



**Washington State  
Department of Transportation**

Lynn Peterson  
Secretary of Transportation

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March 26, 2013

RECEIVED

MAR 29 2013

DEPARTMENT OF ECOLOGY  
EASTERN REGIONAL OFFICE

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](mailto:volkc@wsdot.wa.gov).

Sincerely,

Carlen Volk  
Hazardous Materials Specialist  
WSDOT Maintenance and Operations

# 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

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## 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

# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS  
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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>	<u>Result</u>	<u>Flag</u>
Gasoline (C7 - C12)	< 20	
Diesel (> C12 - C24)	> 50	
Heavy Oil (C24+)	> 100	

## SURROGATE RECOVERY, %

1-chlorooctane	93
o-terphenyl	101

# SOUND ANALYTICAL SERVICES, INC.

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

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

<u>Parameter</u>	<u>Result</u>
Heavy petroleum oils	380

PQL - Practical Quantitation Limit

# SOUND ANALYTICAL SERVICES, INC.

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>	<u>Flag</u>
Gasoline (C7 - C12)	< 20	
Diesel (> C12 - C24)	> 50	
Heavy Oil (C24+)	> 100	

## SURROGATE RECOVERY, %

1-chlorooctane	85
o-terphenyl	96

# SOUND ANALYTICAL SERVICES, INC.

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

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

<u>Parameter</u>	<u>Result</u>
Heavy petroleum oils	290

ND - Not Detected  
PQL - Practical Quantitation Limit

# SOUND ANALYTICAL SERVICES, INC.

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>	<u>Result</u>	<u>Flag</u>
Gasoline (C7 - C12)	< 20	
Diesel (> C12 - C24)	> 50	
Heavy Oil (C24+)	< 100	

## SURROGATE RECOVERY, %

1-chlorooctane	90
o-terphenyl	95

# SOUND ANALYTICAL SERVICES, INC.

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

PQL - Practical Quantitation Limit



# 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

## 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

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 (C <sub>24</sub> +)	< 100	
<u>SURROGATE RECOVERY, %</u>		
1-chlorooctane	80	
o-terphenyl	85	

# SOUND ANALYTICAL SERVICES, INC.

## 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

Parameter	Sample (S)	Duplicate (D)	RPD	Flags
Gasoline (C <sub>7</sub> -C <sub>12</sub> )	< 20	< 20	NC	
Diesel (>C <sub>12</sub> -C <sub>24</sub> )	> 50	> 50	NC	
Heavy Petroleum Oil (C <sub>24</sub> <sup>+</sup> )	> 100	> 100	NC	
<u>SURROGATE RECOVERY, %</u>				
1-chlorooctane	93	92		
o-terphenyl	101	98		

NC = Not Calculated  
RPD = Relative Percent Difference

# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS  
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## 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

Blank No. 021R0201.D

Parameter	Result	PQL
Diesel	ND	25
<u>SURROGATE RECOVERY%</u> o-terphenyl	142	

ND = Not Detected

PQL = Practical Quantitation Limit

### DUPLICATE

Dup No. 41825-4 Batch QC

Parameter	Sample Result	Duplicate Result	RPD	Flag
Diesel	ND	ND	NC	

RPD = Relative Percent Difference

NC = Not Calculated

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE

MS/MSD No. 41825-4 Batch QC

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	

%R = Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

# SOUND ANALYTICAL SERVICES, INC.

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

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE

MS/MSD No. 41862-6 Batch QC

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	3.4	

%R = Percent Recovery

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

# SOUND ANALYTICAL SERVICES, INC.

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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 extract 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.



# SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

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

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## 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. Riddell  
Project Manager

# SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

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

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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

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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

Parameter

Result

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: mg/kg

Parameter

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

Parameter

Result

Heavy petroleum oils < 100



# SOUND ANALYTICAL SERVICES, INC.

Client Name	WSDOT - Operations Olympia
Client ID:	PCS #1 ANA
Lab ID:	50470-01
Date Received:	8/2/95
Date Prepared:	8/5/95
Date Analyzed:	8/8/95
% Solids	85.31

## Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	88		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	29	

# SOUND ANALYTICAL SERVICES, INC.

Client Name	WSDOT - Operations Olympia
Client ID:	PCS #2 ANA
Lab ID:	50470-02
Date Received:	8/2/95
Date Prepared:	8/5/95
Date Analyzed:	8/8/95
% Solids	88.8

## Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	89		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	28	

# SOUND ANALYTICAL SERVICES, INC.

Client Name	WSDOT - Operations Olympia
Client ID:	PCS #3 ANA
Lab ID:	50470-03
Date Received:	8/2/95
Date Prepared:	8/10/95
Date Analyzed:	8/14/95
% Solids	93.9

## Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	112		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	21	26	J X2

# SOUND ANALYTICAL SERVICES, INC.

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## QUALITY CONTROL REPORT

WTPH-418.1 Modified

Client: WSDOT - Operations Olympia  
Lab No: 50470qc  
Units: mg/kg

Date Extracted: 8-9-95  
Date Analyzed: 8-10-95

### METHOD BLANK

Parameter	Result
Heavy Petroleum Oils	< 100

### BLANK SPIKE

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

%R = Percent Recovery

BS = Blank Spike

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE

MS/MSD No. 50645-1 Batch QC

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

MS = Matrix Spike

MSD = Matrix Spike Duplicate

# SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - DI455
Date Received:	-
Date Prepared:	8/5/95
Date Analyzed:	8/7/95
% Solids	

## Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	111		50	150

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	25	

# SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - DI462
Date Received:	-
Date Prepared:	8/10/95
Date Analyzed:	8/14/95
% Solids	

## Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	110		50	150

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	25	

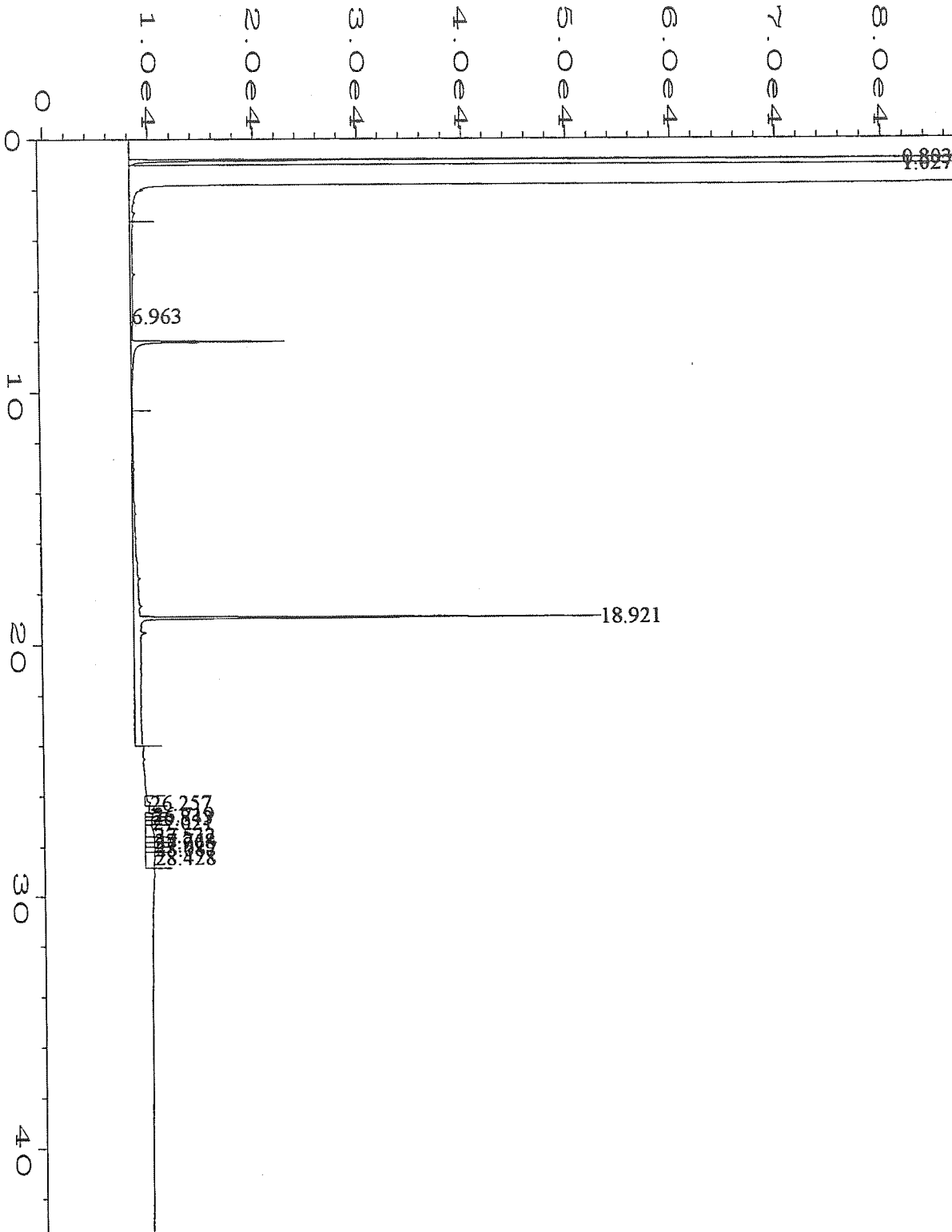
# SOUND ANALYTICAL SERVICES, INC.

## Blank Spike Report

Lab ID: DI455  
Date Prepared: 8/5/95  
Date Analyzed: 8/7/95  
QC Batch ID: DI455

### Diesel by WTPH-D

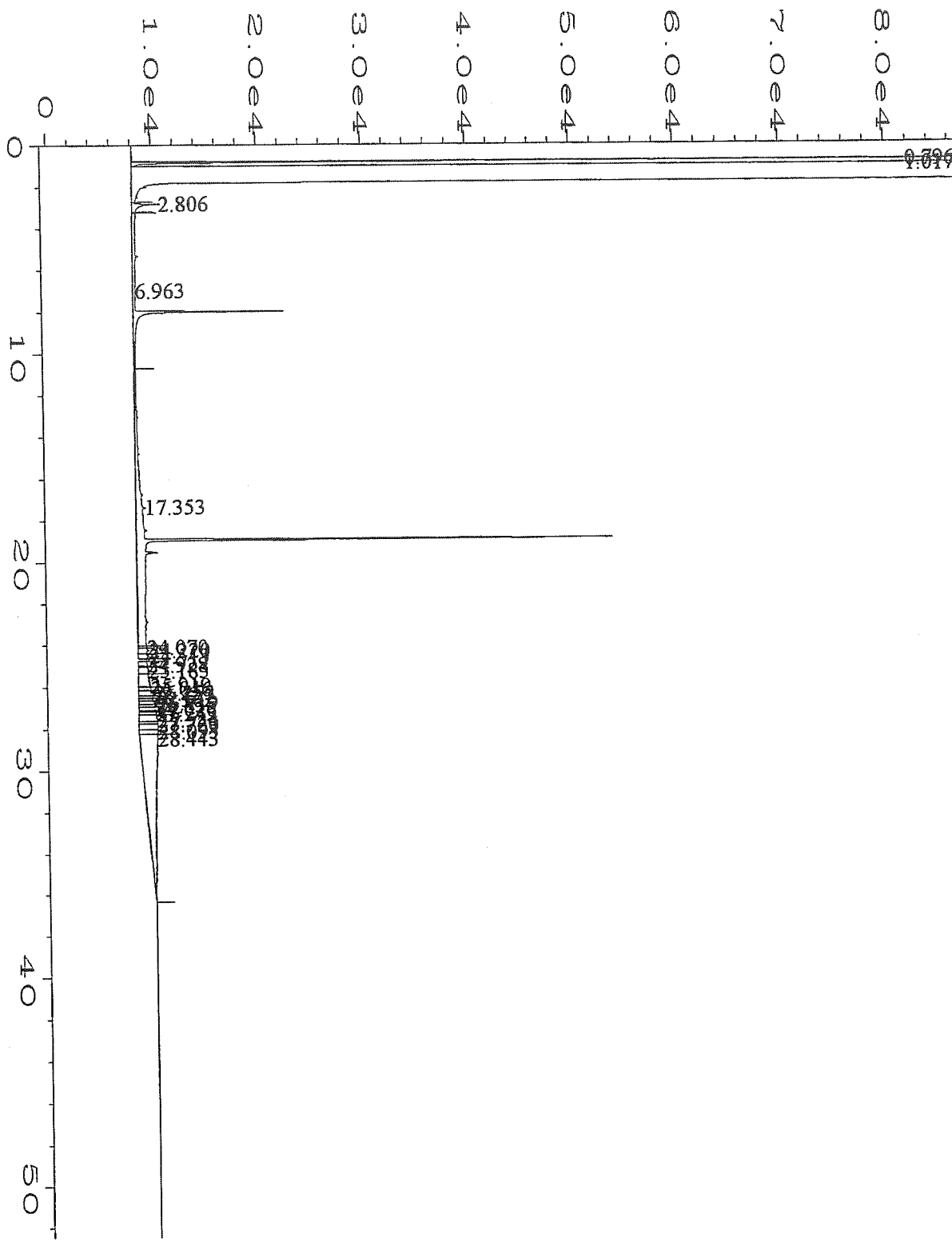
Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
Diesel (>nC12-nC24)	0	250	240	95	



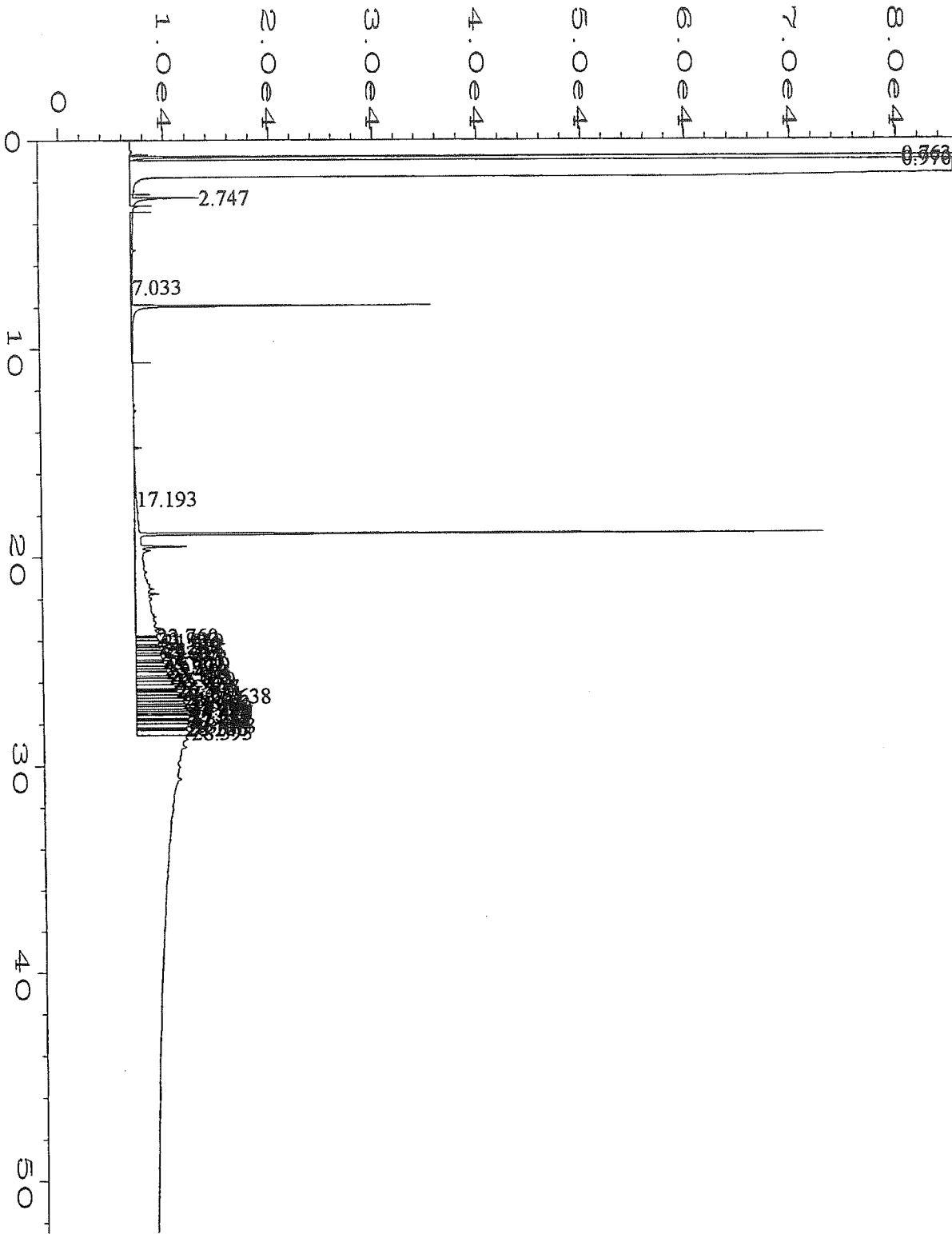
user modified

Data File Name	: C:\HPCHEM\1\DATA\080795_A\048R0501.D	Page Number	: 1
Operator	: DAS/ELG	Vial Number	: 48
Instrument	: HP 5890	Injection Number	: 1
Sample Name	: 50470-1	Sequence Line	: 5
Run Time Bar Code:		Instrument Method:	I-NC40.MTH
Acquired on	: 08 Aug 95 08:28 AM	Analysis Method	: 0721-2D.MTH
Report Created on:	09 Aug 95 03:09 PM	Sample Amount	: 0
Last Recalib on	: 24 JUL 95 11:38 AM	ISTD Amount	: 10
Multiplier	: 1		





Data File Name	: C:\HPCHEM\1\DATA\080795_A\049R0501.D	Page Number	: 1
Operator	: DAS/ELG	Vial Number	: 49
Instrument	: HP 5890	Injection Number	: 1
Sample Name	: 50470-2	Sequence Line	: 5
Run Time Bar Code:		Instrument Method:	I-NC40.MTH
Acquired on	: 08 Aug 95 09:20 AM	Analysis Method	: 0721-2D.MTH
Report Created on:	09 Aug 95 03:10 PM	Sample Amount	: 0
Last Recalib on	: 24 JUL 95 11:38 AM	ISTD Amount	: 11
Multiplier	: 1		



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

