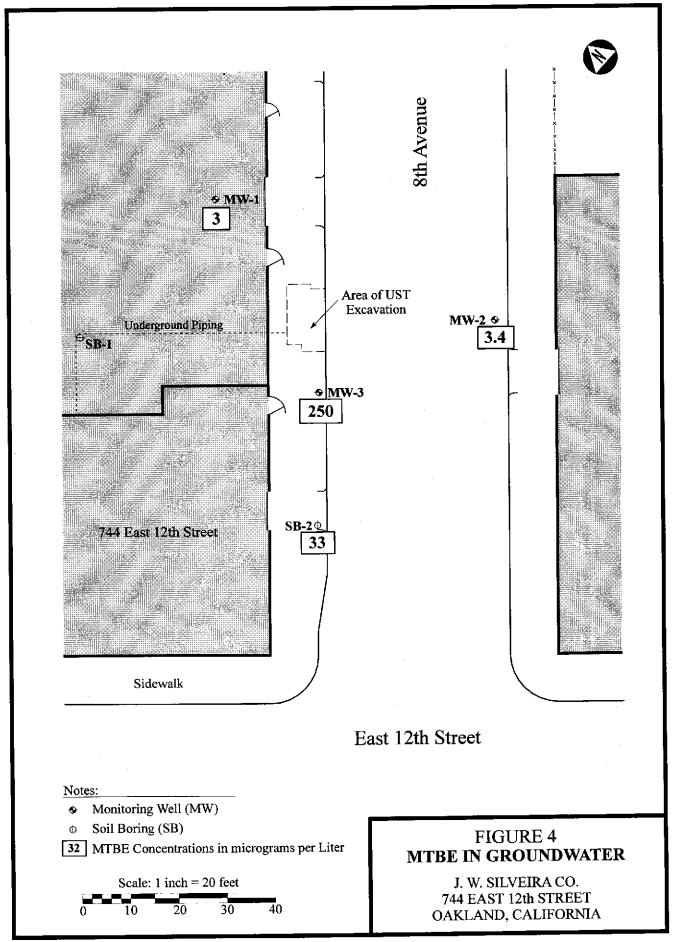


TABLE 1 GROUNDWATER ELEVATIONS 744 EAST 12TH STREET

Date	Ground	.:::::::::::::::::::::::::::::::::::::	om TOC MW-3
6/7/99	8.52	8.51	8.37

Notes:

ft feet

MW-1 TOC Elevation: 18.17 ft MW-2 TOC Elevation: 16.71 ft MW-3 TOC Elevation: 16.35 ft

TOC Top of Casing

TABLE 2 VOC AND TPH COMPOUNDS IN GROUNDWATER FROM MONITORING WELLS AND SOIL BORINGS, 1999 744 EAST 12TH STREET

Analyte	i i i	Ionitoring We	Soil Boring		
V/Θe (α₀//b)	MW-1	MW-2	MW-3	SB-1	SB-2
Benzene	ND	ND	14	ND	ND
Ethylbenzene	NĐ	ND	· ND	ND	ND
Toluene	ND	ND	ND	ND	0.63
,	ND	ND	ND	ND	2.2
m,p-Xylenes o-Xylene	ND	ND	ND	ND	0.74
MTBE	3	3.4	250	ND	33
TPH (ug/L)	MW-1	MW-2	MW-3	SB-4	SB-2
Gasoline	ND	ND	ND	ND	ND

Notes:

μg/L micrograms per Liter

ND Not Detected

TPH Total Petroleum Hydrocarbons VOC Volitile Organic Compound

TABLE 3 VOC AND TPH COMPOUNDS IN SOIL FROM MONITORING WELLS AND SOIL BORINGS, 1999 744 EAST 12TH STREET

Analyte		Lo	cation and De	oth	
VOC (μg/Kg)	MW-1 12.5-13 ft bgs	MW-2 10,5-11 ft bgs	MW-3 10.5-11 ft bgs	SB-1 10.5-11 ft bgs	SB-2 9.5-10 ft bgs
Benzene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND.
m,p-Xylenes	ND	ND	ND	ND	ND :
o-Xylene	ND	ND	ND	ND	ND
MTBE	ND	ND	950	ND	32
TPH (mg/Kg)	MW-1 12.5-13 ft bgs	MW-2 10.5-11 ft bgs	MW-3 10.5-11 ft bgs	SB-1 10.5-11 ft bgs	SB-2 9:5-10 ft bgs
Gasoline	ND	ND	ND	ND	ND

Notes:

bgs below ground surface

ft feet

μg/Kg micrograms per Kilogram mg/Kg milligrams per Kilogram

ND Not Detected

TPH Total Petroleum Hydrocarbons VOC Volitile Organic Compound

APPENDIX A MONITORING WELL COMPLETION RECORD

MONITORING WELL COMPLETION RECORD

BEEN DOUBLING INCODING TION	OLIDEA OF COMPLETION SERVICE	MANUTADINA WELL BEST
DRILLING INFORMATION	SURFACE COMPLETION	MONITORING WELL
DRILLING BEGAN:	M FLUSH MOUNT	MONITORING WELL NO. MW/
DATE 6-2-99 TIME 1/00	☐ ABOVE GROUND W/BUMPER POST	PROJECT SILVEIRA - DAKLAND
WELL INSTALLATION BEGAN:	SCONCRETE ASPHALT	SITE 3-744 EAST 12th ST.
DATE <u>(e-2-99</u> TIME <u>/230</u>		BOREHOLE NO. X9900416
WELL COMPLETION FINISHED:		•
DATE 6-2-99 TIME 1800		TOC TO BOTTOM OF WELL /4.9
DRILLING CO. FAST-TEK		
DRILLER TOM FORTNER	- 7点 総領 総報	ANNULAR SEAL
LICENSE 589008	DEPTH BGS JAMES TO BE STORY TO	AMOUNT CALCULATED 10 gsl
DRILL RIG <u>CME-25</u>		AMOUNT USED
DRILLING METHOD:		M GROUT FORMULA
M HOLLOW STEM AUGER		PORTLAND CEMENT <u>632</u>
☐ AIR ROTARY		BENTONITE 7%
0	REMORE MARKET	WATER _ 30 %
DIAMETER OF AUGERS: ID 8/4 OD 3 3/4"	eresten la company	□ PREPARED MIX
ID <u>8/4</u> OD <u>3³/4</u>		PRODUCT
	e e e e e e e e e e e e e e e e e e e	MFG. BY
BENTONITE SEAL		METHOD INSTALLED:
		DI POURED ITREMIE
AMOUNT LICED 3	_5.0	
AMOUNT CALCULATED 2.4 gel AMOUNT USED 3 gel PELLETS, SIZE	DEPTH BGS	- CASING CASING
Signature Size 2/a"		Ø SCHEDULE 40 PVC
© CHIPS, SIZE 3/8"	5.9	0
PRODUCT HOLE PWG	DEPTH BGS	PRODUCT
		MFG. BY TEMCO INC.
MFG. BY BARIOD INC.	<u>(0.9</u>	
METHOD INSTALLED:	DEPTH BGS	in 2.0 on 24"
MAPOURED TREMIE	8.0 V	casing diameter: ID 2.0 OD 2.4" LENGTH OF CASING 7'
AMOUNT OF WATER USED 2 gol	DEPTH BGS	22.1011101010101
FILTER PACK		WELL SCREEN
AMOUNT CALCULATED 3		SCHEDULE 40 PVC
AMOUNT USED		
M SAND, SIZE # 2/12		PRODUCT
		MFG. BY TOMOS /NC.
FORMATION COLLAPSE:		CASING DIAMETER:
PRODUCT MONTERPY KILD DRIED SAND		ID <u>2.0</u> OD <u>2.4</u>
MFG. BY RMC LONESTAR	1/2	SLOT SIZE <u>. O/O Med</u>
· · · · · · · · · · · · · · · · · · ·	DEPTH BGS	LENGTH OF SCREEN
METHOD INSTALLED:		
≱ LPOURĘD ☐ TREMIE	18.0	BOREHOLE BACKFILL
	DEPTH 8GS	AMOUNT CALCULATED
SURVEY INFORMATION		AMOUNT USED
TOC ELEVATION 18.17		□ BENTONITE CHIPS, SIZE
GROUND ELEVATION		D BENTONITE PELLETS, SIZE
NORTHING CORD.	DEPTH BGS	D SLURRY
EASTING CORD.	CENTRALIZERS	☐ FORMATION COLLAPSE
DATE SURVEYED 7-12-99	D DEPTHS	PRODUCT
SURVEY CO. TTEMI	M NO CENTRALIZERS USED	MFG.BY
	and controlled to the	METHOD INSTALLED:
TETRA TECH EM INC.		POURED D TREMIE
• SAN FRANCISCO •		

