



2030 Addison Street, Suite 500 • Berkeley, California 94704 • 415 540-6954

March 14, 1989

87157.5

Alameda County Health Agency  
Department of Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

Attention: Mr. Lowell Miller

Subject: Final Remediation and Site Closure Report  
Mill Springs Park Apartments (Formerly Livermore Superblock)  
Railroad Avenue between South P and South L Streets  
Livermore, California

#### EXECUTIVE SUMMARY

Aqua Resources Inc. (ARI) has provided environmental consultation and engineering services during the Phase II and Final Site Remediation and Closure for the Mill Springs Park Apartment Site. The site is located on Railroad Avenue, between South L and South P Streets, in Livermore, California. The site is shown in relation to the city of Livermore on the Vicinity Map, Plate 1. The site was known formerly as the Livermore Superblock.

A Final Closure Plan required by the Alameda County Health Agency, Department of Environmental Health (whenever soil contamination with hazardous materials occurs) was prepared by ARI, and presented in a report dated October 23, 1988 with addendum dated October 26, 1988. The Final Closure Plan, with addendum, was approved by the Department of Environmental Health, Hazardous Material Division on October 27, 1988. The previous environmental services provided by ARI included a limited historical review of site usage, three subsurface investigations and observation, sample collection and review of chemical analyses during Phase I soil removal. The

previous environmental services described above were presented in an interim report dated September 12, 1988.

Phase II site remediation and final closure for the subject site included the following elements:

1. Removal of the concrete vault structure
2. Removal of the remaining buried oil lines
3. Removal of the remaining oil contaminated soil in Area B and contaminated soil encountered during removal of the concrete vault structure.
4. Removal and disposal of additional lead contaminated soil.
5. Disposal of oil contaminated concrete rubble generated from the removal of the concrete vault structure and metal oil lines.
6. Removal of four small (approximately 200 gallon) underground steel fuel oil storage tanks encountered during mass grading of the site. One tank was encountered on the north side of building pad no.4; three additional tanks were encountered at building pad no. 3.
7. Placement of fuel oil contaminated soil removed from area B during Phase I removal and from the remaining areas of Area B and the concrete vault structure area during the Phase II removal and from the two tank areas encountered during mass grading of the site in pavement subgrade areas in conformance with the Regional Water Quality Control Board (RWQCB) disposal exemption for the fuel oil contaminated soil.

Removal of the concrete vault structure, remaining buried oil lines and lead contaminated soil were performed in conformance with the approved closure plan. The approved closure plan was amended to include the removal of the underground fuel oil storage tank encountered during mass grading in a letter dated January 26, 1989. Disposal determination and destination of oil contaminated soil, concrete rubble, metal oil lines and fuel tanks are detailed in the following report. Lead contaminated soil was removed and disposed of to a Class I disposal facility in conformance with the approved closure plan.

## 1.0 Introduction

This report addresses the Final Site Remediation and Closure for the Mill Springs Park Apartment Site. A Final Closure Plan dated October 3, 1988 with addendum dated October 26, 1988 was prepared by Aqua Resources Incorporated (ARI). A Final Closure Plan is required by the Alameda Health Agency, Department of Environmental Health whenever soil contamination with hazardous materials occurs. At this site, soil contamination has occurred due to prior release of fuel oil stored in underground fuel storage tanks, oil lines and concrete vault structure and suspected localized surface leakage from discarded lead-acid batteries. The Final Closure Plan and addendum was approved by the Alameda County Department of Environmental Health, Hazardous Materials Division on October 27, 1988.

ARI's scope of services included observation during site remediation, soil sampling for chemical analyses, reviewing chemical analyses, reviewing applicable regulations, meeting with the RWQCB Land Disposal Section regarding a request for exemption from existing disposal regulations, preparing necessary documentation for obtaining the disposal exemption from the RWQCB, developing environmental conclusions and recommendations and preparing the Final Site Remediation and Closure Report. Supervision of chemical analyses was beyond ARI's Scope of Work, and was performed by others.

The following sections of the report present a summary of observations during remedial cleanup of the site, sample collection, chemical analyses performed and conclusions and recommendations. The approximate limits of excavation, locations of the underground fuel oil storage tanks, concrete vault structure, oil lines and locations where fuel oil contaminated soils were placed in roadway subgrade are shown on the Final Excavation Limit Plan, Plate 2. Likewise, copies of chain of custody forms and certified chemical analysis reports are presented in Appendices A and B, respectively. A copy of the RWQCB disposal exemption letter is presented as Appendix C. Copies of the hazardous waste manifests prepared by others (International Technology Corporation (IT) and H & H Environmental Services (H & H)) are presented as Appendix D. A copy of the approved Alameda County Tank Closure/Modification form is presented as Appendix E.

## 2.0 OBSERVATION DURING SITE REMEDIATION

ARI provided full-time observation during removal of lead and fuel oil contaminated soil. Observation during placement of fuel oil contaminated soil in pavement subgrade areas was performed by the Kleinfelder and Associates, project geotechnical engineers, and field reviewed by ARI personnel. Site Remediation and Final Closure included the following elements:

1. Removal of the concrete vault structure.
2. Removal of remaining buried oil lines.
3. Removal of remaining oil contaminated soil in Area B.
4. Removal and disposal of additional lead contaminated soil.
5. Removal and disposal of the four underground fuel oil storage tanks encountered during mass grading of the site.
6. Treatment and/or disposal of concrete rubble and metal oil lines.
7. Treatment and/or disposal of oil contaminated soil (including existing soil stockpiles).

Detailed observations for each element are presented below.

### 2.1 Removal of the Concrete Vault Structure

The concrete vault structure contained wood debris, soil backfill and aged fuel oil. The backfill was removed, including the wood debris and fuel oil. Samples of the backfill were obtained prior to removal for chemical analyses. Results of the chemical analyses indicated that the oil appeared to be an aged No. 6 type fuel oil. The wood debris, soil backfill and aged fuel oil were transported to a Class I disposal facility in conformance with applicable regulations.

Once the backfill was removed, the exposed surfaces of the concrete structure were steam cleaned to remove any remaining contaminant residue. Rinsates were removed and transported to a Class I disposal facility. Following cleaning, the base and sidewalls of the structure were cored. The cores were submitted for chemical analysis. Results of the chemical analyses indicated that the sidewalls of the structure were heavily contaminated with fuel oil; however, the base slab of the vault structure appeared only to have minor contamination.

Visual examination of the cores confirmed the chemical analyses. The sidewall cores had numerous pores and voids that enabled the fuel oil to migrate through the concrete. This suggested poor consolidation of the concrete during original construction of the structure. The base slab, however, had few visible voids or pores, and fuel migration into the core was slight. This data was used to determine appropriate disposal of the concrete after removal. After coring, the concrete structure was fully removed. Concrete that was contaminated was transported to a Class I disposal facility; the remaining concrete rubble was transported to a Class III facility for disposal.

After concrete removal, samples of the exposed subgrade soils were collected for chemical analyses to determine if additional soil removal was required. Visible soil contamination was observed at several locations. Results of chemical analyses indicated that subgrade soils were contaminated above the allowable 100 ppm regulatory requirement. Contaminated soils were removed, and stockpiled onsite. Localized excavation to depths of up to 22 feet were required to remove contaminated soil at the concrete vault structure location. No free groundwater was encountered during the removal. Additional soil samples were obtained and analyzed to confirm that contaminated soils had been removed from the limits of the excavation. The excavation was backfilled with clean, compacted fill under the observation of the project geotechnical engineer's field technician.

## 2.2 Removal of Remaining Fuel Oil Lines

The remaining fuel oil lines were removed in a manner such that oil spillage was avoided. The oil lines, including those removed during Phase I, were transported to a Class I disposal facility. Soil samples were collected from exposed subgrade soils below the oil lines to determine if additional soil removal was required. Results of the chemical data indicated that additional soil removal was not required.

### 2.3 Removal of Oil Contaminated Soil

Remaining oil contaminated areas in Area B (shown on Plate 2) were removed. Excavation in these areas was generally less than about 2 feet except at two locations where excavation between 9 feet and 11 feet was required. Soil samples of the excavated soil were collected and analyzed to determine appropriate treatment and disposal. Excavated soil was stockpiled onsite pending determination of appropriate disposal. Additional soil samples were collected to confirm that contaminated soil had been fully removed. Results of these chemical analyses indicated that further removal was not required. No free groundwater was encountered in excavations performed during this removal.

### 2.4 Removal and Disposal of Additional Lead Contaminated Soil

Soils from the areas of additional lead contamination shown on Plate 2 were removed, and transported to a Class I disposal facility. Soils in these areas were excavated to a depth of approximately 1-1/2 feet. The base of the excavation was resampled to confirm that contaminant levels were within acceptable regulatory limits. Lead contaminated soil areas were wetted prior to excavation to reduce the potential for dust generation during excavation. Excavated soils from these areas were transported to a Class I disposal facility in equipment that was appropriately labeled and certified by D.O.T.

### 2.5 Treatment and Disposal of Concrete Rubble and Metal Oil Lines

After steam cleaning and removal, concrete rubble determined to be contaminated with oil was transported to a Class I facility for disposal. Concrete rubble that was not contaminated was transported to a Class III facility for disposal. Metal oil lines removed as part of the Phase I and II removal and remediation were manifested to a Class I disposal facility.

### 2.6 Removal and Disposal of Underground Storage Tanks

During mass grading of the site, four underground fuel storage tanks were encountered. All the tanks were of steel construction, and had estimated capacities of 200-gallons. One tank was encountered at building pad #4; the

other three tanks were encountered by building pad #3. The tank locations are shown on Plate 2.

The tank at building pad #4 was observed to contain what appeared to be fuel oil and water. No lines were encountered or observed around the tank. Three openings were observed on the top of the tank. Two of the openings could have been for fill riser pipes; while the third opening was probably for a vent line. Small capped pipes were noted at the ends of the tank. The tank body appeared to have a bitumen coating, and appeared to be structurally intact except for the openings at the top of the tank.

The tank was observed to contain about one inch of floating fuel oil; the remaining fluid appeared to be water. A sample of the tank residue was obtained and submitted for chemical analyses. Based on the chemical analyses, the fuel oil residue is very similar to the fuel oil encountered elsewhere on the site. However, the residue did contain some solvents not encountered elsewhere.

The tank body was observed to be substantially intact with no corrosion holes in the tank body. The fill pipe(s) appeared to have been sheared off; however this was believed to have occurred prior to the tank removal as the shear marks were not considered fresh on a visual basis. The tank was emptied using a vacuum truck (H & H), purged with dry ice and removed from the site after approval by the City of Livermore Fire Department. The tank was transported to a licensed recycling facility (H & H) where the tank was cleaned and certified as nonhazardous. The tank was then recycled as scrap; rinsate residues (solids) were manifested as a hazardous waste.

Soil discoloration was noted at the base of the tank. Soil samples were taken to determine if additional soil removal was required (in conformance with RWQCB requirements). Results of the analyses indicated that additional soil removal was required; however, the solvents found in the tank residue were not detected in the soil above the method detection limits (mdl). Contaminated soil was removed; this required local excavation to a maximum depth of 12 1/2 feet (8 feet below the base of tank). No free groundwater was encountered during the excavation. The excavated soil was stockpiled on site for reuse in pavement subgrade areas. The excavation was backfilled with compacted fill under the observation of the project geotechnical engineer.

The other three tanks, encountered at building pad #3, did not appear to have been active since the tank fillers were not oriented vertically. In addition, the tanks were reportedly arranged in a random fashion with one of the tanks partially overlying another tank. Debris and other garbage were reportedly encountered with the tanks. All three tanks were observed to be substantially intact with no corrosion holes. One of the tanks had a small tear in the top of the tank body that occurred during removal. All three tanks were purged, transported and cleaned as described earlier. After cleaning and being certified as nonhazardous, the tank bodies were recycled as scrap. Rinsate residues were manifested as a hazardous waste.

Soil discoloration was noted in the exposed subgrade soils below the tanks. Soil samples were taken in conformance with RWQCB requirements and analyzed. None of the analytes were detected above the mdl; however, the discolored soil was removed, and stockpiled onsite for reuse in pavement subgrade areas. Soil was removed to depth of about 1 foot. The completed excavation was resampled, and the soil samples analyzed. Again, none of the analyses were detected. The excavation was then backfilled with compacted fill under the observation of the project geotechnical engineer.

## 2.7 Treatment and Disposal of Fuel Oil Contaminated Soil

Soils contaminated with fuel oil or asphaltic-like materials were removed from areas B, C and D during the phase I removal, and from localized areas of Area B and the concrete vault structure during the phase II removal. Additional fuel oil contaminated soil was generated during removal of the underground tanks encountered during mass grading of the site. The excavated soils contaminated with fuel oil were stockpiled onsite, pending negotiation of disposal or treatment with the RWQCB. Soils removed from areas C and D and the western portion of Area B were determined to be acceptable for disposal to a class III facility because of the asphaltic-like nature of contaminants. These soils were transported to the DePaoli landfill facility in Livermore for disposal.

The remaining contaminated soil was stockpiled and secured to restrict public access. ARI requested an exemption from the existing disposal regulations administered by the RWQCB (Land Disposal). A bioassay analysis



as well as additional chemical analyses were performed as part of the additional information requested by the RWQCB as part of the exemption request. Based on the RWQCB review, the fuel oil contaminated soil was determined to be nonhazardous, and an exemption was granted for onsite reuse of the contaminated soil as subbase in pavement areas. A copy of the RWQCB letter granting the exemption is attached as Appendix C. As part of mass grading operations and in conformance with the disposal exemption granted by the RWQCB, the fuel oil contaminated soils were reused onsite as subbase material in pavement areas. The areas where the contaminated soils were reused as pavement subbase are indicated on Plate 2.

### 3.0 SAMPLE COLLECTION DURING SOIL REMOVAL

Sample collection for subsequent chemical analyses was performed in conformance with the Health and Safety Plan prepared earlier for this project. Level C protection (ie safety glasses, respirator, disposable gloves, suit and boot covers, etc.) was used in sampling areas of lead contamination. Level D protection (safety glasses, boots, gloves, normal outer clothing, etc.) was used in areas contaminated with fuel oil.

Soil samples were obtained using either a metal scoop or a brass liner. Samples obtained with a scoop were placed and sealed in clean glass sample jars (provided by lab). The sample containers were labelled and placed in an ice chest. The scoop was washed in clear water and rinsed with demineralized water after each sample collection. Brass liners used for sample collection were washed in a solution of Tri-sodium phosphate and triple rinsed with the final rinse consisting of deionized water. The ends of the brass lines were sealed with teflon tap and covered with new plastic end caps. The ends of the caps were taped. The samples were labeled and placed in an ice chest. Samples were transported to the chemical laboratory either by ARI personnel or by lab courier. Formal Chain of Custody protocols were maintained at all times. Copies of the chain of custody forms are presented in Appendix A.

#### 4.0 CHEMICAL ANALYSES DURING SOIL REMOVAL

Chemical analyses during Phase II and final site closure were performed by Curtis and Tompkins Laboratories in Berkeley, California. Soil samples obtained from the two lead contaminated areas were analyzed for lead TTLC using EPA method 7420, and for lead STLC using the Waste Extraction Test procedure (CAC Title 22, Section 66700) and EPA method 7420. Soil samples obtained from Areas contaminated with fuel oil were analyzed for Total Petroleum Hydrocarbons (TPH) using EPA Methods 3550 and 8015. Selected samples were also analyzed for Total Oil and Grease (TOG, EPA 503E) and for Volatile Organics (EPA 8240). A sample of the oil in the concrete structures was also obtained and analyzed for TPH, TOG, heavy metals and for polychlorinated biphenyls (PCB). Additional material property analyses were performed on the oil sample to aid in characterizing the oil as a no. 6 type fuel oil.

As part of the disposal exemption request for the fuel oil contaminated soil, a Bioassay analysis was performed by Brown and Caldwell. The results of the Bioassay indicate that the LC50 is greater than 750 mg/l. Additional analyses performed as part of the disposal exemption request submittal included Semi-Volatile Organics (EPA 8270) and additional heavy metals and PCB analyses. Based on the results, the RWQCB agreed with ARI that the fuel oil contaminated soil was non-toxic, and granted the disposal exemption for onsite reuse of the material as a subbase material in pavement areas. Results of the chemical analyses referenced above are presented in the Certified Laboratory Reports presented in Appendix B. A copy of the letter granting the disposal exemption prepared by the RWQCB is presented as appendix C.

Additional chemical analyses were performed on samples obtained at the two locations where underground storage tanks were found. The analyses included TOG, TPH, EPA 8240, selected heavy metals and PCB in conformance with RWQCB underground tank guidelines. These analyses were also performed to confirm that the fuel oil was similar to that encountered elsewhere around the site.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Our conclusions based on review of field observations and results of chemical analyses to date are:

1. Excavation for two additional lead areas appears to have removed soil having lead concentrations exceeding regulatory allowable limits.
2. Remaining fuel oil contaminated areas were removed based on visual examination of excavation sidewalls and excavation base and TPH laboratory test results.
3. The fuel oil contaminated soil encountered at the two locations where underground storage tanks were found appears to be similar to that found in Area B and the concrete vault structure. These soils were reused onsite as described below.
4. The fuel oil contaminated soil was placed as a subbase in pavement areas in conformance with the disposal exemption requirements.

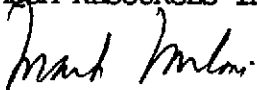
Based on these conclusions and the previously agreed closure plan, we recommend performing a groundwater investigation to determine if groundwater contamination from fuel oil has occurred. This will require installation of a groundwater monitoring well. The proposed location for the groundwater monitoring well is shown on Plate 2. The basis for the well location is given in a separate groundwater study report dated March 14, 1989.

## 6.0 LIMITATIONS

The excavation limits were based on visual examination in the field. Soil samples obtained for chemical analyses represent conditions encountered at a specific point where taken. Chemical analyses were performed under the direction of others. Although a responsible effort has been made by ARI to test soil samples for likely contaminants in the areas that have been excavated, ARI cannot provide a guarantee either express or implied that other hazardous contaminants are not present at this site.

It has been a pleasure to provide you with this information. If you have any questions regarding the above, please do not hesitate to contact the undersigned.

Respectfully submitted,  
AQUA RESOURCES INC.



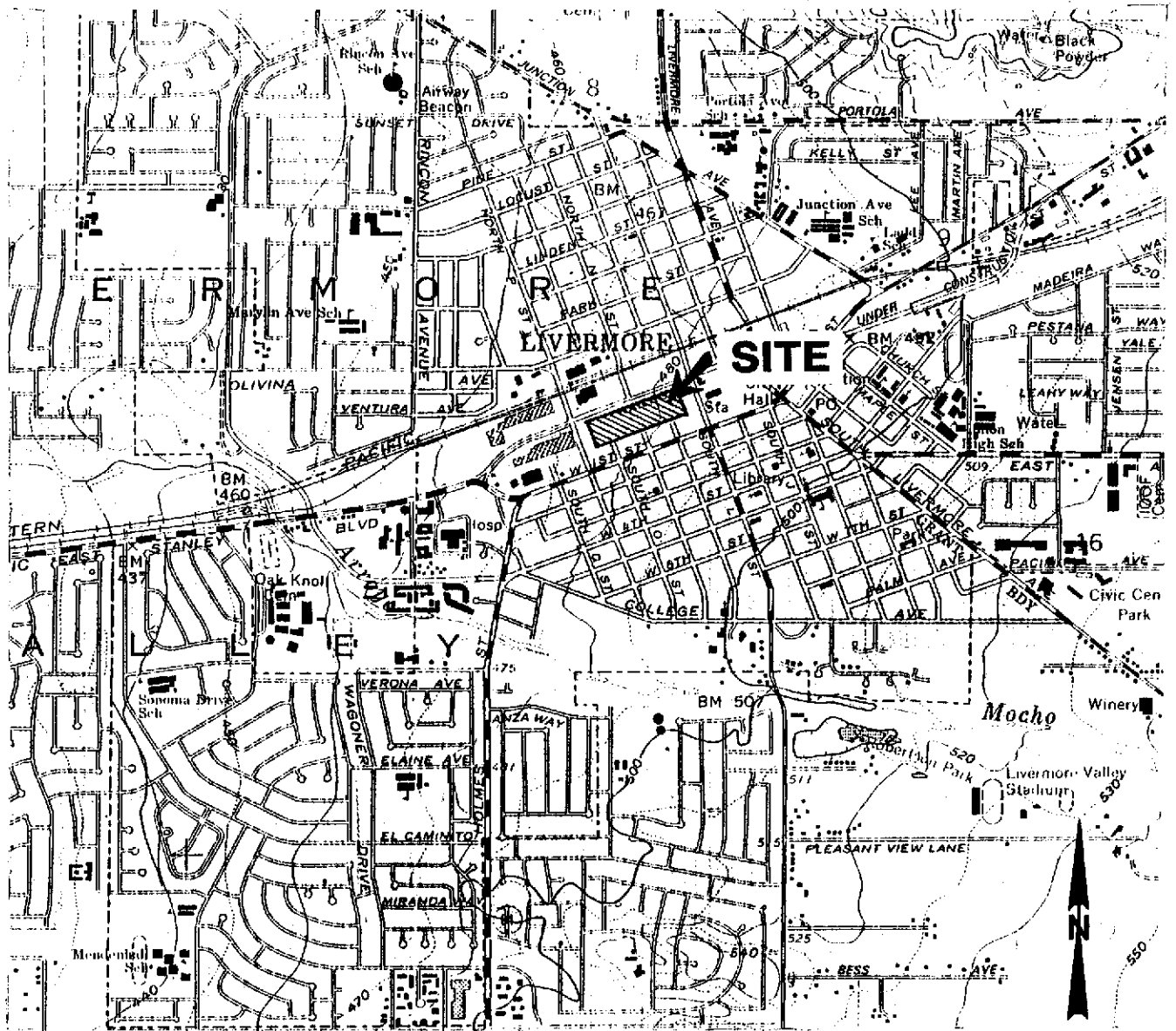
Mark Milani, P.E.  
Project Manager

cc: Addressee (2)

Barnett Range Corporation (2)  
Attn: Mr. Larry Malcolm

Regional Water Quality Control Board  
San Francisco Region  
Attn: Ms. Lisa McCann

Attachments: Plate 1 - Vicinity Map  
Plate 2 - Final Excavation Limit Plan  
Appendix A - Chain of Custody Forms  
Appendix B - Certified Laboratory Reports  
Appendix C - RWQCB disposal exemption letter  
Appendix D - Hazardous Waste Manifests  
Appendix E - Approved Alameda County Tank Closure Form



## VICINITY MAP

### MILL SPRINGS PARK APARTMENTS

Railroad Avenue  
Livermore, California

#### REFERENCE:

Portion of U.S.G.S. 7.5 Minute Topographic Quadrangle Map, Livermore, California, dated 1961, photorevised 1980, at a scale of 1:24,000.

