

◀ MORE ON BACK ▶

UPDATES:

\* PETROLEUM RELEASE FORM \*

Please Check All That Apply

2-8-96

2/21/96

7-31-96

-----INCIDENT INFORMATION-----

LOG NBR: 26-95-303  
UST FAC NBR: 3933  
SITE NAME: ARCO # 6118  
SITE ADDRESS: 5282 N Lombard  
SITE CITY: Port ZIP: 97203  
SITE COUNTY: Mult PHONE: \_\_\_\_\_

RECEIVED BY: SAM  
DATE REPORTED: 11-7-95

☒ REGULATED UST  
☐ NON-REGULATED UST  
☐ HEATING OIL TANK

FUNDING

☒ LUST ☐ HSRAF  
☐ OHC ☐ FINANCIAL ASST

PROJECT MANAGER: \_\_\_\_\_

☒ INVOICE START ☒ INVOICE STOP  
LTR. AGR. 1-30-96 ☒ NFA SENT  
DATE: \_\_\_\_\_

-----MAIL CONTACTS-----

REPORTED BY

NAME: Brian Kier  
COMPANY: EMCON  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_ ZIP: \_\_\_\_\_  
STATE: \_\_\_\_\_ PHONE: 624 7200

RESPONSIBLE PARTY

NAME: Chuck Hutchens  
COMPANY: ARCO Products Company  
ADDRESS: 12520 NE 160th Place  
CITY: Woodinville ZIP: 98072-7960  
STATE: WA PHONE: \_\_\_\_\_

INVOICE CONTACT

NAME: RP  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_ ZIP: \_\_\_\_\_  
STATE: \_\_\_\_\_ PHONE: \_\_\_\_\_

OTHER CONTACT(S)

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_ ZIP: \_\_\_\_\_  
STATE: \_\_\_\_\_ PHONE: \_\_\_\_\_

-----SITE ASSESSMENT-----

DATE DISCOVERED: 11-7-95  
☐ EMERGENCY RESP.  
☐ ENFORCEMENT

☒ FURTHER CLEANUP REQ.  
☐ NO FURTHER CLEANUP REQ.  
☐ OFFSITE MIGRATION

\_\_\_\_\_  
L.I.P.S. SCORE (Region)

CONFIRMATION:

☐ SI) STAFF  
☐ LD) LAB:DEQ  
☐ LR) LAB:RP  
☐ LO) LAB:OTHER  
☐ RR) RP REPORT  
☒ CN) CONTRACTOR  
☐ OT) OTHER \_\_\_\_\_

DISCOVERY:

☐ RM) ROUTINE MONITORING  
☒ DC) DECOMMISSIONING  
☐ CP) COMPLAINT  
☐ IC) INVENTORY CONTROL  
☐ SA) SITE ASSESSMENT  
☐ TT) TANK TEST  
☐ OT) OTHER \_\_\_\_\_

CAUSE:

☒ TL) TANK LEAK  
☐ PL) PIPE LEAK  
☐ OF) OVERFILL  
☐ SS) SURFACE SPILL  
☐ PV) PUMP/VALVE LEAK  
☐ OT) OTHER \_\_\_\_\_  
☐ UN) UNKNOWN

7-31-96



# -----CONTAMINANTS - IMPACTS-----

## CONTAMINANTS:

- ☐ UG) UNLEADED GASOLINE
- ☐ LG) LEADED GASOLINE
- ☒ MG) MISC. GASOLINE
- ☐ DS) DIESEL
- ☐ FO) FUEL OIL
- ☐ WO) WASTE OIL
- ☐ LB) LUBRICANT

- ☐ SV) SOLVENT
- ☐ BF) BUNKER FUEL
- ☐ OP) OTHER PET. DIST.
- ☐ CH) CHEMICAL
- ☐ HO) HEATING OIL
- ☐ UN) UNKNOWN
- ☐ OT) OTHER \_\_\_\_\_

## MEDIA/IMPACT:

- ☒ SL) SOIL
- ☐ GW) GROUNDWATER
- ☐ SW) SURFACE WATER
- ☐ DW) DRINKING WATER
- ☐ FV) FACILITY (VAPOR)
- ☐ FP) FACILITY (FREE PROD)

# -----SITE - SOIL MANAGEMENT-----

RELEASE STOPPED: 11-7-95  
 CLEANUP STARTED: 11-7-95

REMEDATION COMPLETED: 2-29-96 <sup>SAM</sup> 03/01/96  
 NO FURTHER ACTION: 7-31-96 JFS

SWLA PERMIT NUMBER: \_\_\_\_\_

DATE ISSUED: \_\_\_\_\_

AMOUNT OF SOIL (yds3) TREATED ON SITE: \_\_\_\_\_

AMOUNT OF SOIL (yds3) TREATED OFF SITE: 466 tons

## TREATMENT METHOD:

- ☐ AREATION
- ☒ THERMAL
- ☐ BIOLOGICAL
- ☐ OTHER \_\_\_\_\_

AMOUNT OF SOIL (yds3) DISPOSED OF: \_\_\_\_\_ ☐ TREATED

☐ UNTREATED

FINAL DISPOSITION OF SOIL:

- ☐ ONSITE
- ☐ LANDFILL

☐ ROAD BASE

☒ OTHER \_\_\_\_\_

*TPS Technologies*

NOTES/COMMENTS: \_\_\_\_\_

This Space Provided For Regional Use



## COST RECOVERY AGREEMENT

This document serves as an agreement between the undersigned (hereinafter "you") and the Department of Environmental Quality (DEQ) regarding DEQ review and oversight of the investigation and/or cleanup of petroleum (hazardous substances) at the property located at:

Facility Name: ARCO 6118  
Address: 5282 N Lombard St.  
City, Zip: Portland OR  
File/Log #: 26-95-303  
Date Sent: 2-7-96

DEQ agrees to review environmental documents submitted by you or on your behalf regarding the investigation and/or cleanup of the above-referenced site. Additional details regarding DEQ oversight will be established upon review of the initial site data.

DEQ requires that persons requiring DEQ review and oversight of investigation and cleanup activities agree to the terms of this agreement and pay project oversight costs.

DEQ project oversight costs will include direct costs and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are those general management and support costs of the DEQ and of the Environmental Cleanup Division (ECD) allocable to DEQ oversight of this agreement and not charged as direct personal services costs. Review and oversight costs shall not include any unreasonable costs or costs not otherwise recoverable by DEQ under ORS 465.255.

DEQ costs are payable within thirty (30) days of issuance of the monthly statement, by check made payable to the "Department of Environmental Quality."

If you elect not to enter into this agreement, it does not release you from any responsibility you might have from any reporting requirements, investigation and/or cleanup of petroleum (hazardous substances) at the above referenced facility. This does not preclude the DEQ from conducting audits or inspections of all or portions of the investigation and cleanup activities associated with this facility. Enforcement action may be initiated if violation of DEQ requirements is found.

Either DEQ or you may terminate this agreement by giving 15 days advance written notice to the other. Only those costs incurred or obligated by DEQ prior to the effective date of any termination of the agreement shall be recoverable under this Agreement. Termination of this agreement will not affect any other right DEQ may have for recovery of costs under any applicable law.

You will hold DEQ harmless for any claims (including but not limited to claims of property damage or personal injury) arising from activities reviewed or overseen under this agreement.

02/07/96 WED 13:08 [TX/RX NO 79001]



01/30/96 TUE 18:39 FAX 503 620 7658

EMCON - PORTLAND  
NEW RR ADDITION

This agreement is not and shall not be construed as an admission by you of any liability under ORS 465.255 or any other law or as a waiver by you of any defense such as liability. This agreement is not and shall not be construed as a waiver, release or settlement of claims DEQ may have against you or any other person or as a waiver of any enforcement authority DEQ may have.

The DEQ regional Office will be responsible for the review and oversight of the investigation and cleanup activities associated with the property. Please refer all site specific inquiries to that office.

All inquiries regarding cost recovery and/or invoices should be directed to Kathleen Lippitt at (503) 229-6635.

If the terms of this agreement are acceptable, please have it executed by an authorized officer in the space provided below. In order to more effectively schedule your project, please return this agreement within thirty (30) days of receipt to: Debi Smith, Department of Environmental Quality, Northwest Region Office, 2020 SW Fourth Avenue, Portland, Oregon 97201.

Accepted and agreed to this 30<sup>th</sup> day of Jan. 1996

By: CB Hutchens  
Title: Jr. Env. Remed. Engr.

Please provide the following information on where the invoices should be sent.

Individual Name: Mr. Chuck Hutchens Title: Field Engineer  
Company: ARCO PRODUCTS COMPANY  
Mail Address: 12520 NE 160th Place  
City, State, Zip: Woodinville, WA 98072-7960  
Phone Number: (206) 485-8792

01/28/96 FRI 18:16 (TX/RX NO 78711)

#513 P02/02

JAN-30-'96 TUE 17:04 ID:ARCO CHUCK HUTCHENS TEL NO:206 481-3530

TO:EMCON - PORTLAND

2002

EMCON - PORTLAND

02/07/96 WED 10:57 FAX 503 620 7658



July 31, 1996

CHUCK HUTCHENS  
ARCO PRODUCTS COMPANY  
12520 NE 160TH PLACE  
WOODINVILLE WA 98072-7960

DEPARTMENT OF  
ENVIRONMENTAL  
QUALITY

NORTHWEST REGION

Re: ARCO #6118  
File No. 26-95-0303

Dear Mr. Hutchens:

The Department of Environmental Quality has completed our review of the information submitted to date regarding the underground storage tank (UST) decommissioning and cleanup conducted at 5282 North Lombard, Portland, Oregon. The Department has determined that the site appears to be cleaned up in accordance with OAR 340-122-201 through -360, and that no further action is required at this time.

This determination is a result of our evaluation and judgement based on the regulations and facts as we now understand them, including:

1. Four 6,000 gallon gasoline USTs were removed and recycled at Schnitzer Steel Products, Portland, Oregon. One 12,000 gallon gasoline UST was removed and recycled at Columbia Resource, Vancouver, Washington.
2. Approximately 466 tons of petroleum-impacted soils were disposed of TPS Technologies, Portland, Oregon.
3. Groundwater was not encountered in the excavations.
4. After petroleum contaminated soil was removed, confirmatory sampling of all soils remaining beneath the dispenser island and the southwest UST excavation tested no higher than 9.3 parts per million (ppm) by Oregon Method Total Petroleum Hydrocarbon Gasoline (TPH-G), which is below the cleanup standard of 80 ppm for gasoline established for this site.
5. A pocket of contamination still exists on this property which exceeds currently required cleanup levels for this site, but which the Department approves leaving pursuant to OAR 340-122-355(4) since the removal of this contamination would endanger structures and utility lines on the property or be prohibitively expensive, and the contamination does not threaten human health, safety, welfare and the environment.

John A. Kitzhaber  
Governor



2020 SW Fourth Avenue  
Suite 400  
Portland, OR 97201-4987  
(503) 229-5263 Voice  
TTY (503) 229-5471  
DEQ-1



Arco #6118  
July 31, 1996  
Page 2

The pocket, estimated to be 27 cubic yards, is beneath the northwest portion of the former UST excavation. Gasoline concentrations are 340 ppm 12 feet below ground surface (bgs) and diminish to 3.3 ppm at 14 bgs.

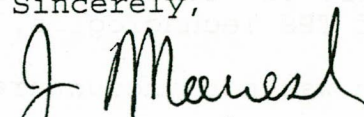
However, you should be aware that the Department's approval to leave a pocket of contamination is based on the site conditions described in the report as they exist today. Should conditions (i.e. land use) change allowing access to the contamination, you are responsible for further evaluation of the remaining contamination and any cleanup necessary at that time. You are also responsible for notifying any potential purchaser of the property about this remaining pocket of contamination.

The Department's determination will not be applicable if new or undisclosed facts show that the cleanup does not comply with the referenced rules. The Department's determination also does not apply to any conditions at the site other than the release of the petroleum product specifically addressed in your report. We recommend that a copy of all information be maintained with the permanent facility records.

Please note that pursuant to OAR 340-122-360(2), a copy of your report must be retained until ten (10) years after the first transfer of the property.

Your effort to comply with the regulations to ensure that your facility has been adequately cleaned up is appreciated. If you have any questions, please feel free to contact James Maresh at (503) 229-5527.

Sincerely,



James Maresh  
UST Cleanup Specialist  
Northwest Region

cc: Emcon  
15055 Sequoia Parkway  
Suite 140  
Portland OR 97224





**EMCON**

15055 SW Sequoia Parkway • Suite 140 • Portland, Oregon 97224 • (503) 624-7200 • Fax (503) 620-7658

DEPT OF ENVIRONMENTAL QUALITY  
RECEIVED

MAR 01 1996

NORTHWEST REGION

February 29, 1996

Project 40233-025.005

Mr. Jim Marsh  
Oregon Department of Environmental Quality  
2020 SW Fourth Avenue, Suite 400  
Portland, Oregon 97201

Re: Clarifications to Underground Storage Tank Replacement Assessment Report, ARCO  
Service Station 6118, Portland, Oregon (DEQ File 26-95-303)

Dear Mr. Marsh:

In response to your request, and on behalf of ARCO Products Company, EMCON has prepared this letter summarizing clarifications to the referenced report, dated January 18, 1996:

- The report incorrectly states that an estimated 109 cubic yards of soil were left in place with concentrations of total petroleum hydrocarbons as gasoline exceeding Oregon Department of Environmental Quality (DEQ) matrix level 2 cleanup standards. The correct estimated amount is 27 cubic yards (see Figure 3 in the report).
- Sample E-8 was collected from the bottom of the excavation at 12 feet below ground surface (bgs). Because it was uncertain whether E-8 would be below DEQ cleanup standards, an additional sample (E-14) was collected below E-8 at 14 feet bgs (see Table 2 in the report). Because of job constraints (large excavation created hazards, job deadline), the excavation could not be left open until laboratory results were ready. Even if EMCON had attempted to excavate the soil from 12 to 14 feet bgs, a portion of the identified pocket extends outside the excavation (see Figure 3 in the report). Removal of this soil would have required extensive overexcavation and would have been prohibitively expensive.

EMCON believes the site has been adequately remediated. We request the DEQ issue a no-further-action letter for the site.





Mr. Jim Marsh  
February 29, 1996  
Page 2

Project 40233-025.005

Please call if you have any questions or if we can be of further assistance.

Sincerely,

EMCON



Brian Kier, P.E.  
Engineer



Cary W. Goodman  
Supervising Scientist

cc: Chuck Hutchens; ARCO, Woodinville, Washington  
Rick Silverman; DEQ NW Region, Portland, Oregon



**EMCON**

15055 SW Sequoia Parkway • Suite 140 • Portland, Oregon 97224 • (503) 624-7200 • Fax (503) 620-7658

**FAX TRANSMITTAL**

TO:

Jim Marsh - DEQ

DATE:

2/29/96

FROM:

Brian Kier

TIME:

0930Number of Pages 3 (Including Cover Page)

If you have received this communication in error, please notify us at the telephone number listed above.

Sender Note: Complete if applicable.

CLIENT:

ARCO 6168

Project/Task #:

PHONE #:

FAX #:

229-6945

Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited.

COMMENTS:

Letter we discussed - Please call w/ any  
questions.ThanksORIGINAL TO FOLLOW: ☒ORIGINAL WILL NOT FOLLOW: ☐BROADCAST: ☐

ANY QUESTIONS REGARDING THIS TRANSMISSION, PLEASE CALL THE NUMBER LISTED ABOVE



**EMCON**

15055 SW Sequoia Parkway • Suite 140 • Portland, Oregon 97224 • (503) 624-7200 • Fax (503) 620-7658

February 29, 1996  
Project 40233-025.005

Mr. Jim Marsh  
Oregon Department of Environmental Quality  
2020 SW Fourth Avenue, Suite 400  
Portland, Oregon 97201

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Mr. Jim Marsh  
February 29, 1996  
Page 2

Project 40233-025.005

Please call if you have any questions or if we can be of further assistance.

Sincerely,

EMCON

  
Brian Kier, P.E.  
Engineer

  
Cary W. Goodman  
Supervising Scientist

cc: Chuck Hutchens; ARCO, Woodinville, Washington  
Rick Silverman; DEQ NW Region, Portland, Oregon



# UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Brian Kier DATE: \_\_\_\_\_  
WITH: Emcon TIME: 0945  
TELEPHONE NO: ( ) 624-7200  
REGARDING: ARCO 6118  
FILE NO: 26-95-303

## SUMMARY OF CALL

Further excavation of gasoline contaminated soil was impractical due to proximity of nearby street. Pit was already too deep - Pocket of contamination was miscalculated - should be  $\frac{1}{4}$  of stated volume (109 yds<sup>3</sup>)

J. Mansel  
Staff Signature



February 12, 1996

F  
Oregon

CHRISTINE RYBAK  
ARCO PRODUCTS COMPANY  
PO BOX 6038  
ARTESIA CA 90702 6038

DEPARTMENT OF  
ENVIRONMENTAL  
QUALITY

Re: ARCO #6118  
File No.: 26-95-0303

NORTHWEST REGION

Dear Ms. Rybak:

On February 7, 1996, we received the signed Cost Recovery Agreement which indicated your interest in participating in the Underground Storage Tank Cleanup Voluntary Cost Recovery Program.

At the current time, we have a backlog of projects which have signed up for Departmental oversight through this program, and these are currently being assigned on a first come, first serve, basis. As additional staff resources become available, your project will be assigned to a project manager.

Our goal is to assign projects as soon as possible. However, at current demand levels, we are estimating there will be a eight to ten week wait before your project can be assigned. You will be notified as soon as your project has been assigned and provided the name and phone number of the project manager who will be working with you. Your status on the waiting list will not delay processing of a soil treatment application, if you propose to conduct soil treatment and have applied for a letter of authorization.

We do appreciate your interest in this program and look forward to working with you in the near future.

If you have any questions about the status of your site for assignment, please contact Andree Pollock at (503) 229-5474. If you have a general question about the regulations or cleanup activities at your site, please call (503) 229-5489 and ask to speak to the Underground Storage Tank Duty Officer.

Sincerely,



Richard P. Reiter  
UST Section Manager

John A. Kitzhaber  
Governor



cc: Chuck Hutchens  
12520 NE 160th Place  
Woodinville, WA 98072-7960

2020 SW Fourth Avenue  
Suite 400  
Portland, OR 97201-4987  
(503) 229-5263 Voice  
TTY (503) 229-5471  
DEQ-1





**EMCON**

15055 SW Sequoia Parkway • Suite 140 • Portland, Oregon 97224 • (503) 624-7200 • Fax (503) 620-7658

*Silverman*

DEPT OF ENVIRONMENTAL QUALITY  
RECEIVED

JAN 18 1996

January 18, 1996  
Project 40233-025.005

NORTHWEST REGION

Mr. Chuck Hutchens  
ARCO Products Company  
12520 NE 160th Place  
Woodinville, Washington 98072-7960

Re: Underground Storage Tank Replacement Assessment, ARCO Service Station 6118,  
Portland, Oregon (DEQ File 26-95-303).

Dear Chuck:

Consistent with work authorization 18417 00, EMCON has prepared this report summarizing the preliminary assessment and removal of five underground storage tanks (USTs) at the referenced site (see Figure 1).

## BACKGROUND

The site is an active service station. A preliminary UST assessment in October 1989 found total petroleum hydrocarbons (TPH) in soil at concentrations below Oregon Department of Environmental Quality (DEQ) matrix level 2 cleanup standards. Groundwater was not encountered during drilling, which extended a maximum of 31.5 feet below the ground surface (bgs). The DEQ issued a no-further-action (NFA) letter for the site. ARCO then postponed replacing the USTs.

An assessment conducted while stage 2 vapor recovery piping was installed in May and June 1992 found a layer of soil near the dispenser islands that contained TPH at concentrations above matrix level 2 standards. Chromium, lead, and polychlorinated biphenyls were also detected. Hand-augered borings in November 1992 defined a pocket of contaminated soil at the site. Nevertheless, the DEQ subsequently issued a second NFA letter for the site.

## SCOPE-OF-WORK

EMCON performed the following tasks during this phase of work:

- Conducted a preliminary UST removal assessment, which consisted of drilling four soil borings in the vicinity of the USTs.
- Observed and documented the subsurface conditions exposed during the excavation and removal of five gasoline USTs and associated product and vapor recovery lines.





- Directed the excavation of TPH-contaminated soil.
- Collected characterization and confirmation soil samples from the excavations.
- Coordinated laboratory analysis of selected soil samples.
- Compiled and evaluated the data.
- Prepared this report.

## **SOIL BORINGS AND SAMPLING**

On August 14, 1995, four borings (B-1 through B-4) were drilled in the vicinity of the USTs and fuel islands (see Figure 2). Drilling was performed using a 6-inch-diameter hollow-stem auger and a CME W5 HT drill rig, owned and operated by Cascade Drilling, Inc., of Portland, Oregon. An EMCON engineer was present during all drilling activities.

Soil samples were collected from each boring at 5-foot intervals, using the standard penetration test method. All samples were field screened using a flame ionization detector (FID). Soil samples were put in laboratory-supplied glass containers and placed on ice in a cooler. Samples were shipped under chain-of-custody procedures to Columbia Analytical Services Inc. (CAS), of Kelso, Washington, for analysis. Appendix A summarizes the soil sampling methods and procedures.

The borings penetrated approximately 4 feet of asphalt and sandy gravel subbase, followed by sandy clay or sand with gravel to depths of 4 to 11 feet bgs, underlain by sand and gravely sand. All borings were completed to a total depth of 21 feet bgs. Boring logs are included in Appendix B.

Groundwater was not encountered in any of the borings. No petroleum odors were detected in the samples or drill cuttings. The borings were backfilled with bentonite chips to 1 foot bgs and then capped with asphalt. Drill cuttings were stockpiled on site, covered with Visqueen™, and later disposed of at TPS in Portland, Oregon, during UST replacement.

## **UST DECOMMISSIONING**

An EMCON engineer (Elizabeth Ruddy – soil matrix cleanup license 14347) observed the UST decommissioning, product and vapor recovery line removal, and excavation of TPH-contaminated soil.



ARCO hired American Construction (American) of Vancouver, Washington, to decommission and replace the USTs and product and vapor recovery lines, as part of a station upgrade. American also excavated TPH-contaminated soil, under EMCON's direction. American transported TPH-contaminated soil to TPS for treatment by thermal desorption, and clean soil to Porter and Yetts landfill in Portland.

Soil samples were collected either directly from the excavation or from the backhoe bucket (see Appendix A). Samples were numbered consecutively, although only selected samples were submitted for laboratory analysis.

### **UST Decommissioning**

American removed four gasoline USTs (6,000 gallons each) on November 6, 1995, and one gasoline UST (12,000 gallons) on November 8. EMCON personnel were on site during all removals. The steel USTs (USTs 1 through 4 on Figure 2) had some apparent rusting and corrosion, but no noticeable holes. Petroleum staining was evident on the sides of USTs 2 and 3. The fiberglass UST (UST 5) did not have any holes or staining. Installation of the new double-wall steel USTs required American to install temporary sheet piling and excavate to approximately 16 feet bgs.

Soil surrounding the USTs consisted of backfill sand that had hydrocarbon-like odors. After removal of USTs 1, 2, 3, and 4, American excavated TPH-contaminated soil to approximately 12 feet bgs. EMCON notified the DEQ of a petroleum release on November 7, 1995. The DEQ assigned number 26-95-303 to the site. EMCON collected confirmation samples E-1, E-2, E-3, E-7, E-8, E-9, E-12, and E-13 from the floor of the excavation (see Figure 3). After laboratory analysis of those samples, sample E-14 was collected at 14 feet bgs, below where sample E-8 had been collected.

After UST 5 had been removed, soil samples E-15, E-16, and E-19 were collected, at depths ranging from 12 to 15 feet bgs. American then continued the excavation to approximately 16 feet bgs, for the new USTs.

The decommissioning checklist and service change report are included in Appendix C. The four steel tanks were removed and transported to Schnitzer Steel in Portland, Oregon, for disposal (see Appendix C for receipts). The fiberglass UST was disposed of at Columbia Resource in Vancouver, Washington. Approximately 310 cubic yards of TPH-contaminated soil were removed from the UST excavation and transported to TPS (see Appendix D for disposal receipts) and an estimated 400 cubic yards of clean soil were transported to Porter and Yetts for disposal.



## **Product and Vapor Recovery Line Removal**

During November 1995, American removed the dispensers, product lines, and vapor recovery lines. Soil with petroleum hydrocarbon odors was discovered beneath the west dispenser of each island and under the product piping running to the USTs. Soil beneath the product piping, which ran east to west along the dispenser islands, did not appear to be impacted with petroleum hydrocarbons. Soil samples D-1 through D-7 were collected from beneath the dispenser islands and along the product line trenches running to the USTs. Samples D-1 and D-4 were collected beneath the west dispenser of each island after TPH-contaminated soil had been removed (see Figure 3).

Approximately 90 cubic yards of TPH-contaminated soil were removed from beneath the west dispensers and from the product line trenches. The contaminated soil, along with soil from the UST excavation, was transported to TPS (see Appendix D for disposal receipts).

## **ANALYTICAL RESULTS**

Soil samples were sent to either CAS or North Creek Analytical (NCA) of Portland, Oregon, under chain-of custody procedures. Copies of the analytical reports and chain-of-custody records are found in Appendices E and F.

### **Soil Borings**

Selected soil samples were analyzed for TPH identification by DEQ Method TPH-HCID. TPH was not detected at or above the method reporting limits (MRLs) in any of the analyzed soil samples. Results are summarized in Table 1.

### **UST Decommissioning**

Soil sample E-8, collected at 12 feet bgs beneath the west end of UST 2, was analyzed for TPH identification by DEQ Method TPH-HCID. TPH as gasoline and TPH as diesel were detected in the sample, although the laboratory indicated that the TPH as diesel was due to overlap of gasoline range hydrocarbons. On the basis of the TPH-HCID results for E-8, additional confirmation samples were analyzed for TPH as gasoline by DEQ Method TPH-G.

Analysis of sample E-8 by DEQ Method TPH-G detected TPH as gasoline at a concentration of 340 parts per million (ppm), which is above the matrix level 2 cleanup standard of 80 ppm. Sample E-14, collected beneath the location E-8 at 14 feet bgs, contained TPH as gasoline at a concentration of 3.3 ppm (see Figure 3). TPH as gasoline



was not detected at or above the MRL in the remaining soil samples from the UST excavation. Soil sample results are summarized on Table 2.

### **Product and Vapor Recovery Line Removal**

Laboratory analysis of soil samples D-1, D-2, and D-3 detected TPH as gasoline at concentrations of 9.2, 2.8, and 2.3 ppm, respectively. These concentrations are below the DEQ matrix level 2 cleanup standard (80 ppm). None of the other samples collected near the dispensers or from the product line trenches had concentrations of TPH as gasoline at or above the MRLs (see Table 2 and Appendix F).

### **CONCLUSION**

Sample E-8, collected at 12 feet bgs from beneath UST 2, was the only sample with a TPH concentration exceeding the matrix level 2 cleanup standard. Sample E-14, collected 2 feet below E-8, contained TPH as gasoline at a concentration of 3.3 ppm. Conservatively assuming that contaminated soil extends from 12 to 14 feet bgs and laterally from sample E-2 to boring B-3, and from E-9 to E-7, as much as 109 cubic yards of soil contaminated with TPH as gasoline at concentrations exceeding DEQ matrix level 2 cleanup standards may remain in place at the site (see Figure 2). To remove the additional yards would have required extensive overexcavation.

Analysis of soil boring samples and confirmation samples collected from beneath the remaining USTs and product and vapor recovery lines showed that TPH concentrations were below matrix level 2 cleanup standards.

### **SUMMARY**

- On August 14, 1995, four soil borings were drilled to 21 feet bgs near the USTs and dispenser islands. Laboratory analysis of soil samples did not detect TPH at concentrations at or above the MRLs. Groundwater was not encountered in any of the borings.
- Four 6,000-gallon gasoline USTs were decommissioned and removed on November 6, 1995, and one 12,000-gallon gasoline UST was decommissioned and removed on November 8.
- Approximately 400 cubic yards (466.65 tons) of TPH-contaminated soil were excavated during the removal of the USTs and product and vapor recovery lines. The soil was transported to TPS for treatment and disposal.



- Laboratory analysis of soil sample E-8, collected at 12 feet bgs beneath the northwest end of UST 2, detected TPH as gasoline at a concentration of 340 ppm, which exceeds the DEQ matrix level 2 cleanup standard of 80 ppm. Laboratory analysis of sample E-14, collected beneath the location of E-8 at a depth of 14 feet bgs, found TPH as gasoline at a concentration of 3.3 ppm.
- TPH as gasoline was detected at concentrations below the DEQ matrix level 2 cleanup standard in samples D-2, D-3, and D-4, collected from the product line trench and from beneath the west dispenser of the north island. TPH as gasoline was not detected at or above the MRL in any other confirmation soil samples collected from the UST excavation or near the dispensers or product line trenches.
- EMCON conservatively estimates that 109 cubic yards of soil contaminated with TPH as gasoline at concentrations exceeding DEQ matrix level 2 cleanup standards remain in place at the site beneath the former location of UST 2 (see Figure 2).

## RECOMMENDATIONS

- EMCON does not recommend any further action at the site and recommends that ARCO request an NFA letter from the DEQ.

EMCON appreciates the opportunity to assist you with this project. Please call if you have any questions or if we can be of further assistance.

Sincerely,

EMCON



Elizabeth Ruddy  
Engineer



Brian Kier, P.E.  
Engineer

Attachments: Limitations  
Tables 1 and 2  
Figures 1, 2, and 3  
Appendices A through F

cc/att: Cary Goodman; EMCON, Portland, Oregon  
Rick Silverman; DEQ NW Region, Portland, Oregon



## LIMITATIONS

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The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.



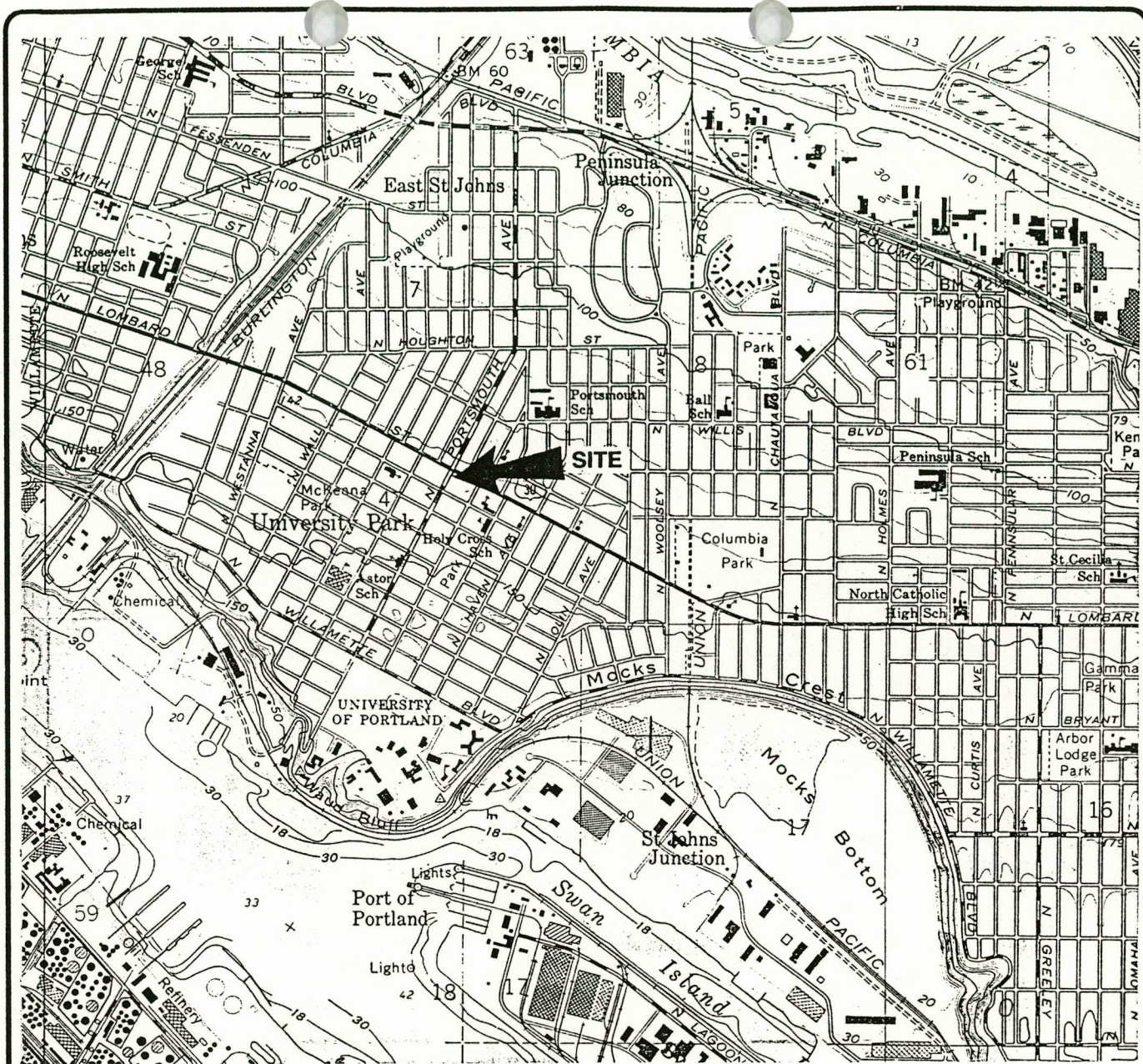
**Table 1**  
**Summary of Analytical Results**  
**Soil Boring Samples**  
**(mg/kg or ppm)**

| Sample Information                                              |        |                    |                   |                          | DEQ Method TPH-HCID |        |           |
|-----------------------------------------------------------------|--------|--------------------|-------------------|--------------------------|---------------------|--------|-----------|
| Name                                                            | Boring | Depth,<br>feet bgs | Date<br>Collected | FID Measurement<br>(ppm) | Gasoline            | Diesel | Heavy/Oil |
| B-1-5                                                           | B-1    | 4.5                | 8/14/95           | 1                        | —                   | —      | —         |
| B-1-10                                                          | B-1    | 10.5               | 8/14/95           | 0                        | —                   | —      | —         |
| B-1-15                                                          | B-1    | 14.5               | 8/14/95           | 0                        | ND                  | ND     | ND        |
| B-1-20                                                          | B-1    | 19.5               | 8/14/95           | 0                        | —                   | —      | —         |
| B-2-5                                                           | B-2    | 4.5                | 8/14/95           | 0                        | —                   | —      | —         |
| B-2-11                                                          | B-2    | 11                 | 8/14/95           | 0                        | —                   | —      | —         |
| B-2-15                                                          | B-2    | 15                 | 8/14/95           | 0                        | ND                  | ND     | ND        |
| B-2-20                                                          | B-2    | 19.5               | 8/14/95           | 0                        | —                   | —      | —         |
| B-3-5                                                           | B-3    | 4.5                | 8/14/95           | 0                        | —                   | —      | —         |
| B-3-10                                                          | B-3    | 9.5                | 8/14/95           | 0                        | —                   | —      | —         |
| B-3-15                                                          | B-3    | 14.5               | 8/14/95           | 0                        | ND                  | ND     | ND        |
| B-3-20                                                          | B-3    | 19.5               | 8/14/95           | 0                        | —                   | —      | —         |
| B-4-5                                                           | B-4    | 4.5                | 8/14/95           | 0                        | —                   | —      | —         |
| B-4-10                                                          | B-4    | 9.5                | 8/14/95           | 0                        | ND                  | ND     | ND        |
| B-4-15                                                          | B-4    | 14.5               | 8/14/95           | 0                        | —                   | —      | —         |
| B-4-20                                                          | B-4    | 19.5               | 8/14/95           | 0                        | —                   | —      | —         |
| MRL                                                             |        |                    |                   |                          | 20                  | 50     | 100       |
| NOTE:                                                           |        |                    |                   |                          |                     |        |           |
| — = sample not analyzed.                                        |        |                    |                   |                          |                     |        |           |
| ND = not detected at or above the method reporting limit (MRL). |        |                    |                   |                          |                     |        |           |

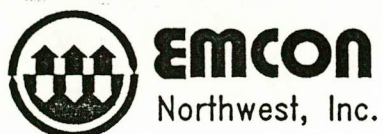
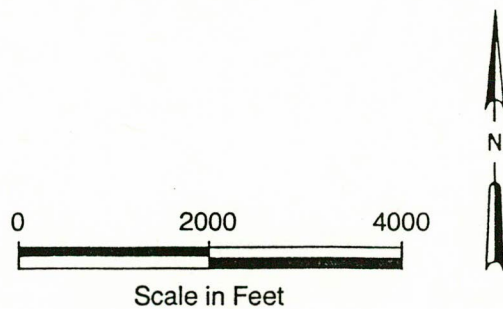
**Table 2**  
**Summary of Analytical Results**  
**UST and Fuel Line Excavation Soil Samples**  
**(mg/kg or ppm)**

| Sample Information                                                                                                            |                  |                     |                   |                          | DEQ Method TPH-HCID |                |           | DEQ             | EPA                 |
|-------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|-------------------|--------------------------|---------------------|----------------|-----------|-----------------|---------------------|
| Name                                                                                                                          | Location         | Depth<br>(feet bgs) | Date<br>Collected | FID Measurement<br>(ppm) | Gasoline            | Diesel         | Heavy/Oil | Method<br>TPH-G | Method<br>TPH-418.1 |
| E-1-12                                                                                                                        | Tank Nest        | 12                  | 11/6/95           | 90                       | —                   | —              | —         | ND              | —                   |
| E-2-12                                                                                                                        | Tank Nest        | 12                  | 11/6/95           | 10                       | —                   | —              | —         | ND              | —                   |
| E-3-12                                                                                                                        | Tank Nest        | 12                  | 11/6/95           | 9                        | —                   | —              | —         | ND              | —                   |
| E-7-12                                                                                                                        | Tank Nest        | 12                  | 11/6/95           | 60                       | —                   | —              | —         | ND              | —                   |
| E-8-12                                                                                                                        | Tank Nest        | 12                  | 11/6/95           | 1300                     | D                   | D <sup>a</sup> | ND        | 340             | —                   |
| E-9-12                                                                                                                        | Tank Nest        | 12                  | 11/6/95           | 150                      | —                   | —              | —         | ND              | —                   |
| E-13-12                                                                                                                       | Tank Nest        | 12                  | 11/6/95           | 40                       | —                   | —              | —         | ND              | —                   |
| E-14-14                                                                                                                       | Tank Nest        | 14                  | 11/6/95           | 20                       | —                   | —              | —         | 3.3             | —                   |
| E-15-12                                                                                                                       | Tank Nest        | 12                  | 11/9/95           | 1                        | —                   | —              | —         | ND              | —                   |
| E-16-12                                                                                                                       | Tank Nest        | 12                  | 11/9/95           | 1                        | —                   | —              | —         | ND              | —                   |
| E-19-15                                                                                                                       | Tank Nest        | 15                  | 11/10/95          | —                        | —                   | —              | —         | ND              | —                   |
| D-1-4.5                                                                                                                       | Dispenser Island | 4.5                 | 11/14/95          | 90                       | —                   | —              | —         | ND              | —                   |
| D-2-3.9                                                                                                                       | Fuel Line        | 3.9                 | 11/14/95          | 150                      | —                   | —              | —         | 9.2             | —                   |
| D-3-3.9                                                                                                                       | Fuel Line        | 3.9                 | 11/14/95          | 65                       | —                   | —              | —         | 2.8             | —                   |
| D-4-4.3                                                                                                                       | Dispenser Island | 4.3                 | 11/14/95          | 15                       | —                   | —              | —         | 2.3             | —                   |
| D-5-3.7                                                                                                                       | Fuel Line        | 3.9                 | 11/14/95          | 0                        | —                   | —              | —         | ND              | —                   |
| D-6-3.5                                                                                                                       | Dispenser Island | 3.5                 | 11/14/95          | 25                       | —                   | —              | —         | ND              | —                   |
| D-7-3.5                                                                                                                       | Dispenser Island | 3.5                 | 11/14/95          | 10                       | —                   | —              | —         | ND              | —                   |
| SP-1                                                                                                                          | Stockpile        | —                   | 11/8/95           | 0                        | —                   | —              | —         | ND              | —                   |
| SP-2                                                                                                                          | Stockpile        | —                   | 11/8/95           | 1                        | —                   | —              | —         | ND              | —                   |
| SP-3                                                                                                                          | Stockpile        | —                   | 11/8/95           | 1                        | —                   | —              | —         | ND              | —                   |
| SP-4                                                                                                                          | Stockpile        | —                   | 11/8/95           | 1                        | —                   | —              | —         | ND              | —                   |
| S-1                                                                                                                           | Soil Disposal    | —                   | 11/2/95           | —                        | ND                  | D              | D         | 36              | 120                 |
| S-2                                                                                                                           | Soil Disposal    | —                   | 11/2/95           | —                        | D                   | D              | ND        | 34              | 100                 |
| MRL                                                                                                                           |                  |                     |                   |                          | 20                  | 50             | 100       | 2               | 20                  |
| DEQ Matrix Level 2 Cleanup Standards                                                                                          |                  |                     |                   |                          | 80                  | 500            | 500       | 80              | 500                 |
| NOTE:                                                                                                                         |                  |                     |                   |                          |                     |                |           |                 |                     |
| — = sample not analyzed.                                                                                                      |                  |                     |                   |                          |                     |                |           |                 |                     |
| ND = not detected at or above the method reporting limit (MRL).                                                               |                  |                     |                   |                          |                     |                |           |                 |                     |
| <sup>a</sup> NCA Laboratories reported that the diesel ranged hydrocarbons are due to overlap of gasoline range hydrocarbons. |                  |                     |                   |                          |                     |                |           |                 |                     |





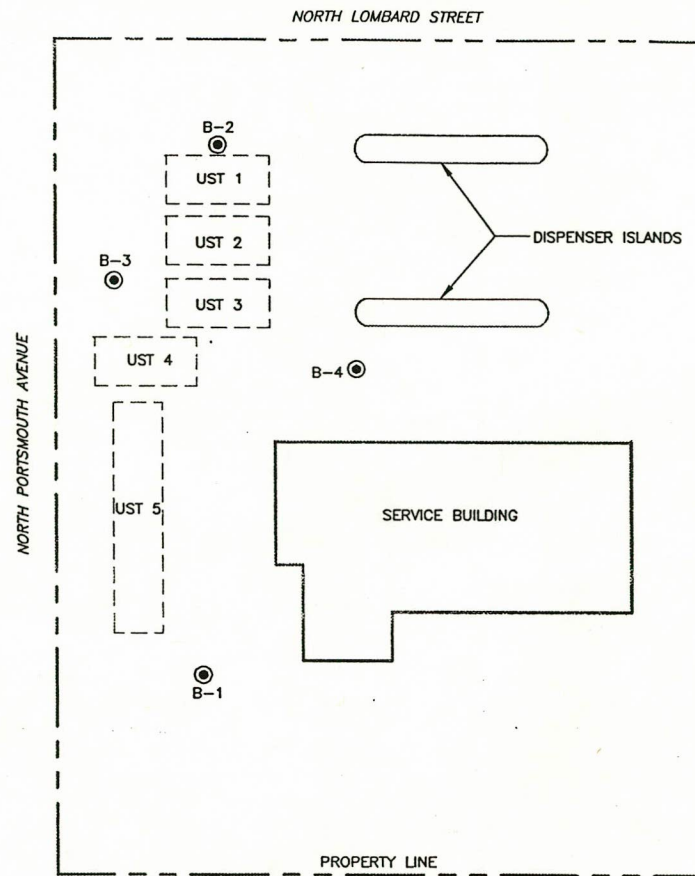
Reference: USGS 7.5' quad. PORTLAND, OREG., (1977)



DATE 7/92  
DWN. mk  
APPR. BK  
REVIS.  
PROJECT NO. 0233025.03

Figure 1  
ARCO SERVICE STATION 6118  
PORTLAND, OREGON  
LOCATION MAP





**EXPLANATION**

- FORMER LOCATION OF USTs
- B-1 
●
 APPROXIMATE LOCATION OF PRE-TANK REPLACEMENT INVESTIGATION SOIL BORINGS DRILLED AUGUST 14, 1995



0 20 40  
SCALE IN FEET

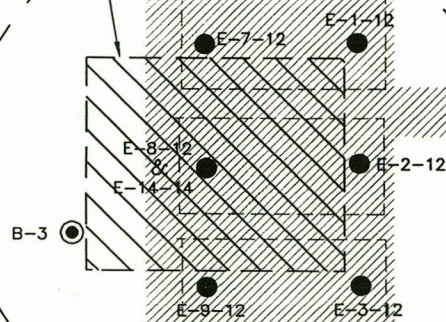
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APPR. *EL*  
REVIS.  
PROJECT NO.  
40233025.005

Figure 2  
ARCO SERVICE STATION 6118  
PORTLAND, OREGON

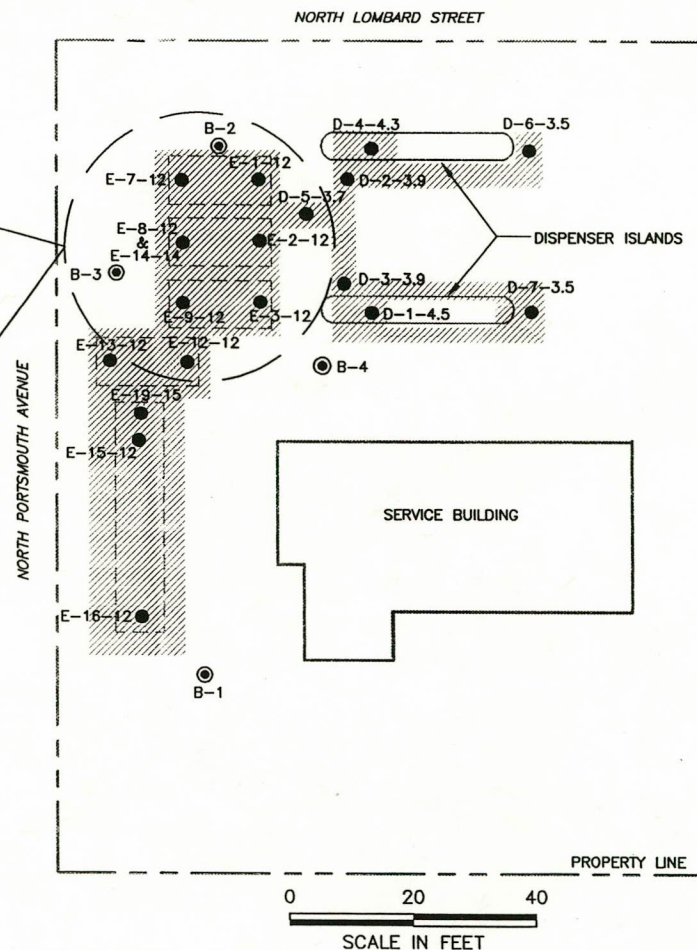
SOIL BORING LOCATIONS



ESTIMATED POCKET  
OF CONTAMINATION  
(12 TO 14 FT BGS)



0 10 20  
SCALE IN FEET



**EXPLANATION**

FORMER LOCATION OF USTs

AREA OF EXCAVATION

D-6-3.5 ● SOIL SAMPLE COLLECTED IN DISPENSER  
AND PRODUCT LINE EXCAVATIONS

E-12-12 ● SOIL SAMPLE COLLECTED IN UST  
EXCAVATION

B-1 ● APPROXIMATE LOCATION OF PRE-UST  
REPLACEMENT INVESTIGATION SOIL  
BORINGS DRILLED AUGUST 14, 1995



DATE 12/95  
DWN. MK  
APPR. LR  
REVIS.  
PROJECT NO.  
40233025.005

Figure 3  
ARCO SERVICE STATION 6118  
PORTLAND, OREGON  
UST AND PRODUCT LINE EXCAVATIONS  
AND SOIL SAMPLING LOCATIONS



**APPENDIX A**  
**SOIL SAMPLING METHODS AND PROCEDURES**



## **DRILLING AND SAMPLING METHODS**

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### **Drilling**

GeoTech Explorations, Inc., of Tualatin, Oregon, used a Canterra GT-250 truck-mounted hollow-stem auger drill rig to advance the borings. The rig used either 3.25- or 6.25-inch-inside-diameter augers that were steam-cleaned between borings. Soil samples were collected at approximately 3- to 5-foot intervals with a split-spoon sampler that was cleaned in a manner consistent with EMCON's standard protocol between samples. Each soil sample was screened for soil vapor headspace with a flame ionization detector (FID) by placing the lower portion of the sample into a plastic bag, sealing the bag to create a headspace, and inserting the sample tip of the FID into the headspace after approximately 10 minutes. FID readings and field observations were recorded in a field notebook and on the soil boring logs.

### **Soil Sampling**

Soil samples for laboratory analysis were collected from the middle portion of the sampler with new disposable gloves and quickly placed into laboratory-prepared glass containers. The containers were filled to limit headspace, sealed with Teflon<sup>™</sup>-lined lids, labeled, and immediately placed in an insulated cooler with ice. The samples were delivered to Columbia Analytical Services, Inc. (CAS) in Kelso, Washington. Chain-of-custody procedures were followed for the samples.

## **UST EXCAVATION SOIL SAMPLING PROCEDURES**

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Soil samples were collected by hand with a new pair of disposable gloves. At least 3 inches of soil was rapidly scraped away from the area to be sampled. Soil was then placed directly into labeled, laboratory-prepared glass containers. The containers were filled in a manner to reduce disturbance and headspace, quickly sealed with Teflon-lined caps, and placed in ice in an insulated cooler for transport to an ARCO contract laboratory. Soil from each sample location was observed for evidence of petroleum staining and odor.

Soil samples from depths greater than 4 feet bgs were collected in the backhoe bucket. Soil to be sampled was rapidly brought to the surface and samples were collected in the manner described above.

Samples were handled and transported to the laboratory consistent with USEPA protocol. Chain-of-custody procedures were followed to monitor sample integrity and to document sample possession from collection to arrival at the analytical laboratory. Each sample was affixed with a label that identified the job, sampler, date and time of collection, and a unique sample identification number. Sample depths and locations were recorded in a field notebook.



**APPENDIX B**  
**BORING LOGS**



# LOG OF EXPLORATORY BORING

PROJECT NAME ARCO Service Station 6118  
 LOCATION Portland, Oregon  
 DRILLED BY Cascade Drilling, Inc.  
 DRILL METHOD Hollow Stem Auger  
 LOGGED BY Lisa Kelly

BORING NO. B- 1  
 PAGE 1 OF 1  
 APPROX. SURFACE ELEV. 142'  
 TOTAL DEPTH 21.0'  
 DATE COMPLETED 8/14/95

| SAMPLE<br>NUMBER<br>SAMPLE<br>TYPE | RECOVERY<br>PERCENT<br>HEADSPACE<br>(ppm) | BLOW<br>COUNTS<br>(N COMP) | GROUND<br>WATER<br>LEVELS | DEPTH<br>IN FEET | SAMPLES | BORING<br>COMPLETION<br>DETAILS | LITHOLOGIC<br>COLUMN | LITHOLOGIC<br>DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------|-------------------------------------------|----------------------------|---------------------------|------------------|---------|---------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B-1-5<br>**2" SB                   | 100<br>(1)                                | 3-6-11<br>(17)             |                           | 5                |         |                                 |                      | 0 to 0.25 foot: ASPHALT.<br>0.25 to 3.0 feet: SANDY GRAVEL (GP); dark gray; subrounded to subangular gravel up to 1-inch diameter; some fine to coarse sand; trace fines; moist. (FILL)<br>3.0 to 7.0 feet: SANDY CLAY WITH GRAVEL (CL); brown; 30% fine to coarse sand, subrounded; 5% subrounded gravel up to 0.5-inch diameter; medium, moist. (PLEISTOCENE FLOOD DEPOSITS)<br>7.0 to 17.5 feet: SAND (SP); brown-gray; fine to coarse sand, subrounded to subangular; 10% subangular gravel up to 1.5-inch diameter; trace fines; dense; moist.<br>@ 10.0 feet: difficult drilling.<br>@ 15.0 feet: graded to sand and trace fines; no gravels.<br>17.5 to 21.0 feet: GRAVELLY SAND (SP); gray; fine to coarse sand, subrounded to subangular; 45% subrounded to subangular gravel up to 1.5-inch diameter; trace fines, very dense; moist.<br>Total depth drilled = 21.0 feet.<br>Total depth sampled = 21.0 feet.<br>BORING COMPLETION DETAILS:<br>0 to 0.5 foot: Concrete.<br>0.5 to 21.0 feet: Bentonite chips hydrated with potable water. |
| B-1-10<br>**2" SB                  | 100<br>(0)                                | 10-21-5<br>(26)            |                           | 10               |         |                                 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| *B-1-15<br>**2" SB                 | 100<br>(0)                                | 21-26-27<br>(53)           |                           | 15               |         |                                 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| B-1-20<br>**2" SB                  | 100<br>(0)                                | 27-35-30<br>(65)           |                           | 20               |         |                                 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                    |                                           |                            |                           | 25               |         |                                 |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



EMCON

## REMARKS

Surface elevation estimated from the PORTLAND, OREG., (1977) USGS 7.5 minute quad. Headspace was read with a flame ionization detector (FID) calibrated to a 99.8 parts per million (ppm) methane gas. Soil borings backfilled with bentonite and concrete as shown. First five feet of boring were manually augered. \*\*Samples collected with a 2-inch internal diameter split spoon sampler. \*Indicates sample submitted for laboratory analysis. Groundwater not encountered during drilling. Assignment of lithologic units based on field observations and Geologic Map of the Portland Quadrangle (M.H. Beeson and others, 1991. Scale 1:24,000).



# LOG OF EXPLORATORY BORING

PROJECT NAME ARCO Service Station 6118  
 LOCATION Portland, Oregon  
 DRILLED BY Cascade Drilling, Inc.  
 DRILL METHOD Hollow Stem Auger  
 LOGGED BY Lisa Kelly

BORING NO. B- 2  
 PAGE 1 OF 1  
 APPROX. SURFACE ELEV. 142'  
 TOTAL DEPTH 21.0'  
 DATE COMPLETED 8/14/95

| SAMPLE<br>NUMBER<br>SAMPLE<br>TYPE | RECOVERY<br>PERCENT<br>HEADSPACE<br>(ppm) | BLOW<br>COUNTS<br>(N COMP) | GROUND<br>WATER<br>LEVELS | DEPTH<br>IN FEET | SAMPLES | BORING<br>COMPLETION<br>DETAILS | LITHOLOGIC<br>COLUMN | LITHOLOGIC<br>DESCRIPTION                                                                                                                                                                                        |
|------------------------------------|-------------------------------------------|----------------------------|---------------------------|------------------|---------|---------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    |                                           |                            |                           |                  |         |                                 |                      | 0 to 0.25 foot: ASPHALT.                                                                                                                                                                                         |
|                                    |                                           |                            |                           |                  |         |                                 |                      | 0.25 to 4.0 feet: SANDY GRAVEL (GP); dark gray; subrounded to subangular gravel up to 1-inch diameter; some fine to coarse sand; trace fines; moist. (FILL)                                                      |
| B-2-5<br>**2" SB                   | 66<br>(0)                                 | 13-14-23<br>(37)           |                           | 5                |         |                                 |                      | 4.0 to 11.0 feet: SANDY CLAY WITH GRAVEL (CL); brown; 40% fine to coarse sand, subrounded to subangular; 5% subrounded to subangular gravel up to 0.5-inch diameter; medium, moist. (PLEISTOCENE FLOOD DEPOSITS) |
| B-2-10<br>**2" SB                  | 100<br>(0)                                | 13-18-21<br>(39)           |                           | 10               |         |                                 |                      | 11.0 to 19.5 feet: SAND (SP); brown-gray; fine to coarse sand, subrounded to subangular; 10% subrounded to subangular gravel up to 1.5-inch diameter; trace fines; dense; moist.                                 |
| *B-2-15<br>**2" SB                 | 100<br>(0)                                | 24-29-33<br>(62)           |                           | 15               |         |                                 |                      | @ 15.0 feet: very dense.                                                                                                                                                                                         |
| B-2-20<br>**2" SB                  | 100<br>(0)                                | 31-38-44<br>(82)           |                           | 20               |         |                                 |                      | 19.5 to 21.0 feet: GRAVELLY SAND (SP); gray; fine to coarse sand, subrounded to subangular; 30% subrounded to subangular gravel up to 1.0-inch diameter; trace fines, very dense; moist.                         |
|                                    |                                           |                            |                           |                  |         |                                 |                      | Total depth drilled = 21.0 feet.<br>Total depth sampled = 21.0 feet.<br><b>BORING COMPLETION DETAILS:</b><br>0 to 0.5 foot: Concrete.<br>0.5 to 21.0 feet: Bentonite chips hydrated with potable water.          |



## REMARKS

Surface elevation estimated from the PORTLAND, OREG., (1977) USGS 7.5 minute quad. Headspace was read with a flame ionization detector (FID) calibrated to a 99.8 parts per million (ppm) methane gas. Soil borings backfilled with bentonite and concrete as shown. First five feet of boring were manually augered. \*\*Samples collected with a 2-inch internal diameter split spoon sampler. \*Indicates sample submitted for laboratory analysis. Groundwater not encountered during drilling. Assignment of lithologic units based on field observations and Geologic Map of the Portland Quadrangle (M.H. Beeson and others, 1991. Scale 1:24,000).



# LOG OF EXPLORATORY BORING

PROJECT NAME ARCO Service Station 6118  
 LOCATION Portland, Oregon  
 DRILLED BY Cascade Drilling, Inc.  
 DRILL METHOD Hollow Stem Auger  
 LOGGED BY Lisa Kelly

BORING NO. B- 3  
 PAGE 1 OF 1  
 APPROX. SURFACE ELEV. 142'  
 TOTAL DEPTH 21.0'  
 DATE COMPLETED 8/14/95

| SAMPLE<br>NUMBER<br>SAMPLE<br>TYPE | RECOVERY<br>PERCENT<br>HEADSPACE<br>(ppm) | BLOW<br>COUNTS<br>(IN COMP) | GROUND<br>WATER<br>LEVELS | DEPTH<br>IN FEET | SAMPLES | BORING<br>COMPLETION<br>DETAILS | LITHOLOGIC<br>COLUMN | LITHOLOGIC<br>DESCRIPTION                                                                                                                                                                                                                                                    |
|------------------------------------|-------------------------------------------|-----------------------------|---------------------------|------------------|---------|---------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    |                                           |                             |                           |                  |         |                                 |                      | 0 to 0.25 foot: ASPHALT.                                                                                                                                                                                                                                                     |
| B-3-5<br>**2" SB                   | 66<br>(0)                                 | 8-7-9<br>(16)               |                           | 5                |         |                                 |                      | 0.25 to 4.0 feet: SANDY GRAVEL (GP) WITH<br>COBBLES; dark gray; subrounded to subangular<br>gravel up to 3-inch diameter; subrounded to<br>subangular cobbles up to 6-inch diameter, some<br>fine to coarse sand; trace fines; moist. (FILL)<br>@ 3.0 feet: brick fragments. |
| B-3-10<br>**2" SB                  | 66<br>(0)                                 | 13-20-21<br>(41)            |                           | 10               |         |                                 |                      | 4.0 to 19.5 feet: SAND (SP); brown; fine to coarse<br>sand, subrounded to subangular; trace fines;<br>medium; moist. (PLEISTOCENE FLOOD<br>DEPOSITS)<br><br>@ 10.0 feet: gray.                                                                                               |
| *B-3-15<br>**2" SB                 | 66<br>(0)                                 | 14-20-27<br>(47)            |                           | 15               |         |                                 |                      | @ 15.0 feet: dense.                                                                                                                                                                                                                                                          |
| B-3-20<br>**2" SB                  | 100<br>(0)                                | 16-18-21<br>(39)            |                           | 20               |         |                                 |                      | 19.5 to 21.0 feet: GRAVELLY SAND (SP); gray; fine<br>to coarse sand, subrounded to subangular; 15%<br>subrounded to subangular gravel up to 1.0-inch<br>diameter; trace fines; dense; moist.                                                                                 |
|                                    |                                           |                             |                           |                  |         |                                 |                      | Total depth drilled = 21.0 feet.<br>Total depth sampled = 21.0 feet.<br>BORING COMPLETION DETAILS:<br>0 to 0.5 foot: Concrete.<br>0.5 to 21.0 feet: Bentonite chips hydrated with<br>potable water.                                                                          |



EMCON

## REMARKS

Surface elevation estimated from the PORTLAND, OREG., (1977) USGS 7.5 minute quad. Headspace was read with a flame ionization detector (FID) calibrated to a 99.8 parts per million (ppm) methane gas. Soil borings backfilled with bentonite and concrete as shown. First five feet of boring were manually augered. \*\*Samples collected with a 2-inch internal diameter split spoon sampler. \*Indicates sample submitted for laboratory analysis. Groundwater not encountered during drilling. Assignment of lithologic units based on field observations and Geologic Map of the Portland Quadrangle (M.H. Beeson and others, 1991. Scale 1:24,000).



# LOG OF EXPLORATORY BORING

PROJECT NAME **ARCO Service Station 6118**  
 LOCATION **Portland, Oregon**  
 DRILLED BY **Cascade Drilling, Inc.**  
 DRILL METHOD **Hollow Stem Auger**  
 LOGGED BY **Lisa Kelly**

BORING NO. **B- 4**  
 PAGE **1 OF 1**  
 APPROX. SURFACE ELEV. **142'**  
 TOTAL DEPTH **21.0'**  
 DATE COMPLETED **8/14/95**

| SAMPLE<br>NUMBER<br>SAMPLE<br>TYPE | RECOVERY<br>PERCENT<br>HEADSPACE<br>(ppm) | BLOW<br>COUNTS<br>(N COMP) | GROUND<br>WATER<br>LEVELS | DEPTH<br>IN FEET | SAMPLES | BORING<br>COMPLETION<br>DETAILS | LITHOLOGIC<br>COLUMN | LITHOLOGIC<br>DESCRIPTION                                                                                                                                                                               |
|------------------------------------|-------------------------------------------|----------------------------|---------------------------|------------------|---------|---------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    |                                           |                            |                           |                  |         |                                 |                      | 0 to 0.25 foot: <b>ASPHALT.</b>                                                                                                                                                                         |
|                                    |                                           |                            |                           |                  |         |                                 |                      | 0.25 to 4.0 feet: <b>SANDY GRAVEL (GP)</b> ; dark gray; subrounded to subangular gravel up to 3-inch diameter; some fine to coarse sand; trace fines; moist. (FILL)                                     |
| B-4-5<br>**2" SB                   | 66<br>(0)                                 | 4-5-8<br>(13)              |                           | 5                |         |                                 |                      | 4.0 to 19.5 feet: <b>SAND (SP)</b> ; brown; fine to coarse sand, subrounded to subangular; trace fines; medium; moist. (PLEISTOCENE FLOOD DEPOSITS)                                                     |
| *B-4-10<br>**2" SB                 | 66<br>(0)                                 | 11-16-21<br>(37)           |                           | 10               |         |                                 |                      | @ 10.0 feet: gray; 5% subrounded to subangular gravel up to 1.0-inch diameter.                                                                                                                          |
| B-4-15<br>**2" SB                  | 66<br>(0)                                 | 21-27-29<br>(56)           |                           | 15               |         |                                 |                      | @ 15.0 feet: dense.                                                                                                                                                                                     |
| B-4-20<br>**2" SB                  | 66<br>(0)                                 | 23-35-40<br>(75)           |                           | 20               |         |                                 |                      | 19.5 to 21.0 feet: <b>GRAVELLY SAND (SP)</b> ; gray; fine to coarse sand, subrounded to subangular; 30% subrounded to subangular gravel up to 1.5-inch diameter; trace fines; very dense; moist.        |
|                                    |                                           |                            |                           | 25               |         |                                 |                      | Total depth drilled = 21.0 feet.<br>Total depth sampled = 21.0 feet.<br><b>BORING COMPLETION DETAILS:</b><br>0 to 0.5 foot: Concrete.<br>0.5 to 21.0 feet: Bentonite chips hydrated with potable water. |

## REMARKS

Surface elevation estimated from the PORTLAND, OREG., (1977) USGS 7.5 minute quad. Headspace was read with a flame ionization detector (FID) calibrated to a 99.8 parts per million (ppm) methane gas. Soil borings backfilled with bentonite and concrete as shown. First five feet of boring were manually augered. \*\*Samples collected with a 2-inch internal diameter split spoon sampler. \*Indicates sample submitted for laboratory analysis. Groundwater not encountered during drilling. Assignment of lithologic units based on field observations and Geologic Map of the



**EMCON**



**APPENDIX C**

**DECOMMISSIONING CHECKLIST  
SERVICE CHANGE REPORT  
UST DISPOSAL RECEIPTS**



01/08/96 13:12 FAX 2062518782

BARGHAUSEN ENC

001

Oregon Department of Environmental Quality  
**UNDERGROUND STORAGE TANK DECOMMISSIONING CHECKLIST**

DEQ FACILITY NUMBER: 3933 DATE: \_\_\_\_\_

FACILITY NAME: Atlantic Richfield #6118

FACILITY ADDRESS: 5282 N. LOMBARD

Portland, Oregon

PHONE: \_\_\_\_\_

**A. SAFETY EQUIPMENT ON JOB SITE:**Fire Extinguisher: Type/Size: 20 ABCRecharge Date: NEW

Combustible Gas Detector: Model: \_\_\_\_\_

Calibration Date: \_\_\_\_\_

Oxygen Analyzer: Model: \_\_\_\_\_

Calibration Date: \_\_\_\_\_

**B. DECOMMISSIONING: All Tanks: (Unk. = Unknown, N/A = Not Applicable)  
(Check Appropriate Box)**

1. All electrical equipment grounded and explosion proof?
2. Safety equipment on job site?
3. Overhead electrical lines located?
4. Subsurface electrical lines off or disconnected?
5. Natural gas lines off or disconnected?
6. No open fires or smoking material in area?
7. Vehicle and pedestrian traffic controlled?
8. Excavation material area cleared?
9. Rainwater runoff directed to treatment area?
10. Drained and collected product from lines?
11. Removed product and residual from tank?
12. Cleaned tank?
13. Excavated to top of tank?
14. Removed tank fixtures? (pumps, leak detection equip.
15. Removed product, fill and vent lines?

| Yes                                 | No                                  | Unk                      | N/A                                 |
|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            |
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| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            |

**C. TANK ABANDONMENT IN-PLACE:**

16. Sampling plan approved by DEQ?

Date: \_\_\_\_\_ DEQ Staff: \_\_\_\_\_

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|



**B. DECOMMISSIONING: All Tanks: (Unk. = Unknown, N/A = Not Applicable)  
(Check Appropriate Box)**

17. Contamination concerns fully resolved?

18. Fill Material? Type: NATIVE 4 3/4" ROAD BASE**D. TANK REMOVAL:**

19. Tank placement area cleared, chocks placed?

20. Purged or ventilated tank to prevent explosion?

Method used: Day ICE Meter reading: \_\_\_\_\_

21. No chains or steel cables wrapped around tank for removal?

22. Tank removed, set on ground, blocked to prevent movement?

23. Tank set on truck and secured with strap(s)?

24. Tank labeled before leaving site?

**E. SITE ASSESSMENT:**

25. Site assessed for contamination? See OAR 340-122-340

26. Soil samples taken and analyzed?

27. Decommissioning/Change-in-Service report sent to DEQ?

28. Was contamination found? Date/Time: 11/6/9529. Was contamination reported to DEQ? By: BRIAN KIER  
Date/Time: 11/7/95 / TIME VARIES DEQ Staff: RICK SILVERMAN / JIM MARSH

30. Was hazardous waste determination made for tank contents (Liquids/sludges)?

31. Disposal location of tank(s) contents.

Name: SPENCE ENVIRONMENTALDate: 11/3/95Address: 914 S. MOLAVA AVEOREGON CITY, OREGON 97045

Attach disposal receipt.

32. Disposal or recycling location of removed tank(s) and associated piping.

Name: SCHNITZER STEEL PRODUCTSDate: 11/6/95Address: 12005 N. BURGARDPORTLAND, OREGON 97203

Attach disposal receipt.

33. If tank(s) are intended to be reused, identify new tank site.

Name: NA

Date: \_\_\_\_\_

Address: \_\_\_\_\_

Purpose of Reuse: \_\_\_\_\_

| Yes                                 | No                       | Unk                      | N/A                      |
|-------------------------------------|--------------------------|--------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                     |                                     |                          |                          |
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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



01/08/96 13:13 FAX 2062518782

BARGHAUSEN ENG

0002

**F. WORK PERFORMED BY:**

DEQ Service Provider's License #: 13954  
 Name: WALTER E. ORL  
 Telephone: 360-750-7899

DEQ Decommissioning Supervisor's License #: 13954  
 Name: WALTER E. ORL  
 Telephone: 360-750-7899

**E. CHECKLIST FILING:**

1. Provide copy of checklist to the UST owner and operator.
2. Send completed checklist to the DEQ headquarters within 30 days after the excavation is backfilled.

**NOTE:** If contamination was found during decommissioning and reported to DEQ regional office, this report may be submitted with either the first interim cleanup report or the final cleanup report, whichever is first.

Send Completed and Signed Form to: Department of Environmental Quality  
 UST Program - Decommissioning Checklist  
 811 S.W. Sixth Ave.  
 Portland, Oregon 97204

Or FAX Completed and Signed Form to: (503) 229-6954

|                                                                                                |                     |
|------------------------------------------------------------------------------------------------|---------------------|
| I have personally reviewed this decommissioning checklist and find it to be true and complete. |                     |
| Signature: <u>Walter E. Orl</u><br>(Licensed Supervisor)                                       | Date: <u>1/8/95</u> |
| Signature: _____<br>(Owner or Operator)                                                        | Date: _____         |

For information: (503) 229-5733 or Toll Free in Oregon UST HELPLINE 1-800-742-7878



01/08/96 13:14 FAX 2062518782

BARGHAUSEN ENG

003

Oregon Department of Environmental Quality  
UNDERGROUND STORAGE TANK DECOMMISSIONING/SERVICE CHANGE REPORTDEQ FACILITY NUMBER: 3933

DATE: \_\_\_\_\_

FACILITY NAME: Atlantic Richfield #6118FACILITY ADDRESS: 5280 N. LombardPortland, Oregon

PHONE: \_\_\_\_\_

The following information **MUST** be submitted by the underground storage tank owner, operator or licensed DEQ Supervisor within 30 days following completion of the tank decommissioning or changing tank contents to a non-regulated substance. (OAR 340-150-001 through -150)

The attached supplemental checklist should be prepared by the person performing the decommissioning or service change. The checklist should be provided to DEQ and the tank owner to demonstrate that all required practices were followed.

Ordinarily the checklist is filled out by the DEQ licensed Service Provider or Supervisor. Owners who wish to personally decommission a tank or change service must follow all DEQ and other applicable standards. The owner should contact the DEQ Regional Office prior to starting the work to receive current copies of underground storage tank regulations.

## A. DATES:

Decommissioning/Service Change Notice - Date Submitted: 7/14/95 (30 days before work starts)Work Start Telephone Notice - Date Submitted: 10/1/95 (3 working days before work starts)

#26-30-9592

DEQ Person Notified: Mitch ScheelDate Work Started: 11/3/95Date Work Completed: 12/29/95

Note: Provide the following information if any soil or water contamination is found during the decommissioning or service change. Contamination must be reported by the UST owner or operator within 24 hours. The licensed service provider must report contamination within 72 hours after discovery unless previously reported.

Date Contamination Reported: 11/7/95 By: Brian KierDEQ Person Notified: Rick Silverman / Jim MarshBackfill Telephone Notice - Date Called: 11/16/95 (before backfilling)DEQ Person Notified: Rick Silverman

## B. PERMITS:

Note: DEQ permits or an addendum to the UST permit(s) may be needed where soil or water cleanup is required.

DEQ Water Discharge Permit #: \_\_\_\_\_ Date: \_\_\_\_\_

Disposed to (Location): \_\_\_\_\_

DEQ Solid Waste Disposal Permit #: \_\_\_\_\_ Date: \_\_\_\_\_



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**B. PERMITS (Continued)**

UST Soil Treatment Permit Addendum - Type: \_\_\_\_\_ Date: \_\_\_\_\_

Soil Disposal or Treatment Location: \_\_\_\_\_

**C. TANK INFORMATION:**

| Tank # | DEQ UST Permit | Tank Size in (Gallons) | Product: Gasoline, Diesel, Used Oil, Other? |     | Closure or Service Change? |                  |           | Tank to be Replaced? |    |
|--------|----------------|------------------------|---------------------------------------------|-----|----------------------------|------------------|-----------|----------------------|----|
|        |                |                        | Present                                     | New | Tank Removal               | Closures Inplace | Other Use | Yes                  | No |
| #1     |                | 6,000                  | Gas                                         |     | X                          |                  |           | X                    |    |
| #2     |                | 6,000                  | Gas                                         |     | X                          |                  |           | X                    |    |
| #3     |                | 6,000                  | Gas                                         |     | X                          |                  |           | X                    |    |
| #4     |                | 6,000                  | Gas                                         |     | X                          |                  |           | X                    |    |
| #5     |                | 12,000                 | Gas                                         |     | X                          |                  |           |                      |    |

▼ Where decommissioned tank(s) are replaced by new underground storage tanks the UST owner or operator must submit a new permit application containing information on the new tanks 30 days before placing them in service.

∞ Submit a soil sampling plan to the DEQ regional office and receive plan approval prior to starting work if 1) tank is to be decommissioned in-place, 2) tank contents are changed to a non-regulated substance, 3) tank contains a regulated substance other than petroleum, or 4) tank changed to non-regulated use.

**D. DISPOSAL INFORMATION:**

| Tank # | Tank & Piping Disposal Method |           |       |                                     | Disposal Location of Tank Contents *                               |         |
|--------|-------------------------------|-----------|-------|-------------------------------------|--------------------------------------------------------------------|---------|
|        | Scrap                         | Land-fill | Other | Identify Location & Property Owner  | Liquids                                                            | Sludges |
| #1     | X                             |           |       | SCHNITZER STEEL<br>PORTLAND, OREGON | SPENCER ENVIRONMENTAL<br>914 S. MARIANA AVE<br>OREGON CITY, OREGON |         |
| #2     | X                             |           |       | SCHNITZER STEEL<br>PORTLAND, OREGON |                                                                    |         |
| #3     | X                             |           |       | SCHNITZER STEEL<br>PORTLAND, OREGON |                                                                    |         |
| #4     | X                             |           |       | SCHNITZER STEEL<br>PORTLAND, OREGON |                                                                    |         |
| #5     |                               | X         |       | COLUMBIA RESOURCE<br>VANCOUVER, WA  |                                                                    |         |

\* Note: The tank contents, the tank and the piping may be subject to the requirements of Hazardous Waste regulations. If you have questions, contact the DEQ Hazardous Waste Section at (503) 229-5913 or DEQ regional office hazardous waste staff.



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## E. CONTAMINATION INFORMATION:

| Tank # | Ground-water in pit? | Product odor in soil? | Product stains in soil? | Number of samples | Laboratory (Name, City, State, Phone)                        |
|--------|----------------------|-----------------------|-------------------------|-------------------|--------------------------------------------------------------|
| 1      | NO                   | YES                   | YES                     | 2                 | NORTH CREEK ANALYTICAL<br>BEAVERTON, OR 97008 (503) 643-9200 |
| 2      | NO                   | YES                   | YES                     | 3                 | "                                                            |
| 3      | NO                   | YES                   | YES                     | 2                 | "                                                            |
| 4      | NO                   | NO                    | NO                      | 2                 | "                                                            |
| 5      | NO                   | NO                    | NO                      | 5                 | "                                                            |

\* Note: Sampling is required if groundwater is encountered. See cleanup rules.

## F. SITE SKETCH:

(Show location of adjacent roads, property lines, structures, dispenser, & all UST's) (Show North, general direction of ground slope and soil sample locations. Sketch does not need to be drawn to scale. You may attach a separate drawing.)

SEE ATTACHED DISK



01/08/96 13:16 FAX 2062518782

BARGHAUSEN ENG

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## G. WORK PERFORMED BY:

DEQ Service Provider's License #: 13954 Construction Contractors License #: 104646Name: WALTER E ORRTelephone: 360-750-7899DEQ Decommissioning Supervisor's License #: 13954Name: WALTER E ORRTelephone: 360-750-7899DEQ Soil Matrix Service Provider's License #: 12429 (If applicable)Name: EMCONTelephone: (503) 624-7200DEQ Soil Matrix Supervisor's License #: 14347 (If applicable)Name: ELIZABETH RUDDYTelephone: (503) 624-7200

## H. ATTACHMENTS TO THIS REPORT:

1. Attach a copy of the laboratory report showing the results of all tests on all soil and water samples. The laboratory report must identify sample collection methods, sample location, sample depth, sample type (soil or water), type of sample container, sample temperature during transportation, types of tests, and copies of analytical laboratory reports, including QA/QL information. Include laboratory name, address and copies of chain-of-custody forms.

2. If contamination is detected and a Level 2 or Level 3 soil matrix cleanup standard is selected attach a copy of the soil matrix analysis for the site including methods of determining soil type, depth to groundwater, and sensitivity of uppermost aquifer.

## I. REPORT FILING:

This report, signed by the tank owner or operator, complete with all applicable attachments must be filed with DEQ headquarters within 30 days after the excavation is backfilled or change-in-service is complete. Contact the DEQ regional office prior to filing this report where special circumstances exist at the site (such as water in pit, remaining pockets or contamination, etc.).

NOTE: If contamination was found during site assessment at decommissioning or change-in-service and reported to DEQ regional office, this report may be submitted with either the first interim cleanup report or the final cleanup report, whichever is first.

Return Completed and Signed Form to: Department of Environmental Quality  
UST Program - Decommissioning Report  
811 S.W. Sixth Ave.  
Portland, Oregon 97204

Or FAX Completed and Signed Form to: (503) 229-6954

I have personally reviewed this report and the attachments and find them to be true and complete:

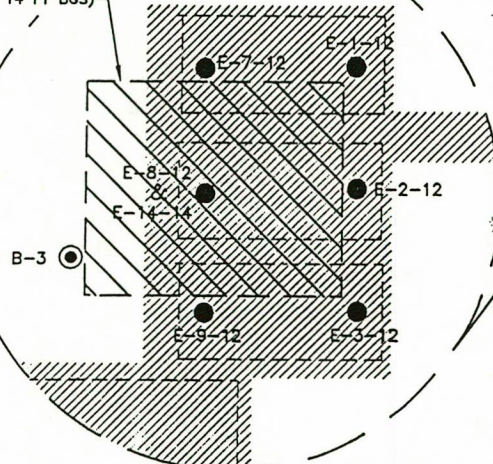
Signature: Walter Orr  
(Owner or Operator)

Date: 1/8/96

For information: (503) 229-5733 or Toll Free in Oregon UST HELPLINE 1-800-742-7878



ESTIMATED POCKET  
OF CONTAMINATION  
(12 TO 14 FT BGS)



0 10 20  
SCALE IN FEET

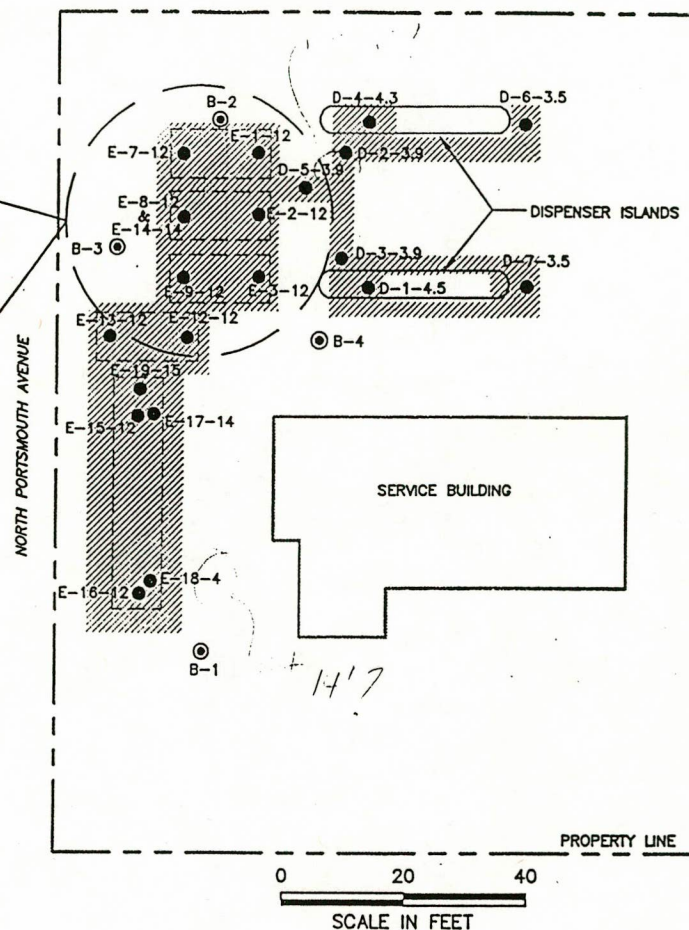
**DRAFT**



G:\DWG\0233\025\3SITE2

PLOT AT 1 = 20

NORTH LOMBARD STREET



**EXPLANATION**

--- FORMER LOCATION OF USTs

▨ AREA OF EXCAVATION

D-6-3.5 ● SOIL SAMPLE COLLECTED IN DISPENSER  
AND PRODUCT LINE EXCAVATIONS

E-12-12 ● SOIL SAMPLE COLLECTED IN UST  
EXCAVATION

B-1 ● APPROXIMATE LOCATION OF PRE-UST  
REPLACEMENT INVESTIGATION SOIL  
BORINGS DRILLED AUGUST 14, 1995

DATE 12/95  
DWN. MK  
APPR.  
REVS.  
PROJECT NO.  
40233025.005

Figure 3  
ARCO SERVICE STATION 6118  
PORTLAND, OREGON  
UST AND PRODUCT LINE EXCAVATIONS  
AND SOIL SAMPLING LOCATIONS



|                          |                     |                                                                                                                                                                                              |                   |                                      |                                                                                                                                                                                                                                                                                                                 |
|--------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TOMER<br><i>Mr. Walt</i> |                     | SCHNITZER STEEL PRODUCTS CO.<br>INTERNATIONAL TERMINAL<br>12005 N. BURGARD, PORTLAND, OR 97203<br>(503) 286-5771                                                                             |                   | BILL OF SALE NO.<br><b>FE-433677</b> |                                                                                                                                                                                                                                                                                                                 |
| CONTRACT NUMBER          |                     | I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS. |                   |                                      |                                                                                                                                                                                                                                                                                                                 |
| NDOR<br>MBER             | COMMODITY<br>NUMBER | 103                                                                                                                                                                                          | COMM.<br>DESC.    |                                      |                                                                                                                                                                                                                                                                                                                 |
| N                        | 50740               | G 1b                                                                                                                                                                                         | 02:39 PM 11/06/95 | ◀ G                                  | FURTHER, IF YOU SELL US CAR BODIES, REFRIGERATORS, AIR CONDITIONERS OR OTHER MANUFACTURED ITEMS THAT CONTAIN CFC'S OR FREONS, YOU CERTIFY THAT THE CFC'S OR FREONS HAVE BEEN REMOVED IN ACCORDANCE WITH THE CLEAN AIR ACT AND THAT "SEALED UNITS" AND COMPRESSORS HAVE BEEN EMPTIED OF ALL OIL OR OIL PRODUCTS. |
| A                        | 45760               | G 1b                                                                                                                                                                                         | 02:50 PM 11/06/95 | ◀ T                                  |                                                                                                                                                                                                                                                                                                                 |
|                          | 4980                |                                                                                                                                                                                              |                   | ◀ N                                  |                                                                                                                                                                                                                                                                                                                 |
| CE                       | EXTENDED            | 174.30                                                                                                                                                                                       |                   | WEIGHER                              | I hereby state that I am the lawful owner of the material described herein, that I have a right to sell same and that for payment received in full, hereby acknowledged, I sell and convey title of same to SCHNITZER STEEL PRODUCTS CO.                                                                        |
| BRIEF                    | TRACTOR NO.         | 636                                                                                                                                                                                          |                   | TIME                                 |                                                                                                                                                                                                                                                                                                                 |
| X                        |                     |                                                                                                                                                                                              |                   |                                      |                                                                                                                                                                                                                                                                                                                 |
| FILE                     |                     |                                                                                                                                                                                              |                   |                                      |                                                                                                                                                                                                                                                                                                                 |

(2001 1000) 5

|                          |                     |                                                                                                                                                                                              |                   |                                      |                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TOMER<br><i>Mr. Walt</i> |                     | SCHNITZER STEEL PRODUCTS CO.<br>INTERNATIONAL TERMINAL<br>12005 N. BURGARD, PORTLAND, OF 97203<br>(503) 286-5771                                                                             |                   | BILL OF SALE NO.<br><b>FE-433710</b> |                                                                                                                                                                                                                                                                                                                  |
| CONTRACT NUMBER          |                     | I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS. |                   |                                      |                                                                                                                                                                                                                                                                                                                  |
| NDOR<br>MBER             | COMMODITY<br>NUMBER | 103                                                                                                                                                                                          | COMM.<br>DESC.    |                                      |                                                                                                                                                                                                                                                                                                                  |
| N                        | 50920               | G 1b                                                                                                                                                                                         | 03:30 PM 11/06/95 | ◀ G                                  | FURTHER, IF YOU SELL US CAR BODIES, REFRIGERATORS, AIR CONDITIONERS OR OTHER MANUFACTURED ITEMS THAT CONTAIN CFC'S OR FREONS, YOU CERTIFY THAT THE CFC'S OR FREONS HAVE BEEN REMOVED IN ACCORDANCE WITH THE CLEAN AIR ACT, AND THAT "SEALED UNITS" AND COMPRESSORS HAVE BEEN EMPTIED OF ALL OIL OR OIL PRODUCTS. |
| A                        | 45800               | G 1b                                                                                                                                                                                         | 03:42 PM 11/06/95 | ◀ T                                  |                                                                                                                                                                                                                                                                                                                  |
|                          | 5120                |                                                                                                                                                                                              |                   | ◀ N                                  |                                                                                                                                                                                                                                                                                                                  |
| ICE                      | EXTENDED            | 179.20                                                                                                                                                                                       |                   | WEIGHER                              | I hereby state that I am the lawful owner of the material described herein, that I have a right to sell same and that for payment received in full, hereby acknowledged, I sell and convey title of same to SCHNITZER STEEL PRODUCTS CO.                                                                         |
| BRIEF                    | TRACTOR NO.         |                                                                                                                                                                                              |                   | TIME                                 |                                                                                                                                                                                                                                                                                                                  |
| Y                        |                     |                                                                                                                                                                                              |                   |                                      |                                                                                                                                                                                                                                                                                                                  |

(2001 1000) 5



TOMER  
Burr, Walt  
REGIS

SCHNITZER STEEL PRODUCTS CO.  
INTERNATIONAL TERMINAL  
12005 N. BURGARD, PORTLAND, OR 97203  
(503) 286-5771

BILL OF SALE NO.  
FE-433633

|                 |                     |                                                                                                                                                                                              |              |
|-----------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| CONTRACT NUMBER |                     | I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS. |              |
| NDOR<br>MOEN    | COMMODITY<br>NUMBER | 103                                                                                                                                                                                          | COMM<br>DESC |
| N               | 50620               | G 1b 12:43 PM 11/06/95                                                                                                                                                                       | ◀ G          |
| A               | 44580               | G 1b 12:53 PM 11/06/95                                                                                                                                                                       | ◀ T          |
|                 | 6040                |                                                                                                                                                                                              | ◀ N          |
| ICE             | EXTENDED            | 211.40                                                                                                                                                                                       | WEIGHER      |
| 70              |                     |                                                                                                                                                                                              | DP           |
| TRIER           | TRACTOR NO.         | 636                                                                                                                                                                                          | TIME         |
| m. Cost + Pmc   |                     |                                                                                                                                                                                              | X            |

FILE

TOMER  
Burr, Walt  
REGIS

SCHNITZER STEEL PRODUCTS CO.  
INTERNATIONAL TERMINAL  
12005 N. BURGARD, PORTLAND, OR 97203  
(503) 286-5771

BILL OF SALE NO.  
FE-433654

|                 |                     |                                                                                                                                                                                              |              |
|-----------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| CONTRACT NUMBER |                     | I REPRESENT AND WARRANT THAT THIS MATERIAL DOES NOT CONTAIN A HAZARDOUS SUBSTANCE AS DEFINED BY FEDERAL OR STATE LAW, AND I AGREE TO INDEMNIFY SCHNITZER STEEL PROD. CO. AGAINST ALL CLAIMS. |              |
| NDOR<br>MOEN    | COMMODITY<br>NUMBER | 103                                                                                                                                                                                          | COMM<br>DESC |
| N               | 50720               | G 1b 01:45 PM 11/06/95                                                                                                                                                                       | ◀ G          |
| A               | 44580               | G 1b 01:56 PM 11/06/95                                                                                                                                                                       | ◀ T          |
|                 | 6140                |                                                                                                                                                                                              | ◀ N          |
| ICE             | EXTENDED            | 214.90                                                                                                                                                                                       | WEIGHER      |
| 70              |                     |                                                                                                                                                                                              | DP           |
| TRIER           | TRACTOR NO.         | 636                                                                                                                                                                                          | TIME         |
| m. Cost         |                     |                                                                                                                                                                                              | X            |

FILE



**APPENDIX D**  
**SOIL DISPOSAL RECEIPTS**



TPS Technologies Inc.

Manifest No.: 09-01425      Time In 10:38      Time Out 10:46      Date 11-10-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 79920 lb INB KEY  
Tare : 31500 lb KEY  
=====

Net : 48420 lb

Net Tons : 24.21

Load No.: 019  
Transporter: AMERICAN CONST  
Driver's Name: PHILLIP STACHER  
Transaction No.: 003885

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 11:33      Time Out 11:38      Date 11-10-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 84300 lb INB KEY  
Tare : 31460 lb KEY  
=====

Net : 52840 lb

Net Tons : 26.42

Load No.: 020  
Transporter: AMERICAN CONST  
Driver's Name: PHILLIP STACHER  
Transaction No.: 003888

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 13:10      Time Out 13:14      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 59400 lb INB KEY  
Tare : 31440 lb KEY  
=====

Net : 27960 lb

Net Tons : 13.98

Load No.: 017  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003865



TPS Technologies Inc.

Manifest No.: 09-01425      Time In 12:00      Time Out 12:03      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 76300 lb INB KEY  
Tare : 31480 lb KEY  
=====

Net : 44820 lb

Net Tons : 22.41

Load No.: 015  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003860

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 10:50      Time Out 11:06      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 72580 lb INB KEY  
Tare : 31500 lb  
=====

Net : 41080 lb

Net Tons : 20.54

Load No.: 014  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003859

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 10:04      Time Out 10:08      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 74400 lb INB KEY  
Tare : 31500 lb KEY  
=====

Net : 42900 lb

Net Tons : 21.45

Load No.: 011  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003853



TPS Technologies Inc.

Manifest No.: 09-01425      Time In 09:07      Time Out 09:13      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 81780 lb INB KEY  
Tare : 31240 lb KEY  
=====

Net : 50540 lb

Net Tons : 25.27

Load No.: 008  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003847

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 15:21      Time Out 15:48      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 74240 lb INB KEY  
Tare : 31280 lb KEY  
=====

Net : 42960 lb

Net Tons : 21.48

Load No.: 018  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003874

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 12:56      Time Out 13:03      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 83200 lb INB KEY  
Tare : 35940 lb KEY  
=====

Net : 47260 lb

Net Tons : 23.63

Load No.: 016  
Transporter: SUNRISE  
Driver's Name: AL STEPHANIE  
Transaction No.: 003864



# TPS Technologies Inc.

Manifest No.: 09-01425      Time In 10:41      Time Out 10:45      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 80720 lb INB KEY  
Tare : 36000 lb KEY  
=====

Net : 44720 lb

Load No.: 013

Net Tons : 22.36

Transporter: SUNRISE

Driver's Name: AL STEPHANIE

Transaction No.: 003857

# TPS Technologies Inc.

Manifest No.: 09-01425      Time In 09:20      Time Out 09:30      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 88560 lb INB KEY  
Tare : 35840 lb KEY  
=====

Net : 52720 lb

Load No.: 010

Net Tons : 26.36

Transporter: SUNRISE

Driver's Name: AL STEPHANIE

Transaction No.: 003851

# TPS Technologies Inc.

Manifest No.: 09-01425      Time In 09:10      Time Out 09:17      Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 87320 lb INB KEY  
Tare : 37920 lb KEY  
=====

Net : 49400 lb

Load No.: 009

Net Tons : 24.70

Transporter: SUNRISE

Driver's Name: BRETT KULAVIK

Transaction No.: 003848



# TPS Technologies Inc.

Manifest No.: 09-01425    Time In 10:13    Time Out 10:21    Date 11-09-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 74780 lb INB KEY  
Tare : 37860 lb KEY  
=====

Net : 36920 lb

Net Tons : 18.46

Load No.: 012  
Transporter: SUNRISE  
Driver's Name: BRETT KULAVIK  
Transaction No.: 003854

# TPS Technologies Inc.

Manifest No.: 09-01425    Time In 17:12    Time Out 17:18    Date 11-08-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 81500 lb INB KEY  
Tare : 31260 lb KEY  
=====

Net : 50240 lb

Net Tons : 25.12

Load No.: 007  
Transporter: AMERICAN CONST.  
Driver's Name: TIM WELCH  
Transaction No.: 003846

150.26

# TPS Technologies Inc.

Manifest No.: 09-01425    Time In 16:18    Time Out 16:23    Date 11-06-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 86800 lb INB KEY  
Tare : 31500 lb KEY  
=====

Net : 55300 lb

Net Tons : 27.65

Load No.: 006  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003826



TPS Technologies Inc.

Manifest No.: 09-01425      Time In 13:41      Time Out 13:45      Date 11-06-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 80640 lb INB KEY  
Tare : 31540 lb KEY  
=====

Net : 49100 lb

Load No.: 003

Net Tons : 24.55

Transporter: AMERICAN CONST

Driver's Name: TIM WELCH

Transaction No.: 003823

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 14:28      Time Out 14:31      Date 11-06-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 83680 lb INB KEY  
Tare : 31680 lb KEY  
=====

Net : 52000 lb

Load No.: 004

Net Tons : 26.00

Transporter: AMERICAN CONST

Driver's Name: TIM WELCH

Transaction No.: 003824

TPS Technologies Inc.

Manifest No.: 09-01425      Time In 11:59      Time Out 12:06      Date 11-06-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 81680 lb INB KEY  
Tare : 31560 lb KEY  
=====

Net : 50120 lb

Load No.: 001

Net Tons : 25.06

Transporter: AMERICAN CONSTRUCTIO

Driver's Name: TIM WELCH

Transaction No.: 003821



# TPS Technologies Inc.

Manifest No.: 09-01425      Time In 12:53      Time Out 12:58      Date 11-06-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 75060 lb INB KEY  
Tare : 31620 lb KEY  
=====

Net : 43440 lb

Load No.: 002  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003822

Net Tons : 21.72

# TPS Technologies Inc.

Manifest No.: 09-01425      Time In 15:21      Time Out 15:26      Date 11-06-95

Customer Name: ARCO 6118  
5282 N LOMBARD ST  
PORTLAND, OR

Gross: 82200 lb INB KEY  
Tare : 31640 lb KEY  
=====

Net : 50560 lb

Load No.: 005  
Transporter: AMERICAN CONST  
Driver's Name: TIM WELCH  
Transaction No.: 003825

Net Tons : 25.28



**APPENDIX E**

**LABORATORY ANALYTICAL REPORTS AND  
CHAIN-OF-CUSTODY RECORDS  
FOR SOIL BORING SAMPLES**





18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485-2992  
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290  
9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

**R E C E I V E D**

**AUG 25 1995**

**PORTLAND OFFICE**

August 17, 1995

EMCON Northwest, Inc.  
P.O. Box 231269  
Portland, OR 97224

Attention: Lisa Kelly

RE: JOB # 40233-025.005<sup>\*</sup>  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

Enclosed are test results for your samples received in this lab on Aug. 15, 1995. For your reference, these analyses have been assigned our NCA # P508174.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

*Philip Nerenberg*  
Philip Nerenberg  
Laboratory Manager



### TPH-HCID per Oregon DEQ Results In mg/kg (ppm)

**Client:** EMCON Northwest, Inc.  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P508174  
**Matrix:** soil  
**Sampled:** 08/14/95  
**Received:** 08/15/95

| Client ID | Lab ID    | Analyte   | Results | MRL | Date Prepared | Date Analyzed |
|-----------|-----------|-----------|---------|-----|---------------|---------------|
| B-1-15    | P508174-1 | Gasoline  | ND      | 20  | 08/15/95      | 08/15/95      |
|           |           | Diesel    | ND      | 50  |               |               |
|           |           | Heavy/Oil | ND      | 100 |               |               |
| B-2-15    | P508174-2 | Gasoline  | ND      | 20  | 08/15/95      | 08/15/95      |
|           |           | Diesel    | ND      | 50  |               |               |
|           |           | Heavy/Oil | ND      | 100 |               |               |
| B-3-15    | P508174-3 | Gasoline  | ND      | 20  | 08/15/95      | 08/15/95      |
|           |           | Diesel    | ND      | 50  |               |               |
|           |           | Heavy/Oil | ND      | 100 |               |               |
| B-4-10    | P508174-4 | Gasoline  | ND      | 20  | 08/15/95      | 08/16/95      |
|           |           | Diesel    | ND      | 50  |               |               |
|           |           | Heavy/Oil | ND      | 100 |               |               |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



### SURROGATE RECOVERIES (%)

**Client:** EMCON Northwest, Inc.  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Number:** P508174  
**Received:** 08/15/1995

| Sample Name             | Analyte            | Result | Control Limits |
|-------------------------|--------------------|--------|----------------|
| TPH-HCID per Oregon DEQ |                    |        |                |
| B-1-15                  | 1-Chlorooctadecane | 90     | 50-150         |
| B-2-15                  | 1-Chlorooctadecane | 94     | 50-150         |
| B-3-15                  | 1-Chlorooctadecane | 93     | 50-150         |
| B-4-10                  | 1-Chlorooctadecane | 92     | 50-150         |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

August 17, 1995

EMCON Northwest, Inc.  
P.O. Box 231269  
Portland, OR 97224

Attention: Lisa Kelly

Re: Quality Control Data  
JOB # 40233-025.009  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

NCA project number P508174.

Note: Surrogate Recoveries are included in the final report.

#### QUALITY CONTROL DEFINITIONS

##### METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

##### SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.



Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

**BATCH QUALITY CONTROL RESULTS**  
**TPH-HCID per Oregon DEQ****Client:** EMCON Northwest, Inc.  
**Project:** ARCO #6118, PORTLAND, OR**NCA Project #:** P508174  
**Received:** 08/15/95**METHOD BLANK**  
**Batch # FA95054a**  
**Results In mg/kg (ppm)**

| Compound      | Result   | MRL |
|---------------|----------|-----|
| Gasoline      | ND       | 20  |
| Diesel        | ND       | 50  |
| Heavy/Oil     | ND       | 100 |
| Date Prepared | 08/15/95 |     |
| Date Analyzed | 08/15/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 1-Chlorooctadecane     | 87     | 50-150        |



## ARCO Products Company

Division of AtlanticRichfieldCompany

Task Order No.

88100.00 18417.00 P508174

## Chain of Custody

ARCO Facility no.

6118

City  
(Facility)

PORTLAND

Project manager  
(Consultant)

LISA KELLY / TIM TODD

ARCO engineer

CHUCK HUTCHENS

Telephone no.  
(ARCO)Telephone no.  
(Consultant)

624-7200

Fax no.

(Consultant) 620-7658

Laboratory name

NCA

Contract number

Consultant name

EMCON

Address  
(Consultant)

PORTLAND, OR

| Sample I.D. | Lab no. | Container no. | Matrix |       |       | Preservation |      | Sampling date | Sampling time | BTEX<br>602/EPA 8020 | BTEX/TPH<br>EPA M602/8020/8015 | TPH Modified 8015<br>Gas <input type="checkbox"/> Diesel <input type="checkbox"/> | Oil and Grease<br>413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> | TPH<br>EPA 418.1/SM503E | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 | TCLP<br>Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/> Semi | CAM Metals EPA 601/07000<br>TTL <input type="checkbox"/> STL <input type="checkbox"/> STL <input type="checkbox"/> | Lead Org./DHS<br>Lead EPA<br>7420/7421 <input type="checkbox"/> | TPH-HCID | Hold |
|-------------|---------|---------------|--------|-------|-------|--------------|------|---------------|---------------|----------------------|--------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------|--------------|--------------|--------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------|------|
|             |         |               | Soil   | Water | Other | Ice          | Acid |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          |      |
| B-1-15      |         |               | X      |       |       | X            |      | 8.14.95       | 7:30          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 | X        |      |
| B-2-15      |         |               | X      |       |       | X            |      |               | 9:00          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 | X        |      |
| B-3-15      |         |               | X      |       |       | X            |      |               | 9:55          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 | X        |      |
| B-4-10      |         |               | X      |       |       | X            |      |               | 11:30         |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 | X        |      |
| B-1-5       |         |               |        |       |       |              |      |               | 7:34          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-1-11      |         |               |        |       |       |              |      |               | 7:37          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-1-20      |         |               |        |       |       |              |      |               | 7:55          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-2-5       |         |               |        |       |       |              |      |               | 8:40          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-2-11      |         |               |        |       |       |              |      |               | 8:55          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-2-20      |         |               |        |       |       |              |      |               | 9:03          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-3-5       |         |               |        |       |       |              |      |               | 9:45          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-3-10      |         |               |        |       |       |              |      |               | 9:50          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-3-20      |         |               |        |       |       |              |      |               | 10:00         |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-4-5       |         |               |        |       |       |              |      |               | 11:25         |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-4-15      |         |               |        |       |       |              |      |               | 11:40         |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-4-20      |         |               |        |       |       |              |      |               | 11:45         |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |
| B-SP        |         |               |        |       |       |              |      |               | 12:25         |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                        |                                                                                                                    |                                                                 |          | X    |

Condition of sample:

Temperature received:

11.8

Relinquished by sampler

Date

8.15.95

Time

10:30

Received by

Karin L. Stanley

Relinquished by

Date

Time

Received by

Relinquished by

Date

Time

Received by laboratory

NCA

Date

8/15/95

Time

11:45

Lab number

P508174

Turnaround time

Priority Rush  
1 Business Day ☐Rush  
2 Business Days ☒Expedited  
5 Business Days ☐Standard  
10 Business Days ☐

Remarks

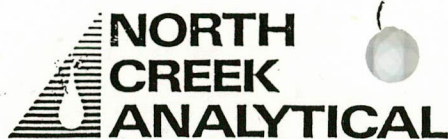
Custody Seal  
No. 023133



**APPENDIX F**

**LABORATORY ANALYTICAL REPORTS AND  
CHAIN-OF-CUSTODY RECORDS  
FOR UST DECOMMISSIONING SAMPLES**





18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485-2992  
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290  
9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

November 6, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

RECEIVED  
NOV - 7 1995  
PORTLAND OFFICE

Attention: Brian Kier

RE: JOB # 40233-  
P.O.#  
PROJECT - ARCO #6118

Enclosed are test results for your samples received in this lab on Nov. 02, 1995. For your reference, these analyses have been assigned our NCA # P511028.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

  
Philip Nerenberg  
Laboratory Manager

**TPH-HCID per Oregon DEQ**  
**Results In mg/kg (ppm)**

**Client:** EMCON  
**Project:** ARCO #6118

**NCA Project #:** P511028  
**Matrix:** soil  
**Sampled:** 11/02/95  
**Received:** 11/02/95

| Client ID | Lab ID    | Analyte   | Results | MRL | Date Prepared | Date Analyzed |
|-----------|-----------|-----------|---------|-----|---------------|---------------|
| S-1       | P511028-1 | Gasoline  | ND      | 20  | 11/02/95      | 11/02/95      |
|           |           | Diesel    | DET     | 50  |               |               |
|           |           | Heavy/Oil | DET     | 100 |               |               |
| S-2       | P511028-2 | Gasoline  | DET     | 20  | 11/02/95      | 11/02/95      |
|           |           | Diesel    | DET     | 50  |               |               |
|           |           | Heavy/Oil | ND      | 100 |               |               |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



**TPH-G per Oregon DEQ (C6-C10)**  
Results In mg/kg (ppm)

**Client:** EMCON  
**Project:** ARCO #6118

**NCA Project #:** P511028  
**Matrix:** soil  
**Sampled:** 11/02/95  
**Received:** 11/02/95

| <u>Client ID</u> | <u>Lab ID</u> | <u>Analyte</u>   | <u>Results</u> | <u>MRL</u> | <u>Date Prepared</u> | <u>Date Analyzed</u> |
|------------------|---------------|------------------|----------------|------------|----------------------|----------------------|
| S-1              | P511028-1     | Gasoline/Related | 36             | 8.0        | 11/02/95             | 11/02/95             |
| S-2              | P511028-2     | Gasoline/Related | 34             | 8.0        | 11/02/95             | 11/02/95             |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

**TPH-418.1M per Oregon DEQ**  
**Results In mg/kg (ppm)**

**Client:** EMCON  
**Project:** ARCO #6118

**NCA Project #:** P511028  
**Matrix:** soil  
**Sampled:** 11/02/95  
**Received:** 11/02/95

| Client ID | Lab ID    | Analyte | Results | MRL | Date Prepared | Date Analyzed |
|-----------|-----------|---------|---------|-----|---------------|---------------|
| S-1       | P511028-1 | TPH     | 120     | 20  | 11/03/95      | 11/03/95      |
| S-2       | P511028-2 | TPH     | 100     | 20  | 11/03/95      | 11/03/95      |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



**SURROGATE RECOVERIES (%)**Client: EMCON  
Project: ARCO #6118NCA Number: P511028  
Received: 11/02/1995

| Sample Name                   | Analyte              | Result | Control Limits |
|-------------------------------|----------------------|--------|----------------|
| TPH-HCID per Oregon DEQ       |                      |        |                |
| S-1                           | 1-Chlorooctadecane   | 105    | 50-150         |
| S-2                           | 1-Chlorooctadecane   | 104    | 50-150         |
| TPH-G per Oregon DEQ (C6-C10) |                      |        |                |
| S-1                           | 4-Bromofluorobenzene | 93     | 63-126         |
|                               | Trifluorotoluene     | 72     | 50-150         |
| S-2                           | 4-Bromofluorobenzene | 100    | 63-126         |
|                               | Trifluorotoluene     | 78     | 50-150         |

MRL  
ND  
\*Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

November 6, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

Re: Quality Control Data  
JOB # 40233-  
P.O.#  
PROJECT - ARCO #6118

NCA project number P511028.

Note: Surrogate Recoveries are included in the final report.

## QUALITY CONTROL DEFINITIONS

### METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

### SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.



Accuracy is measured by percent recovery as in:

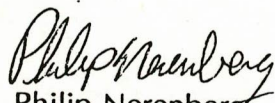
$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

**BATCH QUALITY CONTROL RESULTS**  
TPH-HCID per Oregon DEQClient: EMCON  
Project: ARCO #6118NCA Project #: P511028  
Received: 11/02/95**METHOD BLANK**  
Batch # FA95080a  
Results In mg/kg (ppm)

| Compound      | Result   | MRL |
|---------------|----------|-----|
| Gasoline      | ND       | 20  |
| Diesel        | ND       | 50  |
| Heavy/Oil     | ND       | 100 |
| Date Prepared | 11/02/95 |     |
| Date Analyzed | 11/02/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 1-Chlorooctadecane     | 103    | 50-150        |



**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)**

Client: EMCON  
Project: ARCO #6118

NCA Project #: P511028  
Received: 11/02/95

**METHOD BLANK**  
Batch # BT95079b  
Results In mg/kg (ppm)

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/02/95 |     |
| Date Analyzed    | 11/02/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 98     | 63-126        |
| Trifluorotoluene       | 88     | 50-150        |

**DUPLICATE**  
Batch # BT95079b  
Results In mg/kg (ppm)

Duplicate ID P511028-1

| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| Gasoline | 36          | 38       | 5.4 | 50           |

**LABORATORY CONTROL SAMPLE**  
Batch # BT95079a  
Results In mg/kg (ppm)

| Compound | True | Found | % Rec | QC Limit % Rec |
|----------|------|-------|-------|----------------|
| Gasoline | 31   | 28    | 90    | 50-150         |

**BATCH QUALITY CONTROL RESULTS**  
**TPH-418.1M per Oregon DEQ**

Client: EMCON  
Project: ARCO #6118

NCA Project #: P511028  
Received: 11/02/95

**METHOD BLANK**  
Batch # FB95085b  
Results In mg/kg (ppm)

| Compound      | Result   | MRL |
|---------------|----------|-----|
| TPH           | ND       | 20  |
| Date Prepared | 11/03/95 |     |
| Date Analyzed | 11/03/95 |     |

**DUPLICATE**  
Batch # FB95085z  
Results In mg/kg (ppm)

Duplicate ID P510452-14

| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| TPH (ap) | 21          | ND       | —   | 50           |

(ap) RPD is not reported for sample concentrations less than 5 times the MRL.

**LABORATORY CONTROL SAMPLE**  
Batch # FB95085a  
Results In mg/kg (ppm)

| Compound | True | Found | % Rec | QC Limit % Rec |
|----------|------|-------|-------|----------------|
| TPH      | 125  | 100   | 80    | 30-134         |



COC Rev 7. 8/95



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November 10, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

RECEIVED  
NOV 13 1995  
PORTLAND OFFICE

Attention: Brian Kier

RE: JOB # 18417-00  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

Enclosed are test results for your samples received in this lab on Nov. 07, 1995. For your reference, these analyses have been assigned our NCA # P511085.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

  
Philip Nerenberg  
Laboratory Manager



**TPH-HCID per Oregon DEQ**  
**Results in mg/kg (ppm)**

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P511085  
**Matrix:** soil  
**Sampled:** 11/06/95  
**Received:** 11/07/95

| Client ID | Lab ID    | Analyte   | Results            | MRL | Date Prepared | Date Analyzed |
|-----------|-----------|-----------|--------------------|-----|---------------|---------------|
| E-8-12    | P511085-1 | Gasoline  | DET                | 20  | 11/07/95      | 11/07/95      |
|           |           | Diesel    | DET * <sup>1</sup> | 50  |               |               |
|           |           | Heavy/Oil | ND                 | 100 |               |               |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

**TPH-G per Oregon DEQ (C6-C10)**  
Results In mg/kg (ppm)**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Project #:** P511085  
**Matrix:** soil  
**Sampled:** 11/06/95  
**Received:** 11/07/95

| <u>Client ID</u> | <u>Lab ID</u> | <u>Analyte</u>   | <u>Results</u> | <u>MRL</u> | <u>Date Prepared</u> | <u>Date Analyzed</u> |
|------------------|---------------|------------------|----------------|------------|----------------------|----------------------|
| E-8-12           | P511085-1     | Gasoline/Related | 340            | 40         | 11/07/95             | 11/08/95             |

MRL  
ND  
\*Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



**SURROGATE RECOVERIES (%)****Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Number:** P511085  
**Received:** 11/07/1995

| Sample Name                   | Analyte              | Result           | Control Limits |
|-------------------------------|----------------------|------------------|----------------|
| TPH-HCID per Oregon DEQ       |                      |                  |                |
| E-8-12                        | 1-Chlorooctadecane   | 90               | 50-150         |
| TPH-G per Oregon DEQ (C6-C10) |                      |                  |                |
| E-8-12                        | 4-Bromofluorobenzene | 97               | 63-126         |
|                               | Trifluorotoluene     | — * <sup>2</sup> | 50-150         |

MRL  
ND  
\*Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

## COMMENTS

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Number:** P511085  
**Received:** 11/07/1995

- 
1. Detected hydrocarbons in the diesel range appear to be due to overlap of gasoline range hydrocarbons.
  2. Unable to calculate surrogate recovery due to high analyte concentration.



November 10, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

Re: Quality Control Data  
JOB # 18417-00  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

NCA project number P511085.

Note: Surrogate Recoveries are included in the final report.

#### QUALITY CONTROL DEFINITIONS

##### METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

##### SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager



**BATCH QUALITY CONTROL RESULTS**  
**TPH-HCID per Oregon DEQ**

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P511085  
**Received:** 11/07/95

**METHOD BLANK**  
**Batch # FA95081b**  
**Results In mg/kg (ppm)**

| Compound      | Result   | MRL |
|---------------|----------|-----|
| Gasoline      | ND       | 20  |
| Diesel        | ND       | 50  |
| Heavy/Oil     | ND       | 100 |
| Date Prepared | 11/07/95 |     |
| Date Analyzed | 11/07/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 1-Chlorooctadecane     | 87     | 50-150        |

**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)**

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P511085  
**Received:** 11/07/95

**METHOD BLANK**  
**Batch # BT95081b**  
**Results In mg/kg (ppm)**

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/07/95 |     |
| Date Analyzed    | 11/08/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 95     | 63-126        |
| Trifluorotoluene       | 98     | 50-150        |

**DUPLICATE**  
**Batch # BT95081y**  
**Results In mg/kg (ppm)**
**Duplicate ID P511056-2**

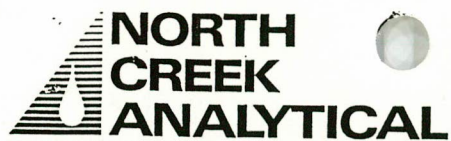
| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| Gasoline | 55          | 58       | 5.3 | 50           |

**LABORATORY CONTROL SAMPLE**  
**Batch # BT95081a**  
**Results In mg/kg (ppm)**

| Compound | True | Found | % Rec | QC Limit % Rec |
|----------|------|-------|-------|----------------|
| Gasoline | 31   | 28    | 90    | 50-150         |







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November 10, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

R E C E I V E D

NOV 13 1995

PORTLAND OFFICE

Attention: Brian Kier

RE: JOB # 18417-00  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

Enclosed are test results for your samples received in this lab on Nov. 08, 1995. For your reference, these analyses have been assigned our NCA # P511116.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

  
Philip Nerenberg  
Laboratory Manager



**TPH-G per Oregon DEQ (C6-C10)**  
Results In mg/kg (ppm)**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Project #:** P511116  
**Matrix:** soil  
**Sampled:** 11/08/95  
**Received:** 11/08/95

| Client ID | Lab ID    | Analyte          | Results | MRL | Date Prepared | Date Analyzed |
|-----------|-----------|------------------|---------|-----|---------------|---------------|
| SP-1      | P511116-1 | Gasoline/Related | ND      | 2.0 | 11/08/95      | 11/09/95      |
| SP-2      | P511116-2 | Gasoline/Related | ND      | 2.0 | 11/08/95      | 11/09/95      |
| SP-3      | P511116-3 | Gasoline/Related | ND      | 2.0 | 11/08/95      | 11/09/95      |
| SP-4      | P511116-4 | Gasoline/Related | ND      | 2.0 | 11/08/95      | 11/09/95      |

MRL  
ND  
\*Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

**SURROGATE RECOVERIES (%)****Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Number:** P511116  
**Received:** 11/08/1995

| Sample Name                   | Analyte              | Result | Control Limits |
|-------------------------------|----------------------|--------|----------------|
| TPH-G per Oregon DEQ (C6-C10) |                      |        |                |
| SP-1                          | 4-Bromofluorobenzene | 84     | 63-126         |
|                               | Trifluorotoluene     | 69     | 50-150         |
| SP-2                          | 4-Bromofluorobenzene | 83     | 63-126         |
|                               | Trifluorotoluene     | 64     | 50-150         |
| SP-3                          | 4-Bromofluorobenzene | 84     | 63-126         |
|                               | Trifluorotoluene     | 71     | 50-150         |
| SP-4                          | 4-Bromofluorobenzene | 83     | 63-126         |
|                               | Trifluorotoluene     | 65     | 50-150         |

MRL  
ND  
\*Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



November 10, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

Re: Quality Control Data  
JOB # 18417-00  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

NCA project number P511116.

Note: Surrogate Recoveries are included in the final report.

#### QUALITY CONTROL DEFINITIONS

##### METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

##### SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager



**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)**

Client: EMCON  
Project: ARCO #6118, PORTLAND, OR

NCA Project #: P511116  
Received: 11/08/95

**METHOD BLANK**  
Batch # BT95082a  
Results In mg/kg (ppm)

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/08/95 |     |
| Date Analyzed    | 11/09/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 98     | 63-126        |
| Trifluorotoluene       | 87     | 50-150        |

**DUPLICATE**  
Batch # BT95082y  
Results In mg/kg (ppm)

Duplicate ID P511116-2

| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| Gasoline | ND          | ND       | 0   | 50           |

**LABORATORY CONTROL SAMPLE**  
Batch # BT95082a  
Results In mg/kg (ppm)

| Compound | True | Found | % Rec | QC Limit % Rec |
|----------|------|-------|-------|----------------|
| Gasoline | 31   | 28    | 90    | 50-150         |

## ARCO Products Company

Division of AtlanticRichfieldCompany

Task Order No.

18417 00

PS11116

Chain of Custody

ARCO Facility no.

ARCO 6118

City  
(Facility)

Portland

Project manager  
(Consultant)

BRIAN KERR

ARCO engineer

Chuck Hutchins

Telephone no.  
(ARCO)Telephone no.  
(Consultant)

624-7200

Fax no.

(Consultant) 620-7658

Consultant name

Emerson

Address  
(Consultant)

Portland OR

Laboratory name

NCA

Contract number

Method of shipment

Hand  
DeliveredSpecial detection  
Limit/reporting

Special QA/QC

Remarks

\* Need Verbal results  
by 830 11/9/95.Call Liz's pager  
870-1634

Lab number

Turnaround time

Priority Rush  
1 Business DayRush  
2 Business DaysExpedited  
5 Business DaysStandard  
10 Business Days

Condition of sample:

Temperature received:

9.4

Relinquished by sampler

Relinquished by

Relinquished by

Date

11/8/95

Time

1609

Received by

Cary W. Goodman

Received by

Karin L. Hardy

Received by laboratory

Date

11-8-95

Time

1608

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

APPC-3292 (2-91)





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R E C E I V E D

NOV 17 1995

PORTLAND OFFICE

November 16, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

RE: JOB # 18417-00  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

Enclosed are test results for your samples received in this lab on Nov. 10, 1995. For your reference, these analyses have been assigned our NCA # P511164.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

  
Philip Nerenberg  
Laboratory Manager

**TPH-G per Oregon DEQ (C6-C10)**  
**Results In mg/kg (ppm)**

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P511164  
**Matrix:** soil  
**Sampled:** 11/06/95  
**Received:** 11/10/95

| Client ID | Lab ID     | Analyte          | Results | MRL | Date Prepared | Date Analyzed |
|-----------|------------|------------------|---------|-----|---------------|---------------|
| E-1-12    | P511164-1  | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-2-12    | P511164-2  | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-3-12    | P511164-3  | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-7-12    | P511164-7  | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-9-12    | P511164-8  | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-12-12   | P511164-11 | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-13-12   | P511164-12 | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-14-12   | P511164-13 | Gasoline/Related | 3.3     | 2.0 | 11/13/95      | 11/13/95      |
| E-15-12   | P511164-14 | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-16-14   | P511164-15 | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |
| E-19-15   | P511164-18 | Gasoline/Related | ND      | 2.0 | 11/13/95      | 11/14/95      |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



### SURROGATE RECOVERIES (%)

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Number:** P511164  
**Received:** 11/10/1995

| Sample Name                   | Analyte              | Result | Control Limits |
|-------------------------------|----------------------|--------|----------------|
| TPH-G per Oregon DEQ (C6-C10) |                      |        |                |
| E-1-12                        | 4-Bromofluorobenzene | 111    | 63-126         |
|                               | Trifluorotoluene     | 74     | 50-150         |
| E-2-12                        | 4-Bromofluorobenzene | 106    | 63-126         |
|                               | Trifluorotoluene     | 80     | 50-150         |
| E-3-12                        | 4-Bromofluorobenzene | 108    | 63-126         |
|                               | Trifluorotoluene     | 71     | 50-150         |
| E-7-12                        | 4-Bromofluorobenzene | 108    | 63-126         |
|                               | Trifluorotoluene     | 85     | 50-150         |
| E-9-12                        | 4-Bromofluorobenzene | 103    | 63-126         |
|                               | Trifluorotoluene     | 70     | 50-150         |
| E-12-12                       | 4-Bromofluorobenzene | 97     | 63-126         |
|                               | Trifluorotoluene     | 77     | 50-150         |
| E-13-12                       | 4-Bromofluorobenzene | 109    | 63-126         |
|                               | Trifluorotoluene     | 79     | 50-150         |
| E-14-12                       | 4-Bromofluorobenzene | 101    | 63-126         |
|                               | Trifluorotoluene     | 83     | 50-150         |
| E-15-12                       | 4-Bromofluorobenzene | 106    | 63-126         |
|                               | Trifluorotoluene     | 80     | 50-150         |
| E-16-14                       | 4-Bromofluorobenzene | 104    | 63-126         |
|                               | Trifluorotoluene     | 84     | 50-150         |
| E-19-15                       | 4-Bromofluorobenzene | 106    | 63-126         |
|                               | Trifluorotoluene     | 75     | 50-150         |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

November 16, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

Re: Quality Control Data  
JOB # 18417-00  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

NCA project number P511164.

Note: Surrogate Recoveries are included in the final report.

#### QUALITY CONTROL DEFINITIONS

##### METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

##### SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.



Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)****Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Project #:** P511164  
**Received:** 11/10/95**METHOD BLANK**  
**Batch # BT95083c**  
**Results In mg/kg (ppm)**

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/13/95 |     |
| Date Analyzed    | 11/13/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 97     | 63-126        |
| Trifluorotoluene       | 97     | 50-150        |



**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)**

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P511164  
**Received:** 11/10/95

**METHOD BLANK**  
**Batch # BT95084a**  
**Results In mg/kg (ppm)**

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/13/95 |     |
| Date Analyzed    | 11/13/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 97     | 63-126        |
| Trifluorotoluene       | 97     | 50-150        |

**DUPLICATE**  
**Batch # BT95083b**  
**Results In mg/kg (ppm)**

**Duplicate ID 1511143-2**

| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| Gasoline | 3500        | 3400     | 2.9 | 50           |

**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)**

Client: EMCON  
Project: ARCO #6118, PORTLAND, OR

NCA Project #: P511164  
Received: 11/10/95

**DUPLICATE**  
Batch # BT95084y  
Results In mg/kg (ppm)

Duplicate ID P511043-17

| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| Gasoline | ND          | ND       | 0   | 50           |

**DUPLICATE**  
Batch # BT95084z  
Results In mg/kg (ppm)

Duplicate ID P511164-11

| Compound | Sample Conc | Dup Conc | RPD | QC Limit RPD |
|----------|-------------|----------|-----|--------------|
| Gasoline | ND          | ND       | 0   | 50           |

**LABORATORY CONTROL SAMPLE**  
Batch # BT95083a  
Results In mg/kg (ppm)

| Compound | True | Found | % Rec | QC Limit % Rec |
|----------|------|-------|-------|----------------|
| Gasoline | 31   | 34    | 110   | 50-150         |

**LABORATORY CONTROL SAMPLE**  
Batch # BT95084a  
Results In mg/kg (ppm)

| Compound | True | Found | % Rec | QC Limit % Rec |
|----------|------|-------|-------|----------------|
| Gasoline | 31   | 22    | 71    | 50-150         |



**ARCO Products Company**  
Division of AtlanticRichfield Company

Task Order No. 18417 00

PS11164

Chain of Custody

|                                      |                                                                         |                                                   |                                         |
|--------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------|
| ARCO Facility no.<br><u>ARCO6118</u> | City (Facility)<br><u>Portland</u>                                      | Project manager (Consultant)<br><u>BRIAN KIER</u> | Laboratory name<br><u>NCA</u>           |
| ARCO engineer<br><u>Chuck Hutten</u> | Telephone no. (ARCO)                                                    | Telephone no. (Consultant)<br><u>624-7200</u>     | Fax no. (Consultant)<br><u>620-7658</u> |
| Consultant name<br><u>EMCON</u>      | Address (Consultant)<br><u>15055 SW SEGUNDA PKWY SUITE 40 PDX 97224</u> |                                                   | Contract number<br><u>AAA</u>           |

| Sample I.D. | Lab no. | Container no. | Matrix |       |       | Preservation |      | Sampling date | Sampling time | BTEX<br>602/EPA 8020 | BTEX/TPH<br>EPA M602/8020/8015 | TPH Modified 8015<br>Gas <input type="checkbox"/> Diesel <input type="checkbox"/> | Oil and Grease<br>413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> | TPH<br>EPA 418.1/SM503E | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 | TCLP<br>Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/> | CAN Metals EPA 601/7000<br>TLC <input type="checkbox"/> STLC <input type="checkbox"/> | Lead Org./DHS<br>Lead EPA<br>7420/7421 <input type="checkbox"/> | TPH-G | HOLD |
|-------------|---------|---------------|--------|-------|-------|--------------|------|---------------|---------------|----------------------|--------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------|--------------|--------------|--------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------|------|
|             |         |               | Soil   | Water | Other | Ice          | Acid |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       |                                                                 |       |      |
| E-1-12      |         |               | X      |       |       | X            |      | 11/6/95       | 1442          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 1                                                               | X     |      |
| E-2-12      |         |               |        |       |       |              |      |               | 1514          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       |                                                                 | X     |      |
| E-3-12      |         |               |        |       |       |              |      |               | 1530          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 3                                                               | X     |      |
| E-4-7       |         |               |        |       |       |              |      |               | 1444          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 4                                                               | X     | X    |
| E-5-6       |         |               |        |       |       |              |      |               | 1517          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 5                                                               | X     | X    |
| E-6-7       |         |               |        |       |       |              |      |               | 1543          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 6                                                               | X     | X    |
| E-7-12      |         |               |        |       |       |              |      |               | 1522          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 7                                                               | X     |      |
| E-9-12      |         |               |        |       |       |              |      |               | 1526          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 8                                                               | X     |      |
| E-10-12     |         |               |        |       |       |              |      |               | 1533          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 9                                                               | X     | X    |
| E-11-7      |         |               |        |       |       |              |      |               | 1536          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 10                                                              | X     | X    |
| E-12-12     |         |               |        |       |       |              |      |               | 1539          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 11                                                              | X     |      |
| E-13-12     |         |               |        |       |       |              |      |               | 1540          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 12                                                              | X     |      |
| E-14-12     |         |               | ✓      |       |       | ✓            |      | 11/7/95       | 726           |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 13                                                              | X     |      |
| E-15-12     |         |               |        |       |       |              |      | 11/9/95       | 818           |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 14                                                              | X     |      |
| E-16-14     |         |               |        |       |       |              |      | 11/9/95       | 1056          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 15                                                              | X     |      |
| E-17-14     |         |               | ✓      |       |       | ✓            |      | 11/7/95       | 1550          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                       | 16                                                              | X     | X    |

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks

Run E-14, 15, 16  
2 day rush  
per LR 11/13 PM

Lab number

Turnaround time

Priority Rush  
1 Business Day ☐

Rush  
2 Business Days ☐

Expedited  
5 Business Days ☐

Standard  
10 Business Days ☐

Condition of sample:

Relinquished by sampler

Relinquished by

Relinquished by

Date

Date

Date

Time

Time

Time

Temperature received:

Received by

Received by

Received by laboratory

NCA

Date

11-10-95

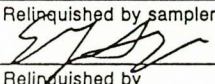
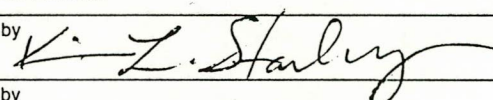
Time

1715



|                                        |  |  |                                            |  |  |                                                   |  |  |                                         |  |  |                 |  |  |
|----------------------------------------|--|--|--------------------------------------------|--|--|---------------------------------------------------|--|--|-----------------------------------------|--|--|-----------------|--|--|
| ARCO Facility no.<br><b>ARCO 6118</b>  |  |  | City (Facility)<br><b>Portland</b>         |  |  | Project manager (Consultant)<br><b>Brian Kier</b> |  |  | Laboratory name<br><b>NCA</b>           |  |  |                 |  |  |
| ARCO engineer<br><b>Chuck Hutchins</b> |  |  | Telephone no. (ARCO)                       |  |  | Telephone no. (Consultant)<br><b>624-7200</b>     |  |  | Fax no. (Consultant)<br><b>620-7658</b> |  |  |                 |  |  |
| Consultant name<br><b>FALCON</b>       |  |  | Address (Consultant)<br><b>Portland OR</b> |  |  |                                                   |  |  |                                         |  |  | Contract number |  |  |

| Sample I.D. | Lab no. | Container no. | Matrix |       |       | Preservation |      | Sampling date | Sampling time | BTEX<br>602/EPA 8020 | BTEX/TPH<br>EPA 1602/8020/8015 | TPH Modified 8015<br>Gas <input type="checkbox"/> Diesel <input type="checkbox"/> | Oil and Grease<br>413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> | TPH<br>EPA 418.1/SM503E | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 | TCMP<br>Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/> | Semi<br>Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/> | CAM Metals EPA 6010/7000<br>TTL <input type="checkbox"/> STL <input type="checkbox"/> | Lead Org/DHS <input type="checkbox"/> | Lead EPA<br>7420/7421 <input type="checkbox"/> | TPH-6 | HOLD | Method of shipment |   |                                                          |
|-------------|---------|---------------|--------|-------|-------|--------------|------|---------------|---------------|----------------------|--------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------|--------------|--------------|--------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------|-------|------|--------------------|---|----------------------------------------------------------|
|             |         |               | Soil   | Water | Other | Ice          | Acid |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
| E-19-14     |         |               | X      |       |       | X            |      | 11/9/95       | 1306          |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    | X | Special detection<br>Limit/reporting                     |
| E-19-15     |         |               | X      |       |       | X            |      | 11/10/95      | 930           |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       | X    |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Special QA/QC                                            |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Remarks                                                  |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Lab number                                               |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Turnaround time                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Priority Rush<br>1 Business Day <input type="checkbox"/> |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Rush<br>2 Business Days <input type="checkbox"/>         |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Expedited<br>5 Business Days <input type="checkbox"/>    |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   | Standard<br>10 Business Days <input type="checkbox"/>    |
|             |         |               |        |       |       |              |      |               |               |                      |                                |                                                                                   |                                                                                 |                         |              |              |              |                                                                                                   |                                                                                                   |                                                                                       |                                       |                                                |       |      |                    |   |                                                          |

|                                                                                                               |  |                         |  |                       |  |                                                                                                      |  |
|---------------------------------------------------------------------------------------------------------------|--|-------------------------|--|-----------------------|--|------------------------------------------------------------------------------------------------------|--|
| Condition of sample:                                                                                          |  |                         |  | Temperature received: |  |                                                                                                      |  |
| Relinquished by sampler<br> |  | Date<br><b>11/10/95</b> |  | Time<br><b>1715</b>   |  | Received by<br> |  |
| Relinquished by                                                                                               |  | Date                    |  | Time                  |  | Received by                                                                                          |  |
| Relinquished by                                                                                               |  | Date                    |  | Time                  |  | Received by laboratory<br><b>NCA</b>                                                                 |  |
|                                                                                                               |  |                         |  |                       |  | Date<br><b>11-10-95</b>                                                                              |  |
|                                                                                                               |  |                         |  |                       |  | Time<br><b>1715</b>                                                                                  |  |





18939 120th Avenue N.E., Suite 101 • Burien, WA 98011-9508 (206) 481-9200 • FAX 485-2992  
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290  
9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

RECEIVED

DEC 05 1995

PORTLAND OFFICE

November 27, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

RE: JOB # 40233-025.005  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

Enclosed are test results for your samples received in this lab on Nov. 14, 1995. For your reference, these analyses have been assigned our NCA # P511196.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

  
Philip Nerenberg  
Laboratory Manager

**TPH-G per Oregon DEQ (C6-C10)**  
**Results In mg/kg (ppm)**

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Project #:** P511196  
**Matrix:** soil  
**Sampled:** 11/14/95  
**Received:** 11/14/95

| Client ID | Lab ID    | Analyte          | Results | MRL | Date Prepared | Date Analyzed |
|-----------|-----------|------------------|---------|-----|---------------|---------------|
| D-1-4.5   | P511196-1 | Gasoline/Related | ND      | 2.0 | 11/14/95      | 11/14/95      |
| D-2-3.9   | P511196-2 | Gasoline/Related | 9.2     | 2.0 | 11/14/95      | 11/14/95      |
| D-3-3.9   | P511196-3 | Gasoline/Related | 2.8     | 2.0 | 11/14/95      | 11/14/95      |
| D-4-4.3   | P511196-4 | Gasoline/Related | 2.3     | 2.0 | 11/14/95      | 11/14/95      |
| D-5-3.7   | P511196-5 | Gasoline/Related | ND      | 2.0 | 11/14/95      | 11/14/95      |
| D-6-3.5   | P511196-6 | Gasoline/Related | ND      | 2.0 | 11/15/95      | 11/15/96      |
| D-7-3.5   | P511196-7 | Gasoline/Related | ND      | 2.0 | 11/15/95      | 11/15/96      |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report



### SURROGATE RECOVERIES (%)

**Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR

**NCA Number:** P511196  
**Received:** 11/14/1995

| Sample Name                          | Analyte              | Result | Control Limits |
|--------------------------------------|----------------------|--------|----------------|
| <b>TPH-G per Oregon DEQ (C6-C10)</b> |                      |        |                |
| D-1-4.5                              | 4-Bromofluorobenzene | 96     | 63-126         |
|                                      | Trifluorotoluene     | 60     | 50-150         |
| D-2-3.9                              | 4-Bromofluorobenzene | 99     | 63-126         |
|                                      | Trifluorotoluene     | 60     | 50-150         |
| D-3-3.9                              | 4-Bromofluorobenzene | 97     | 63-126         |
|                                      | Trifluorotoluene     | 52     | 50-150         |
| D-4-4.3                              | 4-Bromofluorobenzene | 98     | 63-126         |
|                                      | Trifluorotoluene     | 55     | 50-150         |
| D-5-3.7                              | 4-Bromofluorobenzene | 97     | 63-126         |
|                                      | Trifluorotoluene     | 65     | 50-150         |
| D-6-3.5                              | 4-Bromofluorobenzene | 101    | 63-126         |
|                                      | Trifluorotoluene     | 68     | 50-150         |
| D-7-3.5                              | 4-Bromofluorobenzene | 98     | 63-126         |
|                                      | Trifluorotoluene     | 62     | 50-150         |

MRL  
ND  
\*

Method Reporting Level  
None Detected at or above the method reporting level  
See Comment Section at end of report

November 27, 1995

EMCON  
P.O. Box 231269  
Portland, OR 97224

Attention: Brian Kier

Re: Quality Control Data  
JOB # 40233-025.005  
P.O.#  
PROJECT - ARCO #6118, PORTLAND, OR

NCA project number P511196.

Note: Surrogate Recoveries are included in the final report.

#### QUALITY CONTROL DEFINITIONS

##### METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

##### SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.



Accuracy is measured by percent recovery as in:

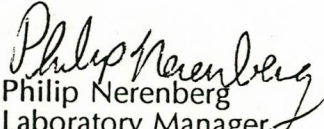
$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)****Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Project #:** P511196  
**Received:** 11/14/95**METHOD BLANK**  
**Batch # BT95086a**  
**Results In mg/kg (ppm)**

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/14/95 |     |
| Date Analyzed    | 11/14/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 104    | 63-126        |
| Trifluorotoluene       | 96     | 50-150        |

**METHOD BLANK**  
**Batch # BT95086b**  
**Results In mg/kg (ppm)**

| Compound         | Result   | MRL |
|------------------|----------|-----|
| Gasoline/Related | ND       | 2.0 |
| Date Prepared    | 11/15/95 |     |
| Date Analyzed    | 11/16/95 |     |

| Surrogate Recovery (%) | Result | Control Limit |
|------------------------|--------|---------------|
| 4-Bromofluorobenzene   | 96     | 63-126        |
| Trifluorotoluene       | 78     | 50-150        |



**BATCH QUALITY CONTROL RESULTS**  
**TPH-G per Oregon DEQ (C6-C10)****Client:** EMCON  
**Project:** ARCO #6118, PORTLAND, OR**NCA Project #:** P511196  
**Received:** 11/14/95**DUPLICATE**  
**Batch # BT95086z**  
**Results In mg/kg (ppm)****Duplicate ID P511196-4**

| Compound | Sample<br>Conc | Dup<br>Conc | RPD | QC Limit<br>RPD |
|----------|----------------|-------------|-----|-----------------|
| Gasoline | 2.3            | 2.0         | 14  | 50              |

**LABORATORY CONTROL SAMPLE**  
**Batch # BT95086a**  
**Results In mg/kg (ppm)**

| Compound | True | Found | % Rec | QC Limit<br>% Rec |
|----------|------|-------|-------|-------------------|
| Gasoline | 31   | 32    | 103   | 50-150            |

## CHAIN OF CUSTODY REPORT

Work Order #: **P511196**

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992  
 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290  
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

|                                                                                                                                                                                                                            |                              |                      |                                                                                                                                   |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| CLIENT: <b>ARCID 6118</b><br>ADDRESS: <b>Lombard 4<br/>Portland OR</b><br>PHONE: <b>503 624-7200</b> FAX:<br>PROJECT NAME: <b>ARCID 6118</b><br>PROJECT NUMBER: <b>40235-025-005</b><br>SAMPLED BY: <b>Elizabeth Ruddy</b> |                              |                      | REPORT TO: <b>BRIAN KIR, EMCOR</b><br>ATTENTION:<br>BILLING TO: <b>ARCID</b><br>P.O. NUMBER:<br>NCA QUOTE #:<br>Analysis Request: |  |  | TURNAROUND REQUEST in Business Days *<br>Organic & Inorganic Analyses<br><div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">10</div> <div style="border: 1px solid black; padding: 2px;">5</div> <div style="border: 1px solid black; padding: 2px;">3</div> <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px;">1</div> </div> Fuels & Hydrocarbon Analyses<br><div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">5</div> <div style="border: 1px solid black; padding: 2px;">3</div> <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px; text-decoration: line-through;">1</div> </div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">OTHER</div> Specify: |                 |                               |
| NCA SAMPLE NUMBER                                                                                                                                                                                                          | CLIENT SAMPLE IDENTIFICATION | SAMPLING DATE / TIME | <div style="transform: rotate(-45deg); font-weight: bold;">TPH-6</div>                                                            |  |  | MATRIX (W, S, O)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | # OF CONTAINERS | COMMENTS & PRESERVATIVES USED |
| P511196-1                                                                                                                                                                                                                  | 1. D-1-4.6                   | 11/14/95 1124        | X                                                                                                                                 |  |  | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1               | NONE (23.5)                   |
| 2                                                                                                                                                                                                                          | 2. D-2-3.9                   | 1151                 | X                                                                                                                                 |  |  | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ↓               | ↓                             |
| 3                                                                                                                                                                                                                          | 3. D-3-3.9                   | 1200                 | X                                                                                                                                 |  |  | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ↓               | ↓                             |
| 4                                                                                                                                                                                                                          | 4. D-4-4.3                   | 1216                 | X                                                                                                                                 |  |  | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ↓               | ↓                             |
| 5                                                                                                                                                                                                                          | 5. D-5-3.7                   | 1226                 | X                                                                                                                                 |  |  | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ↓               | ↓                             |
| 6                                                                                                                                                                                                                          | 7. D-6-3.5                   | 11/14/95 1346        | X                                                                                                                                 |  |  | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ↓               | ↓                             |
| 7                                                                                                                                                                                                                          | 8. D-7-3.5                   | 11/14/95 1347        | X                                                                                                                                 |  |  | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ↓               | ↓                             |
| 9.                                                                                                                                                                                                                         |                              |                      |                                                                                                                                   |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                               |
| 10.                                                                                                                                                                                                                        |                              |                      |                                                                                                                                   |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                               |
| RELINQUISHED BY: <b>[Signature]</b>                                                                                                                                                                                        |                              |                      | DATE: <b>11/14/95</b>                                                                                                             |  |  | RECEIVED BY: <b>Sara McClurg</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                               |
| PRINT NAME: <b>Elizabeth Ruddy</b> FIRM: <b>EMCOR</b>                                                                                                                                                                      |                              |                      | TIME: <b>1501</b>                                                                                                                 |  |  | PRINT NAME: <b>Sara McClurg</b> FIRM: <b>NCA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                               |
| RELINQUISHED BY:                                                                                                                                                                                                           |                              |                      | DATE:                                                                                                                             |  |  | RECEIVED BY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                               |
| PRINT NAME:                                                                                                                                                                                                                |                              |                      | TIME:                                                                                                                             |  |  | PRINT NAME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                               |
| FIRM:                                                                                                                                                                                                                      |                              |                      | TIME:                                                                                                                             |  |  | FIRM:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                               |
| ADDITIONAL REMARKS: <b>Please call Elizabeth Ruddy w/ Results 24 hour turnaround.</b>                                                                                                                                      |                              |                      | <b>Samples D-6 &amp; D-7 added 11/15/95 @ 900.</b>                                                                                |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                               |







# UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Brian Hier DATE: 12/21/95  
WITH: Emcon TIME: 10<sup>55</sup><sub>PM</sub>  
TELEPHONE NO: ( ) 624 - 7200  
REGARDING: ARCO 6418  
FILE NO: 26 - 95 - 303

## SUMMARY OF CALL

Wants an extension on the 45 day report until 1/19/96.  
I gave approval. Will include tank removal & cleanup activities.

R Silverman  
Staff Signature



ETE

NWR UST FIELD INSPECTION REPORT

Inspection Date: 11/9/95

Site Name: Arco - Am Pm # 6118

Time Begin 11:10am End 11:35am Total\* 25 min.

Site Address: 5282 N. Lombard - PDX

\*Include inspection, travel, paperwork

File/Facility No.: 3933 / 26-95-303  
(both UST & UST Cleanup file #'s as appropriate)

Inspector: MBR

Others Onsite: Elizabeth Ruddy - Emcon \*\*

Inspection Type (check one)

include  
company  
name

Walt Orr - American Construction  
Install - 13955 - exp. 3/96  
Delem - 13954 - exp. 3/96

- ☒ Install (New/Retro/StII)
- ☒ Decommission
- ☐ UST Facility - Full
- ☐ UST Facility - Partial
- ☐ Cleanup
- ☐ Soil Treatment
- ☐ Complaint
- ☐ Distrib. Audit
- ☐ Service Provider Audit
- ☐ Leak Detection
- ☐ Fuels (StI/StII/Tanker)

Supervisor License No.: 14347 Exp. date 11/96  
(note name with \*\* that Lic. No. applies to)

Potential Site Hazards

Hazards Appraised? Y / N  
Photos Taken? Y / N (attach)  
Samples Taken? Y / N (attach results)

INSPECTION RESULTS - IN COMPLIANCE? Y / N / NA

↑  
N SITE SKETCH (Plan View)

Notes (use back of form as necessary)

see photos

All tanks out, cleanup  
in progress.













November 7, 1995

Oregon

CHRISTINE RYBAK  
ARCO PRODUCTS COMPANY  
PO BOX 6038  
ARTESIA CA 90702 6038

DEPARTMENT OF  
ENVIRONMENTAL  
QUALITY

NORTHWEST REGION

RE: Arco #6118  
File No.: 26-95-303

Dear Ms. Rybak:

On November 7, 1995, a release was reported from an underground storage tank (UST) system at your facility located at 5282 N Lombard in Portland, Oregon. As the responsible party for the facility, you are required to clean up the release according to OAR 340-122-201 through 340-122-360.

An Initial Report Form for UST Cleanup Projects is enclosed, which needs to be completed and returned to this office within twenty (20) days from the date the release was reported. An outline of additional reporting requirements and due dates is also enclosed. A copy of the UST Cleanup regulations will be provided upon request. As the responsible party, you should be aware of what the requirements are, even if you have hired a qualified contractor or consultant to assist you.

**Please reference the DEQ File Number listed above in all future correspondence and reports.**

By law, DEQ is required to recover all cleanup project oversight costs. DEQ oversight begins with the initial site characterization and continues through site closure. Oversight includes activities such as reviewing reports, preparing correspondence, answering technical assistance questions, site inspections, and enforcement actions. You will be receiving an invoice each month for all oversight activities performed to-date.

DEQ's highest priority for oversight are those sites which pose the greatest hazard to human health, safety and the environment. As a result, many lower environmental priority sites will not be reviewed in detail or receive a final "No further action" or "closure" letter from DEQ until the higher priority sites are addressed. However, all projects - simple or complex - require at least some oversight. At a minimum, sufficient review of reports and data submitted is conducted to determine the environmental priority of the cleanup project.

John A. Kitzhaber  
Governor



2020 SW Fourth Avenue  
Suite 400  
Portland, OR 97201-4987  
(503) 229-5263 Voice  
TTY (503) 229-5471  
DEQ-1

November 7, 1995

Page Two

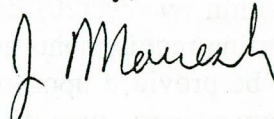
For those responsible parties who desire DEQ oversight, regardless of environmental priority, we have developed a Responsible Party Priority Site Program. To receive oversight and more effectively schedule your project, you will be asked to sign an agreement requesting priority review and confirming your agreement to pay DEQ oversight costs in a timely manner.

Not entering into the Agreement does not release you from responsibility for investigation and/or cleanup of the contamination; nor does it mean that you are exempt from paying for DEQ oversight costs. Please be aware that there may be a waiting list for assignment to the next available project manager, and that these projects are assigned on a first come, first served basis.

Please read the attached information on the cost recovery and invoice process. We have also included information about the Responsible Party Priority Site Program and an agreement, if you are interested in expediting review of your project. You may contact the Waste Management and Cleanup Program at (503) 229-6635 if you have questions about cost recovery.

Thank you for your cooperation and continued efforts to comply with the regulations. **If you have any questions about the regulations and/or your cleanup please call (503) 229-5489 and ask to speak to the Underground Storage Tank Duty Officer.**

Sincerely,



Jim Maresh  
Duty Officer  
Underground Storage Tanks  
Northwest Region

Enclosures



# NWR UST FIELD INSPECTION REPORT

Inspection Date: 11-7-95

Site Name: Arco # 6118

Time Begin 10:15am End 11:15am Total\* 1 hr.

Site Address: 5282 N. Lombard, PDX

\*Include inspection, travel, paperwork

File/Facility No.: 3933/26-95-303  
(both UST & UST Cleanup file #'s as appropriate)

Inspector: MRS

Others Onsite: Elizabeth Ruddy - Emcon \*\*

**Inspection Type** (check one)

include  
company  
name

Lic # 14432  
Walt Orr - American Constr.  
Install - 13955 - exp. 3/96  
Decom - 13954 - exp. 3/96

- ☐ Install (New/Retro/StII)
- ☒ Decommission
- ☐ UST Facility - Full
- ☐ UST Facility - Partial
- ☐ Cleanup
- ☐ Soil Treatment
- ☐ Complaint
- ☐ Distrib. Audit
- ☐ Service Provider Audit
- ☐ Leak Detection
- ☐ Fuels (StI/StII/Tanker)

Supervisor License No.: 14347 Exp. date 11/96  
(note name with \*\* that Lic. No. applies to)

## Potential Site Hazards

Hazards Appraised? Y / N  
Photos Taken? Y / N (attach)  
Samples Taken? Y / N (attach results)

INSPECTION RESULTS - IN COMPLIANCE? Y / N / NA

↑ SITE SKETCH (Plan View)  
N

Notes (use back of form as necessary)

See photos

All but 1 tank out - 5 total.  
Contamination called in  
11/7/95. Plan to start  
install on 11/9/95.



26-95-303

95-303  
Date: 8/3/95 Job No. 5447 No. of Pages: 34  
(Including Cover Sheet)

TO:

MitchFax No: (503) 229-6945

CC:

Fax No. ( )

Fax No. ( )

Fax No. ( )

FROM:

DAN GORALWIK

BARGHAUSEN CONSULTING ENGINEERS, INC.  
18215 72nd Avenue South, Kent, WA 98032  
(206) 251-6222, FAX (206) 251-8782

Comments:

Copy of 30 Day Notice Originally Sent  
7/14/95 - Resent to AG on 9/5/95

Steve Had Faxed Me The Form To Fill Out  
On July 14, 1995. I Completed it &  
Sent it Back to Him The Same Day  
See Transmittal

Note: Please call (206) 251-6222 if you do not receive the number of indicated pages.



Date: 9/5/95 / Job No. 5447 No. of Pages: 2  
(Including Cover Sheet)

TO: Steve Piko Fax No: (503) 229-6954  
ORDER 229-5733

CC: Lori McCutcheon Fax No. ( ) \_\_\_\_\_

\_\_\_\_\_ Fax No. ( ) \_\_\_\_\_

\_\_\_\_\_ Fax No. ( ) \_\_\_\_\_

\_\_\_\_\_ Fax No. ( ) \_\_\_\_\_

FROM:

DAN GOALWIN

BARGHAUSEN CONSULTING ENGINEERS, INC.  
18215 72nd Avenue South, Kent, WA 98032  
(206) 251-6222, FAX (206) 251-8782

Comments:

RE-SENDING 30 DAY NOTICE DECORUM.5 TANKSYOUR SITE # 3933Registration #5BDCABBDCACBDCADBDCAEOLD TANKSJBUE 1JBUS 2JBIG 3JBH 4JB 5

Note: Please call (206) 251-6222 if you do not receive the number of indicated pages.



**Oregon Department of Environmental Quality**  
**UNDERGROUND STORAGE TANK DECOMMISSIONING/CHANGE-IN-SERVICE 30-DAY NOTICE**

**FACILITY (Location of Tanks)**Name: ARCO PAC # 6118Address: 5252 N. Lombard StPortland, ORPhone: 503-284-7974DEQ Facility I.D. Number: 3933

Work To Be Performed By: \_\_\_\_\_

(\_\_\_\_\_) Licensed Service Provider

UNKNOWN @ THIS POINT

Phone: \_\_\_\_\_

**TANK OWNER**Name: Atlantic Richfield CompanyAddress: P.O. Box 6037Artesia, CAPhone: 714-670-5405

License # \_\_\_\_\_

Mobile Phone: \_\_\_\_\_

**FORM MUST BE SUBMITTED BY UST OWNER OR OPERATOR 30 DAYS BEFORE START OF WORK**

**YOU MUST CONTACT YOUR LOCAL DEQ REGIONAL OFFICE 3-DAYS BEFORE STARTING ANY DECOMMISSIONING WORK. (Phone numbers are listed on reverse)**

Will tank removal or potential cleanup affect adjacent property or Right-of-Way property? Yes \_\_\_\_\_ No \_\_\_\_\_  
UNKNOWN

Date decommissioning is scheduled to begin: 8/1/95 - 8/14/95

| Tank # | DEQ UST Permit # | Tank Size in (Gallons) | Product: Gasoline, Diesel, Used Oil, Other? |     | Closure or Service Change? |                 |           | Tank to be Replaced? |    |
|--------|------------------|------------------------|---------------------------------------------|-----|----------------------------|-----------------|-----------|----------------------|----|
|        |                  |                        | Present                                     | New | Tank Removal               | Closure Inplace | Other Use | Yes                  | No |
| 1      |                  | 6,000                  | GASOLINE                                    |     | ✓                          |                 |           | ✓                    |    |
| 2      |                  | 6,000                  | "                                           |     | ✓                          |                 |           | ✓                    |    |
| 3      |                  | 6,000                  | "                                           |     | ✓                          |                 |           | ✓                    |    |
| 4      |                  | 6,000                  | "                                           |     | ✓                          |                 |           | ✓                    |    |
| 5      |                  | 12,000                 | "                                           |     | ✓                          |                 |           | ✓                    |    |

\* If decommissioned tank(s) are to be replaced by new underground storage tanks you must submit a new permit application containing information on the new tanks 30 days before placing them in service.

on Submit a soil sampling plan to the DEQ regional office and receive plan approval prior to starting work if 1) tank is to be decommissioned in-place, 2) tank contents are changed to a non-regulated substance, 3) tank contains a regulated substance other than petroleum, or 4) tank changed to non-regulated use.

Signature: \_\_\_\_\_

(Owner or Operator)

Date: 7/14/95

Kate Christine Rybak  
ARCO Products Company  
Environmental Compliance Administrator



|                         |                     |           |                        |
|-------------------------|---------------------|-----------|------------------------|
| Date: <u>7/14/95</u>    | Job No. <u>5447</u> | FILE COPY | No. of Pages: <u>5</u> |
| (Including Cover Sheet) |                     |           |                        |

|     |                                      |                               |
|-----|--------------------------------------|-------------------------------|
| TO: | <u>Mr. Steve Paiko</u>               | Fax No: <u>(503) 229-6954</u> |
|     | <u>Oregon D.E.Q. V&amp;T Program</u> |                               |
| CC: |                                      | Fax No. ( )                   |
|     |                                      |                               |
|     |                                      | Fax No. ( )                   |
|     |                                      |                               |
|     |                                      | Fax No. ( )                   |
|     |                                      |                               |

FROM:

Dan Goelwin

**BARGHAUSEN CONSULTING ENGINEERS, INC.**  
 18215 72nd Avenue South, Kent, WA 98032  
 (206) 251-6222, FAX (206) 251-8782

Comments:

RE: 30 Day Notice of Decommissioning & Installation  
 of Underground Storage Tanks - ARCO Fac # 6118  
 PORTLAND OR.

Enclosed is the 30 Day Notice for Decommissioning  
 the 5 Existing Tanks at the site along with An Application  
 for the Installation of 4 New - 10,000 gallon Double wall  
 Tanks. For to Follow Shortly so Could you Please  
 Start the Clock on the 30 Days Today!

Thank

Note: Please call (206) 251-6222 if you do not receive the number of indicated pages.

5715 229-6945 Mitch Dot

UST CLEANUP TELEPHONE USE REPORT

CALL FROM/TO: Dan Got Goalwin DATE: 11/3/95  
WITH: Varg-hausen TIME: 4:40 pm  
TELEPHONE NO: (206) 251-6222  
REGARDING: ID # 3933 / American Const. & Env. are  
FILE NO: - - the licensed Ser. Providers

SUMMARY OF CALL

Gave 3-day install # on the basis  
of permit issued, fees paid for new  
tanks, & licensed service provider. Did  
not issue 3-day decommissioning notice  
because I don't have a copy of 30-day  
notice. Dan can't fax me a copy, &  
head HQ can't verify.

Walt → 503-289-7974

Mitch Schae  
Staff Signature















Facility # 3933

Oregon

9/27/95

DEPARTMENT OF  
ENVIRONMENTAL  
QUALITY

**TO: UST Permittee**

**RE: UST Permit Issuance**

Enclosed is the temporary Underground Storage Tank (UST) permit that has been issued for your facility. Please ensure that a copy of the permit is maintained at the facility and available for inspection upon request.

Unless otherwise instructed by the Regional Office, the installation checklist must be submitted to the address listed below thirty (30) days after the installation is complete. A copy of the checklist was provided in the original permit application packet, and a list of regional offices and phone numbers is enclosed.

Return completed checklist to: Department of Environmental Quality  
UST Compliance Section  
811 SW Sixth Avenue  
Portland, OR 97204

Please contact the Regional Office if you have any questions on the technical or regulatory requirements for your installation. If you have questions about your UST Permit or annual fees, please contact the UST Permit Coordinator at 503-229-5559 or toll free at 1-800-742-7878.

enclosures

cc: Regional Office

DEPT OF ENVIRONMENTAL QUALITY  
RECEIVED

SEP 29 1995

NORTHWEST REGION



811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696  
TDD (503) 229-6993  
DEQ-1



Oregon Department of Environmental Quality  
811 SW Sixth Avenue  
Portland, Oregon 97204-1334  
503-229-5733 and in Oregon 1-800-742-7878

## UNDERGROUND STORAGE TANK PROGRAM TEMPORARY PERMIT

### PERMITTEE

Atlantic Richfield Company  
PO Box 6038  
Artesia, CA 90702-6038

### FACILITY NAME AND LOCATION

Arco Facility #6118  
5282 N Lombard Street  
Portland, OR 97203  
Multnomah County

FACILITY ID No.: 3933

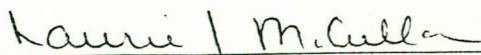
APPLICATION RECEIVED: 07/14/95

APPLICATION TYPE: NEW  
Replace Existing USTs

| <u>UST PERMIT NUMBER</u> | <u>TANK ID NUMBER</u> | <u>TANK SIZE</u> | <u>TANK CONTENTS</u> |
|--------------------------|-----------------------|------------------|----------------------|
| BDCAB                    | 1A                    | 10,000 gallon    | Gasoline             |
| BDCAC                    | 2A                    | 10,000 gallon    | Gasoline             |
| BDCAD                    | 3A                    | 10,000 gallon    | Gasoline             |
| BDCAE                    | 4A                    | 10,000 gallon    | Gasoline             |

The Department of Environmental Quality issues this temporary permit with the understanding that the Permittee is to comply with the conditions of this temporary permit and all applicable regulations.

ISSUE DATE: September 26, 1995

  
Laurie J. McCulloch  
Manager, UST Compliance Program  
Waste Management and Cleanup Division

### Temporary Permit Conditions

1. The Permittee shall maintain a copy of this temporary permit at the facility and, upon request, present it to an authorized Department of Environmental Quality (Department) representative for inspection.
2. The Permittee shall submit a new permit application to the Department within 120 days of a change in tank ownership, property ownership, the name of the Permittee or the operational status of the tank (e.g., changing the tank contents).



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# OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY UNDERGROUND STORAGE TANK PERMIT APPLICATION

## TANK OWNER

PLEASE PRINT CLEARLY

NAME Atlantic Richfield CompanyADDRESS P.O. Box 6038Artesia, CA 90702-6038Attn: Environmental ComplianceX Christopher A. Rybak  
TANK OWNER SIGNATUREDATE 7/14/95PHONE 714-670-5405

## PERMIT FEE ASSESSMENT

Fee is \$35 per year for each tank

4 Tanks at \$35 each = \$ 140.00

AMOUNT REMITTED \$ \_\_\_\_\_

(TO FOLLOW)

Department of Environmental Quality

UST Compliance Section

## PROPERTY OWNER

PLEASE PRINT CLEARLY

NAME SAMEADDRESS SAMEX Christopher A. Rybak for ARCO  
PROPERTY OWNER SIGNATURE

## FACILITY

PLEASE PRINT CLEARLY

NAME ARCO FAC #6118ADDRESS 5282 N. Lombard St.  
Portland, OR 97203PHONE 503-289-7974SIC CODE 5541

## PERMITTEE

PLEASE PRINT CLEARLY

NAME SAMEADDRESS SAMEX Christopher A. Rybak for ARCO  
PERMITTEE SIGNATURE

The DEQ will send the annual compliance invoice to the permittee.

Return this completed form, along with the completed Federal form (Notification for Underground Storage Tanks) and any fees owing to:

DEQ  
Business Office  
811 SW 6th  
Portland, OR 97204

Each completed application must include the signature of the tank owner, the property owner and the permittee. All three signature lines must be signed, even if they are the same person.



# OREGON UST SURVEY

## INSTRUCTIONS

Please fill in form to the best of your knowledge. If you do not know or cannot estimate an item requested, please mark "Unknown."

Facility Name:

| Tank Identification No. (e.g. ABC-123) or Arbitrarily Assigned Sequential Number (e.g. 1,2,3...) | TANK NO.   | TANK NO.   | TANK NO.   | TANK NO.   |
|--------------------------------------------------------------------------------------------------|------------|------------|------------|------------|
|                                                                                                  | 1 (MID)    | 2 (UNL#1)  | 3 (UNL#2)  | 4 (SLIP)   |
| 1. Status of Tank<br>(check one <u>ONLY</u> if applicable)                                       |            |            |            |            |
| If temporarily out of use, Estimated time out of use:                                            |            |            |            |            |
| 1 month-6 months                                                                                 | ( )        | ( )        | ( )        | ( )        |
| 6 months-1 year                                                                                  | ( )        | ( )        | ( )        | ( )        |
| 1 year-5 years                                                                                   | ( )        | ( )        | ( )        | ( )        |
| 5 years or more                                                                                  | ( )        | ( )        | ( )        | ( )        |
| Estimated date tank is to be brought back into use (mo/yr)                                       | ( )        | ( )        | ( )        | ( )        |
| 2. Was tank new at time of installation? (Y/N)                                                   | (Y)        | (Y)        | (Y)        | (Y)        |
| 3. Containment Systems<br>(check one)                                                            |            |            |            |            |
| Single-walled tank                                                                               | ( )        | ( )        | ( )        | ( )        |
| Double-walled tank                                                                               | (✓)        | (✓)        | (✓)        | (✓)        |
| Pit-lining system                                                                                | ( )        | ( )        | ( )        | ( )        |
| Unknown                                                                                          | ( )        | ( )        | ( )        | ( )        |
| 4. Leak Detection System<br>(check all that apply)                                               |            |            |            |            |
| Visual                                                                                           | ( )        | ( )        | ( )        | ( )        |
| Stock Inventory                                                                                  | ( )        | ( )        | ( )        | ( )        |
| Tile drain                                                                                       | ( )        | ( )        | ( )        | ( )        |
| Vapor wells                                                                                      | ( )        | ( )        | ( )        | ( )        |
| Sensor instrument (specify type):                                                                | Electronic | Electronic | Electronic | Electronic |
| In-ground detector                                                                               | ( )        | ( )        | ( )        | ( )        |
| Within walls of double-walled tank                                                               | (✓)        | (✓)        | (✓)        | (✓)        |
| Ground water monitoring wells                                                                    | ( )        | ( )        | ( )        | ( )        |
| Continuous in piping                                                                             | ( )        | ( )        | ( )        | ( )        |
| Pressure test                                                                                    | ( )        | ( )        | ( )        | ( )        |
| Internal inspection                                                                              | ( )        | ( )        | ( )        | ( )        |
| Other, specify                                                                                   |            |            |            |            |
| None                                                                                             | ( )        | ( )        | ( )        | ( )        |
| Unknown                                                                                          | ( )        | ( )        | ( )        | ( )        |
| 5. Overfill Protection (Yes/No)                                                                  | (yes)      | (yes)      | (yes)      | (yes)      |
| 6. Location of Piping<br>(check all that apply)                                                  |            |            |            |            |
| No parts in contact with soil                                                                    | ( )        | ( )        | ( )        | ( )        |
| Parts contacting the soil which are:                                                             |            |            |            |            |
| Unprotected metal                                                                                | ( )        | ( )        | ( )        | ( )        |
| Made of corrosion resistant materials                                                            | (✓)        | (✓)        | (✓)        | (✓)        |
| Corrosion-resisted coated                                                                        | ( )        | ( )        | ( )        | ( )        |
| Cathodically protected                                                                           | ( )        | ( )        | ( )        | ( )        |
| Double-walled                                                                                    | PRODUCT    | PRODUCT    | PRODUCT    | PRODUCT    |
| Within a secondary containment                                                                   | ( )        | ( )        | ( )        | ( )        |
| Interior lined                                                                                   | ( )        | ( )        | ( )        | ( )        |
| Unknown                                                                                          | ( )        | ( )        | ( )        | ( )        |
| 7. History of Tank Repairs<br>(check one except as indicated)                                    |            |            |            |            |
| If tank repaired, Indicate date of last repairs (mo/yr)                                          |            |            |            |            |
| None                                                                                             | (✓)        | (✓)        | (✓)        | (✓)        |
| Unknown                                                                                          | ( )        | ( )        | ( )        | ( )        |
| 8. History of Pipe Repairs<br>(check one except as indicated)                                    |            |            |            |            |
| If pipe repaired, indicate date (mo/yr)                                                          |            |            |            |            |
| None                                                                                             | (✓)        | (✓)        | (✓)        | (✓)        |
| Unknown                                                                                          | ( )        | ( )        | ( )        | ( )        |
| 9. Tank Removed from the Ground                                                                  |            |            |            |            |
| Indicate date (mo/yr)                                                                            |            |            |            |            |
| (mark only if applicable — tank removed since May 1, 1988)                                       | ( )        | ( )        | ( )        | ( )        |

THANK YOU FOR YOUR ASSISTANCE



# Notification for Underground Storage Tanks

APPROVAL EXPIRES 3-30-95

Department of Environmental Quality  
811 SW Sixth Ave. Portland 97204  
In Oregon call Toll Free 1-800-452-4011

STATE USE ONLY  
I.D. Number **3933**  
Date Received

## GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

**Who Must Notify?** Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

**What Tanks Are Included?** Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

**What Tanks Are Excluded?** Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:  
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;  
2. tanks used for storing heating oil for consumptive use on the premises where stored;  
3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;

5. surface impoundments, pits, ponds, or lagoons;

6. storm water or waste water collection systems;

7. flow-through process tanks;

8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;

9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

**What Substances Are Covered?** The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

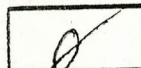
**When To Notify?** 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

**Penalties:** Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

## INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached



### I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

Atlantic Richfield Company

Street Address

4 Centerpointe Drive

County

Orange County

City

La Palma

State

CA

ZIP Code

Area Code

Phone Number

714-670-5405

Type of Owner (Mark all that apply)

☒ Current

☐ State or Local Gov't

☒ Private or Corporate

☐ Former

☐ Federal Gov't (GSA facility I.D. no.)

☐ Ownership uncertain

### II. LOCATION OF TANK(S)

(If same as Section I, mark box here ☐)

Facility Name or Company Site Identifier, as applicable

Arco Fac # 6118

Street Address or State Road, as applicable

5282 N. Lombard Street

County

Multnomah

City (nearest)

PORTLAND

State

OR

ZIP Code

97203

Indicate number of tanks at this location

4

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

### III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐)

J. David Carroll

Job Title

Field Engineer

Area Code

Phone Number

206-836-8882

### IV. TYPE OF NOTIFICATION

☒ Mark box here only if this is an amended or subsequent notification for this location.

### V. CERTIFICATION (Read and sign after completing Section VI)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

Daniel B. Gordon Consultant

Signature

Daniel B. Gordon

Date Signed

7/14/95

CONTINUE ON REVERSE SIDE



**VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)**

| Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)                                                                                                                                                                                                                                                                                                                                                     | Tank No. 1                                                                                                                                                                 | Tank No. 2                                                                                                                                                                    | Tank No. 3                                                                                                                                                                    | Tank No. 4                                                                                                                                                                 | Tank No.                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Status of Tank<br>(Mark all that apply <input checked="" type="checkbox"/> )<br>Currently in Use<br>Temporarily Out of Use<br>Permanently Out of Use<br>Brought into Use after 5/8/86                                                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/>                                         | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/>                                            | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/>                                            | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/>                                         | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                                                  |
| Estimated Age (Years)                                                                                                                                                                                                                                                                                                                                                                                                                                   | NEW                                                                                                                                                                        | NEW                                                                                                                                                                           | NEW                                                                                                                                                                           | NEW                                                                                                                                                                        |                                                                                                                                                                               |
| Estimated Total Capacity (Gallons)                                                                                                                                                                                                                                                                                                                                                                                                                      | 10,000                                                                                                                                                                     | 10,000                                                                                                                                                                        | 10,000                                                                                                                                                                        | 10,000                                                                                                                                                                     |                                                                                                                                                                               |
| Material of Construction<br>(Mark one <input checked="" type="checkbox"/> )<br>Steel<br>Concrete<br>Fiberglass Reinforced Plastic<br>Unknown<br>Other, Please Specify                                                                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                                           | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                                              | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                                              | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                                                         |
| Internal Protection<br>(Mark all that apply <input checked="" type="checkbox"/> )<br>Cathodic Protection<br>Interior Lining (e.g., epoxy resins)<br>None<br>Unknown<br>Other, Please Specify                                                                                                                                                                                                                                                            | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br>_____                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br>_____                                              | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br>_____                                              | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br>_____                                           | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                                                         |
| External Protection<br>(Mark all that apply <input checked="" type="checkbox"/> )<br>Cathodic Protection<br>Painted (e.g., asphaltic)<br>Fiberglass Reinforced Plastic Coated<br>None<br>Unknown<br>Other, Please Specify                                                                                                                                                                                                                               | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____               | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                  | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                  | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____               | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                             |
| Piping<br>(Mark all that apply <input checked="" type="checkbox"/> )<br>Bare Steel<br>Galvanized Steel<br>Fiberglass Reinforced Plastic<br>Cathodically Protected<br>Unknown<br>Other, Please Specify                                                                                                                                                                                                                                                   | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____               | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                  | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                  | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____               | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____                             |
| Substance Currently or Last Stored in Greatest Quantity by Volume<br>(Mark all that apply <input checked="" type="checkbox"/> )<br><u>unleaded</u> Gasoline (including alcohol blends)<br>Used Oil<br>Other, Please Specify<br>c. Hazardous Substance<br>Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.<br>Mark box <input checked="" type="checkbox"/> if tank stores a mixture of substances<br>d. Unknown | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><u>MID</u><br><input type="checkbox"/><br>_____ | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><u>UNL #1</u><br><input type="checkbox"/><br>_____ | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><u>UNL #2</u><br><input type="checkbox"/><br>_____ | <input type="checkbox"/><br><input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><u>SUP</u><br><input type="checkbox"/><br>_____ | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br>_____ |
| Additional Information (for tanks permanently taken out of service)<br>a. Estimated date last used (mo/yr)<br>b. Estimated quantity of substance remaining (gal.)<br>c. Mark box <input checked="" type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)                                                                                                                                                                      | <br><br><br><input type="checkbox"/>                                                                                                                                       | <br><br><br><input type="checkbox"/>                                                                                                                                          | <br><br><br><input type="checkbox"/>                                                                                                                                          | <br><br><br><input type="checkbox"/>                                                                                                                                       | <br><br><br><input type="checkbox"/>                                                                                                                                          |