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION	SURFACE COMPLETION	MONITORING WELL
DRILLING BEGAN:	☑ FLUSH MOUNT	MONITORING WELL NO. MW 2
DATE <u>(0-2-99</u> TIME <u>0800</u>	☐ ABOVE GROUND W/BUMPER POST	PROJECT SILVEIRA - DAKLAND
WELL INSTALLATION BEGAN:	☐ CONCRETE Ø ASPHALT	SITE 3 - 744 EAST 12157
DATE <u>(2-2-99</u> TIME <u>0930</u>		BOREHOLE NO.
WELL COMPLETION FINISHED:		WELL PERMIT NO. X9900416
DATE <u>(0-2-99</u> TIME <u>1800</u>		TOC TO BOTTOM OF WELL 17.91
DRILLING CO. <u>FAST-TEK</u>		
DRILLER TOM FORTNER		ANNULAR SEAL
LICENSE 599008	<u>/.0</u>	AMOUNT CALCULATED 13 gel
DRILL RIG CNE-25	DEPTH BGS	AMOUNT USED 12 gal
DRILLING METHOD:		MEGROUT FORMULA
MA HOLLOW STEM AUGER		PORTLAND CEMENT 63%
☐ AIR ROTARY		BENTONITE 7%
o		WATER 30%
DIAMETER OF AUGERS:		D PREPARED MIX
ID 8/4" OD 33/4"		
··		PRODUCT
BENTONITE SEAL	n una	METHOD INSTALLED:
AMOUNT CALCULATED 2.7 gal		POURED ☐ TREMIE
AMOUNT USED 2.7gd	DEPTH BGS	
O PELLETS, SIZE		- CASING
⊠ CHIPS, SIZE	70	25 SCHEDULE 40 PVC
0	7.0 DEPTH BGS [:::: [::::]	
PRODUCT HOLE PLUG-WYUMING		PRODUCT
MFG. BY BARIOD INC.	7.9 DEPTH BGS	MFG. BY TEMOO hr.
METHOD INSTALLED:	DEPTH BGS	CASING DIAMETER:
Ø POURED ☐ TREMIE	95 ■ ▼	10 <u>2.0</u> 00 <u>2.4</u>
AMOUNT OF WATER USED 1.5 gel	9.5 DEPTH BGS ₩	LENGTH OF CASING 8,0
"		
		WELL SCREEN
FILTER PACK		
AMOUNT CALCULATED 30gd		<u> </u>
ANIOUNI USED		PRODUCT
MI SAND, SIZE # 2/12_		MFG. BY TEMCO INC.
☐ FORMATION COLLAPSE:		CASING DIAMETER:
FROM TO		ID <u>2.0</u> OD <u>2.4</u>
PRODUCT MONTENERY KIN DELLO SAND		SLOT SIZE . O/O "
MFG. BY RWC LAWESTAR	<u> </u>	LENGTH OF SCREEN 10'
METHOD INSTALLED:	DEPTH BGS	
□ POURED □ TREMIE	186	- BOREHOLE BACKFILL
· .	DEPTH BGS	AMOUNT CALCULATED
SURVEY INFORMATION		AMOUNT USED
TOC ELEVATION /6.7/		
GROUND ELEVATION		D BENTONITE CHIPS, SIZE
NORTHING CORD.	DEPTH BGS	D BENTONITE PELLETS, SIZE
		D SLURRY
EASTING CORD	CENTRALIZERS	DEPORTATION COLLAPSE
SURVEY CO. 7-12-43	D DEPTHS,	PRODUCT
CONVET CO	NO CENTRALIZERS USED	MFG. BY
TETRA PROVINCE		METHOD INSTALLED:
TETRA TECH EM INC.		Ø POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION	SURFACE COMPLETION	MONITORING WELL
DRILLING BEGAN:	☐ FLUSH MOUNT	MONITORING WELL NO. MW 3
DATE <u>6-2-99</u> TIME <u>1400</u>	☐ ABOVE GROUND W/BUMPER POST	PROJECT SCUEIRA - DAKLAND
WELL INSTALLATION BEGAN:	□ CONCRETE □ ASPHALT	SITE 3 , 744 EAST 12th 5T
DATE <u>(0-2-99</u> TIME 1530		BOREHOLE NO.
WELL COMPLETION FINISHED:		WELL PERMIT NO. X9900 4/6
DATE <u>(e-2-99</u> TIME 1800		TOC TO BOTTOM OF WELL 18.0
DRILLING CO. FAST-TEX		
DRILLER Tom FORTHER		ANNUL AD OCAL
LICENSE 589008		ANNULAR SEAL
DRILL RIG CUNE-25	DEPTH BGS	AMOUNT CALCULATED Was
DRILLING METHOD:		AMOUNT USED 10 gal
ME HOLLOW STEM AUGER		≱GROUT FORMULA /
☐ AIR ROTARY		PORTLAND CEMENT 63%
_		BENTONITE 7%
D		WATER _ 30%
DIAMETER OF AUGERS:	in the second of the second of	□ PREPARED MIX
id <u>8 /4"</u> od <u>3 /4"</u>		PRODUCT
		MFG. BY
BENTONITE SEAL		METHOD INSTALLED:
AMOUNT CALCULATED 2.7 gr		MA-POURED ☐ TREMIE
AMOUNT USED 2.5 gul	5.0 DEPTH BGS	
RINGUNT USED A.5 gr	DEPTH BGS	CASING TO SERVICE OF THE CASING T
PELLETS, SIZE		SA-SCHEDULE 40 PVC
EL CHIPS, SIZE 3/8"	(e.o_	
	DEPTH BGS	DECEMBE
PRODUCT HOLEPLYG WYOMING		MFG. BY TEMEO
MFG. BY BARIOD INC.	7.0 DEPTH BGS	
METHOD INSTALLED:	DEPTH BGS	CASING DIAMETER:
POURED TREMIE	95	1D 2.0 OD 2.4
AMOUNT OF WATER USED 1.5 gul	9.5 DEPTH BGS	LENGTH OF CASING 7'
•		•
		WELL SCREEN
FILTER PACK		≨SCHEDULE 40 PVC
AMOUNT CALCULATED 30 ml		
AMOUNT USED 30gel		PRODUCT TEMOS /NC.
XSAND, SIZE # 2/12		MFG. BY
☐ FORMATION COLLAPSE:		CASING DIAMETER:
FROM TO		1D 2.0 OD 2.4
PRODUCT MONTHEY KIN DEIDS SAND		SLOT SIZE .OIO IN
MFG. BY RMC CONESTAR	<u>17.0</u>	LENGTH OF SCREEN
METHOD INSTALLED:	DEPTH BGS	ZENOMO OOMEEN
ØKPOURED ☐ TREMIE	ie a little little	
	DEPTH BGS	BOREHOLE BACKFILL
·	DEP (III BOS)	AMOUNT CALCULATED
SURVEY INFORMATION		AMOUNT USED
TOC ELEVATION		☐ BENTONITE CHIPS, SIZE
GROUND ELEVATION	DEPTH BGS	☐ BENTONITE PELLETS, SIZE
NORTHING CORD.		□ SLURRY
EASTING CORD.	CENTRALIZERS	FORMATION COLLAPSE
DATE SURVEYED 7-12-99	D DEPTHS,	PRODUCT/
SURVEY CO. TE EMI	M NO CENTRALIZERS USED	MFG. BY
	•	METHOD INSTALLED:
TETRA TECH EM INC.		POURED TREMIE
SAN FRANCISCO	•	_ ···· -

