



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

November 8, 2011

Ms. Karen Calhoun  
Calhoun Family LLC  
PO Box 928  
Tacoma, WA 98401

**Re: Further Action at the following Site:**

- **Site Name:** Calhouns Service Station
- **Site Address:** 4540 Pacific Avenue, Tacoma, WA 98408
- **Facility/Site No.:** 1324
- **VCP Project No.:** SW1180

Dear Ms. Calhoun:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Calhouns Service Station (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

**Issue Presented and Opinion**

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Is further remedial action necessary to clean up contamination at the Site?

**YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.**

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

**Description of the Site**

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This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Petroleum Constituents in the Soil and Groundwater.



Please note that a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

### **Basis for the Opinion**

This opinion is based on the information contained in the following documents:

1. Client-submitted documents including Tacoma Pierce County Health Department documents (various correspondence dated between 1992 and 1993), UST Tank Removal Permits (February 2, 1991), Soil Analytical results (May - June 1991, and April 1993), and Menotti Excavating Tank Closure Summary (May 24, 1993).
2. Ecology Archive files including Hazard Ranking (August 17, 1992) and Worksheet (August 3, 1992), Financial Assistance request (August, 3, 1992), and UST 30 day notice (March 8, 1991).

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

### **Analysis of the Cleanup**

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

#### **1. Characterization of the Site.**

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action. The Site is described below.

The Site is a former Arco gasoline service station located at 4540 Pacific Avenue, Tacoma, Pierce County, Washington. The Site reportedly operated as a gasoline service station from approximately the 1930s through 1991. The Site had four underground storage tanks (USTs), including two 4000-gallon unleaded-regular gasoline USTs, one

6000-gallon unleaded regular and premium (two compartment) gasoline UST, and one 200-gallon waste oil UST.

Menotti Excavating was contracted in April 1991 to remove all four USTs on the Site. According to Site documents, the tanks were removed. Impacted soils were noted surrounding the fill end of the tank although it is unclear as to which tank was being referenced. Approximately 250 cubic yards of the excavated soil was stockpiled on the Site. Analytical data, reportedly from the gasoline UST excavation (labeled N. End Excav. and Middle Excav), indicated exceedances of the MTCA Method A Cleanup Levels for benzene, toluene, ethylbenzene, xylenes (BTEX), and gasoline-range total petroleum hydrocarbons (TPH-Gx). These samples also exceeded the MTCA Method A Cleanup Levels in force at the time of the UST removal. Two samples that were reportedly collected from the waste oil UST (labeled Side Tank Wall and Side Tank Fill) also contained exceedances of the MTCA Method A Cleanup Level for TPH-Gx.

The stockpiled soils were stored at the back of the property and soil samples were collected in April 1993 for analytical testing. A total of five samples were collected and tested for TPH-Gx and Metals. None of the samples exceeded the applicable MTCA Method A Cleanup Levels. It is unclear as to the actual disposition of the stockpiled soils.

Soils encountered during the UST removal activities were described as a mixture of sands, gravels, and clays. Groundwater was not encountered in any of the excavations and is reported to be present at depths greater than 100 feet below ground surface (bgs) in the area.

Based on a review of the above-listed information, Ecology has the following comments:

1. Although it appears that some soil samples were collected from the UST excavations (June 20, 1991), the number of samples was not adequate to fully characterize the final limits of the excavation. Typically, at a minimum, five soil confirmation samples (including the four sidewalls and one floor sample) are required. In addition, several of the samples indicated exceedances of the MTCA Method A Cleanup Levels. It is unclear whether these samples were actually from the limits of the excavation or from the stockpile. There was also no testing of the soil underneath either the former fuel lines or the former dispenser island. Leaks from fuel delivery systems typically occur from the lines and dispensers rather than the tanks. We recommend you conduct an investigation along the former fuel lines and at the former fuel dispenser island. It is also recommended that soil borings be advanced in the former gasoline UST excavation area to fully characterize that area. These samples should be tested for the constituents listed in MTCA Table 830-1.

