RO 4078

TESORO

Tesoro Petroleum Companies, Inc.
3450 South 344th Way, Suite 201
Auburn, WA 98001-5931
253 896 8700
253 896 8887 Fax

November 3, 2004

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, room 250
Alameda, California 94502

Mr. Steven Ritchie
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

RE: Recovery Well Installation Results Report
44 Lewelling Blvd. San Lorenzo, California – Tesoro Station No. 67107

Dear Ms. Chu and Mr. Ritchie:

Tesoro Petroleum Companies, Inc., on behalf of Tesoro Refining and Marketing Company (Tesoro), submits the referenced Well Installation Results Report for your files. Tesoro and RDM Environmental installed additional recovery well RW-2 converted monitoring wells MW-10 and MW-3 to recovery wells to maximize system effectiveness per project approval correspondence dated March 19, 2004 from Alameda County Health Care Services. The groundwater treatment system capacity will be expanded as part of this project so that effluent quality remains at its currently acceptable level for discharge to the sewer system. Please contact me with any questions regarding this project at (253) 896-8708. Thank you for your continued cooperation concerning this project.

Sincerely,

Jeffrey M. Baker, P.E.
Supervisor, Environmental
Compliance & Remediation
Tesoro Petroleum Companies, Inc.

Attachment

CC: RDM – Richard Munsch (w/o attachment)
Brian Kelleher – Kelleher & Associates
File – Remediation, San Lorenzo

Bedrock Oil Company – Owner
Attn.: Susan Amiri
111 Deerwood Road, Suite 120
San Ramon, CA 94583

Environmental

1704 Via Riata, Roseville, CA 95747 Tel: (916) 771-7098, FAX :(916) 771-4584

October 19, 2004

Mr. Jeff Baker
Tesoro Environmental Resources Company
3450 S. 344th Way, Suite 100
Auburn, Washington 98001

Subject: *Recovery Well Installation Results Report*
Tesoro Station No. 67107
(Former Beacon Station No. 3721)
44 Lewelling Boulevard
San Lorenzo, California
RDM Project No. 02-67107

Dear Mr. Baker:

RDM Environmental (RDM) has been authorized by Tesoro Environmental Resources Company, to convert monitoring well MW-3 from a 2-inch diameter monitoring well to a 6-inch diameter recovery well (MW-3R) and install recovery well RW-2 at the subject site. The location of the site is presented in Figure 1, and a detailed site map with well locations is included as Figure 2.

The well installation was conducted in accordance with the RDM approved remedial work plan entitled *Recovery Well Installation Work Plan* dated April 19, 2004. The May 5, 2004 Alameda County Health Care Services Agency approval letter is included in Enclosure A. Copies of the Alameda County Well Permits are included in Enclosure B.

Soil Borings

On September 16, 2004, a RDM representative observed Mitchell Drilling Environmental Inc. (MDE) of Rancho Cordova, California use the CME 75 truck-mounted hollow-stem auger rig to properly destroy MW-3 and advance two soil borings for the installation of two 6-inch diameter recovery wells. Due to subsurface utilities, monitoring well MW-3 was properly destroyed using the pressure grout method. A neat cement grout slurry containing 5 percent bentonite clay was pumped down the monitoring well using a tremie pipe. The slurry was pressurized at 25 pounds per square inch for 5 minutes.

Due to the presence of water line and remedial piping, RDM was unable to use the existing location of MW-3 to reinstall a 6-inch diameter recovery well. Instead, RDM advanced a new soil boring, completed as recovery well MW-3R, approximately 2 feet west of the former monitoring well location (MW-3). Well MW-3R was completed to an approximate depth of 30 feet below surface grade (bsg).

The newly installed monitoring wells will be developed during the October 2004 vacuum event and ground water samples will be collected during the fourth quarter ground water monitoring event scheduled for October 2004.

Recommendations

RDM recommends plumbing the newly installed recovery wells to the remediation system and beginning remediation efforts. In addition, RDM recommends installing additional soil vapor extraction (SVE) lines to the newly installed recovery wells.

Remarks/Signatures

The interpretations contained in this document represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this project, please contact Richard Munsch at (916) 771-7098.

Sincerely,

RDM ENVIRONMENTAL

Richard D. Munsch
Project Manager

Michael G. Lee, P.E.
California Registered Civil Engineer No. C055795

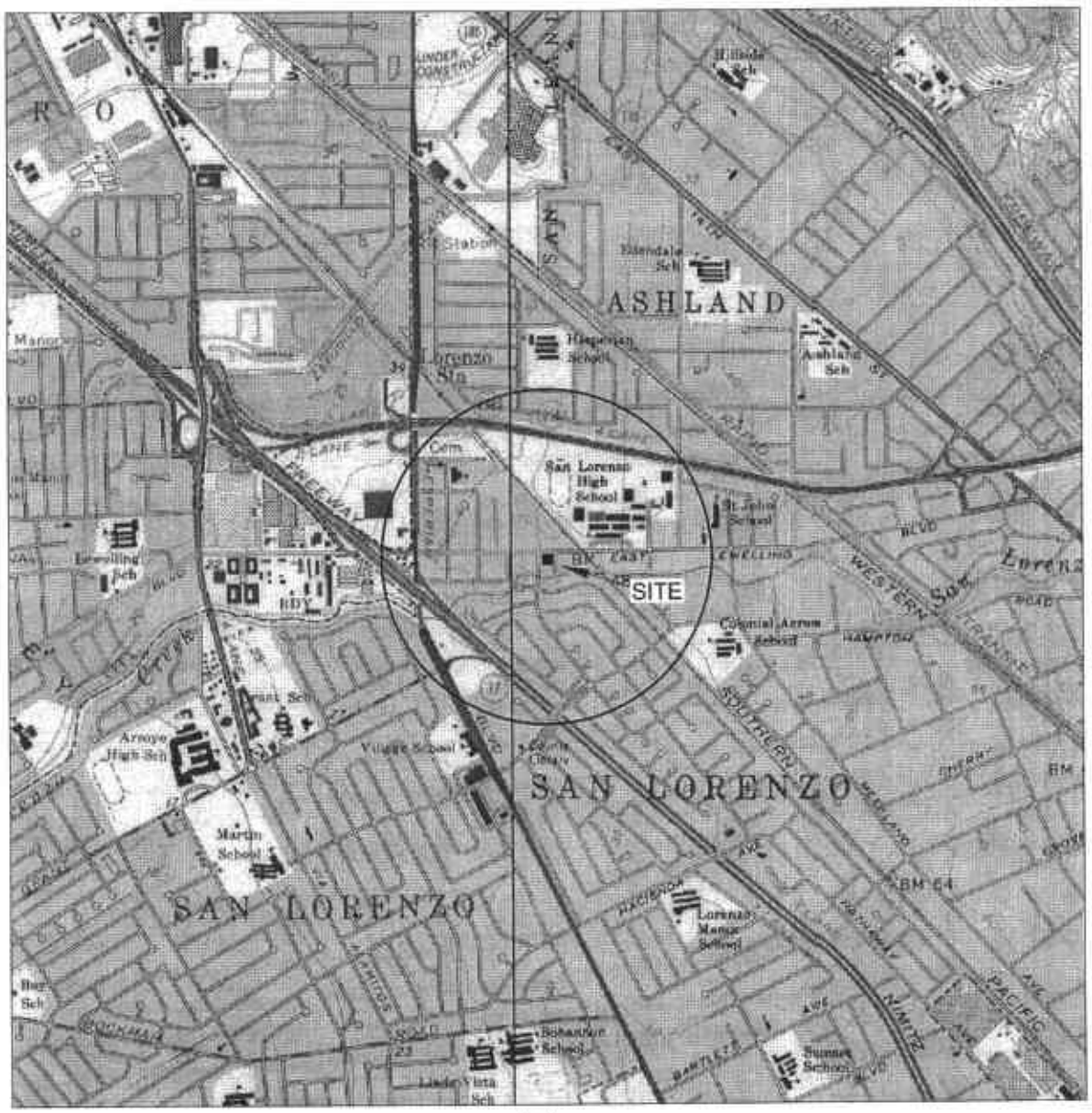
RDM (Subsurface Investigation 9-16-04.doc)
Enclosures

cc: Ms. Eva Chu – Alameda County Environmental Health
Mr. Steven Ritchie – Regional Water Quality Control Board

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Tesoro Station No. 67107
(Former Beacon Station No.3721)
44 Lewelling Boulevard
San Lorenzo, California

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	TPH as gasoline (mg/kg)	MTBE (mg/kg)	Oxygenate Compounds (mg/kg)	Total Lead (mg/kg)
Soil Samples										
RW2-15	09/16/04	15.0	<0.005	<0.005	<0.005	<0.005	<1.0	<0.005	ND	NA
RW2-20	09/16/04	20.0	<0.005	<0.005	0.20	0.23	11	<0.005	ND	NA
RW2-30	09/16/04	30.0	<0.005	<0.005	<0.005	<0.005	3.5	<0.005	ND	NA
Stockpile										
SP-1ABCD	09/16/04	---	<0.025	<0.025	0.032	0.49	69	NA	NA	8.23

TPH = Total petroleum hydrocarbons.
MTBE = Methyl tertiary butyl ether
Oxygenate compounds = Methyl tertiary butyl ether, diisopropyl ether, ethyl-t-butyl ether, tert-amyl methyl ether, tert-butanol by EPA Method 8260B.
mg/kg = Milligrams per kilogram.
NA = Not analyzed.
ND = Not detected at or above the laboratory reporting limit.



GENERAL NOTES:
BASE MAP FROM U.S.G.S.
HAYWARD, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

N

0 2000 FT

SCALE 1:24,000

FIGURE 1
SITE LOCATION MAP
TESORO STATION NO. 67107
(FORMER BEACON STATION NO. 3721)
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 00-3721	DRAWN BY M.L. 12/15/00
FILE NO. 00-3721-1A	PREPARED BY RDM
REVISION NO. 1	REVIEWED BY

R D M Environmental

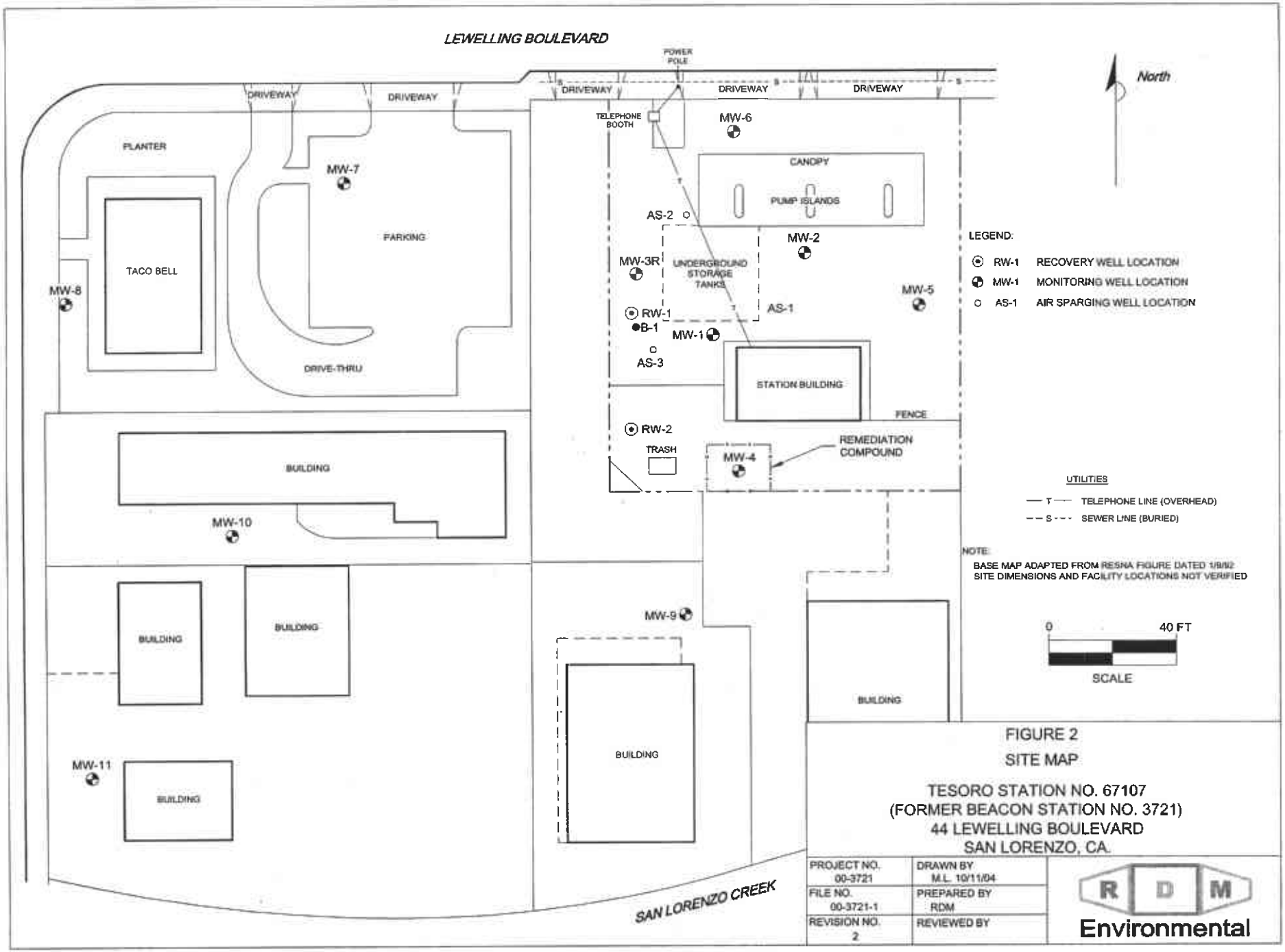


FIGURE 2

SITE MAP

TESORO STATION NO. 67107
(FORMER BEACON STATION NO. 3721)
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 00-3721	DRAWN BY M.L. 10/11/04
FILE NO. 00-3721-1	PREPARED BY RDM
REVISION NO. 2	REVIEWED BY

R D M Environmental

ENCLOSURE A

Alameda County Health Care Services Agency Approval Letter – Date May 5, 2004

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

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

RO0000498

May 5, 2004

Mr. Jeffrey Baker
Tesoro
3450 South 344th Way, Suite 100
Auburn, WA 98001-5931

RE: Work Plan Approval for Tesoro Station No. 67107 at 44 Lewelling Blvd, San Lorenzo, CA

Dear Mr. Baker:

I have completed review of RDM's *Recovery Well Installation Work Plan* report prepared for the above referenced site. The proposal to install an additional recovery well (RW-2) and convert monitoring wells MW-3 and MW-10 into recovery wells to address the MTBE plume is acceptable. Field work should commence within 60 days of the date of this letter, **or by July 7, 2004.**

If you have any questions, I can be reached at (510) 567-6762 or by email at echu@co.alameda.ca.us.

eva chu
Hazardous Materials Specialist

c: Donna Drogos

Richard Munch
RMD Environmental
1704 Via Riata
Roseville, CA 95747

beacon#721-6

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acfcwd.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT: Tesoro Station No. 67107 — 44 Lewelling Blvd. — San Leandro, CA.

CLIENT
Name: Tesoro
Address: 3450 S. 344th Way Suite 100 Phone: (253) 896-8708
City: Auburn, WA Zip: 98001-5931

APPLICANT
Name: RDM Environmental
Fax: (916) 771-4584
Address: 7904 Via Prata Phone: (916) 771-7098
City: Roseville, CA Zip: 95747

TYPE OF PROJECT
Well Construction — Geotechnical Investigation
Cathodic Protection — General
Water Supply — Contamination
(Monitoring) — Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic — Replacement Domestic
Municipal — Irrigation
Industrial — Other

DRILLING METHOD
Mud Rotary — Air Rotary — (Auger)
Cable — Other

DRILLER'S NAME: Mitchell Drilling Environmental

DRILLER'S LICENSE NO. 672617

WELL PROJECTS
Drill Hole Diameter: 12 in. Maximum
Casing Diameter: 6 in. Depth: 30 ft.
Surface Seal Depth: 7 ft. Owner's Well Number: MW-10 (Re-drill)

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings: ___ Maximum
Hole Diameter: ___ in. Depth: ___ ft.

STARTING DATE: 6-10-04

COMPLETION DATE: 6-11-04

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

APPLICANT'S SIGNATURE: [signature] DATE: 5/20/04

PLEASE PRINT NAME: Richard Munsch Rev.5-11-04

FOR OFFICE USE

PERMIT NUMBER: W04-0633
WELL NUMBER: ___
APN: ___

PERMIT CONDITIONS

Limited Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

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

(C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS — Redrill
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION — Re drill —
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) SPECIAL CONDITIONS — MW#3

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 6-5-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acpwa.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT: Tesoro Station No. 67107 — 44 [illegible] — [illegible]

CLIENT
Name: Tesoro
Address: 3450 S. 344th Way, Suite 100 Phone: [illegible]-8708
City: Auburn, WA Zip: 98001-5931

APPLICANT
Name: RDM Environmental Fax: (916) 771-4584
Address: 1704 Via Grande [illegible] Phone: (916) 771-7098
City: Roseville, CA Zip: 95747

TYPE OF PROJECT
Well Construction / Geotechnical Investigation
Cathodic Protection / General
Water Supply / Contamination
(Monitoring) / Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic / Replacement Domestic
Municipal / Irrigation
Industrial / Other ____

DRILLING METHOD:
Mud Rotary / Air Rotary / (Auger)
Cable / Other

DRILLER'S NAME: Mitchell Drilling Environmental

DRILLER'S LICENSE NO. 642617-0

WELL PROJECTS
Drill Hole Diameter 12 in. Maximum
Casing Diameter 6 in. Depth 32.2 ft. RW-2 (re-drill)
Surface Seal Depth 7 ft. Owner's Well Number

GEOTECHNICAL / CONTAMINATION PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

STARTING DATE 6-10-04

COMPLETION DATE 6-11-04

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

APPLICANT'S SIGNATURE [signature] DATE 5/24/04

PLEASE PRINT NAME Richard Munsch Rev 9-11-96

FOR OFFICE USE

PERMIT NUMBER W04-0632
WELL NUMBER ____
APN ____

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

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

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS — Redrill
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION — Redrill —
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) SPECIAL CONDITIONS — MW#3

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 6-9-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6631 James Yoo
FAX (510) 782-1939 www.acpwa.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT: Tesoro Station No. 67107, 2... Lewelling Blvd., San Leandro, CA.

CLIENT
Name: Tesoro
Address: 3450 S 344th Way, Suite 100 Phone: (253) 896-8708
City: Auburn, WA Zip: 98001-5931

APPLICANT
Name: RDM Environmental Fax: (916) 771-4584
Address: 1704 Vía Rústa Phone: (916) 771-7098
City: Roseville, CA Zip: 95747

TYPE OF PROJECT
Well Construction / Geotechnical Investigation
Cathodic Protection / General
Water Supply / Contamination
(Monitoring) / Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic / Replacement Domestic
Municipal / Irrigation
Industrial / Other

DRILLING METHOD
Mud Rotary / Air Rotary / (Auger)
Cable / Other

DRILLER'S NAME: Mitchell Drilling Environmental
DRILLER'S LICENSE NO.: 672617

WELL PROJECTS
Drill Hole Diameter: 12 in. Maximum
Casing Diameter: 6 in. Depth: 30 ft.
Surface Seal Depth: ___ ft. Owner's Well Number: RW-1 (re-drill)

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings: ___ Maximum
Hole Diameter: ___ in. Depth: ___ ft.

STARTING DATE: 6-10-04
COMPLETION DATE: 6-11-04

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

APPLICANT'S SIGNATURE: [signature] DATE: 5/24/04
PLEASE PRINT NAME: Richard Munsch Rev. 3-11-04

FOR OFFICE USE
PERMIT NUMBER: W04-0631
WELL NUMBER: ___
APN: ___

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

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

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS — Re-drill —
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION — Re-drill —
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G.) SPECIAL CONDITIONS — MW#3

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED: [signature] DATE: 6/9/04

RDM ENVIRONMENTAL

Enclosure C

Sampling Methods

Proper sampling methods must be followed to assure that samples represent actual field conditions and that samples are labeled, preserved, and transported properly to retain sample integrity. This attachment describes procedures to be followed by RDM Environmental (RDM), during collection of samples of subsurface soil and groundwater. Sampling procedures will be based on sampling guidance documents from the American Society of Testing and materials (ASTM), U.S. Environmental protection Agency (EPA), and California Department of Health Services (DHS). Actual sampling procedures to be employed will be based on field conditions and may differ from those described here.

A. EXPLORATION BORING/SOIL SAMPLING PROCEDURES

Soil borings and soil sampling will be performed under the direction of a RDM engineer/geologist. The soil borings will be advanced using drilling techniques appropriate for each project, as specified in the project work plan.

Soil samples will be collected at maximum intervals of 5 feet. Soil sampling will be done in accordance with ASTM 1586-84. Using this procedure, three 1.06- to 2-inch-diameter, 6-inch-length, brass or stainless steel tubes are placed in a California-type-split-barrel sampler, or a slide hammer with a single 6-inch by 2-inch brass or stainless tube by tapping the tube into the soil in the backhoe bucket with a hammer. The sampler is driven into the soil by a 140-pound weight falling 30 inches or with a slide hammer on hand auger samples. After an initial set of 6 inches, the number of blows required to drive the sampler an additional 12 inches is known as penetration resistance, or the □N□ value. The □N□ value is used as an empirical measure of the relative density of cohesion-less soils and the consistency of cohesive soils. When collecting a soil sample from a tank excavation or line excavation, the soil sample will be collected by tapping a brass stainless steel tube into the soil in the backhoe bucket.

Upon recovery of the split-barrel sampler or slide hammer sampler, the brass or stainless steel tubes containing the soil will be removed. One tube will be sealed at the ends with plastic end caps. The end caps will be secured to the ends of the tube to prevent loss of volatile constituents. The sample will be labeled with an identification number, time, date, location, and requested laboratory analysis. The sample will then be placed in a plastic bag and stored at approximately 4 degrees Celsius in an ice chest for transport to the laboratory. Sample custody procedures outlined in Section D of this attachment will be followed. This will be performed for each sample collected.

Soil in one of the brass or stainless steel tubes from the split-barrel sampler will be extracted upon recovery, placed in a plastic bag, and sealed for later screening for organic vapors using a photo ionization detector (PID) or a flame ionization detector (FID). The remaining portion of the soil sample will be examined and a complete log of soil conditions will be recorded on a soil boring log using the Unified Soil Classification System. The soil will be examined for grain size, color, and moisture content.

The split-barrel sampler or slide hammer sampler will be cleaned to prevent contamination across sampling intervals using procedures described in Section B. Soil generated from the soil borings will be stored in 55-gallon drums (unless otherwise directed by agencies or the client) labeled with the corresponding boring number, date, and address of the facility.

B. DECONTAMINATION AND DISPOSAL PROCEDURES

All equipment that comes into contact with potentially contaminated soil, drilling fluid, air or water will be decontaminated before each use. Decontamination will consist of steam cleaning, a high-pressure, hot water rinse, or trisodium phosphate (TSP) wash and freshwater rinse, as appropriate. Drilling and sampling equipment will be decontaminated as follows:

1. Drill rig augers, drill rods, and drill bits will be steam-cleaned prior to use and between borings. Visible soil, grease, and other impurities will be removed.

2. Soil sampling equipment will be steam-cleaned prior to use and between each boring. Prior to individual sample collection, any sampling device will also be cleaned in a TSP solution and rinsed twice in clean water. Any visible soil residue will be removed.

3. It is anticipated that disposable equipment will be used to collect water samples. If disposable equipment is not used, water sampling equipment will be decontaminated using methods described in item 2 above for soil sampling equipment.

4. Water sampling containers will be cleaned and prepared by the respective analytical laboratories.

5. Stainless steel or brass soil sampling tubes will be steam-cleaned or washed in TSP solution and rinsed with clean water.

6. Field monitoring equipment (pH, conductivity, or temperature probes) will be rinsed with clean water prior to use and between samples.

C. FIELD MEASUREMENTS

Field data will be collected during various sampling and monitoring activities; this section describes routine procedures to be followed by personnel performing field measurements. The methods presented below are intended to ensure that field measurements are consistent and reproducible when performed by various personnel.

C.1 Buried Utility Locations

Prior to commencement of work on site, RDM will contact underground service alert and appropriate utility companies to have underground utility lines located. RDM will also visually survey the site to estimate the locations of potentially unmarked underground utilities. All work associated with the borings will be preceded by hand augering to a minimum depth of 5 feet below grade to avoid damaging underground utilities.

C.2 Lithologic Logging

A log of soil conditions encountered during the drilling and sample collection will be maintained using the Unified Soil Classification System by a RDM engineer/geologist. All boring logs will be reviewed by a California registered engineer/geologist.

The collected soil samples will be examined and the following information recorded: boring location, sample interval and depth, blow counts, color, soil type, moisture content (qualitative), and depth at which ground water (if present) is first encountered. Also recorded on the soil boring logs will be the field screening

results derived from the use of a portable PID or FID.

C.3 Disposal Procedures

Soils and fluids that are produced and/or used during the installation and sampling of borings, and that are known or suspected to contain potentially hazardous materials, will be contained during the above operations. These substances will be retained on site until chemical testing has been completed to determine the proper means of disposal. Handling and disposal of substances known or suspected to contain potentially hazardous materials will comply with all applicable regulations including those of DHS and the California Department of Water Resources. Soils and fluids produced and/or used during the above-described operations that are shown to contain potentially hazardous materials will be disposed of appropriately.

Residual substances generated during cleaning procedures that are known or suspected to pose a threat to human health or the environment will be placed in appropriate containers until chemical testing has been completed to determine the proper means for their disposal.

C.4 Conductivity, Temperature, and pH

Specific conductance, water temperature, and pH measurements will be made when a water sample is collected. Regardless of the sample collection method, a representative water sample will be placed in a transfer bottle used solely for field parameter determinations. A conventional pH meter with a combination electrode or equivalent will be used for field-specific conductance measurements. Temperature measurements will be performed using standard thermometers or equivalent temperature meters. Combination instruments capable of measuring two or all three of the parameters may also be used.

All instruments will be calibrated in accordance with manufacturer's recommendations. The values for conductivity standards and pH buffers used in calibration will be recorded in a field notebook. All probes will be thoroughly cleaned and rinsed with fresh water prior to any measurements, in accordance with Section C.1

D. SAMPLE CUSTODY

This section describes standard operating procedures for sample custody and custody documentation. Sample custody procedures will be followed through sample collection, transfer, analysis, and ultimate disposal. The purpose of these procedures is to assure that (1) the integrity of samples is maintained during their collection, transportation, and storage prior to analysis and (2) post-analysis sample material is properly disposed of. Sample custody is divided into field procedures and laboratory procedures, as described below.

D.1 Field Custody Procedures

Sample quantities, types, and locations will be determined before the actual fieldwork commences. As few personnel as possible will handle samples. The field sampler is personally responsible for the care and custody of the collected samples until they are properly transferred.

D.1.1 Field Documentation

Each sample will be labeled and sealed properly immediately after collection. Sample identification documents will be carefully prepared so that identification and chain-of-custody records can be maintained and sample disposition can be controlled. Forms will be filled out with waterproof ink. The following sample identification documents will be utilized:

- Sample labels
- Field notebook
- Chain-of-custody forms

D.1.2 Sample Labels

Sample labels provide identification of samples. Preprinted sample labels will be provided. Where necessary, the label will be protected from water and solvents with clear label-protection tape. Each label

will contain the following information:

- Name of collector
- Date and time of collection
- Place of collection
- RDM project number
- Sample number
- Preservative (if any)

D.1.3 Sample Labels Field Data Sheet

Information pertinent to a field survey, measurements, and/or sampling must be recorded on field data sheets. Entries on data sheets should include the following:

- Name and title of author, date and time of entry, and physical/environmental conditions during field activity.
- Location of sampling or measurement activity.
- Name(s) and title(s) of field crew.
- Type of sampled media (e.g., soil, groundwater, air, etc.).
- Sample collection or measurement method(s).
- Number and volume of sample(s) collected.
- Description of sampling point(s).
- Description of measuring reference point(s).
- Date and time of collection or measurement.
- Sample identification number(s).
- Sample preservative (if any).
- Sample distribution (e.g., laboratory).
- Field observations/comments.
- Field measurement data (pH, etc.).

D.1.4 Chain-of-custody Record

A chain-of-custody record will be completed out for and will accompany every sample and every shipment of samples to the analytical laboratories in order to establish the documentation necessary to trace sample possession from the time of collection to disposal. The record will contain the following information:

- Station number and sample I.D.
- Signature of collector, sampler, or recorder.
- Date and time of collection.
- Place of collection.
- Sample type.

- Signatures of persons involved in the chain of possession.
- Inclusive dates of possession.

The laboratory portion of the form should be completed by laboratory personnel and will contain the following information:

- Name of person receiving the sample.
- Laboratory sample number.
- Date and time of sample receipt.
- Analyses requested.
- Sample condition and temperature.

D.1.5 Sample Transfer and Shipment

A chain-of-custody record will always accompany samples. When transferring samples, the individuals relinquishing and receiving the samples will sign, date, and note the time on the chain-of-custody record.

Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis. The chain-of-custody record will accompany each shipment. The method of shipment, courier name(s), and other pertinent information will be entered in the chain-of-custody record.

D.2 Laboratory Custody Procedures

A designated sample custodian will accept custody of the shipped samples and verify that the information on the sample label matches that on the chain-of-custody record. Information regarding method of delivery and sample conditions will also be checked on the chain-of-custody record. The custodian will then enter the appropriate data into the laboratory sample tracking system. The laboratory custodian may use the sample number on the sample label or may assign a unique laboratory number to each sample. The custodian will then transfer the sample to the proper analyst or store the sample in the appropriate secure area.

Laboratory personnel are responsible for the care and custody of samples from the time they are received until the sample is exhausted. Once at the laboratory, the samples will be handled in accordance with U.S. Environmental Protection Agency SW-846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Third Edition, for the intended analyses. All data sheets, chromatographs, and laboratory records will be filed as part of the permanent documentation.

D.3 Corrections to Documentation

Original data recorded in field notebooks, chain-of-custody records, sampling information sheets, and other forms should be written in ink. These documents should not be altered, destroyed, or discarded even if they are illegible or contain inaccuracies that require a replacement document.

If an error is made or found on a document, the individual making the corrections will do so by crossing a single line through the error, entering the correct information, and initialing and dating the change. The erroneous information will be obliterated. Any subsequent error(s) discovered on a document will be corrected. All corrections will be initialed and dated.

D.4 Sample Storage and Disposal

The analytical laboratory should retain samples and extracts for 60 days after the laboratory issues a written report. Unless notified by the program manager, excess or unused samples should be disposed of by the

laboratory in an appropriate manner consistent with applicable government regulations.

MONITORING WELL LOG

PROJECT NAME:	**Tesoro Station No. 67107**	**LOG OF WELL:**	**MW-3R**
SITE ADDRESS:	44 Lewelling Boulevard San Lorenzo, California	BORING DIAM. (in.) WELL DIAM. (in):	15 6
DATE STARTED: DATE COMPLETED:	9/16/04 9/16/04	DRILLER/COMPANY:	Juan Ceja Mitchell Drilling (C-57 #672617)
DRILLING METHOD:	Hollow-stem Auger (CME-75) Split-spoon sampler	GEOLOGIST/ENGINEER:	Mike Berrington, R.G. #7124 MB Environmental Geology

DEPTH (Feet)	Sample Type	Blows/6"	PID (ppm)	SAMPLE NUMBER	USCS SYMBOL	DESCRIPTION	WELL CONSTRUCTION	DEPTH (Feet)
0						Asphalt (3-in.) Hand dug first 5- feet.		0
						Boring not logged; no soil samples collected. Refer to log for MW-3		
5								5
10								10
15								15
20								20
25								25
30								30
35						**Terminated soil boring at 30 feet.** Installed 6-in. recovery well. Sch 40 PVC screen (0.020-inch) from 10 to 30 feet. Sand (#3) from 8 to 30 feet.Hydrated bentonite chips from 7 to 8 feet. Neat cement grout from 2 to 7 feet. Completed with 8-in. well box		35
40								40
45								45
50								50
55								55
60								60
65								65
70								70
75								75

MONITORING WELL LOG

PROJECT NAME:	Tesoro Station No. 67107	LOG OF WELL:	RW-2
SITE ADDRESS:	44 Lewelling Boulevard San Lorenzo, California	BORING DIAM. (in.) WELL DIAM. (in):	15 6
DATE STARTED:	9/16/04	DRILLER/COMPANY:	Juan Ceja Mitchell Drilling (C-57 #672617)
DATE COMPLETED:	9/16/04		
DRILLING METHOD:	Hollow-stem Auger (CME-75) Split-spoon sampler	GEOLOGIST/ENGINEER:	Mike Berrington, R.G. #7124 MB Environmental Geology

DEPTH (Feet)	Sample Type	Blows/6"	PID (ppm)	SAMPLE NUMBER	USCS SYMBOL	DESCRIPTION	WELL CONSTRUCTION
0					CL	Asphalt (3-in.) Hand dug first 5- feet. **SILTY CLAY:** brown, low plasticity, soft, moist plasticity, moist	
5		3 3	0	RW2-5			
					CL-ML	**CLAYEY SILT:** brown, low plasticity, soft, moist	
10		5 5	0	RW2-10			
15		6 7	0	RW2-15			
20		5 6	20	RW2-20		dark gray, wet; contains trace fine to medium grained sand; hydrocarbon odor; 1st groundwater @ approx. 21 feet	
					GP	increased **POORLY GRADED GRAVEL:** fine to coarse-grained,	
25				no sample		subrounded gravel to 1-in. dia.; fine to coarse grained sand; brown, saturated	
30				RW2-30	CL	**CLAY:** pale olive tan, medium plasticity, very stiff, moist	
35						**Terminated soil boring at 30 feet.** Installed 6-in. recovery well. Sch 40 PVC Screen (0.020-inch) from 10 to 30 feet. Sand (#3) from 8 to 30 feet.Hydrated bentonite chips from 7 to 8 feet. Neat cement grout from 2 to 7 feet. Completed with 8-in. well box	
40							
45							
50							
55							
60							
65							
70							
75							

DEPTH (Feet)

ENCLOSURE E

Soil Sample Laboratory Analytical Results

KIFF ANALYTICAL LLC

Report Number : 40204
Date : 9/24/2004

Richard Munsch
RDM Environmental
1704 Via Riata
Roseville, CA 95747

Subject : 3 Soil Samples
Project Name : Tesoro #67107
Project Number :

Dear Mr. Munsch,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 40204
Date : 9/24/2004

Project Name : **Tesoro #67107**
Project Number :

Sample : **RW2-15** Matrix : Soil Lab Number : 40204-01
Sample Date :9/16/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	9/22/2004
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	9/22/2004
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	9/22/2004

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 40204
Date : 9/24/2004

Project Name : **Tesoro #67107**
Project Number :

Sample : **RW2-20** Matrix : Soil Lab Number : 40204-02
Sample Date :9/16/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethylbenzene	**0.20**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Total Xylenes	**0.23**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-Butanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	9/22/2004
TPH as Gasoline	**11**	1.0	mg/Kg	EPA 8260B	9/22/2004
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	9/22/2004
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	9/22/2004

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 40204
Date : 9/24/2004

Project Name : **Tesoro #67107**
Project Number :

Sample : **RW2-30** Matrix : Soil Lab Number : 40204-03
Sample Date :9/16/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	9/22/2004
TPH as Gasoline	**3.5**	1.0	mg/Kg	EPA 8260B	9/22/2004
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	9/22/2004
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	9/22/2004

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 40204

Date : 9/24/2004

QC Report : Method Blank Data

Project Name : **Tesoro #67107**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/22/2004
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	9/22/2004
Toluene - d8 (Surr)	96.1		%	EPA 8260B	9/22/2004
4-Bromofluorobenzene (Surr)	99.2		%	EPA 8260B	9/22/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 40204

Date : 9/24/2004

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro #67107**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	40204-01	<0.0050	0.0391	0.0392	0.0364	0.0373	mg/Kg	EPA 8260B	9/22/04	93.1	95.1	2.08	70-130	25
Toluene	40204-01	<0.0050	0.0391	0.0392	0.0350	0.0357	mg/Kg	EPA 8260B	9/22/04	89.4	91.1	1.85	70-130	25
Tert-Butanol	40204-01	<0.0050	0.196	0.196	0.181	0.198	mg/Kg	EPA 8260B	9/22/04	92.5	101	8.68	70-130	25
Methyl-t-Butyl Ether	40204-01	<0.0050	0.0391	0.0392	0.0365	0.0382	mg/Kg	EPA 8260B	9/22/04	93.3	97.4	4.37	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 40204

Date : 9/24/2004

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro #67107**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0378	mg/Kg	EPA 8260B	9/22/04	96.1	70-130
Toluene	0.0378	mg/Kg	EPA 8260B	9/22/04	91.5	70-130
Tert-Butanol	0.189	mg/Kg	EPA 8260B	9/22/04	94.5	70-130
Methyl-t-Butyl Ether	0.0378	mg/Kg	EPA 8260B	9/22/04	98.0	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Analysis Summary

Report Number : 40204
Date : 9/24/2004

Attention : Richard Munsch
RDM Environmental
1704 Via Riata
Roseville, CA 95747

Project Name :Tesoro #67107
Project Number :

			Sample Name	RW2-15		RW2-20		RW2-30	
			Sample Date	9/16/2004		9/16/2004		9/16/2004	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	**0.20**	0.0050	ND
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	**0.23**	0.0050	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.025	ND	0.0050	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	ND	1.0	**11**	1.0	**3.5**
Toluene - d8 (Surr)	EPA 8260B	%			96.9		103		103
4-Bromofluorobenzene (Surr)	EPA 8260B	%			98.3		102		102

MRL = Method Reporting Limit
ND = Not Detected

Approved By,

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF ANALYTICAL LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Lab No. 40204 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Richard Wunsch
Company/Address: RDW Environmental
Phone No.: (916) 771-7098 FAX No.: (916) 771-4581
Project Number: P.O. No:
Project Name: Tesoro #67107
Project Address: 44 Lewelling Blvd San Lorenzo

California EDF Report? ☐ Yes ☒ No
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Sampler Signature:

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	Analysis Request: BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	TAT: 12 hr/24 hr/48 hr/72 hr (1 wk)	For Lab Use Only
RW2-15	9/16/04	1345		1			X			X						X								X	01
RW2-20		1350		1			X			X						X								X	02
RW2-30		1400		1			X			X						X								X	03

	Date	Time		Remarks:
Relinquished by:	9/20/04	1350	Received by:	
Relinquished by:			Received by:	
Relinquished by:	092004	1325	Received by Laboratory: KIFF ANALYTICA	Bill to:

Distribution: White - Lab, Pink - Originator

Forms/coc 121001.fh9

KIFF ANALYTICAL LLC

Report Number : 40203
Date : 9/21/2004

Richard Munsch
RDM Environmental
1704 Via Riata
Roseville, CA 95747

Subject : 1 Soil Sample
Project Name : Tesoro #67107
Project Number :

Dear Mr. Munsch,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 40203

Date : 9/21/2004

Project Name : **Tesoro #67107**

Project Number :

Sample : **SP-1a,b,c,d** Matrix : Soil Lab Number : 40203-01

Sample Date :9/16/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.025**	0.025	mg/Kg	EPA 8260B	9/20/2004
Toluene	**< 0.025**	0.025	mg/Kg	EPA 8260B	9/20/2004
Ethylbenzene	**0.032**	0.025	mg/Kg	EPA 8260B	9/20/2004
Total Xylenes	**0.49**	0.050	mg/Kg	EPA 8260B	9/20/2004
TPH as Gasoline	**69**	5.0	mg/Kg	EPA 8260B	9/20/2004
Toluene - d8 (Surr)	92.7		% Recovery	EPA 8260B	9/20/2004
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	9/20/2004

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 40203

Date : 9/21/2004

QC Report : Method Blank Data

Project Name : **Tesoro #67107**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/20/2004
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/20/2004
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/20/2004
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	9/20/2004
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	9/20/2004
Toluene - d8 (Surr)	104		%	EPA 8260B	9/20/2004
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	9/20/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 40203

Date : 9/21/2004

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro #67107**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	40168-01	<0.0050	0.0394	0.0392	0.0331	0.0330	mg/Kg	EPA 8260B	9/20/04	84.0	84.1	0.164	70-130	25
Toluene	40168-01	<0.0050	0.0394	0.0392	0.0350	0.0352	mg/Kg	EPA 8260B	9/20/04	88.7	89.8	1.19	70-130	25
Methyl-t-Butyl Ether	40168-01	<0.0050	0.0394	0.0392	0.0354	0.0358	mg/Kg	EPA 8260B	9/20/04	89.7	91.3	1.76	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 40203

Date : 9/21/2004

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro #67107**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0400	mg/Kg	EPA 8260B	9/20/04	87.1	70-130
Toluene	0.0400	mg/Kg	EPA 8260B	9/20/04	92.1	70-130
Methyl-t-Butyl Ether	0.0400	mg/Kg	EPA 8260B	9/20/04	91.0	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Analysis Summary

Report Number : 40203
Date : 9/21/2004

Attention : Richard Munsch
RDM Environmental
1704 Via Riata
Roseville, CA 95747

Project Name :Tesoro #67107
Project Number :

			Sample Name	SP-1a,b,c,d
			Sample Date	9/16/2004
Analyte	Method	Units	MRL	Results
Benzene	EPA 8260B	mg/Kg	0.025	ND
Ethylbenzene	EPA 8260B	mg/Kg	0.025	**0.032**
Toluene	EPA 8260B	mg/Kg	0.025	ND
Total Xylenes	EPA 8260B	mg/Kg	0.050	**0.49**
TPH as Gasoline	EPA 8260B	mg/Kg	5.0	**69**
4-Bromofluorobenzene (Surr)	EPA 8260B	%		102
Toluene - d8 (Surr)	EPA 8260B	%		92.7

MRL = Method Reporting Limit
ND = Not Detected

Approved By,

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

Calscience
Environmental
Laboratories, Inc.

September 21, 2004

Joel Kiff
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Subject: **Calscience Work Order No.: 04-09-1177**
Client Reference: Tesoro #67107

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/21/2004 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 09/21/04
Work Order No: 04-09-1177
Preparation: EPA 3050B
Method: EPA 6010B

Project: Tesoro #67107

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
SP-1a,b,c,d	**04-09-1177-1**	**09/16/04**	**Solid**	**09/21/04**	**09/21/04**	**040921L01**

Parameter	Result	RL	DF	Qual	Units
Lead	8.23	0.50	1		mg/kg

Method Blank	097-01-002-5,781	N/A	Solid	09/21/04	09/21/04	040921L01

Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.500	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 09/21/04
Work Order No: 04-09-1177
Preparation: EPA 3050B
Method: EPA 6010B

Project Tesoro #67107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
04-09-1179-1	**Solid**	**ICP 3300**	**09/21/04**	**09/21/04**	**040921S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	113	400	75-125	44	0-20	3,4

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical		Date Received:	N/A
2795 2nd Street, Suite 300		Work Order No:	04-09-1177
Davis, CA 95616-6593		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Tesoro #67107

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-002-5,781	**Solid**	**ICP 3300**	**09/21/04**	**040921-I-01**	**040921L01**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Lead	50.0	50.6	101	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 04-09-1177

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
D	The analyte concentration was reported from analysis of the diluted sample.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

KIFF ANALYTICAL LLC

2795 Second Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Cal Science Environmental
7440 Lincoln Way
Garden Grove, CA 92841
714-895-5494

1177

Lab No. _____ Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Joel Kiff	Geotracker COELT EDD REPORT? ___ YES X NO
Company/Address: Kiff Analytical, LLC	Sampling Company Log Code:
Phone No.: / FAX No.:	Global ID:
Project Number: / P.O. No.: 40203	EDF Deliverable to (Email Address):
Project Name: Tesoro #67107	E-mail address: inbox@kiffanalytical.com
Project Address:	

Sample Designation	Sampling Date	Sampling Time	Container: Glass Jar	Poly	Amber	Sleeve	Tedlar	Preservative: H_2SO_4	HNO_3	ICE	HCl	$Na_2S_2O_3$	Matrix: WATER	SOIL	AIR	Analysis Request: Total Lead								Date Due: September 21, 2004	For Lab Use Only
SP-1a,b,c,d	9/16/04	21:00	1							X				X		X								X	

Relinquished by: Ken Hayes Kiff Analytical	Date 092004	Time 1900	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 9-21-4	Time 0830	Received by Laboratory:

Remarks: Rush TAT OK by S. Nowak 9/20/04.

Bill to:

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 04-09-1177

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: KIFF. **DATE:** 09/21/04

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

3.0 °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: TA

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: ✓ No (Not Intact) : _____ Not Applicable (N/A): _____

Initial: TA

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: TA

COMMENTS:

KIFF ANALYTICAL LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Lab No. 40203 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Richard Makdisi
Company/Address: RMA Environmental
Phone No.: (916) 771-7098 FAX No.: (916) 771-4581
Project Number: P.O. No:
Project Name: Tesoro #67107
Project Address: 44 Lewelling Blvd San Lorenzo

California EDF Report? ☐ Yes ☐ No
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Sampler Signature:

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container:	Container:	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2)	TOTAL (X) W.E.T. (X)	TAT: 12 hr / 24 hr / 48 hr / 72 hr / 1 wk	For Lab Use Only
SP-1a,b,c,d - 4:1 Comp.	9/1/04	2100	4						X			X		X											X		X	01

	Date	Time	
Relinquished by:	9/2/04	1325	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 9/2/04	Time 1325	Received by Laboratory: KIFF ANALYTICAL

Remarks:

Bill to:

Distribution: White - Lab, Pink - Originator

Forms/coc 121001.fh9