135 MAIN SAN FR	Tech E STREET, S ANCISCO, 0 115-543-488	UITE CA 94	180	00	•	MN BONGID: MW-1 SITE: 744 E 12th 57. PROJECT: SILUEIRA - OAKLAND
SAMPLEID	SAMPLE TIME SAMPLE DEPTH PID READING	DRIVE INTERVAL INCHES RECOVERED INCHES DRIVEN	DEPTH (ft bgs)	MW SCREENED IN		PROJECT NO.: PIIO(0 DATE: (0-2-99 NW-2 LOGGED BY: Roy GLENN
		48/46 42/40	1 2 3 4 5		70 / 77	CONCRETE 6" CLAY, LIGHT BROWNISH GRAY (2.5 4 4/2), LOW PLASTICITY, DAMP, STIFF. CLAY, LIGHT BROWNISH GRAY (2.5 4 4/2) W/ MOTTLED BLACK & REDDISH IRON STAINING 10%, LOW PLASTICITY, DAMP, STIFF W/ 5% FINE GRAVER 4-8 mm W/ 16% WHITE BROKEN SHELLS 2-8 mm W/ 25% WHITE BROKEN SHELLS 2-10 mm
Jw3-2	1200	33/3/0 42/48	11 12		72 6	No SHELLS PRESENT AT 9.5' bgp. SANDY-CLAY, LIGHT YELLOWISH BROWN (104K 6/4). LOW PLASTICITY, MOIST, MEDIUM STIFF, W/15% FINE GRAVE. W/40% FINE GRAVE 4-LEMM GRAVERY-SAND, BROWN (104K 5/3), CDARSE, SUB-ANGULAY. WELL GRADED SAND, WET, LOOSE, W/15% GRAVE. FINE 2-8 MM
		32/36	16		30	SATURATES? ΤD = 18. φ ft byp.

PROJECTINO TITLOGO DATE: (2-2-99 LOGGED BY FOY GLENN ASTROT 2/2 LIGHT BROWNISH GRAY (2.5 4 15/2) LIGHT BROWNISH GRAY (2.5 4 15/2) W/5 7 LIGHT BROWNISH GRAY (2.5 4 15/2) LIGHT BROWNISH GRAY (2.5 4 15/2) W/5 7 LIGHT BROWNISH GRAY (2.5 4 15/2) W/5 7 LIGHT BROWNISH GRAY (2.5 4 15/2) STORY RED ONION STAMMS 38/2, Low RESTLICTY, MOIST, MADDIN 3718 SANDEY-CLAY, LIGHT FROM (15 4 16) LOW TLASTICITY, WHIT, SET. SINTY-SAND, BROWN (16 4 18 15), FINE, SAD, WHIT BROWN, WELL GRADED, SATURATED, LOOSE SINTY-GRAVER, BROWN (16 4 18 15), FINE, SAD ROOSED, TRONG GRAVER, BROWN (16 4 18 15), FINE, SAD ROOSED, TRONG GRAVER, BROWN (16 4 18 15), FINE, SAD ROOSED, TRONG GRAVER, BROWN (16 4 18 15), FINE, SAD ROOSED, TRONG GRAVER, BROWN (16 4 18 15), FINE, SAD ROOSED, TOSE BH boy.	Tetra Tech EI 135 MAIN STREET, SU SAN FRANCISCO, C 415-543-4880	HTE 1800 A 94105		FURNISH THE ST	IG ID: MW-2 ITE: 744 E 12 ¹¹ 57. ROJECT: SIWEIRA - OAKLAND
LIGHT BROWNISH GRAY (25 4 6/2) W/5 20 Brack STAWING - OKOG W/5 20 Brack STAWING - OKOG JULY MOTTLED LIGHT BROWN (75 4R 6/5) W BRACK & RESDISH RESULVENCY STAWING 36/20, Low RESTITION, MOIST, MEDIUM STAR SINDRY - CLAY, LIGHT YOURSH BROWN (16 4R6/4), LOW RESTITION, WELL GRADED, SATURATED, LOOSE WELL BOWNED, WELL GRADED, SATURATED, LOOSE TO LOW GRADED, SATURATED, LOOSE TO LOAD TO SATURATED, LOOSE TO LOAD TO SATURATED, LOOSE TO LOAD TO SATURATED, LOOSE, W/16/20 LOAD TO	SAMPLE ID SAMPLE TIME SAMPLE DEPTH PID READING	ORIVE INTERVAL INCHES RECOVERED INCHES ORIVEN DEPTH (# bgs)	X 8	FIELD SKETCH 12 ¹ 57. LC	ROJECT NO.: P1106 ATE: 6-2-99
LIGHT BROWNISH GRAY (2.5 y 6/2) LIGHT BROWNISH GRAY (2.5 y 6/2) W/5% BLACK STANDING - OKDE SCLAY, MOTTLED LIGHT FROWN (7.5 YR (4/5)) W/ BLACK & RESDISH IRON OKIDE STANDING - 38/2, LOW PLASTICITY, MOIST, MEDIUM STAND SANDEY-CLAY, LIGHT YELCOWISH BROWN (1/2 YR 6/4), LOW PLASTICITY, WET, SOFT. SILTY-SAND, BROWN (1/2 YR 5/5), MEDIUM SAND, WELL BOWNED, WELL GRADED, SATURATED, LOOSE TO SILTY-GRAVER, BROWN (1/2 YR 5/5), FINE, SUB BOLDOUD, ROOKING GRADED GRAVER, SATURATED, LOOSE, W/1076 COARSE SAND. TD= 18 ft byp.		2/4/6		ASPHALT 21/2" CLAY, GREENSA-GRAY (564 STIFE, W/5% VERY CONESES	(0/1), LOW PLASTICITY, DAMP,
	Jw3-01 1030	75/45 35/36 48/48 5 6 7 8 9 10 11 12 13 14 15 16	, ,	W/52 BLACK STANING - DYDE CLAY, MOTTLED LIGHT BROWN (IRON OYIDE STANING-30%, LO SANDEY- CLAY, LIGHT YELLOW LOW PLASTICITY, WET, SOFT. SILTY-SAND, BROWN (10 YR WELL BOWNED, WELL GRADET SILTY-GRAVER, BROWN (10 YR RONNEY GRADED GRAVER, SAT COARSE SAND.	7.5 YR (4/3) W/ BRACK & RUDDISH OW PRASTICITY, MOIST, MODIUM STIFF, 115H BROWN (10 YR 6/4), 125H BROWN (10 YR 6/4), 125H BROWN SAND, 125/3), MEDIUM SAND, 125/3), SATURATED, CODSE

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Tetra Tech EI 135 MAIN STREET, SI SAN FRANCISCO, C 415-543-4880	JITE 1800 A 94105	BOIG ID: MW-3 SITE: 744 EAST 12 STREET PROJECT: SILUEIRA - OAKLAND
SAMPLE ID SAMPLE TIME SAMPLE DEPTH PIO READING	DRIVE INTERVAL I INCHES RECOVERED INCHES DRIVEN DEPTH (It bgs) MAJ SCREEN USCS SOIL TYPE	PROJECT NO.: PIOLO DATE: 6-2-99 LOGGED BY: ROY GLENN
Jw3-43 1334	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 8 19 20 17 18 19 20 17 18 19 20 17 18 19 20 17 18 19 20 18 18 18 18 18 18 18 18 18 18 18 18 18	CLAY, LIGHT BROWNISH GRAY (2.5 y 4/2), LOW PLASTICITY, TAMP, STIEF, W/BLACK I ROW ONDE STAINING 5%. W/5% FINE GRAVER 4-LE MM GRAVELY-CLAY, STAINED GRAYISH-GREEN (5646/1), LOW PLASTICITY, DAMP, MEDIUM STIFF, W/35% FINE TO COARDE GRAVER (CMM - 25 MM, HYDROCARBON) OTHER PRESENT. MOIST SILTY-SAND, BROWN (10 YR 5/3), MEDIUM SAND, SUB-ROWNOO, WALL GRADIES, SATURATIO, LOOSE