2. The soil samples reportedly collected from the former waste oil UST (May 23, 1991) contained exceedances of the MTCA Method A Cleanup Levels for TPH-G. There do not appear to be any confirmation soil samples collected from the base of the tank excavation. In addition, no samples were tested for halogenated volatile organic compounds (HVOCs), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), or polychlorinated biphenyls (PCBs). It is recommended that a soil boring be advanced in the area of the former waste oil tank and soil samples collected for analysis of TPH-Gx, diesel-range TPH (TPH-Dx), BTEX, and other constituents listed in MTCA Table 830-1, including HVOCs, cPAHs, and PCBs.
3. It is unclear whether the service station had hydraulic lifts inside the shop. This should be investigated and clarified. If hydraulic hoists are found, it is recommended that the soils beneath the hoist sumps be investigated for leakage of hydraulic fluids.
4. Most service stations typically had floor drains connected to an oil/water separator. The presence/absence of the oil/water separator should also be investigated and if found, a soil investigation conducted to determine if there has been a release from this area.
5. Testing from the stockpiled soils indicated that it did not have exceedances of the MTCA Method A Cleanup Levels. The final disposition of the soil is unknown and needs to be clarified.
6. Groundwater was not encountered to the maximum depth of the UST excavations (estimated at 18 feet bgs), and nearby information suggests that groundwater is greater than 100 feet bgs. It is recommended that any soil borings on the Site be advanced to at least 40 feet bgs to identify any perched zones of groundwater that may be present in the area. If groundwater is found, it is recommended that temporary wells be completed within the boring and samples be collected and tested for the constituents of concern including the fuel additives 1-2 dibromoethane, 1-2 dichloroethane, and methyl tertiary-butyl ether. If these fuel additives are found in the groundwater, then the soil samples should also be tested for these constituents.
7. In accordance with WAC 173-340-7490, a Terrestrial Ecological Evaluation (TEE) needs to be completed for the Site. Please fill out the TEE form and submit it to Ecology (along with supporting information, as appropriate). The form can be found on our website at <http://www.ecy.wa.gov/biblio/ecy090300.html>.
8. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial

Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website <http://www.ecy.wa.gov/eim>. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Be advised that Ecology requires up to two weeks to process the data once it is received.

**2. Establishment of cleanup standards.**

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

**a. Cleanup levels.**

MTCA Method A Cleanup Levels for unrestricted land use for soil and groundwater are being used to characterize the Site.

**b. Points of compliance.**

Standard points of compliance are being used for the Site. The point of compliance for protection of groundwater will be established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance shall be established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater shall be established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

Additional investigation is required to define the extent of impacts on the Site prior to establishing points of compliance.

**3. Selection of cleanup action.**

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

Cleanup actions conducted at the Site to date have included UST removal, soil excavation and stockpiling/disposal of impacted soils. However, additional investigation is required to define the extent of impacts on the Site prior to completing the final cleanup action.

**4. Cleanup.**

Ecology has determined the cleanup you performed does not meet the cleanup standards established for the Site.

Impacted soils were encountered and removed during the decommissioning of the Site USTs. Soil samples collected during the Site activities indicate that impacted soils may remain and that further investigation is required prior to completing the final cleanup action. It is currently unknown where the previously stockpiled soil was disposed.

**Limitations of the Opinion**

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**1. Opinion does not settle liability with the state.**

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

**2. Opinion does not constitute a determination of substantial equivalence.**

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

Ms. Karen Calhoun  
November 8, 2011  
Page 7

**3. State is immune from liability.**

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

**Contact Information**

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Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: [www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm](http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm). If you have any questions about this opinion, please contact me at (360) 407-7263 or via email at [tmid461@ecy.wa.gov](mailto:tmid461@ecy.wa.gov).