10/14/88

**APPENDIX A**  
**CHAIN OF CUSTODY FORMS**

15950

AQUA RESOURCES, INC.

SHIPMENT NO.: 1



CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: Livermore Superblock

DATE 10/14/88

PROJECT NO.:

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
# 1-1, 2 <del># 1-3, 4, 5, 6</del>		Water		Glass			TPH TOBG
# 2-1		Soil		Glass			TPH TOBG
# 1-3, 4, 5, 6		Water		Glass			Hold
# 2-2		Soil		Glass			Hold

Total Number of Samples Shipped: 8 | Sampler's Signature: Hugh S. Wong

Relinquished By: Signature: <u>Hugh S. Wong</u> Printed Name: <u>HUGH S. WONG</u> Company: <u>AQUA RESOURCE</u> Reason: _____	Received By: Signature: <u>Gabriella Stephen</u> Printed Name: <u>Gabriella Stephen</u> Company: <u>Curtis &amp; Tompkins, Ltd</u>	Date <u>10/14/88</u>
		Time <u>11:15 am</u>
Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date <u>1 1</u> Time _____

REMARKS:  
 24 hr TAT  
 Samples of backfill materials from concrete vault structure

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 1 OF     

DATE 10/31/84

PROJECT NAME: Mill Spring Lake Apt, Phase II

PROJECT NO.: 27107.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
B5-1 (Line #1 B-11)		Soil	bucket	Brown Liner	Ice	—	TPH (EPA 8015) T06 / EPA 503 E EPA 8240
B5-2 (Line #2 B-11)		Soil	bucket	Brown Liner	Ice	—	TPH, T06, 8240
B5-3 (Line #3 B-11)		Soil	bucket	Brown Liner	Ice	—	TPH, T06, 8240
B5-4 (Sample for B21A)	25N10W	Soil	Scarf	Glass Jar	Ice	—	TPH only
B5-5 Composite of reworked soil from B-21A location	25N10W	Soil	Scarf	Glass Jar	Ice	—	TPH only
B5-6 Sample for B430	45N25E 3/4 lot	Soil	Scarf	Glass Jar	Ice	—	TPH only

Total Number of Samples Shipped: 6 Sampler's Signature: [Signature]

Relinquished By:  
Signature: [Signature]  
Printed Name: Mark Miller  
Company: Aqua Resources  
Reason: Transfer to C&T

Received By:  
Signature: [Signature]  
Printed Name: Scott R. Ryan  
Company: C&T

Date: 11/1/84  
Time: 7:25

Relinquished By:  
Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Reason: \_\_\_\_\_

Received By:  
Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Company: \_\_\_\_\_

Date: 1/1  
Time: \_\_\_\_\_

REMARKS: 24 hr Turn around

Special Shipment / Handling / Storage Requirements:

AM



# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 2

PAGE 1 OF 2

DATE 11/1/89

PROJECT NAME: Mill Spring Park Mt. Phase II

PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
B5-7 sample for B-2							T/H
B5-8 sample for B-4							T/H HLL
B5-9 Composite for B-4							T/H HLL
B5-10 sample B-1							T/H
B5-11 sample B-5							T/H
B5-12 heads for B-18B	38E ON						T/H
B5-13 heads for B17-5	12 N 2W						T/H
A5-1 Depth 1-1 1/2'	37N 128W	soil	dry	glass jar	11C		T/LC tot. Pb
A5-2 Depth 3-7'	37N 128W	soil	dry	glass jar	11C		T/LC tot. Pb

Total Number of Samples Shipped: 16 | Sampler's Signature: [Signature]

Relinquished By: Signature: <u>[Signature]</u> Printed Name: <u>Mark Milano</u> Company: <u>Aqua Resources</u> Reason: <u>to L66</u>	Received By: Signature: <u>[Signature]</u> Printed Name: <u>JOHN GOYETTE</u> Company: <u>CURTIS &amp; TORRINS</u>	Date: <u>11/1/89</u> Time: <u>5:28pm</u>
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Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u> Time: _____
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REMARKS:  
24-hr Turn around on analysis

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 2

PAGE 2 OF 2

DATE 11/1/87

PROJECT NAME: Milk Spray Leak Apt, Phase 2

PROJECT NO.: 871575

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
R5-14 a	11' depth at B-21 @ 15'	Soil	Scoop	glass jar	1cc	—	TCH Composite of five samples
R5-15	11' depth at B-4 @ 12 ft	Soil	Scoop	glass jar	1cc	—	
Stackpt #1		Soil	Scoop	glass jar	1cc	—	
Stackpt #2		Soil	Scoop	}	}	}	
Stackpt #3		Soil	Scoop				
Stackpt #4		Soil	Scoop				
Stackpt #5		Soil	Scoop				

Total Number of Samples Shipped: 16

Sampler's Signature: M. Milore

Relinquished By:  
 Signature: M. Milore  
 Printed Name: Mark Milore  
 Company: Aqua Resources  
 Reason: To Lab

Received By:  
 Signature: [Signature]  
 Printed Name: JOHN GORETTI  
 Company: CURTIS TOMPKINS

Date: 11/1/87  
 Time: 5:28 p.m.

Relinquished By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Reason: \_\_\_\_\_

Received By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_

Date: 1/1  
 Time: \_\_\_\_\_

REMARKS: 24-hr. Time allowed on analysis

Special Shipment / Handling / Storage Requirements:

**AQUA RESOURCES, INC.**

SHIPMENT NO.: 3



**CHAIN OF CUSTODY RECORD**

PAGE 1 OF 1

PROJECT NAME: Mills Slough Park Apt

DATE 11/4/88

PROJECT NO.: 871575

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysts Required
		Material	Method		Temp	Chemical	
Stackpile B Sample #1	A-2 (22,20)	Soil	Sloup	Glass Jar	Ice		T/H
Stackpile B Sample #2	B-2 (33,22)	Soil	Sloup	Glass Jar	Ice		T/H
Stackpile B Sample #3	C-3 (25,15)	Soil	Sloup	Glass Jar	Ice		T/H
Stackpile B Sample #4	B-5 (17,12)	Soil	Sloup	Glass Jar	Ice		T/H
Stackpile 1-5 (Submitted 11/1/88) Additional testing		Soil	Sloup	Glass Jar	Ice		TO6 (Composite of 5 samples)

Total Number of Samples Shipped: 4 Sampler's Signature: Mark Miloni

Relinquished By: Signature: <u>Mark Miloni</u> Printed Name: <u>Mark Miloni</u> Company: <u>Aqua Resources</u> Reason: <u>To Chemical Lab</u>	Received By: Signature: <u>Nancy Johnson</u> Printed Name: <u>Nancy Johnson</u> Company: <u>Chertis Tompkins</u>	Date: <u>11/4/88</u> Time: <u>11:50 A.M.</u>
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Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1 1</u> Time: _____
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REMARKS: 24-hr then-sonad. Note additional analysis on Stackpile #1 through #5 samples, submitted previously (11/1/88) for TO6 [Composite of 5 samples]

AQUA RESOURCES, INC.  
RECEIVED

Special Shipment / Handling / Storage Requirements: \_\_\_\_\_

NOV 1988

JOB NO. \_\_\_\_\_

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 4  
 PAGE 1 OF 1  
 DATE 11/7/87

PROJECT NAME: Mill Spring full Apt  
 PROJECT NO.: 37157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
stpl B A-1	(27,13)	soil	scoop	plastic jar	ice		TPH
stpl B A-3	(8,22)	soil	scoop	plastic jar	ice		TPH
stpl B A-4	(13,24)	soil	scoop	glass jar	ice		TPH
stpl B A-5	(1,8)	soil	scoop	glass jar	ice		TPH
stpl B A-6	(2,17)	soil	scoop	glass jar	ice		TPH
stpl B B-1	(7,1)	soil	scoop	glass jar	ice		TPH
stpl B B-3	(12,10)	soil	scoop	glass jar	ice		TPH
stpl B B-4	(13,23)	soil	scoop	glass jar	ice		TPH
stpl B C-1	(14,27)	soil	scoop	glass jar	ice		TPH
stpl B C-2	(35,34)	soil	scoop	glass jar	ice		TPH
stpl B C-4	(34,12)	soil	scoop	glass jar	ice		TPH

Total Number of Samples Shipped: 11 | Sampler's Signature: Mark Milani

Relinquished By: Signature: <u>Mark Milani</u> Printed Name: <u>Mark Milani</u> Company: <u>Aqua Resources</u> Reason: <u>for transport to lab</u>	Received By: Signature: <u>Patricia Rodgers</u> Printed Name: <u>PATRICIA RODGERS</u> Company: <u>AQUA RESOURCES</u>	Date: <u>11/7/87</u> Time: <u>11:06</u>
Relinquished By: Signature: <u>Patricia Rodgers</u> Printed Name: <u>PATRICIA RODGERS</u> Company: <u>AQUA RESOURCES</u> Reason: <u>analyses</u>	Received By: Signature: <u>Gabriella Stephan</u> Printed Name: <u>Gabriella Stephan</u> Company: <u>Certs &amp; Tompkins, Ltd</u>	Date: <u>11/7/88</u> Time: <u>12:18 p.m.</u>

REMARKS:  
 24-hour turn around pending results of TPH analyses on samples #1 through #4 brought in on Friday, November 4 - on notice to proceed

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.

SHIPMENT NO.: \_\_\_\_\_



## CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: SUPERBLOCK

DATE 11/10/88

PROJECT NO.: 87157-005

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
<u>CONE # 1</u>		<u>CONCRETE</u>		<u>BAGGIE</u>		<u>NO DS</u>	<u>TPH &amp; OLG</u>
<u>CONE # 5</u>		<u>"</u>		<u>"</u>		<u>"</u>	<u>" "</u>

Total Number of Samples Shipped: 2 Sampler's Signature: [Signature]

Relinquished By: [Signature]  
 Signature [Signature]  
 Printed Name D A BURBAGE  
 Company AQUA RESOURCES INC.  
 Reason TRANSFER TO LAB

Received By: [Signature]  
 Signature [Signature]  
 Printed Name SCOTT RATMAN  
 Company CURTIS & TOMPKIN

Date 11/10/88  
 Time 1015

Relinquished By:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Reason \_\_\_\_\_

Received By:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Company \_\_\_\_\_

Date 1/1  
 Time \_\_\_\_\_

**REMARKS:**

REMOVE TEST SAMPLE FROM CENTER OF CORE — DO NOT INCLUDE MAT'L FROM EITHER END OF CORE IN THE ANALYSIS.

**Special Shipment / Handling / Storage Requirements:**

RETURN UNUSED PORTIONS OF CORES

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 1

DATE 11/11/88

PROJECT NAME: Mill Spring Res. Apt

PROJECT NO.: 27117.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
CVS #1	South side wall	Soil	Probe	Open liner	Ice	None	TKH, EPA 3240 Tox
CVS #2	Base	Soil	Probe	Open liner			TKH EPA 3240 Tox
CVS #3	North side wall	Soil	Probe	Open liner			TKH
CVS #4	Northeast North wall	Soil	Scarf	Clear Jar			TKH
CVS #5	North east 1/2" depth 17 feet	Soil	Scarf	Clear Jar			TKH

Total Number of Samples Shipped: 5

Sampler's Signature: [Signature]

Relinquished By:  
 Signature: [Signature]  
 Printed Name: Mark M. Lewis  
 Company: Aqua Resources  
 Reason: to C-7 location

Received By:  
 Signature: [Signature]  
 Printed Name: Scott R. Utman  
 Company: [Signature]

Date: 11/11/88  
 Time: 9:20 a.m.

Relinquished By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Reason: \_\_\_\_\_

Received By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_

Date: 1/1  
 Time: \_\_\_\_\_

**REMARKS:**

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 1

DATE 11/25/88

PROJECT NAME: \_\_\_\_\_

PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
CVS 6		soil		glass jar	100		TOG
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

Total Number of Samples Shipped: 12 Sampler's Signature: Patricia Rodgers

Relinquished By:  
 Signature: Patricia Rodgers  
 Printed Name: PATRICIA RODGERS  
 Company: AQUA RESOURCES  
 Reason: ANALYSES

Received By:  
 Signature: [Signature]  
 Printed Name: JOHN GOYETTE  
 Company: CIT Bank

Date: 11/15/88  
 Time: 17:50

Relinquished By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Reason: \_\_\_\_\_

Received By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_

Date: 1 1  
 Time: \_\_\_\_\_

REMARKS:  
24 - hour turn around on analyses

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 1

DATE 11/16/88

PROJECT NAME: Superblock

PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
CVS #18		SOIL		GLASS BTL	<del>None</del> (10SD)		TOTG
CVS #19		"		" "	17	"	"
CVS #20		"		" "	17	"	"

Total Number of Samples Shipped: 3     Sampler's Signature: AAR Sullivan

Relinquished By: Signature: <u>Patricia Rodgers</u> Printed Name: <u>PATRICIA RODGERS</u> Company: <u>AQUA RESOURCES</u> Reason: <u>ANALYSES</u>	Received By: Signature: <u>[Signature]</u> Printed Name: <u>Scott R. Titman</u> Company: <u>C&amp;I</u>	Date: <u>11/16/88</u>  Time: <u>4:25</u>
--	--	--

Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u>  Time: _____
--	---	-------------------------------------

REMARKS:

ASAP — CALL DEWEY BURBANK

Special Shipment / Handling / Storage Requirements:



# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 2

DATE 11/17/88

PROJECT NAME: \_\_\_\_\_

PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
<u>Stackpile 1</u>		<u>sand</u>		<u>glass jar or brass tube</u>	<u>ice</u>		<u>TPH and TOC</u>
<u>2</u>							
<u>3</u>							
<u>4</u>							
<u>5</u>							
<u>6</u>							
<u>7</u>							
<u>8</u>							
<u>9</u>							
<u>10</u>							
<u>11</u>							
<u>12</u>							
<u>13</u>							
<u>14</u>							
<u>15</u>							
<u>16</u>							
<u>17</u>							
<u>18</u>							
<u>19</u>							
<u>20</u>							

Total Number of Samples Shipped: 20 | Sampler's Signature: Pat Rodgers

Relinquished By:  
 Signature: Patricia Rodgers  
 Printed Name: PATRICIA RODGERS  
 Company: AQUA RESOURCES  
 Reason: analysis

Received By:  
 Signature: Scott Rittner  
 Printed Name: Scott Rittner  
 Company: ERT

Date: 11/17/88  
 Time: \_\_\_\_\_

Relinquished By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Reason: \_\_\_\_\_

Received By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_

Date: 1/1  
 Time: \_\_\_\_\_

REMARKS:  
 BY RHODES 11/18 TO NADCO = COMPOSITE INTO 4 SAMPLES  
 1 → 5, 6 → 10, 11 → 15, 16 → 20  
 AND NON TPH / TOC / CAM 17 (WET) AND EPA 8270 ON EXCH

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.

SHIPMENT NO.: \_\_\_\_\_



## CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

DATE 11/17/88

PROJECT NAME: \_\_\_\_\_

PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
CVS 21		soil		glass jar	ice		TPH and TOC
CVS 22		↓		↓	↓		
CVS 23							
CVS 24							

Total Number of Samples Shipped: <u>4</u>		Sampler's Signature: <u>Patricia Rodgers</u>	
Relinquished By: Signature: <u>Patricia Rodgers</u> Printed Name: <u>PATRICIA RODGERS</u> Company: <u>AQUA RESOURCES</u> Reason: <u>Analysis</u>		Received By: Signature: <u>[Signature]</u> Printed Name: <u>Scott Rittman</u> Company: <u>CAI</u>	
		Date: <u>11/17/88</u>	
		Time: _____	
Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____		Received By: Signature: _____ Printed Name: _____ Company: _____	
		Date: <u>1 1</u>	
		Time: _____	

REMARKS:

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

 SHIPMENT NO.:         

 PAGE 1 OF 1

 DATE Nov. 22, 1987

 PROJECT NAME: Superfund

 PROJECT NO.: 87157.05

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
CVS-1		Soil		Polyethylene	ICE		Residue #
STPLC-8		Soil		Glass JVL	"		" #

 Total Number of Samples Shipped: 2 Sampler's Signature: \_\_\_\_\_

Relinquished By: <u>Mark Milon</u> Signature <u>Mark Milon</u> Printed Name <u>Mark Milon</u> Company <u>Aqua Resources</u> Reason <u>for the 6/1/87 Analysis</u>		Received By: <u>Kathy O'Brien</u> Signature <u>Kathy O'Brien</u> Printed Name <u>Kathy O'Brien</u> Company <u>B&amp;C DEPS</u>		Date <u>11/22/87</u>
Relinquished By: _____ Signature _____ Printed Name _____ Company _____ Reason _____		Received By: _____ Signature _____ Printed Name _____ Company _____		Date <u>  /  /  </u>

REMARKS:  
 \* ILM CAM SCAN (ACUTE AQUATIC TOXICITY) ON EACH OF THE TWO SAMPLES REE CONVERSATION W/ BARBARA BOWMAN  
Louise Burkhardt

Brown + Caldwell # E8811584

Special Shipment / Handling / Storage Requirements:

# Curtis & Tompkins, Ltd

2323 Fifth Street  
Berkeley, California 94710  
(415) 486-0900

## Chain of Custody Form

Samplers \_\_\_\_\_

Job Description Sample Return

Job Number 84157.5

Client Contact Davey Babcock / Ron Milan Recorder \_\_\_\_\_

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Title 22 Metals	EPA PP Metals (# )	TPH Method-	Benzene-Toluene-Xylene(s)	Oil and Grease	EPA 608/8080 Pesticides & PCB's	

Matrix				#Containers	Method Preserved					Sample Number	Sampling Date				SAMPLE NOTES
Water	Soil	Waste	Oil		H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	None	Other		Yr	Mo	Dy	Time	
															CIT ID: 16187-1
															CIT ID: 16243-8
															# " 16175-1
															" 16175-2

Laboratory Notes : Samples Returned to Aqua Resources 11/22/88

Chain of Custody Record	
Relinquished by (signature) Date/Hr <u>[Signature]</u> 11/22 10:40	Received by (signature) <u>[Signature]</u>
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Dispatched by: (signature) Date/Hr	Received for Lab by (signature)

# AQUA RESOURCES, INC.

SHIPMENT NO.: \_\_\_\_\_



## CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: Mill Springs Lock Apt

DATE January 17, 1989

PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
Tank #1	Soil sample	Soil	Grab	Brass Liner	ICC		TPH, TOG
Tank #1	Tank base Depth 3 1/2'	Soil	Grab	Brass Liner	ICC		TPH, TOG
Tank #1	Tank Rupture	Fluid	Grab	Glass Jar	ICC		Hold

Total Number of Samples Shipped: 3 | Sampler's Signature: M. Milani

Relinquished By: Signature: <u>M. Milani</u> Printed Name: <u>Mark Milani</u> Company: <u>Aqua Resources</u> Reason: <u>To G.I. Council</u>	Received By: Signature: <u>James Conley</u> Printed Name: <u>James Conley</u> Company: <u>Curtis &amp; Tompkins</u>	Date <u>11/17/89</u> Time <u>15:17</u>
---	--	---

Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date <u>1 1</u> Time _____
--	---	-------------------------------------

REMARKS:  
24-hr turn around time

Special Shipment / Handling / Storage Requirements:

# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 1DATE January 18, 1981PROJECT NAME: Mill Spring Lake Act  
PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
<u>Tank #1</u>	<u>13 1/2 ft</u>	<u>Soil</u>	<u>Grab</u>	<u>6 Lit Jar</u>	<u>16°</u>	<u>—</u>	<u>TCH + TOB</u>

Total Number of Samples Shipped: 1     Sampler's Signature: Mark Milani

Relinquished By: Signature: <u>Mark Milani</u> Printed Name: <u>Mark Milani</u> Company: <u>Aqua Resources</u> Reason: <u>To Lake &amp; Thompson</u>	Received By: Signature: <u>Monica Wilson</u> Printed Name: <u>Monica Wilson</u> Company: <u>Coates &amp; Thompson</u>	Date <u>1/18/81</u>
		Time <u>1:18 p.m.</u>
Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date <u>1 1</u>
		Time

REMARKS: 24-hr turn around

Special Shipment / Handling / Storage Requirements:



# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 1DATE January 23, 1989PROJECT NAME: Mill Spring Creek A1PROJECT NO.: 87157.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
<u>CVS 2-1</u> <u>Depth 4'</u>	<u>SE Sidewall</u>	<u>Soil</u>	<u>Grab</u>	<u>Glass Jar</u>	<u>Ice</u>		<u>TPH</u>
<u>CVS 2-2</u> <u>Depth 5'</u>	<u>South Sidewall</u> <u>Center</u>	<u>Soil</u>	<u>Grab</u>	<u>Glass Jar</u>	<u>Ice</u>		<u>TPH</u>
<u>CVS 2-3</u> <u>Depth 7'</u>	<u>SW corner</u> <u>Sidewall</u>	<u>Soil</u>	<u>Grab</u>	<u>Glass Jar</u>	<u>Ice</u>		<u>TPH</u>

Total Number of Samples Shipped: 3Sampler's Signature: M. Adams

Relinquished By:  
 Signature M. Adams  
 Printed Name MARIE ADAMS  
 Company Aqua Resources  
 Reason transfer to C+J location

Received By:  
 Signature Scott R. Adams  
 Printed Name SCOTT R. ADAMS  
 Company C+J

Date 1/23/89  
 Time 9:45

Relinquished By:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Reason \_\_\_\_\_

Received By:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Company \_\_\_\_\_

Date 1/1  
 Time \_\_\_\_\_

### REMARKS:

24-hr temp record; call with Vial 111111

Special Shipment / Handling / Storage Requirements:



# AQUA RESOURCES, INC.



## CHAIN OF CUSTODY RECORD

SHIPMENT NO.: \_\_\_\_\_

PAGE 1 OF 1

DATE Feb 7, 1981

PROJECT NAME: Mill Spring Park Apt

PROJECT NO.: 87117.5

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
Tank 2 Base		Soil	Grab	Beck jar	Cooler		TPH, 8240
Tank 3 Base		Soil	Grab	Beck jar	Cooler		
Tank 4 Base		Soil	Grab	Beck jar	Cooler		
Tank 2-4 W Sidewalk		Soil	Grab	Glass Jar	Cooler		TPH
Tank 2-4 S Sidewalk		Soil	Grab	Glass Jar	Cooler		TPH
Tank 2-4 Extension		Soil	Grab	Glass Jar	Cooler		TPH
Bas							

Total Number of Samples Shipped: 6

Sampler's Signature: [Signature]

Relinquished By:  
 Signature: [Signature]  
 Printed Name: Aqua Resources  
 Company: Aqua Resources  
 Reason: To V.B. for transport to Lab

Received By:  
 Signature: [Signature]  
 Printed Name: JOYTEX BASSAROWICZ  
 Company: ARI

Date: 2/7/81  
 Time: 9:50

Relinquished By:  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Reason: \_\_\_\_\_

Received By:  
 Signature: [Signature]  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_

Date: 2/7/81  
 Time: 10:45

REMARKS: For Tanks Sample 1, 2, and 3 run TPH on each sample; ~~sample~~ sample run EPA 8240 on composite of sample 1, 2 & 3  
 24-hour turn around time (Rush)

Special Shipment / Handling / Storage Requirements:

**APPENDIX B**  
**CERTIFIED LABORATORY REPORTS**



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 15841  
 CLIENT: AQUA RESOURCES  
 JOB ID: LIVERMORE SUPERBLOCK

DATE ANALYZED: 10/07/88  
 DATE REPORTED: 10/11/88

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A  
 TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)	O&G (mg/Kg)
15841-1	B3-1	ND(10)	ND(10)	ND(10)	26**	3,000
15841-2	B3-2	ND(10)	ND(10)	ND(10)	*	3,700

\*CONTAINS UNIDENTIFIABLE OIL NOT QUANTIFIABLE BY GC.  
 \*\*QUANTITATION BASED ON LARGEST PEAKS WITHIN THE C12-C20 BOILING RANG

NOTE: TPH ANALYSES WERE PERFORMED AND REPORTED IN AUGUST, 1988.

ND = Not Detected; Limit of detection indicated in parentheses.

  
 \_\_\_\_\_  
 LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 15804  
 CLIENT: AQUA RESOURCES  
 JOB ID: LIVERMORE SUPERBLOCK

DATE ANALYZED: 10/07/88  
 DATE REPORTED: 10/12/88  
 PAGE 1A OF 2

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A  
 TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	O&G (mg/Kg)
15804-1	B9	ND(10)	ND(10)	ND(10)	5,300
15804-2	B10	ND(10)	ND(10)	ND(10)	17,900
15804-3	B11	ND(10)	ND(10)	ND(10)	2,000
15804-4	B12	ND(10)	ND(10)	ND(10)	5,500
15804-5	B13	ND(10)	ND(10)	ND(10)	5,600

NOTE: TPH ANALYSES WERE PERFORMED AND REPORTED AUGUST, 1988.

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

	TPH
Duplicate: Relative % Difference	19
Spike: % Recovery	93

*Steven P. Binner*  
 LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 15804  
CLIENT: AQUA RESOURCES  
JOB ID: LIVERMORE SUPERBLOCK

DATE EXTRACTED: 10/10/88  
DATE ANALYZED: 10/12/88  
DATE REPORTED: 10/12/88  
PAGE 2A OF 2

=====

EXTRACTABLE LEAD IN SOILS

=====

Method References:

Extractable Lead: Waste Extraction Test, CAC Title 22, Section 66700  
Lead Analysis: EPA 7420

LAB ID	SAMPLE ID	EXTRACTABLE LEAD (mg/L)
15804-7	A6	50
15804-8	LEAD #1	21

QA/QC SUMMARY:

-----

	EXTRACTABLE LEAD
RPD %	<1
SPIKE RECOVERY %	101

-----



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 15950  
CLIENT: AQUA RESOURCES, INC.  
PROJECT NAME: LIVERMORE SUPERBLOCK

DATE RECEIVED: 10-14-88  
DATE ANALYZED: 10-15,17-88  
DATE REPORTED: 10-20-88  
PAGE 1 OF 2

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503 A  
TPH: Total Petroleum Hydrocarbons, EPA 3510/8015

LAB ID	CLIENT ID	GASOLINE (mg/L)	KEROSINE (mg/L)	DIESEL (mg/L)	OTHER (mg/L)	O&G (mg/L)
15950-1	1-1,2	ND(10)	ND(10)	ND(10)	0.08 *	165

\* Fingerprint pattern does not match Hydrocarbon Standard. Quantitation based on largest peaks within C12-C22 boiling range.

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	TPH
Spike: % Recovery	16 105

AQUA RESOURCES, INC.  
RECEIVED

OCT 20 1988

JOB NO.

LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 15950  
CLIENT: AQUA RESOURCES  
PROJECT NAME: LIVERMORE SUPERBLOCK

DATE RECEIVED: 10-14-88  
DATE ANALYZED: 10-17,19-88  
DATE REPORTED: 10-21-88  
PAGE 2 OF 2

=====

C&T ID	SAMPLE ID	OIL & GREASE SMWW 503A
15950-2	2-1	>50%



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 15995  
 CLIENT: AQUA RESOURCES  
 JOB ID: LIVERMORE SUPERBLOCK  
 SAMPLE ID: 2-1

DATE RECEIVED: 10/20/88  
 DATE ANALYZED: 10/20/88  
 DATE REPORTED: 10/27/88  
 PAGE 1 OF 3

Metals in Soils & Wastes  
 Digestion Method: EPA 3050

METAL	RESULT	DETECTION LIMIT	METHOD
	mg/kg	mg/kg	
Arsenic	ND	1.0	EPA 6010
Cadmium	ND	0.3	EPA 6010
Chromium (total)	1.7	0.3	EPA 6010
Lead	36	1.0	EPA 6010
Nickel	52	0.3	EPA 6010
Vanadium	32	1.0	EPA 6010

ND = None Detected

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OCT 31 1988

JOB NO. \_\_\_\_\_

QA/QC SUMMARY

	%RPD	%SPIKE
Arsenic	<1	102
Cadmium	<1	98
Chromium (total)	6	92
Lead	3	89
Nickel	4	99
Vanadium	4	94

  
 LABORATORY DIRECTOR



LABORATORY NUMBER: 15995  
CLIENT: AQUA RESOURCES  
JOB ID: 15995-2  
SAMPLE ID: A-1

DATE RECEIVED: 10/20/88  
DATE ANALYZED: 10/21-25  
DATE REPORTED: 10/27/88  
PAGE 2 OF 3

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TOTAL ORGANIC HALOGENS (TOX) ND(25)  
EPA 9020

pH, SU 7.6  
SMWW 423

FLASH POINT, Degrees F NO FLASH\*  
ASTM D93

\*SAMPLE FOAMS AND BOILS OVER AT 160 DEGREES F.

ND = NONE DETECTED. LIMIT OF DETECTION IS INDICATED IN PARENTHESES.

LABORATORY NUMBER: 15995  
CLIENT: AQUA RESOURCES  
JOB ID: LIVERMORE SUPERBLOCK

DATE RECEIVED: 10/20/88  
DATE ANALYZED: 10/26/88  
DATE REPORTED: 10/27/88  
PAGE 3 OF 3

Polychlorinated Biphenyls (PCBs) by EPA Method 8080

LAB ID	CLIENT ID	PCBs (mg/kg)
15995-1	2-1	ND(5)

ND = Not Detected; Limit of Detection indicated in parentheses.



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LABORATORY NUMBER: 16096  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5

DATE RECEIVED: 11/01/88  
 DATE ANALYZED: 11/02/88  
 DATE REPORTED: 11/02/88  
 PAGE 1 OF 5

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16096-1	B5-1	ND(10)	ND(10)	ND(10)	TRACE*
16096-2	B5-2	ND(10)	ND(10)	ND(10)	ND(10)
16096-3	B5-3	ND(10)	ND(10)	ND(10)	ND(10)
16096-4	B5-4	ND(10)	ND(10)	ND(10)	ND(10)
16096-5**	B5-5	ND(10)	ND(10)	ND(10)	29*
16096-6**	B5-6	ND(10)	ND(10)	ND(10)	ND(10)

ND = Not Detected; Limit of detection in parentheses.

\*QUANTITATION BASED ON LARGEST PEAKS WITHIN C12-C24 BOILING RANGE.

\*\*SAMPLES B5-5 & B5-6 CONTAIN UNIDENTIFIABLE OIL NOT QUANTIFIABLE BY GC.

QA/QC:

RPD, % 10  
 RECOVERY, % 114

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NOV 07 1988

*Jim Wong for CBG*  
 LABORATORY DIRECTOR

JOB NO. \_\_\_\_\_

Berkeley

Wilmington

Los Angeles

LABORATORY NUMBER: 16096  
CLIENT: AQUA RESOURCES  
JOB ID: 87157.5

DATE RECEIVED: 11/01/88  
DATE ANALYZED: 11/02/88  
DATE REPORTED: 11/02/88  
PAGE 2 OF 5

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C&T ID	SAMPLE ID	OIL & GREASE, mg/Kg SMWW 503A
16096-1	B5-1	33
16096-2	B5-2	53
16096-3	B5-3	ND(50)



LABORATORY NUMBER: 16096-1  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
SAMPLE ID: B5-1

DATE RECEIVED: 11/01/88  
DATE EXTRACTED: 11/01/88  
DATE ANALYZED: 11/02/88  
DATE REPORTED: 11/02/88  
PAGE 3 OF 5

## EPA METHOD 8240: VOLATILE ORGANICS IN SOILS &amp; WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	50
bromomethane	ND	50
vinyl chloride	ND	50
chloroethane	ND	50
methylene chloride	ND	25
trichlorofluoromethane	ND	25
1,1-dichloroethene	ND	25
1,1-dichloroethane	ND	25
trans-1,2-dichloroethene	ND	25
chloroform	ND	25
1,2-dichloroethane	ND	25
1,1,1-trichloroethane	ND	25
carbon tetrachloride	ND	25
bromochloromethane	ND	25
1,2-dichloropropane	ND	25
cis-1,3-dichloropropene	ND	25
trichloroethylene	ND	25
dibromochloromethane	ND	25
1,1,2-trichloroethane	ND	25
benzene	ND	25
trans-1,3-dichloropropene	ND	25
2-chloroethylvinyl ether	ND	50
bromoform	ND	25
1,1,2,2-tetrachloroethane	ND	25
tetrachloroethene	ND	25
toluene	ND	25
chlorobenzene	ND	25
ethyl benzene	ND	25

## Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	50
carbon disulfide	ND	25
2-butanone	ND	50
vinyl acetate	ND	50
2-hexanone	ND	50
4-methyl-2-pentanone	ND	50
styrene	ND	25
total xylenes	ND	25



LABORATORY NUMBER: 16096-2  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
SAMPLE ID: B5-2

DATE RECEIVED: 11/01/88  
DATE EXTRACTED: 11/01/88  
DATE ANALYZED: 11/02/88  
DATE REPORTED: 11/02/88  
PAGE 4 OF 5

## EPA METHOD 8240: VOLATILE ORGANICS IN SOILS &amp; WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	50
bromomethane	ND	50
vinyl chloride	ND	50
chloroethane	ND	50
methylene chloride	ND	25
trichlorofluoromethane	ND	25
1,1-dichloroethene	ND	25
1,1-dichloroethane	ND	25
trans-1,2-dichloroethene	ND	25
chloroform	ND	25
1,2-dichloroethane	ND	25
1,1,1-trichloroethane	ND	25
carbon tetrachloride	ND	25
bromochloromethane	ND	25
1,2-dichloropropane	ND	25
cis-1,3-dichloropropene	ND	25
trichloroethylene	ND	25
dibromochloromethane	ND	25
1,1,2-trichloroethane	ND	25
benzene	ND	25
trans-1,3-dichloropropene	ND	25
2-chloroethylvinyl ether	ND	50
bromoform	ND	25
1,1,2,2-tetrachloroethane	ND	25
tetrachloroethene	ND	25
toluene	ND	25
chlorobenzene	ND	25
ethyl benzene	ND	25

## Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	50
carbon disulfide	ND	25
2-butanone	ND	50
vinyl acetate	ND	50
2-hexanone	ND	50
4-methyl-2-pentanone	ND	50
styrene	ND	25
total xylenes	ND	25



LABORATORY NUMBER: 16096-3  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
SAMPLE ID: B5-3

DATE RECEIVED: 11/01/88  
DATE EXTRACTED: 11/01/88  
DATE ANALYZED: 11/02/88  
DATE REPORTED: 11/02/88  
PAGE 5 OF 5

## EPA METHOD 8240: VOLATILE ORGANICS IN SOILS &amp; WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	50
bromomethane	ND	50
vinyl chloride	ND	50
chloroethane	ND	50
methylene chloride	ND	25
trichlorofluoromethane	ND	25
1,1-dichloroethene	ND	25
1,1-dichloroethane	ND	25
trans-1,2-dichloroethene	ND	25
chloroform	ND	25
1,2-dichloroethane	ND	25
1,1,1-trichloroethane	ND	25
carbon tetrachloride	ND	25
bromochloromethane	ND	25
1,2-dichloropropane	ND	25
cis-1,3-dichloropropene	ND	25
trichloroethylene	ND	25
dibromochloromethane	ND	25
1,1,2-trichloroethane	ND	25
benzene	ND	25
trans-1,3-dichloropropene	ND	25
2-chloroethylvinyl ether	ND	50
bromoform	ND	25
1,1,2,2-tetrachloroethane	ND	25
tetrachloroethene	ND	25
toluene	ND	25
chlorobenzene	ND	25
ethyl benzene	ND	25

## Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	50
carbon disulfide	ND	25
2-butanone	ND	50
vinyl acetate	ND	50
2-hexanone	ND	50
4-methyl-2-pentanone	ND	50
styrene	ND	25
total xylenes	ND	25



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LABORATORY NUMBER: 16104  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5

DATE RECEIVED: 11/01/88  
 DATE ANALYZED: 11/02/88  
 DATE REPORTED: 11/03/88  
 PAGE 1 OF 2

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16104-1	B5-7	ND(10)	ND(10)	ND(10)	ND(10)
16104-4	B5-10	ND(10)	ND(10)	ND(10)	ND(10)
16104-5	B5-11	ND(10)	ND(10)	ND(10)	ND(10)
16104-6	B5-12	ND(10)	ND(10)	ND(10)	TRACE*
16104-7	B5-13	ND(10)	ND(10)	ND(10)	ND(10)
16104-10	B5-14	ND(10)	ND(10)	ND(10)	ND(10)
16104-11	B5-15	ND(10)	ND(10)	ND(10)	ND(10)
16104-12-16	STOCKPILE #1-#5	ND(10)	ND(10)	ND(10)	27*

ND = NONE DETECTED. LIMIT OF DETECTION IS INDICATED IN PARENTHESES.

\*QUANTITATION BASED ON LARGEST PEAKS WITHIN C12-C24 BOILING RANGE.

NOTE: SAMPLES B5-12, B5-13, AND STOCKPILE #1-#5 COMPOSITE CONTAIN OIL & GREASE NOT QUANTIFIABLE BY GC.

*Stephen L. Green*  
 LABORATORY DIRECTOR

Berkeley

Wilmington

Los Angeles





Curtis & Tompkins, Ltd., Analytical Laboratory

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-

LABORATORY NUMBER: 16104  
CLIENT: AQUA RESOURCES  
JOB ID: 87157.5

DATE R 88  
DATE A 38  
DATE R1 18  
PAGE 2

C&T ID	SAMPLE ID	LEAD, mg/Kg EPA 6010
16104-8	A5-1	7.8
16104-9	A5-2	7.8

QA/QC:

RPD, %	12
RECOVERY, %	92



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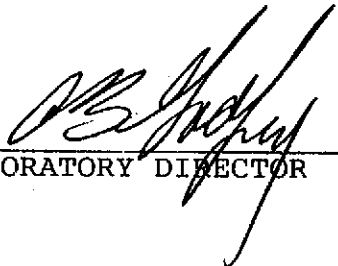
LAB NUMBER: 16125-COMPOSITE  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
CLIENT ID: STOCKPILE (#1-#5)

DATE RECEIVED: 11-04-88  
DATE ANALYZED: 11-07-88  
DATE REPORTED: 11-07-88

Method Reference: O&G: Oil and Grease, SMWW 503 A

LAB ID	CLIENT ID	O&G (mg/Kg)
16125-12-16	STOCKPILE #1-#5	4,700

ND = Not Detected; Limit of detection indicated in parentheses.

  
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2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16124  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 LOCATION: MILLS SPRING PARK APT

DATE RECEIVED: 11/04/88  
 DATE ANALYZED: 11/04/88  
 DATE REPORTED: 11/07/88

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16124-1	STPL B A-2	ND(10)	ND(10)	ND(10)	280*
16124-2	STPL B B-2	ND(10)	ND(10)	ND(10)	220*
16124-3	STPL B C-3	ND(10)	ND(10)	ND(10)	270*
16124-4	STPL B B-5	ND(10)	ND(10)	ND(10)	260*

ND = Not Detected; Limit of detection in parentheses.

\* Fingerprint pattern does not match hydrocarbon standards; Quantitation based on largest peaks within C12-C24 boiling range.

NOTE: ALL SAMPLES CONTAIN OIL & GREASE NOT QUANTIFIABLE BY GC.

QA/QC SUMMARY:

Duplicate, Relative % Difference 4  
 Average Spike Recovery % 85

*Steven P. Brimmer*  
 LABORATORY DIRECTOR



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LABORATORY NUMBER: 16144  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5

DATE RECEIVED: 11/07/88  
 DATE ANALYZED: 11/08/88  
 DATE REPORTED: 11/09/88

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16144-1	STPL B A-1	ND(10)	ND(10)	ND(10)	110*,12**
16144-2	STPL B A-3	ND(10)	ND(10)	ND(10)	260*
16144-3	STPL B A-4	ND(10)	ND(10)	ND(10)	240*
16144-4	STPL B A-5	ND(10)	ND(10)	ND(10)	210*
16144-5	STPL B A-6	ND(10)	ND(10)	ND(10)	190*
16144-6	STPL B B-1	ND(10)	ND(10)	ND(10)	180*
16144-7	STPL B B-3	ND(10)	ND(10)	ND(10)	140*
16144-8	STPL B B-4	ND(10)	ND(10)	ND(10)	120*
16144-9	STPL B C-1	ND(10)	ND(10)	ND(10)	140*
16144-10	STPL B C-2	ND(10)	ND(10)	ND(10)	130*
16144-11	STPL B C-4	ND(10)	ND(10)	ND(10)	63*

ND = NONE DETECTED. LIMIT OF DETECTION IS INDICATED IN PARENTHESES,

\*QUANTITATION BASED ON LARGEST PEAKS WITHIN C12-C22 BOILING RANGE.

\*\*QUANTITATION BASED ON A 100 PPM C24-C30 STANDARD.

NOTE: ALL SAMPLES CONTAIN OIL & GREASE NOT QUANTIFIABLE BY GC.

*Steven P. Brimmer*  
 LABORATORY DIRECTOR



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2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16175  
CLIENT: AQUA RESOURCES, INC.  
JOB #: 87157-005/SUPERBLOCK

DATE RECEIVED: 11-10-88  
DATE ANALYZED: 11-11-88  
DATE REPORTED: 11-11-88

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A  
TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)	O&G (mg/Kg)
16175-1	CORE #1	ND(10)	ND(10)	ND(10)	ND(10)	ND(50)
16175-2	CORE #5	ND(10)	ND(10)	650	ND(10)	12,000

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	TPH 3
Spike: % Recovery	103

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2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16187  
 CLIENT: AQUA RESOURCES  
 JOB #:87157.5

DATE RECEIVED: 11/11/88  
 DATE ANALYZED: 11/14/88  
 DATE REPORTED: 11/14/88  
 PAGE 1 OF 3

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A  
 TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)	O&G (mg/Kg)
16187-1	CVS #1	ND(10)	ND(10)	ND(10)	160*	16,800
16187-2	CVS #2	ND(10)	ND(10)	ND(10)	180*	1,800
16187-3	CVS #3	ND(10)	ND(10)	ND(10)	ND(10)	N/R **
16187-4	CVS #4	ND(10)	ND(10)	ND(10)	ND(10)	N/R
16187-5	CVS #5	ND(10)	ND(10)	ND(10)	840*	N/R **

\*QUANTITATION BASED ON LARGEST PEAKS WITHIN THE C12-C24 BOILING RANGE.

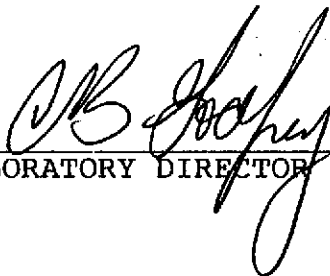
\*\*CONTAINS OIL & GREASE NOT QUANTIFIABLE BY GC.

N/R = Not Requested.

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	TPH 23
Spike: % Recovery	109

  
 LABORATORY DIRECTOR



LABORATORY NUMBER: 16187-1  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
SAMPLE ID: CVS #1

DATE RECEIVED: 11/11/88  
DATE EXTRACTED: 11/11/88  
DATE ANALYZED: 11/11/88  
DATE REPORTED: 11/14/88  
PAGE 2 OF 3

## EPA METHOD 8240: VOLATILE ORGANICS IN SOILS &amp; WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	50
bromomethane	ND	50
vinyl chloride	ND	50
chloroethane	ND	50
methylene chloride	ND	25
trichlorofluoromethane	ND	25
1,1-dichloroethene	ND	25
1,1-dichloroethane	ND	25
trans-1,2-dichloroethene	ND	25
chloroform	ND	25
1,2-dichloroethane	ND	25
1,1,1-trichloroethane	ND	25
carbon tetrachloride	ND	25
bromochloromethane	ND	25
1,2-dichloropropane	ND	25
cis-1,3-dichloropropene	ND	25
trichloroethylene	ND	25
dibromochloromethane	ND	25
1,1,2-trichloroethane	ND	25
benzene	ND	25
trans-1,3-dichloropropene	ND	25
2-chloroethylvinyl ether	ND	50
bromoform	ND	25
1,1,2,2-tetrachloroethane	ND	25
tetrachloroethene	ND	25
toluene	ND	25
chlorobenzene	ND	25
ethyl benzene	ND	25

## Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	50
carbon disulfide	ND	25
2-butanone	ND	50
vinyl acetate	ND	50
2-hexanone	ND	50
4-methyl-2-pentanone	ND	50
styrene	ND	25
total xylenes	ND	25

## QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	95%
Toluene-d8	109%
Bromofluorobenzene	102%



LABORATORY NUMBER: 16187-2  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
SAMPLE ID: CVS #2

DATE RECEIVED: 11/11/88  
DATE EXTRACTED: 11/11/88  
DATE ANALYZED: 11/11/88  
DATE REPORTED: 11/14/88  
PAGE 3 OF 3

## EPA METHOD 8240: VOLATILE ORGANICS IN SOILS &amp; WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	50
bromomethane	ND	50
vinyl chloride	ND	50
chloroethane	ND	50
methylene chloride	ND	25
trichlorofluoromethane	ND	25
1,1-dichloroethene	ND	25
1,1-dichloroethane	ND	25
trans-1,2-dichloroethene	ND	25
chloroform	ND	25
1,2-dichloroethane	ND	25
1,1,1-trichloroethane	ND	25
carbon tetrachloride	ND	25
bromochloromethane	ND	25
1,2-dichloropropane	ND	25
cis-1,3-dichloropropene	ND	25
trichloroethylene	ND	25
dibromochloromethane	ND	25
1,1,2-trichloroethane	ND	25
benzene	ND	25
trans-1,3-dichloropropene	ND	25
2-chloroethylvinyl ether	ND	50
bromoform	ND	25
1,1,2,2-tetrachloroethane	ND	25
tetrachloroethene	ND	25
toluene	ND	25
chlorobenzene	ND	25
ethyl benzene	ND	25

## Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	50
carbon disulfide	ND	25
2-butanone	ND	50
vinyl acetate	ND	50
2-hexanone	ND	50
4-methyl-2-pentanone	ND	50
styrene	ND	25
total xylenes	ND	25

## QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102%
Toluene-d8	101%
Bromofluorobenzene	97%





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LAB NUMBER: 16208  
CLIENT: AQUA RESOURCES  
PROJECT #: 87157.5

DATE RECEIVED: 11-14-88  
DATE ANALYZED: 11-15-88  
DATE REPORTED: 11-15-88

Method Reference: O&G: Oil and Grease, SMWW 503 A

LAB ID	CLIENT ID	O&G (mg/Kg)
16208-1	STOCKPILE B (C-4)	6,200

AQUA RESOURCES, INC.  
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JOB

  
LABORATORY DIRECTOR



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LABORATORY NUMBER: 16221  
CLIENT: AQUA RESOURCES  
JOB ID: 87157.5

DATE RECEIVED: 11/15/88  
DATE ANALYZED: 11/16/88  
DATE REPORTED: 11/16/88

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C&T ID	SAMPLE ID	OIL & GREASE, mg/Kg SMWW 503A
16221-1	CVS 6	8,400
16221-2	CVS 7	4,100
16221-3	CVS 8	7,500
16221-4	CVS 9	8,000
16221-5	CVS 10	7,800
16221-6	CVS 11	17,000
16221-7	CVS 12	1,900
16221-8	CVS 13	700
16221-9	CVS 14	12,700
16221-10	CVS 15	13,400
16221-11	CVS 16	ND(50)
16221-12	CVS 17	350

ND = NONE DETECTED. LIMIT OF DETECTION IS INDICATED IN PARENTHESES.

  
LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16232  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5

DATE RECEIVED: 11/16/88  
 DATE ANALYZED: 11/17/88  
 DATE REPORTED: 11/18/88

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A  
 TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)	O&G (mg/Kg)
16232-1	CVS #18	ND(10)	ND(10)	ND(10)	970*	4,200
16232-2	CVS #19	ND(10)	ND(10)	ND(10)	ND(10)	60
16232-3	CVS #20	ND(10)	ND(10)	ND(10)	ND(10)	ND(50)

\* Fingerprint pattern does not match Hydrocarbon Standards. Quantitation based on largest peaks within C12-C24 boiling range.

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	TPH
Spike: % Recovery	14
	104

*Stephen L. Johnson for C&T*  
 LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16243  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5

DATE RECEIVED: 11/17/88  
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 DATE REPORTED: 11/21/88  
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Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A

TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)	O&G (mg/Kg)
16243/1-5	COMPOSITE 1: STOCKPILE C 1-5	ND(10)	ND(10)	ND(10)	64	7,600
16243/6-10	COMPOSITE 2: STOCKPILE C 6-10	ND(10)	ND(10)	ND(10)	95	9,000
16243/11-15	COMPOSITE 3: STOCKPILE C 11-15	ND(10)	ND(10)	ND(10)	39	8,300
16243/16-20	COMPOSITE 4: STOCKPILE C 16-20	ND(10)	ND(10)	ND(10)	33	8,700
16243-21	CVS 21	ND(10)	ND(10)	ND(10)	ND(10)	250
16243-22	CVS 22	ND(10)	ND(10)	ND(10)	ND(10)	ND(50)
16243-23	CVS 23	ND(10)	ND(10)	ND(10)	ND(10)	1,000
16243-24	CVS 24	ND(10)	ND(10)	ND(10)	ND(10)	ND(50)

\* Fingerprint pattern does not match Hydrocarbon Standard. Quantitation based on largest peaks within C12-C24 boiling range.

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

	TPH
Duplicate: Relative % Difference	15
Spike: % Recovery	92

LABORATORY DIRECTOR

Berkeley

Wilmington

Los Angeles

LABORATORY NUMBER: 16243/1-5  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 COMPOSITE ID: STOCKPILE C 1-5

 DATE RECEIVED: 11/17/88  
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 Title 22 Metals in Soils & Wastes  
 Extraction by CAC Section 66700 Waste Extraction Test

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.1	EPA 6010
Arsenic	ND	0.5	EPA 6010
Barium	4.2	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	0.17	0.01	EPA 6010
Cobalt	0.49	0.01	EPA 6010
Copper	0.55	0.01	EPA 6010
Lead	1.1	0.05	EPA 6010
Mercury	ND	0.01	EPA 7470
Molybdenum	ND	0.01	EPA 6010
Nickel	0.99	0.01	EPA 6010
Selenium	ND	0.1	EPA 6010
Silver	ND	0.02	EPA 6010
Thallium	ND	0.05	EPA 6010
Vanadium	0.28	0.02	EPA 6010
Zinc	1.8	0.01	EPA 6010

ND = None Detected

## QA/QC SUMMARY

	%RPD	%RECOVERY		%RPD	%RECOVERY
Antimony	<1	101	Mercury	21	94
Arsenic	<1	101	Molybdenum	2	102
Barium	<1	102	Nickel	<1	102
Beryllium	<1	105	Selenium	3	94
Cadmium	1	98	Silver	<1	100
Chromium	<1	104	Thallium	1	102
Cobalt	<1	104	Vanadium	1	99
Copper	<1	99	Zinc	<1	101
Lead	1	100			



LABORATORY NUMBER: 16243/6-10  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 COMPOSITE ID: STOCKPILE C 6-10

DATE RECEIVED: 11/17/88  
 DATE ANALYZED: 11/22/88  
 DATE REPORTED: 11/23/88  
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Title 22 Metals in Soils & Wastes  
 Extraction by CAC Section 66700 Waste Extraction Test

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.1	EPA 6010
Arsenic	ND	0.5	EPA 6010
Barium	4.3	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	0.02	0.01	EPA 6010
Chromium (total)	0.17	0.01	EPA 6010
Cobalt	0.51	0.01	EPA 6010
Copper	0.54	0.01	EPA 6010
Lead	1.0	0.05	EPA 6010
Mercury	ND	0.01	EPA 7470
Molybdenum	ND	0.01	EPA 6010
Nickel	1.0	0.01	EPA 6010
Selenium	ND	0.1	EPA 6010
Silver	ND	0.02	EPA 6010
Thallium	ND	0.05	EPA 6010
Vanadium	0.28	0.02	EPA 6010
Zinc	2.1	0.01	EPA 6010

ND = None Detected

QA/QC SUMMARY

	%RPD	%RECOVERY		%RPD	%RECOVERY
Antimony	<1	101	Mercury	21	94
Arsenic	<1	101	Molybdenum	2	102
Barium	<1	102	Nickel	<1	102
Beryllium	<1	105	Selenium	3	94
Cadmium	1	98	Silver	<1	100
Chromium	<1	104	Thallium	1	102
Cobalt	<1	104	Vanadium	1	99
Copper	<1	99	Zinc	<1	101
Lead	1	100			

LABORATORY NUMBER: 16243/11-15  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 COMPOSITE ID: STOCKPILE C 11-15

DATE RECEIVED: 11/17/88  
 DATE ANALYZED: 11/22/88  
 DATE REPORTED: 11/23/88  
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Title 22 Metals in Soils & Wastes  
 Extraction by CAC Section 66700 Waste Extraction Test

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.1	EPA 6010
Arsenic	ND	0.5	EPA 6010
Barium	4.1	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	0.36	0.01	EPA 6010
Cobalt	0.49	0.01	EPA 6010
Copper	0.66	0.01	EPA 6010
Lead	0.99	0.05	EPA 6010
Mercury	ND	0.01	EPA 7470
Molybdenum	ND	0.01	EPA 6010
Nickel	1.2	0.01	EPA 6010
Selenium	ND	0.1	EPA 6010
Silver	ND	0.02	EPA 6010
Thallium	ND	0.05	EPA 6010
Vanadium	0.29	0.02	EPA 6010
Zinc	2.5	0.01	EPA 6010

ND = None Detected

QA/QC SUMMARY

	%RPD	%RECOVERY		%RPD	%RECOVERY
Antimony	<1	101	Mercury	21	94
Arsenic	<1	101	Molybdenum	2	102
Barium	<1	102	Nickel	<1	102
Beryllium	<1	105	Selenium	3	94
Cadmium	1	98	Silver	<1	100
Chromium	<1	104	Thallium	1	102
Cobalt	<1	104	Vanadium	1	99
Copper	<1	99	Zinc	<1	101
Lead	1	100			



LABORATORY NUMBER: 16243/16-20  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
COMPOSITE ID: STOCKPILE C 16-20

DATE RECEIVED: 11/17/88  
DATE ANALYZED: 11/22/88  
DATE REPORTED: 11/23/88  
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Title 22 Metals in Soils & Wastes  
Extraction by CAC Section 66700 Waste Extraction Test

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	0.16	0.1	EPA 6010
Arsenic	ND	0.5	EPA 6010
Barium	3.8	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	0.19	0.01	EPA 6010
Cobalt	0.50	0.01	EPA 6010
Copper	0.58	0.01	EPA 6010
Lead	1.7	0.05	EPA 6010
Mercury	ND	0.01	EPA 7470
Molybdenum	ND	0.01	EPA 6010
Nickel	1.0	0.01	EPA 6010
Selenium	ND	0.1	EPA 6010
Silver	ND	0.02	EPA 6010
Thallium	ND	0.05	EPA 6010
Vanadium	0.28	0.02	EPA 6010
Zinc	2.3	0.01	EPA 6010

ND = None Detected

QA/QC SUMMARY

	%RPD	%RECOVERY		%RPD	%RECOVERY
Antimony	<1	101	Mercury	21	94
Arsenic	<1	101	Molybdenum	2	102
Barium	<1	102	Nickel	<1	102
Beryllium	<1	105	Selenium	3	94
Cadmium	1	98	Silver	<1	100
Chromium	<1	104	Thallium	1	102
Cobalt	<1	104	Vanadium	1	99
Copper	<1	99	Zinc	<1	101
Lead	1	100			



LABORATORY NUMBER: 16243/1-5  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 COMPOSITE ID: STOCKPILE C, 1-5

DATE RECEIVED: 11/17/88  
 DATE EXTRACTED: 11/18/88  
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EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes  
 Extraction Method: EPA 3580 - Waste Dilution

ACID COMPOUNDS	RESULT mg/kg	LOD mg/kg
Phenol	ND	25
2-Chlorophenol	ND	25
2-Nitrophenol	ND	125
2,4-Dimethylphenol	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	50
2,4,6-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	125
4-Nitrophenol	ND	125
2-Methyl-4,6-dinitrophenol	ND	125
Pentachlorophenol	ND	125
BASE/NEUTRAL COMPOUNDS		
Bis(2-chloroethyl)ether	ND	25
1,3-Dichlorobenzene	ND	25
1,4-Dichlorobenzene	ND	25
1,2-Dichlorobenzene	ND	25
Bis(2-chloroisopropyl)ether	ND	25
N-nitrosodi-n-propylamine	ND	25
Hexachloroethane	ND	25
Nitrobenzene	ND	25
Isophorone	ND	25
Bis(2-chloroethoxy)methane	ND	25
1,2,4-Trichlorobenzene	ND	25
Naphthalene	ND	25
Hexachlorobutadiene	ND	25
Hexachlorocyclopentadiene	ND	25
2-Chloronaphthalene	ND	25
Dimethyl phthalate	ND	25
Acenaphthylene	ND	25
2,6-Dinitrotoluene	ND	25
Acenaphthene	ND	25
2,4-Dinitrotoluene	ND	25
Fluorene	ND	25
Diethyl phthalate	ND	25
4-Chlorophenylphenyl ether	ND	25
N-Nitrosodiphenylamine	ND	25
1,2-Diphenylhydrazine	ND	25



LABORATORY NUMBER: 16243/1-5  
COMPOSITE ID: STOCKPILE C, 1-5

EPA 8270  
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BASE/NEUTRAL COMPOUNDS	RESULT mg/kg	LOD mg/kg
4-Bromophenylphenyl ether	ND	25
Hexachlorobenzene	ND	25
Phenanthrene	ND	25
Anthracene	ND	25
Dibutylphthalate	ND	25
Fluoranthene	ND	25
Benzidine	ND	125
Pyrene	ND	25
Butylbenzylphthalate	ND	25
Benzo (a) anthracene	ND	25
3,3'-Dichlorobenzidine	ND	125
Chrysene	ND	25
Bis (2-ethylhexyl)phthalate	ND	25
Di-n-octyl phthalate	ND	25
Benzo (b) fluoranthene	ND	25
Benzo (k) fluoranthene	ND	25
Benzo (a) pyrene	ND	25
Indeno (1,2,3-cd) pyrene	ND	125
Dibenzo (a,h) anthracene	ND	125
Benzo (ghi) perylene	ND	125
HSL COMPOUNDS		
Benzoic Acid	ND	250
2-Methylphenol	ND	25
4-Methylphenol	ND	25
2,4,5-Trichlorophenol	ND	25
Aniline	ND	25
Benzyl Alcohol	ND	125
4-Chloroaniline	ND	50
2-Methylnaphthalene	ND	25
2-Nitroaniline	ND	125
3-Nitroaniline	ND	125
Dibenzofuran	ND	25
4-Nitroaniline	ND	125

ND = None Detected, Limit of Detection (LOD) appears in right column



LABORATORY NUMBER: 16243/6-10  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
COMPOSITE ID: STOCKPILE C, 6-10

DATE RECEIVED: 11/17/88  
DATE EXTRACTED: 11/18/88  
DATE ANALYZED: 11/19/88  
DATE REPORTED: 11/21/88  
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EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes  
Extraction Method: EPA 3580 Waste Dilution

ACID COMPOUNDS	RESULT mg/kg	LOD mg/kg
Phenol	ND	25
2-Chlorophenol	ND	25
2-Nitrophenol	ND	125
2,4-Dimethylphenol	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	50
2,4,6-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	125
4-Nitrophenol	ND	125
2-Methyl-4,6-dinitrophenol	ND	125
Pentachlorophenol	ND	125
BASE/NEUTRAL COMPOUNDS		
Bis(2-chloroethyl)ether	ND	25
1,3-Dichlorobenzene	ND	25
1,4-Dichlorobenzene	ND	25
1,2-Dichlorobenzene	ND	25
Bis(2-chloroisopropyl)ether	ND	25
N-nitrosodi-n-propylamine	ND	25
Hexachloroethane	ND	25
Nitrobenzene	ND	25
Isophorone	ND	25
Bis(2-chloroethoxy)methane	ND	25
1,2,4-Trichlorobenzene	ND	25
Naphthalene	ND	25
Hexachlorobutadiene	ND	25
Hexachlorocyclopentadiene	ND	25
2-Chloronaphthalene	ND	25
Dimethyl phthalate	ND	25
Acenaphthylene	ND	25
2,6-Dinitrotoluene	ND	25
Acenaphthene	ND	25
2,4-Dinitrotoluene	ND	25
Fluorene	ND	25
Diethyl phthalate	ND	25
4-Chlorophenylphenyl ether	ND	25
N-Nitrosodiphenylamine	ND	25
1,2-Diphenylhydrazine	ND	25



LABORATORY NUMBER: 16243/6-10  
COMPOSITE ID: STOCKPILE C, 6-10

EPA 8270  
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## BASE/NEUTRAL COMPOUNDS

RESULT  
mg/kg

LOD  
mg/kg

4-Bromophenylphenyl ether	ND	25
Hexachlorobenzene	ND	25
Phenanthrene	ND	25
Anthracene	ND	25
Dibutylphthalate	ND	25
Fluoranthene	ND	25
Benzidine	ND	125
Pyrene	ND	25
Butylbenzylphthalate	ND	25
Benzo (a) anthracene	ND	25
3,3'-Dichlorobenzidine	ND	125
Chrysene	ND	25
Bis (2-ethylhexyl)phthalate	ND	25
Di-n-octyl phthalate	ND	25
Benzo (b) fluoranthene	ND	25
Benzo (k) fluoranthene	ND	25
Benzo (a) pyrene	ND	25
Indeno (1,2,3-cd) pyrene	ND	125
Dibenzo (a,h) anthracene	ND	125
Benzo (ghi) perylene	ND	125

## HSL COMPOUNDS

Benzoic Acid	ND	250
2-Methylphenol	ND	25
4-Methylphenol	ND	25
2,4,5-Trichlorophenol	ND	25
Aniline	ND	25
Benzyl Alcohol	ND	125
4-Chloroaniline	ND	50
2-Methylnaphthalene	ND	25
2-Nitroaniline	ND	125
3-Nitroaniline	NE	125
Dibenzofuran	ND	25
4-Nitroaniline	ND	125

ND = None Detected, Limit of Detection (LOD) appears in right column

LABORATORY NUMBER: 16243/11-15  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 COMPOSITE ID: STOCKPILE C, 11-15

DATE RECEIVED: 11/17/88  
 DATE EXTRACTED: 11/18/88  
 DATE ANALYZED: 11/19/88  
 DATE REPORTED: 11/21/88  
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EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes  
 Extraction Method: EPA 3580 - Waste Dilution

ACID COMPOUNDS	RESULT mg/kg	LOD mg/kg
Phenol	ND	25
2-Chlorophenol	ND	25
2-Nitrophenol	ND	125
2,4-Dimethylphenol	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	50
2,4,6-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	125
4-Nitrophenol	ND	125
2-Methyl-4,6-dinitrophenol	ND	125
Pentachlorophenol	ND	125
 BASE/NEUTRAL COMPOUNDS		
Bis(2-chloroethyl)ether	ND	25
1,3-Dichlorobenzene	ND	25
1,4-Dichlorobenzene	ND	25
1,2-Dichlorobenzene	ND	25
Bis(2-chloroisopropyl)ether	ND	25
N-nitrosodi-n-propylamine	ND	25
Hexachloroethane	ND	25
Nitrobenzene	ND	25
Isophorone	ND	25
Bis(2-chloroethoxy)methane	ND	25
1,2,4-Trichlorobenzene	ND	25
Naphthalene	ND	25
Hexachlorobutadiene	ND	25
Hexachlorocyclopentadiene	ND	25
2-Chloronaphthalene	ND	25
Dimethyl phthalate	ND	25
Acenaphthylene	ND	25
2,6-Dinitrotoluene	ND	25
Acenaphthene	ND	25
2,4-Dinitrotoluene	ND	25
Fluorene	ND	25
Diethyl phthalate	ND	25
4-Chlorophenylphenyl ether	ND	25
N-Nitrosodiphenylamine	ND	25
1,2-Diphenylhydrazine	ND	25



LABORATORY NUMBER: 16243/11-15  
COMPOSITE ID: STOCKPILE C, 11-15

EPA 8270  
PAGE 11 OF 13

## BASE/NEUTRAL COMPOUNDS

	RESULT mg/kg	LOD mg/kg
4-Bromophenylphenyl ether	ND	25
Hexachlorobenzene	ND	25
Phenanthrene	ND	25
Anthracene	ND	25
Dibutylphthalate	ND	25
Fluoranthene	ND	25
Benzidine	ND	125
Pyrene	ND	25
Butylbenzylphthalate	ND	25
Benzo (a) anthracene	ND	25
3,3'-Dichlorobenzidine	ND	125
Chrysene	ND	25
Bis (2-ethylhexyl)phthalate	ND	25
Di-n-octyl phthalate	ND	25
Benzo (b) fluoranthene	ND	25
Benzo (k) fluoranthene	ND	25
Benzo (a) pyrene	ND	25
Indeno (1,2,3-cd) pyrene	ND	125
Dibenzo (a,h) anthracene	ND	125
Benzo (ghi) perylene	ND	125

## HSL COMPOUNDS

Benzoic Acid	ND	250
2-Methylphenol	ND	25
4-Methylphenol	ND	25
2,4,5-Trichlorophenol	ND	25
Aniline	ND	25
Benzyl Alcohol	ND	125
4-Chloroaniline	ND	50
2-Methylnaphthalene	ND	25
2-Nitroaniline	ND	125
3-Nitroaniline	ND	125
Dibenzofuran	ND	25
4-Nitroaniline	ND	125

ND = None Detected, Limit of Detection (LOD) appears in right column



LABORATORY NUMBER: 16243/16-20  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5  
COMPOSITE ID: STOCKPILE C, 16-20

DATE RECEIVED: 11/17/88  
DATE EXTRACTED: 11/18/88  
DATE ANALYZED: 11/19/88  
DATE REPORTED: 11/21/88  
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EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes  
Extraction Method: EPA 3580 - Waste Dilution

ACID COMPOUNDS	RESULT mg/kg	LOD mg/kg
Phenol	ND	25
2-Chlorophenol	ND	25
2-Nitrophenol	ND	125
2,4-Dimethylphenol	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	50
2,4,6-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	125
4-Nitrophenol	ND	125
2-Methyl-4,6-dinitrophenol	ND	125
Pentachlorophenol	ND	125
BASE/NEUTRAL COMPOUNDS		
Bis(2-chloroethyl)ether	ND	25
1,3-Dichlorobenzene	ND	25
1,4-Dichlorobenzene	ND	25
1,2-Dichlorobenzene	ND	25
Bis(2-chloroisopropyl)ether	ND	25
N-nitrosodi-n-propylamine	ND	25
Hexachloroethane	ND	25
Nitrobenzene	ND	25
Isophorone	ND	25
Bis(2-chloroethoxy)methane	ND	25
1,2,4-Trichlorobenzene	ND	25
Naphthalene	ND	25
Hexachlorobutadiene	ND	25
Hexachlorocyclopentadiene	ND	25
2-Chloronaphthalene	ND	25
Dimethyl phthalate	ND	25
Acenaphthylene	ND	25
2,6-Dinitrotoluene	ND	25
Acenaphthene	ND	25
2,4-Dinitrotoluene	ND	25
Fluorene	ND	25
Diethyl phthalate	ND	25
4-Chlorophenylphenyl ether	ND	25
N-Nitrosodiphenylamine	ND	25
1,2-Diphenylhydrazine	ND	25



LABORATORY NUMBER: 16243/16-20  
COMPOSITE ID: STOCKPILE C, 16-20

EPA 8270  
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## BASE/NEUTRAL COMPOUNDS

	RESULT mg/kg	LOD mg/kg
4-Bromophenylphenyl ether	ND	25
Hexachlorobenzene	ND	25
Phenanthrene	ND	25
Anthracene	ND	25
Dibutylphthalate	ND	25
Fluoranthene	ND	25
Benzidine	ND	125
Pyrene	ND	25
Butylbenzylphthalate	ND	25
Benzo (a) anthracene	ND	25
3,3'-Dichlorobenzidine	ND	125
Chrysene	ND	25
Bis (2-ethylhexyl)phthalate	ND	25
Di-n-octyl phthalate	ND	25
Benzo (b) fluoranthene	ND	25
Benzo (k) fluoranthene	ND	25
Benzo (a) pyrene	ND	25
Indeno (1,2,3-cd) pyrene	ND	125
Dibenzo (a,h) anthracene	ND	125
Benzo (ghi) perylene	ND	125

## HSL COMPOUNDS

Benzoic Acid	ND	250
2-Methylphenol	ND	25
4-Methylphenol	ND	25
2,4,5-Trichlorophenol	ND	25
Aniline	ND	25
Benzyl Alcohol	ND	125
4-Chloroaniline	ND	50
2-Methylnaphthalene	ND	25
2-Nitroaniline	ND	125
3-Nitroaniline	ND	125
Dibenzofuran	ND	25
4-Nitroaniline	ND	125

ND = None Detected, Limit of Detection (LOD) appears in right column





BROWN AND CALDWELL LABORATORIES

TOXICITY BIOASSAY

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

Log No.: E88-11-584-1

Date Sampled: 11/17/88
Date Received: 11/22/88
Date Reported: 12/06/88

Report To: Aqua Resources Inc.
2030 Addison Street, Suite 500
Berkeley, California 94704

Page one of two

Attn: Dewey Burbank

Hedy J. Ficklin for
Laboratory Director

cc:

CALIFORNIA HAZARDOUS WASTE ASSESSMENT BIOASSAY: SCREEN

Sample Description: CVS -1
Organism: Pimephales promelas, fathead minnow
Source: Thomas Fish Company
Exposure Water: Fresh
Source: Emeryville Dechlorinating
Temperature Range: 15.0 °C
Aeration: Air X Oxygen None

Table with columns for Bioassay Conditions, Time (Hrs), Control (No., %), and Dilution (250mg/L, 750mg/L) with sub-columns for No. and %.

RESULTS: 96 hr TLm\* >750mg/L Toxicity Units Not Established
Percent survival in undiluted sample Not Applicable

Length of fish, cm: Max. 3.3 Min. 2.3 Mean 2.8
Weight of fish, g.: Max. 0.46 Min. 0.17 Mean 0.31

\*In cases where 96 hour mortality does not equal or exceed 50% in at least one dilution of the sample, no TLm value is established.

Analyst: M.L. Parris
vb



BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

TOXICITY BIOASSAY

Log No.: E88-11-584-2

Date Sampled: 11/17/88
Date Received: 11/22/88
Date Reported: 12/06/88

Aqua Resources

Report To:

Attn: Dewey Burbank

Page two of two

Nedy J. Ficklin for
Laboratory Director

cc:

CALIFORNIA HAZARDOUS WASTE ASSESSMENT BIOASSAY: SCREEN

STPL.C-8

Sample Description: Pinephales promelas, fathead minnow
Test Organism: Fresh
Source: Emeryville Dechlorinated Tap Water
Temperature Range: 15.0 °C
Aeration: Air X Oxygen None

Table with columns for Bioassay Conditions, Time Hrs, Control, 250mg/L, 750mg/L, and Dilution 750mg/L. Rows include Organisms Surviving, Dissolved Oxygen mg/L, and pH.

RESULTS: 06 hr TLm\* >750mg/L Toxicity Units Not Established
Percent survival in undiluted sample Not Applicable

Length of fish, cm: Max. 3.3 Min. 2.3 Mean 2.8
Weight of fish, g.: Max. 0.46 Min. 0.17 Mean 0.31

\*In cases where 96 hour mortality does not equal or exceed 50% in at least one dilution of the sample, no TLm value is established.

M.L. Parris
vb



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16611  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5

DATE RECEIVED: 01/18/89  
DATE ANALYZED: 01/18/89  
DATE REPORTED: 01/20/89

Results of Analysis for Petroleum Hydrocarbons/Oil & Grease

Method References: O&G: Oil and Grease, SMWW 503A  
TPH: Total Petroleum Hydrocarbons, EPA 3550/8015

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)	O&G (mg/Kg)
16611-1	TANK #1, 13.5 ft.	ND(10)	ND(10)	ND(10)	ND(10)	240

ND = Not Detected; Limit of detection indicated in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	TPH 2
Spike: % Recovery	110

*Stephen L. Jensen*  
LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16655  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 LOCATION: MILL SPRING PARK APT.

DATE RECEIVED: 01-23-89  
 DATE ANALYZED: 01-24-89  
 DATE REPORTED: 01-25-89

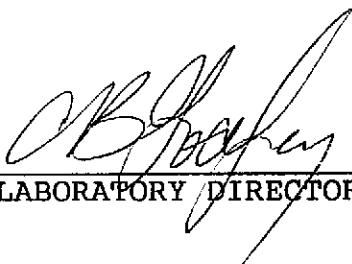
Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16655-1	CVS 2-1/DEPTH 4'	ND(10)	ND(10)	ND(10)	ND(10)
16655-2	CVS 2-2/DEPTH 5'	ND(10)	ND(10)	ND(10)	ND(10)
16655-3	CVS 2-3/DEPTH 7'	ND(10)	ND(10)	ND(10)	ND(10)

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	2
Spike: % Recovery	88

  
 LABORATORY DIRECTOR



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16603  
 CLIENT: AQUA RESOURCES, INC.  
 PROJECT #: 87157.5  
 PROJECT NAME: MILL SPRINGS PARK APT.

DATE RECEIVED: 01/17/89  
 DATE REPORTED: 01/25/89  
 PAGE 1 OF 5

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

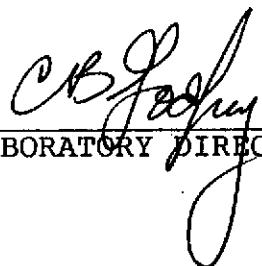
LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16603-1	TANK #1 SOIL STOCKPILE	ND(10)	ND(10)	ND(10)	681 *
16603-2	TANK #1 TANK BASE 3.5'	ND(10)	ND(10)	ND(10)	1,400 *

\* Fingerprint pattern does not match Hydrocarbon Standard. Quantitation based on largest peaks within C12-C24 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	2
Spike: % Recovery	110

  
 LABORATORY DIRECTOR

LABORATORY NUMBER: 16603  
 CLIENT: AQUA RESOURCES, INC.  
 PROJECT #: 87157.5  
 PROJECT NAME: MILL SPRINGS PARK APT.

DATE RECEIVED: 01/17/89  
 DATE REPORTED: 01/25/89  
 PAGE 2 OF 5

Total Oil & Grease in Soils & Wastes  
 SMWW 503A

LAB ID	CLIENT ID	OIL & GREASE (mg/Kg)
16603-1	TANK #1 SOIL STOCKPILE	28,000
16603-2	TANK #1 TANK BASE 3.5'	18,000

QA/QC SUMMARY

Duplicate: Relative % Difference	5
Spike: % Recovery	98

LABORATORY NUMBER: 16603  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5

DATE RECEIVED: 01/17/89  
DATE REPORTED: 01/25/89  
PAGE 3 OF 5

Polychlorinated Biphenyls (PCBs) by EPA Method 8080

LAB ID	CLIENT ID	PCBs (mg/kg)	ARCOLOR
16603-2	TANK #1 TANK BASE 3.5'	ND(1)	---

ND = Not Detected; Limit of Detection indicated in parentheses.

QA/QC Summary:

Duplicate: Relative % Difference	4
Average Spike Recovery %	90



LABORATORY NUMBER: 16603-2  
CLIENT: AQUA RESOURCES, INC.  
PROJECT #: 87157.5/MILL SPRINGS  
SAMPLE ID: TANK #1/TANK BASE 3.5'

DATE RECEIVED: 01/17/89  
DATE EXTRACTED: 01/19/89  
DATE ANALYZED: 01/19/89  
DATE REPORTED: 01/25/89  
PAGE 4 OF 5

## EPA METHOD 8240: VOLATILE ORGANICS IN SOILS &amp; WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	1000
bromomethane	ND	1000
vinyl chloride	ND	1000
chloroethane	ND	1000
methylene chloride	ND	500
trichlorofluoromethane	ND	500
1,1-dichloroethene	ND	500
1,1-dichloroethane	ND	500
trans-1,2-dichloroethene	ND	500
chloroform	ND	500
1,2-dichloroethane	ND	500
1,1,1-trichloroethane	ND	500
carbon tetrachloride	ND	500
bromodichloromethane	ND	500
1,2-dichloropropane	ND	500
cis-1,3-dichloropropene	ND	500
trichloroethylene	ND	500
dibromochloromethane	ND	500
1,1,2-trichloroethane	ND	500
benzene	ND	500
trans-1,3-dichloropropene	ND	500
2-chloroethylvinyl ether	ND	1000
bromoform	ND	500
1,1,2,2-tetrachloroethane	ND	500
tetrachloroethene	ND	500
toluene	ND	500
chlorobenzene	ND	500
ethyl benzene	ND	500

## Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	1000
carbon disulfide	ND	500
2-butanone	ND	1000
vinyl acetate	ND	1000
2-hexanone	ND	1000
4-methyl-2-pentanone	ND	1000
styrene	ND	500
total xylenes	ND	500

## QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	94%
Toluene-d8	92%
Bromofluorobenzene	106%





LABORATORY NUMBER: 16603  
CLIENT: AQUA RESOURCES, INC.  
PROJECT #: 87157.5  
PROJECT NAME: MILL SPRINGS PARK APT.

DATE RECEIVED: 01/17/89  
DATE ANALYZED: 01/18/89  
DATE REPORTED: 01/25/89  
PAGE 5 OF 5

LAB ID	CLIENT ID	CADMIUM (mg/Kg)	CHROMIUM (mg/Kg)	LEAD (mg/Kg)	ZINC (mg/Kg)
16603-2	TANK #1 TANK BASE 3.5'	ND(0.5)	51	3.5	39

METHOD: EPA 6010

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: %RPD	<1	1	<1	1
Spike: % Recovery	100	110	89	94



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2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16603  
 CLIENT: AQUA RESOURCES, INC.  
 PROJECT #: 87157.5  
 PROJECT NAME: MILL SPRINGS PARK APT.

DATE RECEIVED: 01/17/89  
 DATE REPORTED: 01/25/89  
 PAGE 1 OF 5

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16603-3	TANK #1 TANK RESIDUE	ND(10,000)	ND(10,000)	ND(10,000)	100,000*

\* Fingerprint pattern does not match Hydrocarbon Standard. Quantitation based on largest peaks within C12-C24 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	2
Spike: % Recovery	110

*Stephen L. Joseph*  
 LABORATORY DIRECTOR

LABORATORY NUMBER: 16603  
CLIENT: AQUA RESOURCES, INC.  
PROJECT #: 87157.5  
PROJECT NAME: MILL SPRINGS PARK APT.

DATE RECEIVED: 01/17/89  
DATE REPORTED: 01/25/89  
PAGE 2 OF 5

Total Oil & Grease in Soils & Wastes  
SMWW 503A

LAB ID	CLIENT ID	OIL & GREASE (mg/Kg)
16603-3	TANK #1 TANK RESIDUE	800,000

QA/QC SUMMARY

Duplicate: Relative % Difference	5
Spike: % Recovery	98



LABORATORY NUMBER: 16603  
CLIENT: AQUA RESOURCES  
JOB #: 87157.5

DATE RECEIVED: 01/17/89  
DATE REPORTED: 01/25/89  
PAGE 3 OF 5

Polychlorinated Biphenyls (PCBs) by EPA Method 8080

LAB ID	CLIENT ID	PCBs (mg/kg)	ARCOLOR
16603-3	TANK #1 TANK RESIDUE	ND(1)	---

ND = Not Detected; Limit of Detection indicated in parentheses.

QA/QC Summary:

Duplicate: Relative % Difference 4  
Average Spike Recovery % 90

\_\_\_\_\_  
LABORATORY DIRECTOR

LABORATORY NUMBER: 16603-3  
 CLIENT: AQUA RESOURCES, INC.  
 PROJECT #: 87157.5/MILL SPRINGS  
 SAMPLE ID: TANK #1/TANK RESIDUE

DATE RECEIVED: 01/17/89  
 DATE EXTRACTED: 01/20/89  
 DATE ANALYZED: 01/20/89  
 DATE REPORTED: 01/25/89  
 PAGE 4 OF 5

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	1000
bromomethane	ND	1000
vinyl chloride	ND	1000
chloroethane	ND	1000
methylene chloride	ND	500
trichlorofluoromethane	ND	500
1,1-dichloroethene	ND	500
1,1-dichloroethane	ND	500
trans-1,2-dichloroethene	ND	500
chloroform	ND	500
1,2-dichloroethane	ND	500
1,1,1-trichloroethane	ND	500
carbon tetrachloride	ND	500
bromodichloromethane	ND	500
1,2-dichloropropane	ND	500
cis-1,3-dichloropropene	ND	500
trichloroethylene	ND	500
dibromochloromethane	ND	500
1,1,2-trichloroethane	ND	500
benzene	2,500	500
trans-1,3-dichloropropene	ND	500
2-chloroethylvinyl ether	ND	1000
bromoform	ND	500
1,1,2,2-tetrachloroethane	ND	500
tetrachloroethene	ND	500
toluene	11,000	500
chlorobenzene	ND	500
ethyl benzene	5,300	500

Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	1000
carbon disulfide	ND	500
2-butanone	ND	1000
vinyl acetate	ND	1000
2-hexanone	ND	1000
4-methyl-2-pentanone	ND	1000
styrene	ND	500
total xylenes	13,000	500

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102%
Toluene-d8	90%
Bromofluorobenzene	106%



LABORATORY NUMBER: 16603  
CLIENT: AQUA RESOURCES, INC.  
PROJECT #: 87157.5  
PROJECT NAME: MILL SPRINGS PARK APT.

DATE RECEIVED: 01/17/89  
DATE ANALYZED: 01/18/89  
DATE REPORTED: 01/25/89  
PAGE 5 OF 5

LAB ID	CLIENT ID	CADMIUM (mg/Kg)	CHROMIUM (mg/Kg)	LEAD (mg/Kg)	ZINC (mg/Kg)
16603-3	TANK #1 TANK RESIDUE	ND(0.5)	ND(0.5)	4.8	8.9

METHOD: EPA 6010

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: %RPD	<1	1	<1	1
Spike: % Recovery	100	110	89	94



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

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16770  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5

DATE RECEIVED: 02/07/89  
 DATE ANALYZED: 02/07/89  
 DATE REPORTED: 02/09/89  
 PAGE 1 OF 2

Total Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16770-1	TANK 2 BASE	ND(10)	ND(10)	ND(10)	ND(10)
16770-2	TANK 3 BASE	ND(10)	ND(10)	ND(10)	ND(10)
16770-3	TANK 4 BASE	ND(10)	ND(10)	ND(10)	ND(10)
16770-4	TANK 2-4 W. SIDEWALL	ND(10)	ND(10)	ND(10)	ND(10)
16770-5	TANK 2-4 S. SIDEWALL	ND(10)	ND(10)	ND(10)	ND(10)
16770-6	EXCAVATION BASE	ND(10)	ND(10)	ND(10)	ND(10)

\* Fingerprint pattern does not match Hydrocarbon Standards. Quantitation based on largest peaks within C-C boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	24
Spike: % Recovery	97

  
 LABORATORY DIRECTOR

LABORATORY NUMBER: 16770-1,2,3  
 CLIENT: AQUA RESOURCES  
 JOB #: 87157.5  
 COMPOSITE ID: TANK 2,3,4

DATE RECEIVED: 02/07/89  
 DATE EXTRACTED: 02/07/89  
 DATE ANALYZED: 02/08/89  
 DATE REPORTED: 02/09/89  
 PAGE 2 OF 2

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES

COMPOUND	Result ug/kg	Detection Limit ug/kg
chloromethane	ND	50
bromomethane	ND	50
vinyl chloride	ND	50
chloroethane	ND	50
methylene chloride	ND	25
trichlorofluoromethane	ND	25
1,1-dichloroethene	ND	25
1,1-dichloroethane	ND	25
trans-1,2-dichloroethene	ND	25
chloroform	ND	25
1,2-dichloroethane	ND	25
1,1,1-trichloroethane	ND	25
carbon tetrachloride	ND	25
bromodichloromethane	ND	25
1,2-dichloropropane	ND	25
cis-1,3-dichloropropene	ND	25
trichloroethylene	ND	25
dibromochloromethane	ND	25
1,1,2-trichloroethane	ND	25
benzene	ND	25
trans-1,3-dichloropropene	ND	25
2-chloroethylvinyl ether	ND	50
bromoform	ND	25
1,1,2,2-tetrachloroethane	ND	25
tetrachloroethene	ND	25
toluene	ND	25
chlorobenzene	ND	25
ethyl benzene	ND	25

Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	50
carbon disulfide	ND	25
2-butanone	ND	50
vinyl acetate	ND	50
2-hexanone	ND	50
4-methyl-2-pentanone	ND	50
styrene	ND	25
total xylenes	ND	25

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	108
Toluene-d8	112
Bromofluorobenzene	88



**APPENDIX C**  
**RWQCB DISPOSAL EXEMPTION LETTER**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION  
1111 JACKSON STREET, ROOM 6040  
OAKLAND 94607

Phone: Area Code 415  
464-1255



December 27, 1988  
File No. 2199.00(CTS)

Aqua Resources Incorporated  
2030 Addison Street, Suite 500  
Berkeley, CA 94704

Attn: Mr. Mark Milani

**SUBJECT:** Exemption from Land Disposal Regulations for Mill Springs Park  
Apartment Site, Livermore, CA

Dear Mr. Milani:

We have reviewed your 15 December, 1988 submittal requesting exemption from the land disposal regulations for fuel oil contaminated soils at the Mill Springs Park Apartment Site in Livermore. The data demonstrates that the contaminated soils are non-toxic and that ground water is at depth exceeding approximately 32 feet below ground surface. The report verifies that the contaminated soils will be reused onsite and placed in areas where it will be covered by pavement, thus reducing the potential for surface infiltration and subsequent migration of contaminants into ground water.

Based upon the above findings, I find that this site is exempt from the land disposal regulations specified in Title 23, Chapter 3, Subchapter 15, Section 2511h of the California Code of Regulations.

Please be aware that the above exemption to Section 2511h does not free present or future land owners from responsibilities related to future cleanup of pollution in the event that new information indicates a pollutant problem on the site or originating from the site.

If you have any questions, please contact Curtis Scott at (415) 464-0455.

Sincerely

  
Steven R. Ritchie  
Executive Officer

AQUA RESOURCES, INC.  
RECEIVED

DEC 28 1988

JOB NO. \_\_\_\_\_  
FILE \_\_\_\_\_

**APPENDIX D**  
**HAZARDOUS WASTE MANIFESTS**

Please print of type. (Form designed for use on effie (12-pitch typewriter). #IT 130777

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		Generator's US EPA ID No. WA1091824807117	Manifest Document No. 10101011	2. Page of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address BARNETT - FANCEE CORPORATION 2609 HAMMILL LANE STOCKTON, CA 95209				A. State Manifest Document Number 87993768		
4. Generator's Phone (209) 951-4100				B. State Generator's ID		
5. Transporter 1 Company Name IT TRANSPORTATION		6. US EPA ID Number WA0001010587117		C. State Transporter's ID		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone		
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT INC 35251 OLD SHAWNEE DR LITTON, CA 95234		10. US EPA ID Number CA1101010606117		E. State Facility's ID		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) a. RU HAZARDOUS WASTE (W051 (R008)) b. ... c. ... d. ...		12. Containment No.	13. Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste Code
16. Additional Descriptions for Materials Listed Above		16. Handling Code				
15. Special Handling Instructions and Additional Information OWNR PROFILE H43217						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name LARRY MALCOLM		Signature <i>Larry Malcolm</i>		Month Day Year 09/01/18		
17. Transporter 1 Acknowledgement of Receipt of Materials						
Printed/Typed Name BARRY RICHARDSON		Signature <i>Barry Richardson</i>		Month Day Year 09/06/18		
18. Transporter 2 Acknowledgement of Receipt of Materials						
Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name Judy Crawford		Signature <i>Judy Crawford</i>		Month Day Year 09/07/18		

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

TRANSPORTER FACILITY

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

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

GENERATOR

TRANSPORTER

FACILITY

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. DAD982480717		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.															
3. Generator's Name and Mailing Address DANIEL FANUCO COMPANY 5001 WASHINGTON BLVD SACRAMENTO CA 95829						A. State Manifest Document Number 87998562																	
4. Generator's Phone (209) 951-5111						B. State Generator's ID HAWA36-1927636																	
5. Transporter 1 Company Name IT TRANSPORTATION			6. US EPA ID Number 1120600589V17			C. State Transporter's ID 901767		D. Transporter's Phone															
7. Transporter 2 Company Name						8. US EPA ID Number		E. State Transporter's ID															
9. Designated Facility Name and Site Address PETROLEUM WASTE UNIT 2100 W. 10TH ST SACRAMENTO CA						10. US EPA ID Number DAD980075376		G. State Facility's ID CPVATP05PAG															
								H. Facility's Phone 585-726-7341															
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit		15. Waste No.											
						No.		Type		Quantity		Wt/Vol		State		EPA/Other							
						a.								611		EPCU							
						b.																	
						c.																	
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						K. Handling Codes for Wastes Listed Above		a.		b.		c.		d.									
15. Special Handling Instructions and Additional Information																							
Printed/Typed Name						Signature						Month Day Year											
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name						Signature						Month Day Year					
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name						Signature						Month Day Year					
19. Discrepancy Indication Space																							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.																							
Printed/Typed Name KYLE SHAFER						Signature						Month Day Year 11/1/87											

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8602; WITHIN CALIFORNIA CALL 1-800-852-7550

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CA1091820675276		Manifest Document No. 11111111111111111111	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.					
		3. Generator's Name and Mailing Address EAGLE KANGAROO CORPORATION 2007 HUNTER CANYON 5th Street LA 70001				A. State Manifest Document Number <b>87998563</b>					
4. Generator's Phone (279) 951-3111				B. State Generator's ID 11111111111111111111							
5. Transporter 1 Company Name I.T. TRUCKS		6. US EPA ID Number 11111111111111111111		C. State Transporter's ID 11111111111111111111		D. Transporter's Phone 11111111111111111111					
7. Transporter 2 Company Name		8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone					
9. Designated Facility Name and Site Address PACIFIC WASTE TREATMENT 11111111111111111111		10. US EPA ID Number CA1091820675276		G. State Facility's ID 11111111111111111111		H. Facility's Phone 11111111111111111111					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HAZARDOUS WASTE CALIFORNIA				12. Containers		13. Total Quantity		14. Unit		15. Waste No.	
				No.		Type		Quantity		WT/Vol	
b.										State EPA/Other	
c.										State EPA/Other	
d.										State EPA/Other	
16. Additional Descriptions for Materials Listed Above HAZARDOUS WASTE - 1127						K. Handling Codes for Wastes Listed Above 03					
15. Special Handling Instructions and Additional Information											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.											
Printed/Typed Name				Signature				Month Day Year			
17. Transporter 1 Acknowledgement of Receipt of Materials											
Printed/Typed Name				Signature				Month Day Year			
18. Transporter 2 Acknowledgement of Receipt of Materials											
Printed/Typed Name				Signature				Month Day Year			
19. Discrepancy Indication Space											
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.											
Printed/Typed Name HILARIO CAVAZOS				Signature [Signature]				Month Day Year 11/10/91			

GENERATOR

TRANSPORTER

FACILITY

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No. **CA D 92 248 071 7** Manifest Document No. **001013**

2. Page 1 of 1 Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address  
**BARNETT RANCO CORPORATION**  
**2609 HAMMER LANE**  
**STOCKTON, CA 95209**

A. State Manifest Document Number  
**87998564**

4. Generator's Phone **(209) 951-6140**

B. State Generator's ID  
**HAHQ361-02763 E**

5. Transporter A Company Name  
**Fuller Excavating**

C. State Transporter's ID  
**900895**

6. US EPA ID Number  
**CA 98 1443781**

D. Transporter's Phone

7. Transporter 2 Company Name

E. State Transporter's ID

9. Designated Facility Name and Site Address  
**PETROLEUM WASTE, INC.**  
**LOKERN ROAD**  
**BUTTONWOOD CA 93206**

G. State Facility's ID  
**CA D 98 067 52 761**

10. US EPA ID Number  
**CA D 98 067 52 761**

H. Facility's Phone  
**805-767-7301**

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers No. Type 13. Total Quantity 14. Unit Wt/Vol 15. Waste No.

a. **WOOD + DEBRIS CONTAMINATED WITH BUNKER FUEL**  
**CALIFORNIA REGULATED ONLY**

**001 PIT 0017 Y**

b.

State **CA**  
EPA/Other **NONE**

c.

State  
EPA/Other

d.

State  
EPA/Other

J. Additional Descriptions for Materials Listed Above  
**PW, ACCEPTING # F127**

K. Handling Codes for Wastes Listed Above  
a. **03**

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  
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Printed/Typed Name  
**W.F. Webber**

Signature **W.F. Webber** Month Day Year **VV 10 1988**

17. Transporter 1 Acknowledgement of Receipt of Materials  
Printed/Typed Name  
**RICHARD E. DUNBAR**

Signature **Richard E. Dunbar** Month Day Year **VV 11 1988**

18. Transporter 2 Acknowledgement of Receipt of Materials  
Printed/Typed Name

Signature Month Day Year

19. Discrepancy Indication Space

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

Printed/Typed Name  
**V. P. 20**

Signature **V.P. 20** Month Day Year **VV 10 1988**

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER, 800-424-9302, WASHINGTON, CALIFORNIA 95033-8000

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

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

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CA1019212KABIC7117110112		Manifest Document No. 11111111		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address BARNETT KANE CORPORATION 2609 HAMMER LANE STOCKTON CA 95209						A. State Manifest Document Number 87998565			
4. Generator's Phone (209) 951-5111						B. State Generator's ID KABIC7117110112			
5. Transporter 1 Company Name T.T. TRANSPORTATION				6. US EPA ID Number KABIC7117110112		C. State Transporter's ID 901786 911717		D. Transporter's Phone 916-272-9117	
7. Transporter 2 Company Name				8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone	
9. Designated Facility Name and Site Address PETROLEUM WASTE AND LUBRIC OIL CANTONMENT						10. US EPA ID Number CA1019210167152127		G. State Facility's ID CA1019210167152127	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity	
*WOOD + DEBRIS CONTAMINATED WITH EXCESS FLUOR CALIFORNIA						No. Type		14. Unit Wt/Vol	
						301 5T		2217 Y	
								I. Waste No.	
								State Call	
								EPA/Other N/A	
								State	
								EPA/Other	
								State	
								EPA/Other	
Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above			
*WASTE ACCEPTANCE F127						a. 03		b.	
						c.		d.	
15. Special Handling Instructions and Additional Information									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name W.F. Webber				Signature [Signature]		Month Day Year 11/15/81			
17. Transporter 1 Acknowledgement of Receipt of Materials									
Printed/Typed Name Bill Drott				Signature [Signature]		Month Day Year 11/17/81			
18. Transporter 2 Acknowledgement of Receipt of Materials									
Printed/Typed Name [Redacted]				Signature [Redacted]		Month Day Year [Redacted]			
19. Discrepancy Indication Space									
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name North Becker				Signature [Signature]		Month Day Year 11/18/81			



**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No. **CA10712430717** Manifest Document No. **02201** 2. Page 1 of 1 information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address  
**MIRIATT RANGE CORP**  
**2607 HUMMER LAKE**  
**STAGLETON CA 95201**  
 4. Generator's Phone **(916) 951-5440**

A. State Manifest Document Number  
**87998567**

B. State Generator's ID  
**HAV1616-0274316**

5. Transporter 1 Company Name  
**BOUNCE EXPRESS CO** 6. US EPA ID Number  
**CA10712430717**

C. State Transporter's ID  
**R02811**

D. Transporter's Phone  
**415-770-1021**

7. Transporter 2 Company Name  
 8. US EPA ID Number

E. State Transporter's ID  
 F. Transporter's Phone

9. Designated Facility Name and Site Address  
**PETROBRAS WASTE INC**  
**10800 RD**  
**BUTTEVILLE CA 95926** 10. US EPA ID Number  
**CA10981010212121**

G. State Facility's ID  
**CA10981010212121**

H. Facility's Phone  
**706-776-7341**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers  
 No. Type

13. Total Quantity  
 14. Unit  
 15. Waste No.

**WOOD DEBRIS, PILES, SOIL,  
 CONT. W/ BURNER OIL**

State  
**CA**

EPA/Other  
**RM175**

RECEIVED  
 NOV 22 1988  
 TFMUZ

16. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  
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Printed/Typed Name **H.P. White** Signature **H.P. White** Month Day Year **11/22/88**

17. Transporter 1 Acknowledgement of Receipt of Materials  
 Printed/Typed Name **M.D. (DAVE) NICHOLS** Signature **M.D. Nichols** Month Day Year **11/22/88**

18. Transporter 2 Acknowledgement of Receipt of Materials  
 Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.  
 Printed/Typed Name **Regina BARRERA** Signature **Regina Barrera** Month Day Year **11/22/88**

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-6802. WITHIN CALIFORNIA CALL 1-800-852-7850

**UNIFORM HAZARDOUS WASTE MANIFEST**

Generator's US EPA ID No. **CA00002480717** Manifest Document No. **130761** 2. Page **1** of **1** Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: **MARKET MANEY CORPORATION**  
 2609 HUMBOLDT AVE  
 STOCKTON, CA 95209

4. Generator's Phone: **209-951-5100**

5. Transporter 1 Company Name: **IT TRANSPORTATION** 6. US EPA ID Number: **CA0000025591**

7. Transporter 2 Company Name: 8. US EPA ID Number:

9. Designated Facility Name and Site Address: **CHEMICAL WASTE MANAGEMENT**  
 35251 OLD BEYLAKE BLVD  
 RICHMOND, CA 94827 10. US EPA ID Number: **CA000001117**

A. State Manifest Document Number: **87908594**

B. State Generator's ID: **HAHA3270271375**

C. State Transporter's ID: **TC100**

D. Transporter's Phone: **209-572-2001**

E. State Transporter's ID:

F. Transporter's Phone:

G. State Facility's ID: **CA000001117**

H. Facility's Phone: **209-240-2711**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers		13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
	No.	Type			
a. <b>FLR HAZARDOUS WASTE SOLID A (D001)</b> <b>ORM-E CA9159</b>	<b>001</b>	<b>CM</b>	<b>000034</b>		State EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above: **ORM-E CA9159**

K. Handling Codes for Wastes Listed Above:  
 a. **05** b. **05**  
 c. **05** d. **05**

15. Special Handling Instructions and Additional Information: **314**

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: **W. Wood** Signature: **W. Wood** Month Day Year: **11 1988**

17. Transporter 1 Acknowledgement of Receipt of Materials  
 Printed/Typed Name: **Frank Inou** Signature: **Frank Inou** Month Day Year: **11 1988**

18. Transporter 2 Acknowledgement of Receipt of Materials  
 Printed/Typed Name: Signature: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.  
 Printed/Typed Name: **STEVE BRAN A** Signature: **Steve Bran A** Month Day Year: **11 1988**

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

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.

CAD982480717

Manifest Document No.

2. Page 1 of 1

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

3. Generator's Name and Mailing Address

Barnett-Range Corporation  
2609 E. Hammer Lane  
Stockton, CA 95209

A. State Manifest Document Number

87998614

4. Generator's Phone

209-951-5140

B. State Generator's ID

HAHQ35-027636

5. Transporter 1 Company Name

I.T. TRANSPORTATION

6. US EPA ID Number

ICIA1D2100105189117

C. State Transporter's ID

901769 901786

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone

415 372-9100

9. Designated Facility Name and Site Address

Petroleum Waste, Inc.  
Lokern Rd.  
Buttonwillow, CA 93206

10. US EPA ID Number

ICAD9806752761

F. Transporter's Phone

G. State Facility's ID  
C1A19810161504761  
H. Facility's Phone  
(805) 762-7341

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

a. Soil Contaminated with Bunker Fuel  
California Regulated Only

12. Containers No. Type

0101 DT

000/8

Y

13. Total Quantity

14. Unit Wt/Vol

I. Waste No.

State 611

EPA/Other none

State

EPA/Other

State

EPA/Other

State

EPA/Other

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

a. 06

15. Special Handling Instructions and Additional Information

PWI Acceptance #F1247  
Wear proper protective clothing

IT Job # 130769

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

W.F. Webber

Signature

W.F. Webber

Month Day Year

11/1/88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Bill Pratt

Signature

Bill Pratt

Month Day Year

11/1/88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

RECEIVED

Month Day Year

NOV 21 1988

A/P-MTZ

19. Discrepancy Indication Space

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

Printed/Typed Name

TALY MINOR

Signature

TALY MINOR

Month Day Year

11/1/88

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER, 1-800-424-9802, EXT. 1-800-424-7550

GENERATOR

TRANSPORTER

FACILITY

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CA0982480717	Manifest Document No.	2. Page 1 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address Barnett-Range Corporation 2609 E. Hammer Lane Stockton, CA 95209 209-951-5140				A. State Manifest Document Number 87998610		
4. Generator's Phone 209-951-5140				B. State Generator's ID HAHQ36-027636		
5. Transporter 1 Company Name TRIPLE B TRUCKING		6. US EPA ID Number CA109821001718141		C. State Transporter's ID 901297-8		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 7074262314		
9. Designated Facility Name and Site Address Petroleum Waste, Inc. Lokern Rd. Buttonwillow, CA 93206 CA0980675276				E. State Transporter's ID		
10. US EPA ID Number				F. Transporter's Phone		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers		13. Total Quantity
a. Soil Contaminated with Bunker Fuel California Regulated Only				No.	Type	14. Unit Wt/Vol
b.						1. Waste No. 511
c.						EPA/Other None
d.						State
J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above		
				a. 06		
				b.		
				c.		
				d.		
15. Special Handling Instructions and Additional Information PWI Acceptance #F12#7 Wear proper protective clothing				IT Job # 130769		NOV 21 1988
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name W.F. Webber		Signature W.F. Webber		Month Day Year 11/1/15/88		
17. Transporter 1 Acknowledgement of Receipt of Materials						
Printed/Typed Name E.W. BURMAN		Signature E.W. Burman		Month Day Year 11/1/15/88		
18. Transporter 2 Acknowledgement of Receipt of Materials						
Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space 						
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name Noel Beck		Signature Noel Beck		Month Day Year 11/1/15/88		

1-800-775-8802  
 IN CASE OF AN EMERGENCY OR SOIL, CALL THE NATIONAL RESPONSE CENTER  
 GENERATOR  
 TRANSPORTER  
 FACILITY

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>CAD9824807171</b>		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.							
		3. Generator's Name and Mailing Address <b>Barnett-Range Corporation 2609 E. Hammer Lane STOCKTON, CA 95209</b>						A. State Manifest Document Number <b>87998612</b>		B. State Generator's ID <b>HAH036-027638</b>					
4. Generator's Phone <b>209-951-5140</b>						5. Transporter 1 Company Name <b>Art's Transfer Trucking</b>		6. US EPA ID Number <b>CA0980944115101</b>		C. State Transporter's ID <b>901131/032</b>					
7. Transporter 2 Company Name						8. US EPA ID Number		D. Transporter's Phone <b>415-827-3440</b>		E. State Transporter's ID					
9. Designated Facility Name and Site Address <b>Petroleum Waste, Inc. Lokern Rd. Buttonwillow, CA 93206</b>						10. US EPA ID Number <b>CAD9806752761</b>		F. Transporter's Phone <b>(805) 762-7341</b>		G. State Facility's ID <b>CA 998,067,527,6</b>					
H. Facility's Phone						11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers		13. Total Quantity					
J. Additional Descriptions for Materials Listed Above						No.		Type		14. Unit					
						I. Waste No.		State		EPA/Other		State		EPA/Other	
						State		EPA/Other		State		EPA/Other		State	
						EPA/Other		State		EPA/Other		State		EPA/Other	
						EPA/Other		State		EPA/Other		State		EPA/Other	
15. Special Handling Instructions and Additional Information <b>PWI Acceptance #F12#7 Wear proper protective clothing</b>						K. Handling Codes for Wastes Listed Above a. <b>06</b>		b.		c.					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						RECEIVED		NOV 21 1988		A/P-MTZ					
Printed/Typed Name <b>W.F. Webber</b>				Signature <i>W.F. Webber</i>				Month Day Year <b>11/15/88</b>							
17. Transporter 1 Acknowledgement of Receipt of Materials				Printed/Typed Name <b>Art Burger</b>				Signature <i>Art Burger</i>							
18. Transporter 2 Acknowledgement of Receipt of Materials				Printed/Typed Name				Signature							
19. Discrepancy Indication Space				Printed/Typed Name <b>NUPH Beer Ben</b>				Signature <i>Beer Ben</i>							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.				Printed/Typed Name				Signature							

GENERATOR

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.  
 CAD982480717

Manifest Document No.

2. Page 1 of 1

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

3. Generator's Name and Mailing Address

Barnett-Range Corporation  
 2609 E. Hammer Lane

4. Generator's City, State, and ZIP Code  
 Stockton, CA 95209

209-951-5140

A. State Manifest Document Number  
 87998613

B. State Generator's ID  
 HAHQ36+027636

5. Transporter 1 Company Name

Acklam Trucking

6. US EPA ID Number  
 CAD98FV420FV3

C. State Transporter's ID  
 802870

D. Transporter's Phone  
 415-933-0766

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address

Petroleum Waste, Inc.  
 Lokern Rd.

Buttonwillow, CA 93206

10. US EPA ID Number  
 CAD980675276

G. State Facility's ID  
 CA09180675276

H. Facility's Phone  
 (805) 762-7341

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

a. Soil Contaminated with Bunker Fuel  
 California Regulated Only

12. Containers No. Type 13. Total Quantity 14. Unit (Wt/Vol) 15. Waste No.

NOV 21 1988

State 611

EPA/Other none

State

EPA/Other

State

EPA/Other

State

EPA/Other

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

a. 66

RECEIVED  
 NOV 21 1988  
 AJP-MTZ

15. Special Handling Instructions and Additional Information

PWI Acceptance #F1247  
 Wear proper protective clothing

IT Job # 130769

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

WF Webber

Signature

WF Webber

Month Day Year

11/15/88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Tom Acklam

Signature

Tom Acklam

Month Day Year

11/15/88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 9.

Printed/Typed Name

JOHNNY ALVAREZ

Signature

[Signature]

Month Day Year

11/15/88

GENERATOR

TRANSPORTER

FACILITY OWNER

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

1-800-633-7550  
 WITHIN CALIFORNIA CALL 1-800-424-8802  
 CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802  
 IN AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802  
 GENERATOR  
 TRANSPORTER  
 FACILITY OWNER

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CAD982480717	Manifest Document No. 2101012	2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address <b>Barnett-Range Corporation</b> 2609 E. Hammer Lane Stockton, CA 95209				A. State Manifest Document Number <b>87998615</b>		B. State Generator's ID HAHQ36-027636	
4. Generator's Phone 209-951-5140		5. Transporter 1 Company Name <b>ET TRANS</b>		6. US EPA ID Number CAD9809081817		C. State Transporter's ID 901779	
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 415-372-9121		E. State Transporter's ID	
9. Designated Facility Name and Site Address <b>Petroleum Waste, Inc.</b> Lokern Rd. Buttonwillow, CA 93204		10. US EPA ID Number CAD980675276		F. Transporter's Phone		G. State Facility's ID CA198061192161	
				H. Facility's Phone (805) 762-7341			
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers	13. Total Quantity	14. Unit Wt/Vol	1. Waste No.
a. Soil Contaminated with Bunker Fuel California Regulated Only				No.	Type		611
b.							State EPA/Other none
c.							State EPA/Other
d.							State EPA/Other
J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above			
				a. 06		b.	
				c.		d.	
15. Special Handling Instructions and Additional Information PWI Acceptance #F1277 IT Job # 130769 Wear proper protective clothing							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name x W.F. Webber				Signature x W.F. Webber		Month Day Year 11/21/88	
17. Transporter 1 Acknowledgement of Receipt of Materials							
Printed/Typed Name Roy L. Olson				Signature Roy L. Olson		Month Day Year 11/21/88	
18. Transporter 2 Acknowledgement of Receipt of Materials							
Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Rem 19.							
Printed/Typed Name VALIY MINOR				Signature [Signature]		Month Day Year 11/17/88	

RECEIVED  
 NOV 21 1988  
 AIR-MAIL

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No. <b>CAD982480717</b>	Manifest Document No. <b>10101</b>	2. Page 1 of 1 Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address <b>Barnett-Range Corporation 2609 E. Hammer Lane Stockton, CA 95209</b>		A. State Manifest Document Number <b>87998016</b>
4. Generator's Phone <b>209-951-5140</b>		B. State Generator's ID <b>HA1005-02636</b>
5. Transporter 1 Company Name <b>J.T. TRONS INTL</b>	6. US EPA ID Number <b>CA1000101589117</b>	C. State Transporter's ID <b>10101</b>
7. Transporter 2 Company Name	8. US EPA ID Number	D. Transporter's Phone
9. Designated Facility Name and Site Address <b>Petroleum Waste, Inc. Lokern Rd. Buttonwillow, CA</b>		E. State Facility's ID <b>CA1000101589117</b>
10. US EPA ID Number <b>CAD880675276</b>		F. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers		13. Total Quantity	14. Unit Wt/Vol	Waste No.
	No.	Type			
a. <b>Soil Contaminated with Bunker Fuel California Regulated Only</b>					State EPA/OS
b.					State EPA/OS
c.					State EPA/OS
d.					State EPA/OS

Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above  
**06**

15. Special Handling Instructions and Additional Information  
**PWI Acceptance #F129 1 IT Job # 130769**  
**Wear proper protective clothing**

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: **X [Signature]** Signature: **X [Signature]** Month Day Year: **11/19/15 1518**

17. Transporter 1 Acknowledgement of Receipt of Materials  
 Printed/Typed Name: **D. Dwight Nobles** Signature: **[Signature]** Month Day Year: **11/19/15 1515**

18. Transporter 2 Acknowledgement of Receipt of Materials  
 Printed/Typed Name: Signature: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.  
 Printed/Typed Name: **PAUL SILAPPA** Signature: **[Signature]** Month Day Year: **11/19/15**

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER, 1-800-424-8802. WITHIN CALIFORNIA CALL 1-800-852-7550  
 GENERATOR  
 TRANSPORTER  
 FACILITY



Please print or type. (Form designed for use on elite (12-pitch typewriter).)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CA12913241/071117311013		Manifest Document No. 311013		2. Page 1 of		Information in the shaded areas is not required by Federal law.					
3. Generator's Name and Mailing Address BARNETT-RANGE CORP P.O. BOX 8179, SULLY, CA 95208						A. State Manifest Document Number 88231036							
4. Generator's Phone (209) 951-5140						B. State Generator's ID							
5. Transporter 1 Company Name H+H Ship Service Co			6. US EPA ID Number CA10114127111618			C. State Transporter's ID 002752		D. Transporter's Phone 415-321-2126					
7. Transporter 2 Company Name			8. US EPA ID Number			E. State Transporter's ID		F. Transporter's Phone					
9. Designated Facility Name and Site Address H+H Ship Service Co 220 CHINATOWN						10. US EPA ID Number							
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) a. WASTE COMBUSTIBLE LIQUID NOS. OXIDE UN 1993						12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		15. Waste No. State 441 EPA/Other	
b.												State EPA/Other	
c.												State EPA/Other	
d.												State EPA/Other	
J. Additional Descriptions for Materials Listed Above oil water						K. Handling Codes for Wastes Listed Above a. 01							
15. Special Handling Instructions and Additional Information Others.										<b>RECEIVED</b>			
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of the waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.										FEB - 8 1989			
Printed/Typed Name W.F. Webber				Signature W.F. Webber				Month Day Year 1 21 1989					
17. Transporter 1 Acknowledgement of Receipt of Materials													
Printed/Typed Name Robert C. Hansen				Signature Robert C. Hansen				Month Day Year 02 01 1989					
18. Transporter 2 Acknowledgement of Receipt of Materials													
Printed/Typed Name <del>Robert C. Hansen</del>				Signature <del>Robert C. Hansen</del>				Month Day Year <del>02 01 1989</del>					
19. Discrepancy Indication Space													
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.													
Printed/Typed Name Richard Blackwell				Signature Richard Blackwell				Month Day Year 1 26 1989					

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-632-7550

GENERATOR

TRANSPORTER

FACILITY

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CAAD1010477111618		Manifest Document No. 31111418		2. Page 1 of		Information in the shaded areas is not required by Federal law.					
3. Generator's Name and Mailing Address General 2187 San Francisco, CA 94107						A. State Manifest Document Number 88231148							
4. Generator's Phone (214) 751-5150						B. State Generator's ID 9-02-0000							
5. Transporter 1 Company Name H E H SHIP SERVICE CO			6. US EPA ID Number CAAD1010477111618			C. State Transporter's ID 902449		D. Transporter's Phone (415) 543-4835					
7. Transporter 2 Company Name						E. State Transporter's ID							
8. US EPA ID Number						F. Transporter's Phone							
9. Designated Facility Name and Site Address HEH SHIP SERVICE COMPANY 220 CHINA BASIN STREET SAN FRANCISCO, CA 94107			10. US EPA ID Number CAAD1010477111618			G. State Facility's ID		H. Facility's Phone (415) 543-4835					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit. Wt./Vol.		15. Waste No.	
a. WAST EMPTY TANK, COMBUSTIBLE LIQUID NOS NA 1993						2101 TIP		1150		State 512		EPA/Other N/A	
b.										State		EPA/Other	
c.										State		EPA/Other	
d.										State		EPA/Other	
J. Additional Descriptions for Materials Listed Above EMPTY UNDERGROUND WAST OIL STORAGE TANKS WITH LESS THAN ONE GALLON RESIDUAL LIQUED IN TANK.						K. Handling Codes for Wastes Listed Above a. 01 b. c. d.							
15. Special Handling Instructions and Additional Information						<b>RECEIVED</b> FEB 8 1989							
16. <b>GENERATOR'S CERTIFICATION:</b> I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to 49 CFR 173.155 and all applicable federal and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						<b>CONSTRUCTION</b>							
Printed/Typed Name W.F. Foster			Signature W.F. Foster			Month Day Year 10/20/89							
17. Transporter 1 Acknowledgement of Receipt of Materials													
Printed/Typed Name SIDNEY W FOSTER			Signature Sidney W Foster			Month Day Year 10/20/89							
18. Transporter 2 Acknowledgement of Receipt of Materials													
Printed/Typed Name			Signature			Month Day Year							
19. Discrepancy Indication Space													
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.													
Printed/Typed Name Cleveland Valley			Signature Cleveland Valley			Month Day Year 02/01/89							

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7650

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-952-7550

4. Generator Name and Address  
 H+H SHIP SERVICE CO  
 220 CHINA BASIN  
 SAN FRANCISCO, CA 94107

5. Transporter 1 Company Name  
 H+H SHIP SERVICE CO

6. US EPA ID Number  
 CAAD0047711168

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address  
 H+H SHIP SERVICE CO  
 220 CHINA BASIN  
 SAN FRANCISCO, CA 94107

10. US EPA ID Number  
 CAAD0047711168

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers	13. Total Quantity	14. Unit	15. Weight
003	TP	280	6

"EMPTY WASTE OIL TANK, WASTE COMBUSTIBLE LIQUID N.O.S. UN1993

12. Additional Descriptions for Materials Listed Above  
 EMPTY UNDERGROUND TANK WITH LESS THAN 100 GALLONS OF OIL REMAINING IN TANK

13. Handling Codes for Wastes Listed Above  
 D1

16. Special Handling Instructions and Additional Information  
 GLOVES / DRY ICE

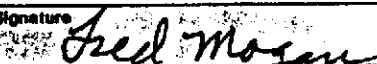
18. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  
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Printed/Typed Name  
 WF Webber

Signature  


Month Day Year  
 02/15/89

17. Transporter 1 Acknowledgement of Receipt of Materials  
 Printed/Typed Name  
 FRED MOGAN

Signature  


Month Day Year  
 02/15/89

18. Transporter 2 Acknowledgement of Receipt of Materials  
 Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space  
 (This area is for use by the generator or transporter to indicate any discrepancies between the manifest and the actual contents of the container.)

**APPENDIX E**  
**APPROVED ALAMEDA COUNTY TANK CLOSURE FORM**

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY  
 DEPARTMENT OF ENVIRONMENTAL HEALTH  
 HAZARDOUS MATERIALS DIVISION

470 - 27TH ST., RM. 322

OAKLAND, CA 94612

PHONE NO. 415/874-7237

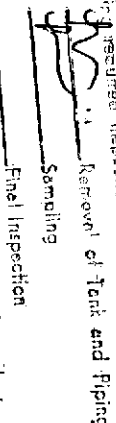
DEPARTMENT OF ENVIRONMENTAL HEALTH  
 470 - 27th Street, Third Floor  
 Oakland, CA 94612

Telephone: (415) 874-7237

ACCEPTED

additional conditions:  
 1. monitoring well  
 2. fuel oil areas and  
 to be transported to  
 class II landfill  
 3. Final report of  
 sampling copies  
 10/26/84 letter  
 to be submitted  
 within 30 days

ISSUANCE OF A PERMIT TO OPERATE IS DEPENDENT ON COMPLIANCE WITH ACCEPTED PLANS AND ALL APPLICABLE LAWS AND REGULATIONS.  
 THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.



These plans have been reviewed and found to be essentially compliant with the requirements of State and local health laws. Changes to your plans indicated by this permit are to assure compliance with State and local health laws. The project proposed herein is now reviewed for issuance of any required building permits for construction. The copy of these accepted plans must be on file and available to all contractors and craftsmen involved with the project or alterations of these plans and specifications. Any work submitted to this Department and to the Fire and Building Inspection Department for obtaining a permit if such plans meet the requirements of State and local laws. Notify this Department at least 48 hours prior to the following required inspections:  
 Removal of Tank and Piping  
 Sampling  
 Final Inspection

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

1. Business Name Barnett Range Corporation
- Business Owner Hal Barnett, Jim Range
2. Site Address 1799 Railroad Ave [temp. const. address] <sup>U.S. Post Office</sup>  
 City Livermore Zip 94550 Phone (415) 373-816 <sup>8/31/88</sup>
3. Mailing Address P.O. Box 8189  
 City Stockton Zip 95208-1487 Phone (209) 951-514
4. Land Owner Barnett-Range Corporation  
 Address see above City, State \_\_\_\_\_ Zip \_\_\_\_\_
5. EPA I.D. No. CAD 98-248-0717
6. Contractor To be determined  
 Address \_\_\_\_\_ City \_\_\_\_\_ Phone \_\_\_\_\_  
 License Type \_\_\_\_\_ ID# \_\_\_\_\_
7. Other (Specify) Aqua Resources Inc. (Consultants)  
 Address 2030 Addison St Suite 500  
 City Berkeley Phone (415) 540-6954

8. Contact Person for Investigation

Name Mark Miami Title Project Mgr

Phone (415) 540-6959

9. Total No. of Tanks at facility \_\_\_\_\_

10. Have permit applications for all tanks been submitted to this office? Yes [ ] No [ ]

11. State Registered Hazardous Waste Transporters/Facilities

*See letter 10/26/86*

a) Product/Waste Transporter

Name To be determined EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

b) Rinsate Transporter

Name \_\_\_\_\_ EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

c) Tank Transporter

Name \_\_\_\_\_ EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

d) Contaminated Soil Transporter

Name \_\_\_\_\_ EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

12. Sample Collector

Name Agua Resources Inc.

Company " "

Address 2030 Addison St, suite 500

City Berkeley State CA Zip 94704 Phone (415) 540-6

13. Sampling Information for each tank or area

Tank or Area		Material sampled	Location & Depth
Capacity	Historic Contents (past 5 years)		
Approx 22,000 gal.	Tank was abandoned and filled many years ago.  Historic content unknown.	Soil backfill	see enclosed site plan Depth: 3'-0"

14. Have tanks or pipes leaked in the past? Yes [ ] No []

If yes, describe. No visual leak before excavation of tank

15. NFPA methods used for rendering tank inert? Yes [ ] No []

If yes, describe. Tank has no top - no volatiles present.

16. Laboratories

Name Curtis + Tompkins, LTD

Address 2323 5<sup>th</sup> St.

City Berkeley

State CA

Zip 94710

State Certification No. 17772 159

17. Chemical Methods to be used for Analyzing Samples

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Number
Fuel/Waste oil	TPH (High Boiling Point) EPA 3510/3550	EPA 8015
	Total Oil + Grease (TOG) EPA 3550	EPA 503 E
	Volatile Organic Compounds EPA 5020/5030	EPA 8240

18. Site Safety Plan submitted? Yes [ ] No [X] *not recd. yet per discussion 8/24/88 Eric C.*

19. Workman's Compensation: Yes [X] No [ ]

Copy of Certificate enclosed? Yes [X] No [ ]

Name of Insurer Industrial Indemnity

20. Plot Plan submitted? Yes [X] No [ ]

21. Deposit enclosed? Yes [X] No [ ]

22. Please forward to this office the following information within 60 days after receipt of sample results.

- a) Chain of Custody Sheets
- b) Original Signed Laboratory Reports
- c) TSD to Generator copies of wastes shipped and received
- d) Attachment A summarizing laboratory results



I declare that to the best of my knowledge and belief the statements and information provided above are correct and true. I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I will notify the Department of Environmental Health at least two (2) working days (48 hours) in advance to schedule any required inspections. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Signature of Contractor

Name (please type) BARNETT-RANGE CORPORATION

Signature Walter F. Webber Jr., Project Superintendent

Date 8/24/88

Signature of Site Owner or Operator

Name (please type) BARNETT-RANGE CORPORATION

Signature Walter F. Webber Jr. for Barnett-Range Corporation

Date 8/24/88

NOTES:

1. Any changes in this document must be approved by this Department.
2. Any leaks discovered must be submitted to this office on an underground storage tank unauthorized leak/contamination site report form within 5 days of its discovery.
3. Three (3) copies of this plan must be submitted to this Department. One copy must be at the construction site at all times.
4. A copy of your approved plan must be sent to the landowner.



2030 Addison Street, Suite 500 • Berkeley, California 94704 • 415 540-6954

TRANSMITTAL MEMORANDUM

TO: Alameda County Health Agency  
Department of Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

DATE: October 26, 1988

ATTENTION: Mr. Lowell Miller

FILE: 87157.5

SUBJECT: Contractor Information  
Mill Springs Park Apartments  
Livermore, CA

WE ARE SENDING:           \_\_\_ Herewith                   \_\_\_ Under Separate Cover  
                                  \_\_\_ Via Mail                        \_\_\_ X Via Hand Delivery

THE FOLLOWING: Contractor Information

\_\_\_ X At your request    \_\_\_ X For your files    \_\_\_ For your review  
\_\_\_ X For your approval  \_\_\_ For correction    \_\_\_ For payment

REMARKS: Contractor performing Phase 2 removal at the above site is IT Corporation, U.S. EPA #CAD 0000 58917. This should complete all the information for the previously submitted County closures plan form. If you have any questions, please call.

Copies to: Barnett-Range Corp.  
            Attn: Mr. Larry Malcolm

By: Mark Milani  
            Mark Milani  
            Project Manager



aqua  
resources  
inc.

2030 Addison Street, Suite 500 • Berkeley, California 94704 • 415 540-6954

January 26, 1989

Alameda County Health Agency  
Department of Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

87157.5

Attention: Mr. Lowell Miller

Subject: Amendment to Tank Closure Permit  
Mill Springs Park Apartments (Formerly Livermore Superblock)  
Railroad Avenue between South P and South L Streets  
Livermore, California

Dear Mr. Miller:

This letter confirms our January 23, 1989 telecon regarding a small steel fuel oil storage tank encountered during mass grading of the site. As you requested, we have prepared an amendment for the previously approved Final Closure Plan for your review and approval. Results of the chemical analyses performed will be forwarded to your office upon receipt by Aqua Resources Inc. If you have any questions, please contact the undersigned.

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

Respectfully submitted,  
AQUA RESOURCES INC.

Mark Milani, P.E.  
Project Manager

Enclosure

cc: Addressee

Barnett Range Corporation  
Attn: Mr. Larry Malcolm

8. Contact Person for Investigation

Name Mark Milani Title Project Manager

Phone 415-540-6954

9. Total No. of Tanks at facility 1

10. Have permit applications for all tanks been submitted to this office?  
Yes [  ] No [  ]

11. State Registered Hazardous Waste Transporters/Facilities

a) Product/Waste Transporter

Name To be determined EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

b) Rinsate Transporter

Name To be determined EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

c) Tank Transporter

Name To be determined EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

d) Contaminated Soil Transporter

Name \_\_\_\_\_ EPA I.D. No. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

12. Sample Collector

Name Mark Milani

Company Aqua Resources Inc.

Address 2030 Addison Street, Suite 500

City Berkeley State CA Zip 94704 Phone 415-540-6954

13. Sampling Information for each tank or area

Tank or Area		Material sampled	Location & Depth
Capacity	Historic Contents (past 5 years)		
Approximately 200-gallon tank, steel construction	Tank was abandoned historic contents unknown	-Tank residue (fluid) -Excavated soil	Tank residue sample from tank Excavated soil -base of tank, depth 3½ feet -composite of excavated soil removed from excavation -base of excavation, depth 12½ to 13½ feet

14. Have tanks or pipes leaked in the past? Yes  No

If yes, describe. Tank appears to have leaked from filler pipe - tank body connection

15. NFPA methods used for rendering tank inert? Yes  No

If yes, describe. To be provided

16. Laboratories

Name Curtis and Tompkins, Ltd.

Address 2323 5th Street

City Berkeley State CA Zip 94710

State Certification No. 159



2030 Addison Street, Suite 500 • Berkeley, California 94704 • 415 540-6954

RECEIVED  
DEC 1 1988  
HAZARDOUS WASTE PROGRAM

December 15, 1988

Regional Water Quality Control Board  
San Francisco Region  
1111 Jackson Street, Rm 6000  
Oakland, CA 94607

87157.5

Attn: Mr. Curtis Scott  
Land Disposal Division

Subject: Amended Request for Exemption from Existing Disposal  
Regulations/Fuel Oil Contaminated Soil/Mill Springs Park Apartment  
Site, Livermore, CA

Dear Mr. Scott:

This letter amends our request for exemption from existing disposal regulations, and presents additional data requested by you and Mr. Ken Theisen at the December 13, 1988 meeting held at your office. A summary of chemical analyses performed to date and copies of all certified chemical test reports were attached to the December 13, 1988 letter presented to you at the meeting. As we discussed, this disposal exemption would apply to soils found to be contaminated with fuel oil at the Mill Springs Park Apartment Site in Livermore.

We are requesting this disposal exemption under section 2511-H, Subchapter 15 "Discharge of Waste to Land," Chapter 3, Title 23 of the California Administration Code. This request is based on chemical analyses that characterize the fuel contaminated soil as being non-toxic, that no free groundwater was encountered in previous borings performed by Aqua Resources Inc (ARI) to depths of up to 32 feet and that the contaminated soil would be reused onsite under paved areas. Reuse under paved areas will prevent contact with surface infiltration and thus greatly reduce potential for migration.

Logs of previous borings performed by ARI, boring location plans and the Phase I and Phase II excavation plans have been provided as attachments to this letter. If you have any questions, please contact the undersigned.

Respectfully submitted,  
AQIA RESOURCES INC.

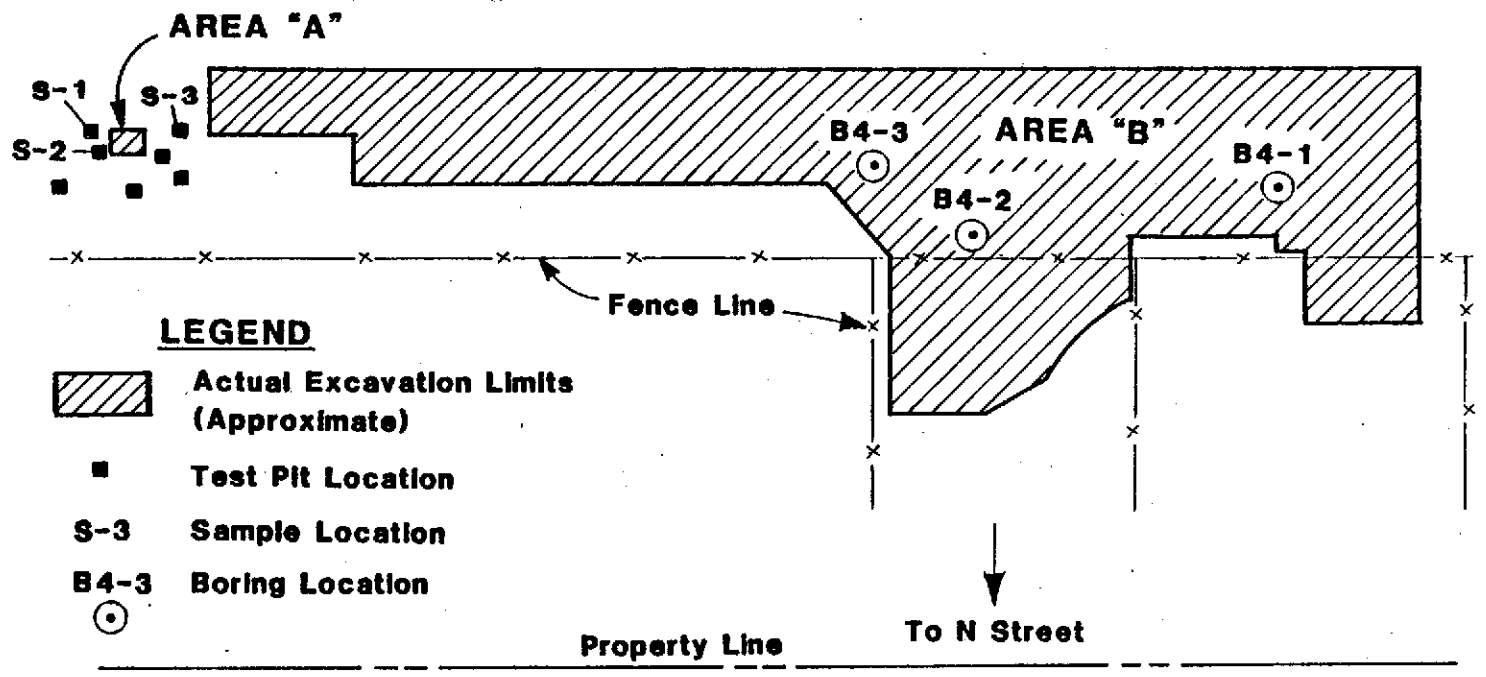
*Mark Milani*

Mark Milani, P.E.  
Project Manager




Attachment: Boring Logs  
Boring Location Plans  
Phase I & II Excavation Plans

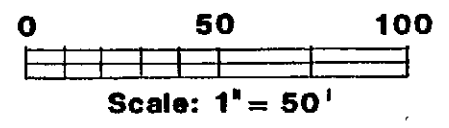
Copies: Barnett Range Corporation  
Attn: Mr. Larry Malcolm

Alameda County Health Agency  
Environmental Health Department,  
Hazardous Material Division  
Attn: Mr. Lowell Miller



**LEGEND**

-  Actual Excavation Limits (Approximate)
-  Test Pit Location
- S-3** Sample Location
- B4-3** Boring Location
- 



**BORING AND TEST PIT LOCATION PLAN  
MILL SPRINGS PARK APARTMENTS  
RAILROAD AVENUE  
LIVERMORE, CALIFORNIA  
for  
Barnett-Range Corporation**

**PLATE 1**

Reference: Excavation Limit Plan by  
Aqua Resources Inc. dated August  
1988, scale 1"=50'



LOCATION	L-1	DRILLER	ELEVATION AND DATE	DATE	12/18/87	DATE FINISHED	12/18/87
DRILLING CONTRACTOR	HEW Drilling Co.		STARTED	10		ROCK	
EQUIPMENT	CME-55 Solid Flight Auger		NO. OF DIST.	0		NO. OF CORE	2
DIAMETER OF BORING	6-inch		SAMPLES	FIRST		12H HRS.	
PURPOSE OF BORING			DEPTH (FEET)			CHECKED BY:	
SAMPLING EQUIPMENT	2 1/2-inch split barrel		LOGGED BY:	David Church			

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG	LITHOLOGY	SAMPLES			DRILLING RATE / TIME	REMARKS
				NO.	TYPE	BLOW COUNT		
0	Silty gravel							BL=Brass Liner
	Silt with trace gravel							
	Gravel, coarse							
6				1	BL			
10	Boring terminated at 10 feet No free water encountered			2	BL			
15								
20								
25								
30								

Project Livermore Superblock  
Project No. 87157.2

### LOG OF BORING

Fig.

BORING LOCATION	L-2	ELEVATION AND DATUM	
DRILLING CONTRACTOR	HEW Drilling Co.	DATE COMPLETED	12/18/87
EQUIPMENT	CME-55 solid Flight Auger	DEPTH (FEET)	11
DIAMETER OF BORING	6-inch	NO. OF DIST.	0
PURPOSE OF BORING		SAMPLES	FIRST
EQUIPMENT	2 1/2-inch split barrel	RATE (FEET)	
COMMENTS		LOGGED BY:	David Church
		DATE FINISHED	12/18/87
		NO. OF CORES	2
		CORRECTION	24 THRS.
		CHECKED BY:	

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES			REMARKS
			NO.	TYPE	BLOW COUNT	
	Gravelly silt					BL=Brass Liner
	Silty gravel		1	BI		
5						
10						
	Boring terminated at 11 feet No free water encountered		2	BI		
15						
20						
25						
30						

Project	Livermore Superblock	<b>LOG OF BORING</b>	Fig.
Project No.	87157.2		

BORING LOCATION L-3	ELEVATION AND DATUM	DATE STARTED 12/18/87	DATE FINISHED 12/18/87
DRILLER HEW Drilling Co.	NO. OF DIST. 0	DEPTH (FT) 10½	ROCK UNDIST. (FT) 2
EQUIPMENT CME-55 Solid Flight Auger	DIAMETER 6-inch	WATER FIRST DEPTH (FT) LOGGED BY David Church	CORE 24 TMS.
PURPOSE OF BORING SAMPLING EQUIPMENT 2½-inch split barrel	CHECKED BY:		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES				REMARKS
			NO.	TYPE	BLOCK COUNT	DRILLING RATE/ FEET	
0	Silty gravel						BL=Brass Liner
5	Clay Silty gravel, coarse size gravel, some clay		1	Bl			
10	Sandy gravel		2	Bl			
10½	Boring terminated at 10½ feet No free water encountered						
15							
20							
25							
30							

Project Livermore Superblock  
Project No. 87157.2

### LOG OF BORING

Fig.

BORING LOCATION	L-4	ELEVATION AND DATUM		DATE	12/18/87	DATE FINISHED	12/18/87
DRILLING CONTRACTOR	HEW Drilling Co.	DRILLER		STARTED		ROCK	
DRILLING EQUIPMENT	CME-55 Solid Flight Auger			COMPLETED		DEPTH (FEET)	10
DIAMETER OF BORING	6-inch			NO. OF DIST.	0	DEPTH (FEET)	2
PURPOSE OF BORING				SAMPLER	FIRST	COMPL.	24 HRS.
SAMPLING EQUIPMENT	2 1/2-inch split barrel			DEPTH (FEET)		CHECKED BY:	
COMMENTS				LOGGED BY:	David Church		

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG	LITHOLOGY	SAMPLES			REMARKS
				NO.	TYPE	BLOW COUNT	
0	Gravel						BL-Brass Liner
	Clay			1	BL		
5	Clayey gravel						
10	Boring terminated at 10 feet No free water encountered			2	BL		
15							
20							
25							
30							

Project Livermore Superblock  
Project No. 87157.2

### LOG OF BORING

Fig.

BORING LOCATION	L-5	ELEVATION AND DATUM	
DRILLING CONTRACTOR	HEW Drilling Co.	DATE STARTED	12/18/87
DRILLING EQUIPMENT	CME-55 Solid Flight Auger	COMPLETION DEPTH (FEET)	10
DIAMETER OF BORING	6-inch	NO. OF SAMPLES	0
PURPOSE OF BORING		WATER DEPTH (FEET)	
SAMPLING EQUIPMENT	2 1/2-inch split barrel	LOGGED BY:	David Church
COMMENTS		DATE FINISHED	12/18/87
		NO. OF CORES	2
		COMPL. TIME	24 HRS.
		CHECKED BY:	

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG	SAMPLES			REMARKS
			NO.	TYPE	BLON COUNT	
	Gravel					BL=Brass Liner
	Clayey gravel					
	Clay					
6	Clayey sand, trace fine size gravel		1	BL		
	Clayey gravel					
10	Boring terminated at 10 feet No free water encountered		2	BL		
15						
20						
25						
30						

Project	Livermore Superblock	<b>LOG OF BORING</b>	Fig.
Project No.	87157.2		

BORE LOCATION: L-6  
 DRILLING CONTRACTOR: HEW Drilling Co. DRILLER:  
 DRILLING EQUIPMENT: CME-55 Solid Flight Auger  
 DIAMETER OF BORING: 6-inch  
 PURPOSE OF BORING:  
 EQUIPMENT USED: 2 1/2-inch split barrel  
 COMMENTS:

ELEVATION AND DATE:  
 DATE: 12/18/87  
 STARTED AT: 10  
 DEPTH (FEET):  
 NO. OF SAMPLES: 0  
 WATER (GALLONS):  
 LOGGED BY:

DATE COMPLETED: 12/18/87  
 HOURS: 2  
 CORE:  
 170 HRS:  
 CHECKED BY:

David Church

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGICAL	SAMPLES				REMARKS
			NO.	TYPE	BLCM COUNT	DRILLING RATE/HR	
0	Gravel (ballast)						BL=Brass Liner
0-5	Gravelly silt, light brown		1	BL			
5-10	Sandy, silty gravel, dry		2	BL			
10	Boring terminated at 10 feet No free water encountered						
16							
20							
25							
30							

Project Livermore Superblock  
 Project No. 87157.2

LOG OF BORING

Fig.

LOCATION L-7  
 DRILLING CONTRACTOR HEW Drilling Co. DRILLER  
 DRILLING EQUIPMENT CME-55 Solid Flight Auger  
 DIAMETER OF BORING 6-inch  
 PURPOSE OF BORING  
 SAMPLING EQUIPMENT 2½-inch split barrel  
 COMMENTS

ELEVATION AND DATUM  
 DATE STARTED 12/18/87  
 DEPTH (FEET) 11  
 NO. OF SAMPLES 0  
 SAMPLES FIRST  
 DEPTH (FEET)  
 LOGGED BY:

DATE FINISHED 12/18/87  
 NO. OF TUBES (L) 2  
 NO. OF TUBES (R) 20 INS.  
 CHECKED BY:

David Church

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES				REMARKS
			NO.	TYPE	BLCH COUNT	DRILLING RATE/FEET	
	Silty gravel						BL=Brass Liner
	Clay, red						
	Gravelly clay		1	BI			
6							
10							
	Boring terminated at 11 feet No free water encountered		2	BI			
15							
20							
25							
30							

Project Livermore Superblock  
 Project No. 87157.2

LOG OF BORING

Fig.

BORING LOCATION	B-20	ELEVATION AND DATUM	
DRILLING CONTRACTOR	Water Development Corp.	DRILLER	
DRILLING EQUIPMENT	CME-55, Hollow Stem Auger	DATE STARTED	4/26/88
DIAMETER OF BORING	8-inch	COMPLETION DEPTH (FT)	15
PURPOSE OF BORING		NO. OF DIST. SAMPLES	0
SAMPLING EQUIPMENT	2½-inch split barrel	WATER FIRST DEPTH (FT)	
COMMENTS	Boring backfilled with Bentonite grout	LOGGED BY:	David Church
		DATE FINISHED	4/26/88
		ROCK DEPTH (FT)	
		UNDIST. CORE	3
		COMPL. HRS.	1 2/4
		CHECKED BY:	

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES				REMARKS
			NO.	TYPE	BLOW COUNT	DRILLING RATE/TIME	
	Sandy gravel, dry, fine-size gravel						BL=Brass Liner
	Silty clay, black						
	Sandy gravel, moist, coarse size gravel						
5	Dry with trace clay below 5 feet		1	BL			
10	Clayey gravelly sand, red-brown, moist, coarse		2	BL			
15	Sandy clay, brown, moist, stiff with gravel		3	BL			
	Boring terminated at 15 feet. No free water encountered						
20							
25							
30							

Project Livermore Superblock  
Project No. 87157.3

### LOG OF BORING

Fig.



BORING LOCATION	B-23		ELEVATION AND DATUM	
DRILLING CONTRACTOR	Water Development Corp.	DRILLER	DATE STARTED	4/26/88
DRILLING EQUIPMENT	CME-55 Hollow Stem Auger		COMPLETION DEPTH (FT)	15
DIAMETER OF BORING	8-inch		NO. OF DIST. SAMPLES	4
PURPOSE OF BORING			WATER FIRST DEPTH (FT)	
SAMPLING EQUIPMENT	2½-inch split barrel		LOGGED BY:	David Church
COMMENTS	Boring backfilled with Bentonite grout		CHECKED BY:	

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG	SAMPLES				REMARKS
			NO.	TYPE	BLOW COUNT	DRILLING RATE/ MIN.	
0	Sandy gravel						BL=Brass Liner
	Clayey sand, black, moist						
	Clayey gravel, moist, fine size gravel		1	BL			
5			2	BL			
	Coarse size gravel below 9 feet		3	BL			
10							
	Gravelly clay, brown, stiff						
	Clay, yellow-brown, moist		4	BL			
15	Boring terminated at 15 feet No free water encountered						
20							
25							
30							

Project Livermore Superblock	<b>LOG OF BORING</b>	Flg.
Project No. 87157.3		

BORING LOCATION	B-26	ELEVATION AND DATUM	
DRILLING CONTRACTOR	Water Development Corp.	DRILLER	
DRILLING EQUIPMENT	CME-55 Hollow Stem Auger	DATE STARTED	4/26/88
DIAMETER OF BORING	8-inch	COMPLETION DEPTH (FT)	15
PURPOSE OF BORING		NO. OF SAMPLES	0
SAMPLING EQUIPMENT	2 1/2-inch split barrel	WATER DEPTH (FT)	
COMMENTS	Boring backfilled with Bentonite Grout	LOGGED BY:	Voytek Bajsarowicz
		DATE FINISHED	4/26/88
		ROCK DEPTH (FT)	
		UNDIST. CORE	3
		COMPL. 24 HRS.	
		CHECKED BY:	

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES				REMARKS
			NO.	TYPE	BLOW COUNT	DRILLING RATE/FT-MIN	
5	Sandy gravel		1	BL			BL=Brass Liner
10	Clayey gravel clay interbed at 10 feet		2	BL			
15	Boring terminated at 15 feet No free water encountered		3	BL			
20							
25							
30							

Project	Livermore Superblock	<b>LOG OF BORING</b>	Fig.
Project No.	87157.3		

BORING LOCATION B4-1	ELEVATION AND DATUM 5'7" below original site grade
DRILLING CONTRACTOR ENSCO	DRILLER Tim
DRILLING EQUIPMENT Mobile B-34	DATE STARTED 9/9/88
DIAMETER OF BORING 8-inch hollow stem auger	DATE FINISHED 9/9/88
PURPOSE OF BORING Contamination Investigation	COMPLETION DEPTH (FT) 16½
SAMPLING EQUIPMENT 2-inch I.D. split barrel	NO. OF DIST. SAMPLES
COMMENTS No free groundwater encountered	WATER FIRST DEPTH (FT)
	LOGGED BY: J. Alt
	CHECKED BY: M. Milani

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES				REMARKS
			NO.	TYPE	BLOW COUNT	DRILLING RATE/ TIME	
	Fill from constructing drilling pad						
5	Clayey gravel, dark grey, dry, gravel up to 1" diameter with interbed of wet blue-grey sandy clay between 5 and 6½ feet moist below 6½ feet		1		35 32		
10	Silty clay, brown, moist, with trace sand and gravel		2		23 50		
15	Clayey sand and gravel, brown, moist, gravel up to ½" in diameter		3		10 9 7		
	Boring terminated at 16½ feet. No free groundwater encountered. Boring grouted full depth.		4		9 17 34		

Project Mill Springs Park Apartments  
Project No. 87157.5

**LOG OF BORING**

Fig.

BORING LOCATION	B4-2	ELEVATION AND DATUM	8 feet below original site gra.	
DRILLING CONTRACTOR	ENSCO	DRILLER	Tim	DATE STARTED
DRILLING EQUIPMENT	Mobile B-34	COMPLETION DEPTH (FT)	16½	DATE FINISHED
DIAMETER OF BORING	8-inch hollow stem auger	NO. OF DIST. SAMPLES	3	ROCK DEPTH (FT)
PURPOSE OF BORING	Contamination Investigation	WATER FIRST DEPTH (FT)		UNDIST. CORE
SAMPLING EQUIPMENT	2-inch I.D. split barrel	LOGGED BY:	J. Alt	COMPL. 24 HRS.
COMMENTS	No free groundwater encountered	CHECKED BY:	M. Milani	

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES			REMARKS
			NO.	TYPE	BLOW COUNT	
0	Fill from drilling pad construction					
5	Clayey sand and gravel, light brown, gravel up to 3/4" diameter		1		13 12 18	
10	Silty clay, light brown, moist, trace gravel		2		6 8 12	
16	Clayey sand and gravel, light brown, gravel up to 1" diameter		3		22 50	
16½	Boring terminated at 16½ feet. No free groundwater encountered. Boring grouted full depth.					
20						
25						
30						

Project Mill Springs Park Apartments  
Project No. 87157.5

**LOG OF BORING**

Fig.

BORING LOCATION	B4-3	ELEVATION AND DATUM	6'8" below original grade	
DRILLING CONTRACTOR	ENSCO	DRILLER	Tim	DATE STARTED
DRILLING EQUIPMENT	Mobile B-34	COMPLETION DEPTH (FT)	26½	DATE FINISHED
DIAMETER OF BORING	8-inch hollow stem auger	NO. OF SAMPLES		ROCK DEPTH (FT)
PURPOSE OF BORING	Contamination Investigation	WATER DEPTH (FT)	FIRST	UNDIST. CORE
SAMPLING EQUIPMENT	2-inch I.D. split barrel	LOGGED BY:		COMPL. 24 HRS.
COMMENTS	No free groundwater encountered			
				CHECKED BY:

DEPTH (FEET)	DESCRIPTION	GRAPHIC LOG LITHOLOGY	SAMPLES				REMARKS
			NO.	TYPE	BLOW COUNT	DRILLING RATE/TIME	
5	Clayey sand and gravel, blue-grey, gravel up to 1" diameter		1		12 26 20	1:15	
10	Clay, green-grey, moist		2		4 8 12		
15	Clayey gravel, green-grey, moist, gravel up to 2" diameter		3		10 30 19		
20	Clayey sand and gravel, blue, wet		4				
25	Sandy gravel, light brown, wet, trace clay		5		27 50		
	Boring terminated at 26½ feet. No free groundwater encountered. Boring grouted full depth.						

Project Mill Springs Park Apartments  
Project No. 87157.5

## LOG OF BORING

Fig.



AQUA RESOURCES, INC.  
BERKELEY, CALIFORNIA