		SUIT	TE ·	1800		BOUGID: SB-1 SITE: 744 EAST 12 ¹¹ ST. PROJECT: SILVEIRA - DAKLAND
SAMPLE 1D	SAMPLE TIME SAMPLE DEPTH	PID READING DRIVE INTERVAL	INCHES RECOVERED INCHES DRIVEN	DEPTH (ft bgs)	USCS SOIL TYPE	PROJECT NO.: PILOLO DATE: 6-2-99 LOGGED BY: Roy GUENU
			42/42	1 2 3	77	CONCRETE 6" CLAY, LIGHT BROWNISH GRAY (2.5 4 6/2), LOW PLANTICITY, PAMP, STIFF.
			47/48	4 5 6 7 8	777	CLAY, MOTTLES LIGHT BROWNISH GRAY (2.5 46/2) W/BLACK & RENDISH HOW DXIDE STANDING 1.5%, LOW PLATICITY, DAMP, STIFF, W/10% TINE GRAVEL W/590 WHITE BROKEN SHOWS 2-8 mm
JW3-4	14SØ //		46/48	9 10 11	77	SAMOY- CLAY, LIGHT YELLOWISH BROWN (10 4R44), LOW PLASTICITY, MOIST, MEDIUM STIFF, W/570 FINE GRAVEL WET
		¥	2	13 14 15		GRAVELY-SAND, BROWN (10 YR 5/3), COARSE, SUB-ANGULAR, WILL GRADED SAND, WET, LOOSE, W/2020 FINE GRAVEL.
		¥	33/36	16 17 18	SW	SATURATED TD=18 ft by
				19		

E .		UITE A 94	180	0	SITE: 744 EAST 12 ^{t1} ST. PROJECT: SILUEIRA - DAKLAND
SAMPLE ID	SAMPLE TIME SAMPLE DEPTH PID READING	DRIVE INTERVAL INCHES RECOVERED INCHES DRIVEN	DEPTH (11 bgs)	USCS SOIL TYPE	058-2 ξί PROJECT NO.: P11Φ(φ DATE: (6-2-99
JW3-46		28/36 31/36 40/48 47/46 44/45 INCHE	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	SOSN 10 10 10 10 10 10 VWS	PRED SKETCH EAST 12th ST. LOGGED BY: ROY (GLEUN) CONCRETE 3" CLAY, LIGHT BROWNISH GRAY (2544), LOW REASTICITY, DAMP, STIFF. W/BLACK & REDDISH POWN OXIDE STANING 10% CLAY, STAND GRAYISH-GROW (5GYU), LOW RUSSTICITY, DAMP, MIDIUM STIFF W/15% FINE GRAVEL 5-BAM, HYTHOCOMERON OTOR PRESENT. SANDROY-CLAY, LIGHT YOUQUISH PROWN (10 YP 44), LOW REASTICITY, MOIST, MEANIN STIFF. MOIST WET GRANDY-CLAY, BROWN (10 YR 5/3), LOW REASTICITY, DAMP, STIFF, W/20% FINE GRAVEL.
			18 19 20		TD = 18 ft logs.

The copy of the COCs delivered to the analytical laboratory does not include information about which location specific samples were collected from, nor is information provided on the laboratory copy of the COC about whether or not the sample is a quality control sample. Thus, the copy of the COCs which includes this information has also been included in this appendix.

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San Francisco, CA 94105	PO#	Lab: a las			tive Added	
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		<u>~~ 7</u>	No./Container Types	Analysis	Required	, . 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
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Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

RECEIVED

Laboratory Number 139755

JUN 2 8 1999

TETRA TECH EM INC.

Tetra Tech EMI 135 Main Street

Suite 1800

San Francisco, CA 94105

Project#: P1106.05

Location: JW Silveria UST, Oak.

Sample ID	Lab ID	
JW3-01 JW3-02 JW3-03 JW3-04 JW3-05 JW3-06 JW3-07 JW3-08	139755-001 139755-002 139755-003 139755-004 139755-005 139755-006 139755-007	

I certify that this data package has been reviewed for technical correctness and completeness. Please see attached narrative for a discussion of any analytical problems related to this sample set. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

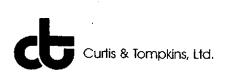
The case narrative is an integral and inseparable part of this report. \bigcirc

Signature:

Title: Operations Manager

Signature: Coul Worthon Title: Project Manager

6/21/99



Laboratory Number: 139755

Client: Tetra Tech EMI

Location: JW Silveria US I, Cakland

Project#: P1106.05

Receipt Date: 06/03/99

CASE NARRATIVE

This hardcopy data package contains sample and QC results for five soil samples and three water samples that were received on June 3, 1999. Soil results were reported on a dry-weight basis.

TPH Purgeables/BTXE: No analytical problems were encountered.



Chain of Custody Record

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P1106.05	HAL DAWSON	Loy	> 9ll	_		1 Liter Poly	Brass Tube Glass Jar	Acerane	CLP VOA	CLP SVOA CLP Pest/ PCBs	T P	TPH Extract	15		11		
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Turnaround time/remarks:

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Curtis & Tompkins, Ltd.

COOLER RECEIPT CHECKLIST

Login#	139755	Date Recei	ا . ived:	0/3	Number	of Coolers:	<i>J</i>	<i></i>
Client:		_ 	Project	t:	P1104:04	<u>*</u>	<u></u>	
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1.	Did cooler come					क्षा कराव वीविश्व के की बीव की कराव अब में दिवसे की बीव की की की की की		\mathbf{w}
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	Did bottle labels							NO
	Were appropriate				ated?		Colored Colored	NO
	Were correct pre						VIES.	NO
7.	Was sufficient ar	nount of sam	ple sent for	tests indica	ated?			NO
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Percent Moisture Summary Report

11-JUN-99 48586 MR

Date: Batch: Analyst:

						Percent	Percent
Sample	Method	Date	Tare(g)	Wet(g)	Dry(g)	Solids	Moisture
139707-001	CLP SOW 390	11-JUN-99	15.2086	22.613	21.2519	82	18
139755-001	CLP SOW 390	11-JUN-99	15.1006	22.1986	20.8668	81	1 9
139755-002	CLP SOW 390	11-JUN-99	15.9738	22.6529	21.7696	87	13
139755-003	CLP SOW 390	11-JUN-99	15.8485	22.223	21.2678	85	15
139755-004	CLP SOW 390	11-JUN-99	15.7932	23.4552	21.9956	81	1 9
139755-006	CLP SOW 390	11-JUN-99	15.3093	22.4025	21.3129	85	15
139767-002	CLP SOW 390	11-JUN-99	15.4967	22.9024	22.5271	95	5
139767-003	CLP SOW 390	11-JUN-99	15.2178	22.4455	21.8175	91	9
139767-004	CLP SOW 390	11-JUN-99	15.3789	22.26	21.9676	96	4
139767-005	CLP SOW 390	11-JUN-99	15.4881	23.4615	23.1166	96	4
139767-006	CLP SOW 390	11-JUN-99	14.6335	23.0883	22.6368	95	5
139767-007	CLP SOW 390	11-JUN-99	15.0383	23.8915	23.5369	96	4
139767-008	CLP SOW 390	11-JUN-99	15.9407	23.7889	23.4341	95	5
139767-009	CLP SOW 390	11- มนม - 99	15.6188	23.1136	22.7085	95	5
139767-010	CLP SOW 390	11-JUN-99	15.4913	23.5108	23.058	94	6
139767-011	CLP SOW 390	11-JUN-99	15.6317	22.8891	22.4816	94	6
139767-012	CLP SOW 390	11-JUN-99	14.9898	23.7064	23.3221	96	4
139767-014	CLP SOW 390	11-JUN-99	15.2987	22.7277	22.2814	94	6
139767-015	CLP SOW 390	11-JUN-99	15.9725	23.8646	23.5281	96	4
139767-016	CLP SOW 390	11-JUN-99	14.996	22.7799	22.4097	95	5
qc99685	CLP SOW 390	11-JUN-99	14.9885	22.8706	21.6653	85	15
of 139755-00	6				RPD	: 0.1%	0.5%