Sincerely,



Thomas Middleton L.H.G.  
SWRO Toxics Cleanup Program

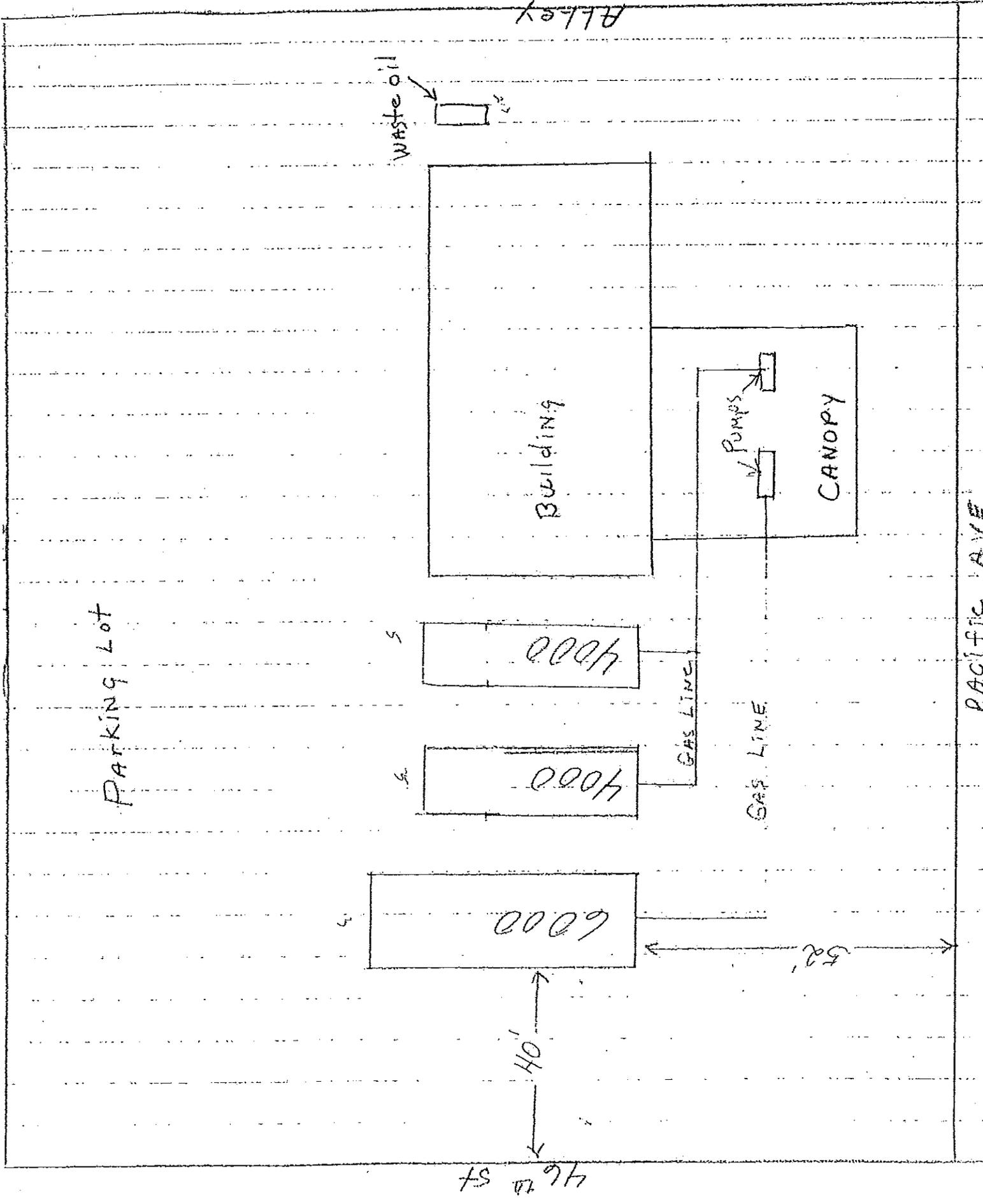
TMM/ksc:Calhouns Service Station FA

Enclosures:      Approximate Site UST Layout Figure  
                      Stockpile Sample Location Figure  
                      May 23, 1991 Waste Oil UST Soil Sample Analytical Results  
                      June 20, 1991 Gasoline UST Soil Sample Analytical Results  
                      April 1993 Soil Stockpile Analytical Results  
                      Ed Menotti Excavating UST Removal Summary  
                      Tacoma Pierce County Health Department UST Removal Inspection Form

By certified mail: (7009 3410 0000 1272 3571)

cc:      Rob Olsen, Tacoma Pierce County Health Department  
            Scott Rose – Ecology  
            Carol Johnston - Ecology  
            Dolores Mitchell – Ecology (w/o enclosures)





Alley

Waste oil

Building

Pumps

CANOPY

Parking Lot

4000

4000

GAS LINE

GAS LINE

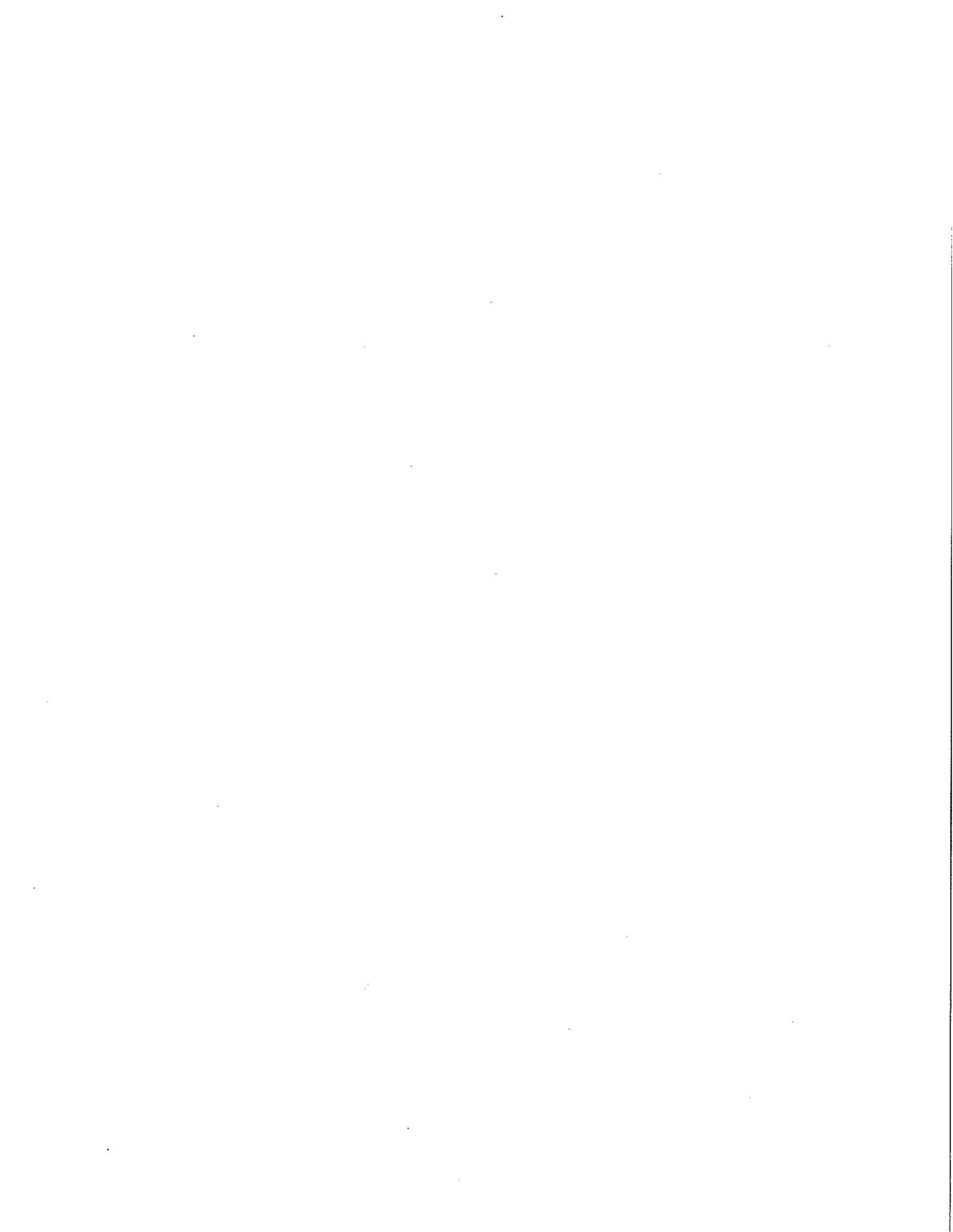
6000

40'

52'

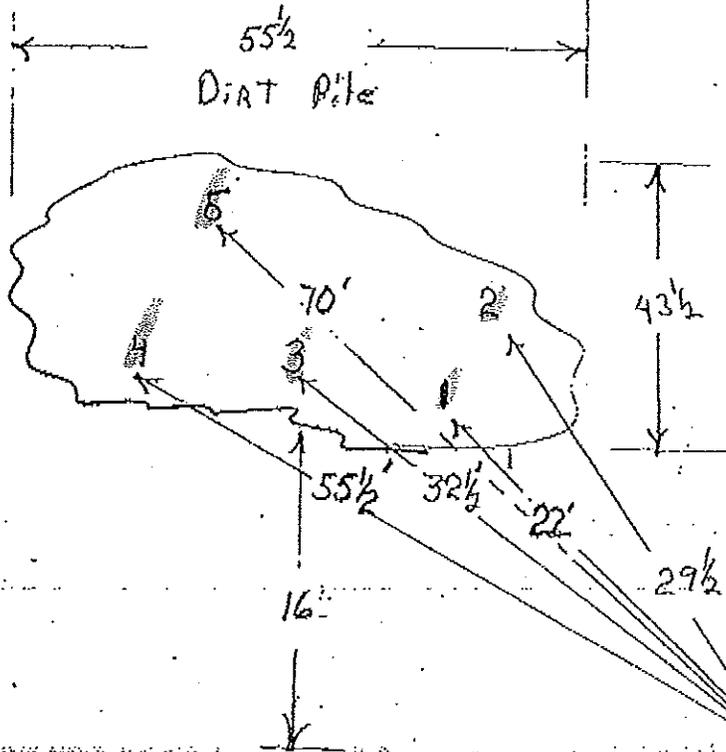
4th St

PACIFIC AVE

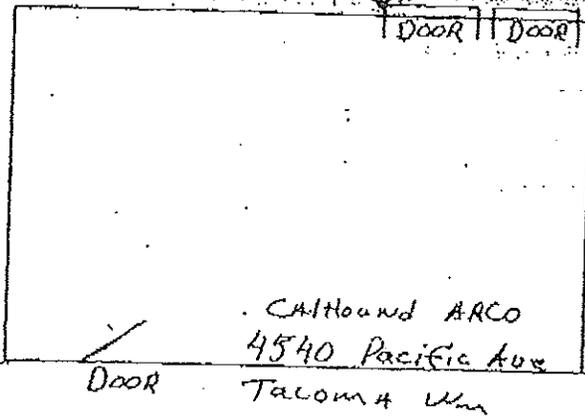


# MIRIOTTI EXCAVATING

709 E. 90th  
 Tacoma, WA 98445  
 (206) 531-9036 - FAX (206) 536-0567



- # 1 - 22' From point of Begin
- # 2 - 29 1/2'
- # 3 - 32 1/2'
- # 4 - 55 1/2'
- # 5 - 70'



POINT OF BEGINNING



So. 46<sup>th</sup>

So. 46<sup>th</sup> and Pacific  
 Tacoma WA  
 depth of samples - 30"

Pacific Avenue

4/19/83

Drawing By  
 ED MERRITT



# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Calhoun

Date: May 23, 1991

Report On: Analysis of Soil

Lab No.: 17562

IDENTIFICATION:

Samples Received on 05-10-91  
Project: 43rd & Pacific

ANALYSIS:

Lab Sample No.	1	2
Client Identification	Side Tank Wall	Side Tank Fill
Units	mg/kg	mg/kg
Total Petroleum Hydrocarbons by EPA Method 418.1	51 ✓	260
Total Metals:		
Arsenic	< 5.5 ✓	< 5.5 ✓
Barium	99 ✓	160 ✓
Cadmium	< 0.14 ✓	< 0.14 ✓
Chromium	50 ✓	41 ✓
Lead	39 ✓	140 ✓
Mercury*	< 0.1 ✓	< 0.1 ✓
Selenium	< 8.3 ✓	< 8.3 ✓
Silver	< 0.55 ✓	< 0.55 ✓

MTHB 8 500

STD ?  
MTHB 240

Note - TPH results reported on an as received basis.

\* by Cold Vapor

*Waste oil ?*

SOUND ANALYTICAL SERVICES

*Stan P. Palmquist*  
STAN P. PALMQUIST



# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS  
 4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Menotti Excavating

Date: June 20, 1991

Report On: Analysis of Soil

Lab No.: 18097

IDENTIFICATION:

Samples Received on 06-12-91

Project: Calhoon's Arco Service Station, 46th & Pacific.

ANALYSIS:

Lab Sample No.	1	2	3
Client ID	N. End Excav.	Middle Excav.	South End
Units	mg/kg	mg/kg	mg/kg
Benzene	3.3	0.31	< 0.05
Toluene	150	30	< 0.05
Ethyl Benzene	88	46	< 0.05
Xylenes	570	390	< 0.05
Total Petroleum Fuel Hydrocarbons	7,500	6,800	22
TPH as	Gasoline	Gasoline	Gasoline
Total Lead	8.6	12	0.10

Samples were analyzed for BTEX in accordance with SW-846 Method 8020 and for TPH by Modified 8015, using purge and trap techniques which can only detect gasoline (Method 5030).

Note - Results reported on an as received basis.

SURROGATE RECOVERY, %

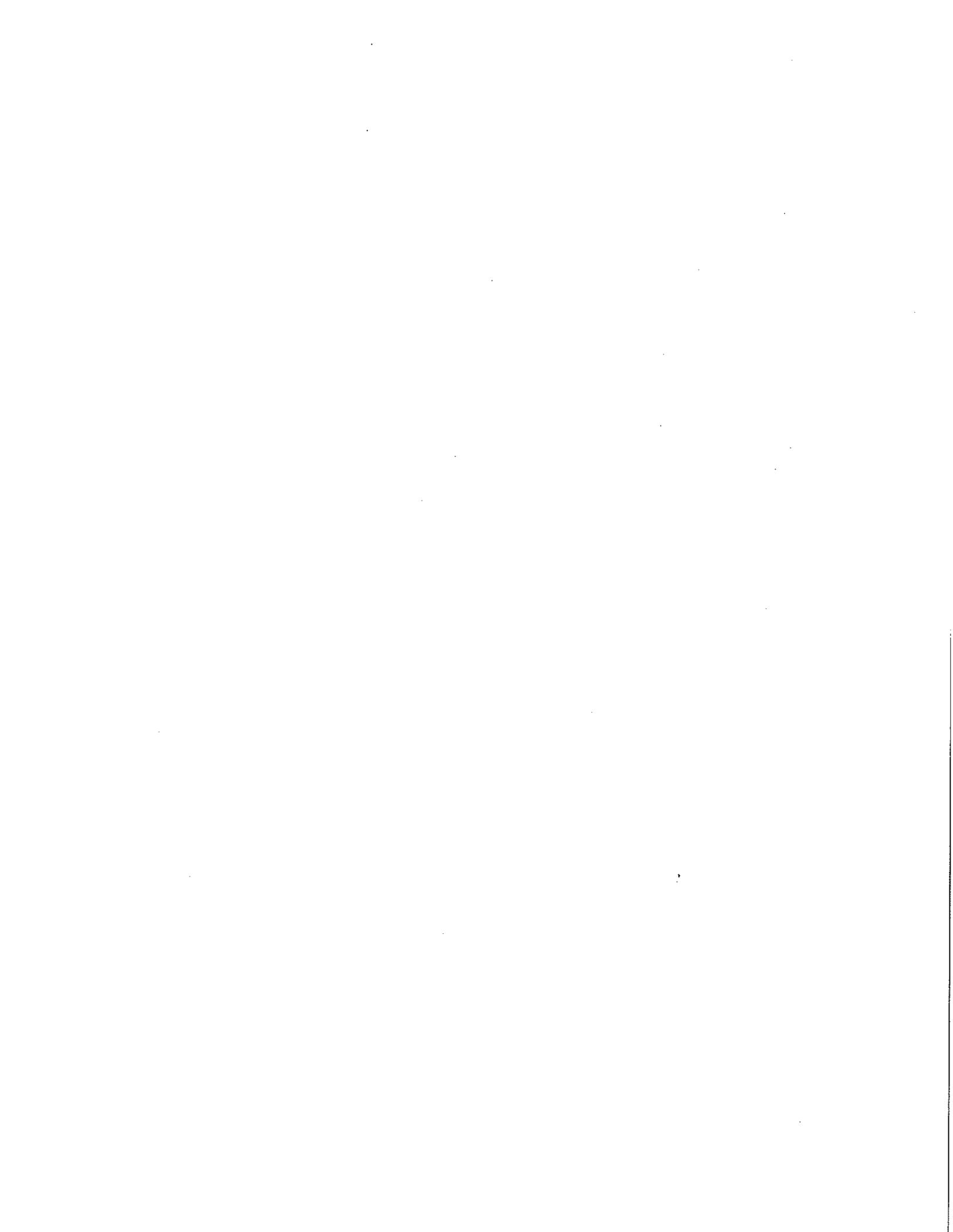
Lab Sample No.	1	2	3
BTEX -Trifluorotoluene	242*	162*	93
WTPH-G-Trifluorotoluene	244*	150	93

\* Surrogate Recovery high due to matrix interference.

SOUND ANALYTICAL SERVICES

*Larry Zuraw*  
 LARRY ZURAW

*Waste Oil.*



# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Don Calhoun

Date: April 15, 1993

Report On: Analysis of Soil

Lab No.: 31336

Page 1 of 5

## IDENTIFICATION:

Samples received on 04-09-93

## ANALYSIS:

Lab Sample No. 31336-1

Client ID: 1

WTPH-G with BTEX by Method 8020

Date Extracted: 4-12-93

Date Analyzed: 4-14-93

<u>Parameter</u>	<u>Concentration, mg/kg</u>	<u>PQL</u>	<u>Flag</u>
Gasoline (C7 - C12)	ND	1.0	
Benzene	ND	0.05	
Toluene	ND	0.05	
Ethyl Benzene	ND	0.05	
Xylenes	ND	0.05	

## SURROGATE RECOVERY, %

Trifluorotoluene

81

ND - Not Detected

PQL - Practical Quantitation Limit

Continued . . .



# SOUND ANALYTICAL SERVICES, INC.

Don Calhoun  
Page 2 of 5  
Lab No. 31336  
April 15, 1993

Lab Sample No. 31336-2

Client ID: 2

WTPH-G with BTEX by Method 8020  
Date Extracted: 4-12-93  
Date Analyzed: 4-14-93

<u>Parameter</u>	<u>Concentration, mg/kg</u>	<u>PQL</u>	<u>Flag</u>
Gasoline (C7-C12)	ND	1.0	
Benzene	ND	0.05	
Toluene	ND	0.05	
Ethyl Benzene	ND	0.05	
Xylenes	ND	0.05	

## SURROGATE RECOVERY, %

Trifluorotoluene 93

ND - Not Detected  
PQL - Practical Quantitation Limit

Continued . . .



# SOUND ANALYTICAL SERVICES, INC.

Don Calhoun  
Page 3 of 5  
Lab No. 31336  
April 15, 1993

Lab Sample No. 31336-3

Client ID: 3

WTPH-G with BTEX by Method 8020  
Date Extracted: 4-12-93  
Date Analyzed: 4-14-93

<u>Parameter</u>	<u>Concentration, mg/kg</u>	<u>PQL</u>	<u>Flag</u>
Gasoline (C7-C12)	ND	1.0	
Benzene	ND	0.05	
Toluene	ND	0.05	
Ethyl Benzene	ND	0.05	
Xylenes	ND	0.05	

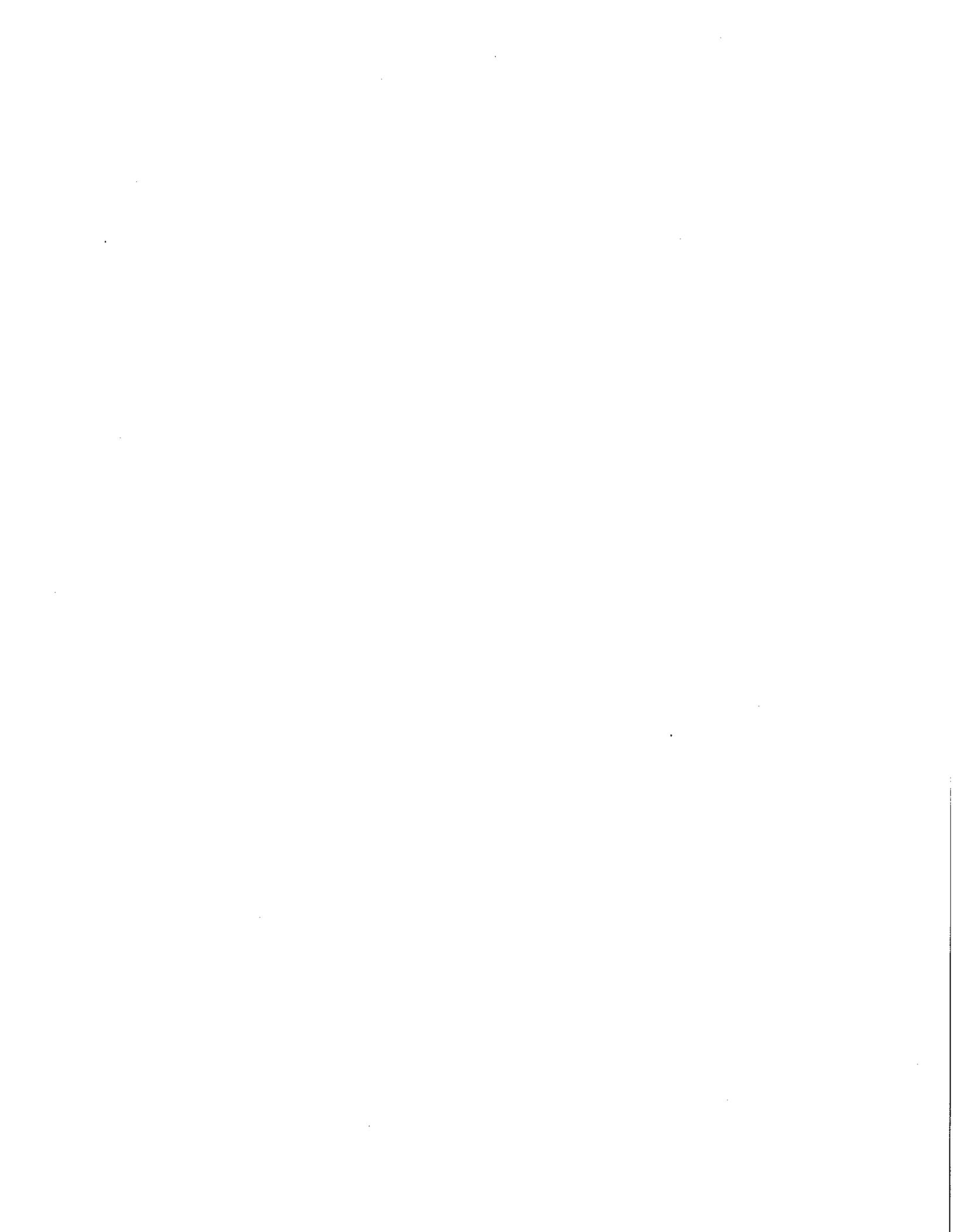
SURROGATE RECOVERY, %

Trifluorotoluene	85
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ND - Not Detected

PQL - Practical Quantitation Limit

Continued . . .



# SOUND ANALYTICAL SERVICES, INC.

Don Calhoun  
Page 4 of 5  
Lab No. 31336  
April 15, 1993

Lab Sample No. 31336-4

Client ID: 4

WTPH-G with BTEX by Method 8020  
Date Extracted: 4-12-93  
Date Analyzed: 4-14-93

<u>Parameter</u>	<u>Concentration, mg/kg</u>	<u>PQL</u>	<u>Flag</u>
Gasoline (C7-C12)	ND	1.0	
Benzene	ND	0.05	
Toluene	ND	0.05	
Ethyl Benzene	ND	0.05	
Xylenes	ND	0.05	
<u>SURROGATE RECOVERY, %</u>			
Trifluorotoluene	85		

ND - Not Detected  
PQL - Practical Quantitation Limit

Continued . . .



# SOUND ANALYTICAL SERVICES, INC.

Don Calhoun  
Page 5 of 5  
Lab No. 31336  
April 15, 1993

Lab Sample No. 31336-5

Client ID: 5

WTPH-G with BTEX by Method 8020  
Date Extracted: 4-12-93  
Date Analyzed: 4-14-93

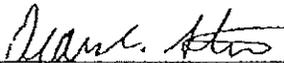
<u>Parameter</u>	<u>Concentration, mg/kg</u>	<u>PQL</u>	<u>Flag</u>
Gasoline (C7-C12)	ND	1.0	
Benzene	ND	0.05	
Toluene	ND	0.05	
Ethyl Benzene	ND	0.05	
Xylenes	ND	0.05	

SURROGATE RECOVERY, %

Trifluorotoluene 85

ND - Not Detected  
PQL - Practical Quantitation Limit

SOUND ANALYTICAL SERVICES

  
DEAN A. STROM



Cynthia Wadless?

709 E. 90th  
Tacoma, WA 98445  
(206) 531-9036 • FAX (206) 536-0567

May 24, 1993

Calhoun's Arco  
4540 Pacific Avenue  
Tacoma, Washington 98408

Re: Tank Closure - 4540 Pacific Avenue, Tacoma, Wa. 98408

We removed four tanks off above listed property; two-4,000 gallon tanks, one-approximate 50 gallon tank and one-approximate 6,000 tank. These tanks were installed in 1957, as near as we can approximate.

These tanks were in service until April 1991. The only sign of leakage was at the fill end of the tank.

During the excavation to remove this tank, various types of soil were encountered. There was no evidence of soil contamination beyond what would normally be expected. The site was over-excavated to at least (3) three feet beyond the limit of the tank. The small amount of contaminated material encountered at the fill end of tanks were stock piled on plastic on the property for later disposal.

Tank #4 (50 gallon oil tank) was located three feet north of building, at the northwest corner. Test results of May 23, 1991 are on file with the Pierce County Health Department, as are all other test results.

Letter dated April 29, 1991, from Tacoma Pierce County Health Department states it is okay to fill in these holes, which has taken place.

Thank you,

Ed Menotti  
Site Supervisor



TACOMA-PIERCE COUNTY HEALTH DEPARTMENT

UNDERGROUND STORAGE TANK REMOVAL

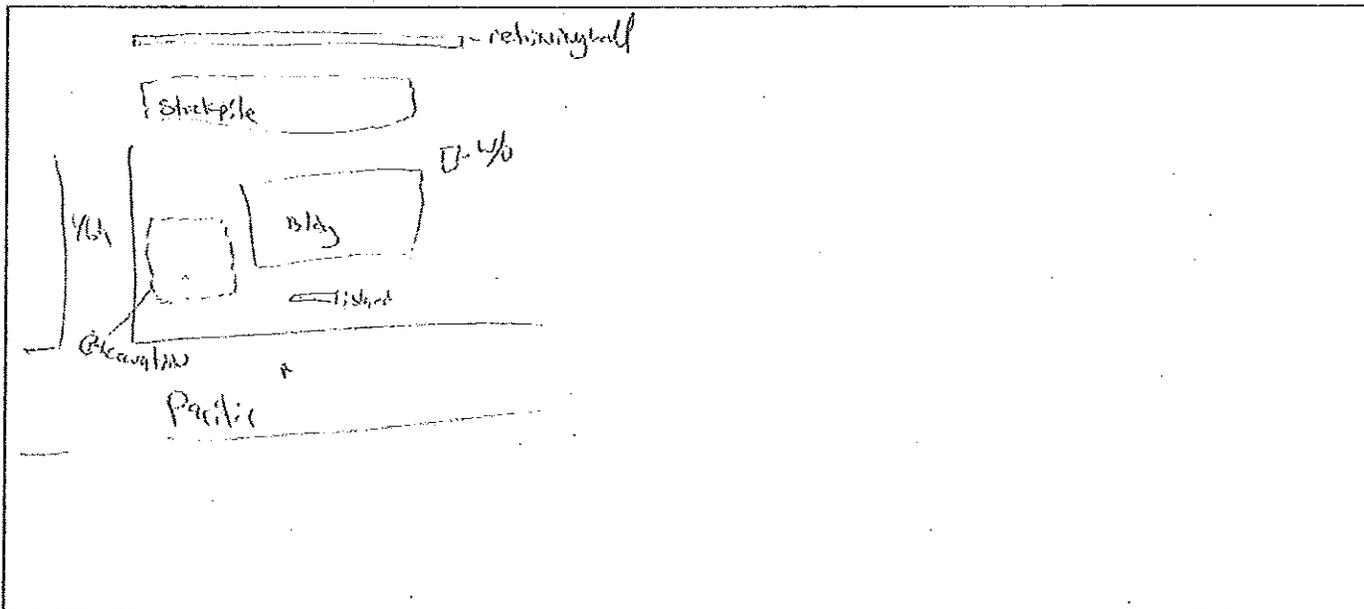
INSPECTION FORM

Date of Removal: 4/28/91

Site: Cullhorns Bros 4580 Pacific Ave 4  
Name Address Number of tanks pulled

Personnel Present Onsite: Ed Menotti (crew)

Depth to H<sub>2</sub>O: 29' Distance to Surface H<sub>2</sub>O: 700  
Site Diagram:



Soil Description: gravelly - silty clay

Evidence of Contamination:  yes  no If yes, Describe: Over excavation to ~~20~~ to a depth of ~ 1 1/2 feet - ~ 250 yds of soil removed.  
pH (clean) at that point, need locate all results, report.

Onsite treatment is not allowed due to close proximity to neighbors - applying to DOE for funds

See Reverse for Further Information:

