

**Lynn Peterson** Secretary of Transportation

March 26, 2013

Transportation Building 310 Maple Park Avenue S.E. P.O. Box 47300 Olympia, WA 98504-7300 360-705-7000 TTY: 1-800-833-6388 www.wsdot.wa.gov



DEPARTMENT OF ECOLOGY

Michael Boatsman Washington State Department of Ecology Toxics Cleanup Program 4601 N Monroe Street Spokane, WA 99205-1295

Re: WSDOT Anatone Maintenance Site, Ecology Facility Site ID 53852761

Dear Mr. Boatsman:

The purpose of this letter is to provide you with information regarding remediation activities at the site that may not have been submitted to Ecology.

The petroleum contaminated soil, which was excavated following removal of the former USTs, underwent bioremediation on site and was sampled two times. The results indicate that contamination was decreased to levels below the Model Toxics Control Act Method A Soil Cleanup Levels. The laboratory reports are attached.

If you have questions you may contact me by phone at (360) 705-7861 or email at volkc@wsdot.wa.gov.

Sincerely,

Carlen Volk

Hazardous Materials Specialist

Carlo Valle

WSDOT Maintenance and Operations

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

#### TRANSMITTAL MEMORANDUM

DATE: July 25, 1994

TO: Harry Horn

WSDOT - Vancouver

PROJECT: Anatone

LABORATORY NUMBER: 41777

Enclosed are the original and one copy of the Tier II data deliverables package for Laboratory Work Order Number 41777. Three samples were received for analysis at Sound Analytical Services, Inc., on July 15, 1994.

Should there be any questions regarding this data package, please do not hesitate to call me at (206) 922-2310.

Sincerely,

Andrew J. Riddell Project Manager

#### SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: WSDOT - Vancouver

Date: July 25, 1994

Report On: Analysis of Soil

Lab No.: 41777

IDENTIFICATION:

Samples received on 07-15-94

Project: Anatone

ANALYSIS:

Lab Sample No. 41777-1

Client ID: 21

WTPH-HCID

Date Extracted: 7-18-94

Date Analyzed: 7-18-94

Units: mg/kg

<u>Parameters</u>	Result	Flag
Gasoline (C7-C12)	< 20	
Diesel (> C12 - C24)	> 50	
Heavy Oil (C24+)	> 100	
SURROGATE RECOVERY, %		
1-chlorooctane o-terphenyl	93 101	

WSDOT - Vancouver Project: Anatone Lab No. 41777 July 25, 1994

Lab Sample No. 41777-1

Client ID: 21

WTPH-D

Date Extracted: 7-21-94
Date Analyzed: 7-22-94

Units: mg/kg

<u>Parameter</u>	Result	POL	<u>Flag</u>
Diesel (> C12 - C24)	440	28	X2
SURROGATE RECOVERY, % o-terphenyl	129		

WTPH-418.1 Modified Date Extracted: 7-20-94 Date Analyzed: 7-20-94

Units: mg/kg

<u>Parameter</u>

Result

Heavy petroleum oils

380

PQL - Practical Quantitation Limit

WSDOT - Vancouver Project: Anatone Lab No. 41777 July 25, 1994

Lab Sample No. 41777-2

Client ID: 22

WTPH-HCID

Date Extracted: 7-18-94

Date Analyzed: 7-18-94

Units: mg/kg

<u>Parameters</u>	<u>Result</u>	Flag
Gasoline (C7-C12)	< 20	
Diesel (> C12 - C24)	> 50	
Heavy Oil (C24+)	> 100	
SURROGATE RECOVERY, %		
1-chlorooctane o-terphenyl	85 96	

WSDOT - Vancouver Project: Anatone Lab No. 41777 July 25, 1994

Lab Sample No. 41777-2

Client ID: 22

WTPH-D

Date Extracted: 7-21-94
Date Analyzed: 7-22-94

Units: mg/kg

<u>Parameter</u>	Result	POL	Flag
Diesel (> C12 - C24)	230	28	
SURROGATE RECOVERY, % o-terphenyl	121		

WTPH-418.1 Modified
Date Extracted: 7-20-94
Date Analyzed: 7-20-94
Units: mg/kg

<u>Parameter</u>

Result

Heavy petroleum oils

290

ND - Not Detected PQL - Practical Quantitation Limit

WSDOT - Vancouver Project: Anatone Lab No. 41777 July 25, 1994

Lab Sample No. 41777-3

Client ID: 23

WTPH-HCID

Date Extracted: 7-18-94

Date Analyzed: 7-18-94

Units: mg/kg

<u>Parameters</u>	Result	Flag
Gasoline (C7-C12)	< 20	
Diesel (> C12 - C24)	> 50	
Heavy Oil (C24+)	< 100	
SURROGATE RECOVERY, %		
1-chlorooctane o-terphenyl	90 95	

WSDOT - Vancouver Project: Anatone Lab No. 41777 July 25, 1994

Lab Sample No. 41777-3

Client ID: 23

WTPH-D

Date Extracted: 7-21-94
Date Analyzed: 7-22-94

Units: mg/kg

<u>Parameter</u>	Result	POL	Flag
Diesel (> C12 - C24)	290	28	
SURROGATE RECOVERY, % o-terphenyl	122		

PQL - Practical Quantitation Limit

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### QUALITY CONTROL REPORT

#### WTPH-HCID

Client:

WSDOT - Vancouver

Lab No:

41777qc1

Units:

mg/kg

Date Extracted: 7-18-94

Date Analyzed: 7-18-94

#### METHOD BLANK

Blank No. 006F0301 D

Blank NO. 006F0301.D	)	
Parameter	Result	Flags
Gasoline (C <sub>7</sub> -C <sub>12</sub> )	< 20	
Diesel (>C <sub>12</sub> -C <sub>24</sub> )	< 50	
Heavy Petroleum Oil	< 100	
SURROGATE RECOVERY, % 1-chlorooctane o-terphenyl	80 85	

#### QUALITY CONTROL REPORT

#### WTPH-HCID

Client:

WSDOT - Vancouver

Lab No:

41777qc1

Matrix:

Soil

Units:

mg/kg

Date Extracted: 7-18-94 Date Analyzed: 7-18-94

#### **DUPLICATES**

Dup No. 41777-1

Dup No. 41///-1	<del> </del>			
Parameter	Sample (S)	Duplicate (D)	RPD	Flags
Gasoline	< 20	< 20	NC	
Diesel (>C <sub>12</sub> -C <sub>24</sub> )	> 50	> 50	NC	
Heavy Petroleum Oil	> 100	> 100	NC	
SURROGATE RECOVERY, % 1-chlorooctane o-terphenyl	93 101	92 98		

= Not Calculated

RPD = Relative Percent Difference

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

### QUALITY CONTROL REPORT

### WTPH-D (Diesel Range Organics)

Client:

WSDOT - Vancouver

Lab No:

41777qc2

Units:

mg/kg

Date Extracted: 7-21-94

Date Analyzed: 7-21-94

#### METHOD BLANK

E	lank	No.	02	1R0	20	01	. D	)

DIGIN NO. UZIKUZUI.D	<u> </u>	
Parameter	Result	PQL
Diesel	ND	25
SURROGATE RECOVERY% o-terphenyl	142	
NTO - Not D 1	t	

ND = Not Detected

PQL = Practical Quantitation Limit

#### DUPLICATE

Dup No. 41825-4 Batch OC

Dup No. 41825-4 Batc	n OC	t		
Parameter	Sample Result	Duplicate Result	RPD	Flag
Diesel	ND	ND	NC	
RPD = Relative Percent	t Difference			

NC = Not Calculated

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE

MS/MSD No. 41825-4 Batch OC

MS/MSD	NO. 418	25-4 Bat	ch OC		<b></b>				
Parameter	Sample Result	MS Amount	MS Result	MS %R	MSD Amount	MSD Result	MSD %R	RPD	Flag
Diesel	ND	290	263	91	296	298	101	11	9
%R = Perce	nt Recov	ery			RPD = Re	latino	Do		

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

## SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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### QUALITY CONTROL REPORT

#### WTPH-418.1 Modified

Client:

WSDOT - Vancouver

Lab No:

41777qc3

Units:

mg/kg

Date Extracted: 7-20-94

Date Analyzed: 7-20-94

#### METHOD BLANK

Parameter	Result			
Heavy Petroleum Oils	< 100			

#### DUPLICATE

Dup No. 41862-6 Batch	QC	•	
Parameter	Sample Result	Duplicate Result	RPD
Heavy Petroleum Oils	280	320	13
RPD = Relative Percent	Difference		

RPD = Relative Percent Difference

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE

MS/MSD	No. 418	62-6 Bat	ch OC						
Parameter	Sample Result	MS Amount	MS Result	MS %R	MSD Amount	MSD Result	MSD %R	RPD	Flag
Heavy Oil	280	625	855	92.0	627	877	95.2		rrag
%R = Perce MS = Matri	nt Recov x Spike	ery			RPD = Re		•	3.4 t Diff	erence

MSD = Matrix Spike Duplicate

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#### DATA QUALIFIER FLAGS

- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- B1: This analyte was also detected in the associated method blank. The reported sample results have been adjusted for moisture, final exact volume, and/or dilutions performed during extract preparation. The analyte concentration was evaluated prior to sample preparation adjustments, and was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was also detected in the associated method blank. However, the analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- E: The concentration of this analyte exceeded the instrument calibration range.
- D: The reported result for this analyte is calculated based on a secondary dilution factor.
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be \_\_\_\_\_\_.
- X2: Contaminant does not appear to be "typical" product. Further testing is suggested for identification.
- X3: Identification and quantification of peaks was complicated by matrix interference; GC/MS confirmation is recommended.
- X4: RPD for duplicates outside advisory QC limits. Sample was re-analyzed with similar results.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike was diluted out during analysis.
- X6: Recovery of matrix spike outside advisory QC limits. Sample was re-analyzed with similar results.
- X7: Recovery of matrix spike outside advisory QC limits. Matrix interference is indicated by blank spike recovery data.
- X7a: Recovery and/or RPD values for MS/MSD outside advisory QC limits due to high contaminant levels.
- X8: Surrogate was diluted out during analysis.
- X9: Surrogate recovery outside advisory QC limits due to matrix composition.
- X10: Blank spike recovery outside advisory QC limits.
- X11: Blank spike/blank spike duplicate RPD outside advisory QC limits.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

**UST PARAMETERS** 

(206) 922-2310 • FAX (206) 922-5047

Tacoma, Washington 98424 4813 Pacific Hwy. East

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

Specify State

ANALYSIS REQUESTED:

CLIENT:

DETINEBBLES CLOSURE znagolaH laloT F62204 47 Metals Semi-volatiles SPECIAL INSTRUCTIONS/COMMENTS: Volatile Organica EPA 624/8240 GC/MS Aromatic Volatiles EPA 602/8020 EPA 601/8010 Phenols s'HA9 PCB's TCLP Lead Time / Date Total Lead Maros Hat TPH-G / BTEX X3T8 1.814 H9T 125000 E **G-H9T** D-H4T HARRY TORK HCID Printed Name # of Containers MATRIX 201 TIME AND TOKE てなった 5-7-1 DATE Signature 0 SAMPLE I.D. PROJECT NAME: PHONE NO: CONTACT: Refinquished By Relinquished By Relinquished By Received By Received By Received By LAB

5000

#### ANALYTICAL & ENVIRONMENTAL CHEMISTS

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

#### TRANSMITTAL MEMORANDUM

DATE: August 16, 1995

TO: Norm Payton

WSDOT - Operations Olympia

PROJECT: Anatone PCS Samples

LABORATORY NUMBER: 50470

Enclosed are the test results for three samples received at Sound Analytical Services on August 2, 1995.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please call me at (206) 922-2310.

Sincerely,

Andrew J. Ri'ddell Project Manager

#### **ANALYTICAL & ENVIRONMENTAL CHEMISTS**

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

Report To: WSDOT - Operations Olympia Date: August 16, 1995

Report On: Analysis of Soil Lab No.: 50470

IDENTIFICATION:

Samples received on 08-02-95 Project: Anatone PCS Samples

ANALYSIS:

Lab Sample No. 50470-1 Client ID: PCS #1 ANA

WTPH-418.1 Modified Date Extracted: 8-9-95 Date Analyzed: 8-10-95

Units: mg/kg

<u>Parameter</u> <u>Result</u>

Heavy petroleum oils < 100

Lab Sample No. 50470-2 Client ID: PCS #2 ANA

WTPH-418.1 Modified
Date Extracted: 8-9-95
Date Analyzed: 8-10-95

Units: mq/kq

<u>Parameter</u> Result

Heavy petroleum oils < 100

Lab Sample No. 50470-3 Client ID: PCS #3 ANA

WTPH-418.1 Modified
Date Extracted: 8-9-95
Date Analyzed: 8-10-95

Units: mg/kg

<u>Parameter</u> Result

Heavy petroleum oils < 100

Client Name

Client ID: Lab ID:

Date Received:

Date Prepared: Date Analyzed:

% Solids

WSDOT - Operations Olympia

PCS #1 ANA

50470-01 8/2/95

> 8/5/95 8/8/95

85.31

Diesel by WTPH-D

Surrogate o-Terphenyl

% Recovery 88 Flags

29

**Recovery Limits** 

**Low High** 50 150

Sample results are on a dry weight basis.

Analyte

Diesel (>nC12-nC24)

Result

(mg/kg) ND PQL

Flags

Client Name

Client ID: Lab ID:

Date Received: Date Prepared:

Date Analyzed: % Solids

WSDOT - Operations Olympia

PCS #2 ANA 50470-02

8/2/95 8/5/95

8/8/95 88.8

Diesel by WTPH-D

Surrogate o-Terphenyl

% Recovery 89 Flags

**Recovery Limits** 

**Low High** 50 150

Sample results are on a dry weight basis.

Analyte

Diesel (>nC12-nC24)

Result

(mg/kg)

ND

PQL

28

Flags

Client Name

Client ID: Lab ID:

Date Received:

Date Prepared:

Date Analyzed: % Solids

WSDOT - Operations Olympia

PCS #3 ANA

50470-03 8/2/95

8/10/95

8/14/95 93.9

Diesel by WTPH-D

Surrogate o-Terphenyl % Recovery 112 Flags

Recovery Limits

Low High 50 150

Sample results are on a dry weight basis.

Analyte

Diesel (>nC12-nC24)

Result

(mg/kg)

21

PQL

26

Flags J X2

#### ANALYTICAL & ENVIRONMENTAL CHEMISTS

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#### QUALITY CONTROL REPORT

#### WTPH-418.1 Modified

Client:

WSDOT - Operations Olympia

Lab No:

50470qc

Units:

mq/kq

Date Extracted: 8-9-95

Date Analyzed: 8-10-95

#### METHOD BLANK

Parameter	Result			
Heavy Petroleum Oils	< 100			

#### BLANK SPIKE

Parameter	BS	BS	BS	
	Result	Amount	%R	
Total Petroleum Hydrocarbons	507	500.5	101	

%R = Percent Recovery

BS = Blank Spike

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE

50645-1 Batch OC MS/MSD No

Parameter	Sample Result	MS Amount	MS Result	MS %R	MSD Amount	MSD Result	MSD %R	RPD	Flag
Heavy Oil	< 100	518	600	116	524	590	113	2.6	

%R = Percent Recovery

RPD = Relative Percent Difference

= Matrix Spike

MSD = Matrix Spike Duplicate

Lab ID:

Method Blank - DI455

Date Received:

Date Prepared:

Date Analyzed: % Solids

8/5/95

8/7/95

Diesel by WTPH-D

Surrogate o-Terphenyl % Recovery 111

Flags

**Recovery Limits** Low

High 50 150

Sample results are on an as received basis.

Analyte

Result

Diesel (>nC12-nC24)

(mg/kg) ND

PQL

25

Flags

Lab ID:

Method Blank - DI462

Date Received:

Date Prepared: Date Analyzed:

% Solids

8/10/95

8/14/95

Diesel by WTPH-D

Surrogate o-Terphenyl % Recovery 110

**Flags** 

**Recovery Limits** 

Low High 50 150

Sample results are on an as received basis.

Analyte

Diesel (>nC12-nC24)

Result

(mg/kg) ND

**PQL** 

25

**Flags** 

#### Blank Spike Report

Lab ID: Date Prepared:

Date Analyzed: QC Batch ID: DI455

8/5/95 8/7/95

DI455

#### Diesel by WTPH-D

Parameter Name Diesel (>nC12-nC24) Blank Result

(mg/kg)

0

Spike Amount

(mg/kg)

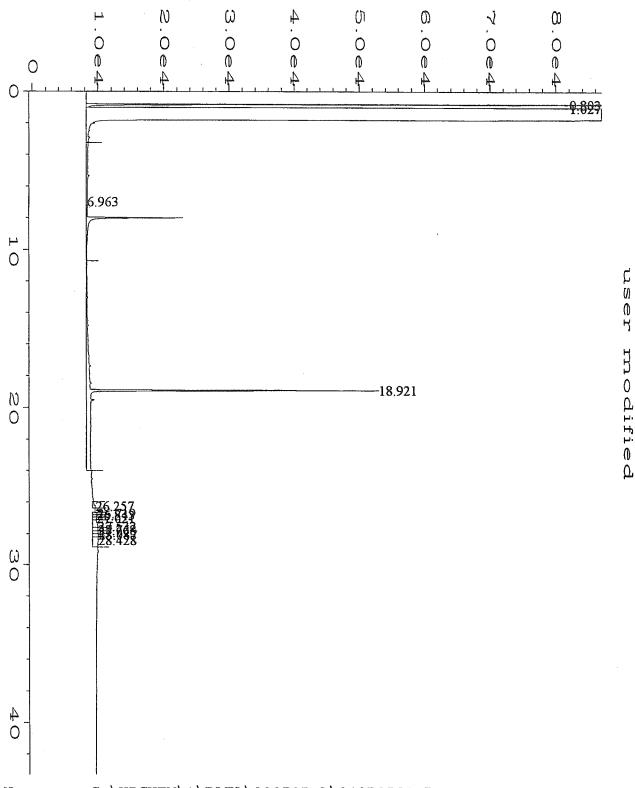
250

BS Result

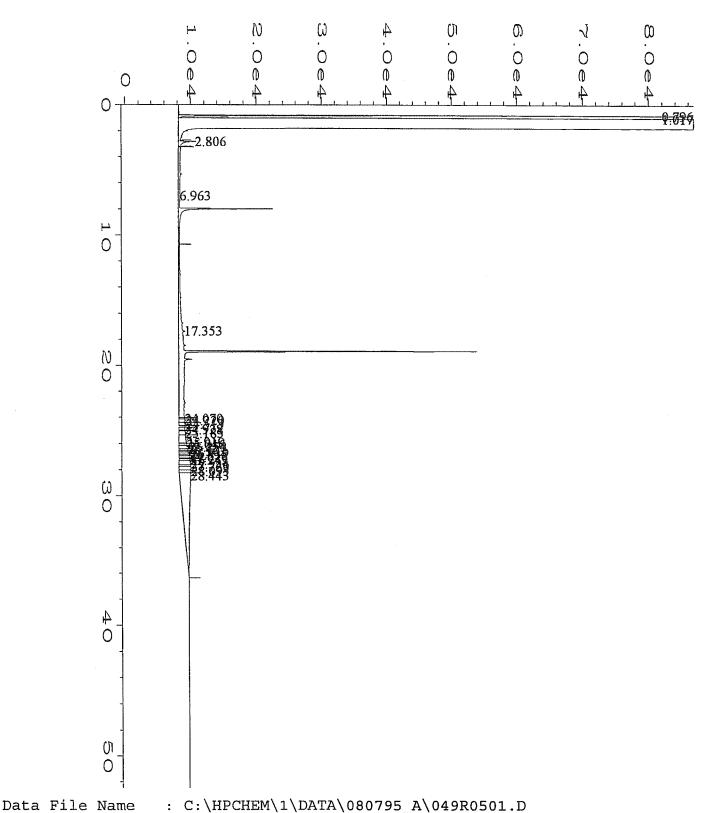
BS

Flag

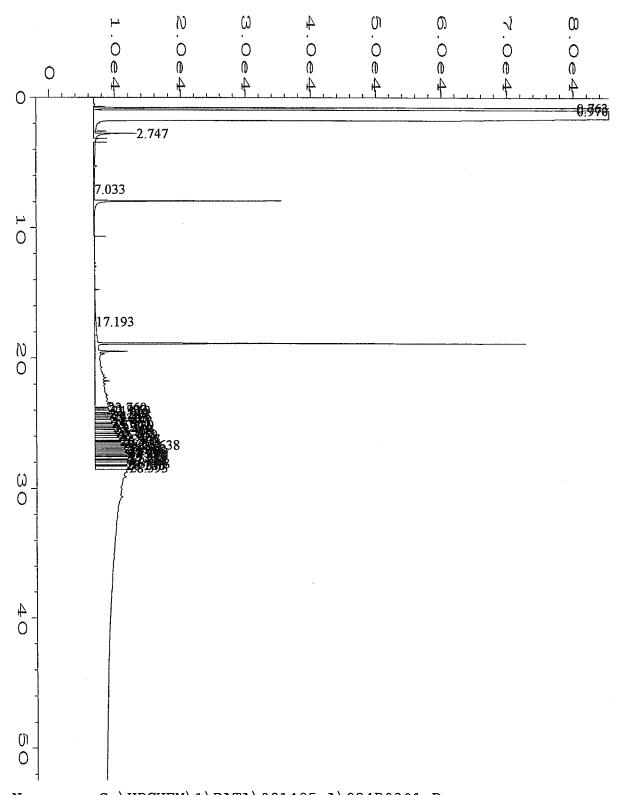
(mg/kg) % Rec. 240 95



```
Data File Name
                 : C:\HPCHEM\1\DATA\080795 A\048R0501.D
Operator
                   DAS/ELG
                                                 Page Number
                                                                   : 1
                  : HP 5890
Instrument
                                                 Vial Number
                                                                   : 48
Sample Name
                  : 50470-1
                                                 Injection Number: 1
Run Time Bar Code:
                                                 Sequence Line
Acquired on
                 : 08 Aug 95
                               08:28 AM
                                                 Instrument Method: I-NC40.MTH
                                                                   : 0721-2D.MTH
Report Created on: 09 Aug 95
                               03:09 PM
                                                 Analysis Method
                                                 Sample Amount
Last Recalib on : 24 JUL 95 11:38 AM
                                                                   :
                                                                     0
Multiplier
                                                 ISTD Amount
                                                                            10
                  : 1
                                                                   :
```



```
Operator
                 : DAS/ELG
                                                 Page Number
                                                                   : 1
Instrument
                 : HP 5890
                                                  Vial Number
                                                                   : 49
Sample Name
                 : 50470-2
                                                  Injection Number
                                                                     1
                                                                   :
Run Time Bar Code:
                                                 Sequence Line
                                                                   : 5
                 : 08 Aug 95
Acquired on
                               09:20 AM
                                                  Instrument Method: I-NC40.MTH
                                                 Analysis Method
Report Created on: 09 Aug 95
                               03:10 PM
                                                                     0721-2D.MTH
                                                                   :
                                                 Sample Amount
Last Recalib on : 24 JUL 95 11:38 AM
                                                                     0
                                                                             11
Multiplier
                                                  ISTD Amount
                  : 1
```



```
Data File Name
                 : C:\HPCHEM\1\DATA\081495 A\024R0301.D
                                                 Page Number
Operator
                 : DAS/ELG
                                                                   : 1
Instrument
                 : HP 5890
                                                 Vial Number
                                                                   : 24
Sample Name
                   50470-3
                                                 Injection Number: 1
Run Time Bar Code:
                                                 Sequence Line
                                                                   : 3
Acquired on
                 : 14 Aug 95
                                                 Instrument Method: I-NC40.MTH
                               06:27 AM
Report Created on: 15 Aug 95
                                                 Analysis Method
                                                                  : 0815-2D.MTH
                               02:43 PM
                                                 Sample Amount
Last Recalib on
                 : 15 AUG 95 01:14 PM
                                                                   :
                                                                     0
                                                                           12
                                                 ISTD Amount
Multiplier
                  : 1
```

ANALYTICAL & ENVIRONMENTAL CHEMISTS

\* \* \*

**UST PARAMETERS** 

ANALYSIS REQUESTED:

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

(206) 922-2310 • FAX (206) 922-5047

4813 Pacific Hwy. East Tacoma, Washington 98424

DEFINEBABLES CLOSURE znegolaH latoT Metals Semi-volatiles

EPA 625/8270 GC/MS SPECIAL INSTRUCTIONS/COMMENTS: Volatile Organica PPA 624/8240 GC/MS Aromatic Volatiles EPA 602/8020 Halogenated Volatiles EPA 601/8010 slonand e'HA9 bcB,a TCLP Lead Time / Date 400500 Specify State Male T Total Lead イススパ N MO Maros H9T TPH-G / BTEX X3T8 1.814 H9T Firm Q-HqT D-HdT WAREL TI. PULHERAL HCID Printed Name # of Containers TIME MATRIX Ā A V V V 8 1,63 PROJECT NAME: Anatone 0211 2 DATE Signature 4 427 CLENT: STODO CONTACT: Narm PHONE NO: 360 SAMPLE I.D. マヤシン 400 Relinquished By Relinquished By Relinquished By Received By Received By Received By LAB#