TVH-Total Volatile Hydrocarbons

Client:

Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

Sample #	Client	ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139755-001 139755-002 139755-003 139755-004	JW3-02 JW3-03	MW2 10.5-11 MW1 12.5-13 MW3 10.5-11 SB1-10.5-11	48621 48621 48608 48621	06/02/99 06/02/99 06/02/99 06/02/99	06/13/99 06/13/99 06/12/99 06/13/99	06/13/99 06/13/99 06/12/99 06/13/99	19% 13% 15% 19%

Analyte Diln Fac:	Units	139755-001 1	139755-002 1	139755-003 1	139755-004 1
Gasoline C7-C12	mg/Kg	<1.2	<1.1	<1.2	<1.2
Surrogate					
Trifluorotoluene	%REC	93	94	96	95
Bromofluorobenzene	%REC	88	92	93	91



 \mathtt{BTXE}

Tetra Tech EMI Client:

Project#: Pl106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method:

EPA 5030

Sample # (Client	ID	Batch #	Sampled	Extracted	Analyzed	Moisture.
139755-001	JW3-01		48621	06/02/99	06/13/99	06/13/99	19%
139755-002			48621	06/02/99	06/13/99	06/13/99	13%
139755-003	JW3-03	· hu 3 10.5-(1	48621	06/02/99	06/13/99	06/13/99	15%
139755-004			48621	06/02/99	06/13/99	06/13/99	19%

Analyte	Units	139755-001	139755-002	139755-003	139755-004
Diln Fac:		1	1	2	1
MTBE	ug/Kg	<25	<23	950	<25
Benzene	ug/Kg	<6.2	<5.7	<12	<6.2
Toluene	ug/Kg	<6.2	<5.7	<12	<6,2
Ethylbenzene	ug/Kg	<6.2	<5.7	<12	<6.2
m,p-Xylenes	ug/Kg	<6.2	<5.7	<12	<6.2
o-Xylene	ug/Kg	<6.2	<5.7	<12	<6.2
Surrogate					
Trifluorotoluene	%REC	103	106	102	101
Bromofluorobenzene	%REC	98	101	100	98



TVH-Total Volatile Hydrocarbons

Client:

Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

Sample # Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139755-006 JW3-06	48621	06/02/99	06/13/99	06/13/99	15%

Analyte Diln Fac:	Units	139755-006 1		
Gasoline C7-C12	mg/Kg	<1.2		
Surrogate				
Trifluorotoluene	%REC	98		
Bromofluorobenzene	%REC	92		



BTXE

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method: EPA 5030

Sample #	Client ID		Batch #	Sampled	Extracted	Analyzed	Moisture
139755-006	JW3-06	5B2 9,5-10	48621	06/02/99	06/13/99	06/13/99	15%

Analyte Diln Fac:	Units	139755-006			<u> </u>	
MTBE	ug/Kg	32		•		
Benzene	ug/Kg	<5.9				
Toluene	ug/Kg	<5.9				
Ethylbenzene	ug/Kg	<5.9				
m,p-Xylenes	ug/Kg	<5.9	•			
o-Xylene	ug/Kg	<5.9		 		
Surrogate						
Trifluorotoluene	%REC	104				
Bromofluorobenzene	%REC	101				

Curtis & Tompkins, Ltd.

Lab #: 139755

BATCH QC REPORT

TVH-T	otal Volatile Hydrocarbons
Client: Tetra Tech EMI Project#: P1106.05 Location: JW Silveria UST,Oak.	Analysis Method: EPA 8015M Prep Method: EPA 5030
	METHOD BLANK
Matrix: Soil Batch#: 48608 Units: mg/Kg Diln Fac: 1	Prep Date: 06/11/99 Analysis Date: 06/11/99

MB Lab ID: QC99776

Analyte	Result	
Gasoline C7-C12	<1.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	93	62-143
Bromofluorobenzene	87	59-150

Lab #: 139755

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Tetra Tech EMI Client:

Prep Method:

Analysis Method: EPA 8015M

Project#: P1106.05

EPA 5030

Location: JW Silveria UST, Oak.

METHOD BLANK

Prop Date:

06/13/99

Matrix: Batch#:

Analysis Date:

06/13/99

Units: Diln Fac: 1

mg/Kg

Soil

48621

MB Lab ID: QC99837.

Analyte	Result	
Gasoline C7-C12	<1.0	·
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	93	62-143
Bromofluorobenzene	91	59-150

Curtis & Tompkins, Ltd.

Lab #: 139755

BATCH QC REPORT

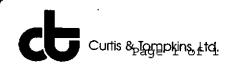
BTXE Analysis Method: EPA 8021B Tetra Tech EMI Client: EPA 5030 Project#: P1106.05 Prep Method: Location: JW Silveria UST, Oak. METHOD BLANK 06/13/99 ₽fep Date: Soil Matrix: Analysis Date: 06/13/99 48621 Batch#: ug/Kg Units: Diln Fac: 1

MB Lab ID: QC99837

Analyte	Result	
MTBE	<20	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	< 5 . 0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	104	59-134
Bromofluorobenzene	100	38-150

Lab #: 139755

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Soil

Project#: Pl106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

LABORATORY CONTROL SAMPLE

Prep Date:

06/11/99

Analysis Date:

06/11/99

48608 Batch#: Units: mg/Kg

Diln Fac: 1

Matrix:

LCS Lab ID: QC99777

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	10.24	10	102	77-122
Surrogate	%Rec	Limits		
Trifluorotoluene Bromofluorobenzene	94 108	62-143 59-150		

[#] Column to be used to flag recovery and RPD values with an asterisk

13

^{*} Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

BATCH QC REPORT



BTXE

Client: Tetra Tech EMI

Project#: P1106.05

Analysis Method: EPA 8021B

Prep Method:

EPA 5030

Location: JW Silveria UST, Oak.

LABORATORY CONTROL SAMPLE

Matrix:

Soil

Batch#:

Prep Date: Analysis Date: 06/13/99

48621 Units:

ug/Kg

06/13/99

Diln Fac: 1

LCS Lab ID: QC99838

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	79.18	100	79	59-135
Benzene	84.28	100	84	67-116
Toluene	88.45	100	88	77-122
Ethylbenzene	88.07	100	88	70-124
m,p-Xylenes	185.6	200	93	75-125
o-Xylene	90.56	. 100	91	75-126
Surrogate	%Rec	Limits		
Trifluorotoluene	103	59-134		
Bromofluorobenzene	100	38-150		

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits



BATCH QC REPORT

TVH-Total Volatile Hydrocarbons Analysis Method: EPA 8015M Tetra Tech EMI Client: Prep Method: EPA 5030 Project#: P1106.05 Location: JW Silveria UST, Oak BLANK SPIKE/BLANK SPIKE DUPLICATE 06/13/99 Prep Date: Soil Matrix: Analysis Date: 06/13/99 Batch#: 48621 mq/Kq Units: Diln Fac: 1

BS Lab ID: QC99839

Analyte	Spike Added	i BS	%Rec #	Limits
Gasoline C7-C12	10	9.26	93	77-122
Surrogate	%Rec	Limits		
Trifluorotoluene Bromofluorobenzene	93 105	62-143 59-150		•

BSD Lab ID: QC99840

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	10	8,83	88	77-122	5	11
Surrogate	%Rec	Limít	ន			
Trifluorotoluene Bromofluorobenzene	94 111	62-14 59-15	_			

[#] Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 1 outside limits

^{*} Values outside of QC limits



Curtis & Tompkins, Ltd.

Lab #: 139755

TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI Analysis Method: EPA 8015M
Project#: P1106 05 Prep Method: EPA 5030

Project#: P1106.05 Prep Method: F Location: JW Silveria UST,Oak.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ

Lab ID: 139853-002

Matrix: Soil

Batch#: 48608

Units: mg/Kg Diln Fac: 1 Sample Date: 06/09/99
Received Date: 06/10/99
Prep Date: 06/12/99
Analysis Date: 06/12/99

MS Lab ID: QC99779

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	10	<1	9.7	97	55-134
Surrogate	å Rec	Limits			
Trifluorotoluene Bromofluorobenzene	95 117	62-143 59-150			

MSD Lab ID: QC99780

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	10	8.96	90	55-134	8	30
Surrogate	%Rec	Limit	5			
Trifluorotoluene Bromofluorobenzene	94 107	62-143 59-15				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

BATCH QC REPORT



BTXE

Client: Tetra Tech EMI

Project#: Pl106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ

Lab ID: 139871-002

Matrix: Soil
Batch#: 48621
Units: ug/Kg
Diln Fac: 1

Sample Date:

06/05/99

Received Date: Prep Date:

06/11/99 06/13/99

Analysis Date:

06/13/99

MS Lab ID: QC99841

Analyte	Spike Added	Sample	MS	%Rec #	Limits
MTBE	100	<20	79.02	79	51-145
Benzene	100	<5	78.43	78	57-125
Toluene	100	<5	74.41	74	64-124
Ethylbenzene	100	<5	73.03	73	41-131
m,p-Xylenes	200	<5	151.2	76	50-128
o-Xylene	100	<5	79.21	79	44-138
Surrogate	%Rec	Limits			
Trifluorotoluene	104	59-134		<u>.</u>	
Bromofluorobenzene	102	38-150			

MSD Lab ID: QC99842

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
MTBE	100	80.38	80	51-145	2	13
Benzene	100	73.47	73	57-125	7	10
Toluene	100	66.39	66	64-124	11	12
Ethylbenzene	100	65.84	66	41-131	10	13
m,p-Xylenes	200	148.1	74	50-128	2	13
o-Xylene	100	78.84	79	44-138	0	13
Surrogate	%Rec	Limits	3			
Trifluorotoluene	107	59-134	4			
Bromofluorobenzene	104	38-150	0			

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method: EPA 5030

Sample #	Client	ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139755-005 139755-007 139755-008	JW3-07	SBI gravew SB2 "" Topbl	48701 48632 48701	06/02/99 06/02/99 06/02/99	06/16/99 06/16/99 06/16/99	06/16/99 06/16/99 06/16/99	

Matrix: Water

Analyte Diln Fac:	Units	139755-005 1	139755-007 1	139755-008 1	
Gasoline C7-C12	ug/L	<50	<50	<50	·
Surrogate					-
Trifluorotoluene	%REC	105	111	110	
Bromofluorobenzene	%REC	106	114	115	

Page 1 of 1

BTXE

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method: EPA 5030

Sample # C	lient ID		Batch #	Sampled	Extracted	Analyzed	Moisture
139755-005 JI 139755-007 JI	- [31 ggu 32 ggu		06/02/99 06/02/99	06/16/99 06/16/99	06/16/99 06/16/99	,
139755-008 J	W3-08	B1.	48701	06/02/99	06/16/99	06/16/99	

Matrix: Water

Analyte Diln Fac:	Units	139755-005	139755-007	139755-008 1	
MTBE	ug/L	<2	33	<2	
Benzene	ug/L	<0.5	<0.5	<0.5	
Toluene	ug/L	<0.5	<0.5	<0.5	
Ethylbenzene	ug/L	<0.5	0.63	<0.5	
m,p-Xylenes	ug/L	<0.5	2.2	<0.5	
o-Xylene	ug/L	<0.5	0.74	<0.5	
Surrogate					
Trifluorotoluene	%REC	109	113	116	
Bromofluorobenzene	%REC	110	116	119	

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Analysis Method: EPA 8015M

Project#: Pl106.05

Prep Method: EPA 5030

Location: JW Silveria UST, Oak.

Client: Tetra Tech EMI

Water

METHOD BLANK

Prep Date:

06/16/99

Analysis Date: 06/16/99

Batch#: 48701 Units: ug/L Diln Fac: 1

Matrix:

MB Lab ID: QC00163

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	98	53-150
Bromofluorobenzene	97	53-149

BATCH QC REPORT



BTXE

Client: Tetra Tech EMI

Water

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method:

EPA 5030

METHOD BLANK

Prep Date:

06/16/99

Analysis Date:

06/16/99

Units: ug/L Diln Fac: 1

Batch#: 48701

Matrix:

MB Lab ID: QC00163

Analyte	Result	
MTBE	<2.0	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	103	51-143
Bromofluorobenzene	102	37-146

BATCH QC REPORT



Lab #: 139755

TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Project#: P1106.05 Prep Method:

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

nod: EPA 5030

METHOD BLANK

Matrix: Water Prep Date: 06/15/99 Batch#: 48632 Analysis Date: 06/15/99

Batch#: 48632 Analysis Date:
Units: ug/L
Diln Fac: 1

MB Lab ID: QC99886

Analyte Result

Gasoline C7-C12 <50

Surrogate %Rec Recovery Limits

Trifluorotoluene 93 53-150
Bromofluorobenzene 94 53-149

Curtis & Tompkins, Ltd. Page 1 of 1

EPA 5030

BATCH QC REPORT

Lab #: 139755

BTXE

Client: Tetra Tech EMI

Water

Project#: P1106.05

Location: JW Silveria UST, Oak.

METHOD BLANK

Matrix: Batch#: 48632

Units: ug/L Diln Fac: 1

Prep Date: 06/15/99 06/15/99 Analysis Date:

Analysis Method: EPA 8021B

Prep Method:

MB Lab ID: QC99886

Analyte	Result	
MTBE	<2.0	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	90	51-143
Bromofluorobenzene	92	37-146

Curtis & Tompkins, Ltd. Page 1 of 1

BATCH QC REPORT

Lab #: 139755

TVH-Total Volatile Hydrocarbons

Tetra Tech EMI Client:

Project#: Pl106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

LABORATORY CONTROL SAMPLE

Water Matrix: 48701

Batch#: Units: ug/L Diln Fac: 1

06/16/99 Prep Date: Analysis Date: 06/16/99

LCS Lab ID: QC00162

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1868 2000		93	77-117
Surrogate	%Rec	Limits		•
Trifluorotoluene	107	53-150		
Bromofluorobenzene	120	53-149		

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Tetra Tech EMI Client:

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Water Matrix: 48632 Batch#:

Units: ug/L Diln Fac: 1

Prep Date:

06/15/99

06/15/99 Analysis Date:

LCS Lab ID: QC99885

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1849	2000	92	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	108	53-150		
Bromofluorobenzene	121	53-149		

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Curtis & Tompkins, Ltd. Page 1 of 1

BATCH QC REPORT

Lab #: 139755

BTXE

Tetra Tech EMI Client:

Project#: P1106.05

Analysis Method: EPA 8021B

Prep Method:

EPA 5030

Location: JW Silveria UST, Oak.

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water 48701 Prep Date:

06/16/99

Batch#:

Analysis Date:

06/16/99

Units: ug/L Diln Fac: 1

BS Lab ID: QC00164

Analyte	Spike Added	BS	%Rec #	Limits
MTBE	20	15.86	79	66-126
Benzene	20	18.1	91	65-111
Toluene	20	19.05	95	76-117
Ethylbenzene	20	19.47	97	71-121
m,p-Xylenes	40	38.98	97	80-123
o-Xylene	20	19.08	95	75-127
Surrogate	%Rec	Limits	- All againment	
Trifluorotoluene	112	51-143		
Bromofluorobenzene	112	37-146		

BSD Lab ID: QC00165

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
MTBE	20	15.95	80	66-126	1.	12
Benzene	20	18.26	91	65-111	1	10
Toluene	20	18.7	94	76-117	2	10
Ethylbenzene	20	19.77	99	71-121	2	11
m,p-Xylenes	40	38.67	97	80-123	1	10
o-Xylene	20	18.92	95	75-127	1	11
Surrogate	*Rec	Limits			· · · · · · · · · · · · · · · · · · ·	
Trifluorotoluene	108	51-143				
Bromofluorobenzene	107	37-14	6			

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

BATCH QC REPORT



BTXE

Client: Tetra Tech EMI

Project#: Pl106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water Batch#: 48632 Units: ug/L

Diln Fac: 1

Prep Date:

06/15/99

Analysis Date: 06/15/99

BS Lab ID: QC99887

Analyte	Spike Added	BS	%Rec #	Limits
MTBE	20	14.66	73	66-126
Benzene	20	15.66	78	65-111
Toluene	20	16.87	84	76-117
Ethylbenzene	20	16.8	84	71-121
m,p-Xylenes	40	33.87	85	80-123
o-Xylene	20	16.72	84	75-127
Surrogate	%Rec	Limits		
Trifluorotoluene	98	51-143		
Bromofluorobenzene	102	37-146		

BSD Lab ID: QC99888

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
MTBE	20	14.68	73	66-126	0	12
Benzene	20	15.78	79	65-111	1	10
Toluene	20	16.9	85	76-117	0	10
Ethylbenzene	20	17.03	85	71-121	1	11
m,p-Xylenes	40	34.25	86	80-123	1	10
o-Xylene	20	16.91	85	75-127	1	11
Surrogate	%Rec	Limits				
Trifluorotoluene	94	51-143				
Bromofluorobenzene	98	37-14	6			

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits



BATCH QC REPORT Lab #: 139755

TVH-Total Volatile Hydrocarbons

Tetra Tech EMI Client:

Analysis Method: EPA 8015M

Project#: P1106.05

EPA 5030

Prep Method:

Location: JW Silveria UST, Oak.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ

Sample Date:

06/10/99

139898-008 Lab ID:

Received Date:

06/11/99

Matrix: Water 48701

Prep Date:

06/16/99

Batch#: Units: uq/L

Diln Fac: 1

Analysis Date: 06/16/99

MS Lab ID: QC00166

Analyte	Spike Added	Sample	MS %Rec #		Limits	
Gasoline C7-C12 2000		<50	1798	90	69-131	
Surrogate	%Rec	Limits				
Trifluorotoluene Bromofluorobenzene	119 137	53-150 53-149		-		

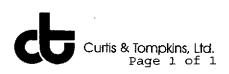
MSD Lab ID: QC00167

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	1783	89	69-131	1	13
Surrogate	%Rec	Limits				
Trifluorotoluene Bromofluorobenzene	120 137	53-150 53-149				

[#] Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 1 outside limits

^{*} Values outside of QC limits



BATCH QC REPORT

Lab #: 139755

TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI Analysis Method: EPA 8015M

Project#: P1106.05 Prep Method: EPA 5030

Location: JW Silveria UST, Oak.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

 Field ID:
 ZZZZZZ
 Sample Date:
 06/10/99

 Lab ID:
 139856-002
 Received Date:
 06/11/99

 Matrix:
 Water
 Prep Date:
 06/15/99

Batch#: 48632 Analysis Date: 06/15/99
Units: ug/L

MS Lab ID: QC99889

Diln Fac: 1

Analyte	Spike Added	ke Added Sample		%Rec #	Limits
Gasoline C7-C12	2000	<50	2060	103	69-131
Surrogate	%Rec	Limits			
Trifluorotoluene Bromofluorobenzene	115 132	53-150 53-149			

MSD Lab ID: QC99890

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2042	102	69-131	1	13
Surrogate	%Rec	Limits				
Trifluorotoluene Bromofluorobenzene	120 138	53-1 53-1				

[#] Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 1 outside limits

^{*} Values outside of QC limits



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

RECEIVED

Laboratory Number 139796

JUN 28 1999

TETRA TECH EM INC.

Tetra Tach EMI 135 Main Street

Suite 1800

San Francisco, CA 94105

Project#: P1106.05

Location: JW Silveria UST, Oak.

JW3-09 Lab ID

JW3-09 139796-001
JW3-10 139796-002
JW3-11 139796-003

I certify that this data package has been reviewed for technical correctness and completeness. Please see attached narrative for a discussion of any analytical problems related to this sample set. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

The case narrative is an integral and inseparable part of this

Signature:

Title: Operations

Date:

6-4-99

Signature:

and Wrother

Date:

6/21/99

Title: Project Manager



Laboratory Number: 139796

Client: Tetra Tech EMI

Location: JW Silveria UST, Oakland

Project#: P1106.05

Receipt Date: 06/08/99

CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on June 3, 1999.

TPH Purgeables/BTXE: No analytical problems were encountered.



13976 Chain of Custody Record

Page	of	

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Sample ID	Sample Description/Notes	Date	Time	Matrix	\$]=	Ä	5		5	5	<u> </u>	3 5	= ≥	20	$\perp \downarrow$				_
		6-7-99	1003	WATER	3								X	>	$\sqrt{\chi}$					•
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Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

 ω



JW Strein COOLER RECEIPT CHECKLIST

			, ,			/
Login#	± <u>139796</u>	Date Received	- 6/6	Numbe	r of Coolers: _	
Client:	TOMI		Project:	P1106.05		
			•		<i>(</i>	
A.	Preliminary Ex	kamination Phase By (p	1, 6			a ,
	Date Opened:	file 98 By (p	orint):	Ulum (S	ign) (Malesu	<u></u>
l.	Did cooler cor	me with a shipping s	slip (airbill, et	c.)?		YES 🔇
	If VFS enter	carrier name and air	rhill number			-
2.	Were custody	seals on outside of	cooler?			YES XO
	How many and	d where?	Seal	date:	Seal name:	•
3 .	Were custody	seals unbroken and	intact at the	date and time	of arrival?	YES NO
1 .	Were custody	papers dry and inta-	ct when recei	ved?		YES NO
5.	Were custody	papers filled out pro	operly (ink, si	gned, etc.)?		(DES NO
5.	Did you sign t	he custody papers in	n the appropr	iate place?		XES NO
7.	Was project id	lentifiable from cust	ody papers?	************		YES NO
	If YES, enter	project name at the	top of this fo	rm.		
3.	If required, w.	s sufficient ice used	1?			ON SEY
	Type of ice:	s sufficient ice used	Tem	perature:	3,0°	
					^ .	
3.	Login Phase	Col.	- 1	,	(` 100	^ .
	Date Logged I	(n:By ((print): O	NI AND (SI	ign) Millill	<u> </u>
	Describe type	of packing in cooler	r;			
<u>)</u> ,	Did all bottles	arrive unbroken?	414141414		.,.,	(XES NO
3 .	Were labels in	good condition and	i complete (II), date, time,	signature, etc.)	?(YÆS NO
ļ,	Did bottle labe	els agree with custoe	dy papers?			
5 .	Were appropri	iate containers used	for the tests	indicated?		XES NO
ó,	Were correct t	preservatives added	to samples?			VES NO
7	Was sufficient	amount of sample	sent for tests	indicated?		(25) NO
3.	Were bubbles	amount of sample sabsent in VOA sam	ples? If NO.	list sample Ids	below	(YES NO
).	Was the client	contacted concerni	ing this sampl	e delivery?	,,,	YES NO
•	If YES, give d	letails below	<u>ن</u>	,		
		ed?	By	whom?	Da	ite:
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Additio	onal Comments	\$:				
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TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

Batch #	Sampled	Extracted	Analyzed	Moisture
48632	06/07/99	06/15/99	06/15/99	
48632	06/07/99	06/15/99	06/15/99	
48566	06/07/99	06/10/99	06/10/99	
	48632 48632	48632 06/07/99 48632 06/07/99	48632 06/07/99 06/15/99 48632 06/07/99 06/15/99	48632 06/07/99 06/15/99 06/15/99 48632 06/07/99 06/15/99 06/15/99

Matrix: Water

Analyte Diln Fac:	Units	139796-001 1	139796-002 1	139796-003 1	
Gasoline C7-C12	ug/L	<50	<50	<50 ·	• 1
Surrogate					
Trifluorotoluene Bromofluorobenzene	%REC %REC	103 102	110 113	9 4 98	



BTXE

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method: EPA 5030

Batch #	Sampled	Extracted	Analyzed	Moisture
48632	06/07/99	06/15/99	06/15/99	
48632	06/07/99	06/15/99	06/15/99	
48632	06/07/99	06/16/99	06/16/99	
	48632 48632	48632 06/07/99 48632 06/07/99	48632 06/07/99 06/15/99 48632 06/07/99 06/15/99	48632 06/07/99 06/15/99 06/15/99 48632 06/07/99 06/15/99 06/15/99

Matrix: Water

MW-3

Analyte Diln Fac:	Units	139796-001 1	139796-002 1	139796-003 5	
MTBE	ug/L	3.4	3 C	250	
Benzene	ug/L	<0.5	<0.5	14	
Toluene	ug/L	<0.5	<0.5	<2.5	
Ethylbenzene	ug/L	<0.5	<0.5	<2.5	
m,p-Xylenes	ug/L	<0.5	<0.5	<2.5	
o-Xylene	ug/L	<0.5	<0.5	<2.5	·
Surrogate					
Trifluorotoluene	%REC	102	109	106	
Bromofluorobenzene	%REC	104	114	109	

C: Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two

Curtis & Tompkins, Ltd. Page 1 of 1

Lab #: 139796

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Tetra Tech EMI Client:

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

METHOD BLANK

Matrix: Water

48566 Batch#: Units: ug/L

06/10/99 Prep Date: Analysis Date:

06/10/99

Diln Fac: 1

MB Lab ID: QC99611

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	100	53-150
Bromofluorobenzene	100	53-149

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Analysis Method: EPA 8015M

Project#: P1106.05

Prep Method:

EPA 5030

Location: JW Silveria UST, Oak.

METHOD BLANK

Matrix: Water Prep Date:

06/15/99

48632 Batch#: ug/L Units:

Analysis Date:

06/15/99

Diln Fac: 1

MB Lab ID: QC99886

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	93	53-150
Bromofluorobenzene	94	53-149

BATCH QC REPORT



BTXE

Tetra Tech EMI Client:

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method:

EPA 5030

METHOD BLANK

Water Matrix:

Batch#: 48632

Diln Fac: 1

Units: ug/L

Prep Date:

06/15/99

Analysis Date:

06/15/99

MB Lab ID: QC99886

Bromofluorobenzene

Result Analyte <2.0 MTBE <0.5 Benzene < 0.5 Toluene <0.5 Ethylbenzene m,p-Xylenes <0.5 <0.5 o-Xylene Recovery Limits %Rec Surrogate 51-143 90 Trifluorotoluene 37-146

92

Client:

BATCH QC REPORT

Analysis Method: EPA 8015M Tetra Tech EMI Prep Method: EPA 5030 Project#: P1106.05

TVH-Total Volatile Hydrocarbons

Location: JW Silveria UST, Oak.

LABORATORY CONTROL SAMPLE

06/10/99 Prep Date: Matrix: Water 06/10/99 Analysis Date: Batch#: 48566

Units: ug/L Diln Fac: 1

LCS Lab ID: QC99609

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1836	2000	92	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene Bromofluorobenzene	104 118	53-150 53-149		

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water Batch#: 48632 Units: ug/L

Diln Fac: 1

Prep Date: Analysis Date: 06/15/99

06/15/99

LCS Lab ID: QC99885

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1849	2000	92	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene Bromofluorobenzene	108 121	53-150 53-149	-	

[#] Column to be used to flag recovery and RPD values with an asterisk

11

^{*} Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

BATCH QC REPORT



BTXE

Client: Tetra Tech EMI

Project#: Pl106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8021B

Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water

Batch#: 48632 Units: ug/L Diln Fac: 1 Prep Date: 06/15/99
Analysis Date: 06/15/99

BS Lab ID: QC99887

Analyte	Spike Added BS		%Rec #	Limits	
MTBE	20	14.66	73	66-126	
Benzene	20	15.66	78	65-111	
Toluene	20	16.87	84	76-117	
Ethylbenzene	20	16.8	84	71-121	
m,p-Xylenes	40	33.87	85	80-123	
o-Xylene	20	16.72	84	75-127	
Surrogate	%Rec	Limits			
Trifluorotoluene	98	51-143			
Bromofluorobenzene	102	37-146			

BSD Lab ID: QC99888

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
MTBE	20	14.68	73	66-126	0	12
Benzene	20	15.78	79	65-111	1	10
Toluene	20	16.9	85	76-117	0	10
Ethylbenzene	20	17.03	85	71-121	1	11
m,p-Xylenes	40	34.25	86	80-123	1	10
o-Xylene	20	16.91	85	75-127	1	11
Surrogate	%Rec	Limits				
Trifluorotoluene	94	51-143				
Bromofluorobenzene	. 98	37-146				

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

BATCH QC REPORT

Lab #: 139796

TVH-Total Volatile Hydrocarbons

Analysis Method: EPA 8015M Tetra Tech EMI Client: EPA 5030 Prep Method: Project#: P1106.05

Location: JW Silveria UST, Oak.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

06/09/99 Sample Date: Field ID: ZZZZZZ 06/09/99 Received Date: Lab ID: 139822-002 Prep Date: 06/10/99 Matrix: Water 06/10/99 Analysis Date: Batch#: 48566

ug/L Units: Diln Fac: 1

MS Lab ID: QC99612

Analyte	Spike Added Sample		MS	%Rec #	Limits	
Gasoline C7-C12	2000	<50	2100	105	69-131	
Surrogate	%Rec	Limits				
Trifluorotoluene Bromofluorobenzene	118 136	53-150 53-149				

MSD Lab ID: QC99613

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2079	104	69-131	1	13
Surrogate	%Rec	Limits				
Trifluorotoluene Bromofluorobenzene	108 124	53-1: 53-1:				

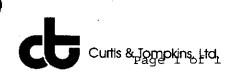
[#] Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 1 outside limits

^{*} Values outside of QC limits



BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: Tetra Tech EMI

Project#: P1106.05

Location: JW Silveria UST, Oak.

Analysis Method: EPA 8015M

Prep Method:

EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ

139856-002 Lab ID:

Matrix:

Batch#: 48632

Water

Units: Diln Fac: 1

ug/L

Sample Date:

06/10/99

Received Date: Prep Date:

06/11/99

06/15/99

Analysis Date:

06/15/99

MS Lab ID: QC99889

Analyte	Spike Added Sample		MS	%Rec #	Limits	
Gasoline C7-C12	2000	<50	2060	103	69-131	
Surrogate	%Rec	Limits				
Trifluorotoluene Bromofluorobenzene	115 132	53-150 53-149				

MSD Lab ID: QC99890

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2042	102	69-131	1	13
Surrogate	%Rec	Limi	ts			
Trifluorotoluene	120 138	53-150 53-149				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits