MEMORANDUM

DATE: October 10, 1997

TO: Baz Stevens, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Waste and Focused Removal Soil Sampling September 23, 1997
Sound Analytical Report #67736

Analytical Methods:

- Method 8081 for Organochlorine Pesticides
- Method 8141 for Organophosphorus Pesticides, Modified for GC/MS

Data Use Intended:

- Waste Samples: To establish preliminary waste designation prior to further excavation and assignment of roll-off bins.
- Focused removal trench samples:
  a) To establish whether further excavation is needed.
  b) To establish correlation with the immunoassay field screening results for subsequent use during final excavation.

Summary of Qualified and Rejected Data

- No soil data were rejected or qualified due to quality control problems. However, one of two Performance Evaluation samples showed high recovery for DDT. Also one of two pairs of blind duplicates did not agree for organochlorine pesticides. These problems were investigated and assigned possible causes. There was not cause for additional corrective actions or qualification of data.
- Some analytes (both organochlorine and organophosphorus) in the undetected results for the field rinsate blank samples (water matrix) were qualified with "UJ" to indicate low recovery of blank spikes (i.e. Laboratory Control Samples). Low recovery for one LCS sample also resulted in poor precision for the blank spike duplicate pair for organochlorine pesticides in water.
- Some results were below the quantitation limit and were flagged with "J" qualifiers. "C" flags were used to indicate that second-column confirmation had confirmed the results. "U" qualifiers were not used for undetected results, rather "ND" was placed in the quantitative value data field. "UJ" was added to an "ND" result when low recovery for a blank spike indicated that the detection limit may have been higher than that reported.

Summary of Method 8081 Laboratory and Field Sampling Quality Control (Organochlorine Pesticides):

- Sampling Dates Covered - September 23, 1997.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not acceptable.** One of the two performance sample results reported were above the acceptance limits for DDT. The laboratory evaluated the analytical record and found no error. No action was taken because the other PE result was acceptable.

Analyte	#W1092377 (% Recovery)	#FR10C92379 (% Recovery)
Date of Analysis	10/1/97	10/1/97
4,4'-DDD	96	108
4,4'-DDE	113	123
4,4'-DDT	112	146**
Dieldrin	110	110
Endrin	96	116
2,4'-DDT*	found at low conc.	found at low conc.
Endrin aldehyde*	found at low conc.	ND

* minor contaminants and breakdown products

** outside of the acceptance window for the PE sample

- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration - **Acceptable.** The initial calibration results for the 2,4'- isomers have been inserted following page 84 of the report.
  Surrogates - **Acceptable.** Surrogates in many of the samples and in the performance evaluation samples were not reportable because of high concentrations of target analytes.
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable except for the water matrix.** The low recovery for one of the duplicate LCS samples is possibly the result of analyst error in the water extraction and does not reflect an overall problem with accuracy.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Acceptable.**

- Laboratory Precision - **Acceptable except for the water matrix.** The water matrix blank spike/blank spike duplicate pair showed poor precision due to unusually low recovery for all analytes in one sample. No data qualification has been applied for this singular occurrence of low recovery.
- Field Precision - **Not acceptable for one of two duplicates in this delivery group.** The focused removal duplicates were a factor of four different. All of the analytical records were reviewed by the laboratory and no further action was taken. Some of the most contaminated material was granular. It is possible that some of this particulate material that cannot be equally distributed between duplicates affected the duplicate results.

Summary of Method 8141 (Modified) Laboratory and Field Sampling Quality Control (Organophosphorus Pesticides):

- Sampling Dates Covered - September 23, 1997.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Acceptable.** No official PE acceptance limits have been provided for this analysis, but the percent recoveries were within those acceptable for method 8081.

Analyte	#W1092377 (% Recovery)	#FR10C92379 (% Recovery)
Date of Analysis	10/1/97	10/1/97
Dimethoate	41	39
Disulfoton	88	85
Parathion	77	79
Azinophos, methyl	88	81

- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration - **Acceptable.** These parameters were verified with the laboratory, however, data summaries for internal standard response were not included in the data package provided by the laboratory. Subsequent reports will include this documentation.
  Surrogates - **Acceptable.** Some of the samples were diluted due to high concentrations of analyte and therefore the surrogates were not reportable.
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Not acceptable for the water matrix.** Results for both LCS duplicates were slightly below the project DQO target for recovery. The results (all undetected) have been qualified as UJ to indicate the uncertainty in the detection level caused by low recovery.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Acceptable.**

- Laboratory Precision - **Acceptable**.
- Field Precision - **Not acceptable for one of two duplicates in this delivery group.** The focused removal duplicates were a factor of four different. Some of the most contaminated material was granular. It is possible that some of this particulate material that cannot be equally distributed between duplicates affected the duplicate results. No further action was taken.

Summary of Data Comparability, Representativeness, and Completeness

- **Immunoassay Field Analysis Correlation** - The immunoassay tests are intentionally biased high by a factor of two. This correlation is roughly apparent in the results, but it is expected that the correlation will be poorer above the concentration of the highest calibrator for the immunoassay (0.5 ppm for cyclodienes and 40 ppm for DDT). Correlation is also affected by the mix of compounds present.

- **Field Sampling Issues** - No problems were encountered. The waste samples were taken as composites within the bin noted in the sample number (e.g. W3... is from waste bin #3). The subsamples for each composite were taken from 5 locations within the bin and homogenized according to the Sampling and Analysis Plan.
- **Data Completeness** - The data completeness was 100% for this phase of work (focused removal)

Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project, except as noted.

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

TRANSMITTAL MEMORANDUM

DATE: October 16, 1997

TO: Mike Webb
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

PROJECT: Wenatchee Test Plot Soils, USACOE

REPORT NUMBER: 67736

Enclosed are the test results for nineteen samples received at Sound Analytical Services on September 26, 1997.

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

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Lila Transue

Lila Transue
Project Manager

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc.

Date: October 16, 1997

Project: Wenatchee Test Plot Soils, USACOE

Lab No.: 67736

Delivered By: Federal Express

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix	Sample Description
67736-1	W392371	09-23-97	solid	Dry, brown sandy soil
67736-2	W692372	09-23-97	solid	Dry, brown sandy soil
67736-3	W192373	09-23-97	solid	Dry, brown sandy soil with debris
67736-4	W192374	09-23-97	solid	Dry, brown sandy soil with debris
67736-5	W492375	09-23-97	solid	Dry, brown sandy soil with debris
67736-6	WCANS92376	09-23-97	solid	Dry, light brown clay soil
67736-7	W1092377	09-23-97	solid	Dry, light brown sandy soil
67736-8	W1092378	09-23-97	solid	Dry, light brown sandy soil
67736-9	CEB92471	09-23-97	liquid	Clear, colorless
67736-10	FR45C92371	09-23-97	solid	Dry, brown sandy soil with debris
67736-11	FR45B92372	09-23-97	solid	Dry, brown sandy soil
67736-12	FR45B92373	09-23-97	solid	Dry, brown sandy soil
67736-13	FR45A92374	09-23-97	solid	Moist, brown sandy soil with rocks
67736-14	FR23A92375	09-23-97	solid	Dry, brown sandy soil
67736-15	FR23B92377	09-23-97	solid	Dry, brown sandy soil with debris
67736-16	FR23C92378	09-23-97	solid	Dry, brown sandy soil with debris
67736-17	FR10C92379	09-23-97	solid	Dry, light brown sandy soil
67736-18	FR10B923710	09-23-97	solid	Dry, light brown sandy soil
67736-19	FREB923711	09-23-97	liquid	Clear, colorless

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 16, 1997

Project: Wenatchee Test Plot Soils, USACOE Lab No.: 67736

SAMPLE PREPARATION AND ANALYSIS

Organophosphorus Pesticides

Samples were analyzed for organophosphorus pesticides in accordance with EPA SW-846 Method 8141 GC/MS Modified. The soil samples were extracted in accordance with EPA SW-846 Method 3540 on 9-27-97. The extracts were analyzed on 9-30-97 and 10-1-97. The water samples were extracted in accordance with EPA Method 3510 on 9-30-97 and analyzed on 10-1-97.

Samples 67736-7 and 67736-17 required dilution prior to analysis due to the high concentrations of various analytes.

Samples 67736-1, 67736-3, 67736-4, 67736-7, 67736-15, and 67736-17 required secondary dilution analyses for quantitation of parathion.

The percent recoveries for disulfoton, malathion, and paraoxon, ethyl in the blank spike and for disulfoton and paraoxon, ethyl in the blank spike duplicate analyses associated with the water matrix. No action was taken based on the outliers.

Due to a laboratory error, the matrix spike/matrix spike duplicate and blank spike for the soil matrix did not contain paraoxon, ethyl or paraoxon, methyl. All other required spike compounds were used. A matrix spike/matrix spike duplicate analysis containing paraoxon, ethyl and paraoxon, methyl was performed on one sample from this delivery group and reanalyzed with the following delivery group for this project. Results for this later matrix spike/matrix spike duplicate analysis are provided with Laboratory Report Number 67763.

All other quality control parameters were within acceptance limits.

Organochlorine Pesticides

Samples were analyzed for organochlorine pesticides in accordance with EPA SW-846 Method 8081. The soil samples were extracted in accordance with EPA SW-846 Method 3540 on 9-28-97 and analyzed on 9-29-97 and 9-30-97. The water samples were extracted in accordance with EPA SW-846 Method 3510 on 9-30-97 and analyzed on 9-30-97.

Samples 67736-1 through 67736-5, 67736-8, 67736-11 through 67736-13, and 67736-18 required dilution prior to analysis due to the high concentrations of target analytes present. Surrogate recoveries could not be determined for these samples due to the required dilutions.

Samples 67736-2, 67736-5, 67736-8, 67736-11 through 67736-14, and 67736-18 required secondary dilution analyses for quantitation of various target analytes.

The percent recoveries for all spiked analytes in the blank spike analysis associated with the water matrix were outside of the project specified quality control limits. It appears that a portion of the extract

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 16, 1997

Project: Wenatchee Test Plot Soils, USACOE Lab No.: 67736

may have been lost, as the surrogate recoveries for this blank spike were also low. The percent recoveries for 2,4-DDE and 2,4-DDT in the blank spike duplicate analysis associated with the water matrix were outside of the project specified quality control limits. The relative percent difference values for all compounds in the blank spike/blank spike duplicate analyses were also outside of the project specified quality control limits due to the low recoveries in the blank spike. Additional sample volume was not available for reextraction of the sample batch.

The percent recoveries for tetrachloro-m-xylene (surrogate) in the method blank, blank spike, and blank spike duplicate associated with the water matrix were outside of the project specified limits, but within laboratory control limits. The percent recovery for decachlorobiphenyl (surrogate) in the blank spike associated with the water matrix was outside of the project specified limits, but within laboratory control limits.

All target analytes were confirmed as present using a second analytical column.

All other quality control parameters were within acceptance limits.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W392371
Lab ID:	67736-01
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	92.86
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	83		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		140	85	
Dimethoate	ND		94	52	
Diazinon	ND		75	74	
Disulfoton	ND		68	44	
Parathion,methyl	ND		84	75	
Malathion	ND		89	63	
Parathion		8300	1200	1200	D
Azinphos,methyl	ND		91	62	
Ethion	ND		88	44	
Paraoxon,methyl	ND		88	44	
Paraoxon,ethyl	ND		88	44	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W692372
Lab ID:	67736-02
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	95.41
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	71		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	79	
Dimethoate	ND	88	49	
Diazinon	ND	70	69	
Disulfoton	ND	63	41	
Parathion,methyl	ND	78	70	
Malathion	ND	83	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	85	58	
Ethion	ND	82	41	
Paraoxon,methyl	ND	82	41	
Paraoxon,ethyl	ND	82	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W192373
Lab ID:	67736-03
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	93.87
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	89		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	82	
Dimethoate	ND		90	50	
Diazinon	ND		72	71	
Disulfoton	ND		65	43	
Parathion,methyl	ND		81	72	
Malathion	ND		86	61	
Parathion		16000	1200	1100	D
Azinphos,methyl	ND		88	60	
Ethion	ND		84	42	
Paraoxon,methyl	ND		84	42	
Paraoxon,ethyl	ND		84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W192374
Lab ID:	67736-04
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	94.33
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		140	85	
Dimethoate	ND		94	52	
Diazinon	ND		75	74	
Disulfoton	ND		68	45	
Parathion,methyl	ND		84	75	
Malathion	ND		89	63	
Parathion		14000	1200	1200	D
Azinphos,methyl	ND		91	62	
Ethion	ND		88	44	
Paraoxon,methyl	ND		88	44	
Paraoxon,ethyl	ND		88	44	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W492375
Lab ID:	67736-05
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	95.24
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	86		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	79	
Dimethoate	ND	87	48	
Diazinon	ND	69	68	
Disulfoton	ND	63	41	
Parathion,methyl	ND	78	69	
Malathion	ND	82	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	84	58	
Ethion	ND	81	41	
Paraoxon,methyl	ND	81	41	
Paraoxon,ethyl	ND	81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376
Lab ID:	67736-06
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	96.8
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	84		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	78	
Dimethoate	ND	86	48	
Diazinon	ND	68	68	
Disulfoton	ND	62	41	
Parathion,methyl	ND	77	69	
Malathion	ND	81	58	
Parathion	ND	110	110	
Azinphos,methyl	ND	83	57	
Ethion	ND	80	40	
Paraoxon,methyl	ND	80	40	
Paraoxon,ethyl	ND	80	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W1092377
Lab ID:	67736-07
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	97.57
Dilution Factor	20

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	80		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		260	160	
Dimethoate		6300	180	99	
Diazinon	ND		140	140	
Disulfoton		2700	130	84	
Parathion,methyl	ND		160	140	
Malathion	ND		170	120	
Parathion		370000	23000	22000	D
Azinphos,methyl		2600	170	120	
Ethion	ND		170	83	
Paraoxon,methyl	ND		170	83	
Paraoxon,ethyl	ND		170	83	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	CEB92471
Lab ID:	67736-09
Date Received:	9/26/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	-
Dilution Factor	2

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Analyte	Result (ug/L)	PQL	MDL	Flags
Dichlorvos	ND	0.42	0.26	
Dimethoate	ND	0.18	0.076	
Diazinon	ND	0.11	0.11	
Disulfoton	ND	0.12	0.073	
Parathion,methyl	ND	0.18	0.15	
Malathion	ND	0.086	0.081	
Parathion	ND	0.23	0.22	
Azinphos,methyl	ND	0.34	0.15	
Ethion	ND	0.21	0.11	
Paraoxon,methyl	ND	0.21	0.11	
Paraoxon,ethyl	ND	0.21	0.11	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45C92371
Lab ID:	67736-10
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	96.9
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	82		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	83	
Dimethoate	ND	92	51	
Diazinon	ND	73	72	
Disulfoton	ND	66	43	
Parathion,methyl	ND	82	73	
Malathion	ND	87	62	
Parathion	ND	120	120	
Azinphos,methyl	ND	89	61	
Ethion	ND	86	43	
Paraoxon,methyl	ND	86	43	
Paraoxon,ethyl	ND	86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45B92372
Lab ID:	67736-11
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	96.43
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	99		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	83	
Dimethoate	ND	92	51	
Diazinon	ND	73	72	
Disulfoton	ND	66	43	
Parathion,methyl	ND	82	73	
Malathion	ND	87	62	
Parathion	ND	120	110	
Azinphos,methyl	ND	89	61	
Ethion	ND	86	43	
Paraoxon,methyl	ND	86	43	
Paraoxon,ethyl	ND	86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45B92373
Lab ID:	67736-12
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	96.42
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	106		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	80	
Dimethoate	ND	88	49	
Diazinon	ND	70	69	
Disulfoton	ND	63	42	
Parathion,methyl	ND	79	70	
Malathion	ND	83	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	86	58	
Ethion	ND	82	41	
Paraoxon,methyl	ND	82	41	
Paraoxon,ethyl	ND	82	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45A92374
Lab ID:	67736-13
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	90.72
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	98		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	84	
Dimethoate	ND	93	52	
Diazinon	ND	74	73	
Disulfoton	ND	67	44	
Parathion,methyl	ND	83	74	
Malathion	ND	88	63	
Parathion	ND	120	120	
Azinphos,methyl	ND	90	62	
Ethion	ND	87	43	
Paraoxon,methyl	ND	87	43	
Paraoxon,ethyl	ND	87	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR23A92375
Lab ID:	67736-14
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	95.48
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	92		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	80	
Dimethoate	ND		89	49	
Diazinon	ND		71	70	
Disulfoton	ND		64	42	
Parathion,methyl	ND		79	71	
Malathion	ND		84	60	
Parathion		410	110	110	
Azinphos,methyl	ND		86	59	
Ethion	ND		83	41	
Paraoxon,methyl	ND		83	41	
Paraoxon,ethyl	ND		83	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR23B92377
Lab ID:	67736-15
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	95.39
Dilution Factor	20

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	97		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		260	160	
Dimethoate	ND		180	100	
Diazinon	ND		140	140	
Disulfoton	ND		130	85	
Parathion,methyl	ND		160	140	
Malathion	ND		170	120	
Parathion		770000	23000	23000	D
Azinphos,methyl	ND		180	120	
Ethion	ND		170	84	
Paraoxon,methyl	ND		170	84	
Paraoxon,ethyl	ND		170	84	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR23C92378
Lab ID:	67736-16
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	95.4
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	89		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)		PQL	MDL	Flags
Dichlorvos	ND		130	83	
Dimethoate	ND		92	51	
Diazinon	ND		73	72	
Disulfoton	ND		66	43	
Parathion,methyl	ND		82	73	
Malathion	ND		87	62	
Parathion		170	120	110	
Azinphos,methyl	ND		89	61	
Ethion	ND		86	43	
Paraoxon,methyl	ND		86	43	
Paraoxon,ethyl	ND		86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR10C92379
Lab ID:	67736-17
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	97.64
Dilution Factor	20

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	83		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		250	160	
Dimethoate		6600	180	98	
Diazinon	ND		140	140	
Disulfoton		2800	130	83	
Parathion,methyl	ND		160	140	
Malathion	ND		170	120	
Parathion		360000	23000	22000	D
Azinphos,methyl		2800	170	120	
Ethion	ND		160	82	
Paraoxon,methyl	ND		160	82	
Paraoxon,ethyl	ND		160	82	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FREB923711
Lab ID:	67736-19
Date Received:	9/26/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	-
Dilution Factor	2

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	87		65	135

Analyte	Result (ug/L)	PQL	MDL	Flags
Dichlorvos	ND	0.42	0.26	
Dimethoate	ND	0.18	0.075	
Diazinon	ND	0.11	0.11	
Disulfoton	ND	0.12	0.072	
Parathion,methyl	ND	0.17	0.15	
Malathion	ND	0.084	0.08	
Parathion	ND	0.22	0.21	
Azinphos,methyl	ND	0.34	0.15	
Ethion	ND	0.21	0.1	
Paraoxon,methyl	ND	0.21	0.1	
Paraoxon,ethyl	ND	0.21	0.1	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W392371
Lab ID:	67736-01
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	92.86
Dilution Factor	20

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		11	1.6	
alpha-BHC	ND		420	1.6	
beta-BHC	ND		420	3	
delta-BHC	ND		420	1.7	
gamma-BHC (Lindane)	ND		420	3.7	
Chlordane (technical)	ND		210	52	
4,4'-DDD	ND		420	3.7	
4,4'-DDE		1100	420	7.7	C
4,4'-DDT		910	420	27	C
2,4'-DDD	ND		420	32	
2,4'-DDE	ND		420	32	
2,4'-DDT		220	420	32	J C
Dieldrin		82	21	1.5	C
Endosulfan I	ND		42	6.9	
Endosulfan II	ND		42	3.5	
Endosulfan sulfate	ND		42	5.1	
Endrin	ND		21	2.6	
Endrin aldehyde	ND		420	19	
Heptachlor	ND		420	2.2	
Heptachlor epoxide	ND		420	3.5	
Methoxychlor	ND		420	47	
Toxaphene	ND		420	930	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W692372
Lab ID:	67736-02
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	95.41
Dilution Factor	100

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		51	7.7	
alpha-BHC	ND		2100	7.9	
beta-BHC	ND		2100	15	
delta-BHC	ND		2100	8.1	
gamma-BHC (Lindane)	ND		2100	18	
Chlordane (technical)	ND		1000	250	
4,4'-DDD		1100	2100	18	J C
4,4'-DDE		2600	2100	37	C
4,4'-DDT		56000	21000	1300	C D
2,4'-DDD		200	2100	150	J C
2,4'-DDE		340	2100	150	J C
2,4'-DDT		9400	2100	150	C
Dieldrin	ND		100	7.3	
Endosulfan I	ND		210	33	
Endosulfan II	ND		210	17	
Endosulfan sulfate	ND		210	25	
Endrin	ND		100	12	
Endrin aldehyde	ND		2100	92	
Heptachlor	ND		2100	10	
Heptachlor epoxide	ND		2100	17	
Methoxychlor	ND		2100	230	
Toxaphene	ND		2100	4500	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W192373
Lab ID:	67736-03
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	93.87
Dilution Factor	20

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	10	1.5	
alpha-BHC	ND	410	1.6	
beta-BHC	ND	410	2.9	
delta-BHC	ND	410	1.6	
gamma-BHC (Lindane)	ND	410	3.5	
Chlordane (technical)	ND	200	50	
4,4'-DDD	110	410	3.5	J C
4,4'-DDE	640	410	7.3	C
4,4'-DDT	1200	410	26	C
2,4'-DDD	ND	410	30	
2,4'-DDE	ND	410	30	
2,4'-DDT	110	410	30	J C
Dieldrin	1200	20	1.4	C
Endosulfan I	ND	41	6.6	
Endosulfan II	ND	41	3.4	
Endosulfan sulfate	ND	41	4.9	
Endrin	ND	20	2.5	
Endrin aldehyde	ND	410	18	
Heptachlor	ND	410	2.1	
Heptachlor epoxide	ND	410	3.4	
Methoxychlor	ND	410	45	
Toxaphene	ND	410	890	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W192374
Lab ID:	67736-04
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	94.33
Dilution Factor	20

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		10	1.5	
alpha-BHC	ND		410	1.6	
beta-BHC	ND		410	2.9	
delta-BHC	ND		410	1.6	
gamma-BHC (Lindane)	ND		410	3.5	
Chlordane (technical)	ND		200	50	
4,4'-DDD	ND		410	3.5	
4,4'-DDE		670	410	7.4	C
4,4'-DDT		410	410	26	C
2,4'-DDD	ND		410	31	
2,4'-DDE	ND		410	31	
2,4'-DDT		110	410	31	J C
Dieldrin		1500	20	1.5	C
Endosulfan I	ND		41	6.6	
Endosulfan II	ND		41	3.4	
Endosulfan sulfate	ND		41	4.9	
Endrin	ND		20	2.5	
Endrin aldehyde	ND		410	18	
Heptachlor	ND		410	2.1	
Heptachlor epoxide	ND		410	3.4	
Methoxychlor	ND		410	45	
Toxaphene	ND		410	890	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W492375
Lab ID:	67736-05
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	95.24
Dilution Factor	100

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		51	7.6	
alpha-BHC	ND		2000	7.8	
beta-BHC	ND		2000	14	
delta-BHC	ND		2000	8	
gamma-BHC (Lindane)	ND		2000	18	
Chlordane (technical)	ND		1000	250	
4,4'-DDD		360	2000	17	J C
4,4'-DDE		6300	2000	37	C
4,4'-DDT		20000	20000	1300	D C
2,4'-DDD	ND		2000	150	
2,4'-DDE		730	2000	150	J C
2,4'-DDT		3100	2000	150	C
Dieldrin	ND		100	7.2	
Endosulfan I	ND		200	33	
Endosulfan II	ND		200	17	
Endosulfan sulfate	ND		200	25	
Endrin	ND		100	12	
Endrin aldehyde	ND		2000	91	
Heptachlor	ND		2000	10	
Heptachlor epoxide	ND		2000	17	
Methoxychlor	ND		2000	230	
Toxaphene	ND		2000	4400	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376
Lab ID:	67736-06
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	96.8
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	114		63	149
Decachlorobiphenyl	113		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	0.5	0.074	
alpha-BHC	ND	20	0.076	
beta-BHC	ND	20	0.14	
delta-BHC	ND	20	0.078	
gamma-BHC (Lindane)	ND	20	0.17	
Chlordane (technical)	ND	9.9	2.4	
4,4'-DDD	ND	20	0.17	
4,4'-DDE	26	20	0.36	C
4,4'-DDT	13	20	1.3	J C
2,4'-DDD	ND	20	1.5	
2,4'-DDE	ND	20	1.5	
2,4'-DDT	4.5	20	1.5	J C
Dieldrin	ND	0.99	0.071	
Endosulfan I	ND	2	0.32	
Endosulfan II	ND	2	0.16	
Endosulfan sulfate	ND	2	0.24	
Endrin	3.4	0.99	0.12	C
Endrin aldehyde	ND	20	0.89	
Heptachlor	ND	20	0.1	
Heptachlor epoxide	ND	20	0.17	
Methoxychlor	ND	20	2.2	
Toxaphene	ND	20	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W1092378
Lab ID:	67736-08
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	97.38
Dilution Factor	20

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		9.8	1.5	
alpha-BHC	ND		390	1.5	
beta-BHC	ND		390	2.8	
delta-BHC	ND		390	1.5	
gamma-BHC (Lindane)	ND		390	3.4	
Chlordane (technical)	ND		200	48	
4,4'-DDD		4000	2000	33	D C
4,4'-DDE		3300	2000	71	D C
4,4'-DDT		3300	2000	250	D C
2,4'-DDD	ND		390	29	
2,4'-DDE	ND		390	29	
2,4'-DDT		43	390	29	J C
Dieldrin		69	20	1.4	C
Endosulfan I	ND		39	6.4	
Endosulfan II	ND		39	3.3	
Endosulfan sulfate	ND		39	4.8	
Endrin		390	20	2.4	C
Endrin aldehyde		84	390	18	J C
Heptachlor	ND		390	2	
Heptachlor epoxide	ND		390	3.3	
Methoxychlor	ND		390	44	
Toxaphene	ND		390	860	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	CEB92471
Lab ID:	67736-09
Date Received:	9/26/97
Date Prepared:	9/30/97
Date Analyzed:	9/30/97
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	78		30	122
Decachlorobiphenyl	83		59	126

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	0.011	0.00085	
alpha-BHC	ND	0.011	0.00087	
beta-BHC	ND	0.011	0.0016	
delta-BHC	ND	0.011	0.00089	
gamma-BHC (Lindane)	ND	0.011	0.002	
Chlordane (technical)	ND	0.11	0.028	
4,4'-DDD	ND	0.023	0.002	
4,4'-DDE	ND	0.023	0.0041	
4,4'-DDT	ND	0.023	0.014	
2,4'-DDD	ND	0.023	0.017	
2,4'-DDE	ND	0.023	0.017	
2,4'-DDT	ND	0.023	0.017	
Dieldrin	ND	0.023	0.0027	
Endosulfan I	ND	0.023	0.0014	
Endosulfan II	ND	0.023	0.01	
Endosulfan sulfate	ND	0.011	0.0012	
Endrin	ND	0.011	0.0019	
Endrin aldehyde	ND	0.11	0.025	
Heptachlor	ND	0.023	0.0036	
Heptachlor epoxide	ND	1.1	0.62	
Methoxychlor	ND	0.011	0.0031	
Toxaphene	ND	0	0	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45C92371
Lab ID:	67736-10
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	96.9
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	107		63	149
Decachlorobiphenyl	93		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.48	0.071	
alpha-BHC	ND	19	0.073	
beta-BHC	ND	19	0.14	
delta-BHC	ND	19	0.074	
gamma-BHC (Lindane)	ND	19	0.16	
Chlordane (technical)	ND	9.5	2.3	
4,4'-DDD	3.7	19	0.16	J C
4,4'-DDE	36	19	0.34	C
4,4'-DDT	110	19	1.2	C
2,4'-DDD	ND	19	1.4	
2,4'-DDE	13	19	1.4	J C
2,4'-DDT	44	19	1.4	C
Dieldrin	ND	0.95	0.068	
Endosulfan I	ND	1.9	0.31	
Endosulfan II	ND	1.9	0.16	
Endosulfan sulfate	ND	1.9	0.23	
Endrin	ND	0.95	0.12	
Endrin aldehyde	ND	19	0.85	
Heptachlor	ND	19	0.097	
Heptachlor epoxide	ND	19	0.16	
Methoxychlor	ND	19	2.1	
Toxaphene	ND	19	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45B92372
Lab ID:	67736-11
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	96.43
Dilution Factor	50

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		24	3.6	
alpha-BHC	ND		950	3.7	
beta-BHC	ND		950	6.8	
delta-BHC	ND		950	3.7	
gamma-BHC (Lindane)	ND		950	8.2	
Chlordane (technical)	ND		480	120	
4,4'-DDD		430	950	8.1	J C
4,4'-DDE		1600	950	17	C
4,4'-DDT		20000	9500	60	D C
2,4'-DDD	ND		950	72	
2,4'-DDE		850	950	72	J C
2,4'-DDT		4400	950	72	C
Dieldrin	ND		48	3.4	
Endosulfan I	ND		95	15	
Endosulfan II	ND		95	7.9	
Endosulfan sulfate	ND		95	12	
Endrin	ND		48	5.8	
Endrin aldehyde	ND		950	43	
Heptachlor	ND		950	4.9	
Heptachlor epoxide	ND		950	8	
Methoxychlor	ND		950	110	
Toxaphene	ND		950	2100	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45B92373
Lab ID:	67736-12
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	96.42
Dilution Factor	200

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		100	15	
alpha-BHC	ND		4000	15	
beta-BHC	ND		4000	28	
delta-BHC	ND		4000	16	
gamma-BHC (Lindane)	ND		4000	34	
Chlordane (technical)	ND		2000	490	
4,4'-DDD		1700	4000	34	J C
4,4'-DDE		6700	4000	72	C
4,4'-DDT		110000	40000	2500	D C
2,4'-DDD	ND		4000	300	
2,4'-DDE		3600	4000	300	J C
2,4'-DDT		18000	4000	300	C
Dieldrin	ND		200	14	
Endosulfan I	ND		400	64	
Endosulfan II	ND		400	33	
Endosulfan sulfate	ND		400	48	
Endrin	ND		200	24	
Endrin aldehyde	ND		4000	180	
Heptachlor	ND		4000	20	
Heptachlor epoxide	ND		4000	33	
Methoxychlor	ND		4000	440	
Toxaphene	ND		4000	8700	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR45A92374
Lab ID:	67736-13
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	90.72
Dilution Factor	50

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		26	3.9	
alpha-BHC	ND		1000	4	
beta-BHC	ND		1000	7.4	
delta-BHC	ND		1000	4	
gamma-BHC (Lindane)	ND		1000	8.9	
Chlordane (technical)	ND		520	130	
4,4'-DDD		260	1000	8.8	J C
4,4'-DDE		550	1000	19	J C
4,4'-DDT		11000	2100	130	D C
2,4'-DDD	ND		1000	78	
2,4'-DDE	ND		1000	78	
2,4'-DDT		2400	1000	78	C
Dieldrin	ND		52	3.7	
Endosulfan I	ND		100	17	
Endosulfan II	ND		100	8.6	
Endosulfan sulfate	ND		100	13	
Endrin	ND		52	6.3	
Endrin aldehyde	ND		1000	46	
Heptachlor	ND		1000	5.3	
Heptachlor epoxide	ND		1000	8.6	
Methoxychlor	ND		1000	110	
Toxaphene	ND		1000	2300	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR23A92375
Lab ID:	67736-14
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	95.48
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	110		63	149
Decachlorobiphenyl	75		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.5	0.075	
alpha-BHC	ND		20	0.077	
beta-BHC	ND		20	0.14	
delta-BHC	ND		20	0.078	
gamma-BHC (Lindane)	ND		20	0.17	
Chlordane (technical)	ND		10	2.5	
4,4'-DDD		11	20	0.17	J C
4,4'-DDE		770	200	3.6	D C
4,4'-DDT		420	200	13	D C
2,4'-DDD		8.1	20	1.5	J C
2,4'-DDE		19	20	1.5	J C
2,4'-DDT		140	200	15	J D C
Dieldrin		42	1	0.071	C
Endosulfan I	ND		2	0.32	
Endosulfan II	ND		2	0.17	
Endosulfan sulfate	ND		2	0.24	
Endrin		3.6	1	0.12	C
Endrin aldehyde	ND		20	0.89	
Heptachlor	ND		20	0.1	
Heptachlor epoxide	ND		20	0.17	
Methoxychlor	ND		20	2.2	
Toxaphene	ND		20	44	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR23B92377
Lab ID:	67736-15
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	95.39
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	108		63	149
Decachlorobiphenyl	95		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.51	0.076	
alpha-BHC		1.6	20	0.078	J C
beta-BHC	ND		20	0.14	
delta-BHC	ND		20	0.079	
gamma-BHC (Lindane)		2.5	20	0.18	J C
Chlordane (technical)	ND		10	2.5	
4,4'-DDD		6.1	20	0.17	J C
4,4'-DDE		28	20	0.37	C
4,4'-DDT		130	20	1.3	C
2,4'-DDD		41	20	1.5	C
2,4'-DDE	ND		20	1.5	
2,4'-DDT		21	20	1.5	C
Dieldrin		30	1	0.072	C
Endosulfan I	ND		2	0.33	
Endosulfan II	ND		2	0.17	
Endosulfan sulfate	ND		2	0.25	
Endrin	ND		1	0.12	
Endrin aldehyde	ND		20	0.91	
Heptachlor	ND		20	0.1	
Heptachlor epoxide	ND		20	0.17	
Methoxychlor	ND		20	2.3	
Toxaphene	ND		20	44	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR23C92378
Lab ID:	67736-16
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	95.4
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	108		63	149
Decachlorobiphenyl	79		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.51	0.076	
alpha-BHC	ND		20	0.078	
beta-BHC	ND		20	0.15	
delta-BHC	ND		20	0.08	
gamma-BHC (Lindane)	ND		20	0.18	
Chlordane (technical)	ND		10	2.5	
4,4'-DDD	ND		20	0.17	
4,4'-DDE		17	20	0.37	J C
4,4'-DDT		8.2	20	1.3	J C
2,4'-DDD	ND		20	1.5	
2,4'-DDE	ND		20	1.5	
2,4'-DDT	ND		20	1.5	
Dieldrin		19	1	0.073	C
Endosulfan I	ND		2	0.33	
Endosulfan II	ND		2	0.17	
Endosulfan sulfate	ND		2	0.25	
Endrin	ND		1	0.12	
Endrin aldehyde	ND		20	0.91	
Heptachlor	ND		20	0.1	
Heptachlor epoxide	ND		20	0.17	
Methoxychlor	ND		20	2.3	
Toxaphene	ND		20	45	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FR10B923710
Lab ID:	67736-18
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	97.59
Dilution Factor	20

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	24	10	1.5 C
alpha-BHC	ND		400	1.5
beta-BHC	ND		400	2.8
delta-BHC	ND		400	1.6
gamma-BHC (Lindane)	ND		400	3.4
Chlordane (technical)	ND		200	49
4,4'-DDD		4500	2000	34 D C
4,4'-DDE		3600	2000	72 D C
4,4'-DDT		4300	2000	250 D C
2,4'-DDD	ND		400	30
2,4'-DDE	ND		400	30
2,4'-DDT		120	400	30 J C
Dieldrin		69	20	1.4 C
Endosulfan I	ND		40	6.5
Endosulfan II	ND		40	3.3
Endosulfan sulfate	ND		40	4.8
Endrin		470	20	2.4 C
Endrin aldehyde	ND		400	18
Heptachlor	ND		400	2
Heptachlor epoxide	ND		400	3.3
Methoxychlor	ND		400	44
Toxaphene	ND		400	870

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	FREB923711
Lab ID:	67736-19
Date Received:	9/26/97
Date Prepared:	9/30/97
Date Analyzed:	9/30/97
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	86		30	122
Decachlorobiphenyl	95		59	126

Analyte		**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.01	0.00075	
alpha-BHC	ND		0.01	0.00077	
beta-BHC	ND		0.01	0.0014	
delta-BHC	ND		0.01	0.00078	
gamma-BHC (Lindane)	ND		0.01	0.0017	
Chlordane (technical)	ND		0.1	0.025	
4,4'-DDD	ND		0.02	0.0017	
4,4'-DDE	ND		0.02	0.0036	
4,4'-DDT	ND		0.02	0.013	
2,4'-DDD	ND		0.02	0.015	
2,4'-DDE	ND		0.02	0.015	
2,4'-DDT	ND		0.02	0.015	
Dieldrin	ND		0.02	0.0024	
Endosulfan I	ND		0.02	0.0012	
Endosulfan II	ND		0.02	0.0089	
Endosulfan sulfate	ND		0.01	0.001	
Endrin	ND		0.01	0.0017	
Endrin aldehyde	ND		0.1	0.022	
Heptachlor	ND		0.02	0.0032	
Heptachlor epoxide	ND		1	0.54	
Methoxychlor	ND		0.01	0.0028	
Toxaphene	ND		0	0	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP194
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	-
Dilution Factor	2

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	98		65	135

Analyte	Result (ug/L)	PQL	MDL	Flags
Dichlorvos	ND	0.4	0.25	
Dimethoate	ND	0.17	0.072	
Diazinon	ND	0.11	0.11	
Disulfoton	ND	0.12	0.069	
Parathion,methyl	ND	0.17	0.14	
Malathion	ND	0.082	0.077	
Parathion	ND	0.22	0.21	
Azinphos,methyl	ND	0.33	0.14	
Ethion	ND	0.2	0.1	
Paraoxon,methyl	ND	0.2	0.1	
Paraoxon,ethyl	ND	0.2	0.1	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP192
Date Received:	-
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	108		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	89	50	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	80	71	
Malathion	ND	85	60	
Parathion	ND	110	110	
Azinphos,methyl	ND	87	59	
Ethion	ND	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	OP194
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
QC Batch ID:	OP194

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Dichlorvos	0	1	0.83	83	0.892	89.2	7.2	
Dimethoate	0	1	0.888	88.8	0.87	87	2	
Diazinon	0	1	0.72	72	0.714	71.4	0.84	
Disulfoton	0	1	0.71	71	0.652	65.2	8.5	
Parathion,methyl	0	1	0.788	78.8	0.796	79.6	1	
Malathion	0	1	0.744	74.4	0.758	75.8	1.9	
Parathion	0	1	0.796	79.6	0.842	84.2	5.6	
Azinphos,methyl	0	1	0.826	82.6	0.744	74.4	10	
Ethion	0	1	0.77	77	0.772	77.2	0.26	
Paraoxon,methyl	0	1	0.808	80.8	0.766	76.6	5.3	
Paraoxon,ethyl	0	1	0.666	66.6	0.654	65.4	1.8	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	
Lab ID:	SOP194
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	-
Dilution Factor	2

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	96		65	135

Analyte	Result (ug/L)	PQL	MDL	Flags
Dichlorvos	0.83	0.4	0.25	
Dimethoate	0.89	0.17	0.072	
Diazinon	0.72	0.11	0.11	
Disulfoton	0.71	0.12	0.069	
Parathion,methyl	0.79	0.17	0.14	
Malathion	0.74	0.082	0.077	
Parathion	0.8	0.22	0.21	
Azinphos,methyl	0.83	0.33	0.14	
Ethion	0.77	0.2	0.1	
Paraoxon,methyl	0.81	0.2	0.1	
Paraoxon,ethyl	0.67	0.2	0.1	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	
Lab ID:	DOP194
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	-
Dilution Factor	2

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	85		65	135

Analyte	Result (ug/L)	PQL	MDL	Flags
Dichlorvos	0.89	0.4	0.25	
Dimethoate	0.87	0.17	0.072	
Diazinon	0.71	0.11	0.11	
Disulfoton	0.65	0.12	0.069	
Parathion,methyl	0.8	0.17	0.14	
Malathion	0.76	0.082	0.077	
Parathion	0.84	0.22	0.21	
Azinphos,methyl	0.74	0.33	0.14	
Ethion	0.77	0.2	0.1	
Paraoxon,methyl	0.77	0.2	0.1	
Paraoxon,ethyl	0.65	0.2	0.1	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	OP192
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
QC Batch ID:	OP192

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dichlorvos	0	420	360	87	
Dimethoate	0	420	430	102	
Diazinon	0	420	370	89	
Disulfoton	0	420	310	75	
Parathion,methyl	0	420	420	101	
Malathion	0	420	380	92	
Parathion	0	420	390	94	
Azinphos,methyl	0	420	420	100	
Ethion	0	420	380	92	
Paraoxon,methyl	0	NT	0	0	
Paraoxon,ethyl	0	NT	0	0	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SOP192
Date Received:	-
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	80		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	360	130	81	
Dimethoate	430	89	50	
Diazinon	370	71	70	
Disulfoton	310	64	42	
Parathion,methyl	420	80	71	
Malathion	380	84	60	
Parathion	390	110	110	
Azinphos,methyl	420	87	59	
Ethion	380	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	WCANS92376
Lab ID:	67736-06
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
QC Batch ID:	OP192

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	405	418	103	430	108	4.7	
Dimethoate	0	405	428	106	510	128	19	
Diazinon	0	405	386	95.2	412	103	7.9	
Disulfoton	0	405	338	83.4	399	100	18	
Parathion,methyl	0	405	413	102	461	115	12	
Malathion	0	405	397	98	466	117	18	
Parathion	0	405	395	97.6	447	112	14	
Azinphos,methyl	0	405	439	108	450	113	4.5	
Ethion	0	405	406	100	404	101	1	
Paraoxon,methyl	0	NT	0	0	0	0	0	
Paraoxon,ethyl	0	NT	0	0	0	0	0	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376 - ms
Lab ID:	67736S06
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	9/30/97
% Solids	96.8
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	420	130	78	
Dimethoate	430	87	48	
Diazinon	390	69	68	
Disulfoton	340	63	41	
Parathion,methyl	410	78	69	
Malathion	400	82	59	
Parathion	400	110	110	
Azinphos,methyl	440	84	58	
Ethion	410	81	41	
Paraoxon,methyl	ND	81	41	
Paraoxon,ethyl	ND	81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376 - msd
Lab ID:	67736D06
Date Received:	9/26/97
Date Prepared:	9/27/97
Date Analyzed:	10/1/97
% Solids	96.8
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	87		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	430	120	77	
Dimethoate	510	86	48	
Diazinon	410	68	67	
Disulfoton	400	62	40	
Parathion,methyl	460	76	68	
Malathion	470	81	58	
Parathion	450	110	110	
Azinphos,methyl	450	83	57	
Ethion	400	80	40	
Paraoxon,methyl	ND	80	40	
Paraoxon,ethyl	ND	80	40	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE801
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	9/30/97
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	62		30	122
Decachlorobiphenyl	79		59	126

Analyte		Result (ug/L)	PQL	MDL	Flags
Aldrin	ND		0.01	0.00075	
alpha-BHC	ND		0.01	0.00077	
beta-BHC	ND		0.01	0.0014	
delta-BHC	ND		0.01	0.00078	
gamma-BHC (Lindane)	ND		0.01	0.0017	
Chlordane (technical)	ND		0.1	0.025	
4,4'-DDD	ND		0.02	0.0017	
4,4'-DDE	ND		0.02	0.0036	
4,4'-DDT	ND		0.02	0.013	
2,4'-DDD	ND		0.02	0.015	
2,4'-DDE	ND		0.02	0.015	
2,4'-DDT	ND		0.02	0.015	
Dieldrin	ND		0.02	0.0024	
Endosulfan I	ND		0.02	0.0012	
Endosulfan II	ND		0.02	0.0089	
Endosulfan sulfate	ND		0.01	0.001	
Endrin	ND		0.01	0.0017	
Endrin aldehyde	ND		0.1	0.022	
Heptachlor	ND		0.02	0.0032	
Heptachlor epoxide	ND		1	0.54	
Methoxychlor	ND		0.01	0.0028	
Toxaphene	ND		0	0	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE800
Date Received:	-
Date Prepared:	9/28/97
Date Analyzed:	9/29/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	109		63	149
Decachlorobiphenyl	118		57	143

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.5	0.075	
alpha-BHC	ND	20	0.077	
beta-BHC	ND	20	0.14	
delta-BHC	ND	20	0.078	
gamma-BHC (Lindane)	ND	20	0.17	
Chlordane (technical)	ND	10	2.5	
4,4'-DDD	ND	20	0.17	
4,4'-DDE	ND	20	0.36	
4,4'-DDT	ND	20	1.3	
2,4'-DDD	ND	20	1.5	
2,4'-DDE	ND	20	1.5	
2,4'-DDT	ND	20	1.5	
Dieldrin	ND	1	0.071	
Endosulfan I	ND	2	0.32	
Endosulfan II	ND	2	0.17	
Endosulfan sulfate	ND	2	0.24	
Endrin	ND	1	0.12	
Endrin aldehyde	ND	20	0.89	
Heptachlor	ND	20	0.1	
Heptachlor epoxide	ND	20	0.17	
Methoxychlor	ND	20	2.2	
Toxaphene	ND	20	44	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE801
Date Prepared:	9/30/97
Date Analyzed:	9/30/97
QC Batch ID:	PE801

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Aldrin	0	0.2	0.103	51.3	0.154	76.9	40	
gamma-BHC (Lindane)	0	0.2	0.124	62.1	0.172	86.1	32	
4,4'-DDD	0	0.5	0.265	53.1	0.413	82.5	43	
4,4'-DDE	0	0.5	0.249	49.7	0.415	83	50	
4,4'-DDT	0	0.5	0.271	54.1	0.444	88.7	48	
2,4'-DDD	0	0.5	0.251	50.2	0.382	76.4	41	
2,4'-DDE	0	0.5	0.223	44.6	0.354	70.8	45	
2,4'-DDT	0	0.5	0.218	43.6	0.361	72.2	49	
Dieldrin	0	0.5	0.334	66.8	0.471	94.2	34	
Endrin	0	0.5	0.292	58.4	0.416	83.3	35	
Heptachlor	0	0.2	0.114	57.1	0.161	80.6	34	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE801
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	9/30/97
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	49		30	122
Decachlorobiphenyl	60		59	126

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	0.1	0.01	0.00075	C
gamma-BHC (Lindane)	0.12	0.01	0.0017	C
4,4'-DDD	0.27	0.02	0.0017	C
4,4'-DDE	0.25	0.02	0.0036	C
4,4'-DDT	0.27	0.02	0.013	C
2,4'-DDD	0.25	0.02	0.015	C
2,4'-DDE	0.22	0.02	0.015	C
2,4'-DDT	0.22	0.02	0.015	C
Dieldrin	0.33	0.02	0.0024	C
Endrin	0.29	0.01	0.0017	C
Heptachlor	0.11	0.02	0.0032	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DPE801
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	9/30/97
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	62		30	122
Decachlorobiphenyl	79		59	126

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	0.15	0.01	0.00075	C
gamma-BHC (Lindane)	0.17	0.01	0.0017	C
4,4'-DDD	0.41	0.02	0.0017	C
4,4'-DDE	0.41	0.02	0.0036	C
4,4'-DDT	0.44	0.02	0.013	C
2,4'-DDD	0.38	0.02	0.015	C
2,4'-DDE	0.35	0.02	0.015	C
2,4'-DDT	0.36	0.02	0.015	C
Dieldrin	0.47	0.02	0.0024	C
Endrin	0.42	0.01	0.0017	C
Heptachlor	0.16	0.02	0.0032	C

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE800
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
QC Batch ID:	PE800

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	BSD Result (ug/kg)	BSD % Rec.	RPD	Flag
Aldrin	0	20	20.6	103	20.5	103	0	
gamma-BHC (Lindane)	0	20	20.7	103	20.7	103	0	
4,4'-DDD	0	50	52.6	105	54.2	108	2.8	
4,4'-DDE	0	50	53.8	108	54.6	109	0.92	
4,4'-DDT	0	50	51.6	103	50.7	101	2	
2,4'-DDD	0	50	47.7	95.4	49.6	99.2	3.9	
2,4'-DDE	0	50	46.9	93.7	47.7	95.5	1.9	
2,4'-DDT	0	50	45	90	46.8	93.5	3.8	
Dieldrin	0	50	54	108	54.3	109	0.92	
drin	0	50	37.8	75.6	38.5	77	1.8	
eptachlor	0	20	21.3	107	21.3	106	0.94	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE800
Date Received:	-
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	104		63	149
Decachlorobiphenyl	110		57	143

Sample results are on an as received basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin		21	0.5	0.075	C
gamma-BHC (Lindane)		21	20	0.17	C
4,4'-DDD		53	20	0.17	C
4,4'-DDE		54	20	0.36	C
4,4'-DDT		52	20	1.3	C
2,4'-DDD		48	20	1.5	C
2,4'-DDE		47	20	1.5	C
2,4'-DDT		45	20	1.5	C
Endosulfan I	ND		2	0.32	
Endosulfan sulfate	ND		2	0.24	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DPE800
Date Received:	-
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	106		63	149
Decachlorobiphenyl	111		57	143

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**		**MDL**	**Flags**
Aldrin		21	0.5	0.075	C
gamma-BHC (Lindane)		21	20	0.17	C
4,4'-DDD		54	20	0.17	C
4,4'-DDE		55	20	0.36	C
4,4'-DDT		51	20	1.3	C
2,4'-DDD		50	20	1.5	C
2,4'-DDE		48	20	1.5	C
2,4'-DDT		47	20	1.5	C
Endosulfan I	ND		2	0.32	
Endosulfan sulfate	ND		2	0.24	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	WCANS92376
Lab ID:	67736-06
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
QC Batch ID:	PE800

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	0	19.1	21.2	111	21.4	111	0	
gamma-BHC (Lindane)	0	19.1	21.7	114	22.2	115	0.87	
4,4'-DDD	0	47.8	55.8	117	54.6	113	3.5	
4,4'-DDE	26	47.8	84.1	122	80.7	114	6.8	
4,4'-DDT	13	47.8	76.2	132	75.6	130	1.5	
2,4'-DDD	0	47.8	54.3	114	53	110	3.6	
2,4'-DDE	0	47.8	51	107	49.7	103	3.8	
2,4'-DDT	4.5	47.8	47.3	89.5	50.7	95.7	6.7	
Dieldrin	12	47.8	70	121	70.6	120	0.83	
ıdrin	3.4	47.8	51.5	101	53.2	103	2	
.eptachlor	0	19.1	22	115	22.3	115	0	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376 - ms
Lab ID:	67736S06
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	96.8
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	114		63	149
Decachlorobiphenyl	120		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin		21	0.48	0.071	C
gamma-BHC (Lindane)		22	19	0.17	C
4,4'-DDD		56	19	0.16	C
4,4'-DDE		84	19	0.34	C
4,4'-DDT		76	19	1.2	C
2,4'-DDD		54	19	1.4	C
2,4'-DDE		51	19	1.4	C
2,4'-DDT		47	19	1.4	C
Endosulfan I	ND		1.9	0.31	
Endosulfan sulfate	ND		1.9	0.23	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376 - msd
Lab ID:	67736D06
Date Received:	9/26/97
Date Prepared:	9/28/97
Date Analyzed:	9/30/97
% Solids	96.8
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	112		63	149
Decachlorobiphenyl	112		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)		PQL	MDL	Flags
Aldrin		21	0.48	0.072	C
gamma-BHC (Lindane)		22	19	0.17	C
4,4'-DDD		55	19	0.16	C
4,4'-DDE		81	19	0.35	C
4,4'-DDT		76	19	1.2	C
2,4'-DDD		53	19	1.4	C
2,4'-DDE		50	19	1.4	C
2,4'-DDT		51	19	1.4	C
Endosulfan I	ND		1.9	0.31	
Endosulfan sulfate	ND		1.9	0.23	

SOUND ANALYTICAL SERVICES, INC.

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

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration 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 detected in the associated method blank. 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).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

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 was 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.

DATA QUALIFIER DEFINITIONS

SOUND ANALYTICAL SERVICES, INC.

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 • TELEPHONE (253)922-2310 • FAX (253)922-5047

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration 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 detected in the associated method blank. 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).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

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 was 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.

CHAIN OF CUSTODY

ANALYTICAL & ENVIRONMENTAL CHEMISTS

Tacoma, Washington 98
(253) 922-2310 • FAX (253) 922-5047

11/4

6 T156

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: GARRY SWANSON ASSOC, INC

PROJECT NAME: WHATCOM TREC

CONTACT: MIKE WEBB

PHONE NO: SITE

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pest (As per QAPP)	OC Pest (As per QAPP)		Cooler Ambient Temperature						
1	W392371	9/23/97	1430	SOIL	1														X	X								
2	W692372	23SEP97	1440	SOIL	1														X	X								
3	W192373	"	1455	SOIL	1														X	X								
4	W1923 74	"	1455	SOIL	1														X	X								
5	W492375	"	1520	SOIL	1														X	X								
6	WCANS92376	"	1735	SOIL	1														X	X								
7	W1092377	"	1750	SOIL	1														X									
8	W1092378	23SEP97	1800	SOIL	1															X								
9	CEB92471	23SEP97	1900	WATER	2														X	X								
	TRIP BLANK	23SEP97	1405	WATER	1																	X						
	SAMPLED BY MIKE WEBB																											

	Signature	Printed Name	Firm	Time / Date
Relinquished By	Michael Webb	MIKE WEBB	GSA Inc	9/25/97 1500
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

Released to Felix w/ COC seals

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

LILA TRANSUE: LAB CONTACT
US ARMY CORPS OF ENGINEERS
PROJECT - USE PROJECT QAPP

ANALYTICAL & ENVIRONMENTAL CHEMISTS

Tacoma, Washington 98
(253) 922-2310 • FAX (253 22-5047

16

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: GARY STRUTHERS ASSOC
PROJECT NAME: WENATCHEE WTREC
CONTACT: MIKE WEBB
PHONE NO: SITE 509-664-8936 425-519-0300 X217

ANALYSIS REQUESTED:

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pest (as per QAPP)	OC Pest (as per QAPP)		Cooler Arrival Temperature
10	FR45C92371	9/23/97	1640	SOIL	1														X	X		
11	FR45B92372	9/23/97	1645	SOIL	1														X	X		
12	FR45B92373	9/23/97	1645	SOIL	1														X	X		
13	FR45A92374	9/23/97	1655	SOIL	1														X	X		
14	FR23A92375	9/23/97	1705	SOIL	1														X	X		
15	FR23B92377	9/23/97	1715	SOIL	1														X	X		
16	FR23C92378	9/23/97	1725	SOIL	1														X	X		
17	FR10C92379	9/23/97	1735	SOIL	1														X	~~X~~ NO TPH		
18	FR10B923710	9/23/97	1745	SOIL	1													~~NO~~ X	~~X~~	X		
19	FREB923711	9/23/97	1900	WATER	2														X	X		
—	TEMP BLANK	9/25/97	1400	WATER	1																	X
	SAMPLED BY MIKE WEBB																					

	Signature	Printed Name	Firm	Time / Date
Relinquished By	Michael Webb	MIKE WEBB	GSA INC	9/25/97 15:00
Received By			RELEASED TO FEDX w/COC seals	
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
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Lila Transue: Lab Contact
US Army Corps of Engineers
Project — Use Project QAPP

Page _____ of _____

SOUND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 9842-
(253) 922-2310 • FAX (253) 922-5047

6T1 6

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: GARRY STRUTHERS ASSOC.

PROJECT NAME: WENATCHEE WTREX

CONTACT: MIKE WEBB

PHONE NO: SITE 509-664-8936 / 425-519-0300 X217

ANALYSIS REQUESTED:

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pest (as per QAPP)	OC Pest (as per QAPP)		Cooler Arrival Temperature
10	FR45C92371	9/23/97	1640	SOIL	1														X	X		
11	FR45B92372	9/23/97	1645	SOIL	1														X	X		
12	FR45B92373	9/23/97	1645	SOIL	1														X	X		
13	FR45A92374	9/23/97	1655	SOIL	1														X	X		
14	FR23A92375	9/23/97	1705	SOIL	1														X	X		
15	FR23B92377	9/23/97	1715	SOIL	1														X	X		
16	FR23C92378	9/23/97	1725	SOIL	1														X	X		
17	FR10C92379	9/23/97	1735	SOIL	1														X	~~X~~	NO	
18	FR10B923710	9/23/97	1745	SOIL	1													NO	~~X~~	X		
19	FREB923711	9/23/97	1900	WATER	2														X	X		
—	TEMP BLANK	9/25/97	1400	WATER	1																	X

SAMPLED BY MIKE WEBB

RECEIVED OCT 28 1997 Garry Struthers Assoc., Inc.

RELEASED TO FEDX w/COC seals

	Signature	Printed Name	Firm	Time / Date
Relinquished By	[signature]	MIKE WEBB	GSA INC	9/25/97 15:00
Received By	[signature]	Duc Nguyen	SAS	9-26-97 1000
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.

Check this box to have samples returned ☐.

Lila Transue: Lab Contact

US ARMY CORPS OF ENGINEERS PROJECT — USE PROJECT QAPP

SOUND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 9842-
(253) 922-2310 • FAX (253) 922-5047

11/4

6,136

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: Garry Struthers Assoc, inc.

PROJECT NAME: Wenatchee TRFEC

CONTACT: Mike Webb

PHONE NO: Site

ANALYSIS REQUESTED:

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pest (As per QAPP)	OC Pest (As per QAPP)	Cooler Ambient Temperature
1	W392371	9/23/97	1430	Soil	1														X	X	
2	W692372	23SEP97	1440	Soil	1														X	X	
3	W192373	|	1455	Soil	1														X	X	
4	W192374	|	1455	Soil	1														X	X	
5	W492375	|	1520	Soil	1														X	X	
6	WCANS92376	|	1735	Soil	1														X		
7	W1092377	|	1750	Soil	1															X	
8	W1092378	23SEP97	1800	Soil	1														X	X	
9	CEB92471	23SEP97	1900	Water	2																X
	Trip Blank	23SEP97	1405	Water	1																

SAMPLED BY MIKE WEBB

	Signature	Printed Name	Firm	Time / Date (Released to FedX w/ COE Seals)
Relinquished By	Michael Webb	MIKE WEBB	GSA Inc	9/25/97 1500
Received By	Duc Nguyen	Duc Nguyen	SAS	9-26-97 1000
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

LILA TRANSUE: LAB CONTACT
US Army Corps of Engineers Project - Use Project QAPP

SAS LAB NO. 677

COOLER RECEIPT FORM

PROJECT: Wenatchee Test Plot Soils USACE W.O.# —

COOLER RECEIVED ON 9-26-97 AND OPENED ON 9-26-97 BY DBiang

Biang
(SIGNATURE)

Temperature upon receipt: cooler 4 °C
temp. blank 1 °C

1. Were custody seals on outside of cooler and intact? YES NO

   a. If YES, how many and where: 1 each left + right sides
   b. Were signature and date correct? YES NO

2. Were custody papers taped to lid inside cooler? YES NO

3. Were custody papers properly filled out (ink, signed, etc)? YES NO

4. Did you sign custody papers in the appropriate place? YES NO

5. Did you attach shipper's packing slip to this form? YES NO

6. What kind of packing material was used? bubblewrap

7. Was sufficient ice used (if appropriate)? YES NO

8. Were all bottles sealed in separate plastic bags? YES NO

9. Did all bottles arrive in good condition (unbroken)? YES NO

10. Were all bottle labels complete (no., date, signed, pres, etc)? YES NO

11. Did all bottle labels and tags agree with custody papers? YES NO

12. Were correct bottles used for the test indicated? YES NO

13. If present, were VOA vials checked for absence of air bubbles and noted if found? n/a YES NO

14. Adequate volume of VOA vials received per sample? n/a YES NO

15. Was sufficient amount of sample sent in each bottle? YES NO

16. Were correct preservatives used? n/a YES NO

17. Corrective action taken, if necessary:

   a. Name of person contacted: _____
   b. Date: _____

SAS LAB NO. 6TT3

COOLER RECEIPT FORM

PROJECT: Wenatchee Test Plot Soils USHA W.O.# —

COOLER RECEIVED ON 9-26-97 AND OPENED ON 9-26-97 BY SJiang

SJiang
(SIGNATURE)

Temperature upon receipt: cooler 2 °C
temp. blank 3 °C

1. Were custody seals on outside of cooler and intact? YES NC
   a. If YES, how many and where: 1 each left & right
   b. Were signature and date correct? YES NC
2. Were custody papers taped to lid inside cooler? YES NC
3. Were custody papers properly filled out (ink, signed, etc)? YES NC
4. Did you sign custody papers in the appropriate place? YES NC
5. Did you attach shipper's packing slip to this form? YES NC
6. What kind of packing material was used? bubble wrap
7. Was sufficient ice used (if appropriate)? YES NC
8. Were all bottles sealed in separate plastic bags? YES NC
9. Did all bottles arrive in good condition (unbroken)? YES NC
10. Were all bottle labels complete (no., date, signed, pres, etc)? YES NC
11. Did all bottle labels and tags agree with custody papers? YES NC
12. Were correct bottles used for the test indicated? YES NC
13. If present, were VOA vials checked for absence of air bubbles and noted if found? N/A YES NC
14. Adequate volume of VOA vials received per sample? N/A YES NC
15. Was sufficient amount of sample sent in each bottle? YES NC
16. Were correct preservatives used? N/A YES NC
17. Corrective action taken, if necessary:
    a. Name of person contacted: _____
    b. Date: _____

DATA DELIVERABLES PACKAGE

ORGANOPHOSPHORUS PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner 09/30/97

HIT ANY KEY TO CONTINUE

							AVE	RSD
Triphenyl Phosphate	0.240	0.224	0.243	0.230	0.229	0.209	0.229	5.3%
Dichlorvos	0.397	0.486	0.502	0.561	0.491	0.337	0.462	17.5%
Dimethoate	0.301	0.323	0.355	0.365	0.315	0.271	0.322	10.9%
Diazinon	0.330	0.410	0.443	0.501	0.501	0.391	0.429	15.5%
Disulfoton	0.494	0.468	0.437	0.387	0.382	0.581	0.458	16.3%
Paraoxon,methyl	0.404	0.492	0.473	0.465	0.384	0.380	0.433	11.3%
Parathion,methyl	0.248	0.279	0.337	0.366	0.299	0.234	0.294	17.3%
Paraoxon,ethyl	0.389	0.360	0.373	0.335	0.321	0.420	0.366	9.9%
Malathion	0.423	0.520	0.567	0.597	0.605	0.361	0.512	19.5%
Parathion	0.112	0.135	0.154	0.178	0.150	0.122	0.142	17.1%
Ethion	0.649	0.718	0.872	0.964	0.948	0.769	0.820	15.6%
Azinphos,methyl	1.483	1.534	1.475	1.378	1.206	1.439	1.419	8.2%

CONTINUING CALIBRATION DATA

Calibration Check Report

DATAFILE : P25400 ANALYSIS DATE : 09/30/97 18:17
SAMPLE : 1.0 NG/UL 8141 + CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.219	4.495	%
Dichlorvos	0.462	0.463	0.176	%
Dimethoate	0.322	0.331	2.883	%
Diazinon	0.429	0.420	2.174	%
Disulfoton	0.458	0.492	7.393	%
Paraoxon,methyl	0.433	0.434	0.148	%
Parathion,methyl	0.294	0.306	3.962	%
Paraoxon,ethyl	0.366	0.365	0.388	%
Malathion	0.512	0.521	1.724	%
Parathion	0.142	0.141	0.747	%
Ethion	0.820	0.775	5.473	%
Azinphos,methyl	1.419	1.296	8.694	%

Calibration Check Report

DATAFILE : P25426 ANALYSIS DATE : 10/01/97 06:14
SAMPLE : 1.0 NG/UL 8141 + END OF RUN CONT. CALIB.
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.231	0.771	%
Dichlorvos	0.462	0.423	8.533	%
Dimethoate	0.322	0.349	8.423	%
Diazinon	0.429	0.406	5.534	%
Disulfoton	0.458	0.501	9.285	%
Paraoxon,methyl	0.433	0.426	1.690	%
Parathion,methyl	0.294	0.291	1.097	%
Paraoxon,ethyl	0.366	0.341	6.984	%
Malathion	0.512	0.490	4.293	%
Parathion	0.142	0.133	6.306	%
Ethion	0.820	0.778	5.052	%
Azinphos,methyl	1.419	1.594	12.330	%

Calibration Check Report

DATAFILE : P25427 ANALYSIS DATE : 10/01/97 08:11
SAMPLE : 1.0 NG/UL 8141 + ICAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.241	5.290	%
Dichlorvos	0.462	0.457	1.111	%
Dimethoate	0.322	0.334	3.919	%
Diazinon	0.429	0.368	14.317	%
Disulfoton	0.458	0.470	2.679	%
Paraoxon,methyl	0.433	0.455	5.093	%
Parathion,methyl	0.294	0.298	1.397	%
Paraoxon,ethyl	0.366	0.341	7.043	%
Malathion	0.512	0.441	13.876	%
Parathion	0.142	0.133	5.856	%
Ethion	0.820	0.778	5.050	%
Azinphos,methyl	1.419	1.525	7.446	%

Calibration Check Report

DATAFILE : P25434 ANALYSIS DATE : 10/01/97 13:01
SAMPLE : 1.0 NG/UL 8141 END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

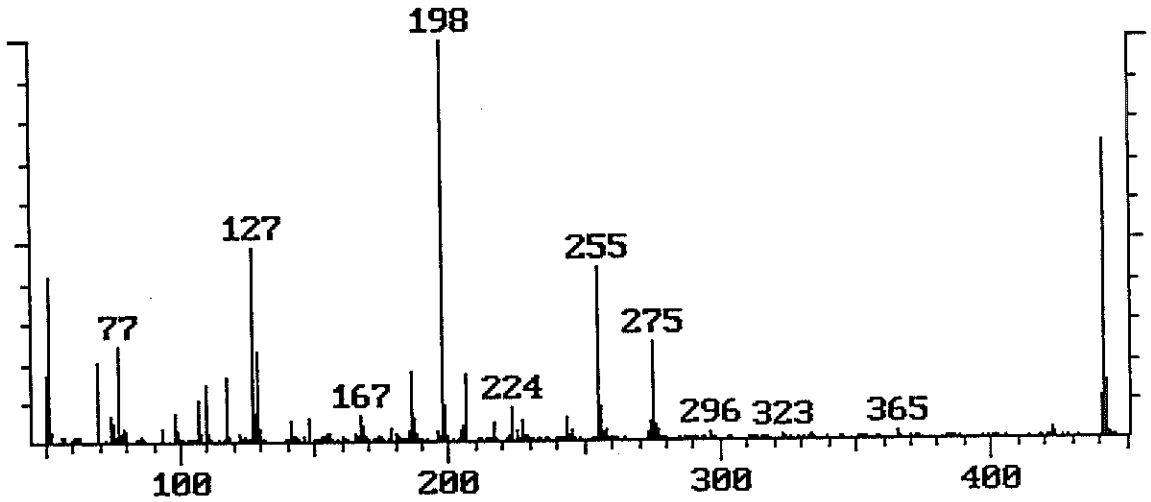
	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.222	3.128	%
Dichlorvos	0.462	0.437	5.500	%
Dimethoate	0.322	0.320	0.545	%
Diazinon	0.429	0.373	12.996	%
Disulfoton	0.458	0.465	1.592	%
Paraoxon,methyl	0.433	0.408	5.910	%
Parathion,methyl	0.294	0.289	1.754	%
Paraoxon,ethyl	0.366	0.314	14.208	%
Malathion	0.512	0.476	7.136	%
Parathion	0.142	0.133	6.558	%
Ethion	0.820	0.745	9.147	%
Azinphos,methyl	1.419	1.438	1.306	%

DFTPP TUNING DATA

Method 8270 DFTPP Report

Data File: P25392
Cali File: DFTPP

Acqu Date: 09/30/97
Acqu Time: 13:40

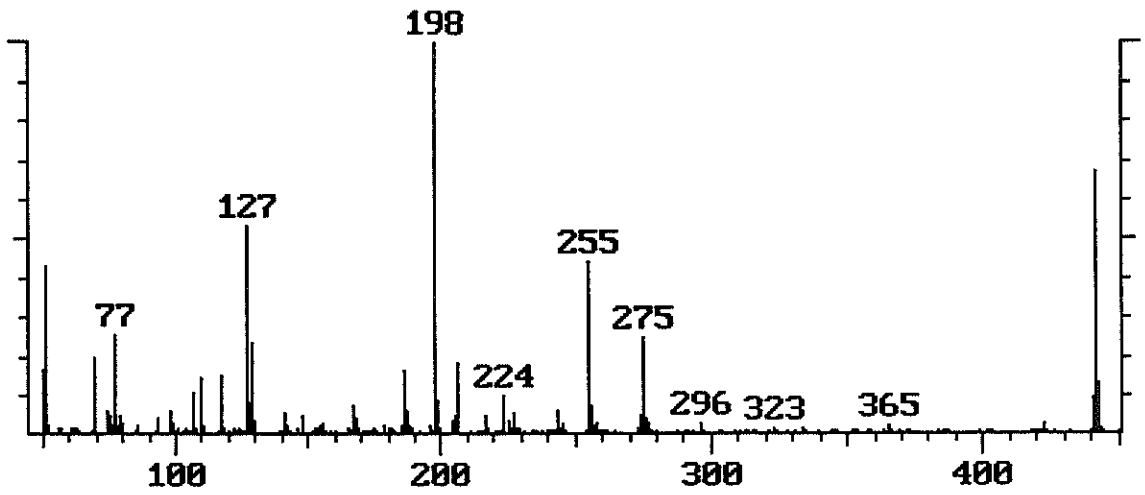


Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	41.23	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	19.90	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	48.91	Pass
197	<= 1% of Mass 198	0.73	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.66	Pass
275	10-30% of Mass 198	24.62	Pass
365	>= 1% of Mass 198	1.85	Pass
441	Exists/<= Mass 443	13.80	Pass
442	40-100% of Mass 198	74.39	Pass
443	17-23% of Mass 442	19.27	Pass

Method 8270 DFTPP Report

Data File: P25399
Cali File: DFTPP

Acqu Date: 09/30/97
Acqu Time: 17:59

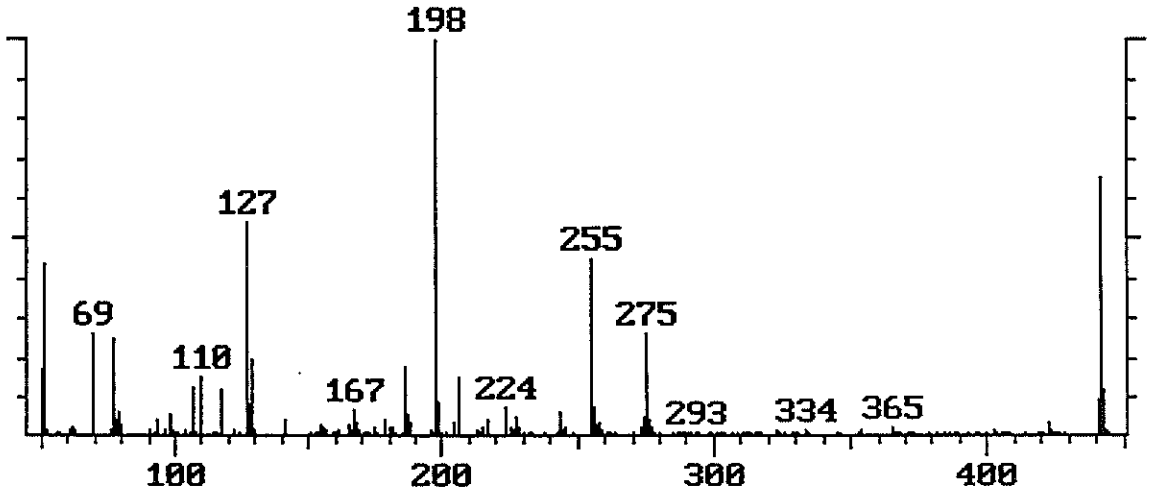


Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	42.63	Pass
68	<= 2% of Mass 69	0.66	Pass
69	Exists Only	19.31	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	53.02	Pass
197	<= 1% of Mass 198	0.47	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.39	Pass
275	10-30% of Mass 198	24.67	Pass
365	>= 1% of Mass 198	1.38	Pass
441	Exists/<= Mass 443	13.41	Pass
442	40-100% of Mass 198	66.90	Pass
443	17-23% of Mass 442	18.60	Pass

Method 8270 DFTPP Report

Data File: P25426DF
Cali File: DFTPP

Acqu Date: 10/01/97
Acqu Time: 06:52



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	43.35	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	25.59	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	53.78	Pass
197	<= 1% of Mass 198	0.21	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.20	Pass
275	10-30% of Mass 198	25.92	Pass
365	>= 1% of Mass 198	1.58	Pass
441	Exists/<= Mass 443	13.46	Pass
442	40-100% of Mass 198	65.30	Pass
443	17-23% of Mass 442	17.78	Pass

ORGANOCHLORINE PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	5845	5734	5480	5026	4791	4317	5199	1.9236E-04	541	10.4	0.9951
alpha-BHC	8600	8949	8719	8177	7853	7221	8253	1.2117E-04	585	7.1	0.9966
Lindane	8248	8397	8101	7641	7339	6697	7737	1.2925E-04	589	7.6	0.9961
Heptachlor	8444	8504	8199	7782	7393	6801	7854	1.2733E-04	608	7.7	0.9964
Aldrin	9785	8438	8112	7579	7241	6632	7965	1.2556E-04	1001	12.6	0.9963
B-BHC	3820	3184	3017	2907	2756	2573	3043	3.2866E-04	397	13.1	0.9975
D-BHC	7940	8137	8017	7562	7332	6768	7626	1.3113E-04	472	6.2	0.9971
Heptachlor Epoxide	7581	7343	7216	6812	6527	6001	6913	1.4465E-04	534	7.7	0.9966
Endosulfan-I	5835	5827	6085	5335	5443	4953	5579	1.7923E-04	377	6.8	0.9965
gamma-Chlordane	7925	7826	7263	7103	6472	6096	7114	1.4057E-04	663	9.3	0.9969
alpha-Chlordane	7031	7153	6966	6460	6241	5733	6597	1.5157E-04	504	7.6	0.9966
4,4'-DDE	6566	6623	6479	5892	5837	5315	6119	1.6343E-04	476	7.8	0.9964
Dieldrin	6469	6421	6165	5733	5534	5138	5910	1.6921E-04	484	8.2	0.9973
Endrin	4627	4640	4490	3925	3806	3683	4195	2.3836E-04	399	9.5	0.9990
4,4'-DDD	2977	3968	4105	4094	4075	3881	3850	2.5975E-04	399	10.4	0.9990
Endosulfan-II	5069	4887	4986	4721	4570	4393	4771	2.0960E-04	236	4.9	0.9991
4,4'-DDT	3709	4604	4416	4075	3999	3445	4041	2.4744E-04	393	9.7	0.9968
Endrin Aldehyde	1930	2491	2466	2311	2642	2690	2422	4.1297E-04	252	10.4	0.9982
Methox/Endo Sulfate	2656	2689	2646	2440	2353	2167	2492	4.0130E-04	190	7.6	0.9968
Endrin Ketone	4514	4832	4719	4450	4375	4213	4517	2.2138E-04	207	4.6	0.9993
Decachlorobiphenyl	4232	4320	4140	3820	3649	3467	3938	2.5394E-04	314	8.0	0.9984

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	7845	7510	7153	6684	6715	6452	7060	1.4165E-04	493	7.0	0.9994
alpha-BHC	11726	12023	11179	10746	10862	10591	11188	8.9382E-05	524	4.7	0.9997
Lindane	10778	10558	10234	9873	9894	9500	10140	9.8624E-05	435	4.3	0.9994
beta-BHC	4822	4177	4197	3975	3706	3473	4058	2.4640E-04	426	10.5	0.9972
Heptachlor	9080	9859	9441	8870	8631	8267	9025	1.1081E-04	521	5.8	0.9990
D-BHC	9481	9846	9718	9460	9657	9481	9607	1.0409E-04	144	1.5	0.9999
Aldrin	9947	10052	9743	9386	9245	8766	9523	1.0501E-04	443	4.7	0.9988
Heptachlor Epoxide	8359	8894	8652	8371	8211	7851	8390	1.1919E-04	328	3.9	0.9991
gamma-Chlordane	9455	8715	8465	8049	7890	7577	8359	1.1964E-04	615	7.4	0.9992
alpha-Chlordane	8578	8320	7924	7600	7435	7064	7820	1.2787E-04	517	6.6	0.9988
Endosulfan-I	9651	7858	7605	7156	7026	6672	7661	1.3053E-04	969	12.7	0.9989
4,4'-DDE	7603	7017	6980	6854	7066	7079	7100	1.4085E-04	237	3.3	0.9999
Dieldrin	6907	6922	6827	6665	6836	6869	6837	1.4625E-04	84	1.2	0.9999
Endrin	4748	5075	4960	4526	4542	4592	4740	2.1095E-04	211	4.5	0.9998
4,4'-DDD	4674	4588	4653	4561	4811	4818	4684	2.1350E-04	100	2.1	0.9997
Endosulfan-II	5217	5257	5332	5088	5184	5144	5204	1.9217E-04	78	1.5	0.9999
4,4'-DDT	4586	4972	5024	5029	5118	5204	4989	2.0045E-04	195	3.9	0.9998
Endrin Aldehyde	3046	3366	3378	3242	3287	3207	3254	3.0728E-04	112	3.4	0.9998
Endosulfan Sulfate	4146	4413	4446	4338	4305	4338	4331	2.3090E-04	96	2.2	1.0000
Methoxychlor	2169	2148	2166	2136	2246	2421	2214	4.5164E-04	99	4.5	0.9974
Endrin Ketone	5066	5180	5228	5165	5277	5246	5194	1.9254E-04	69	1.3	1.0000
Decachlorobiphenyl	5290	5042	4866	4516	4299	4183	4699	2.1279E-04	399	8.5	0.9992

Sample Concentration = (Linear Regression Value) x (Analyte Response)

CONTINUING CALIBRATION DATA

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 09299718
Date Analyzed: 9/29/97

DB-1701

Compound	Response (Area)
4,4'-DDE	6098
4,4'-DDD	6831
4,4'-DDT	578297
Endrin Aldehyde	10483
Endrin Ketone	20545
Endrin	264639
DDT % Breakdown	2.2%
Endrin % Breakdown	10.5%
Total % Breakdown	12.7%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	11163
4,4'-DDT	724829
Endrin Aldehyde	18849
Endrin Ketone	16627
Endrin	305774
DDT % Breakdown	1.5%
Endrin % Breakdown	10.4%
Total % Breakdown	11.9%

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299719
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	51.2	2.4%	OK
alpha-BHC	25	27.08	8.3%	OK
Lindane	25	26.84	7.4%	OK
Heptachlor	25	27.26	9.0%	OK
Aldrin	25	27.41	9.6%	OK
B-BHC	25	26.78	7.1%	OK
D-BHC	25	26.69	6.8%	OK
Heptachlor Epoxide	25	27.16	8.6%	OK
Endosulfan-I	25	26.87	7.5%	OK
gamma-Chlordane	25	27.92	11.7%	OK
alpha-Chlordane	25	27.32	9.3%	OK
4,4'-DDE	50	54.12	8.2%	OK
Dieldrin	50	55.02	10.0%	OK
Endrin	50	54.01	8.0%	OK
4,4'-DDD	50	53.56	7.1%	OK
Endosulfan-II	50	55.02	10.0%	OK
4,4'-DDT	50	54.5	9.0%	OK
Endrin Aldehyde	50	50.41	0.8%	OK
Methoxychlor	250	279.03	11.6%	OK
Endosulfan Sulfate	50	51.95	3.9%	OK
Endrin Ketone	50	55.25	10.5%	OK
Decachlorobiphenyl	100	109	9.2%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299720
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	22.02	10.1%	OK
2,4-DDD	20	21.86	9.3%	OK
2,4-DDT	20	22	11.5%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 09299732
Date Analyzed: 9/29/97

DB-1701

Compound	Response (Area)
4,4'-DDE	11741
4,4'-DDD	10947
4,4'-DDT	597646
Endrin Aldehyde	15264
Endrin Ketone	16363
Endrin	232520
DDT % Breakdown	3.7%
Endrin % Breakdown	12.0%
Total % Breakdown	15.6%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	34657
4,4'-DDT	773100
Endrin Aldehyde	17391
Endrin Ketone	15805
Endrin	265586
DDT % Breakdown	4.3%
Endrin % Breakdown	11.1%
Total % Breakdown	15.4%

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299738
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	50.76	1.5%	OK
alpha-BHC	25	26.82	7.3%	OK
Lindane	25	26.64	6.6%	OK
Heptachlor	25	26.86	7.4%	OK
Aldrin	25	27.25	9.0%	OK
B-BHC	25	26.08	4.3%	OK
D-BHC	25	26.33	5.3%	OK
Heptachlor Epoxide	25	26.88	7.5%	OK
Endosulfan-I	25	25.69	2.8%	OK
gamma-Chlordane	25	26.6	6.4%	OK
alpha-Chlordane	25	26	4.0%	OK
4,4'-DDE	50	52.83	5.7%	OK
Dieldrin	50	53.84	7.7%	OK
Endrin	50	53.56	7.1%	OK
4,4'-DDD	50	53.13	6.3%	OK
Endosulfan-II	50	51.35	2.7%	OK
4,4'-DDT	50	53.1	6.2%	OK
Endrin Aldehyde	50	45.26	9.5%	OK
Methoxychlor	250	264	5.6%	OK
Endosulfan Sulfate	50	54.65	9.3%	OK
Endrin Ketone	50	52.05	4.1%	OK
Decachlorobiphenyl	100	111	10.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299739
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	18.95	5.3%	OK
2,4-DDD	20	20.97	4.8%	OK
2,4-DDT	20	22	11.4%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 09299752
Date Analyzed: 9/29/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	6697
4,4'-DDT	533022
Endrin Aldehyde	13384
Endrin Ketone	21221
Endrin	224675
DDT % Breakdown	1.2%
Endrin % Breakdown	13.3%
Total % Breakdown	14.6%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	13383
4,4'-DDT	724477
Endrin Aldehyde	19547
Endrin Ketone	20725
Endrin	264917
DDT % Breakdown	1.8%
Endrin % Breakdown	13.2%
Total % Breakdown	15.0%

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299753
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	51.96	3.9%	OK
alpha-BHC	25	27.47	9.9%	OK
Lindane	25	27.39	9.6%	OK
Heptachlor	25	27.47	9.9%	OK
Aldrin	25	27.82	11.3%	OK
B-BHC	25	26.73	6.9%	OK
D-BHC	25	26.71	6.8%	OK
Heptachlor Epoxide	25	26.03	4.1%	OK
Endosulfan-I	25	23.73	5.1%	OK
gamma-Chlordane	25	27.09	8.4%	OK
alpha-Chlordane	25	25.75	3.0%	OK
4,4'-DDE	50	52.41	4.8%	OK
Dieldrin	50	54.16	8.3%	OK
Endrin	50	50.48	1.0%	OK
4,4'-DDD	50	50.26	0.5%	OK
Endosulfan-II	50	52.59	5.2%	OK
4,4'-DDT	50	56.72	13.4%	OK
Endrin Aldehyde	50	53	6.0%	OK
Methoxychlor	250	287.04	14.8%	OK
Endosulfan Sulfate	50	55.89	11.8%	OK
Endrin Ketone	50	52.21	4.4%	OK
Decachlorobiphenyl	100	112	12.0%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299754
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	17.5	12.5%	OK
2,4-DDD	20	20.56	2.8%	OK
2,4-DDT	20	21	7.4%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 09299759
Date Analyzed: 9/29/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	7638
4,4'-DDT	596134
Endrin Aldehyde	20635
Endrin Ketone	18757
Endrin	247824
DDT % Breakdown	1.3%
Endrin % Breakdown	13.7%
Total % Breakdown	15.0%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	16001
4,4'-DDT	821284
Endrin Aldehyde	24986
Endrin Ketone	22710
Endrin	301281
DDT % Breakdown	1.9%
Endrin % Breakdown	13.7%
Total % Breakdown	15.6%

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299760
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	52.51	5.0%	OK
alpha-BHC	25	27.25	9.0%	OK
Lindane	25	27.05	8.2%	OK
Heptachlor	25	27.11	8.4%	OK
Aldrin	25	27.64	10.6%	OK
B-BHC	25	26.59	6.4%	OK
D-BHC	25	26.78	7.1%	OK
Heptachlor Epoxide	25	25.06	0.2%	OK
Endosulfan-I	25	24.77	0.9%	OK
gamma-Chlordane	25	28.02	12.1%	OK
alpha-Chlordane	25	26.44	5.8%	OK
4,4'-DDE	50	52.72	5.4%	OK
Dieldrin	50	54.35	8.7%	OK
Endrin	50	51.42	2.8%	OK
4,4'-DDD	50	51.98	4.0%	OK
Endosulfan-II	50	52.55	5.1%	OK
4,4'-DDT	50	52.75	5.5%	OK
Endrin Aldehyde	50	49.48	1.0%	OK
Methoxychlor	250	282.33	12.9%	OK
Endosulfan Sulfate	50	55.43	10.9%	OK
Endrin Ketone	50	54.04	8.1%	OK
Decachlorobiphenyl	100	112	12.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299761
Date Analyzed: 9/29/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	22.57	12.9%	OK
2,4-DDD	20	22.13	10.7%	OK
2,4-DDT	20	22	12.1%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 09299774
Date Analyzed: 9/30/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	7005
4,4'-DDT	621197
Endrin Aldehyde	18170
Endrin Ketone	26176
Endrin	258401
DDT % Breakdown	1.1%
Endrin % Breakdown	14.6%
Total % Breakdown	15.8%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	14607
4,4'-DDT	832249
Endrin Aldehyde	27931
Endrin Ketone	20799
Endrin	311549
DDT % Breakdown	1.7%
Endrin % Breakdown	13.5%
Total % Breakdown	15.3%

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299775
Date Analyzed: 9/30/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	52.62	5.2%	OK
alpha-BHC	25	27.04	8.2%	OK
Lindane	25	26.87	7.5%	OK
Heptachlor	25	27.14	8.6%	OK
Aldrin	25	27.16	8.6%	OK
B-BHC	25	26.23	4.9%	OK
D-BHC	25	25.91	3.6%	OK
Heptachlor Epoxide	25	26.51	6.0%	OK
Endosulfan-I	25	27.34	9.4%	OK
gamma-Chlordane	25	26.48	5.9%	OK
alpha-Chlordane	25	26.57	6.3%	OK
4,4'-DDE	50	53.1	6.2%	OK
Dieldrin	50	54.28	8.6%	OK
Endrin	50	51.24	2.5%	OK
4,4'-DDD	50	52.58	5.2%	OK
Endosulfan-II	50	54.12	8.2%	OK
4,4'-DDT	50	56.08	12.2%	OK
Endrin Aldehyde	50	53.11	6.2%	OK
Methoxychlor	250	273.96	9.6%	OK
Endosulfan Sulfate	50	53.74	7.5%	OK
Endrin Ketone	50	53.15	6.3%	OK
Decachlorobiphenyl	100	106	5.9%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299776
Date Analyzed: 9/30/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	21.51	7.6%	OK
2,4-DDD	20	20.4	2.0%	OK
2,4-DDT	20	22	8.0%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 09299788
Date Analyzed: 9/30/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	6637
4,4'-DDT	627677
Endrin Aldehyde	21176
Endrin Ketone	16925
Endrin	261392
DDT % Breakdown	1.0%
Endrin % Breakdown	12.7%
Total % Breakdown	13.8%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	13380
4,4'-DDT	855652
Endrin Aldehyde	31829
Endrin Ketone	23574
Endrin	318058
DDT % Breakdown	1.5%
Endrin % Breakdown	14.8%
Total % Breakdown	16.4%

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299789
Date Analyzed: 9/30/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	51	2.0%	OK
alpha-BHC	25	27.14	8.6%	OK
Lindane	25	27.05	8.2%	OK
Heptachlor	25	27.58	10.3%	OK
Aldrin	25	27.49	10.0%	OK
B-BHC	25	26.66	6.6%	OK
D-BHC	25	26.37	5.5%	OK
Heptachlor Epoxide	25	28.61	14.4%	OK
Endosulfan-I	25	27.18	8.7%	OK
gamma-Chlordane	25	28.02	12.1%	OK
alpha-Chlordane	25	27.43	9.7%	OK
4,4'-DDE	50	55.05	10.1%	OK
Dieldrin	50	56.13	12.3%	OK
Endrin	50	53.75	7.5%	OK
4,4'-DDD	50	54.45	8.9%	OK
Endosulfan-II	50	56.67	13.3%	OK
4,4'-DDT	50	55.87	11.7%	OK
Endrin Aldehyde	50	49.55	0.9%	OK
Methoxychlor	250	274.96	10.0%	OK
Endosulfan Sulfate	50	56.77	13.5%	OK
Endrin Ketone	50	56.53	13.1%	OK
Decachlorobiphenyl	100	111	11.4%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 09299790
Date Analyzed: 9/30/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	21.86	9.3%	OK
2,4-DDD	20	21.36	6.8%	OK
2,4-DDT	20	22	10.4%	OK

MEMORANDUM

DATE: December 11, 1997

TO: Fred Luck, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Characterization Sampling September 24, 1997
Sound Analytical Reports #67763

Analytical Methods:

- Method 8081 for Organochlorine Pesticides
- Method 8141 for Organophosphorus Pesticides, Modified for GC/MS

Data Use Intended:

Characterization Samples - Step 1 (from grid and depth estimated to be closest to the regulatory limit):

- To establish the excavation depths needed.
- To establish correlation with the immunoassay field screening results for subsequent use.

Summary of Qualified and Rejected Data:

- No soil data were rejected due to quality control problems.
- The laboratory control sample results for 2,4'-DDE, 2,4'-DDD, and 2,4'-DDT were consistently below the project targets and were mostly acceptable in the matrix spike samples (yet relatively low). This problem is not deemed to be a significant indication of bias, but a "J" has been applied to indicate use with caution. These 2,4' isomers tend to be less than 25% of the total concentration of the family of 4,4' and 2,4' isomers. The impact on decisions is relatively small.
- Some results were below the quantitation limit and were flagged with "J" qualifiers. "C" flags were used to indicate that second-column confirmation had confirmed the results (4,4'-DDD and 2,4'-DDT cannot be confirmed when both are present). "U" qualifiers were not used for undetected results, rather "ND" was placed in the quantitative value data field.

Summary of Method 8081 Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 24, 1997: C1A1924145, C1A2924146, C2A1924139, C2A2924140, C3C5924110, C3C6924111, C4B1924118, C4B2924119, C5C4924743, C5C5924744, C5C6924745, C6B2924754, C6B2924755 (field duplicate), C6B3924756, C6B3924757 (field duplicate), C7C2924727, C7C3924729, C8B4924749, C8B5924750, C8B6924751, C9A292472, C9A392473.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated in this delivery group.**

- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration (Initial and Continuing) - **Acceptable.**
  DDT and Endrin Breakdown Standards - **Acceptable.** The laboratory reported a nonconformance for some analytical runs, but this QC parameter was within the project specifications.
  Second Column Confirmation - **Acceptable.**
  Surrogates - **Acceptable**. However, one of two surrogates in samples C4B1924118, C3C5924110, C3C6924111 were outside of limits due to matrix interference and sample quantitations were not affected. C8B5924750-MS showed slightly low recovery, but most other accuracy indicators in that sample were acceptable. Surrogates in sample C7C2924727 were not reportable due to dilution of the sample.
  Matrix Spikes - **Acceptable.** High analyte concentrations caused nonconformances for 4,4'-DDE. No corrective action was necessary. The laboratory control sample results were acceptable. The matrix spike C8B5924750-MS showed slightly low recovery for the 2,4'-isomers (2,4'-DDE was outside of limits). This is likely the result of differences in sources of standards as opposed to poor method performance. A "J" flag has been applied to the analytical results for the 2,4' isomers.
  Laboratory Control Samples (LCS) - **Acceptable except for aldrin and 2,4' isomers.** No corrective action for aldrin was warranted because this analyte was not found in samples and the matrix spikes were acceptable.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Acceptable.**

Summary of Method 8141 (Modified) Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 24, 1997: C2A1924139, C2A2924140, C3C5924110, C3C6924111, C4B1924118, C4B2924119, C5C4924743, C5C5924744, C5C6924745, C6B2924754, C6B2924755 (field duplicate), C6B3924756, C6B3924757 (field duplicate), C7C2924727, C7C3924729, C8B4924749, C8B5924750, C8B6924751.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated in this delivery group.**
- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration, Tune, and Internal Standard Response- **Acceptable.**
  Surrogates - **Acceptable.**
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable.**
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**

- Field Precision - **Acceptable.**

Summary of Data Comparability, Representativeness, and Completeness

- **Field Sampling Issues** - No significant problems were encountered. These samples were extracted from segmented push-sample cores. Some compression of soil was recognized during sampling. Each three-foot core was divided equally to compensate for the compression. Core locations were based on visual cues from remnants of the experiments left on the surface.
- **Data Completeness** - The data completeness was 100% for this phase of work.

Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project except as noted. A "J" flag has been applied to indicate use with caution for 2,4' isomers of DDE, DDD, and DDT. These tend to be less than 25% of the total concentration of the family of 4,4' and 2,4' isomers. The impact on decisions is relatively small.

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

TRANSMITTAL MEMORANDUM

DATE: October 27, 1997

TO: Mike Webb
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

PROJECT: Wenatchee Test Plot Soils, USACOE

REPORT NUMBER: 67763

Enclosed are the test results for twenty-nine samples received at Sound Analytical Services on September 29, 1997.

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

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Lila A Transue

Lila Transue
Project Manager

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc.

Date: October 27, 1997

Project: Wenatchee Test Plot Soils, USACOE

Lab No.: 67763

Delivered By: Delivered by Submitter

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix	Description
67763-1	C1A1924145	09-24-97	solid	Dry, brown, fine sand
67763-2	C1A2924146	09-24-97	solid	Dry, brown, fine sand
67763-3	C2A1924139	09-24-97	solid	Dry, grey brown, fine silt
67763-4	C2A2924140	09-24-97	solid	Dry, brown, fine silt
67763-5	C4B1924118	09-24-97	solid	Dry, brown, fine silt
67763-6	C4B2924119	09-24-97	solid	Dry, brown, fine silt
67763-7	C6B2924754	09-24-97	solid	Dry, brown, fine silt
67763-8	C6B2924755	09-24-97	solid	Dry, brown, fine silt
67763-9	C6B3924756	09-24-97	solid	Dry, brown, fine silt
67763-10	C6B3924757	09-24-97	solid	Dry, brown, fine silt
67763-11	C9A292472	09-24-97	solid	Dry, brown, fine sand
67763-12	C9A392473	09-24-97	solid	Dry, brown, fine sand
67763-13	C7C2924727	09-24-97	solid	Dry, brown, fine silt
67763-14	C7C3924729	09-24-97	solid	Dry, brown, fine silt
67763-15	C8B5924750	09-24-97	solid	Dry, light brown, fine sand
67763-16	C8B6924751	09-24-97	solid	
67763-17	C5C5924744	09-24-97	solid	Dry, light brown, fine sand
67763-18	C5C6924745	09-24-97	solid	Dry, light brown, fine sand
67763-23	C3C5924110	09-24-97	solid	Dry, light brown, fine sand
67763-24	C3C6924111	09-24-97	solid	Dry, light brown, fine sand

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 27, 1997

Project: Wenatchee Test Plot Soils, USACOE Lab No.: 67763

Sample Identification, Continued:

Lab. No.	Client ID	Date Sampled	Matrix	Description
67763-27	C8B4924749	09-24-97	solid	Dry, light brown, fine sand
67763-28	C5C4924743	09-24-97	solid	Dry, light brown, fine sand

SAMPLE EXTRACTION AND ANALYSIS

ORGANOPHOSPHORUS PESTICIDES

Samples 67763-3 through 67763-10, 67763-13 through 67763-15, 67763-17, 67763-18, 67763-23, 67763-24, 67763-27 and 67763-28 were analyzed for organophosphorus pesticides in accordance with EPA SW-846 Method 8141. The samples were extracted in accordance with EPA SW-846 Method 3540 on 9-30-97 and 10-01-97 and analyzed on 10-01-97 and 10-02-97.

All quality control parameters were within acceptance limits.

ORGANOCHLORINE PESTICIDES

Samples 67763-1 through 67763-15, 67763-17, 67763-18, 67763-23, 67763-24, 67763-27 and 67763-28 were analyzed for organochlorine pesticides in accordance with EPA Method 8081. The samples were extracted on 9-30-97 and 10-01-97 and analyzed on 10-01-97 and 10-02-97.

Several of the reported values in samples 67763-1, 67763-3, 67763-4, 67763-5, 67763-7 through 67763-11, 67763-18, 67763-23, 67763-27 and 67763-28 are based on secondary dilution.

The percent recoveries for decachlorobiphenyl (surrogate) in samples 67763-5, 67763-23, and 67763-24 fell outside of the quality control limits due to matrix interferences.

The percent recovery for TCMX (surrogate) in the matrix spike analysis for sample 67763-15 was outside project-specified QC limits. No action was taken based on the outlier, as the sample and matrix spike duplicate recoveries for TCMX were within acceptance limits.

The percent recoveries for TCMX and decachlorobiphenyl (surrogates) in sample 67762-13 were not determined due to the required dilution.

The percent recoveries for aldrin, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT in the blank spike analysis associated with samples 67763-1 through 67763-14 were slightly outside project-specified QC limits. No action was taken based on these outliers, as the matrix spike recoveries for these analytes were within acceptance limits.

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 27, 1997

Project: Wenatchee Test Plot Soils, USACOE Lab No.: 67763

ORGANOCHLORINE PESTICIDES, Continued

The percent recoveries for , 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT in the blank spike analysis associated with samples 67763-15, 67763-17, 67763-18, 67763-23, 67763-24, 67763-27, and 67763-28 were slightly outside project-specified QC limits. No action was taken based on these outliers, as the matrix spike recoveries for these analytes were within acceptance limits.

The percent recoveries for 4,4'-DDD and 4,4'-DDT in the matrix spike and matrix spike duplicate analysis for sample 67763-10 fell out side of the quality control limits due to high contaminant levels in the original sample.

All detected compounds were confirmed as present using a second dissimilar column. All relative percent difference values were less than or equal to 40%, except for 4,4'-DDD, which coelutes with 2,4'-DDT on the confirmation column, as most samples that contained 4,4'-DDD contained significant concentrations of 2,4'-DDT.

All other quality control parameters were within acceptance limits

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2A1924139
Lab ID:	67763-03
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	80		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	79	
Dimethoate	ND	87	49	
Diazinon	ND	69	69	
Disulfoton	ND	63	41	
Parathion,methyl	ND	78	70	
Malathion	ND	83	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	85	58	
Ethion	ND	81	41	
Paraoxon,methyl	ND	81	41	
Paraoxon,ethyl	ND	81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2A2924140
Lab ID:	67763-04
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	96.37
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	84		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	83	
Dimethoate	ND	92	51	
Diazinon	ND	73	72	
Disulfoton	ND	66	43	
Parathion,methyl	ND	82	73	
Malathion	ND	87	62	
Parathion	ND	120	110	
Azinphos,methyl	ND	89	61	
Ethion	ND	86	43	
Paraoxon,methyl	ND	86	43	
Paraoxon,ethyl	ND	86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4B1924118
Lab ID:	67763-05
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.64
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	77	
Dimethoate	ND	86	48	
Diazinon	ND	68	68	
Disulfoton	ND	62	41	
Parathion,methyl	ND	77	69	
Malathion	ND	81	58	
Parathion	ND	110	110	
Azinphos,methyl	ND	83	57	
Ethion	ND	80	40	
Paraoxon,methyl	ND	80	40	
Paraoxon,ethyl	ND	80	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4B2924119
Lab ID:	67763-06
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.13
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	81	
Dimethoate	ND		89	50	
Diazinon	ND		71	70	
Disulfoton		1600	64	42	
Parathion,methyl	ND		80	71	
Malathion	ND		85	60	
Parathion	ND		120	110	
Azinphos,methyl	ND		87	59	
Ethion	ND		83	42	
Paraoxon,methyl	ND		83	42	
Paraoxon,ethyl	ND		83	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B2924754
Lab ID:	67763-07
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.15
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	82	
Dimethoate	ND		91	50	
Diazinon	ND		72	71	
Disulfoton		1600	65	43	
Parathion,methyl	ND		81	72	
Malathion	ND		86	61	
Parathion	ND		120	110	
Azinphos,methyl	ND		88	60	
Ethion	ND		85	42	
Paraoxon,methyl	ND		85	42	
Paraoxon,ethyl	ND		85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B2924755
Lab ID:	67763-08
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.25
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	112		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	78	
Dimethoate	ND		87	48	
Diazinon	ND		69	68	
Disulfoton		1600	62	41	
Parathion,methyl	ND		77	69	
Malathion	ND		82	58	
Parathion	ND		110	110	
Azinphos,methyl	ND		84	57	
Ethion	ND		81	40	
Paraoxon,methyl	ND		81	40	
Paraoxon,ethyl	ND		81	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924756
Lab ID:	67763-09
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.55
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	77	
Dimethoate	ND	85	47	
Diazinon	ND	68	67	
Disulfoton	44	61	40	J
Parathion,methyl	ND	76	68	
Malathion	ND	81	57	
Parathion	ND	110	110	
Azinphos,methyl	ND	82	56	
Ethion	ND	79	40	
Paraoxon,methyl	ND	79	40	
Paraoxon,ethyl	ND	79	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924757
Lab ID:	67763-10
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.56
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	80	
Dimethoate	ND		89	50	
Diazinon	ND		71	70	
Disulfoton		48	64	42	J
Parathion,methyl	ND		80	71	
Malathion	ND		84	60	
Parathion	ND		110	110	
Azinphos,methyl	ND		86	59	
Ethion	ND		83	42	
Paraoxon,methyl	ND		83	42	
Paraoxon,ethyl	ND		83	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7C2924727
Lab ID:	67763-13
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/2/97
% Solids	97.11
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	86		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	79	
Dimethoate	ND		88	49	
Diazinon	ND		70	69	
Disulfoton	ND		63	41	
Parathion,methyl	ND		78	70	
Malathion	ND		83	59	
Parathion	ND		110	110	
Azinphos,methyl	ND		85	58	
Ethion		2000	82	41	
Paraoxon,methyl	ND		82	41	
Paraoxon,ethyl	ND		82	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7C3924729
Lab ID:	67763-14
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/2/97
% Solids	97.15
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	83		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	78	
Dimethoate	ND		87	48	
Diazinon	ND		69	68	
Disulfoton	ND		63	41	
Parathion,methyl	ND		78	69	
Malathion	ND		82	59	
Parathion	ND		110	110	
Azinphos,methyl	ND		84	58	
Ethion		94	81	41	
Paraoxon,methyl	ND		81	41	
Paraoxon,ethyl	ND		81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B5924750
Lab ID:	67763-15
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.38
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	97		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	83	
Dimethoate	ND	92	51	
Diazinon	ND	73	72	
Disulfoton	ND	66	43	
Parathion,methyl	ND	82	73	
Malathion	ND	87	62	
Parathion	ND	120	120	
Azinphos,methyl	ND	89	61	
Ethion	ND	86	43	
Paraoxon,methyl	ND	86	43	
Paraoxon,ethyl	ND	86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5C5924744
Lab ID:	67763-17
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.78
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	92		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	82	
Dimethoate	ND	91	51	
Diazinon	ND	72	72	
Disulfoton	ND	65	43	
Parathion,methyl	ND	81	73	
Malathion	ND	86	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	88	60	
Ethion	ND	85	42	
Paraoxon,methyl	ND	85	42	
Paraoxon,ethyl	ND	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5C6924745
Lab ID:	67763-18
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	97.13
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	122		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	82	
Dimethoate	ND	90	50	
Diazinon	ND	72	71	
Disulfoton	ND	65	43	
Parathion,methyl	ND	81	72	
Malathion	ND	86	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	88	60	
Ethion	ND	84	42	
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3C5924110
Lab ID:	67763-23
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.58
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	96		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	82	
Dimethoate	ND	91	51	
Diazinon	ND	72	72	
Disulfoton	ND	65	43	
Parathion,methyl	ND	81	73	
Malathion	ND	86	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	88	60	
Ethion	ND	85	42	
Paraoxon,methyl	ND	85	42	
Paraoxon,ethyl	ND	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3C6924111
Lab ID:	67763-24
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.02
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	85		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	90	50	
Diazinon	ND	71	71	
Disulfoton	ND	65	42	
Parathion,methyl	ND	80	72	
Malathion	ND	85	60	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	59	
Ethion	ND	84	42	
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B4924749
Lab ID:	67763-27
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.85
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	105		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		130	78	
Dimethoate	ND		87	48	
Diazinon	ND		69	68	
Disulfoton	ND		63	41	
Parathion,methyl	ND		78	69	
Malathion	ND		82	59	
Parathion	ND		110	110	
Azinphos,methyl		350	84	58	
Ethion	ND		81	41	
Paraoxon,methyl	ND		81	41	
Paraoxon,ethyl	ND		81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5C4924743
Lab ID:	67763-28
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	97.31
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	83		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)		PQL	MDL	Flags
Dichlorvos	ND		130	81	
Dimethoate	ND		90	50	
Diazinon	ND		71	71	
Disulfoton	ND		65	42	
Parathion,methyl		110	80	72	
Malathion	ND		85	60	
Parathion	ND		120	110	
Azinphos,methyl	ND		87	59	
Ethion	ND		84	42	
Paraoxon,methyl	ND		84	42	
Paraoxon,ethyl	ND		84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C1A1924145
Lab ID:	67763-01
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	96.9
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	87		63	149
Decachlorobiphenyl	117		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.3	2	
4,4'-DDD		21	17	0.14	C
4,4'-DDE		4300	830	15	D C
4,4'-DDT		1900	830	52	D C
2,4'-DDD		37	17	1.2	C J
2,4'-DDE		66	17	1.2	C J
2,4'-DDT		590	330	62	D C J
Dieldrin		43	0.83	0.059	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II		18	1.7	0.14	C
Endosulfan sulfate	ND		1.7	0.2	
Endrin		15	0.83	0.1	C
Endrin aldehyde	ND		17	0.74	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor		36	17	1.9	C
Toxaphene	ND		17	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C1A2924146
Lab ID:	67763-02
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.13
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	79		63	149
Decachlorobiphenyl	98		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**	
Aldrin	ND		0.4	0.06		
alpha-BHC	ND		16	0.062		
beta-BHC	ND		16	0.11		
delta-BHC	ND		16	0.063		
gamma-BHC (Lindane)	ND		16	0.14		
Chlordane (technical)	ND		8	2		
4,4'-DDD	ND		16	0.14		
4,4'-DDE		260	80	1.4	C	
4,4'-DDT		60	16	1	C	
2,4'-DDD	ND		16	1.2		UJ
2,4'-DDE		3.6	16	1.2	J C	J
2,4'-DDT		24	16	1.2	C	J
Dieldrin	ND		0.8	0.057		
Endosulfan I	ND		1.6	0.26		
Endosulfan II	ND		1.6	0.13		
Endosulfan sulfate	ND		1.6	0.19		
Endrin	ND		0.8	0.097		
Endrin aldehyde	ND		16	0.72		
Heptachlor	ND		16	0.082		
Heptachlor epoxide	ND		16	0.13		
Methoxychlor	ND		16	1.8		
Toxaphene	ND		16	35		

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2A1924139
Lab ID:	67763-03
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	80		63	149
Decachlorobiphenyl	121		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.41	0.061	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.064	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.1	2	
4,4'-DDD		24	16	0.14	C
4,4'-DDE		5000	810	15	D C
4,4'-DDT		2600	810	51	D C
2,4'-DDD		46	16	1.2	C
2,4'-DDE		65	16	1.2	C
2,4'-DDT		780	330	61	D C
Dieldrin		130	41	2.9	D C
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.14	
Endosulfan sulfate	ND		1.6	0.2	
Endrin		30	0.81	0.099	C
Endrin aldehyde		18	16	0.73	C
Heptachlor	ND		16	0.083	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor		38	16	1.8	C
Toxaphene	ND		16	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2A2924140
Lab ID:	67763-04
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	96.37
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	73		63	149
Decachlorobiphenyl	96		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**	
Aldrin	ND		0.43	0.064		
alpha-BHC	ND		17	0.066		
beta-BHC	ND		17	0.12		
delta-BHC	ND		17	0.067		
gamma-BHC (Lindane)	ND		17	0.15		
Chlordane (technical)	ND		8.6	2.1		
4,4'-DDD	ND		17	0.15		
4,4'-DDE		320	86	1.5	D C	
4,4'-DDT		56	17	1.1	C	
2,4'-DDD	ND		17	1.3		UJ
2,4'-DDE		2.5	17	1.3	J C	J
2,4'-DDT		17	17	1.3	J C	J
Dieldrin		74	0.86	0.061	C	
Endosulfan I	ND		1.7	0.28		
Endosulfan II	ND		1.7	0.14		
Endosulfan sulfate	ND		1.7	0.21		
Endrin	ND		0.86	0.1		
Endrin aldehyde	ND		17	0.76		
Heptachlor	ND		17	0.087		
Heptachlor epoxide	ND		17	0.14		
Methoxychlor	ND		17	1.9		
Toxaphene	ND		17	37		

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4B1924118
Lab ID:	67763-05
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.64
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	74		63	149
Decachlorobiphenyl	188	X9	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.4	0.06	
alpha-BHC		0.84	16	0.061	J C
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.063	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8	2	
4,4'-DDD		22	16	0.14	C
4,4'-DDE		710	320	5.8	D C
4,4'-DDT		2600	800	50	D C
2,4'-DDD		20	16	1.2	
2,4'-DDE		16	16	1.2	C
2,4'-DDT		310	160	60	D C
Dieldrin		79	0.8	0.057	C
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.19	
Endrin		26	0.8	0.097	C
Endrin aldehyde		18	16	0.71	C
Heptachlor	ND		16	0.082	
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4B2924119
Lab ID:	67763-06
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.13
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	72		63	149
Decachlorobiphenyl	133		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.3	2	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		30	17	0.3	C
4,4'-DDT		24	17	1	C
2,4'-DDD	ND		17	1.2	UJ
2,4'-DDE	ND		17	1.2	UJ
2,4'-DDT		9.3	17	1.2	J C
Dieldrin		2.9	0.83	0.059	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.83	0.1	
Endrin aldehyde	ND		17	0.74	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B2924754
Lab ID:	67763-07
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.15
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	72		63	149
Decachlorobiphenyl	104		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.5	2.1	
4,4'-DDD		34	17	0.14	C
4,4'-DDE		2100	850	15	D C
4,4'-DDT		2400	850	53	D C
2,4'-DDD		42	17	1.3	C
2,4'-DDE		73	17	1.3	C
2,4'-DDT		540	340	63	C
Dieldrin		110	0.85	0.06	C
Endosulfan I		610	85	14	D C
Endosulfan II		340	85	7	D C
Endosulfan sulfate	ND		1.7	0.2	
Endrin		11	0.85	0.1	C
Endrin aldehyde		21	17	0.75	C
Heptachlor	ND		17	0.086	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B2924755
Lab ID:	67763-08
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.25
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	71		63	149
Decachlorobiphenyl	85		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.4	0.06	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.063	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.1	2	
4,4'-DDD		36	16	0.14	C
4,4'-DDE		2500	810	15	D C
4,4'-DDT		2900	810	51	D C
2,4'-DDD		80	16	1.2	C J
2,4'-DDE		42	16	1.2	C J
2,4'-DDT		720	320	61	C J M.W. 12-11-
Dieldrin		100	0.81	0.058	C
Endosulfan I		640	81	13	D C
Endosulfan II		340	81	6.7	D C
Endosulfan sulfate	ND		1.6	0.2	
Endrin		11	0.81	0.098	C
Endrin aldehyde		20	16	0.72	C
Heptachlor	ND		16	0.082	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924756
Lab ID:	67763-09
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.55
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	68		63	149
Decachlorobiphenyl	83		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.4	0.059	
alpha-BHC	ND		16	0.061	
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.062	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		7.9	2	
4,4'-DDD	ND		16	0.13	
4,4'-DDE		1700	790	14	D C
4,4'-DDT		200	160	50	D C
2,4'-DDD		7.2	16	1.2	J C
2,4'-DDE		11	16	1.2	J C
2,4'-DDT		2.1	16	1.2	J C
Dieldrin		17	0.79	0.057	C
Endosulfan I		7.3	1.6	0.26	C
Endosulfan II		5	1.6	0.13	C
Endosulfan sulfate	ND		1.6	0.19	
Endrin	ND		0.79	0.096	
Endrin aldehyde	ND		16	0.71	
Heptachlor	ND		16	0.081	
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924757
Lab ID:	67763-10
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.56
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	72		63	149
Decachlorobiphenyl	90		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.3	2	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		210	170	15	D C
4,4'-DDT		250	170	52	D C
2,4'-DDD		6.8	17	1.2	J C
2,4'-DDE		13	17	1.2	J C
2,4'-DDT		55	17	1.2	C
Dieldrin	ND		0.83	0.059	
Endosulfan I		11	1.7	0.27	C
Endosulfan II		4.8	1.7	0.14	C
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.83	0.1	
Endrin aldehyde	ND		17	0.74	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.8	
Toxaphene	ND		17	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C9A292472
Lab ID:	67763-11
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/2/97
% Solids	97.38
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	79		63	149
Decachlorobiphenyl	111		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags	
Aldrin	ND		0.41	0.061		
alpha-BHC	ND		16	0.063		
beta-BHC	ND		16	0.12		
delta-BHC	ND		16	0.064		
gamma-BHC (Lindane)	ND		16	0.14		
Chlordane (technical)	ND		8.2	2		
4,4'-DDD		28	16	0.14	C	
4,4'-DDE		5500	820	15	D C	
4,4'-DDT		3000	820	52	D C	
2,4'-DDD		83	16	1.2	C	J m.
2,4'-DDE		120	330	62	J D C	J
2,4'-DDT		960	330	62	D C	J
Dieldrin		27	0.82	0.059	C	
Endosulfan I	ND		1.6	0.27		
Endosulfan II		16	1.6	0.14	C	
Endosulfan sulfate	ND		1.6	0.2		
Endrin		21	0.82	0.099	C	
Endrin aldehyde		14	16	0.73	J C	
Heptachlor	ND		16	0.084		
Heptachlor epoxide	ND		16	0.14		
Methoxychlor		44	16	1.8	C	
Toxaphene	ND		16	36		

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C9A392473
Lab ID:	67763-12
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/2/97
% Solids	96.35
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	77		63	149
Decachlorobiphenyl	97		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.41	0.061	
alpha-BHC	ND		16	0.063	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.064	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.2	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		87	16	0.3	C
4,4'-DDT		8.6	16	1	J C
2,4'-DDD	ND		16	1.2	UJ m.
2,4'-DDE	ND		16	1.2	UJ 12
2,4'-DDT		4.9	16	1.2	J C J
Dieldrin	ND		0.82	0.059	
Endosulfan I	ND		1.6	0.27	
Endosulfan II	ND		1.6	0.14	
Endosulfan sulfate	ND		1.6	0.2	
Endrin	ND		0.82	0.099	
Endrin aldehyde	ND		16	0.73	
Heptachlor	ND		16	0.084	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7C2924727
Lab ID:	67763-13
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/2/97
% Solids	97.11
Dilution Factor	50

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		20	3	
alpha-BHC	ND		820	3.1	
beta-BHC	ND		820	5.8	
delta-BHC	ND		820	3.2	
gamma-BHC (Lindane)	ND		820	7.1	
Chlordane (technical)	ND		410	100	
4,4'-DDD		1200	820	6.9	C
4,4'-DDE		1200	820	15	C
4,4'-DDT		630	820	51	J C
2,4'-DDD	ND		820	61	UJ m.
2,4'-DDE	ND		820	61	UJ 12
2,4'-DDT		190	820	61	J C J
Dieldrin		240	41	2.9	C
Endosulfan I		500	82	13	C
Endosulfan II		450	82	6.8	C
Endosulfan sulfate	ND		82	9.9	
Endrin	ND		41	5	
Endrin aldehyde	ND		820	36	
Heptachlor	ND		820	4.2	
Heptachlor epoxide	ND		820	6.8	
Methoxychlor	ND		820	91	
Toxaphene	ND		820	1800	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7C3924729
Lab ID:	67763-14
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/2/97
% Solids	97.15
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	91		63	149
Decachlorobiphenyl	107		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.41	0.06	
alpha-BHC	ND	16	0.062	
beta-BHC	ND	16	0.12	
delta-BHC	ND	16	0.063	
gamma-BHC (Lindane)	ND	16	0.14	
Chlordane (technical)	ND	8.1	2	
4,4'-DDD	38	16	0.14	C
4,4'-DDE	43	16	0.29	C
4,4'-DDT	21	16	1	C
2,4'-DDD	ND	16	1.2	
2,4'-DDE	ND	16	1.2	
2,4'-DDT	5.5	16	1.2	J C
Dieldrin	ND	0.81	0.058	
Endosulfan I	ND	1.6	0.26	
Endosulfan II	ND	1.6	0.13	
Endosulfan sulfate	ND	1.6	0.2	
Endrin	ND	0.81	0.098	
Endrin aldehyde	ND	16	0.72	
Heptachlor	ND	16	0.083	
Heptachlor epoxide	ND	16	0.14	
Methoxychlor	ND	16	1.8	
Toxaphene	ND	16	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B5924750
Lab ID:	67763-15
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.38
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	75		63	149
Decachlorobiphenyl	100		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.43	0.064	
alpha-BHC	ND	17	0.066	
beta-BHC	ND	17	0.12	
delta-BHC	ND	17	0.067	
gamma-BHC (Lindane)	ND	17	0.15	
Chlordane (technical)	ND	8.6	2.1	
4,4'-DDD	ND	17	0.15	
4,4'-DDE	ND	17	0.31	
4,4'-DDT	11	17	1.1	J C
2,4'-DDD	ND	17	1.3	UJ M.
2,4'-DDE	ND	17	1.3	UJ M.
2,4'-DDT	2.3	17	1.3	J C J
Dieldrin	ND	0.86	0.061	
Endosulfan I	ND	1.7	0.28	
Endosulfan II	ND	1.7	0.14	
Endosulfan sulfate	ND	1.7	0.21	
Endrin	ND	0.86	0.1	
Endrin aldehyde	ND	17	0.77	
Heptachlor	ND	17	0.087	
Heptachlor epoxide	ND	17	0.14	
Methoxychlor	ND	17	1.9	
Toxaphene	ND	17	38	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5C5924744
Lab ID:	67763-17
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.78
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	79		63	149
Decachlorobiphenyl	101		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.42	0.063	
alpha-BHC	ND	17	0.065	
beta-BHC	ND	17	0.12	
delta-BHC	ND	17	0.066	
gamma-BHC (Lindane)	ND	17	0.15	
Chlordane (technical)	ND	8.5	2.1	
4,4'-DDD	3	17	0.14	J C
4,4'-DDE	26	17	0.31	C
4,4'-DDT	55	17	1.1	C
2,4'-DDD	4.5	17	1.3	J C J m.i
2,4'-DDE	ND	17	1.3	4J 12.
2,4'-DDT	10	17	1.3	J C J
Dieldrin	ND	0.85	0.06	
Endosulfan I	10	1.7	0.27	C
Endosulfan II	7.4	1.7	0.14	C
Endosulfan sulfate	ND	1.7	0.21	
Endrin	3.9	0.85	0.1	C
Endrin aldehyde	3.7	17	0.76	J C
Heptachlor	ND	17	0.087	
Heptachlor epoxide	ND	17	0.14	
Methoxychlor	ND	17	1.9	
Toxaphene	ND	17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5C6924745
Lab ID:	67763-18
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	97.13
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	65		63	149
Decachlorobiphenyl	89		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.42	0.063	
alpha-BHC	ND	17	0.065	
beta-BHC	ND	17	0.12	
delta-BHC	ND	17	0.066	
gamma-BHC (Lindane)	ND	17	0.15	
Chlordane (technical)	ND	8.4	2.1	
4,4'-DDD	5.1	17	0.14	J C
4,4'-DDE	170	84	6.1	D C
4,4'-DDT	250	84	21	D C
2,4'-DDD	2.9	17	1.3	J C J
2,4'-DDE	27	17	1.3	C J
2,4'-DDT	57	17	1.3	C J m
Dieldrin	62	0.84	0.06	C 12
Endosulfan I	1300	34	5.5	D C
Endosulfan II	1400	34	2.8	D C
Endosulfan sulfate	1300	34	4.1	D C
Endrin	ND	0.84	0.1	
Endrin aldehyde	7.7	17	0.75	J C
Heptachlor	ND	17	0.086	
Heptachlor epoxide	ND	17	0.14	
Methoxychlor	ND	17	1.9	
Toxaphene	ND	17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3C5924110
Lab ID:	67763-23
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.58
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	83		63	149
Decachlorobiphenyl	255	X9	57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.5	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		4.1	17	0.31	J C
4,4'-DDT		4.8	17	1.1	J C
2,4'-DDD		24	17	1.3	C J M,
2,4'-DDE		4.5	17	1.3	J C J 12.
2,4'-DDT		10	17	1.3	J C J
Dieldrin		38	0.85	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II		5.7	1.7	0.14	C
Endosulfan sulfate		120	34	4.1	D C
Endrin		1300	17	2.1	D C
Endrin aldehyde		350	85	15	D C
Heptachlor	ND		17	0.087	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor		18	17	1.9	C
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3C6924111
Lab ID:	67763-24
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.02
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	80		63	149
Decachlorobiphenyl	143	X9	57	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		5.1	17	0.3	J C
4,4'-DDT		2	17	1.1	J C
2,4'-DDD		3.7	17	1.3	J C J
2,4'-DDE	ND		17	1.3	U J
2,4'-DDT		3.2	17	1.3	J C J
Dieldrin		9.1	0.84	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II		5.8	1.7	0.14	C
Endosulfan sulfate		26	1.7	0.2	C
Endrin		100	0.84	0.1	C
Endrin aldehyde		9.3	17	0.75	J C
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B4924749
Lab ID:	67763-27
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.85
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	76		63	149
Decachlorobiphenyl	101		57	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.41	0.06	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.063	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.1	2	
4,4'-DDD		170	320	2.8	J D C
4,4'-DDE		480	320	5.8	D C
4,4'-DDT		6100	320	20	D C
2,4'-DDD		59	16	1.2	C J mw
2,4'-DDE		23	16	1.2	C J 12-1
2,4'-DDT		1300	320	61	D C J
Dieldrin		6.8	0.81	0.058	C
Endosulfan I	ND		1.6	0.26	
Endosulfan II		12	1.6	0.13	C
Endosulfan sulfate	ND		1.6	0.2	
Endrin		7.3	0.81	0.098	C
Endrin aldehyde		2.6	16	0.72	J C
Heptachlor		2.5	16	0.083	J C
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5C4924743
Lab ID:	67763-28
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	97.31
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	83		63	149
Decachlorobiphenyl	113		57	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD		79	17	0.14	C
4,4'-DDE		460	330	6	D C
4,4'-DDT		1000	330	21	D C
2,4'-DDD		69	17	1.3	C J mw
2,4'-DDE		20	17	1.3	C J 12-1
2,4'-DDT		200	84	25	D C J
Dieldrin		34	0.84	0.06	C
Endosulfan I		15	1.7	0.27	C
Endosulfan II		99	33	2.8	D C
Endosulfan sulfate	ND		1.7	0.2	
Endrin		71	0.84	0.1	C
Endrin aldehyde		120	84	15	D C
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene		4200	330	730	D C

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP193
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	81		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	89	50	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	80	71	
Malathion	ND	85	60	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	59	
Ethion	ND	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP195
Date Received:	-
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	89	50	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	80	71	
Malathion	ND	85	60	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	59	
Ethion	ND	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	OP193
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
QC Batch ID:	OP193

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dichlorvos	0	420	400	96	
Dimethoate	0	420	380	90	
Diazinon	0	420	320	77	
Disulfoton	0	420	350	85	
Parathion,methyl	0	420	360	86	
Malathion	0	420	350	84	
Parathion	0	420	360	88	
Azinphos,methyl	0	420	380	92	
Ethion	0	420	330	80	
Paraoxon,methyl	0	420	370	89	
Paraoxon,ethyl	0	420	320	76	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SOP193
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	88		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	400	130	81	
Dimethoate	380	89	50	
Diazinon	320	71	70	
Disulfoton	350	64	42	
Parathion,methyl	360	80	71	
Malathion	350	85	60	
Parathion	360	110	110	
Azinphos,methyl	380	87	59	
Ethion	330	83	42	
Paraoxon,methyl	370	83	42	
Paraoxon,ethyl	320	83	42	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	OP195
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
QC Batch ID:	OP195

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dichlorvos	0	420	420	100	
Dimethoate	0	420	380	92	
Diazinon	0	420	350	83	
Disulfoton	0	420	350	84	
Parathion,methyl	0	420	360	85	
Malathion	0	420	350	85	
Parathion	0	420	360	87	
Azinphos,methyl	0	420	390	93	
Ethion	0	420	360	86	
Paraoxon,methyl	0	420	370	89	
Paraoxon,ethyl	0	420	360	87	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SOP195
Date Received:	-
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	420	130	81	
Dimethoate	380	89	50	
Diazinon	350	71	70	
Disulfoton	350	64	42	
Parathion,methyl	360	80	71	
Malathion	350	84	60	
Parathion	360	110	110	
Azinphos,methyl	390	87	59	
Ethion	360	83	42	
Paraoxon,methyl	370	83	42	
Paraoxon,ethyl	360	83	42	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	C6B3924757
Lab ID:	67763-10
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
QC Batch ID:	OP193

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	407	426	105	494	121	14	
Dimethoate	0	407	430	106	426	104	1.9	
Diazinon	0	407	350	86	365	89.2	3.7	
Disulfoton	48	407	374	80.1	417	90	12	
Parathion,methyl	0	407	408	100	413	101	1	
Malathion	0	407	379	93.2	387	94.6	1.5	
Parathion	75	407	391	77.8	413	82.5	5.9	
Azinphos,methyl	0	407	408	100	380	92.8	7.5	
Ethion	0	407	375	92.2	392	95.8	3.8	
[illegible]araoxon,methyl	0	407	416	102	390	95.2	6.9	
[illegible]araoxon,ethyl	26	407	324	73.3	348	78.7	7.1	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924757 - ms
Lab ID:	67763S10
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.56
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	93		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	430	130	79	
Dimethoate	430	87	49	
Diazinon	350	69	69	
Disulfoton	370	63	41	
Parathion,methyl	410	78	70	
Malathion	380	83	59	
Parathion	390	110	110	
Azinphos,methyl	410	85	58	
Ethion	380	81	41	
Paraoxon,methyl	420	81	41	
Paraoxon,ethyl	320	81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924757 - msd
Lab ID:	67763D10
Date Received:	9/29/97
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	97.56
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	87		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	490	130	79	
Dimethoate	430	88	49	
Diazinon	370	70	69	
Disulfoton	420	63	42	
Parathion,methyl	410	78	70	
Malathion	390	83	59	
Parathion	410	110	110	
Azinphos,methyl	380	85	58	
Ethion	390	82	41	
Paraoxon,methyl	390	82	41	
Paraoxon,ethyl	350	82	41	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	WCANS92376
Lab ID:	67736-06
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
QC Batch ID:	OP192

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	430	444	103	479	111	7.5	
Dimethoate	0	430	420	97.6	456	106	8.3	
Diazinon	0	430	414	96.2	410	95.4	0.84	
Disulfoton	0	430	360	83.8	405	94.2	12	
Parathion,methyl	0	430	396	92.2	420	97.6	5.7	
Malathion	0	430	408	94.8	402	93.6	1.3	
Parathion	0	430	444	103	408	94.8	8.3	
Azinphos,methyl	0	430	426	99	453	105	5.9	
Ethion	0	430	415	96.6	425	98.8	2.3	
raoxon,methyl	0	430	410	95.4	437	102	6.7	
araoxon,ethyl	0	430	397	92.4	424	98.6	6.5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376 - ms
Lab ID:	67736S06
Date Received:	9/26/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.8
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	92		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	440	130	83	
Dimethoate	420	92	51	
Diazinon	410	73	73	
Disulfoton	360	66	44	
Parathion,methyl	400	82	74	
Malathion	410	87	62	
Parathion	440	120	120	
Azinphos,methyl	430	89	61	
Ethion	420	86	43	
Paraoxon,methyl	410	86	43	
Paraoxon,ethyl	400	86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WCANS92376 - msd
Lab ID:	67736D06
Date Received:	9/26/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.8
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	119		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	480	130	83	
Dimethoate	460	92	51	
Diazinon	410	73	73	
Disulfoton	400	66	44	
Parathion,methyl	420	82	74	
Malathion	400	87	62	
Parathion	410	120	120	
Azinphos,methyl	450	89	61	
Ethion	420	86	43	
Paraoxon,methyl	440	86	43	
Paraoxon,ethyl	420	86	43	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	C8B5924750
Lab ID:	67763-15
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
QC Batch ID:	OP195

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	425	426	100	404	95.2	4.9	
Dimethoate	0	425	428	101	368	86.6	15	
Diazinon	0	425	413	97.2	353	83.2	16	
Disulfoton	0	425	365	85.8	321	75.6	13	
Parathion,methyl	0	425	399	93.8	350	82.4	13	
Malathion	0	425	399	93.8	326	76.8	20	
Parathion	0	425	411	96.8	363	85.4	13	
Azinphos,methyl	0	425	381	89.6	371	87.4	2.5	
Ethion	0	425	399	93.8	358	84.2	11	
ıraoxon,methyl	0	425	396	93.2	380	89.6	3.9	
araoxon,ethyl	0	425	331	77.8	341	80.2	3	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B5924750 - ms
Lab ID:	67763S15
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.38
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	430	130	82	
Dimethoate	430	91	51	
Diazinon	410	73	72	
Disulfoton	360	66	43	
Parathion,methyl	400	81	73	
Malathion	400	86	61	
Parathion	410	120	110	
Azinphos,methyl	380	88	60	
Ethion	400	85	42	
Paraoxon,methyl	400	85	42	
Paraoxon,ethyl	330	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B5924750 - msd
Lab ID:	67763D15
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.38
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	84		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	400	130	82	
Dimethoate	370	91	51	
Diazinon	350	72	72	
Disulfoton	320	66	43	
Parathion,methyl	350	81	73	
Malathion	330	86	61	
Parathion	360	120	110	
Azinphos,methyl	370	88	60	
Ethion	360	85	42	
Paraoxon,methyl	380	85	42	
Paraoxon,ethyl	340	85	42	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE802
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	74		63	149
Decachlorobiphenyl	102		57	143

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	0.42	0.062	
alpha-BHC	ND	17	0.064	
beta-BHC	ND	17	0.12	
delta-BHC	ND	17	0.065	
gamma-BHC (Lindane)	ND	17	0.14	
Chlordane (technical)	ND	8.3	2	
4,4'-DDD	ND	17	0.14	
4,4'-DDE	ND	17	0.3	
4,4'-DDT	ND	17	1	
2,4'-DDD	ND	17	1.2	
2,4'-DDE	ND	17	1.2	
2,4'-DDT	ND	17	1.2	
Dieldrin	ND	0.83	0.059	
Endosulfan I	ND	1.7	0.27	
Endosulfan II	ND	1.7	0.14	
Endosulfan sulfate	ND	1.7	0.2	
Endrin	ND	0.83	0.1	
Endrin aldehyde	ND	17	0.74	
Heptachlor	ND	17	0.085	
Heptachlor epoxide	ND	17	0.14	
Methoxychlor	ND	17	1.9	
Toxaphene	ND	17	36	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE803
Date Received:	-
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	75		63	149
Decachlorobiphenyl	90		57	143

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.42	0.062	
alpha-BHC	ND	17	0.064	
beta-BHC	ND	17	0.12	
delta-BHC	ND	17	0.065	
gamma-BHC (Lindane)	ND	17	0.14	
Chlordane (technical)	ND	8.3	2	
4,4'-DDD	ND	17	0.14	
4,4'-DDE	ND	17	0.3	
4,4'-DDT	ND	17	1	
2,4'-DDD	ND	17	1.2	
2,4'-DDE	ND	17	1.2	
2,4'-DDT	ND	17	1.2	
Dieldrin	ND	0.83	0.059	
Endosulfan I	ND	1.7	0.27	
Endosulfan II	ND	1.7	0.14	
Endosulfan sulfate	ND	1.7	0.2	
Endrin	ND	0.83	0.1	
Endrin aldehyde	ND	17	0.74	
Heptachlor	ND	17	0.085	
Heptachlor epoxide	ND	17	0.14	
Methoxychlor	ND	17	1.9	
Toxaphene	ND	17	36	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	PE802
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
QC Batch ID:	PE802

Organochlorine Pesticides by USEPA Method 8081

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Aldrin	0	17	12	72	
gamma-BHC (Lindane)	0	17	14	82	
4,4'-DDD	0	42	34	81	
4,4'-DDE	0	42	35	83	
4,4'-DDT	0	42	39	93	
2,4'-DDD	0	42	31	74	
2,4'-DDE	0	42	28	67	
2,4'-DDT	0	42	29	70	
Dieldrin	0	42	37	90	
Endrin	0	42	39	94	
Heptachlor	0	17	13	76	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE802
Date Received:	-
Date Prepared:	9/30/97
Date Analyzed:	10/1/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	68		63	149
Decachlorobiphenyl	96		57	143

Sample results are on an as received basis.

Analyte	Result (ug/kg)		PQL	MDL	Flags
Aldrin		12	0.42	0.062	C
gamma-BHC (Lindane)		14	17	0.14	J C
4,4'-DDD		34	17	0.14	C
4,4'-DDE		35	17	0.3	C
4,4'-DDT		39	17	1	C
2,4'-DDD		31	17	1.2	C
2,4'-DDE		28	17	1.2	C
2,4'-DDT		29	17	1.2	C
Endosulfan I	ND		1.7	0.27	
Endosulfan sulfate	ND		1.7	0.2	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE803
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
QC Batch ID:	PE803

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	BSD Result (ug/kg)	BSD % Rec.	RPD	Flag
Aldrin	0	16.7	13.4	80.4	12.9	77.3	3.9	
gamma-BHC (Lindane)	0	16.7	14	84.3	13.1	78.8	6.7	
4,4'-DDD	0	41.6	32.6	78.4	31.9	76.7	2.2	
4,4'-DDE	0	41.6	32.8	78.7	31.8	76.4	3	
4,4'-DDT	0	41.6	35.5	85.3	34.8	83.5	2.1	
2,4'-DDD	0	41.6	29.7	71.4	28.8	69.2	3.1	
2,4'-DDE	0	41.6	28	67.3	27.1	65.1	3.3	
2,4'-DDT	0	41.6	27.6	66.2	27	64.8	2.1	
Dieldrin	0	41.6	37	88.9	36.2	86.9	2.3	
drin	0	41.6	33.9	81.4	32.3	77.7	4.7	
eptachlor	0	16.7	13.6	81.8	13.2	79.3	3.1	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE803
Date Received:	-
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	72		63	149
Decachlorobiphenyl	94		57	143

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin		13	0.42	0.062	C
gamma-BHC (Lindane)		14	17	0.14	J C
4,4'-DDD		33	17	0.14	C
4,4'-DDE		33	17	0.3	C
4,4'-DDT		36	17	1	C
2,4'-DDD		30	17	1.2	C
2,4'-DDE		28	17	1.2	C
2,4'-DDT		28	17	1.2	C
Endosulfan I	ND		1.7	0.27	
Endosulfan sulfate	ND		1.7	0.2	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DPE803
Date Received:	-
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	71		63	149
Decachlorobiphenyl	94		57	143

Sample results are on an as received basis.

Analyte		**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin			13	0.42	0.062	C
gamma-BHC (Lindane)			13	17	0.14	J C
4,4'-DDD			32	17	0.14	C
4,4'-DDE			32	17	0.3	C
4,4'-DDT			35	17	1	C
2,4'-DDD			29	17	1.2	C
2,4'-DDE			27	17	1.2	C
2,4'-DDT			27	17	1.2	C
Endosulfan I	ND			1.7	0.27	
Endosulfan sulfate	ND			1.7	0.2	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	C6B3924757
Lab ID:	67763-10
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
QC Batch ID:	PE802

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	0	16.1	13.8	85.7	13.3	81.2	5.4	
gamma-BHC (Lindane)	0	16.1	15.3	95.3	14.8	90.7	4.9	
4,4'-DDD	0	40.1	38.7	96.5	34.9	85.5	12	
4,4'-DDE	210	40.1	201	0	188	0	0	X7a
4,4'-DDT	250	40.1	268	35.7	239	0	200	X7a
2,4'-DDD	6.8	40.1	38.3	78.4	36	71.6	9.1	
2,4'-DDE	13	40.1	40.8	68.6	39.2	63.7	7.4	
2,4'-DDT	55	40.1	89.5	84.9	81.4	63.4	29	
Dieldrin	0	40.1	54.3	135	52.9	130	3.8	
·drin	0	40.1	45.1	112	44.6	109	2.7	
eptachlor	0	16.1	13.5	83.9	13.1	80.2	4.5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924757 - ms
Lab ID:	67763S10
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	97.56
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	76		63	149
Decachlorobiphenyl	95		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	14	0.4	0.06	C
gamma-BHC (Lindane)	15	16	0.14	J C
4,4'-DDD	39	16	0.14	C
4,4'-DDE	200	16	0.29	E C
4,4'-DDT	270	16	1	E C
2,4'-DDD	38	16	1.2	C
2,4'-DDE	41	16	1.2	C
2,4'-DDT	90	16	1.2	C
Dieldrin	54	0.8	0.057	C
Endrin	45	0.8	0.097	C
Heptachlor	13	16	0.082	J C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6B3924757 - msd
Lab ID:	67763D10
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	97.56
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	71		63	149
Decachlorobiphenyl	89		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	13	0.41	0.061	C
gamma-BHC (Lindane)	15	16	0.14	J C
4,4'-DDD	35	16	0.14	C
4,4'-DDE	190	16	0.29	E C
4,4'-DDT	240	16	1	E C
2,4'-DDD	36	16	1.2	C
2,4'-DDE	39	16	1.2	C
2,4'-DDT	81	16	1.2	C
Dieldrin	53	0.82	0.058	C
Endrin	45	0.82	0.099	C
Heptachlor	13	16	0.083	J C

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	C8B5924750
Lab ID:	67763-15
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
QC Batch ID:	PE803

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	0	17	11.8	69.3	14.4	84.7	20	
gamma-BHC (Lindane)	0	17	12.1	71.2	14.9	87.6	21	
4,4'-DDD	0	42.5	30	70.5	36.5	85.9	20	
4,4'-DDE	0	42.5	30.5	71.8	37.1	87.3	19	
4,4'-DDT	11	42.5	58.8	113	58.2	111	1.8	
2,4'-DDD	0	42.5	26.4	62	33.1	77.9	23	
2,4'-DDE	0	42.5	24.9	58.7	30.5	71.9	20	
2,4'-DDT	2.3	42.5	28.3	61.1	34.3	75.3	21	
Dieldrin	0	42.5	33.3	78.4	40.6	95.5	20	
[illegible]drin	0	42.5	33.4	78.7	44.2	104	28	
[illegible]ptachlor	0	17	12.1	71.5	15	88.6	21	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B5924750 - ms
Lab ID:	67763S15
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.38
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	61	N	63	149
Decachlorobiphenyl	78		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin		12	0.42	0.063	C
gamma-BHC (Lindane)		12	17	0.15	J C
4,4'-DDD		30	17	0.14	C
4,4'-DDE		31	17	0.31	C
4,4'-DDT		59	17	1.1	C
2,4'-DDD		26	17	1.3	C
2,4'-DDE		25	17	1.3	C
2,4'-DDT		28	17	1.3	C
Endosulfan I	ND		1.7	0.28	
Endosulfan sulfate	ND		1.7	0.21	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8B5924750 - msd
Lab ID:	67763D15
Date Received:	9/29/97
Date Prepared:	10/1/97
Date Analyzed:	10/2/97
% Solids	96.38
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	80		63	149
Decachlorobiphenyl	95		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin		14	0.42	0.063	C
gamma-BHC (Lindane)		15	17	0.15	J C
4,4'-DDD		36	17	0.14	C
4,4'-DDE		37	17	0.31	C
4,4'-DDT		58	17	1.1	C
2,4'-DDD		33	17	1.3	C
2,4'-DDE		31	17	1.3	C
2,4'-DDT		34	17	1.3	C
Endosulfan I	ND		1.7	0.27	
Endosulfan sulfate	ND		1.7	0.21	

DATA QUALIFIER DEFINITIONS

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration 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 detected in the associated method blank. 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).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

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 was 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.

CHAIN OF CUSTODY

ANALYTICAL SERVICES, INC.
ALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 9842
(253) 922-2310 • FAX (253) 922-5047

6773 Rush

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

NT: Garry Struthers Assoc.
PROJECT NAME: Wenatchee WTRRC
CONTACT: Mike Webb
PHONE NO (425) 519-0300 X 217

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pesticide QAPP (as per QAPP)	OC Pesticide QAPP (as per QAPP)	HOLD FOR SUBSEQUENT INSTRUCTIONS
1	C1A1924145	9/24/97	1630	Soil	1															X	
2	C1A2924146		1630		1															X	
3	C2A1924139		1620		1														X	X	
4	C2A2924140		1620		1														X	X	
5	C4B1924118		1515		1														X	X	
6	C4B2924119		1515		1														X	X	
7	C6B2924754		1130		1														X	X	
8	C6B2924755		1135		1														X	X	
9	C6B3924756	↓	1130	↓	1														X	X	
10	C6B3924757	9/24/97	1135	Soil	1														X	X	
11	C9A2924772		0901		1															X	
12	C9A3924773		0901		1															X	
13	C7C2924727		1020		1														X	X	
14	C7C3924729	↓	1020	↓	1														X	X	
15	C8B5924750	9/24/97	1115	Soil	1														X	X	✓

	Signature	Printed Name	Firm	Time / Date
Relinquished By	Michael Webb	MIKE WEBB	GSA Inc	9/29/97 10:57
Received By	Giang	Giang	SAS	9/29/97 1057
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:
COC 1 of 2 for this cooler
These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.
Lila Transue: lab contact
US Army Corps of Engineers project - use Project QAPP
Temperature blank Enclosed in cooler
SAMPLED BY DOUG GRESHAM (D.G.) AND MIKE WEBB

UND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy. East
Tacoma, Washington 984
(253) 922-2310 • FAX (253) 922-5047

Rush

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: GARY SOUTHERS ASSOC.
PROJECT NAME: WENATCHEE TEREC
CONTACT: MIKE WEBB
PHONE NO (425) 519-0300 X 217

ANALYSIS REQUESTED:

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pesticides (APP)	OC Pesticides (APP)		hold for subsequent analysis
16	C8B6924751	9/24/97	1115	Soil	1														X	X		✓
17	C5C5924744		1055		1														X	X		✓
18	C5C6924745		1055		1														X	X		✓
19	C3A5924137		1550		1														X	X		✓
20	C3A6924138		1550		1														X	X		✓
21	C3B5924116		1455		1														X	X		✓
22	C3B6924117		1455		1														X	X		✓
23	C3C5924110		1440		1														X	X		✓
24	C3C6924111		1440		1														X	X		✓
25	C3B4924115		1455		1														X	X		✓
26	C3C4924109		1440		1														X	X		✓
27	C8B4924749		1115		1														X	X		✓
28	C5C4924743		1055		1														X	X		✓
29	C3A4924136		1550		1														X	X		✓
																			X	X		✓

	Signature	Printed Name	Firm	Time / Date
Relinquished By			GSA	1057 9/29/97
Received By		Giamy	SAS	1057 9/29/97
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:
COC 2 of 2 for this Cooler
These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.
Lila Transue: Lab Contact
USArmy Corps of Engineers
Project - Use Project QAPP
Temperature blank enclosed in cooler
SAMPLED BY Doug Gresham (D.G.) AND MIKE WEBB

SAS LAB NO 6776

PAGE 1 OF

COOLER RECEIPT FORM

PROJECT: Wenatchee Test Plot Soils W.O.# ———

COOLER RECEIVED ON 9-29-97 AND OPENED ON 9-29-97 BY SGiang

SGiang
(SIGNATURE)

Temperature upon receipt: cooler 2 °C
temp. blank 2 °C

1. Were custody seals on outside of cooler and intact? YES (NO)

   a. If YES, how many and where: _____
   b. Were signature and date correct? YES (NO)

2. Were custody papers taped to lid inside cooler? YES (NO)

3. Were custody papers properly filled out (ink, signed, etc)? (YES) NO

   Hand Carried

4. Did you sign custody papers in the appropriate place? (YES) NO

5. Did you attach shipper's packing slip to this form? None YES NO

6. What kind of packing material was used? bubblewrap

7. Was sufficient ice used (if appropriate)? (YES) NO

8. Were all bottles sealed in separate plastic bags? (YES) NO

9. Did all bottles arrive in good condition (unbroken)? (YES) NO

10. Were all bottle labels complete (no., date, signed, pres, etc)? (YES) NO

11. Did all bottle labels and tags agree with custody papers? (YES) NO

12. Were correct bottles used for the test indicated? (YES) NO

13. If present, were VOA vials checked for absence of air bubbles and noted if found? N/A YES NO

14. Adequate volume of VOA vials received per sample? N/A YES NO

15. Was sufficient amount of sample sent in each bottle? (YES) NO

16. Were correct preservatives used? N/A YES NO

17. Corrective action taken, if necessary:

    a. Name of person contacted: _____
    b. Date: _____

DATA DELIVERABLES PACKAGE

CHLORINATED PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	5845	5734	5480	5026	4791	4317	5199	1.9236E-04	541	10.4	0.9951
alpha-BHC	8600	8949	8719	8177	7853	7221	8253	1.2117E-04	585	7.1	0.9966
Lindane	8248	8397	8101	7641	7339	6697	7737	1.2925E-04	589	7.6	0.9961
Heptachlor	8444	8504	8199	7782	7393	6801	7854	1.2733E-04	608	7.7	0.9964
Aldrin	9785	8438	8112	7579	7241	6632	7965	1.2556E-04	1001	12.6	0.9963
B-BHC	3820	3184	3017	2907	2756	2573	3043	3.2866E-04	397	13.1	0.9975
D-BHC	7940	8137	8017	7562	7332	6768	7626	1.3113E-04	472	6.2	0.9971
Heptachlor Epoxide	7581	7343	7216	6812	6527	6001	6913	1.4465E-04	534	7.7	0.9966
Endosulfan-I	5835	5827	6085	5335	5443	4953	5579	1.7923E-04	377	6.8	0.9965
gamma-Chlordane	7925	7826	7263	7103	6472	6096	7114	1.4057E-04	663	9.3	0.9969
alpha-Chlordane	7031	7153	6966	6460	6241	5733	6597	1.5157E-04	504	7.6	0.9966
4,4'-DDE	6566	6623	6479	5892	5837	5315	6119	1.6343E-04	476	7.8	0.9964
Dieldrin	6469	6421	6165	5733	5534	5138	5910	1.6921E-04	484	8.2	0.9973
Endrin	4627	4640	4490	3925	3806	3683	4195	2.3836E-04	399	9.5	0.9990
4,4'-DDD	2977	3968	4105	4094	4075	3881	3850	2.5975E-04	399	10.4	0.9990
Endosulfan-II	5069	4887	4986	4721	4570	4393	4771	2.0960E-04	236	4.9	0.9991
4,4'-DDT	3709	4604	4416	4075	3999	3445	4041	2.4744E-04	393	9.7	0.9968
Endrin Aldehyde	1930	2491	2466	2311	2642	2690	2422	4.1297E-04	252	10.4	0.9982
Methox/Endo Sulfate	2656	2689	2646	2440	2353	2167	2492	4.0130E-04	190	7.6	0.9968
Endrin Ketone	4514	4832	4719	4450	4375	4213	4517	2.2138E-04	207	4.6	0.9993
Decachlorobiphenyl	4232	4320	4140	3820	3649	3467	3938	2.5394E-04	314	8.0	0.9984

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	7845	7510	7153	6684	6715	6452	7060	1.4165E-04	493	7.0	0.9994
alpha-BHC	11726	12023	11179	10746	10862	10591	11188	8.9382E-05	524	4.7	0.9997
Lindane	10778	10558	10234	9873	9894	9500	10140	9.8624E-05	435	4.3	0.9994
beta-BHC	4822	4177	4197	3975	3706	3473	4058	2.4640E-04	426	10.5	0.9972
Heptachlor	9080	9859	9441	8870	8631	8267	9025	1.1081E-04	521	5.8	0.9990
D-BHC	9481	9846	9718	9460	9657	9481	9607	1.0409E-04	144	1.5	0.9999
Aldrin	9947	10052	9743	9386	9245	8766	9523	1.0501E-04	443	4.7	0.9988
Heptachlor Epoxide	8359	8894	8652	8371	8211	7851	8390	1.1919E-04	328	3.9	0.9991
gamma-Chlordane	9455	8715	8465	8049	7890	7577	8359	1.1964E-04	615	7.4	0.9992
alpha-Chlordane	8578	8320	7924	7600	7435	7064	7820	1.2787E-04	517	6.6	0.9988
Endosulfan-I	9651	7858	7605	7156	7026	6672	7661	1.3053E-04	969	12.7	0.9989
4,4'-DDE	7603	7017	6980	6854	7066	7079	7100	1.4085E-04	237	3.3	0.9999
Dieldrin	6907	6922	6827	6665	6836	6869	6837	1.4625E-04	84	1.2	0.9999
Endrin	4748	5075	4960	4526	4542	4592	4740	2.1095E-04	211	4.5	0.9998
4,4'-DDD	4674	4588	4653	4561	4811	4818	4684	2.1350E-04	100	2.1	0.9997
Endosulfan-II	5217	5257	5332	5088	5184	5144	5204	1.9217E-04	78	1.5	0.9999
4,4'-DDT	4586	4972	5024	5029	5118	5204	4989	2.0045E-04	195	3.9	0.9998
Endrin Aldehyde	3046	3366	3378	3242	3287	3207	3254	3.0728E-04	112	3.4	0.9998
Endosulfan Sulfate	4146	4413	4446	4338	4305	4338	4331	2.3090E-04	96	2.2	1.0000
Methoxychlor	2169	2148	2166	2136	2246	2421	2214	4.5164E-04	99	4.5	0.9974
Endrin Ketone	5066	5180	5228	5165	5277	5246	5194	1.9254E-04	69	1.3	1.0000
Decachlorobiphenyl	5290	5042	4866	4516	4299	4183	4699	2.1279E-04	399	8.5	0.9992

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
2,4-DDE	4543	4283	4362	4073	3955	4243	2.3567E-04	209	4.9	0.9951
2,4-DDD	3296	3310	3554	3293	3198	3330	3.0028E-04	119	3.6	0.9966
2,4-DDT	4258	4268	4377	4168	4039	4222	2.3686E-04	113	2.7	0.9961

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
2,4-DDE	12668	11847	12373	12281	13204	12474	8.0164E-05	450	3.6	0.9994
2,4-DDD	3982	3648	4019	3817	3842	3861	2.5898E-04	132	3.4	0.9997
2,4-DDT	8550	8474	9495	9413	9817	9150	1.0929E-04	539	5.9	0.9994

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Inserted after p 30.
M.W. 12-2-97

CONTINUING CALIBRATION DATA

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019708
Date Analyzed: 10/1/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	44.18	11.6%	OK
alpha-BHC	25	23.31	6.8%	OK
Lindane	25	23.24	7.0%	OK
Heptachlor	25	22.93	8.3%	OK
Aldrin	25	22.77	8.9%	OK
B-BHC	25	22.28	10.9%	OK
D-BHC	25	22.56	9.8%	OK
Heptachlor Epoxide	25	22.24	11.0%	OK
Endosulfan-I	25	22.86	8.6%	OK
gamma-Chlordane	25	21.6	13.6%	OK
alpha-Chlordane	25	22.64	9.4%	OK
4,4'-DDE	50	46.5	7.0%	OK
Dieldrin	50	44.76	10.5%	OK
Endrin	50	54.28	8.6%	OK
4,4'-DDD	50	45.23	9.5%	OK
Endosulfan-II	50	44.46	11.1%	OK
4,4'-DDT	50	48.35	3.3%	OK
Endrin Aldehyde	50	44.11	11.8%	OK
Methoxychlor	250	248	0.8%	OK
Endosulfan Sulfate	50	47.86	4.3%	OK
Endrin Ketone	50	43.77	12.5%	OK
Decachlorobiphenyl	100	92	8.3%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019722
Date Analyzed: 10/1/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	45.75	8.5%	OK
alpha-BHC	25	24.28	2.9%	OK
Lindane	25	23.94	4.2%	OK
Heptachlor	25	22.68	9.3%	OK
Aldrin	25	23.58	5.7%	OK
B-BHC	25	23.44	6.2%	OK
D-BHC	25	23.62	5.5%	OK
Heptachlor Epoxide	25	23.35	6.6%	OK
Endosulfan-I	25	24.84	0.6%	OK
gamma-Chlordane	25	22.8	8.8%	OK
alpha-Chlordane	25	23.15	7.4%	OK
4,4'-DDE	50	46.98	6.0%	OK
Dieldrin	50	48.36	3.3%	OK
Endrin	50	52.75	5.5%	OK
4,4'-DDD	50	48.19	3.6%	OK
Endosulfan-II	50	47.87	4.3%	OK
4,4'-DDT	50	48.65	2.7%	OK
Endrin Aldehyde	50	44.57	10.9%	OK
Methoxychlor	250	261.52	4.6%	OK
Endosulfan Sulfate	50	47.58	4.8%	OK
Endrin Ketone	50	47.51	5.0%	OK
Decachlorobiphenyl	100	99	1.2%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019736
Date Analyzed: 10/1/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	51.96	3.9%	OK
alpha-BHC	25	27.47	9.9%	OK
Lindane	25	27.39	9.6%	OK
Heptachlor	25	27.47	9.9%	OK
Aldrin	25	27.82	11.3%	OK
B-BHC	25	26.73	6.9%	OK
D-BHC	25	26.71	6.8%	OK
Heptachlor Epoxide	25	26.03	4.1%	OK
Endosulfan-I	25	23.73	5.1%	OK
gamma-Chlordane	25	27.09	8.4%	OK
alpha-Chlordane	25	25.75	3.0%	OK
4,4'-DDE	50	52.41	4.8%	OK
Dieldrin	50	54.16	8.3%	OK
Endrin	50	50.48	1.0%	OK
4,4'-DDD	50	50.26	0.5%	OK
Endosulfan-II	50	52.59	5.2%	OK
4,4'-DDT	50	56.72	13.4%	OK
Endrin Aldehyde	50	53	6.0%	OK
Methoxychlor	250	287.04	14.8%	OK
Endosulfan Sulfate	50	55.89	11.8%	OK
Endrin Ketone	50	52.21	4.4%	OK
Decachlorobiphenyl	100	112	12.0%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019750
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	52.51	5.0%	OK
alpha-BHC	25	27.25	9.0%	OK
Lindane	25	27.05	8.2%	OK
Heptachlor	25	27.11	8.4%	OK
Aldrin	25	27.64	10.6%	OK
B-BHC	25	26.59	6.4%	OK
D-BHC	25	26.78	7.1%	OK
Heptachlor Epoxide	25	25.06	0.2%	OK
Endosulfan-I	25	24.77	0.9%	OK
gamma-Chlordane	25	28.02	12.1%	OK
alpha-Chlordane	25	26.44	5.8%	OK
4,4'-DDE	50	52.72	5.4%	OK
Dieldrin	50	54.35	8.7%	OK
Endrin	50	51.42	2.8%	OK
4,4'-DDD	50	51.98	4.0%	OK
Endosulfan-II	50	52.55	5.1%	OK
4,4'-DDT	50	52.75	5.5%	OK
Endrin Aldehyde	50	49.48	1.0%	OK
Methoxychlor	250	282.33	12.9%	OK
Endosulfan Sulfate	50	55.43	10.9%	OK
Endrin Ketone	50	54.04	8.1%	OK
Decachlorobiphenyl	100	112	12.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10029705
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	46.99	6.0%	OK
alpha-BHC	25	24.92	0.3%	OK
Lindane	25	24.77	0.9%	OK
Heptachlor	25	24.49	2.0%	OK
Aldrin	25	24.71	1.2%	OK
B-BHC	25	24.16	3.4%	OK
D-BHC	25	24.01	4.0%	OK
Heptachlor Epoxide	25	24.42	2.3%	OK
Endosulfan-I	25	25.76	3.0%	OK
gamma-Chlordane	25	23.63	5.5%	OK
alpha-Chlordane	25	24	4.0%	OK
4,4'-DDE	50	48.04	3.9%	OK
Dieldrin	50	49.83	0.3%	OK
Endrin	50	44.25	11.5%	OK
4,4'-DDD	50	49.04	1.9%	OK
Endosulfan-II	50	46.92	6.2%	OK
4,4'-DDT	50	46.79	6.4%	OK
Endrin Aldehyde	50	52.61	5.2%	OK
Methoxychlor	250	261.89	4.8%	OK
Endosulfan Sulfate	50	48.6	2.8%	OK
Endrin Ketone	50	51.12	2.2%	OK
Decachlorobiphenyl	100	101	0.8%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10029719
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	48.51	3.0%	OK
alpha-BHC	25	25.55	2.2%	OK
Lindane	25	25.38	1.5%	OK
Heptachlor	25	25.59	2.4%	OK
Aldrin	25	25.51	2.0%	OK
B-BHC	25	25.11	0.4%	OK
D-BHC	25	25.12	0.5%	OK
Heptachlor Epoxide	25	25.52	2.1%	OK
Endosulfan-I	25	26.51	6.0%	OK
gamma-Chlordane	25	25.26	1.0%	OK
alpha-Chlordane	25	25.13	0.5%	OK
4,4'-DDE	50	50.59	1.2%	OK
Dieldrin	50	52.69	5.4%	OK
Endrin	50	50.21	0.4%	OK
4,4'-DDD	50	49.96	0.1%	OK
Endosulfan-II	50	48.97	2.1%	OK
4,4'-DDT	50	49.82	0.4%	OK
Endrin Aldehyde	50	45.78	8.4%	OK
Methoxychlor	250	279.14	11.7%	OK
Endosulfan Sulfate	50	53.34	6.7%	OK
Endrin Ketone	50	52.48	5.0%	OK
Decachlorobiphenyl	100	104	3.6%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10029732
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	50.34	0.7%	OK
alpha-BHC	25	26.23	4.9%	OK
Lindane	25	25.71	2.8%	OK
Heptachlor	25	26.02	4.1%	OK
Aldrin	25	25.44	1.8%	OK
B-BHC	25	25.85	3.4%	OK
D-BHC	25	25.39	1.6%	OK
Heptachlor Epoxide	25	25.8	3.2%	OK
Endosulfan-I	25	27.73	10.9%	OK
gamma-Chlordane	25	24.92	0.3%	OK
alpha-Chlordane	25	25.43	1.7%	OK
4,4'-DDE	50	51.1	2.2%	OK
Dieldrin	50	53.23	6.5%	OK
Endrin	50	56.89	13.8%	OK
4,4'-DDD	50	52.12	4.2%	OK
Endosulfan-II	50	50.32	0.6%	OK
4,4'-DDT	50	52.97	5.9%	OK
Endrin Aldehyde	50	46.99	6.0%	OK
Methoxychlor	250	257.22	2.9%	OK
Endosulfan Sulfate	50	53.34	6.7%	OK
Endrin Ketone	50	51.08	2.2%	OK
Decachlorobiphenyl	100	104	4.2%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019709
Date Analyzed: 10/1/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	17.69	11.6%	OK
2,4-DDD	20	18.02	9.9%	OK
2,4-DDT	20	18	10.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019723
Date Analyzed: 10/1/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	19.27	3.7%	OK
2,4-DDD	20	19.31	3.5%	OK
2,4-DDT	20	19	3.9%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019737
Date Analyzed: 10/1/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	19.79	1.1%	OK
2,4-DDD	20	19.96	0.2%	OK
2,4-DDT	20	20	1.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10019751
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	19.46	2.7%	OK
2,4-DDD	20	19.66	1.7%	OK
2,4-DDT	20	20	0.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10029706
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	20.19	1.0%	OK
2,4-DDD	20	19.76	1.2%	OK
2,4-DDT	20	20	0.4%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10029720
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	18.11	9.5%	OK
2,4-DDD	20	20.99	4.9%	OK
2,4-DDT	20	19	4.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10029733
Date Analyzed: 10/2/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	22.52	12.6%	OK
2,4-DDD	20	21.98	9.9%	OK
2,4-DDT	20	23	15.0%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10019707
Date Analyzed: 10/1/97

DB-1701		DB-17	
Compound	**Response (Area)**	**Compound**	**Response (Area)**
4,4'-DDE	9098	4,4'-DDE	20341
4,4'-DDD	4957	4,4'-DDD	0
4,4'-DDT	427443	4,4'-DDT	559955
Endrin Aldehyde	5162	Endrin Aldehyde	7314
Endrin Ketone	7770	Endrin Ketone	0
Endrin	226116	Endrin	269992
DDT % Breakdown	3.2%	DDT % Breakdown	3.5%
Endrin % Breakdown	5.4%	Endrin % Breakdown	2.6%
Total % Breakdown	8.6%	Total % Breakdown	6.1%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10019721
Date Analyzed: 10/1/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	449626
Endrin Aldehyde	7419
Endrin Ketone	15198
Endrin	214808
DDT % Breakdown	0.0%
Endrin % Breakdown	9.5%
Total % Breakdown	9.5%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	586127
Endrin Aldehyde	17173
Endrin Ketone	14248
Endrin	250322
DDT % Breakdown	0.0%
Endrin % Breakdown	11.2%
Total % Breakdown	11.2%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10019735
Date Analyzed: 10/1/97

DB-1701

Compound	Response (Area)
4,4'-DDE	9652
4,4'-DDD	0
4,4'-DDT	467142
Endrin Aldehyde	6059
Endrin Ketone	7939
Endrin	255566
DDT % Breakdown	2.0%
Endrin % Breakdown	5.2%
Total % Breakdown	7.2%

DB-17

Compound	Response (Area)
4,4'-DDE	31935
4,4'-DDD	0
4,4'-DDT	603772
Endrin Aldehyde	9391
Endrin Ketone	8638
Endrin	300794
DDT % Breakdown	5.0%
Endrin % Breakdown	5.7%
Total % Breakdown	10.7%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10019749
Date Analyzed: 10/2/97

DB-1701

Compound	Response (Area)
4,4'-DDE	8923
4,4'-DDD	0
4,4'-DDT	494960
Endrin Aldehyde	6099
Endrin Ketone	10749
Endrin	251942
DDT % Breakdown	1.8%
Endrin % Breakdown	6.3%
Total % Breakdown	8.0%

DB-17

Compound	Response (Area)
4,4'-DDE	72027
4,4'-DDD	17758
4,4'-DDT	646452
Endrin Aldehyde	14255
Endrin Ketone	11505
Endrin	293485
DDT % Breakdown	12.2%
Endrin % Breakdown	8.1%
Total % Breakdown	20.3%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10029704
Date Analyzed: 10/2/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	464810
Endrin Aldehyde	16105
Endrin Ketone	15892
Endrin	193888
DDT % Breakdown	0.0%
Endrin % Breakdown	14.2%
Total % Breakdown	14.2%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	606196
Endrin Aldehyde	17634
Endrin Ketone	16340
Endrin	226012
DDT % Breakdown	0.0%
Endrin % Breakdown	13.1%
Total % Breakdown	13.1%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10029718
Date Analyzed: 10/2/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	468658
Endrin Aldehyde	15615
Endrin Ketone	12994
Endrin	204964
DDT % Breakdown	0.0%
Endrin % Breakdown	12.2%
Total % Breakdown	12.2%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	612751
Endrin Aldehyde	21426
Endrin Ketone	18783
Endrin	237630
DDT % Breakdown	0.0%
Endrin % Breakdown	14.5%
Total % Breakdown	14.5%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10029731
Date Analyzed: 10/2/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	5030
4,4'-DDT	501970
Endrin Aldehyde	0
Endrin Ketone	12197
Endrin	287444
DDT % Breakdown	1.0%
Endrin % Breakdown	4.1%
Total % Breakdown	5.1%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	17739
4,4'-DDT	664376
Endrin Aldehyde	0
Endrin Ketone	17863
Endrin	358331
DDT % Breakdown	2.6%
Endrin % Breakdown	4.7%
Total % Breakdown	7.3%

ORGANOPHOSPHORUS PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner 09/30/97

HIT ANY KEY TO CONTINUE

							AVE	RSD
Triphenyl Phosphate	0.240	0.224	0.243	0.230	0.229	0.209	0.229	5.3%
Dichlorvos	0.397	0.486	0.502	0.561	0.491	0.337	0.462	17.5%
Dimethoate	0.301	0.323	0.355	0.365	0.315	0.271	0.322	10.9%
Diazinon	0.330	0.410	0.443	0.501	0.501	0.391	0.429	15.5%
Disulfoton	0.494	0.468	0.437	0.387	0.382	0.581	0.458	16.3%
Paraoxon,methyl	0.404	0.492	0.473	0.465	0.384	0.380	0.433	11.3%
Parathion,methyl	0.248	0.279	0.337	0.366	0.299	0.234	0.294	17.3%
Paraoxon,ethyl	0.389	0.360	0.373	0.335	0.321	0.420	0.366	9.9%
Malathion	0.423	0.520	0.567	0.597	0.605	0.361	0.512	19.5%
Parathion	0.112	0.135	0.154	0.178	0.150	0.122	0.142	17.1%
Ethion	0.649	0.718	0.872	0.964	0.948	0.769	0.820	15.6%
Azinphos,methyl	1.483	1.534	1.475	1.378	1.206	1.439	1.419	8.2%

CONTINUING CALIBRATION DATA

Calibration Check Report

DATAFILE : P25468 ANALYSIS DATE : 10/02/97 11:55
SAMPLE : 1.0 NG/UL 8141 END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.226	1.518	%
Dichlorvos	0.462	0.471	1.828	%
Dimethoate	0.322	0.331	2.834	%
Diazinon	0.429	0.377	12.113	%
Disulfoton	0.458	0.485	5.758	%
Paraoxon,methyl	0.433	0.374	13.711	%
Parathion,methyl	0.294	0.263	10.629	%
Paraoxon,ethyl	0.366	0.379	3.301	%
Malathion	0.512	0.460	10.283	%
Parathion	0.142	0.127	10.636	%
Ethion	0.820	0.694	15.339	%
Azinphos,methyl	1.419	1.363	3.980	%

Calibration Check Report

DATAFILE : P25453 ANALYSIS DATE : 10/02/97 03:26
SAMPLE : 1.0 NG/UL 8141 CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.262	14.396	%
Dichlorvos	0.462	0.441	4.615	%
Dimethoate	0.322	0.316	1.852	%
Diazinon	0.429	0.372	13.267	%
Disulfoton	0.458	0.447	2.463	%
Paraoxon,methyl	0.433	0.422	2.599	%
Parathion,methyl	0.294	0.269	8.502	%
Paraoxon,ethyl	0.366	0.355	3.267	%
Malathion	0.512	0.438	14.470	%
Parathion	0.142	0.117	17.233	%
Ethion	0.820	0.749	8.670	%
Azinphos,methyl	1.419	1.457	2.666	%

Calibration Check Report

DATAFILE : P25436 ANALYSIS DATE : 10/01/97 18:41
SAMPLE : 1.0 NG/UL 8141 CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.239	4.212	%
Dichlorvos	0.462	0.464	0.442	%
Dimethoate	0.322	0.317	1.519	%
Diazinon	0.429	0.381	11.217	%
Disulfoton	0.458	0.488	6.582	%
Paraoxon,methyl	0.433	0.431	0.451	%
Parathion,methyl	0.294	0.281	4.422	%
Paraoxon,ethyl	0.366	0.335	8.495	%
Malathion	0.512	0.479	6.540	%
Parathion	0.142	0.128	9.472	%
Ethion	0.820	0.752	8.246	%
Azinphos,methyl	1.419	1.496	5.439	%

Calibration Check Report

DATAFILE : P25451 ANALYSIS DATE : 10/02/97 02:09
SAMPLE : 1.0 NG/UL 8141 END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

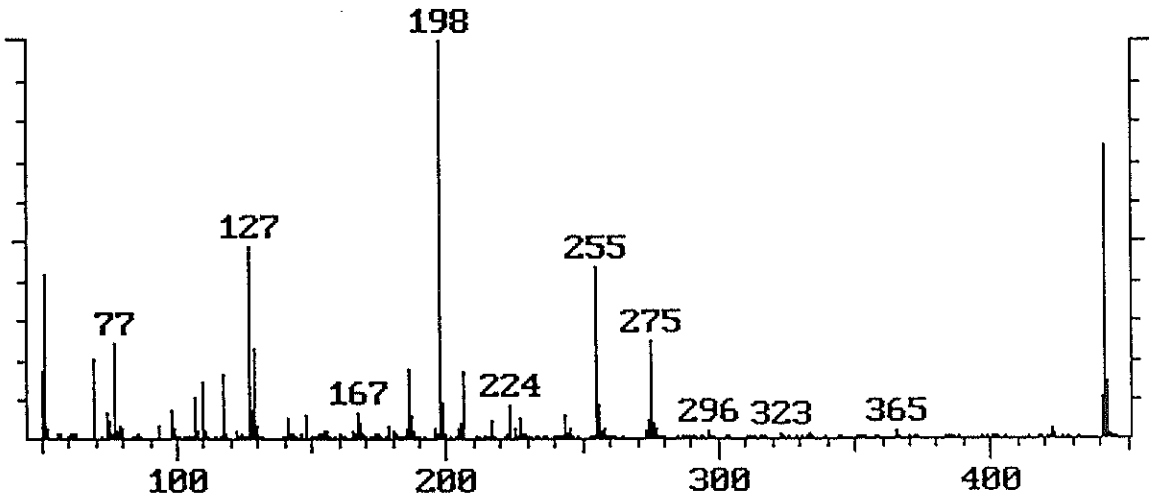
	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.228	0.537	%
Dichlorvos	0.462	0.481	4.120	%
Dimethoate	0.322	0.297	7.629	%
Diazinon	0.429	0.349	18.778	%
Disulfoton	0.458	0.400	12.608	%
Paraoxon,methyl	0.433	0.405	6.583	%
Parathion,methyl	0.294	0.276	5.965	%
Paraoxon,ethyl	0.366	0.321	12.490	%
Malathion	0.512	0.430	16.087	%
Parathion	0.142	0.121	14.408	%
Ethion	0.820	0.740	9.753	%
Azinphos,methyl	1.419	1.318	7.156	%

DFTPP TUNING DATA

Method 8270 DFTPP Report

Data File: P25392
Cali File: DFTPP

Acqu Date: 09/30/97
Acqu Time: 13:40

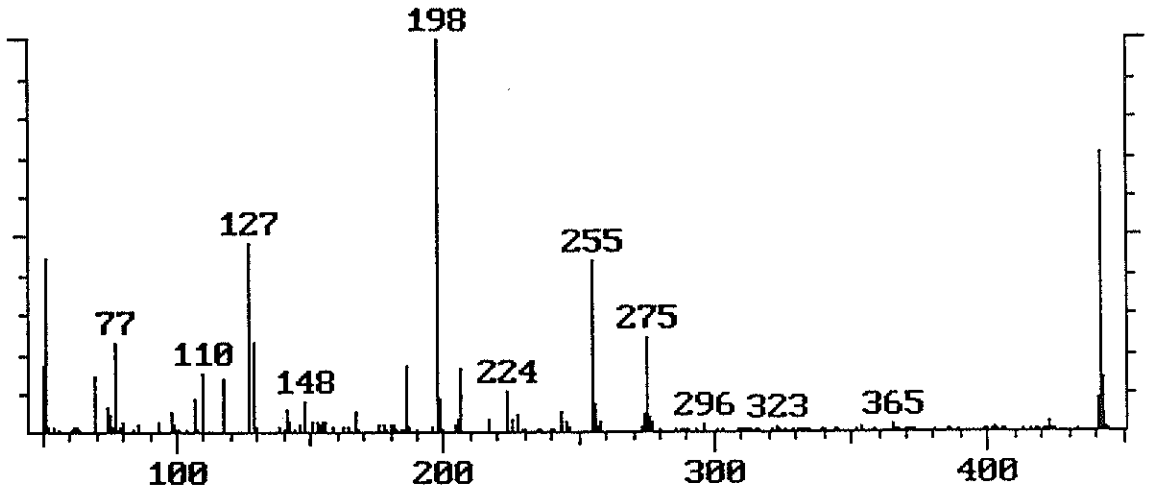


Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	41.23	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	19.90	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	48.91	Pass
197	<= 1% of Mass 198	0.73	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.66	Pass
275	10-30% of Mass 198	24.62	Pass
365	>= 1% of Mass 198	1.85	Pass
441	Exists/<= Mass 443	13.80	Pass
442	40-100% of Mass 198	74.39	Pass
443	17-23% of Mass 442	19.27	Pass

Method 8270 DFTPP Report

Data File: P25435
Cali File: DFTPP

Acqu Date: 10/01/97
Acqu Time: 17:33

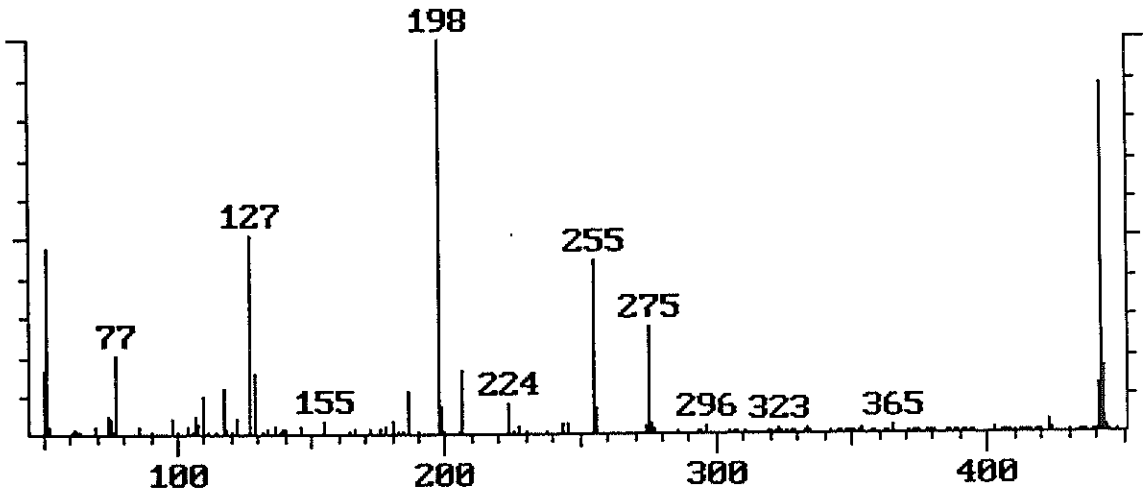


Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	43.97	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	13.97	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	47.78	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.21	Pass
275	10-30% of Mass 198	23.73	Pass
365	>= 1% of Mass 198	1.56	Pass
441	Exists/<= Mass 443	11.22	Pass
442	40-100% of Mass 198	70.91	Pass
443	17-23% of Mass 442	19.06	Pass

Method 8270 DFTPP Report

Data File: P25452
Cali File: DFTPP

Acqu Date: 10/02/97
Acqu Time: 02:34



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	47.25	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	1.43	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	50.69	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	6.93	Pass
275	10-30% of Mass 198	27.44	Pass
365	>= 1% of Mass 198	1.94	Pass
441	Exists/<= Mass 443	13.56	Pass
442	40-100% of Mass 198	88.50	Pass
443	17-23% of Mass 442	18.97	Pass

MEMORANDUM

DATE: December 11, 1997

TO: Fred Luck, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Characterization Sampling September 24, 1997
Sound Analytical Reports #67927

Analytical Methods:

- Method 8081 for Organochlorine Pesticides
- Method 8141 for Organophosphorus Pesticides, Modified for GC/MS

Data Use Intended:

Characterization Samples - Step 2 (from grids not evaluated in Step 1 and at a depth found to be closest to the regulatory limit):

- To establish the excavation depths needed.
- To establish correlation with the immunoassay field screening results for subsequent use.

Summary of Qualified and Rejected Data:

- No soil data were rejected due to quality control problems.
- The endrin result for sample C3B5924116 has been qualified for use with caution due to possible low bias (endrin breakdown check sample). The endrin aldehyde and endrin ketone results have been qualified for possible high bias.
- Some results were below the quantitation limit and were flagged with "J" qualifiers. "C" flags were used to indicate that second-column confirmation had confirmed the results (4,4'-DDD and 2,4'-DDT cannot be confirmed when both are present). "U" qualifiers were not used for undetected results, rather "ND" was placed in the quantitative value data field.
- This final laboratory report contains a few results that changed since issuance of the preliminary report (samples C1010372 and C3B5924116).

Summary of Method 8081 Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled September 24, 1997: C1B2924158, C1C2924172, C2B2924152, C2C2924165, C2C2924166 (field duplicate), C3B4924115, C3B5924116, C3A4924136, C4A2924126, C4A2924127 (field duplicate), C4C2924101, C5A6924799, C5B6924772, C6A3924787, C6C3924736, C7A3924781, C7B3924763, C8A5924777, C8C5924723, C9B392479, C9C3924715, C1010372 (PE sample).
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Acceptable.**

Analyte	**# C1010372 (% Recovery)**
Date of Analysis	10/8/97
4,4'-DDD	79
4,4'-DDE	96
4,4'-DDT	75
Dieldrin	98
Endrin	101
Endrin aldehyde*	ND

* breakdown products

- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration (Initial and Continuing) - **Acceptable.**
  DDT and Endrin Breakdown Standards - **Acceptable except for final check sample on 10/7/97.** The only sample affected has been given a "J" qualifier for use with caution due to possible low bias for endrin and high bias for endrin aldehyde and endrin ketone.
  Second Column Confirmation - **Acceptable.**
  Surrogates - **Acceptable.** Surrogates in samples C1010372, C3B4924115, and C3A4924136 were not reportable due to dilution of the sample.
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable except for 2,4'-DDT.** No corrective action was deemed necessary based on acceptable matrix spike results.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Acceptable.** However, 2 ug/kg of dieldrin was found in sample C2C2924165 and not in its duplicate. This level is only twice the quantitation limit and is so low as not to be of regulatory concern.

Summary of Method 8141 (Modified) Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled September 24, 1997: C2B2924152, C2C2924165, C2C2924166 (field duplicate), C3B4924115, C3B5924116, C3A4924136, C4A2924126, C4A2924127 (field duplicate), C4C2924101, C5A6924799, C5B6924772, C6A3924787, C6C3924736, C7A3924781, C7B3924763, C8A5924777, C8C5924723, C1010371 (PE sample).
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Acceptable.**

Analyte	**# C1010371 (% Recovery)**
Date of Analysis	10/7/97
Dimethoate	52
Disulfoton	85
Parathion	73
Azinophos, methyl	84

- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration, Tune, and Internal Standard Response- **Acceptable.**
  Surrogates - **Acceptable.**
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable.**
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Acceptable.**

Summary of Data Comparability, Representativeness, and Completeness

- **Field Sampling Issues** - No significant problems were encountered. These samples were extracted from segmented push-sample cores. Some compression of soil was recognized during sampling. Each three-foot core was divided equally to compensate for the compression. Core locations were based on visual cues from remnants of the experiments left on the surface.
- **Data Completeness** - The data completeness was 100% for this phase of work.

Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project except as noted.

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

TRANSMITTAL MEMORANDUM

DATE: October 27, 1997

TO: Mike Webb
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

PROJECT: Wenatchee TFREC

REPORT NUMBER: 67927

Enclosed are the test results for twenty-three samples received at Sound Analytical Services on October 3, 1997.

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

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Lila Transue

Lila Transue
Project Manager

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc.

Date: October 27, 1997

Project: Wenatchee TFREC

Lab No.: 67927

Delivered By: Delivered by Submitter

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix	Description
67927-1	C1B2924158	09-24-97	solid	Dry, brown, fine sand
67927-2	C1C2924172	09-24-97	solid	Dry, brown, fine sand
67927-3	C2B2924152	09-24-97	solid	Dry, brown, fine sand
67927-4	C2C2924165	09-24-97	solid	Dry, brown, fine sand
67927-5	C2C2924166	09-24-97	solid	Dry, brown, fine sand
67927-6	C4A2924127	09-24-97	solid	Dry, brown, fine sand
67927-7	C4A2924126	09-24-97	solid	Dry, brown, fine sand
67927-8	C4C2924101	09-24-97	solid	Dry, brown, fine sand
67927-9	C6A3924787	09-24-97	solid	Dry, brown, fine sand
67927-10	C6C3924736	09-24-97	solid	Dry, brown, fine sand
67927-11	C7A3924781	09-24-97	solid	Dry, brown, fine sand
67927-12	C7B3924763	09-24-97	solid	Dry, brown, fine sand
67927-13	C9B392479	09-24-97	solid	Damp, brown, fine sand
67927-14	C1010371	10-03-97	solid	Dry, brown, sand
67927-15	C1010372	10-03-97	solid	Dry, brown, sand
67927-24	C5A6924799	09-24-97	solid	Dry, brown, fine sand
67927-25	C5B6924772	09-24-97	solid	Dry, brown, fine sand

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 27, 1997

Project: Wenatchee TFREC Lab No.: 67927

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

67927-26	C8A5924777	09-24-97	solid	Dry, brown, fine sand
67927-27	C8C5924723	09-24-97	solid	Dry, brown, fine sand
67927-28	C9C3924715	09-24-97	solid	Moist, brown, fine sand
67927-29	C3B5924116	09-24-97	solid	Dry, brown, fine sand
67927-30	C3B4924115	09-24-97	solid	Dry, brown, fine sand
67927-31	C3A4924136	09-24-97	solid	Dry, brown, fine sand

SAMPLE EXTRACTION AND ANALYSIS

ORGANOPHOSPHORUS PESTICIDES

Samples 67927-3 through 67927-12, 67927-14, 67927-24 through 67927-27, and 67927-29 through 67927-31 were analyzed for organophosphorus pesticides in accordance with EPA Method 8141. The samples were extracted in accordance with EPA SW-846 Method 3540 on 10-05-97 and analyzed on 10-07-97.

The reported value for parathion in sample 67927-14 was based on a secondary dilution.

All quality control parameters were within acceptance limits.

ORGANOCHLORINE PESTICIDES

Samples 67927-1 through 67927-13, 67927-15, and 67927-24 through 67927-31 were analyzed for organochlorine pesticides in accordance with EPA Method 8081. The samples were extracted in accordance with EPA SW-846 Method 3540 on 10-05-97 and 10-06-97 and analyzed on 10-07-97, 10-08-97 and 10-09-97.

The final quality control review resulted in two changes from the preliminary results. Dieldrin in sample 67927-15 was changed to 190 ug/kg. For sample 67927-29, 2,4'-DDD was changed from a nondetect to 10 ug/kg with a J flag to indicate that it is present below the practical quantitation limit.

Several of the reported values in samples 67927-3, 67927-6 through 67927-8, 67927-15, and 67927-28 through 67927-31 are based on secondary dilutions.

The percent recoveries of TCMX and decachlorobiphenyl (surrogates) in samples 67927-15, 67927-30 and 67927-31 were not reported due to the required dilutions.

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 27, 1997

Project: Wenatchee TFREC Lab No.: 67927

ORGANOCHLORINE PESTICIDES, Continued

The continuing calibration verification (CCV) standard for endosulfan sulfate run on 10-08-97 was below the acceptable limits. The samples that were associated with this standard are the secondary dilutions of samples 67927-8, 67927-15, and 67927-28 through 67927-31. No action was taken based on this CCV because none of the samples were being quantitated for endosulfan sulfate.

The end-of-run DDT/Endrin breakdown evaluation standard for 10-07-97 was outside QC limits for endrin. Prior to analyzing additional samples, instrument maintenance was performed. The DDT/Endrin breakdown evaluation standards analyzed on 10-08-97 were within acceptance limits.

The percent recovery for 2,4'-DDT in the blank spike associated with samples was slightly outside QC limits. No action was taken based on the one outlier.

Matrix spike and matrix spike duplicate analysis of sample 67927-30 are not reported due to high contaminant levels in the original sample. The blank spike extracted with the sample batch had acceptable recoveries.

All detected compounds were confirmed as present using a second dissimilar column. All relative percent difference values were less than or equal to 40%, except for 4,4'-DDD, which coelutes with 2,4'-DDT on the confirmation column, as most samples that contained 4,4'-DDD contained significant concentrations of 2,4'-DDT.

All other quality control parameters were within acceptance limits

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2B2924152
Lab ID:	67927-03
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.48
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	104		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	79	
Dimethoate	ND	87	48	
Diazinon	ND	69	68	
Disulfoton	ND	63	41	
Parathion,methyl	ND	78	69	
Malathion	ND	82	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	84	58	
Ethion	ND	81	41	
Paraoxon,methyl	ND	81	41	
Paraoxon,ethyl	ND	81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2C2924165
Lab ID:	67927-04
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	92		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	82	
Dimethoate	ND	91	51	
Diazinon	ND	72	72	
Disulfoton	ND	65	43	
Parathion,methyl	ND	81	73	
Malathion	ND	86	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	88	60	
Ethion	ND	85	42	
Paraoxon,methyl	ND	85	42	
Paraoxon,ethyl	ND	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2C2924166
Lab ID:	67927-05
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	95.97
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	95		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	82	
Dimethoate	ND	91	51	
Diazinon	ND	72	72	
Disulfoton	ND	65	43	
Parathion,methyl	ND	81	73	
Malathion	ND	86	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	88	60	
Ethion	ND	85	42	
Paraoxon,methyl	ND	85	42	
Paraoxon,ethyl	ND	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4A2924127
Lab ID:	67927-06
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.62
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	102		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	79	
Dimethoate	ND	88	49	
Diazinon	ND	70	69	
Disulfoton	ND	63	41	
Parathion,methyl	ND	78	70	
Malathion	ND	83	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	85	58	
Ethion	ND	82	41	
Paraoxon,methyl	ND	82	41	
Paraoxon,ethyl	ND	82	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4A2924126
Lab ID:	67927-07
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.37
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	89		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	90	50	
Diazinon	ND	72	71	
Disulfoton	ND	65	43	
Parathion,methyl	ND	80	72	
Malathion	ND	85	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	60	
Ethion	ND	84	42	
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4C2924101
Lab ID:	67927-08
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.05
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	109		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	79	
Dimethoate	ND	87	49	
Diazinon	ND	69	69	
Disulfoton	ND	63	41	
Parathion,methyl	ND	78	70	
Malathion	ND	83	59	
Parathion	ND	110	110	
Azinphos,methyl	ND	85	58	
Ethion	ND	81	41	
Paraoxon,methyl	ND	81	41	
Paraoxon,ethyl	ND	81	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6A3924787
Lab ID:	67927-09
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.08
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	104		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	82	
Dimethoate	ND	91	50	
Diazinon	ND	72	71	
Disulfoton	ND	65	43	
Parathion,methyl	ND	81	72	
Malathion	ND	86	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	88	60	
Ethion	ND	85	42	
Paraoxon,methyl	ND	85	42	
Paraoxon,ethyl	ND	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6C3924736
Lab ID:	67927-10
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.91
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	107		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	80	
Dimethoate	ND	89	50	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	79	71	
Malathion	ND	84	60	
Parathion	ND	110	110	
Azinphos,methyl	ND	86	59	
Ethion	ND	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7A3924781
Lab ID:	67927-11
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.22
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	89		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	77	
Dimethoate	ND	85	48	
Diazinon	ND	68	67	
Disulfoton	ND	62	40	
Parathion,methyl	ND	76	68	
Malathion	ND	81	58	
Parathion	ND	110	110	
Azinphos,methyl	ND	83	57	
Ethion	ND	80	40	
Paraoxon,methyl	ND	80	40	
Paraoxon,ethyl	ND	80	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7B3924763
Lab ID:	67927-12
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.04
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	99		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	78	
Dimethoate	ND	86	48	
Diazinon	ND	69	68	
Disulfoton	ND	62	41	
Parathion,methyl	ND	77	69	
Malathion	ND	82	58	
Parathion	ND	110	110	
Azinphos,methyl	ND	84	57	
Ethion	ND	80	40	
Paraoxon,methyl	ND	80	40	
Paraoxon,ethyl	ND	80	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C1010371
Lab ID:	67927-14
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.85
Dilution Factor	100

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		1200	780	
Dimethoate		8300	860	480	
Diazinon	ND		690	680	
Disulfoton		2700	620	410	
Parathion,methyl	ND		770	690	
Malathion	ND		820	580	
Parathion		340000	22000	1100	D
Azinphos,methyl		2700	840	570	
Ethion	ND		810	400	
Paraoxon,methyl	ND		810	400	
Paraoxon,ethyl	ND		810	400	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5A6924799
Lab ID:	67927-24
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.45
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	99		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	76	
Dimethoate	ND	84	47	
Diazinon	ND	67	66	
Disulfoton	ND	61	40	
Parathion,methyl	ND	75	67	
Malathion	ND	80	57	
Parathion	ND	110	110	
Azinphos,methyl	ND	82	56	
Ethion	ND	78	39	
Paraoxon,methyl	ND	78	39	
Paraoxon,ethyl	ND	78	39	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5B6924772
Lab ID:	67927-25
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	95.5
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	101		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	83	
Dimethoate	ND	92	51	
Diazinon	ND	73	72	
Disulfoton	ND	66	43	
Parathion,methyl	ND	82	73	
Malathion	ND	87	62	
Parathion	ND	120	110	
Azinphos,methyl	ND	89	61	
Ethion	ND	86	43	
Paraoxon,methyl	ND	86	43	
Paraoxon,ethyl	ND	86	43	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8A5924777
Lab ID:	67927-26
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.08
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	78	
Dimethoate	ND	87	48	
Diazinon	ND	69	68	
Disulfoton	ND	62	41	
Parathion,methyl	ND	77	69	
Malathion	ND	82	58	
Parathion	ND	110	110	
Azinphos,methyl	ND	84	57	
Ethion	ND	81	40	
Paraoxon,methyl	ND	81	40	
Paraoxon,ethyl	ND	81	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8C5924723
Lab ID:	67927-27
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.74
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	100		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	90	50	
Diazinon	ND	72	71	
Disulfoton	ND	65	43	
Parathion,methyl	ND	80	72	
Malathion	ND	85	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	60	
Ethion	ND	84	42	
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3B5924116
Lab ID:	67927-29
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.49
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	114		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	90	50	
Diazinon	ND	72	71	
Disulfoton	ND	65	43	
Parathion,methyl	ND	80	72	
Malathion	ND	85	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	60	
Ethion	ND	84	42	
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3B4924115
Lab ID:	67927-30
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.51
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	100		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	120	78	
Dimethoate	ND	86	48	
Diazinon	ND	69	68	
Disulfoton	ND	62	41	
Parathion,methyl	ND	77	69	
Malathion	ND	82	58	
Parathion	ND	110	110	
Azinphos,methyl	ND	84	57	
Ethion	ND	81	40	
Paraoxon,methyl	ND	81	40	
Paraoxon,ethyl	ND	81	40	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3A4924136
Lab ID:	67927-31
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.92
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	101		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	80	
Dimethoate	ND	89	49	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	79	71	
Malathion	ND	84	60	
Parathion	ND	110	110	
Azinphos,methyl	ND	86	59	
Ethion	ND	83	41	
Paraoxon,methyl	ND	83	41	
Paraoxon,ethyl	ND	83	41	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C1B2924158
Lab ID:	67927-01
Date Received:	10/3/97
Date Prepared:	10/6/97
Date Analyzed:	10/7/97
% Solids	96.23
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	89		63	149
Decachlorobiphenyl	110		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.4	0.059	
alpha-BHC	ND		16	0.061	
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.062	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		7.9	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		70	16	0.29	C
4,4'-DDT		9.6	16	1	J C
2,4'-DDD	ND		16	1.2	
2,4'-DDE	ND		16	1.2	
2,4'-DDT		2.3	16	1.2	J C
Dieldrin		2.2	0.79	0.057	C
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.19	
Endrin	ND		0.79	0.096	
Endrin aldehyde	ND		16	0.71	
Heptachlor	ND		16	0.081	
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C1C2924172
Lab ID:	67927-02
Date Received:	10/3/97
Date Prepared:	10/6/97
Date Analyzed:	10/7/97
% Solids	96.17
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	82		63	149
Decachlorobiphenyl	99		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		98	17	0.3	C
4,4'-DDT		9.7	17	1.1	J C
2,4'-DDD	ND		17	1.3	
2,4'-DDE	ND		17	1.3	
2,4'-DDT		4.9	17	1.3	J C
Dieldrin		3.8	0.84	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.84	0.1	
Endrin aldehyde		4.1	17	0.75	J C
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2B2924152
Lab ID:	67927-03
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.48
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	75		63	149
Decachlorobiphenyl	86		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.41	0.061	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.064	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.1	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		300	160	2.9	D C
4,4'-DDT		61	16	1	C
2,4'-DDD	ND		16	1.2	
2,4'-DDE		2.8	16	1.2	J C
2,4'-DDT		20	16	1.2	C
Dieldrin		3.3	0.81	0.058	C
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.2	
Endrin	ND		0.81	0.098	
Endrin aldehyde	ND		16	0.72	
Heptachlor	ND		16	0.083	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2C2924165
Lab ID:	67927-04
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	80		63	149
Decachlorobiphenyl	102		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.5	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		100	17	0.31	C
4,4'-DDT		11	17	1.1	J C
2,4'-DDD	ND		17	1.3	
2,4'-DDE	ND		17	1.3	
2,4'-DDT		6	17	1.3	J C
Dieldrin		2	0.85	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.21	
Endrin	ND		0.85	0.1	
Endrin aldehyde	ND		17	0.76	
Heptachlor	ND		17	0.086	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2C2924166
Lab ID:	67927-05
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	95.97
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	86		63	149
Decachlorobiphenyl	100		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.5	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		94	17	0.31	C
4,4'-DDT		9.3	17	1.1	J C
2,4'-DDD	ND		17	1.3	
2,4'-DDE	ND		17	1.3	
2,4'-DDT		5.7	17	1.3	J C
Dieldrin	ND		0.85	0.06	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.21	
Endrin	ND		0.85	0.1	
Endrin aldehyde	ND		17	0.76	
Heptachlor	ND		17	0.087	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4A2924127
Lab ID:	67927-06
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.62
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	85		63	149
Decachlorobiphenyl	108		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.41	0.061	
alpha-BHC	ND		16	0.063	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.064	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.2	2	
4,4'-DDD		3.9	16	0.14	J C
4,4'-DDE		200	160	2.9	D C
4,4'-DDT		150	82	10	D C
2,4'-DDD	ND		16	1.2	
2,4'-DDE		5.4	16	1.2	J C
2,4'-DDT		41	16	1.2	C
Dieldrin		18	0.82	0.058	C
Endosulfan I	ND		1.6	0.27	
Endosulfan II	ND		1.6	0.14	
Endosulfan sulfate	ND		1.6	0.2	
Endrin	ND		0.82	0.099	
Endrin aldehyde	ND		16	0.73	
Heptachlor	ND		16	0.083	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4A2924126
Lab ID:	67927-07
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.37
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	69		63	149
Decachlorobiphenyl	94		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD		3.4	17	0.14	J C
4,4'-DDE		190	170	3	D C
4,4'-DDT		150	84	11	D C
2,4'-DDD	ND		17	1.3	
2,4'-DDE		4.6	17	1.3	J C
2,4'-DDT		35	17	1.3	C
Dieldrin		16	0.84	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.84	0.1	
Endrin aldehyde	ND		17	0.75	
Heptachlor	ND		17	0.086	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C4C2924101
Lab ID:	67927-08
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.05
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	73		63	149
Decachlorobiphenyl	106		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.41	0.061	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.064	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.1	2	
4,4'-DDD		2	16	0.14	J C
4,4'-DDE		200	160	2.9	D C
4,4'-DDT		30	16	1	C
2,4'-DDD	ND		16	1.2	
2,4'-DDE		33	16	1.2	C
2,4'-DDT		21	16	1.2	C
Dieldrin		22	0.81	0.058	C
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.14	
Endosulfan sulfate	ND		1.6	0.2	
Endrin		3.5	0.81	0.099	C
Endrin aldehyde	ND		16	0.73	
Heptachlor	ND		16	0.083	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6A3924787
Lab ID:	67927-09
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.08
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	88		63	149
Decachlorobiphenyl	103		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.5	2.1	
4,4'-DDD		3.3	17	0.14	J C
4,4'-DDE		31	17	0.3	C
4,4'-DDT		130	17	1.1	C
2,4'-DDD	ND		17	1.3	
2,4'-DDE	ND		17	1.3	
2,4'-DDT		24	17	1.3	C
Dieldrin	ND		0.85	0.06	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.85	0.1	
Endrin aldehyde	ND		17	0.75	
Heptachlor	ND		17	0.086	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C6C3924736
Lab ID:	67927-10
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.91
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	79		63	149
Decachlorobiphenyl	101		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.3	2	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		5.8	17	0.3	J C
4,4'-DDT		3.6	17	1	J C
2,4'-DDD	ND		17	1.2	
2,4'-DDE	ND		17	1.2	
2,4'-DDT	ND		17	1.2	
Dieldrin	ND		0.83	0.059	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.83	0.1	
Endrin aldehyde	ND		17	0.74	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.8	
Toxaphene	ND		17	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7A3924781
Lab ID:	67927-11
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.22
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	87		63	149
Decachlorobiphenyl	99		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.4	0.059	
alpha-BHC	ND		16	0.061	
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.062	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		57	16	0.29	C
4,4'-DDT		54	16	1	C
2,4'-DDD	ND		16	1.2	
2,4'-DDE		2.3	16	1.2	J C
2,4'-DDT		18	16	1.2	C
Dieldrin	ND		0.8	0.057	
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.19	
Endrin	ND		0.8	0.097	
Endrin aldehyde	ND		16	0.71	
Heptachlor	ND		16	0.081	
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C7B3924763
Lab ID:	67927-12
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.04
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	80		63	149
Decachlorobiphenyl	91		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.4	0.06	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.063	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		6.6	16	0.29	J C
4,4'-DDT		3.3	16	1	J C
2,4'-DDD	ND		16	1.2	
2,4'-DDE	ND		16	1.2	
2,4'-DDT	ND		16	1.2	
Dieldrin	ND		0.8	0.057	
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.19	
Endrin	ND		0.8	0.097	
Endrin aldehyde	ND		16	0.72	
Heptachlor	ND		16	0.082	
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C9B392479
Lab ID:	67927-13
Date Received:	10/3/97
Date Prepared:	10/6/97
Date Analyzed:	10/7/97
% Solids	92.88
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	83		63	149
Decachlorobiphenyl	109		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		17	17	0.3	C
4,4'-DDT		15	17	1.1	J C
2,4'-DDD		2.2	17	1.3	J C
2,4'-DDE		2.1	17	1.3	J C
2,4'-DDT		2.7	17	1.3	J C
Dieldrin	ND		0.84	0.06	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.84	0.1	
Endrin aldehyde	ND		17	0.75	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C1010372
Lab ID:	67927-15
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/8/97
% Solids	97.75
Dilution Factor	20

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		7.9	1.2	
alpha-BHC	ND		320	1.2	
beta-BHC	ND		320	2.3	
delta-BHC	ND		320	1.2	
gamma-BHC (Lindane)	ND		320	2.7	
Chlordane (technical)	ND		160	39	
4,4'-DDD		3300	320	2.7	D C
4,4'-DDE		2800	320	5.7	D C
4,4'-DDT		2200	320	20	D C
2,4'-DDD	ND		320	24	
2,4'-DDE	ND		320	24	
2,4'-DDT	ND		320	24	
Dieldrin		190	16	1.1	C
Endosulfan I	ND		32	5.1	
Endosulfan II	ND		32	2.6	
Endosulfan sulfate	ND		32	3.8	
Endrin		410	16	1.9	C
Endrin aldehyde	ND		320	14	
Heptachlor	ND		320	1.6	
Heptachlor epoxide	ND		320	2.7	
Methoxychlor	ND		320	35	
Toxaphene	ND		320	690	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5A6924799
Lab ID:	67927-24
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.45
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	75		63	149
Decachlorobiphenyl	94		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin	ND		0.39	0.059	
alpha-BHC	ND		16	0.06	
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.061	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		7.8	1.9	
4,4'-DDD		1.6	16	0.13	J C
4,4'-DDE		3.4	16	0.28	J C
4,4'-DDT		27	16	0.99	C
2,4'-DDD	ND		16	1.2	
2,4'-DDE	ND		16	1.2	
2,4'-DDT	ND		16	1.2	
Dieldrin	ND		0.78	0.056	
Endosulfan I	ND		1.6	0.25	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.19	
Endrin	ND		0.78	0.095	
Endrin aldehyde	ND		16	0.7	
Heptachlor	ND		16	0.08	
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.7	
Toxaphene	ND		16	34	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C5B6924772
Lab ID:	67927-25
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	95.5
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	85		63	149
Decachlorobiphenyl	97		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.43	0.064	
alpha-BHC	ND		17	0.066	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.067	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.6	2.1	
4,4'-DDD	ND		17	0.15	
4,4'-DDE		5	17	0.31	J C
4,4'-DDT		5.1	17	1.1	J C
2,4'-DDD	ND		17	1.3	
2,4'-DDE	ND		17	1.3	
2,4'-DDT	ND		17	1.3	
Dieldrin	ND		0.86	0.061	
Endosulfan I	ND		1.7	0.28	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.21	
Endrin	ND		0.86	0.1	
Endrin aldehyde	ND		17	0.76	
Heptachlor	ND		17	0.087	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	38	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8A5924777
Lab ID:	67927-26
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.08
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	85		63	149
Decachlorobiphenyl	101		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.4	0.06	
alpha-BHC	ND		16	0.062	
beta-BHC	ND		16	0.12	
delta-BHC	ND		16	0.063	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8.1	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		2.8	16	0.29	J C
4,4'-DDT	ND		16	1	
2,4'-DDD	ND		16	1.2	
2,4'-DDE	ND		16	1.2	
2,4'-DDT	ND		16	1.2	
Dieldrin	ND		0.81	0.058	
Endosulfan I	ND		1.6	0.26	
Endosulfan II	ND		1.6	0.13	
Endosulfan sulfate	ND		1.6	0.2	
Endrin	ND		0.81	0.098	
Endrin aldehyde	ND		16	0.72	
Heptachlor	ND		16	0.083	
Heptachlor epoxide	ND		16	0.14	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C8C5924723
Lab ID:	67927-27
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.74
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	83		63	149
Decachlorobiphenyl	97		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD	ND		17	0.14	
4,4'-DDE		3.2	17	0.3	J C
4,4'-DDT		2.6	17	1.1	J C
2,4'-DDD	ND		17	1.3	
2,4'-DDE	ND		17	1.3	
2,4'-DDT	ND		17	1.3	
Dieldrin	ND		0.84	0.06	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.84	0.1	
Endrin aldehyde	ND		17	0.75	
Heptachlor	ND		17	0.086	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C9C3924715
Lab ID:	67927-28
Date Received:	10/3/97
Date Prepared:	10/6/97
Date Analyzed:	10/7/97
% Solids	90.78
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	88		63	149
Decachlorobiphenyl	111		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.44	0.066	
alpha-BHC		2	18	0.068	J C
beta-BHC	ND		18	0.13	
delta-BHC	ND		18	0.069	
gamma-BHC (Lindane)	ND		18	0.15	
Chlordane (technical)	ND		8.8	2.2	
4,4'-DDD		17	18	0.15	J C
4,4'-DDE		330	180	6.4	D C
4,4'-DDT		1000	350	22	D C
2,4'-DDD		11	18	1.3	J C
2,4'-DDE		16	18	1.3	J C
2,4'-DDT		220	180	27	D C
Dieldrin		2.2	0.88	0.063	C
Endosulfan I	ND		1.8	0.29	
Endosulfan II		3.8	1.8	0.15	C
Endosulfan sulfate	ND		1.8	0.21	
Endrin	ND		0.88	0.11	
Endrin aldehyde	ND		18	0.79	
Heptachlor	ND		18	0.09	
Heptachlor epoxide	ND		18	0.15	
Methoxychlor		19	18	2	C
Toxaphene	ND		18	39	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3B5924116
Lab ID:	67927-29
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	97.49
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	81		63	149
Decachlorobiphenyl	86		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		15	0.4	0.06	C
alpha-BHC	ND		16	0.061	
beta-BHC	ND		16	0.11	
delta-BHC	ND		16	0.063	
gamma-BHC (Lindane)	ND		16	0.14	
Chlordane (technical)	ND		8	2	
4,4'-DDD	ND		16	0.14	
4,4'-DDE		7.1	16	0.29	J C
4,4'-DDT		4.3	16	1	J C
2,4'-DDD		10	16	1.2	J C
2,4'-DDE	ND		16	1.2	
2,4'-DDT	ND		16	1.2	
Dieldrin		7900	40	2.9	D C
Endosulfan I		3.2	1.6	0.26	C
Endosulfan II		15	1.6	0.13	C
Endosulfan sulfate	ND		1.6	0.19	
Endrin		290	40	4.8	D C
Endrin aldehyde		36	16	0.71	C
Heptachlor		5.4	16	0.082	J C
Heptachlor epoxide	ND		16	0.13	
Methoxychlor	ND		16	1.8	
Toxaphene	ND		16	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3B4924115
Lab ID:	67927-30
Date Received:	10/3/97
Date Prepared:	10/6/97
Date Analyzed:	10/8/97
% Solids	96.51
Dilution Factor	1000

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		610	400	60	C
alpha-BHC	ND		16000	62	
beta-BHC	ND		16000	110	
delta-BHC	ND		16000	63	
gamma-BHC (Lindane)	ND		16000	140	
Chlordane (technical)	ND		8100	2000	
4,4'-DDD	ND		16000	140	
4,4'-DDE	ND		16000	290	
4,4'-DDT	ND		16000	1000	
2,4'-DDD	ND		16000	1200	
2,4'-DDE	ND		16000	1200	
2,4'-DDT	ND		16000	1200	
Dieldrin		340000	2000	140	D C
Endosulfan I	ND		1600	260	
Endosulfan II	ND		1600	130	
Endosulfan sulfate	ND		1600	200	
Endrin		13000	810	98	C
Endrin aldehyde	ND		16000	720	
Heptachlor	ND		16000	82	
Heptachlor epoxide	ND		16000	130	
Methoxychlor	ND		16000	1800	
Toxaphene	ND		16000	35000	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C3A4924136
Lab ID:	67927-31
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/8/97
% Solids	96.92
Dilution Factor	1000

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		650	410	62	C
alpha-BHC	ND		17000	64	
beta-BHC	ND		17000	120	
delta-BHC	ND		17000	65	
gamma-BHC (Lindane)	ND		17000	140	
Chlordane (technical)	ND		8300	2000	
4,4'-DDD	ND		17000	140	
4,4'-DDE	ND		17000	300	
4,4'-DDT	ND		17000	1000	
2,4'-DDD	ND		17000	1200	
2,4'-DDE	ND		17000	1200	
2,4'-DDT	ND		17000	1200	
Dieldrin		320000	2100	150	D C
Endosulfan I	ND		1700	270	
Endosulfan II	ND		1700	140	
Endosulfan sulfate	ND		1700	200	
Endrin		5600	830	100	C
Endrin aldehyde	ND		17000	740	
Heptachlor	ND		17000	84	
Heptachlor epoxide	ND		17000	140	
Methoxychlor	ND		17000	1800	
Toxaphene	ND		17000	36000	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP197
Date Received:	-
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	94		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	89	50	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	80	71	
Malathion	ND	85	60	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	59	
Ethion	ND	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	OP197
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
QC Batch ID:	OP197

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dichlorvos	0	420	480	116	
Dimethoate	0	420	440	105	
Diazinon	0	420	410	98	
Disulfoton	0	420	430	103	
Parathion,methyl	0	420	420	100	
Malathion	0	420	380	90	
Parathion	0	420	430	104	
Azinphos,methyl	0	420	420	102	
Ethion	0	420	420	102	
Paraoxon,methyl	0	420	440	106	
Paraoxon,ethyl	0	420	380	91	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SOP197
Date Received:	-
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	103		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	480	130	81	
Dimethoate	440	89	50	
Diazinon	410	71	70	
Disulfoton	430	64	42	
Parathion,methyl	420	80	71	
Malathion	380	84	60	
Parathion	430	110	110	
Azinphos,methyl	420	87	59	
Ethion	420	83	42	
Paraoxon,methyl	440	83	42	
Paraoxon,ethyl	380	83	42	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	C2B2924152
Lab ID:	67927-03
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
QC Batch ID:	OP197

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	423	408	96.6	454	106	9.3	
Dimethoate	0	423	396	93.6	408	95.2	1.7	
Diazinon	0	423	379	89.6	401	93.4	4.2	
Disulfoton	0	423	361	85.4	364	84.8	0.71	
Parathion,methyl	0	423	390	92.2	408	95.2	3.2	
Malathion	0	423	366	86.6	374	87.2	0.69	
Parathion	0	423	384	90.8	425	99	8.6	
Azinphos,methyl	0	423	386	91.4	401	93.4	2.2	
Ethion	0	423	384	90.8	411	95.8	5.4	
ıraoxon,methyl	0	423	379	89.6	366	85.4	4.8	
ıraoxon,ethyl	0	423	348	82.4	356	83	0.73	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2B2924152 - ms
Lab ID:	67927S03
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.48
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	410	130	82	
Dimethoate	400	90	50	
Diazinon	380	72	71	
Disulfoton	360	65	43	
Parathion,methyl	390	81	72	
Malathion	370	86	61	
Parathion	380	120	110	
Azinphos,methyl	390	88	60	
Ethion	380	85	42	
Paraoxon,methyl	380	85	42	
Paraoxon,ethyl	350	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2B2924152 - msd
Lab ID:	67927D03
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.48
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	82		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	450	130	83	
Dimethoate	410	92	51	
Diazinon	400	73	72	
Disulfoton	360	66	43	
Parathion,methyl	410	82	73	
Malathion	370	87	62	
Parathion	420	120	120	
Azinphos,methyl	400	89	61	
Ethion	410	86	43	
Paraoxon,methyl	370	86	43	
Paraoxon,ethyl	360	86	43	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE805
Date Received:	-
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	83		63	149
Decachlorobiphenyl	102		57	143

Sample results are on an as received basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.3	2	
4,4'-DDD	ND		17	0.14	
4,4'-DDE	ND		17	0.3	
4,4'-DDT	ND		17	1	
2,4'-DDD	ND		17	1.2	
2,4'-DDE	ND		17	1.2	
2,4'-DDT	ND		17	1.2	
Dieldrin	ND		0.83	0.059	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.83	0.1	
Endrin aldehyde	ND		17	0.74	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	36	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE807
Date Received:	-
Date Prepared:	10/6/97
Date Analyzed:	10/8/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	98		63	149
Decachlorobiphenyl	99		57	143

Sample results are on an as received basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.3	2	
4,4'-DDD	ND		17	0.14	
4,4'-DDE	ND		17	0.3	
4,4'-DDT	ND		17	1	
2,4'-DDD	ND		17	1.2	
2,4'-DDE	ND		17	1.2	
2,4'-DDT	ND		17	1.2	
Dieldrin	ND		0.83	0.059	
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.83	0.1	
Endrin aldehyde	ND		17	0.74	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.8	
Toxaphene	ND		17	36	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	PE805
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
QC Batch ID:	PE805

Organochlorine Pesticides by USEPA Method 8081

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Aldrin	0	17	15	90	
gamma-BHC (Lindane)	0	17	16	95	
4,4'-DDD	0	42	37	88	
4,4'-DDE	0	42	39	93	
4,4'-DDT	0	42	37	89	
2,4'-DDD	0	42	34	82	
2,4'-DDE	0	42	34	81	
2,4'-DDT	0	42	31	75	
Dieldrin	0	42	42	101	
Endrin	0	42	45	107	
Heptachlor	0	17	16	94	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE805
Date Received:	-
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	99		63	149
Decachlorobiphenyl	107		57	143

Sample results are on an as received basis.

Analyte		**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Aldrin			15	0.42	0.062	C
gamma-BHC (Lindane)			16	17	0.14	J C
4,4'-DDD			37	17	0.14	C
4,4'-DDE			39	17	0.3	C
4,4'-DDT			37	17	1	C
2,4'-DDD			34	17	1.2	C
2,4'-DDE			34	17	1.2	C
2,4'-DDT			31	17	1.2	C
Endosulfan I	ND			1.7	0.27	
Endosulfan sulfate	ND			1.7	0.2	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	PE807
Date Prepared:	10/6/97
Date Analyzed:	10/8/97
QC Batch ID:	PE807

Organochlorine Pesticides by USEPA Method 8081

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Aldrin	0	17	15	91	
gamma-BHC (Lindane)	0	17	16	96	
4,4'-DDD	0	42	36	87	
4,4'-DDE	0	42	38	91	
4,4'-DDT	0	42	38	90	
2,4'-DDD	0	42	33	80	
2,4'-DDE	0	42	34	80	
2,4'-DDT	0	42	31	74	
Dieldrin	0	42	42	101	
Endrin	0	42	45	109	
Heptachlor	0	17	16	95	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE807
Date Received:	-
Date Prepared:	10/6/97
Date Analyzed:	10/8/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	101		63	149
Decachlorobiphenyl	111		57	143

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	15	0.42	0.062	C
gamma-BHC (Lindane)	16	17	0.14	J C
4,4'-DDD	36	17	0.14	C
4,4'-DDE	38	17	0.3	C
4,4'-DDT	38	17	1	C
2,4'-DDD	33	17	1.2	C
2,4'-DDE	34	17	1.2	C
2,4'-DDT	31	17	1.2	C
Dieldrin	42	0.83	0.059	C
Endrin	45	0.83	0.1	C
Heptachlor	16	17	0.085	J C

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	C2B2924152
Lab ID:	67927-03
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
QC Batch ID:	PE805

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	0	16.6	15.2	91.3	14.7	85.2	6.9	
gamma-BHC (Lindane)	0	16.6	15.9	95.9	15.4	89.3	7.1	
4,4'-DDD	0	41.5	37.6	90.6	38.2	88.7	2.1	
4,4'-DDE	300	41.5	392	226	391	217	4.1	X7a
4,4'-DDT	61	41.5	100	95.5	100	91.7	4.1	
2,4'-DDD	0	41.5	33.8	81.5	34.3	79.6	2.4	
2,4'-DDE	2.8	41.5	34.8	77.2	34.9	74.6	3.4	
2,4'-DDT	20	41.5	50.7	74.9	51.4	73.9	1.3	
Dieldrin	3.3	41.5	43.2	96	42.6	91.1	5.2	
drin	0	41.5	32.7	78.7	32.1	74.7	5.2	
leptachlor	0	16.6	15.9	95.5	15.3	88.9	7.2	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2B2924152 - ms
Lab ID:	67927S03
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.48
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	87		63	149
Decachlorobiphenyl	99		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	15	0.42	0.062	C
gamma-BHC (Lindane)	16	17	0.14	J C
4,4'-DDD	38	17	0.14	C
4,4'-DDE	390	17	0.3	E C
4,4'-DDT	100	17	1	C
2,4'-DDD	34	17	1.2	C
2,4'-DDE	35	17	1.2	C
2,4'-DDT	51	17	1.2	C
Dieldrin	43	0.83	0.059	C
Endrin	33	0.83	0.1	C
Heptachlor	16	17	0.085	J C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	C2B2924152 - msd
Lab ID:	67927D03
Date Received:	10/3/97
Date Prepared:	10/5/97
Date Analyzed:	10/7/97
% Solids	96.48
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	82		63	149
Decachlorobiphenyl	98		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	15	0.43	0.064	C
gamma-BHC (Lindane)	15	17	0.15	J C
4,4'-DDD	38	17	0.15	C
4,4'-DDE	390	17	0.31	E C
4,4'-DDT	100	17	1.1	C
2,4'-DDD	34	17	1.3	C
2,4'-DDE	35	17	1.3	C
2,4'-DDT	51	17	1.3	C
Dieldrin	43	0.86	0.061	C
Endrin	32	0.86	0.1	C
Heptachlor	15	17	0.088	J C

DATA QUALIFIER DEFINITIONS

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration 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 detected in the associated method blank. 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).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

.D: Not Detected

PQL: Practical Quantitation Limit

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 was 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.

CHAIN OF CUSTODY

GSA ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 9842
(253) 922-2310 • FAX (253) 922-5047

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS COC#4

CLIENT: GARRY STROTHERS ASSOC. INC
PROJECT NAME: WENATCHEE TREC
CONTACT: MIKE WEBB
PHONE NO: 425-519-0300 X217

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OC PESTICIDES	OP PESTICIDES
6797-1	C1B2924158	9/24/97	1655	Soil	1														X	
2	C1C2924172		1730		1														X	
3	C2B2924152		1640		1														X	X
4	C2C2924165		1705		1														X	X
5	C2C2924166		1710		1														X	X
6	C4A2924127		1535		1														X	X
7	C4A2924126		1530		1														X	X
8	C4C2924101		1430		1														X	X
9	C6A3924787		1345		1														X	X
10	C6C3924736		1040		1														X	X
11	C7A3924781		1335		1														X	X
12	C7B3924763		1145		1														X	X
13	C9B3924779	9/24/97	0940		1														X	
14	C1010371	10/3/97	1200		1															X
15	C1010372	10/3/97	1130	Soil	1														X	

	Signature	Printed Name	Firm	Time / Date
Relinquished By	Michael Webb	MIKE WEBB	GSA Inc	4:20 10/3/97
Received By	Mary Curtis	Mary Curtis	SAS	4:20 10/3/97
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

RUSH

US Army Corps project

'ND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 984[illegible]
(253) 922-2310 • FAX (253) 922-5047

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

COC #4 cont'd

CLIENT: Gaddy Structural Assoc., Inc
PROJECT NAME: Wenatchee TREC
CONTACT: Mike Webb
PHONE NO: 425-519-0300 X217

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OC PESTICIDES	OP PESTICIDES		HOLD UNTIL FURTHER INSTRUCTION		RECEIPT TEMP.				
67916	C3A3924135	9/24/97	1550	Soil	1														X	X		X						
17	C3B3924114		1455		1														X	X		X						
18	C3C3924108		1440		1														X	X		X						
19	C5A3924795		1355		1														X	X		X						
20	C5A3924796		1410		1														X	X		X						
21	C5B3924769		1200		1														X	X		X						
22	C5C3924742		1055		1														X	X		X						
23	C8B3924748		1115		1														X	X		X						
24	C5A6924799		1355		1														X	X								
25	C5B6924772		1200		1														X	X								
26	C8A5924777		1315		1														X	X								
27	C8C5924723		1010		1														X	X								
28	C9C3924715		1000		1														X									
TB	Temp Blank	10/3/97	1215		1																				X			

	Signature	Printed Name	Firm	Time / Date
Relinquished By	Michael Webb	MIKE WEBB	GSA INC	4:20 10/3/97
Received By	Mary Curtis - Mary Curtis		SAS	4:20 10/3/97
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

SOUND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy. East
Tacoma, Washington 984.
(253) 922-2310 • FAX (253) 922-5047

These samples RUSH at SAS archived

COC #3 cont'd

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: Gary Struthers Assoc.
PROJECT NAME: Wenatchee TREC
CONTACT: Mike Webb
PHONE NO: (425) 519-0300 x 217

ANALYSIS REQUESTED:

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	OP Pesticides (APP QAPP)	OC Pesticides (APP QAPP)		hold for subsequent analysis
	C8B6924751	9/24/97	1115	Soil	1														X	X		✓
+27	C5C5924744		1055		1														X	X		✓
+28	C5C6924745		1055		1														X	X		✓
	C3A5924137		1550		1														X	X		✓
	C3A6924138		1550		1														X	X		✓
6P27-29	C3B5924116		1455		1														X	X		✓
	C3B6924117		1455		1														X	X		✓
+29	C3C5924110		1440		1														X	X		✓
+30	C3C6924111		1440		1														X	X		✓
30	C3B4924115		1455		1														X	X		✓
	C3C4924109		1440		1														X	X		✓
+31	C8B4924749		1115		1														X	X		✓
+32	C5C4924743		1055		1														X	X		✓
31	C3A4924136		1550		1														X	X		✓

	Signature	Printed Name	Firm	Time / Date
Relinquished By			GSA	1057 9/29/97
Received By	Giang	Giang	SAS	1057 9/29/97
Relinquished By				
Received By				
Relinquished By				

SPECIAL INSTRUCTIONS/COMMENTS:
COC 2 of 2 for this cooler
These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐
Lila Transue - Lab Contact
USArmy Corps of Engineers
Project - Use Project QAPP
Temperature blank enclosed in cooler
SAMPLED BY Doug Gresham (D.G.)
Mike Webb

Hand Delivered

SAS LAB NO. 6796

COOLER RECEIPT FORM

PROJECT: Wenatchee TFREC W.O.# 67927

COOLER RECEIVED ON 10/3/97 AND OPENED ON 10/3/97 BY MC

Mary Cooke
(SIGNATURE)

Temperature upon receipt: cooler 4 °C
temp. blank 2 °C

1. Were custody seals on outside of cooler and intact? YES (NC)

   a. If YES, how many and where: _____
   b. Were signature and date correct? YES NC

2. Were custody papers taped to lid inside cooler? YES (NC)

3. Were custody papers properly filled out (ink, signed, etc)? (YES) NC

4. Did you sign custody papers in the appropriate place? (YES) NC

5. Did you attach shipper's packing slip to this form? YES NC

6. What kind of packing material was used? _____

7. Was sufficient ice used (if appropriate)? (YES) NC

8. Were all bottles sealed in separate plastic bags? (YES) NC

9. Did all bottles arrive in good condition (unbroken)? (YES) NC

10. Were all bottle labels complete (no., date, signed, pres, etc)? (YES) NC

11. Did all bottle labels and tags agree with custody papers? (YES) NC

12. Were correct bottles used for the test indicated? (YES) NC

13. If present, were VOA vials checked for absence of air bubbles and noted if found? N/A YES NC

14. Adequate volume of VOA vials received per sample? N/A YES NC

15. Was sufficient amount of sample sent in each bottle? (YES) NC

16. Were correct preservatives used? N/A YES NC

17. Corrective action taken, if necessary:

    a. Name of person contacted: _____
    b. Date: _____

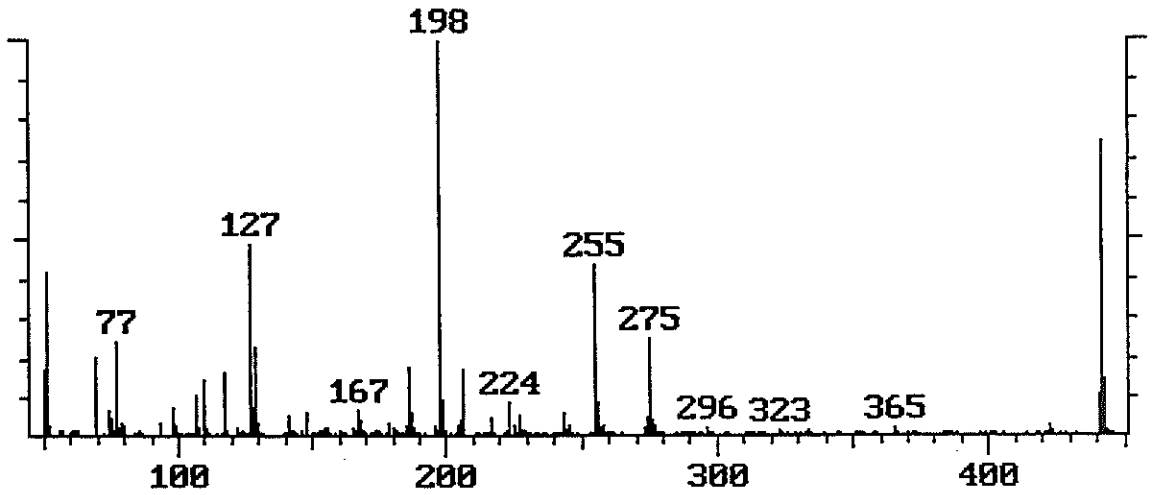
ORGANOPHOSPHORUS PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Method 8270 DFTPP Report

Data File: P25392
Cali File: DFTPP

Acqu Date: 09/30/97
Acqu Time: 13:40



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	41.23	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	19.90	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	48.91	Pass
197	<= 1% of Mass 198	0.73	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.66	Pass
275	10-30% of Mass 198	24.62	Pass
365	>= 1% of Mass 198	1.85	Pass
441	Exists/<= Mass 443	13.80	Pass
442	40-100% of Mass 198	74.39	Pass
443	17-23% of Mass 442	19.27	Pass

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

09/30/97

HIT ANY KEY TO CONTINUE

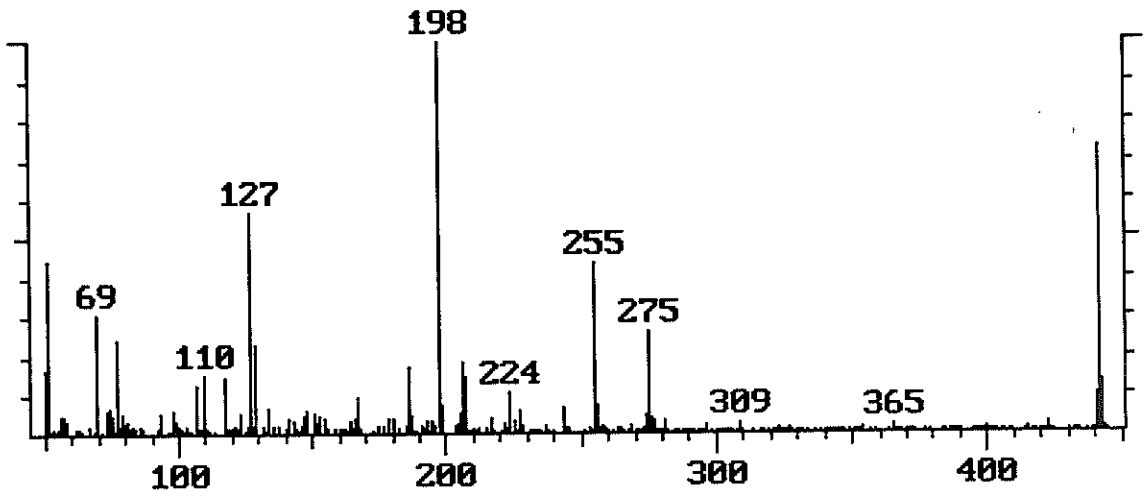
							AVE	RSD
Triphenyl Phosphate	0.240	0.224	0.243	0.230	0.229	0.209	0.229	5.3%
Dichlorvos	0.397	0.486	0.502	0.561	0.491	0.337	0.462	17.5%
Dimethoate	0.301	0.323	0.355	0.365	0.315	0.271	0.322	10.9%
Diazinon	0.330	0.410	0.443	0.501	0.501	0.391	0.429	15.5%
Disulfoton	0.494	0.468	0.437	0.387	0.382	0.581	0.458	16.3%
Paraoxon,methyl	0.404	0.492	0.473	0.465	0.384	0.380	0.433	11.3%
Parathion,methyl	0.248	0.279	0.337	0.366	0.299	0.234	0.294	17.3%
Paraoxon,ethyl	0.389	0.360	0.373	0.335	0.321	0.420	0.366	9.9%
Malathion	0.423	0.520	0.567	0.597	0.605	0.361	0.512	19.5%
Parathion	0.112	0.135	0.154	0.178	0.150	0.122	0.142	17.1%
Ethion	0.649	0.718	0.872	0.964	0.948	0.769	0.820	15.6%
Azinphos,methyl	1.483	1.534	1.475	1.378	1.206	1.439	1.419	8.2%

CONTINUING CALIBRATION DATA

Method 8270 DFTPP Report

Data File: P25551
Cali File: DFTPP

Acqu Date: 10/07/97
Acqu Time: 09:06



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	44.43	Pass
68	<= 2% of Mass 69	1.14	Pass
69	Exists Only	30.38	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	56.58	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	6.56	Pass
275	10-30% of Mass 198	25.56	Pass
365	>= 1% of Mass 198	1.71	Pass
441	Exists/<= Mass 443	13.10	Pass
442	40-100% of Mass 198	72.88	Pass
443	17-23% of Mass 442	17.07	Pass

Calibration Check Report

DATAFILE : P25552 ANALYSIS DATE : 10/07/97 09:27
SAMPLE : 1.0 NG/UL 8141 CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

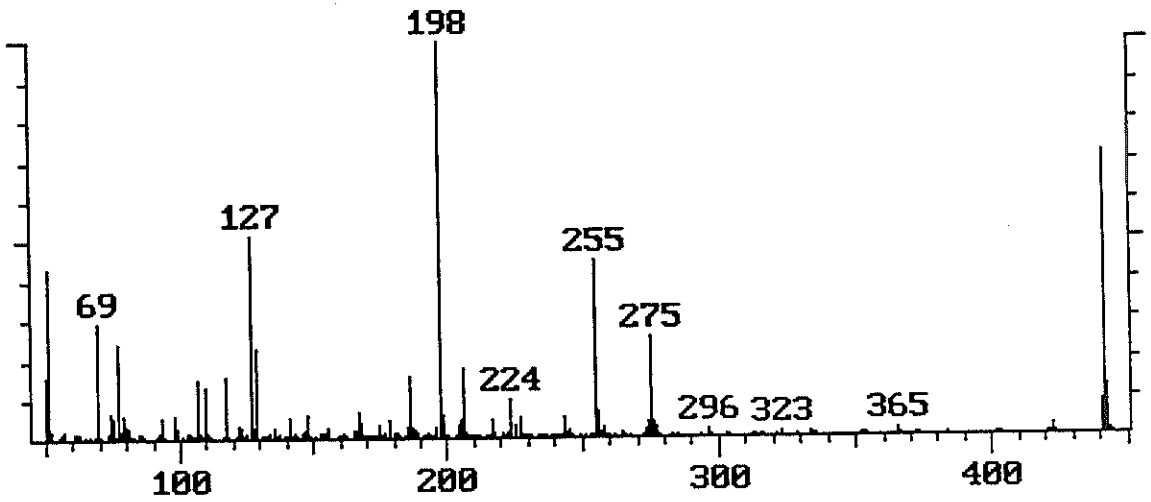
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.216	5.613	%
Dichlorvos	0.462	0.475	2.707	%
Dimethoate	0.322	0.309	4.004	%
Diazinon	0.429	0.388	9.596	%
Disulfoton	0.458	0.484	5.604	%
Paraoxon,methyl	0.433	0.383	11.603	%
Parathion,methyl	0.294	0.262	10.867	%
Paraoxon,ethyl	0.366	0.315	13.934	%
Malathion	0.512	0.462	9.818	%
Parathion	0.142	0.130	8.666	%
Ethion	0.820	0.756	7.723	%
Azinphos,methyl	1.419	1.284	9.530	%

Method 8270 DFTPP Report

Data File: P25568DF
Cali File: DFTPP

Acqu Date: 10/07/97
Acqu Time: 18:59



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	42.68	Pass
68	<= 2% of Mass 69	1.17	Pass
69	Exists Only	29.06	Pass
70	<= 2% of Mass 69	0.19	Pass
127	40-60% of Mass 198	51.60	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	5.46	Pass
275	10-30% of Mass 198	25.18	Pass
365	>= 1% of Mass 198	1.80	Pass
441	Exists/<= Mass 443	11.82	Pass
442	40-100% of Mass 198	71.81	Pass
443	17-23% of Mass 442	17.10	Pass

Calibration Check Report

DATAFILE : P25568CC ANALYSIS DATE : 10/07/97 19:14
SAMPLE : 1.0 NG/UL 8141 + CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.212	7.706	%
Dichlorvos	0.462	0.461	0.281	%
Dimethoate	0.322	0.316	1.861	%
Diazinon	0.429	0.368	14.227	%
Disulfoton	0.458	0.472	3.115	%
Paraoxon,methyl	0.433	0.352	18.830	%
Parathion,methyl	0.294	0.272	7.521	%
Paraoxon,ethyl	0.366	0.328	10.529	%
Malathion	0.512	0.441	13.870	%
Parathion	0.142	0.128	9.858	%
Ethion	0.820	0.792	3.399	%
Azinphos,methyl	1.419	1.273	10.269	%

Calibration Check Report

DATAFILE : P25576 ANALYSIS DATE : 10/07/97 23:08
SAMPLE : 1.0 NG/UL 8141 END OF RUN CALIB. VERIFICATION.
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.231	0.765	%
Dichlorvos	0.462	0.471	1.783	%
Dimethoate	0.322	0.304	5.579	%
Diazinon	0.429	0.360	16.216	%
Disulfoton	0.458	0.481	5.073	%
Paraoxon,methyl	0.433	0.371	14.325	%
Parathion,methyl	0.294	0.272	7.608	%
Paraoxon,ethyl	0.366	0.306	16.559	%
Malathion	0.512	0.444	13.306	%
Parathion	0.142	0.117	17.507	%
Ethion	0.820	0.746	9.051	%
Azinphos,methyl	1.419	1.415	0.260	%

CHLORINATED PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	5845	5734	5480	5026	4791	4317	5199	1.9236E-04	541	10.4	0.9951
alpha-BHC	8600	8949	8719	8177	7853	7221	8253	1.2117E-04	585	7.1	0.9966
Lindane	8248	8397	8101	7641	7339	6697	7737	1.2925E-04	589	7.6	0.9961
Heptachlor	8444	8504	8199	7782	7393	6801	7854	1.2733E-04	608	7.7	0.9964
Aldrin	9785	8438	8112	7579	7241	6632	7965	1.2556E-04	1001	12.6	0.9963
B-BHC	3820	3184	3017	2907	2756	2573	3043	3.2866E-04	397	13.1	0.9975
D-BHC	7940	8137	8017	7562	7332	6768	7626	1.3113E-04	472	6.2	0.9971
Heptachlor Epoxide	7581	7343	7216	6812	6527	6001	6913	1.4465E-04	534	7.7	0.9966
Endosulfan-I	5835	5827	6085	5335	5443	4953	5579	1.7923E-04	377	6.8	0.9965
gamma-Chlordane	7925	7826	7263	7103	6472	6096	7114	1.4057E-04	663	9.3	0.9969
alpha-Chlordane	7031	7153	6966	6460	6241	5733	6597	1.5157E-04	504	7.6	0.9966
4,4'-DDE	6566	6623	6479	5892	5837	5315	6119	1.6343E-04	476	7.8	0.9964
Dieldrin	6469	6421	6165	5733	5534	5138	5910	1.6921E-04	484	8.2	0.9973
Endrin	4627	4640	4490	3925	3806	3683	4195	2.3836E-04	399	9.5	0.9990
4,4'-DDD	2977	3968	4105	4094	4075	3881	3850	2.5975E-04	399	10.4	0.9990
Endosulfan-II	5069	4887	4986	4721	4570	4393	4771	2.0960E-04	236	4.9	0.9991
4,4'-DDT	3709	4604	4416	4075	3999	3445	4041	2.4744E-04	393	9.7	0.9968
Endrin Aldehyde	1930	2491	2466	2311	2642	2690	2422	4.1297E-04	252	10.4	0.9982
Methox/Endo Sulfate	2656	2689	2646	2440	2353	2167	2492	4.0130E-04	190	7.6	0.9968
Endrin Ketone	4514	4832	4719	4450	4375	4213	4517	2.2138E-04	207	4.6	0.9993
Decachlorobiphenyl	4232	4320	4140	3820	3649	3467	3938	2.5394E-04	314	8.0	0.9984

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	7845	7510	7153	6684	6715	6452	7060	1.4165E-04	493	7.0	0.9994
alpha-BHC	11726	12023	11179	10746	10862	10591	11188	8.9382E-05	524	4.7	0.9997
Lindane	10778	10558	10234	9873	9894	9500	10140	9.8624E-05	435	4.3	0.9994
beta-BHC	4822	4177	4197	3975	3706	3473	4058	2.4640E-04	426	10.5	0.9972
Heptachlor	9080	9859	9441	8870	8631	8267	9025	1.1081E-04	521	5.8	0.9990
D-BHC	9481	9846	9718	9460	9657	9481	9607	1.0409E-04	144	1.5	0.9999
Aldrin	9947	10052	9743	9386	9245	8766	9523	1.0501E-04	443	4.7	0.9988
Heptachlor Epoxide	8359	8894	8652	8371	8211	7851	8390	1.1919E-04	328	3.9	0.9991
gamma-Chlordane	9455	8715	8465	8049	7890	7577	8359	1.1964E-04	615	7.4	0.9992
alpha-Chlordane	8578	8320	7924	7600	7435	7064	7820	1.2787E-04	517	6.6	0.9988
Endosulfan-I	9651	7858	7605	7156	7026	6672	7661	1.3053E-04	969	12.7	0.9989
4,4'-DDE	7603	7017	6980	6854	7066	7079	7100	1.4085E-04	237	3.3	0.9999
Dieldrin	6907	6922	6827	6665	6836	6869	6837	1.4625E-04	84	1.2	0.9999
Endrin	4748	5075	4960	4526	4542	4592	4740	2.1095E-04	211	4.5	0.9998
4,4'-DDD	4674	4588	4653	4561	4811	4818	4684	2.1350E-04	100	2.1	0.9997
Endosulfan-II	5217	5257	5332	5088	5184	5144	5204	1.9217E-04	78	1.5	0.9999
4,4'-DDT	4586	4972	5024	5029	5118	5204	4989	2.0045E-04	195	3.9	0.9998
Endrin Aldehyde	3046	3366	3378	3242	3287	3207	3254	3.0728E-04	112	3.4	0.9998
Endosulfan Sulfate	4146	4413	4446	4338	4305	4338	4331	2.3090E-04	96	2.2	1.0000
Methoxychlor	2169	2148	2166	2136	2246	2421	2214	4.5164E-04	99	4.5	0.9974
Endrin Ketone	5066	5180	5228	5165	5277	5246	5194	1.9254E-04	69	1.3	1.0000
Decachlorobiphenyl	5290	5042	4866	4516	4299	4183	4699	2.1279E-04	399	8.5	0.9992

Sample Concentration = (Linear Regression Value) x (Analyte Response)

CONTINUING CALIBRATION DATA

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10079703
Date Analyzed: 10/7/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	46.11	7.8%	OK
alpha-BHC	25	24.18	3.3%	OK
Lindane	25	23.8	4.8%	OK
Heptachlor	25	24.26	3.0%	OK
Aldrin	25	24.03	3.9%	OK
B-BHC	25	23.47	6.1%	OK
D-BHC	25	23.49	6.0%	OK
Heptachlor Epoxide	25	24.11	3.6%	OK
Endosulfan-I	25	24.15	3.4%	OK
gamma-Chlordane	25	24.08	3.7%	OK
alpha-Chlordane	25	23.91	4.4%	OK
4,4'-DDE	50	47.89	4.2%	OK
Dieldrin	50	48.4	3.2%	OK
Endrin	50	43.13	13.7%	OK
4,4'-DDD	50	48.55	2.9%	OK
Endosulfan-II	50	47.37	5.3%	OK
4,4'-DDT	50	48.41	3.2%	OK
Endrin Aldehyde	50	50.59	1.2%	OK
Methoxychlor	250	251.85	0.7%	OK
Endosulfan Sulfate	50	48.3	3.4%	OK
Endrin Ketone	50	50.07	0.1%	OK
Decachlorobiphenyl	100	99	1.1%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10079703
Date Analyzed: 10/7/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	20.06	0.3%	OK
2,4-DDD	20	20.17	0.9%	OK
2,4-DDT	20	20	1.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10079717
Date Analyzed: 10/7/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	49.24	1.5%	OK
alpha-BHC	25	26.64	6.6%	OK
Lindane	25	25.34	1.4%	OK
Heptachlor	25	25.81	3.2%	OK
Aldrin	25	25.47	1.9%	OK
B-BHC	25	24.7	1.2%	OK
D-BHC	25	24.59	1.6%	OK
Heptachlor Epoxide	25	25.22	0.9%	OK
Endosulfan-I	25	25.23	0.9%	OK
gamma-Chlordane	25	25.89	3.6%	OK
alpha-Chlordane	25	25.4	1.6%	OK
4,4'-DDE	50	51.62	3.2%	OK
Dieldrin	50	51.42	2.8%	OK
Endrin	50	51.96	3.9%	OK
4,4'-DDD	50	51.94	3.9%	OK
Endosulfan-II	50	49.54	0.9%	OK
4,4'-DDT	50	50.06	0.1%	OK
Endrin Aldehyde	50	47.45	5.1%	OK
Methoxychlor	250	271.99	8.8%	OK
Endosulfan Sulfate	50	49.9	0.2%	OK
Endrin Ketone	50	50.13	0.3%	OK
Decachlorobiphenyl	100	104	3.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10079718
Date Analyzed: 10/7/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	20.48	2.4%	OK
2,4-DDD	20	20.79	4.0%	OK
2,4-DDT	20	21	4.3%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10079731
Date Analyzed: 10/7/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	47.86	4.3%	OK
alpha-BHC	25	25.14	0.6%	OK
Lindane	25	25.05	0.2%	OK
Heptachlor	25	25.84	3.4%	OK
Aldrin	25	25.46	1.8%	OK
B-BHC	25	24.76	1.0%	OK
D-BHC	25	24.86	0.6%	OK
Heptachlor Epoxide	25	25.43	1.7%	OK
Endosulfan-I	25	27.55	10.2%	OK
gamma-Chlordane	25	24.19	3.2%	OK
alpha-Chlordane	25	25.22	0.9%	OK
4,4'-DDE	50	50.48	1.0%	OK
Dieldrin	50	52.33	4.7%	OK
Endrin	50	48.37	3.3%	OK
4,4'-DDD	50	52.84	5.7%	OK
Endosulfan-II	50	50.83	1.7%	OK
4,4'-DDT	50	50.76	1.5%	OK
Endrin Aldehyde	50	45.24	9.5%	OK
Methoxychlor	250	277.76	11.1%	OK
Endosulfan Sulfate	50	51.34	2.7%	OK
Endrin Ketone	50	49.88	0.2%	OK
Decachlorobiphenyl	100	104	3.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10079732
Date Analyzed: 10/7/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	21.09	5.5%	OK
2,4-DDD	20	21.21	6.1%	OK
2,4-DDT	20	22	7.8%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089706
Date Analyzed: 10/8/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	45.6	8.8%	OK
alpha-BHC	25	23.55	5.8%	OK
Lindane	25	23.11	7.6%	OK
Heptachlor	25	23.67	5.3%	OK
Aldrin	25	22.3	10.8%	OK
B-BHC	25	22.79	8.8%	OK
D-BHC	25	24.13	3.5%	OK
Heptachlor Epoxide	25	22.68	9.3%	OK
Endosulfan-I	25	23.82	4.7%	OK
gamma-Chlordane	25	21.6	13.6%	OK
alpha-Chlordane	25	21.91	12.4%	OK
4,4'-DDE	50	45.54	8.9%	OK
Dieldrin	50	57.45	14.9%	OK
Endrin	50	55.02	10.0%	OK
4,4'-DDD	50	43.3	13.4%	OK
Endosulfan-II	50	44.43	11.1%	OK
4,4'-DDT	50	43.05	13.9%	OK
Endrin Aldehyde	50	45.35	9.3%	OK
Methoxychlor	250	229.98	8.0%	OK
Endosulfan Sulfate	50	37.83	24.3%	
Endrin Ketone	50	42.58	14.8%	OK
Decachlorobiphenyl	100	91	8.8%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089707
Date Analyzed: 10/8/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	21.04	5.2%	OK
2,4-DDD	20	19.25	3.8%	OK
2,4-DDT	20	20	1.9%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089720
Date Analyzed: 10/8/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	47.85	4.3%	OK
alpha-BHC	25	25.34	1.4%	OK
Lindane	25	24.89	0.4%	OK
Heptachlor	25	25.1	0.4%	OK
Aldrin	25	24.5	2.0%	OK
B-BHC	25	25.86	3.4%	OK
D-BHC	25	22.88	8.5%	OK
Heptachlor Epoxide	25	24.37	2.5%	OK
Endosulfan-I	25	25.86	3.4%	OK
gamma-Chlordane	25	23.3	6.8%	OK
alpha-Chlordane	25	23.86	4.6%	OK
4,4'-DDE	50	48.64	2.7%	OK
Dieldrin	50	55.41	10.8%	OK
Endrin	50	55.76	11.5%	OK
4,4'-DDD	50	45.65	8.7%	OK
Endosulfan-II	50	44.64	10.7%	OK
4,4'-DDT	50	45.62	8.8%	OK
Endrin Aldehyde	50	45.04	9.9%	OK
Methoxychlor	250	248.91	0.4%	OK
Endosulfan Sulfate	50	44.44	11.1%	OK
Endrin Ketone	50	45.51	9.0%	OK
Decachlorobiphenyl	100	99	1.1%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089721
Date Analyzed: 10/8/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	22.86	14.3%	OK
2,4-DDD	20	20.98	4.9%	OK
2,4-DDT	20	20	0.4%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089726
Date Analyzed: 10/9/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	44.07	11.9%	OK
alpha-BHC	25	23.41	6.4%	OK
Lindane	25	23.09	7.6%	OK
Heptachlor	25	22.75	9.0%	OK
Aldrin	25	22.66	9.4%	OK
B-BHC	25	23.69	5.2%	OK
D-BHC	25	21.26	15.0%	OK
Heptachlor Epoxide	25	22.09	11.6%	OK
Endosulfan-I	25	23.45	6.2%	OK
gamma-Chlordane	25	21.39	14.4%	OK
alpha-Chlordane	25	21.93	12.3%	OK
4,4'-DDE	50	44.26	11.5%	OK
Dieldrin	50	55.9	11.8%	OK
Endrin	50	48.73	2.5%	OK
4,4'-DDD	50	43.3	13.4%	OK
Endosulfan-II	50	43.1	13.8%	OK
4,4'-DDT	50	43.04	13.9%	OK
Endrin Aldehyde	50	43.9	12.2%	OK
Methoxychlor	250	227.35	9.1%	OK
Endosulfan Sulfate	50	42.6	14.8%	OK
Endrin Ketone	50	43.69	12.6%	OK
Decachlorobiphenyl	100	92	8.3%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10/89727
Date Analyzed: 10/9/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	18.88	5.6%	OK
2,4-DDD	20	17.1	14.5%	OK
2,4-DDT	20	18	9.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089732
Date Analyzed: 10/9/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	46.05	7.9%	OK
alpha-BHC	25	24.55	1.8%	OK
Lindane	25	23.94	4.2%	OK
Heptachlor	25	24.15	3.4%	OK
Aldrin	25	23.91	4.4%	OK
B-BHC	25	21.84	12.6%	OK
D-BHC	25	22.5	10.0%	OK
Heptachlor Epoxide	25	23.56	5.8%	OK
Endosulfan-I	25	24.6	1.6%	OK
gamma-Chlordane	25	22.91	8.4%	OK
alpha-Chlordane	25	23.15	7.4%	OK
4,4'-DDE	50	46.69	6.6%	OK
Dieldrin	50	50.83	1.7%	OK
Endrin	50	51.74	3.5%	OK
4,4'-DDD	50	43.28	13.4%	OK
Endosulfan-II	50	43.28	13.4%	OK
4,4'-DDT	50	44.52	11.0%	OK
Endrin Aldehyde	50	43.39	13.2%	OK
Methoxychlor	250	239.93	4.0%	OK
Endosulfan Sulfate	50	43.75	12.5%	OK
Endrin Ketone	50	44.22	11.6%	OK
Decachlorobiphenyl	100	94	5.7%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10089733
Date Analyzed: 10/9/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	20.38	1.9%	OK
2,4-DDD	20	20.1	0.5%	OK
2,4-DDT	20	20	1.1%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10079702
Date Analyzed: 10/7/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	454001
Endrin Aldehyde	13068
Endrin Ketone	11781
Endrin	178917
DDT % Breakdown	0.0%
Endrin % Breakdown	12.2%
Total % Breakdown	12.2%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	590345
Endrin Aldehyde	22110
Endrin Ketone	10716
Endrin	216871
DDT % Breakdown	0.0%
Endrin % Breakdown	13.1%
Total % Breakdown	13.1%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10079716
Date Analyzed: 10/7/97

DB-1701

Compound	Response (Area)
4,4'-DDE	6157
4,4'-DDD	0
4,4'-DDT	472597
Endrin Aldehyde	15942
Endrin Ketone	14049
Endrin	230029
DDT % Breakdown	1.3%
Endrin % Breakdown	11.5%
Total % Breakdown	12.8%

DB-17

Compound	Response (Area)
4,4'-DDE	7193
4,4'-DDD	11352
4,4'-DDT	606327
Endrin Aldehyde	20094
Endrin Ketone	3243
Endrin	272321
DDT % Breakdown	3.0%
Endrin % Breakdown	7.9%
Total % Breakdown	10.9%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10079730
Date Analyzed: 10/7/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	486703
Endrin Aldehyde	28444
Endrin Ketone	27429
Endrin	210639
DDT % Breakdown	0.0%
Endrin % Breakdown	21.0%
Total % Breakdown	21.0%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	628906
Endrin Aldehyde	48458
Endrin Ketone	36901
Endrin	244257
DDT % Breakdown	0.0%
Endrin % Breakdown	25.9%
Total % Breakdown	25.9%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10089705
Date Analyzed: 10/8/97

DB-1701

Compound	Response (Area)
4,4'-DDE	12876
4,4'-DDD	0
4,4'-DDT	376646
Endrin Aldehyde	4296
Endrin Ketone	7271
Endrin	224056
DDT % Breakdown	3.3%
Endrin % Breakdown	4.9%
Total % Breakdown	8.2%

DB-17

Compound	Response (Area)
4,4'-DDE	22272
4,4'-DDD	0
4,4'-DDT	476798
Endrin Aldehyde	0
Endrin Ketone	0
Endrin	261984
DDT % Breakdown	4.5%
Endrin % Breakdown	0.0%
Total % Breakdown	4.5%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10089719
Date Analyzed: 10/8/97

DB-1701

Compound	Response (Area)
4,4'-DDE	15643
4,4'-DDD	0
4,4'-DDT	444525
Endrin Aldehyde	10622
Endrin Ketone	14749
Endrin	241980
DDT % Breakdown	3.4%
Endrin % Breakdown	9.5%
Total % Breakdown	12.9%

DB-17

Compound	Response (Area)
4,4'-DDE	20148
4,4'-DDD	0
4,4'-DDT	567876
Endrin Aldehyde	20320
Endrin Ketone	20778
Endrin	278766
DDT % Breakdown	3.4%
Endrin % Breakdown	12.8%
Total % Breakdown	16.3%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10089725
Date Analyzed: 10/9/97

DB-1701

Compound	Response (Area)
4,4'-DDE	11185
4,4'-DDD	0
4,4'-DDT	395287
Endrin Aldehyde	11325
Endrin Ketone	13623
Endrin	200920
DDT % Breakdown	2.8%
Endrin % Breakdown	11.0%
Total % Breakdown	13.8%

DB-17

Compound	Response (Area)
4,4'-DDE	14051
4,4'-DDD	0
4,4'-DDT	505722
Endrin Aldehyde	21091
Endrin Ketone	21091
Endrin	241178
DDT % Breakdown	2.7%
Endrin % Breakdown	14.9%
Total % Breakdown	17.6%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10089731
Date Analyzed: 10/9/97

DB-1701

Compound	Response (Area)
4,4'-DDE	11501
4,4'-DDD	0
4,4'-DDT	414395
Endrin Aldehyde	12660
Endrin Ketone	15041
Endrin	212692
DDT % Breakdown	2.7%
Endrin % Breakdown	11.5%
Total % Breakdown	14.2%

DB-17

Compound	Response (Area)
4,4'-DDE	13870
4,4'-DDD	0
4,4'-DDT	514838
Endrin Aldehyde	22925
Endrin Ketone	16820
Endrin	242270
DDT % Breakdown	2.6%
Endrin % Breakdown	14.1%
Total % Breakdown	16.7%

MEMORANDUM

DATE: December 17, 1997

TO: Fred Luck, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Waste Sampling October 14, 1997
Sound Analytical Report #68142

Purpose: This assessment summarizes data quality factors that affect usability and provides guidance in the use of these data for the intended purpose.

Analytical Methods:

- Method 8081 for Organochlorine Pesticides.
- Method 8141 for Organophosphorus Pesticides, Modified for GC/MS.
- TCLP (Method 1311) for metals (Method 6010).

Data Use Intended:

- Waste Samples: To establish waste designation of selected roll-off bins.

Summary of Qualified and Rejected Data:

- No soil data were rejected due to quality control problems.
- Some results were below the quantitation limit and were flagged with "J" qualifiers. "C" flags were used to indicate that second-column confirmation had confirmed the results (4,4'-DDD and 2,4'-DDT cannot be confirmed when both are present). "U" qualifiers were not used for undetected results, rather "ND" was placed in the quantitative value data field.

Summary of Method 8081 and TCLP Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 14, 1997, analyzed by Method 8081: W09O1471, W09O1472 (field duplicate of W09O1471), W09O1473.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated in this delivery group.**
- Analytical Sensitivity - **Acceptable.** Some samples were diluted prior to analysis due to high analyte concentration, thereby elevating the reporting limits. No waste designation decisions were affected.

- Accuracy -

  Calibration (Initial and Continuing) - **Acceptable for all compounds found in samples.**
  DDT and Endrin Breakdown Standards - **Acceptable.**
  Surrogates - **Acceptable.** Surrogates in some of the samples were not reportable because of the dilutions resulting from high concentrations of target analytes.
  Matrix Spikes - **Acceptable.** The MS/MSD was not reportable for one sample due to high concentrations of the analytes in the sample. No corrective action was necessary based on the acceptable laboratory control sample results.
  Laboratory Control Samples (LCS) - **Acceptable.**
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Acceptable except for 4,4'-DDT.** The samples were re-analyzed on October 20 with very similar results for the duplicates. Therefore the variability has been assigned as a sample-specific problem. No corrective action or data qualification was deemed necessary based on low concentrations relative to the Dangerous Waste designation levels.

Summary of Method 8141 (Modified) Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 14, 1997, analyzed by Method 8081: W09O1471, W09O1472 (field duplicate of W09O1471), W09O1473.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated in this delivery group.**
- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration, Tune, and Internal Standard Response- **Acceptable.** These parameters were verified with the laboratory, however, data summaries for internal standard response were not included in the data package provided by the laboratory.
  Surrogates - **Acceptable.**
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable.**
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Acceptable.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Acceptable.**

Summary of TCLP Metals (Methods 1311/6010 and 7470) Laboratory and Field Sampling Quality Control:

Samples Covered - Sampled October 14, 1997, analyzed by Method 8081: W09O1471, W09O1472 (field duplicate of W09O1471), W09O1473.

- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated for this parameter.**
- Analytical Sensitivity - **Acceptable.**

- Accuracy -

  Calibration and Calibration Verification - **Acceptable.**
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable.**
  Serial Dilutions - **Acceptable.** The diluted results are too close to the instrument detection limits to make a definitive conclusion regarding interference (e.g., Pb in the primary sample is only at ten times the detection level, with the diluted sample at two times the detection limit). The results are accepted as reported.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable**.
- Field Precision - **Acceptable**.

Summary of Data Comparability, Representativeness, and Completeness

- **Field Sampling Issues** - No problems were encountered. The waste samples were taken as composites within the bins according to the codes incorporated in the sample number (e.g. W02 is from waste bin #2). The composites were taken from 5 locations within the bins contributing to the composite and homogenized according to the Sampling and Analysis Plan:
- **Data Completeness** - The data completeness was 100% for this phase of work.

Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project.

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
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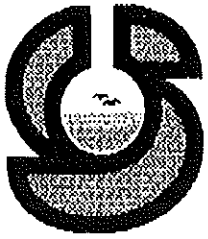

FAX TRANSMITTAL

Contact, Company, and Address:
Mike Webb, Project Chemist
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

Date: December 18, 1997

Phone Number: (425) 519-0300 x217

Fax Number: (425) 519-0309

Pages sent by fax: 1

Hard copy to follow: No

From: Lila Transue

Message:
Mike - For Laboratory Work Order Number 68142, OC pesticide results were reported preliminary from the 10/17/97 analysis. Samples were reanalyzed for the final report on 10/20/97 due to DDT and/or endrin breakdown standard failures in the preliminary run. Samples 68142-1 and 68142-2 were field duplicates. All detected analyte concentrations were comparable except for DDT. The difference between the two DDT concentrations is most likely due to matrix variability based on a review of the MS/MSD results for 68142-1. The MS result for DDE in sample 68872-1 was high. This appears to be due to a matrix interference which caused peak broadening in the MS chromatogram. The MSD also exhibited slight peak broadening for DDE. The unspiked sample did not exhibit peak broadening for DDE. Therefore, it is unlikely that the sample result for 68872-1 is biased significantly high.

- Accuracy -

  Calibration and Calibration Verification - **Acceptable.**
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable.**
  Serial Dilutions - **Acceptable.** The diluted results are too close to the instrument detection limits to make a definitive conclusion regarding interference (e.g., Pb in the primary sample is only at ten times the detection level, with the diluted sample at two times the detection limit). The results are accepted as reported.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable**.
- Field Precision - **Acceptable**.

Summary of Data Comparability, Representativeness, and Completeness

- **Field Sampling Issues** - No problems were encountered. The waste samples were taken as composites within the bins according to the codes incorporated in the sample number (e.g. W02 is from waste bin #2). The composites were taken from 5 locations within the bins contributing to the composite and homogenized according to the Sampling and Analysis Plan:
- **Data Completeness** - The data completeness was 100% for this phase of work.

Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project.

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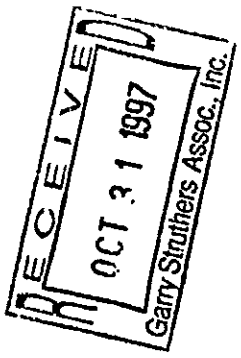
TRANSMITTAL MEMORANDUM



DATE: October 28, 1997

TO: Mike Webb
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

PROJECT: Wenatchee Test Plot Soils, USACOE - Revised

REPORT NUMBER: 68142

Enclosed are the test results for three samples received at Sound Analytical Services on October 15, 1997.

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

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Lila Transue

Lila Transue
Project Manager

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
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ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 28, 1997

Project: Wenatchee Test Plot Soils, USACOE - Revised Lab No.: 68142

Delivered By: Delivered by Submitter

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix	Description
68142-1	W0901471	10-14-97	solid	Dry, brown, silt
68142-2	W0901472	10-14-97	solid	Dry, brown, silt
68142-3	W0201474	10-14-97	solid	Dry, brown, silt

SAMPLE EXTRACTION AND ANALYSIS

ORGANOPHOSPHORUS PESTICIDES
Samples 68142-1 through 68142-3 were analyzed for organophosphorus pesticides in accordance with EPA Method 8141. The samples were extracted in accordance with EPA SW-846 Method 3540 on 10-17-97 and analyzed on 10-17-97.

The reported values for disulfoton and ethion in sample 68142-3 are based on secondary dilutions.

All quality control parameters were within acceptance limits.

ORGANOCHLORINE PESTICIDES
Samples 68142-1 through 68142-3 were analyzed for organochlorine pesticides in accordance with EPA Method 8081. The samples were extracted in accordance with EPA SW-846 Method 3540 on 10-17-97 and analyzed on 10-20-97.

Several of the reported values in samples 68142-1 through 68142-3 are based on secondary dilutions.

The percent recoveries of TCMX and decachlorobiphenyl (surrogates) in sample 68142-3 were not reported due to the required dilutions.

The percent recoveries for 4,4'-DDE and 4,4'-DDT in the matrix spike and matrix spike duplicate analysis of sample 68142-1 are outside the project specified quality control limits due to high contaminant levels in the original sample. The percent recovery for 2,4'-DDT in the matrix spike analysis for sample 68142-1 was outside the project specified quality control limits due to sample specific matrix interferences, as indicated by the blank spike recoveries.

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: October 28, 1997

Project: Wenatchee Test Plot Soils, USACOE - Revised Lab No.: 68142

ORGANOCHLORINE PESTICIDES, Continued

The continuing calibration verification (CCV) standard for b-BHC analyzed on 10-20-97 was above acceptance limits. b-BHC was not detected in any of the associated samples, and no action was taken.

All detected compounds were confirmed as present using a second dissimilar column. All relative percent difference values were less than or equal to 40%, except for 4,4'-DDD, which coelutes with 2,4'-DDT on the confirmation column, as most samples that contained 4,4'-DDD contained significant concentrations of 2,4'-DDT.

All other quality control parameters were within acceptance limits.

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) EXTRACTION

Samples 68142-1 through 68142-3 were extracted by TCLP in accordance with EPA Method 1311. The samples were extracted on 10-15-97 and filtered on 10-16-97.

TCLP METALS

The TCLP extracts for samples 68142-1 through 68142-3 were analyzed for arsenic, barium, cadmium, chromium, lead, selenium and silver by ICP in accordance with EPA Method 6010 on 10-17-97. The TCLP extracts were analyzed for mercury by CVAA in accordance with EPA SW-846 Method 7470 on 10-17-97. The ICP metals were digested in accordance with EPA SW-846 Method 3010 on 10-16-97 and analyzed on 10-17-97. The TCLP extracts were analyzed for mercury on 10-17-97.

Because the CLP program uses slightly different MDLs than SAS spreadsheets used for the preliminary results, one result that was reported at the detection limit has been changed to a nondetect. For sample 68142-1, selenium is now reported as 198U ug/L.

The first continuing calibration blank (CCB) had selenium detected at 233.5 ug/L and the third CCB had silver detected at 14.9 ug/L. These values are above the method detection limit but below the practical quantitation limit, and no action was taken.

Metals data are reported in CLP Format. All other quality control parameters were within acceptance limits.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901471
Lab ID:	68142-01
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	94.87
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	81		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	90	50	
Diazinon	ND	71	71	
Disulfoton	ND	64	42	
Parathion,methyl	ND	80	72	
Malathion	ND	85	60	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	59	
Ethion	72	84	42	J
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901472
Lab ID:	68142-02
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	95.2
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	78		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	90	50	
Diazinon	ND	72	71	
Disulfoton	ND	65	43	
Parathion,methyl	ND	80	72	
Malathion	ND	85	61	
Parathion	ND	120	110	
Azinphos,methyl	ND	87	60	
Ethion	62	84	42	J
Paraoxon,methyl	ND	84	42	
Paraoxon,ethyl	ND	84	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0201474
Lab ID:	68142-03
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	91.45
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	77		65	135

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		140	88	
Dimethoate	ND		97	54	
Diazinon	ND		77	77	
Disulfoton		19000	7000	4600	D
Parathion,methyl	ND		87	78	
Malathion	ND		92	66	
Parathion		360	130	120	
Azinphos,methyl	ND		94	64	
Ethion		210000	9100	4500	D
Paraoxon,methyl	ND		91	45	
Paraoxon,ethyl	ND		91	45	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901471
Lab ID:	68142-01
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
% Solids	94.87
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	85		63	149
Decachlorobiphenyl	84		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.062	
alpha-BHC	ND		17	0.064	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.065	
gamma-BHC (Lindane)	ND		17	0.14	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD		29	17	0.14	C
4,4'-DDE		240	170	3	D C
4,4'-DDT		280	170	11	D C
2,4'-DDD		2.7	17	1.3	J C
2,4'-DDE		3.7	17	1.3	J C
2,4'-DDT		44	17	1.3	C
Dieldrin		2	0.84	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.84	0.1	
Endrin aldehyde	ND		17	0.75	
Heptachlor	ND		17	0.085	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901472
Lab ID:	68142-02
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
% Solids	95.2
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	87		63	149
Decachlorobiphenyl	78		57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		0.42	0.063	
alpha-BHC	ND		17	0.065	
beta-BHC	ND		17	0.12	
delta-BHC	ND		17	0.066	
gamma-BHC (Lindane)	ND		17	0.15	
Chlordane (technical)	ND		8.4	2.1	
4,4'-DDD		23	17	0.14	C
4,4'-DDE		220	84	3	D C
4,4'-DDT		150	84	11	D C
2,4'-DDD		2.2	17	1.3	J C
2,4'-DDE		3.2	17	1.3	J C
2,4'-DDT		38	17	1.3	C
Dieldrin		1.9	0.84	0.06	C
Endosulfan I	ND		1.7	0.27	
Endosulfan II	ND		1.7	0.14	
Endosulfan sulfate	ND		1.7	0.2	
Endrin	ND		0.84	0.1	
Endrin aldehyde	ND		17	0.75	
Heptachlor	ND		17	0.086	
Heptachlor epoxide	ND		17	0.14	
Methoxychlor	ND		17	1.9	
Toxaphene	ND		17	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0201474
Lab ID:	68142-03
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
% Solids	91.45
Dilution Factor	1000

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		450	68	
alpha-BHC	ND		18000	70	
beta-BHC	ND		18000	130	
delta-BHC	ND		18000	71	
gamma-BHC (Lindane)	ND		18000	160	
Chlordane (technical)	ND		9100	2200	
4,4'-DDD	ND		18000	150	
4,4'-DDE	ND		18000	330	
4,4'-DDT	ND		18000	1100	
2,4'-DDD	ND		18000	1400	
2,4'-DDE	ND		18000	1400	
2,4'-DDT	ND		18000	1400	
Dieldrin	ND		910	65	
Endosulfan I		270000	9100	1500	D C
Endosulfan II		140000	9100	750	D C
Endosulfan sulfate	ND		1800	220	
Endrin	ND		910	110	
Endrin aldehyde	ND		18000	810	
Heptachlor	ND		18000	93	
Heptachlor epoxide	ND		18000	150	
Methoxychlor	ND		18000	2000	
Toxaphene	ND		18000	40000	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP199
Date Received:	-
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	84		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	130	81	
Dimethoate	ND	89	50	
Diazinon	ND	71	70	
Disulfoton	ND	64	42	
Parathion,methyl	ND	80	71	
Malathion	ND	84	60	
Parathion	ND	110	110	
Azinphos,methyl	ND	87	59	
Ethion	ND	83	42	
Paraoxon,methyl	ND	83	42	
Paraoxon,ethyl	ND	83	42	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	OP199
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
QC Batch ID:	OP199

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dichlorvos	0	420	400	96	
Dimethoate	0	420	460	110	
Diazinon	0	420	380	90	
Disulfoton	0	420	390	95	
Parathion,methyl	0	420	420	100	
Malathion	0	420	380	90	
Parathion	0	420	460	111	
Azinphos,methyl	0	420	400	95	
Ethion	0	420	410	97	
Paraoxon,methyl	0	420	410	99	
Paraoxon,ethyl	0	420	340	81	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SOP199
Date Received:	-
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	93		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	400	130	81	
Dimethoate	460	89	50	
Diazinon	380	71	70	
Disulfoton	390	64	42	
Parathion,methyl	420	80	71	
Malathion	380	85	60	
Parathion	460	120	110	
Azinphos,methyl	400	87	59	
Ethion	410	83	42	
Paraoxon,methyl	410	83	42	
Paraoxon,ethyl	340	83	42	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	W0901471
Lab ID:	68142-01
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
QC Batch ID:	OP199

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	423	505	120	482	114	5.1	
Dimethoate	0	423	461	109	441	104	4.7	
Diazinon	0	423	398	94.2	415	98	4	
Disulfoton	0	423	384	90.8	389	91.8	1.1	
Parathion,methyl	0	423	432	102	409	96.6	5.4	
Malathion	0	423	394	93.2	386	91.2	2.2	
Parathion	58	423	505	106	474	98.4	7.4	
Azinphos,methyl	0	423	489	116	402	95	20	
Ethion	72	423	474	95.2	483	97	1.9	
Paraoxon,methyl	0	423	443	105	398	94	11	
Paraoxon,ethyl	0	423	431	102	335	79.2	25	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901471 - ms
Lab ID:	68142S01
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	94.87
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	110		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	510	130	82	
Dimethoate	460	90	50	
Diazinon	400	72	71	
Disulfoton	380	65	43	
Parathion,methyl	430	81	72	
Malathion	390	86	61	
Parathion	500	120	110	
Azinphos,methyl	490	88	60	
Ethion	470	85	42	
Paraoxon,methyl	440	85	42	
Paraoxon,ethyl	430	85	42	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901471 - msd
Lab ID:	68142D01
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	94.87
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	91		65	135

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	480	130	82	
Dimethoate	440	91	51	
Diazinon	420	72	71	
Disulfoton	390	65	43	
Parathion,methyl	410	81	72	
Malathion	390	86	61	
Parathion	470	120	110	
Azinphos,methyl	400	88	60	
Ethion	480	85	42	
Paraoxon,methyl	400	85	42	
Paraoxon,ethyl	340	85	42	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE813
Date Received:	-
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	107		63	149
Decachlorobiphenyl	121		65	135

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.42	0.062	
alpha-BHC	ND	17	0.064	
beta-BHC	ND	17	0.12	
delta-BHC	ND	17	0.065	
gamma-BHC (Lindane)	ND	17	0.14	
Chlordane (technical)	ND	8.3	2	
4,4'-DDD	ND	17	0.14	
4,4'-DDE	ND	17	0.3	
4,4'-DDT	ND	17	1	
2,4'-DDD	ND	17	1.2	
2,4'-DDE	ND	17	1.2	
2,4'-DDT	ND	17	1.2	
Dieldrin	ND	0.83	0.059	
Endosulfan I	ND	1.7	0.27	
Endosulfan II	ND	1.7	0.14	
Endosulfan sulfate	ND	1.7	0.2	
Endrin	ND	0.83	0.1	
Endrin aldehyde	ND	17	0.74	
Heptachlor	ND	17	0.085	
Heptachlor epoxide	ND	17	0.14	
Methoxychlor	ND	17	1.9	
Toxaphene	ND	17	36	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	PE813
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
QC Batch ID:	PE813

Organochlorine Pesticides by USEPA Method 8081

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Aldrin	0	17	18	109	
gamma-BHC (Lindane)	0	17	18	107	
4,4'-DDD	0	41	40	97	
4,4'-DDE	0	41	41	99	
4,4'-DDT	0	41	39	94	
2,4'-DDD	0	41	35	84	
2,4'-DDE	0	41	34	82	
2,4'-DDT	0	41	32	78	
Dieldrin	0	41	39	94	
Endrin	0	41	38	93	
Heptachlor	0	17	19	115	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE813
Date Received:	-
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	93		63	149
Decachlorobiphenyl	104		57	143

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	18	0.41	0.062	C
gamma-BHC (Lindane)	18	17	0.14	C
4,4'-DDD	40	17	0.14	C
4,4'-DDE	41	17	0.3	C
4,4'-DDT	39	17	1	C
2,4'-DDD	35	17	1.2	C
2,4'-DDE	34	17	1.2	C
2,4'-DDT	32	17	1.2	C
Dieldrin	39	0.83	0.059	C
Endrin	38	0.83	0.1	C
Heptachlor	19	17	0.084	C

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	W0901471
Lab ID:	68142-01
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
QC Batch ID:	PE813

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	0	21.7	18.6	85.6	20.3	95.2	11	
gamma-BHC (Lindane)	0	21.7	18.6	85.4	19.6	91.9	7.3	
4,4'-DDD	29	43.5	60.6	72.8	62.2	77.7	6.5	
4,4'-DDE	240	43.5	263	59.8	237	0	200	X7a
4,4'-DDT	280	43.5	229	0	225	0	0	X7a
2,4'-DDD	2.7	43.5	31.7	66.7	31.5	67.6	1.3	
2,4'-DDE	3.7	43.5	31.4	63.7	32.1	66.5	4.3	
2,4'-DDT	44	43.5	69.6	58.9	69.7	60.1	2	X7
Dieldrin	2	43.5	43.6	95.8	46.6	104	8.2	
drin	0	43.5	40.6	93.5	44.6	104	11	
eptachlor	0	21.7	20.6	94.7	22.3	104	9.4	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901471 - ms
Lab ID:	68142S01
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/20/97
% Solids	94.87
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	91		63	149
Decachlorobiphenyl	79		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	19	0.43	0.065	C
gamma-BHC (Lindane)	19	17	0.15	C
4,4'-DDD	61	17	0.15	C
4,4'-DDE	260	17	0.31	E
4,4'-DDT	230	17	1.1	E
2,4'-DDD	32	17	1.3	C
2,4'-DDE	31	17	1.3	C
2,4'-DDT	70	17	1.3	C
Dieldrin	44	0.87	0.062	C
Endrin	41	0.87	0.11	C
Heptachlor	21	17	0.089	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	W0901471 - msd
Lab ID:	68142D01
Date Received:	10/15/97
Date Prepared:	10/17/97
Date Analyzed:	10/17/97
% Solids	94.87
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	95		63	149
Decachlorobiphenyl	88		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	20	0.43	0.064	C
gamma-BHC (Lindane)	20	17	0.15	C
4,4'-DDD	62	17	0.15	C
4,4'-DDE	240	17	0.31	E
4,4'-DDT	220	17	1.1	E
2,4'-DDD	32	17	1.3	C
2,4'-DDE	32	17	1.3	C
2,4'-DDT	70	17	1.3	C
Dieldrin	47	0.85	0.061	C
Endrin	45	0.85	0.1	C
Heptachlor	22	17	0.087	C

DATA QUALIFIER DEFINITIONS

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration 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 detected in the associated method blank. 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).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

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 was 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.

CHAIN OF CUSTODY

UND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 984.
(253) 922-2310 • FAX (253) 922-5047

60142

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: GARRY STRUTHER ASSOC.
PROJECT NAME: WTFREC
CONTACT: MIKE WEBB
PHONE NO: 425-519-0300 x 217

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	TCLP Metals	Total OP Pesticides	Total OC Pesticides
	W@901471	10/14/97	9:54	SOIL	1														X	X	X
	W@901472	10/14/97	9:55	SOIL	1														X	X	X
	W@201474	10/14/97	10:30	SOIL	1														X	X	X

	Signature	Printed Name	Firm	Time / Date
Relinquished By		Michael Webb	GSA Inc.	15:00 10/15/97
Received By				1500 10/15/97
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

ARMY CORPS OF ENGINEERS PROJECT
ANALYZE AS PER QAPP
LILA TRANSUE - LAB CONTACT

RUSH (72 Hr TAT)

SAS LAB NO. 6814

PAGE 1 OF

COOLER RECEIPT FORM

PROJECT: Wenatchee Test Plot Soils, USACOE W.O.# —

COOLER RECEIVED ON 10-15-97 AND OPENED ON 10-15-97 BY SGiang

SGiang
(SIGNATURE)

Temperature upon receipt: cooler 6 °C
temp. blank 3 °C

1. Were custody seals on outside of cooler and intact? YES (NC)
   a. If YES, how many and where: none
   b. Were signature and date correct? YES (NC)
2. Were custody papers taped to lid inside cooler? YES (NC)
3. Were custody papers properly filled out (ink, signed, etc)? (YES) NC
4. Did you sign custody papers in the appropriate place? (YES) NC
5. Did you attach shipper's packing slip to this form? YES (NC)
6. What kind of packing material was used? bubble wrap
7. Was sufficient ice used (if appropriate)? (YES) NC
8. Were all bottles sealed in separate plastic bags? (YES) NC
9. Did all bottles arrive in good condition (unbroken)? (YES) NC
10. Were all bottle labels complete (no., date, signed, pres, etc)? (YES) NC
11. Did all bottle labels and tags agree with custody papers? (YES) NC
12. Were correct bottles used for the test indicated? (YES) NC
13. If present, were VOA vials checked for absence of air bubbles and noted if found? n/a YES NC
14. Adequate volume of VOA vials received per sample? n/a YES NC
15. Was sufficient amount of sample sent in each bottle? (YES) NC
16. Were correct preservatives used? n/a YES NC
17. Corrective action taken, if necessary:
    a. Name of person contacted: _____
    b. Date: _____

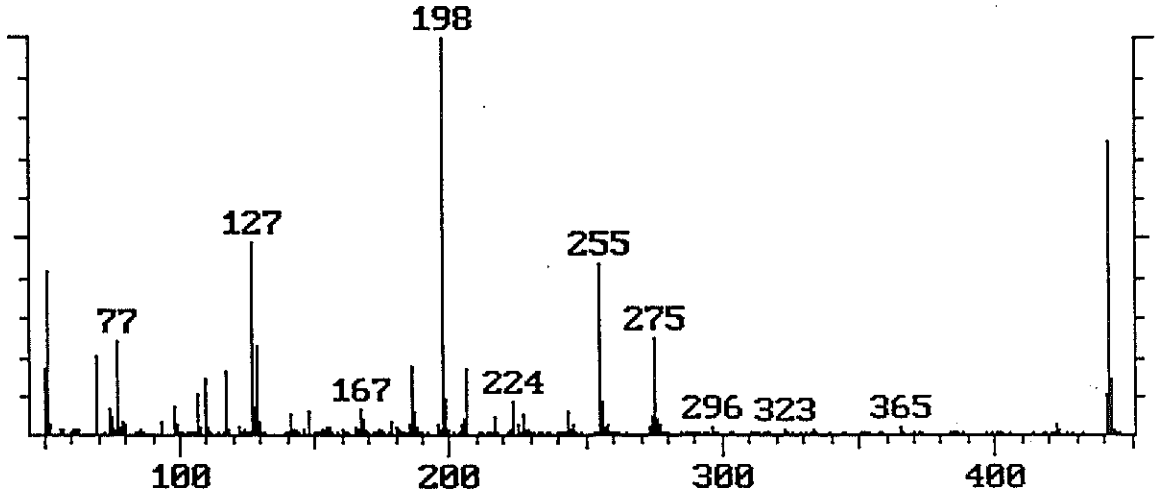
ORGANOPHOSPHORUS PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Method 8270 DFTPP Report

Data File: P25392
Cali File: DFTPP

Acqu Date: 09/30/97
Acqu Time: 13:40



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	41.23	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	19.90	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	48.91	Pass
197	<= 1% of Mass 198	0.73	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	8.66	Pass
275	10-30% of Mass 198	24.62	Pass
365	>= 1% of Mass 198	1.85	Pass
441	Exists/<= Mass 443	13.80	Pass
442	40-100% of Mass 198	74.39	Pass
443	17-23% of Mass 442	19.27	Pass

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

09/30/97

HIT ANY KEY TO CONTINUE

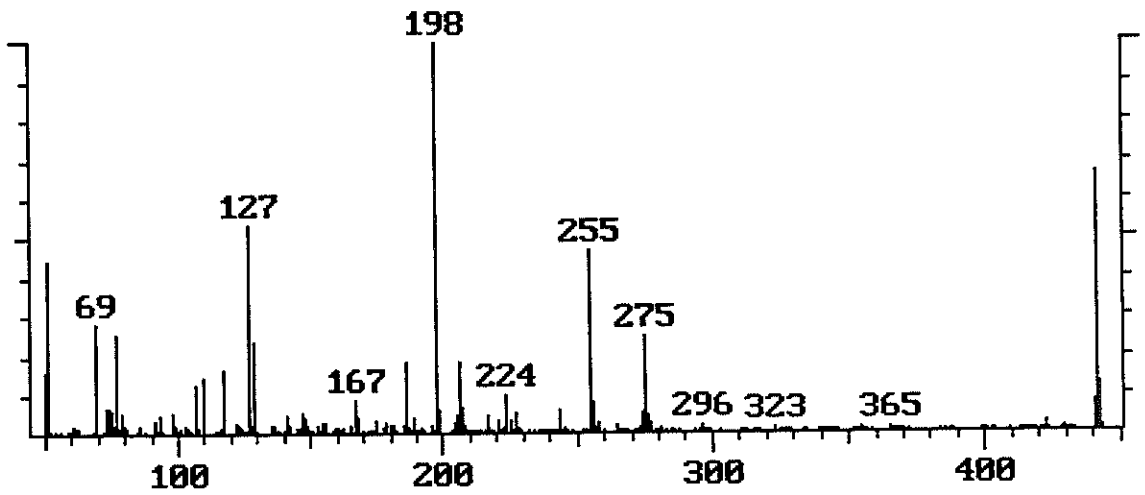
							AVE	RSD
Triphenyl Phosphate	0.240	0.224	0.243	0.230	0.229	0.209	0.229	5.3%
Dichlorvos	0.397	0.486	0.502	0.561	0.491	0.337	0.462	17.5%
Dimethoate	0.301	0.323	0.355	0.365	0.315	0.271	0.322	10.9%
Diazinon	0.330	0.410	0.443	0.501	0.501	0.391	0.429	15.5%
Disulfoton	0.494	0.468	0.437	0.387	0.382	0.581	0.458	16.3%
Paraoxon,methyl	0.404	0.492	0.473	0.465	0.384	0.380	0.433	11.3%
Parathion,methyl	0.248	0.279	0.337	0.366	0.299	0.234	0.294	17.3%
Paraoxon,ethyl	0.389	0.360	0.373	0.335	0.321	0.420	0.366	9.9%
Malathion	0.423	0.520	0.567	0.597	0.605	0.361	0.512	19.5%
Parathion	0.112	0.135	0.154	0.178	0.150	0.122	0.142	17.1%
Ethion	0.649	0.718	0.872	0.964	0.948	0.769	0.820	15.6%
Azinphos,methyl	1.483	1.534	1.475	1.378	1.206	1.439	1.419	8.2%

CONTINUING CALIBRATION DATA

Method 8270 DFTPP Report

Data File: P25743
Cali File: DFTPP

Acqu Date: 10/17/97
Acqu Time: 18:31



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	44.29	Pass
68	<= 2% of Mass 69	0.08	Pass
69	Exists Only	27.92	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	53.16	Pass
197	<= 1% of Mass 198	0.15	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	5.29	Pass
275	10-30% of Mass 198	24.55	Pass
365	>= 1% of Mass 198	1.14	Pass
441	Exists/<= Mass 443	11.78	Pass
442	40-100% of Mass 198	66.49	Pass
443	17-23% of Mass 442	18.41	Pass

Calibration Check Report

DATAFILE : P25744 ANALYSIS DATE : 10/17/97 18:47
SAMPLE : 1.0 NG/UL 8141 + CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.202	11.881	%
Dichlorvos	0.462	0.480	3.742	%
Dimethoate	0.322	0.302	6.036	%
Diazinon	0.429	0.386	10.064	%
Disulfoton	0.458	0.464	1.280	%
Paraoxon,methyl	0.433	0.405	6.590	%
Parathion,methyl	0.294	0.263	10.465	%
Paraoxon,ethyl	0.366	0.328	10.515	%
Malathion	0.512	0.495	3.437	%
Parathion	0.142	0.130	8.646	%
Ethion	0.820	0.704	14.131	%
Azinphos,methyl	1.419	1.394	1.797	%

Calibration Check Report

DATAFILE : P25752ER ANALYSIS DATE : 10/17/97 22:43
SAMPLE : 1.0 NG/UL 8141 + END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

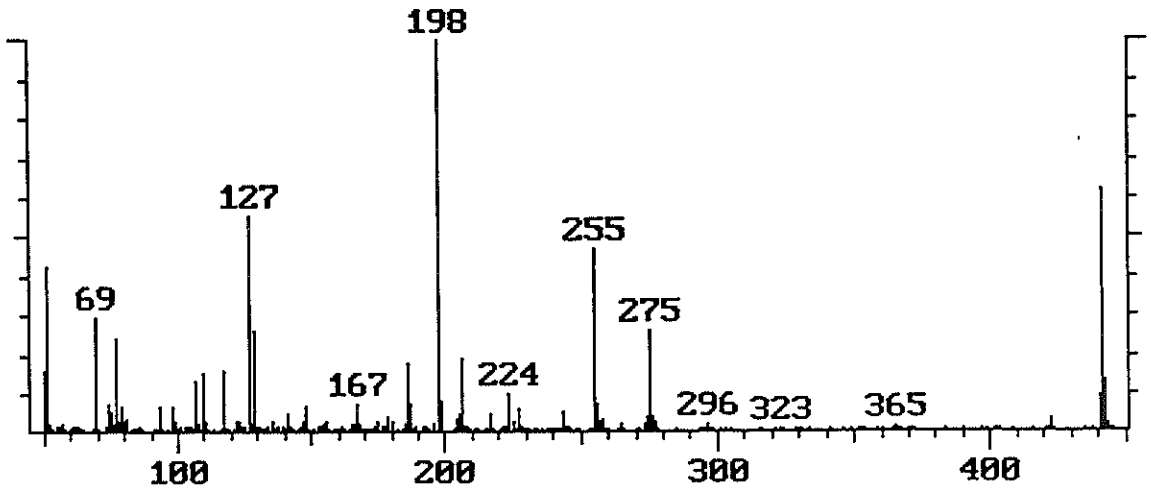
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.214	6.601	%
Dichlorvos	0.462	0.478	3.441	%
Dimethoate	0.322	0.294	8.597	%
Diazinon	0.429	0.428	0.344	%
Disulfoton	0.458	0.459	0.105	%
Paraoxon,methyl	0.433	0.420	3.106	%
Parathion,methyl	0.294	0.255	13.126	%
Paraoxon,ethyl	0.366	0.315	14.083	%
Malathion	0.512	0.516	0.695	%
Parathion	0.142	0.125	11.605	%
Ethion	0.820	0.714	12.948	%
Azinphos,methyl	1.419	1.454	2.451	%

Method 8270 DFTPP Report

Data File: P25777
Cali File: DFTPP

Acqu Date: 10/18/97
Acqu Time: 11:14



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	42.47	Pass
68	<= 2% of Mass 69	1.39	Pass
69	Exists Only	29.03	Pass
70	<= 2% of Mass 69	0.07	Pass
127	40-60% of Mass 198	54.94	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	7.56	Pass
275	10-30% of Mass 198	25.65	Pass
365	>= 1% of Mass 198	1.27	Pass
441	Exists/<= Mass 443	13.87	Pass
442	40-100% of Mass 198	61.53	Pass
443	17-23% of Mass 442	20.47	Pass

Calibration Check Report

DATAFILE : P25778 ANALYSIS DATE : 10/18/97 12:57
SAMPLE : 1.0 NG/UL 8141 CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.220	4.054	%
Dichlorvos	0.462	0.459	0.711	%
Dimethoate	0.322	0.300	6.766	%
Diazinon	0.429	0.429	0.159	%
Disulfoton	0.458	0.452	1.309	%
Paraoxon,methyl	0.433	0.427	1.491	%
Parathion,methyl	0.294	0.266	9.445	%
Paraoxon,ethyl	0.366	0.346	5.702	%
Malathion	0.512	0.504	1.652	%
Parathion	0.142	0.137	3.264	%
Ethion	0.820	0.720	12.218	%
Azinphos,methyl	1.419	1.476	4.027	%

Calibration Check Report

DATAFILE : P25782 ANALYSIS DATE : 10/18/97 14:57
SAMPLE : 1.0 NG/UL 8141 + END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.229	0.208	9.334	%
Dichlorvos	0.462	0.456	1.336	%
Dimethoate	0.322	0.302	6.145	%
Diazinon	0.429	0.381	11.311	%
Disulfoton	0.458	0.450	1.798	%
Paraoxon,methyl	0.433	0.426	1.591	%
Parathion,methyl	0.294	0.267	9.233	%
Paraoxon,ethyl	0.366	0.363	0.908	%
Malathion	0.512	0.509	0.618	%
Parathion	0.142	0.126	11.418	%
Ethion	0.820	0.707	13.761	%
Azinphos,methyl	1.419	1.481	4.346	%

CHLORINATED PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Pesticide %RSD

Date Analyzed: 10-Oct-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	5018	4730	4734	4271	4059	3741	4426	2.2596E-04	441	10.0	0.9951
alpha-BHC	7094	7197	7217	6926	6579	6004	6836	1.4628E-04	430	6.3	0.9958
Lindane	6537	6573	6616	6343	5991	5554	6269	1.5952E-04	383	6.1	0.9968
Heptachlor	6473	6559	6476	6294	5843	5348	6166	1.6219E-04	435	7.1	0.9954
Aldrin	7419	6532	6452	6076	5796	5270	6258	1.5981E-04	669	10.7	0.9957
B-BHC	3041	2425	2426	2401	2240	2100	2439	4.1003E-04	294	12.1	0.9974
D-BHC	5771	6111	6312	6069	5825	5361	5908	1.6926E-04	304	5.1	0.9966
Heptachlor Epoxide	5562	5585	5523	5436	5032	4640	5296	1.8881E-04	348	6.6	0.9959
Endosulfan-I	4834	4794	4575	4789	4407	4236	4606	2.1712E-04	223	4.8	0.9982
gamma-Chlordane	5536	5593	5642	5209	4881	4772	5272	1.8967E-04	345	6.6	0.9990
alpha-Chlordane	5195	5413	5256	5090	4786	4418	5026	1.9895E-04	332	6.6	0.9964
4,4'-DDE	5127	5110	4893	4751	4491	4150	4754	2.1037E-04	346	7.3	0.9967
Dieldrin	6643	5257	4990	4826	4426	4090	5039	1.9846E-04	811	16.1	0.9960
Endrin	3788	3777	3784	3834	3497	3261	3657	2.7345E-04	209	5.7	0.9963
4,4'-DDD	3785	3426	3468	3417	3394	3227	3453	2.8963E-04	167	4.8	0.9990
Endosulfan-II	4825	3708	3652	3639	3593	3357	3796	2.6346E-04	473	12.5	0.9982
4,4'-DDT	4109	3683	3585	3241	3048	2615	3380	2.9585E-04	480	14.2	0.9968
Endrin Aldehyde	1582	1617	1691	1884	1797	1674	1707	5.8566E-04	104	6.1	0.9971
Methox/Endo Sulfate	2841	2363	2242	2156	1988	1819	2235	4.4750E-04	322	14.4	0.9954
Endrin Ketone	3761	3696	3662	3662	3429	3245	3576	2.7967E-04	180	5.0	0.9979
Decachlorobiphenyl	3732	3574	3425	3253	3065	2857	3318	3.0142E-04	297	8.9	0.9972

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
2,4-DDE	4543	4283	4362	4073	3955	4243	2.3567E-04	209	4.9	0.9951
2,4-DDD	3296	3310	3554	3293	3198	3330	3.0028E-04	119	3.6	0.9966
2,4-DDT	4258	4268	4377	4168	4039	4222	2.3686E-04	113	2.7	0.9961

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
2,4-DDE	12668	11847	12373	12281	13204	12474	8.0164E-05	450	3.6	0.9994
2,4-DDD	3982	3648	4019	3817	3842	3861	2.5898E-04	132	3.4	0.9997
2,4-DDT	8550	8474	9495	9413	9817	9150	1.0929E-04	539	5.9	0.9994

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Inserted after p.40.
MW, 12-17-97

Pesticide %RSD

Date Analyzed: 10-Oct-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	6788	6396	6190	5780	5805	5545	6084	1.6437E-04	421	6.9	0.9992
alpha-BHC	8721	8926	8926	8834	8770	8397	8762	1.1412E-04	180	2.1	0.9992
Lindane	8789	8253	8083	8000	7858	7411	8066	1.2398E-04	415	5.1	0.9986
beta-BHC	4331	3252	3104	3019	2859	2641	3201	3.1239E-04	540	16.9	0.9968
Heptachlor	11452	8338	8243	7750	7385	6932	8350	1.1976E-04	1468	17.6	0.9979
D-BHC	8984	7860	7835	7688	7679	7364	7902	1.2656E-04	510	6.5	0.9993
Aldrin	8344	7833	7715	7414	7276	6801	7564	1.3221E-04	481	6.4	0.9981
Heptachlor Epoxide	6978	7147	6618	6566	6239	5875	6571	1.5219E-04	427	6.5	0.9980
gamma-Chlordane	7774	6720	6527	6455	6061	5674	6535	1.5302E-04	651	10.0	0.9974
alpha-Chlordane	5808	6199	6216	6091	5846	5475	5939	1.6838E-04	261	4.4	0.9978
Endosulfan-I	4930	5523	5516	5657	5347	5081	5342	1.8719E-04	258	4.8	0.9983
4,4'-DDE	6340	5930	5826	5674	5670	5495	5823	1.7174E-04	268	4.6	0.9996
Dieldrin	7699	5924	5610	5638	5401	5246	5920	1.6893E-04	823	13.9	0.9994
Endrin	4385	4391	4318	4440	4181	4047	4294	2.3290E-04	137	3.2	0.9990
4,4'-DDD	4984	4355	4240	4248	4160	4082	4345	2.3016E-04	298	6.8	0.9998
Endosulfan-II	3443	4191	4223	4337	4312	4268	4129	2.4220E-04	311	7.5	0.9999
4,4'-DDT	5235	4335	4251	4265	4217	4136	4406	2.2695E-04	375	8.5	0.9998
Endrin Aldehyde	2469	2665	2629	2612	2533	2381	2548	3.9246E-04	99	3.9	0.9982
Endosulfan Sulfate	2711	3327	3402	3533	3441	3333	3291	3.0386E-04	269	8.2	0.9994
Methoxychlor	1967	1994	1973	2020	2062	2109	2021	4.9481E-04	51	2.5	0.9997
Endrin Ketone	4510	4336	4359	4533	4376	4281	4399	2.2731E-04	92	2.1	0.9996
Decachlorobiphenyl	4304	4605	4453	4154	3961	3725	4200	2.3807E-04	295	7.0	0.9978

Sample Concentration = (Linear Regression Value) x (Analyte Response)

CONTINUING CALIBRATION DATA

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10209709
Date Analyzed: 10/20/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	52.52	5.0%	OK
alpha-BHC	25	26.57	6.3%	OK
Lindane	25	27.15	8.6%	OK
Heptachlor	25	27.63	10.5%	OK
Aldrin	25	27.93	11.7%	OK
B-BHC	25	29	16.0%	
D-BHC	25	26.96	7.8%	OK
Heptachlor Epoxide	25	28.1	12.4%	OK
Endosulfan-I	25	27.94	11.8%	OK
gamma-Chlordane	25	28.35	13.4%	OK
alpha-Chlordane	25	28.65	14.6%	OK
4,4'-DDE	50	54.7	9.4%	OK
Dieldrin	50	53.66	7.3%	OK
Endrin	50	52	4.0%	OK
4,4'-DDD	50	52.47	4.9%	OK
Endosulfan-II	50	52.1	4.2%	OK
4,4'-DDT	50	49.31	1.4%	OK
Endrin Aldehyde	50	53.28	6.6%	OK
Methoxychlor	250	224.49	10.2%	OK
Endosulfan Sulfate	50	53.45	6.9%	OK
Endrin Ketone	50	52.16	4.3%	OK
Decachlorobiphenyl	100	108	8.3%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10209710
Date Analyzed: 10/20/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	20.02	0.1%	OK
2,4-DDD	20	19.66	1.7%	OK
2,4-DDT	20	19	5.1%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10209723
Date Analyzed: 10/20/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	50.94	1.9%	OK
alpha-BHC	25	25.45	1.8%	OK
Lindane	25	25.81	3.2%	OK
Heptachlor	25	26.62	6.5%	OK
Aldrin	25	26.74	7.0%	OK
B-BHC	25	27.44	9.8%	OK
D-BHC	25	25.29	1.2%	OK
Heptachlor Epoxide	25	26.63	6.5%	OK
Endosulfan-I	25	26.27	5.1%	OK
gamma-Chlordane	25	26.93	7.7%	OK
alpha-Chlordane	25	27.04	8.2%	OK
4,4'-DDE	50	49.68	0.6%	OK
Dieldrin	50	49.93	0.1%	OK
Endrin	50	47.05	5.9%	OK
4,4'-DDD	50	47.34	5.3%	OK
Endosulfan-II	50	47.06	5.9%	OK
4,4'-DDT	50	46.22	7.6%	OK
Endrin Aldehyde	50	50.3	0.6%	OK
Methoxychlor	250	258.63	3.5%	OK
Endosulfan Sulfate	50	48.5	3.0%	OK
Endrin Ketone	50	47.99	4.0%	OK
Decachlorobiphenyl	100	100	0.4%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10209724
Date Analyzed: 10/20/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	18.87	5.7%	OK
2,4-DDD	20	18.46	7.7%	OK
2,4-DDT	20	18	10.3%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10209708
Date Analyzed: 10/20/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	7825
4,4'-DDT	381224
Endrin Aldehyde	11935
Endrin Ketone	16983
Endrin	193172
DDT % Breakdown	2.0%
Endrin % Breakdown	13.0%
Total % Breakdown	15.0%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	14739
4,4'-DDT	477091
Endrin Aldehyde	22149
Endrin Ketone	17695
Endrin	227711
DDT % Breakdown	3.0%
Endrin % Breakdown	14.9%
Total % Breakdown	17.9%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10209722
Date Analyzed: 10/20/97

DB-1701

Compound	Response (Area)
4,4'-DDE	6062
4,4'-DDD	8013
4,4'-DDT	370785
Endrin Aldehyde	11475
Endrin Ketone	15615
Endrin	195667
DDT % Breakdown	3.7%
Endrin % Breakdown	12.2%
Total % Breakdown	15.8%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	12052
4,4'-DDT	436808
Endrin Aldehyde	21229
Endrin Ketone	14714
Endrin	213697
DDT % Breakdown	2.7%
Endrin % Breakdown	14.4%
Total % Breakdown	17.1%

TCLP METALS DATA PACKAGE

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A__ SAS No.: 68142_ SDG No.:901471

SOW No.: ILM02.1

EPA Sample No.	Lab Sample ID
201474	68142-3
901471	68142-1
901472	68142-2

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

901471

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Matrix (soil/water): WATER Lab Sample ID: 68142-1

Level (low/med): LOW__ Date Received: 10/15/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_		_		NR
7440-36-0	Antimony_		_		NR
7440-38-2	Arsenic__	656	_		P_
7440-39-3	Barium___	822	_		P_
7440-41-7	Beryllium		_		NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__		_		NR
7440-47-3	Chromium_	37.8	_		P_
7440-48-4	Cobalt___		_		NR
7440-50-8	Copper___		_		NR
7439-89-6	Iron_____		_		NR
7439-92-1	Lead_____	399	_		P_
7439-95-4	Magnesium		_		NR
7439-96-5	Manganese		_		NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___		_		NR
7440-09-7	Potassium		_		NR
7782-49-2	Selenium_	198	U		P_
7440-22-4	Silver___	7.4	U		P_
7440-23-5	Sodium___		_		NR
7440-28-0	Thallium_		_		NR
7440-62-2	Vanadium_		_		NR
7440-66-6	Zinc_____		_		NR
0000-00-0	Molybdenu		_		NR
			_		

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

901472

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Matrix (soil/water): WATER Lab Sample ID: 68142-2

Level (low/med): LOW__ Date Received: 10/15/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_		_		NR
7440-36-0	Antimony_		_		NR
7440-38-2	Arsenic__	570	_		P_
7440-39-3	Barium___	717	_		P_
7440-41-7	Beryllium		_		NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__		_		NR
7440-47-3	Chromium_	31.0	_		P_
7440-48-4	Cobalt___		_		NR
7440-50-8	Copper___		_		NR
7439-89-6	Iron_____		_		NR
7439-92-1	Lead_____	328	_		P_
7439-95-4	Magnesium		_		NR
7439-96-5	Manganese		_		NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___		_		NR
7440-09-7	Potassium		_		NR
7782-49-2	Selenium_	290	B		P_
7440-22-4	Silver___	32.3	B		P_
7440-23-5	Sodium___		_		NR
7440-28-0	Thallium_		_		NR
7440-62-2	Vanadium_		_		NR
7440-66-6	Zinc_____		_		NR
0000-00-0	Molybdenu		_		NR
			_		

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

201474

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Matrix (soil/water): WATER Lab Sample ID: 68142-3

Level (low/med): LOW__ Date Received: 10/15/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_		_		NR
7440-36-0	Antimony_		_		NR
7440-38-2	Arsenic__	594	_		P_
7440-39-3	Barium___	838	_		P_
7440-41-7	Beryllium		_		NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__		_		NR
7440-47-3	Chromium_	42.5	_		P_
7440-48-4	Cobalt___		_		NR
7440-50-8	Copper___		_		NR
7439-89-6	Iron_____		_		NR
7439-92-1	Lead_____	2650	_		P_
7439-95-4	Magnesium		_		NR
7439-96-5	Manganese		_		NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___		_		NR
7440-09-7	Potassium		_		NR
7782-49-2	Selenium_	262	B		P_
7440-22-4	Silver___	7.4	U		P_
7440-23-5	Sodium___		_		NR
7440-28-0	Thallium_		_		NR
7440-62-2	Vanadium_		_		NR
7440-66-6	Zinc_____		_		NR
0000-00-0	Molybdenu		_		NR
			_		

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Initial Calibration Source: ENVIR.RESOUR

Continuing Calibration Source: LEEMAN LABS_

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	4000.0	4047.00	101.2	5000.0	5113.00	102.3	4960.00	99.2	P
Barium	50.0	51.10	102.2	500.0	523.50	104.7	505.00	101.0	P
Beryllium									NR
Cadmium	800.0	776.30	97.0	500.0	495.30	99.1	542.70	108.5	P
Calcium									NR
Chromium	100.0	99.40	99.4	500.0	505.80	101.2	533.40	106.7	P
Cobalt									NR
Copper									NR
Iron									NR
Lead	1500.0	1507.00	100.5	5000.0	5087.00	101.7	5426.00	108.5	P
Magnesium									NR
Manganese									NR
Mercury	4.0	4.08	102.0	5.0	5.43	108.6	5.48	109.6	AV
Nickel									NR
Potassium									NR
Selenium	5000.0	5005.00	100.1	5000.0	5256.00	105.1	4700.00	94.0	P
Silver	200.0	191.80	95.9	500.0	512.20	102.4	472.80	94.6	P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenu									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Initial Calibration Source: ENVIR.RESOUR

Continuing Calibration Source: LEEMAN LABS_

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic				5000.0	5097.00	101.9			P
Barium				500.0	502.80	100.6			P
Beryllium									NR
[illegible]mium				500.0	534.40	106.9			P
[illegible]cium									NR
Chromium				500.0	536.40	107.3			P
Cobalt									NR
Copper									NR
Iron									NR
Lead				5000.0	5417.00	108.3			P
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium				5000.0	5042.00	100.8			P
Silver				500.0	481.90	96.4			P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenu									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3
BLANKS

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	134.1	U	134.1	U	134.1	U	134.1	U	134.100	U	P
Barium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Beryllium											NR
Cadmium	24.3	U	24.3	U	24.3	U	24.3	U	24.300	U	P
Calcium											NR
Chromium	4.7	U	4.7	U	4.7	U	4.7	U	4.700	U	P
Cobalt											NR
Copper											NR
Iron											NR
Lead	41.7	U	41.7	U	41.7	U	41.7	U	-58.700		P
Magnesium											NR
Manganese											NR
Mercury	0.2	U	0.2	U	0.2	U			0.174	U	AV
Nickel											NR
Potassium											NR
Selenium	158.2	U	233.5	B	158.2	U	158.2	U	158.200	U	P
Silver	7.4	U	7.4	U	7.4	U	14.9	B	7.400	U	P
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Molybdenum											NR

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No: 68142_ SDG No.: 901471

ICP ID Number: PS3000_____ ICS Source: PLASMA CHEM_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	493200	498600.0	99.7	536000	538100.0	107.6
Antimony								
Arsenic								
Barium	5	500	5	473.1	94.6	5	504.1	100.8
Beryllium								
Cadmium	18	1000	16	911.4	91.1	-9	972.0	97.2
Calcium	500000	500000	495300	500000.0	100.0	462300	464400.0	92.9
Chromium	10	500	-18	463.5	92.7	-19	453.4	90.7
Cobalt								
Copper								
Iron	200000	200000	186000	187800.0	93.9	189000	189900.0	94.9
Lead	42	1000	125	1114.0	111.4	119	1029.0	102.9
Magnesium	500000	500000	534100	540300.0	108.1	544200	547000.0	109.4
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	100		513			454		
Silver	10	1000	-8	939.8	94.0	4	950.4	95.0
Sodium								
Thallium								
Vanadium								
Zinc								

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.
901471

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Matrix (soil/water): WATER_ Level (low/med): LOW___

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic	75-125	5850.0000		656.3000		5000.00	103.9		P
Barium	75-125	1794.0000		822.5000		1000.00	97.1		P
Beryllium									NR
Cadmium	75-125	929.9000		24.3000	U	1000.00	93.0		P
Calcium									NR
Chromium	75-125	4768.0000		37.8000		5000.00	94.6		P
Cobalt									NR
Copper									NR
Iron									NR
Lead	75-125	5196.0000		399.0000		5000.00	95.9		P
Magnesium									NR
Manganese									NR
Mercury	75-125	21.9000		1.7400	U	20.00	109.5		AV
Nickel									NR
Potassium									NR
Selenium	75-125	1277.0000		198.3000	U	1000.00	107.9		P
Silver	75-125	4411.0000		7.4000	U	5000.00	88.2		P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenu									NR

Comments:

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LABORATORY CONTROL SAMPLE

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Solid LCS Source: _____

Aqueous LCS Source: ENVIR. RESOU

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic	1000.0	967.50	96.7						
Barium	1000.0	1014.00	101.4						
Beryllium									
Cadmium	1000.0	1039.00	103.9						
[illegible]cium									
[illegible]omium	1000.0	1053.00	105.3						
Cobalt									
Copper									
Iron									
Lead	1000.0	1091.00	109.1						
Magnesium									
Manganese									
Mercury	2.0	2.11	105.3						
Nickel									
Potassium									
Selenium	10000.0	10050.00	100.5						
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Molybdenu									

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LABORATORY CONTROL SAMPLE

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Solid LCS Source: _____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
[illegible]cium									
[illegible]romium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver	1000.0	883.80	88.4						
Sodium									
Thallium									
Vanadium									
Zinc									
Molybdenu									

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9

ICP SERIAL DILUTION

EPA SAMPLE NO.

901471

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

Matrix (soil/water): WATER Level (low/med): LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							NR
Antimony							NR
Arsenic	656.30		670.50	U	100.0		P
Barium	822.50		799.00		2.9		P
Beryllium							NR
Cadmium	24.30	U	121.50	U			P
Calcium							NR
Chromium	37.80		25.00	B	33.9		P
Cobalt							NR
Copper							NR
Iron							NR
Lead	399.00		208.50	U	100.0		P
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium	198.30	U	791.00	U			P
Silver	7.40	U	37.00	U			P
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR

10
Instrument Detection Limits (Quarterly)

Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

ICP ID Number: PS3000_____ Date: 10/01/97

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	51.0	P
Antimony			6		NR
Arsenic	193.70		1	134.1	P
Barium	455.50		5	0.7	P
Beryllium			5		NR
Cadmium	226.50		5	24.3	P
Calcium	317.93		5000	2.2	P
Chromium	267.72		10	4.7	P
Cobalt			50		NR
Copper			20		NR
Iron	259.94		100	5.5	P
Lead	220.35		0	41.7	P
Magnesium	279.55		5000	64.9	P
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.03		400	158.2	P
Silver	328.07		50	7.4	P
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

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10
Instrument Detection Limits (Quarterly)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

ICP ID Number: _____ Date: 01/10/97

Flame AA ID Number : PS200_____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			6		NR
Arsenic			1		NR
Barium			5		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			20		NR
Iron			100		NR
Lead			0		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.65		0.2	0.2	AV
Nickel			40		NR
Potassium			5000		NR
Selenium			400		NR
Silver			50		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

_____

_____

_____

_____

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11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

ICP ID Number: PS3000_____ Date: 01/10/97

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	___
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	
Arsenic	193.70	0.0001000	-0.0000300	0.0003000	-0.0000100	
Barium	455.50	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium	226.50	0.0000500	0.0000050	-0.0001000	0.0000050	
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	
Chromium	267.72	0.0000000	0.0000000	0.0000090	0.0000000	
Cobalt	228.52	0.0000000	0.0000000	0.0000000	0.0000000	
[illegible]per	324.75	0.0000000	0.0000000	0.0000000	0.0000000	
[illegible]on	259.94	0.0000000	0.0000000	0.0000000	0.0000000	
Lead	220.35	0.0003000	-0.0000200	0.0000800	0.0000000	
Magnesium	279.55	0.0000000	0.0000000	0.0000000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0001000	0.0000000	
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium	196.03	-0.0007500	0.0010000	-0.0011000	0.0005000	
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	
Thallium	190.80	-0.0000500	-0.0000100	0.0000800	-0.0000100	
Vanadium	310.23	0.0000000	0.0000000	0.0000000	0.0000000	
Zinc	231.86	0.0000010	0.0000500	0.0000150	0.0000000	

Comments:

12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.: 901471

ICP ID Number: PS3000_____ Date: 03/10/97

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	5.00	150000.0	P
Antimony	5.00	100000.0	P
Arsenic	5.00	250000.0	P
Barium	5.00	100000.0	P
Beryllium	5.00	100000.0	P
Cadmium	5.00	100000.0	P
Calcium	5.00	750000.0	P
Chromium	5.00	750000.0	P
Cobalt	5.00	100000.0	P
Copper	5.00	750000.0	P
Iron	5.00	500000.0	P
Lead	5.00	500000.0	P
Magnesium	5.00	750000.0	P
Manganese	5.00	500000.0	P
Mercury			NR
Nickel	5.00	750000.0	P
Potassium	5.00	500000.0	P
Selenium	5.00	100000.0	P
Silver	5.00	250000.0	P
Sodium	5.00	100000.0	P
Thallium	5.00	100000.0	P
Vanadium	5.00	100000.0	P
Zinc	5.00	750000.0	P

Comments:

13
PREPARATION LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.:_N/A___ SAS No.: 68142_ SDG No.:901471

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
201474	10/16/97		100
901471	10/16/97		100
901471	10/16/97		100
901472	10/16/97		100
LCSW	10/16/97		100
LCSW	10/16/97		100
WATER P	10/16/97		100

13
PREPARATION LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.:_N/A___ SAS No.: 68142_ SDG No.:901471

Method: AV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
201474	10/17/97		100
901471	10/17/97		100
901471	10/17/97		100
901472	10/17/97		100
LCSW	10/17/97		100
WATER P	10/17/97		100

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14
ANALYSIS RUN LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.:901471

Instrument ID Number: PS3000_____ Method: P_

Start Date: 10/17/97 End Date: 10/17/97

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	MO
ICV	1.00	0730				X	X		X		X				X						X	X					
ICB	1.00	0738				X	X		X		X				X						X	X					
ICSA	1.00	0757					X		X		X				X						X	X					
ICSAB	1.00	0801					X		X		X				X							X					
CCV	1.00	0924				X	X		X		X				X						X	X					
CCB	1.00	0926				X	X		X		X				X						X	X					
WATER PR	1.00	0929				X	X		X		X				X						X	X					
901471	5.00	0931				X	X		X		X				X						X	X					
901471	1.00	0934				X	X		X		X				X						X	X					
471	1.00	0937				X	X		X		X				X						X	X					
ZZZZ	1.00	0939																									
ZZZZZZ	1.00	0942																									
901472	1.00	0944				X	X		X		X				X						X	X					
201474	1.00	0947				X	X		X		X				X						X	X					
ZZZZZZ	1.00	0950																									
CCV	1.00	0953				X	X		X		X				X						X	X					
CCB	1.00	0955				X	X		X		X				X						X	X					
LCSW	1.00	0958				X	X		X		X				X						X						
LCSW	1.00	1001																				X					
ZZZZZZ	1.00	1003																									
ZZZZZZ	1.00	1006																									
CCB	1.00	1009				X	X		X		X				X						X	X					
CCV	1.00	1011				X	X		X		X				X						X	X					
ICSA	1.00	1638					X		X		X				X						X	X					
ICSAB	1.00	1641					X		X		X				X							X					

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14
ANALYSIS RUN LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GSA_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68142_ SDG No.:901471

Instrument ID Number: PS200_____ Method: AV

Start Date: 10/17/97 End Date: 10/17/97

EPA Sample No.	D/F	Time	% R	Analytes																											
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	MO
ICV	1.00	1218																X									
ZZZZZZ	1.00	1221																									
ICB	1.00	1228																X									
CCV	1.00	1423																X									
CCB	1.00	1426																X									
WATER PR	1.00	1428																X									
901471	1.00	1430																X									
901471	1.00	1433																X									
ZZZZZZ	1.00	1436																									
ZZZZ	1.00	1438																									
SW	1.00	1441																X									
901472	1.00	1443																X									
901474	1.00	1445																X									
ZZZZZZ	1.00	1448																									
CCV	1.00	1450																X									
CCB	1.00	1453																X									

```
Protocol: SIMEPA2                                                  Power: 1.1 KW
Mode: Simultaneous Rev: 3.005   Time: 07:18:38  17 Oct 1997   Coolant:  15 LPM
Folder: #101397    Seq: 788     Plasma: On     Print: On      Neb:      53 PSI
User:              Batch:            Id: Ck1        Cup: 2 09 Auxil:       LPM
State: Idle        Macro CLPUP2      8: F3 Print    Xmit: Off Autosampler: On
```

CALIBRATION: Accepted Values

	Current	Accepted	Type	A	B	C	r
As2	Yes	07:18 17-Oct-97	W		1.71649e-4	-7.87386e-2	.999943
Ba1	Yes	07:18 17-Oct-97	W		3.33905e-7	-8.22462e-4	.999797
Cd3	Yes	07:18 17-Oct-97	W		3.35211e-5	1.23768e-2	.999988
Cr4	Yes	07:18 17-Oct-97	W		2.80893e-7	-9.16227e-3	.999924
Pb1	Yes	07:18 17-Oct-97	W		4.57214e-5	-1.94756e-1	.999906
Hg9	Yes	07:18 17-Oct-97	W		3.04444e-5	-4.66650e-2	.981295
Se4	Yes	07:18 17-Oct-97	W		4.22845e-4	-2.76529e-1	.999590
Ag1	Yes	07:18 17-Oct-97	W		8.72198e-7	2.87125e-3	.997661
Cu1	Yes	07:18 17-Oct-97	W		4.87500e-7	-1.01377e-2	.999887
Ni3	Yes	07:18 17-Oct-97	W		1.14485e-5	-5.86633e-2	.999853
Zn1	Yes	07:18 17-Oct-97	W		4.22466e-6	-4.91118e-2	.999974
Be1	Yes	07:18 17-Oct-97	W		1.71028e-7	-8.44445e-5	.999941
Sb1	Yes	07:18 17-Oct-97	W		2.71268e-4	-1.54418e-1	.999977
Tl1	Yes	07:18 17-Oct-97	W		4.76017e-4	3.09901e-1	.999980
3	Yes	07:18 17-Oct-97	W		1.52855e-5	-4.16060e-1	.999776

PgDn

Update coefficients

```
Protocol: SIMEPA2                                                  Power:  1.1 KW
Mode: Simultaneous  Rev: 3.005   Time: 07:18:40  17 Oct 1997   Coolant:   15 LPM
Folder: #101397     Seq: 788     Plasma: On      Print: On      Neb:       53 PSI
User:               Batch:            Id: Ck1        Cup: 2 09 Auxil:        LPM
State: Idle         Macro CLPUP2     10: F3 Print    Xmit: Off Autosampler: On
```

CALIBRATION: Accepted Values

PgUp

	Current	Accepted	Type	A	B	C	r
Co1	Yes	07:18 17-Oct-97	W		4.30018e-6	1.29894e-2	.999957
Fe2	Yes	07:18 17-Oct-97	W		1.02455e-6	1.11624e-3	.999998
Mo1	Yes	07:18 17-Oct-97	W		1.71423e-5	-2.74182e-2	.999997
V 2	Yes	07:18 17-Oct-97	W		4.43161e-7	-1.71235e-1	.999784
Na2	Yes	07:18 17-Oct-97	W		1.17951e-5	-7.62519e-2	.999732
Ca3	Yes	07:18 17-Oct-97	W		2.17917e-5	-2.39037e-1	.999684
K 1	Yes	07:18 17-Oct-97	W		7.77582e-4	-3.42259e-1	.999699
Mg4	Yes	07:18 17-Oct-97	W		1.41728e-5	4.30292e-2	.999770
Mn1	Yes	07:18 17-Oct-97	W		5.40514e-7	1.19561e-3	.999817
Si2	Yes	07:18 17-Oct-97	W		4.36850e-6	-1.53681e-1	.999915
Y 3	Yes	07:18 17-Oct-97	W		3.60522e-6	-2.10629e-2	.999812

```
Update coefficients
```

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 4 Ck4 Seq: 791 07:30:20 17 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		101.2	4.047	4.000	PPM	.3178
Ba1		102.3	.0511	.0500	PPM	.0003
Cd3		97.03	.7763	.8000	PPM	.0029
Cr4		99.43	.0994	.1000	PPM	.0022
Pb1		100.5	1.507	1.500	PPM	.0324
Se4		100.1	5.005	5.000	PPM	.1738
Ag1		95.90	.1918	.2000	PPM	.0019
Al3		102.4	2.047	2.000	PPM	.0157
Fe2		100.6	1.006	1.000	PPM	.0078
Ca3		99.52	4.976	5.000	PPM	.0325
Mg4		100.4	2.008	2.000	PPM	.0100

*** Check Standard: 1 Ck1 Seq: 793 07:38:45 17 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		.0015	.3000	PPM	.0513
Ba1		.0002	.1000	PPM	.0001
Cd3		-.0072	.1000	PPM	.0088
Cr4		-.0003	.1000	PPM	.0026
Pb1		-.0262	.1000	PPM	.0416
Se4		.0827	.3000	PPM	.1312
Ag1		.0005	.1000	PPM	.0035
Al3		.0104	.3000	PPM	.0103
Fe2		-.0046	1.000	PPM	.0018
Ca3		.0141	1.000	PPM	.0001
Mg4		.0010	1.000	PPM	.0110

*** Check Standard: 6 Ck6 Seq: 798 07:57:03 17 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		10.68	.0053	.0500	PPM	.0002
Cd3		183.8	.0165	.0090	PPM	.0394
Cr4	L	-453.4	-.0181	.0040	PPM	.0004
Pb1	H	208.3	.1250	.0600	PPM	.0727
Se4	H	855.4	.5132	.0600	PPM	.5667
Ag1	L	-131.3	-.0079	.0060	PPM	.0024
Al3		98.63	493.2	500.0	PPM	3.617
Fe2		93.00	186.0	200.0	PPM	1.433
Ca3		99.06	495.3	500.0	PPM	4.804
Mg4		106.8	534.1	500.0	PPM	2.548

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 7 Ck7 Seq: 799 08:01:03 17 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		94.62	.4731	.5000	PPM	.0058
Cd3		91.14	.9114	1.000	PPM	.0220
Cr4		92.71	.4635	.5000	PPM	.0014
Pb1		111.4	1.114	1.000	PPM	.0719
Ag1		93.98	.9398	1.000	PPM	.0088
Al3		99.72	498.6	500.0	PPM	5.791
Fe2		93.92	187.8	200.0	PPM	.6421
Ca3		100.0	500.0	500.0	PPM	4.871
Mg4		108.1	540.3	500.0	PPM	1.601

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 2 Ck2 Seq: 819 09:24:04 17 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		102.3	5.113	5.000	PPM	.1656
Ba1		104.7	.5235	.5000	PPM	.0046
Cd3		99.06	.4953	.5000	PPM	.0106
Cr4		101.2	.5058	.5000	PPM	.0021
Pb1		101.7	5.087	5.000	PPM	.0745
Se4		105.1	5.256	5.000	PPM	.0484
Ag1		102.4	.5122	.5000	PPM	.0008

*** Check Standard: 1 Ck1 Seq: 820 09:26:41 17 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0412	.3000	PPM	.0472
Ba1		-.0001	.1000	PPM	.0001
Cd3		.0054	.1000	PPM	.0160
Cr4		-.0007	.1000	PPM	.0004
Pb1		-.0390	.1000	PPM	.0315
Se4		.2335	.3000	PPM	.0702
Ag1		-.0006	.1000	PPM	.0025

*** Sample ID: METHOD BLK Seq: 821 09:29:17 17 Oct 1997 ICP

As2	.0700	PPM	.0313	.0508	.0531	.1061
Ba1	.0002	PPM	.0001	.0002	.0001	.0003
Cd3	-.0025	PPM	.0055	.0027	-.0082	-.0019
Cr4	-.0011	PPM	.0016	-.0008	.0003	-.0028
Pb1	-.0587	PPM	.0435	-.0100	-.0937	-.0725
Se4	.0805	PPM	.2680	-.0412	-.1051	.3878
Ag1	-.0050	PPM	.0012	-.0058	-.0037	-.0056

*** Sample ID: 68142-1 Seq: 822 09:31:52 17 Oct 1997 ICP

DIL 1/5

As2	.1160	PPM	.0763	.1327	.0327	.1825
Ba1	.1598	PPM	.0104	.1708	.1586	.1501
Cd3	.0022	PPM	.0066	-.0042	.0091	.0017
Cr4	.0050	PPM	.0011	.0061	.0040	.0049
Pb1	.0155	PPM	.0609	.0728	.0221	-.0484
Se4	.0941	PPM	.1674	.1223	-.0856	.2457
Ag1	-.0113	PPM	.0053	-.0051	-.0143	-.0144

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 68142-1				Seq: 823		09:34:27 17 Oct 1997 ICP		
As2	.6563	PPM	.0989	.6506	.5604	.7579		
Ba1	.8225	PPM	.0035	.8205	.8265	.8203		
Cd3	.0077	PPM	.0004	.0080	.0072	.0079		
Cr4	.0378	PPM	.0015	.0371	.0395	.0368		
Pb1	.3990	PPM	.0601	.4075	.3351	.4543		
Se4	.1983	PPM	.2075	.0042	.1737	.4171		
Ag1	-.0120	PPM	.0035	-.0086	-.0156	-.0116		
*** Sample ID: 68142-1S				Seq: 824		09:37:02 17 Oct 1997 ICP		
As2	4.938	PPM	.1165	4.804	4.997	5.013		
Ba1	1.682	PPM	.0526	1.657	1.742	1.646		
Cd3	.8445	PPM	.0171	.8275	.8443	.8617		
Cr4	4.265	PPM	.0464	4.276	4.306	4.215		
Pb1	4.656	PPM	.0460	4.697	4.664	4.606		
Se4	1.039	PPM	.1515	1.114	1.139	.8651		
Ag1	3.229	PPM	.0828	3.180	3.325	3.183		
*** Sample ID: 68142-1S				Seq: 825		09:39:37 17 Oct 1997 ICP		
As2	5.850	PPM	.1799	5.668	5.853	6.028		
Ba1	1.794	PPM	.0179	1.806	1.803	1.774		
Cd3	.9299	PPM	.0065	.9273	.9252	.9373		
Cr4	4.768	PPM	.0301	4.802	4.756	4.746		
Pb1	5.196	PPM	.0651	5.160	5.271	5.156		
Se4	1.277	PPM	.1483	1.260	1.138	1.433		
Ag1	4.411	PPM	.0695	4.484	4.404	4.346		
*** Sample ID: 68142-1PS				Seq: 826		09:42:13 17 Oct 1997 ICP		
As2	5.794	PPM	.1549	5.618	5.852	5.911		
Ba1	1.788	PPM	.0181	1.779	1.776	1.809		
Cd3	.9423	PPM	.0023	.9412	.9450	.9408		
Cr4	4.752	PPM	.0525	4.721	4.722	4.813		
Pb1	5.287	PPM	.1875	5.071	5.408	5.382		
Se4	1.391	PPM	.3457	1.526	.9988	1.650		
Ag1	4.377	PPM	.0436	4.379	4.333	4.420		

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 68142-2				Seq: 827		09:44:49 17 Oct 1997 ICP		
As2	.5697	PPM	.1057	.6298	.6317	.4476		
Ba1	.7175	PPM	.0062	.7237	.7113	.7176		
Cd3	.0044	PPM	.0040	-.0001	.0075	.0057		
Cr4	.0310	PPM	.0018	.0293	.0329	.0309		
Pb1	.3279	PPM	.0600	.2624	.3801	.3414		
Se4	.2898	PPM	.3722	.7182	.1052	.0460		
Ag1	.0323	PPM	.0155	.0495	.0282	.0193		
*** Sample ID: 68142-3				Seq: 828		09:47:25 17 Oct 1997 ICP		
As2	.5942	PPM	.1361	.6746	.6709	.4371		
Ba1	.8383	PPM	.0113	.8511	.8344	.8295		
Cd3	.0067	PPM	.0155	-.0068	.0033	.0236		
Cr4	.0425	PPM	.0024	.0452	.0405	.0416		
Pb1	2.653	PPM	.0434	2.683	2.603	2.672		
Se4	.2618	PPM	.3388	.5629	.3275	-.1051		
Ag1	-.0027	PPM	.0032	-.0005	-.0063	-.0011		
*** Sample ID: METHOD BLK				Seq: 829		09:50:01 17 Oct 1997 ICP		
As2	-.0074	PPM	.0286	-.0175	.0250	-.0296		
Ba1	.0001	PPM	.0002	.0001	-.0002	.0003		
Cd3	-.0054	PPM	.0053	-.0114	-.0033	-.0015		
Cr4	-.0012	PPM	.0012	-.0005	-.0006	-.0026		
Pb1	-.0264	PPM	.0600	.0212	-.0066	-.0938		
Se4	-.0197	PPM	.4219	.0366	-.4669	.3712		
Ag1	-.0121	PPM	.0017	-.0108	-.0141	-.0113		
*** Peak				Seq: 830		09:50:37 17 Oct 1997		
XAp = 229 YAp = 119 Intensity = 904220								
*** Check Standard: 2 Ck2				Seq: 831		09:53:01 17 Oct 1997 ICP		

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		99.21	4.960	5.000	PPM	.0397
Ba1		101.0	.5050	.5000	PPM	.0081
Cd3		108.5	.5427	.5000	PPM	.0250
Cr4		106.7	.5334	.5000	PPM	.0030
Pb1		108.5	5.426	5.000	PPM	.0322
Se4		94.00	4.700	5.000	PPM	.1172
Ag1		94.56	.4728	.5000	PPM	.0039

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 1 Ck1 Seq: 832 09:55:59 17 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0929	.3000	PPM	.0241
Ba1		.0000	.1000	PPM	.0003
Cd3		.0000	.1000	PPM	.0118
Cr4		.0012	.1000	PPM	.0002
Pb1		.0354	.1000	PPM	.0403
Se4		-.0039	.3000	PPM	.1270
Ag1		.0033	.1000	PPM	.0031

*** Sample ID: WATER ERA Seq: 833 09:58:36 17 Oct 1997 ICP

As2	.9675	PPM	.0963	.9947	1.047	.8606
Ba1	1.014	PPM	.0028	1.012	1.012	1.017
Cd3	1.039	PPM	.0181	1.057	1.040	1.021
Cr4	1.053	PPM	.0029	1.056	1.051	1.051
Pb1	1.091	PPM	.0346	1.083	1.061	1.129
Se4	10.05	PPM	.0814	10.01	9.992	10.14
Ag1	-.0121	PPM	.0039	-.0094	-.0104	-.0165

*** Sample ID: AGTL Seq: 834 10:01:12 17 Oct 1997 ICP

As2	-.0072	PPM	.0879	.0850	-.0901	-.0165
Ba1	.0002	PPM	.0001	.0002	.0000	.0002
Cd3	-.0082	PPM	.0130	-.0103	-.0201	.0056
Cr4	-.0009	PPM	.0016	-.0001	.0002	-.0027
Pb1	-.0103	PPM	.0678	.0534	-.0816	-.0026
Se4	.1131	PPM	.0467	.0852	.1670	.0872
Ag1	.8838	PPM	.0088	.8910	.8740	.8864

*** Sample ID: BLKSPK Seq: 835 10:03:49 17 Oct 1997 ICP

As2	4.349	PPM	.1933	4.491	4.427	4.129
Ba1	2.362	PPM	.4151	1.910	2.448	2.727
Cd3	.6090	PPM	.1577	.7808	.5755	.4707
Cr4	3.016	PPM	.6442	3.734	2.825	2.489
Pb1	3.339	PPM	.6764	4.097	3.122	2.798
Se4	2.426	PPM	.4347	1.945	2.792	2.540
Ag1	3.423	PPM	.3182	3.783	3.306	3.179

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: BLKSPKDUP				Seq: 836		10:06:26 17 Oct 1997 ICP		
As2	4.361	PPM	.2993	4.536	4.016	4.533		
Ba1	2.399	PPM	.3495	1.996	2.570	2.629		
Cd3	.5827	PPM	.1030	.7016	.5205	.5260		
Cr4	2.937	PPM	.5921	3.617	2.658	2.535		
Pb1	3.288	PPM	.4624	3.822	3.033	3.010		
Se4	2.349	PPM	.1513	2.223	2.307	2.516		
Ag1	3.366	PPM	.3089	3.720	3.225	3.152		

*** Check Standard: 1 Ck1 Seq: 837 10:09:04 17 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0708	.3000	PPM	.1072
Ba1		.0006	.1000	PPM	.0002
Cd3		.0031	.1000	PPM	.0068
Cr4		.0006	.1000	PPM	.0006
Pb1		.0031	.1000	PPM	.0409
Se4		.1291	.3000	PPM	.0944
Ag1		.0149	.1000	PPM	.0064

*** Check Standard: 2 Ck2 Seq: 838 10:11:42 17 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		101.9	5.097	5.000	PPM	.1221
Ba1		100.6	.5028	.5000	PPM	.0031
Cd3		106.9	.5344	.5000	PPM	.0201
Cr4		107.3	.5364	.5000	PPM	.0039
Pb1		108.3	5.417	5.000	PPM	.0630
Se4		100.8	5.042	5.000	PPM	.1293
Ag1		96.37	.4819	.5000	PPM	.0008

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 6 Ck6 Seq: 950 16:38:54 17 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		10.47	.0052	.0500	PPM	.0001
Cd3	L	-103.7	-.0093	.0090	PPM	.0114
Cr4	L	-470.6	-.0188	.0040	PPM	.0014
Pb1		198.1	.1189	.0600	PPM	.0956
Se4	H	756.6	.4540	.0600	PPM	.7903
Ag1		62.65	.0038	.0060	PPM	.0042
Al3		107.2	536.0	500.0	PPM	4.061
Fe2		94.50	189.0	200.0	PPM	.7805
Ca3		92.47	462.3	500.0	PPM	2.029
Mg4		108.8	544.2	500.0	PPM	1.483

*** Check Standard: 7 Ck7 Seq: 951 16:41:54 17 Oct 1997 ICP

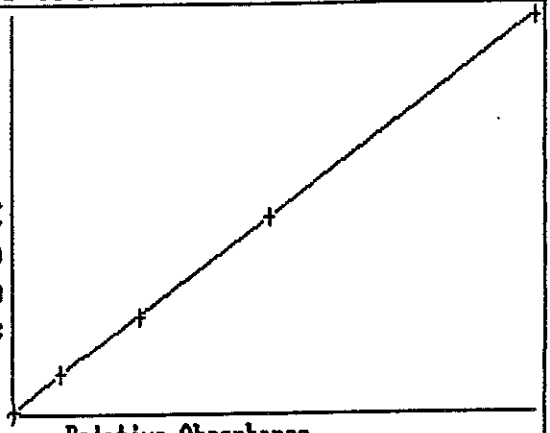
Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		100.8	.5041	.5000	PPM	.0035
Cd3		97.20	.9720	1.000	PPM	.0283
Cr4		90.68	.4534	.5000	PPM	.0047
Pb1		102.9	1.029	1.000	PPM	.0369
Ag1		95.04	.9504	1.000	PPM	.0090
Al3		107.6	538.1	500.0	PPM	2.985
Fe2		94.97	189.9	200.0	PPM	.7118
Ca3		92.88	464.4	500.0	PPM	1.504
Mg4		109.4	547.0	500.0	PPM	2.574

Protocol: HIGH-CAL
Rev: 3.000 Time: 12:15:49 17 Oct 1997
Folder: #100697 Seq: 517 Print: On
User: Batch: Id: Std6Rep3 Cup: 1 32 Gas: 0.30 LPM
State: Idle Macro CAL245 51: F3 Print Xmit: Off Autosampler: On

CALIBRATION: Line Calibration

Line: Hg

	Conc.	Calc.	Dev.	Accepted linear
S1	.0000	.0236	.0236	Quadratic
S2	.1000	.1003	.0003	WtdLinear
S3	2.000	1.963	-.0375	
S4	5.000	5.013	.0134	Accept
S5	10.00	9.949	-.0510	
S6	20.00	20.19	.1864	StdAdd
A	.0000000	r	.999938	
B	4.30549e-5	C	1.60372e-2	



	Mean	%RSD			
S1	175	444.85	1046	-453	-68
S2	1956	1.89	1997	1946	1925
S3	45289	0.83	44981	45102	45625
S4	116070	0.6	115332	116720	116159
S5	230704	1.04	227425	229197	235490
S6	468480	0.64	466551	466930	471961

New calibration coefficients stored

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 4 Ck4 Seq: 517 12:18:45 17 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.0	4.082	4.000	PPB	.0000

*** Check Standard: 3 Ck3 Seq: 518 12:21:20 17 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.30	1.966	2.000	PPB	.0000

*** Check Standard: 2 Ck2 Seq: 519 12:23:56 17 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		106.1	5.306	5.000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 520 12:26:31 17 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.1270	.9000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 521 12:28:54 17 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0270	.9000	PPB	.0000

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 2 Ck2 Seq: 522 14:23:17 17 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		108.6	5.431	5.000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 523 14:26:02 17 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0747	.9000	PPB	.0000

*** Sample ID: method blk Seq: 524 14:28:34 17 Oct 1997 HG

Hg	-.0178	PPB	.0000	-.0178

*** Sample ID: 68142-1 Seq: 525 14:30:53 17 Oct 1997 HG

Hg	.0377	PPB	.0000	.0377

*** Sample ID: 68142-1s Seq: 526 14:33:31 17 Oct 1997 HG

Hg	2.190	PPB	.0000	2.190

*** Sample ID: blkspk Seq: 527 14:36:04 17 Oct 1997 HG

Hg	2.131	PPB	.0000	2.132

*** Sample ID: blkspkdup Seq: 528 14:38:32 17 Oct 1997 HG

Hg	2.124	PPB	.0000	2.124

*** Sample ID: WATER ERA Seq: 529 14:41:06 17 Oct 1997 HG

Hg	2.107	PPB	.0000	2.107

*** Sample ID: 68142-2 Seq: 530 14:43:32 17 Oct 1997 HG

Hg	.0100	PPB	.0000	.0100

*** Sample ID: 68142-3 Seq: 531 14:45:57 17 Oct 1997 HG

Hg	.0655	PPB	.0000	.0655

*** Sample ID: METHOD BLK Seq: 532 14:48:28 17 Oct 1997 HG

Hg	-.0787	PPB	.0000	-.0787

*** Check Standard: 2 Ck2 Seq: 533 14:50:51 17 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		109.6	5.480	5.000	PPB	.0000

07:54:51 23 Oct 1997 Protocol: HIGH-CAL

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 1 Ck1 Seq: 534 14:53:27 17 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0507	.9000	PPB	.0000

MEMORANDUM

DATE: November 7, 1997

TO: Fred Luck, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Waste Sampling October 14, 1997
Cascade Analytical Report #726

Analytical Methods:

- Modified Method 8141 for Carbamate Pesticides

Data Use Intended:

- Waste Samples: To establish waste designation of selected roll-off bins.

Summary of Qualified and Rejected Data

- No soil data were rejected or qualified due to quality control problems. However, There was not cause for additional corrective actions or qualification of data.
- Some results were below the quantitation limit and were flagged with "J" qualifiers. "C" flags were used to indicate that second-column confirmation had confirmed the results. "U" qualifiers were not used for undetected results, rather "<" was placed in front of the quantitative data field containing the value of the detection limit.

Summary of Method 8141 Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 14, 1997: W0901471, W0901472, W0201473.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.** Fred Luck from GSA, Inc. delivered the samples to the laboratory in a cooler and removed the samples from the cooler before the laboratory could document conditions on a Cooler Receipt Form. This nonconformance leading to uncertainty in the sample temperature does not affect the integrity of the data. EPA guidance indicates that concentrated waste samples do not need to be chilled to the temperature indicated in the Sampling and Analysis Plan.
- Performance Evaluation (PE) Results - **Not evaluated for this parameter.**
- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration - **Not Acceptable.** The calibration verification nonconformance mentioned in the report narrative is of little significance to these data because the results were undetected for all parameters measured and only one of the two parallel detectors was affected.

Surrogates - **Acceptable.** Surrogate in W09O1473 was outside of limits due to an interference by a non-target analyte. Chromatograms were attached to the report showing the problem and that the target analytes were not affected.
Matrix Spikes - **Acceptable.**
Laboratory Control Samples (LCS) - **Not Analyzed.** The matrix spikes and surrogates were acceptable, making the LCS superfluous.
Laboratory Blanks - **Acceptable.**
Field Blanks - **Not evaluated.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Acceptable.**

Summary of Data Comparability, Representativeness, and Completeness

Field Sampling Issues - No problems were encountered.

- **Data Completeness** - The data completeness was 100% for this data set.

Overall Conclusions

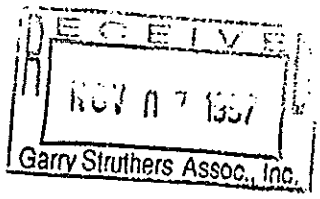
These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project, except as noted.

CASCADE ANALYTICAL, INC.

3019 G.S. Center Road
Wenatchee, WA 98801

Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

November 5, 1997



Batch #: 726

Mike Webb
Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- ANALYTICAL NARRATIVE ---

Dear Mike:

The following results are from the samples submitted on October 15, 1997. Some of the results have data flags attached to them.

There is a X9 data flag attached to your Lab number 97-E013070. The surrogate recovery is outside the advisory QC limits due to matrix composition. This sample does not have any detectable levels of carbaryl or carbofuran. However it has several extra peaks that were not present in the other samples, see attached chromatogram.

Data flags of N are attached to the continuing calibration report. The first data flag was attached because there was not an initial calibration check performed. The analyst did not run an initial calibration check because the a calibration curve was developed immediately prior to analysis. The second N flag is attached because of a continuing calibration failure on the DB-35 column. Since the LB-XLB column calibration check passed and there were no detectable residues of carbaryl or carbofuran it was deemed not necessary to recalibrate and reanalyze samples.

Due to space limitations a blank spike was not performed on this run. The lab anticipated more samples to be received with this batch where a blank spike was scheduled to be analyzed. Subsequent batches will have a blank spike attached.

Sincerely,

David W. Lane
Technical Director

CASCADE ANALYTICAL, INC.

3019 G.S. Center Road
Wenatchee, WA 98801

Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

December 12, 1997

Mike Webb
Gary Struthers Assoc. Inc.
9150 Richards Rd Suite 103
Bellevue, WA 98005

--- Data Clarification ---

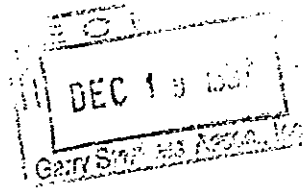
Dear Mike:

Sent with Lab number 97-E013070, was a chromatogram indicating that carbaryl is undetected. Chromatograms of this sample had several peaks. The results from the front column on this sample indicated that carbofuran was present. Rear column data showed that this was an interfering peak with a retention time difference of 1.84 minutes (See attached Chromatogram #1).

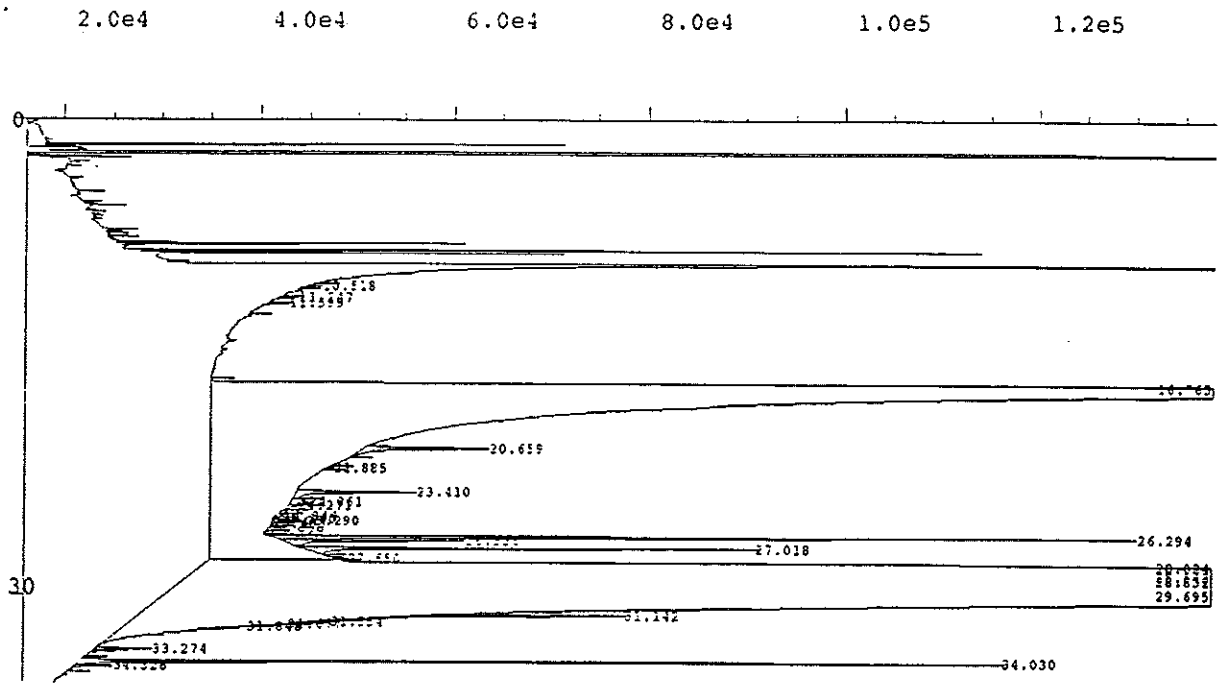
Carbofuran results for Lab number 97-E013752 were variable. The carbofuran peak on the DB-35 column is not completely resolved. This could lead to potential quantitation difficulties. Chromatograms of this sample on DB-XLB show complete resolution of carbofuran. Due to this interference carbofuran was quantitated on the DB-XLB columns (See attached Chromatogram #2, and #3).

Sincerely,

David W. Lane
Technical Director



#1



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External Standard Report

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Data File Name	: C:\HPCHEM\3\DATA\101697\017R0601.D		
Operator	: Katherine L. Smith	Page Number	: 1
Instrument	: GC #3 (NP	Vial Number	: 17
Sample Name	: 13070	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 17 Oct 97 04:40 AM	Instrument Method	: CARB-35.MTH
Report Created on	: 17 Oct 97 04:19 PM	Analysis Method	: CARB-XLA.MTH
Last Recalib on	: 17 Oct 97 02:43 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 2 in C:\HPCHEM\3\DATA\101697\017R0601.D

Ret Time	Area	Type	Width	Ref#	ng/ul	Name
14.952	* not found *			1		Carbofuran
20.659	123317	BB	T 0.143	1	1.815	Carbaryl — NOT Carbaryl - see post spike in run from 10/17/c
28.543	450160	BV	T 0.145	1	1.608	Sulprofos (Surrogate) ← Coelution Problem -no % recovery possible.

Not all calibrated peaks were found

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CASCADE ANALYTICAL, INC.
3019 G.S. Center Road
Wenatchee, WA 98801
Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- PESTICIDE RESIDUE REPORT ---

Lab Number 97-E013068
Sample ID W0901471

Test Requested	Results	Units	MDL	Method	Date Analyzed	Data Flags
Date Extracted				3540A	10/15/97	
Carbaryl	< 0.5	mg/Kg	0.500	8141M	10/16/97	
Carbofuran	< 0.5	mg/Kg	0.500	8141M	10/16/97	
% Solids	94.6	%		SM 3540B	10/23/97	

Surrogate Recoveries

		QC Limits
Bolstar	89.9 % Rec	60 - 140 %

Approved By: _____

000002 of 11

CASCADE ANALYTICAL, INC.

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Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- PESTICIDE RESIDUE REPORT ---

Lab Number 97-E013069
Sample ID W0901472

Test Requested	Results	Units	MDL	Method	Date Analyzed	Data Flags
Date Extracted				3540A	10/15/97	
Carbaryl	< 0.5	mg/Kg	0.500	8141M	10/16/97	
Carbofuran	< 0.5	mg/Kg	0.500	8141M	10/16/97	
% Solids	95.0	%		SM 3540B	10/23/97	

Surrogate Recoveries

		QC Limits
Bolstar	90.7 % Rec	60 - 140 %

Approved By: _____

000003 of 11

CASCADE ANALYTICAL, INC.
3019 G.S. Center Road
Wenatchee, WA 98801
Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- PESTICIDE RESIDUE REPORT ---

Lab Number 97-E013070
Sample ID W0201474

Test Requested	Results	Units	MDL	Method	Date Analyzed	Data Flags
Date Extracted				3540A	10/15/97	
Carbaryl	< 0.5	mg/Kg	0.500	8141M	10/16/97	X9
Carbofuran	< 0.5	mg/Kg	0.500	8141M	10/16/97	X9
% Solids	92.4	%		SM 3540B	10/23/97	

Surrogate Recoveries

		QC Limits
Bolstar	2697 % Rec	60 - 140 %

Approved By: _____

CASCADE ANALYTICAL, INC.
3019 G.S. Center Road
Wenatchee, WA 98801
Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- BLANK REPORT ---

Lab Number Sample ID
Blank

Test Requested	Results	Units	MDL	Method	Date Analyzed	Data Flags
Date Extracted				3540A	10/15/97	
Carbaryl	< 0.5	mg/Kg	0.500	8141M	10/16/97	
Carbofuran	< 0.5	mg/Kg	0.500	8141M	10/16/97	

Surrogate Recoveries

		QC Limits
Bolstar	89.0 % Rec	60 - 140 %

Approved By: _____

CASCADE ANALYTICAL, INC.

3019 G.S. Center Road
Wenatchee, WA 98801

Tel: (509) 662-1888
1-800-545-4206
Fax: (509) 662-8183

Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- DUPLICATE REPORT ---

Lab Number	Sample ID
97-E013068	W0901471

Test Requested	Sample Results	Duplicate Results	Units	RPD	Data Flags
% Solids	94.6	94.4	%	-0.21	

Approved By: _____

CASCADE ANALYTICAL, INC
3019 G.S. Center Road
Wenatchee WA 98801
tel [509] 662-1888
In Eastern Washington: 1 [800] 545-4206
fax [509] 662-8183

Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT ---

Lab Number	Sample ID
97-E013069	W0901472

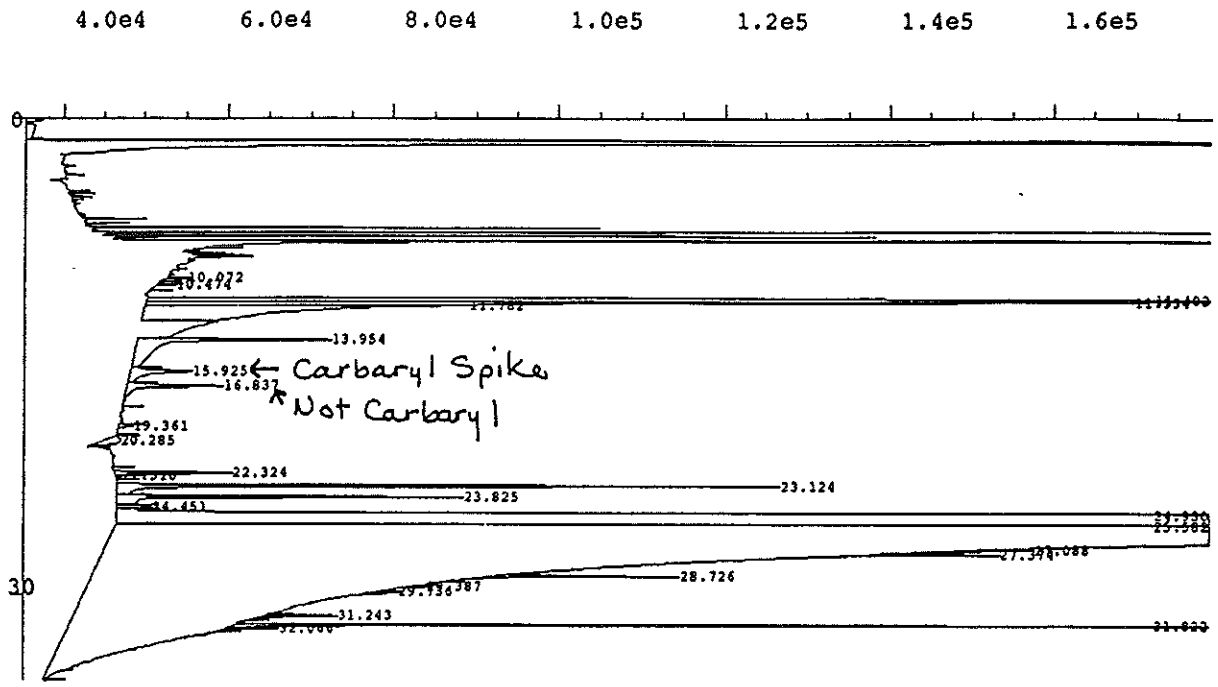
Test Requested	Sample Results (mg/Kg)	Spike Amount (mg/Kg)	MS Result (mg/Kg)	MS % Rec	MSD Result (mg/Kg)	MSD% Rec	RPD	Data Flags
Carbaryl	< 0.5	10.0	9.22	92.2	9.14	91.4	-0.97	
Carbofuran	< 0.5	10.0	9.92	99.2	9.98	99.8	0.60	

Surrogate Recoveries

			QC Limits
MS	Bolstar	73.0 % Rec	60 - 140 %
MSD	Bolstar	77.0 % Rec	

Approved By: _____

000007 of 11



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External Standard Report

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D: File Name	: C:\HPCHEM\3\DATA\101797\013F0201.D		
:ator	: Katherine L. Smith	Page Number	: 1
Instrument	: GC #3 (NP	Vial Number	: 13
Sample Name	: 13070 +1.0ppm	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 2
Acquired on	: 17 Oct 97 06:04 PM	Instrument Method:	CARB-35.MTH
Report Created on:	20 Oct 97 08:13 AM	Analysis Method	: CARB-35A.MTH
Last Recalib on	: 20 Oct 97 08:08 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\3\DATA\101797\013F0201.D

Ret Time	Area	Type	Width	Ref#	ng/ul	Name
11.782	1078932	VV	0.459	1	7.988	Carbofuran
16.837	144236	VB	0.177	1	2.668	Carbaryl
25.582	3.39617E+007	HBAS	1.319	1	125.643	Sulprofos (Surrogate)

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CASCADE ANALYTICAL, INC
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In Eastern Washington: 1 [800] 545-4206
fax [509] 662-8183

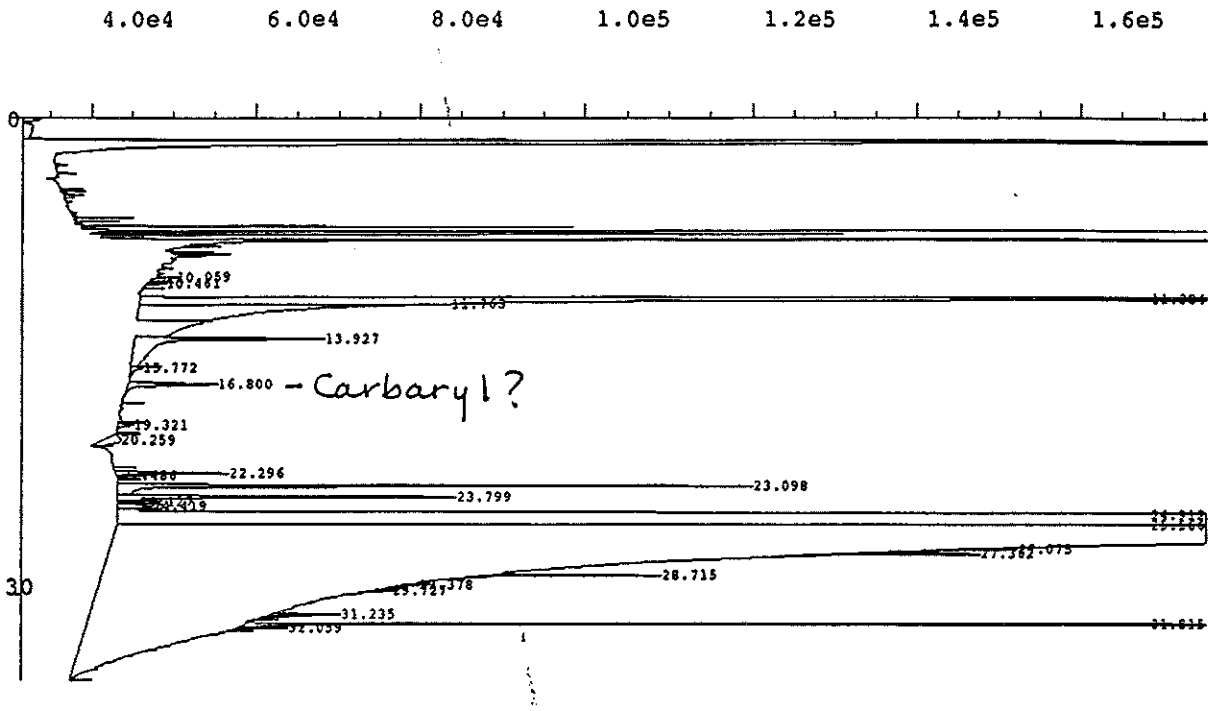
Batch #: 726
Account #: 02999
Sampler: Fred Luck
Date Received: 10/15/97
Date of Report: 10/20/97
Date Sampled: 10/14/97

Gary Struthers Assoc. Inc.
3150 Richards Rd Suite 100
Bellevue, WA 98005

--- CONTINUING CALIBRATION REPORT ---

Calibration Check	Carbaryl ppm	Percent Recovery	Carbofuran ppm	Percent Recovery	Bolstar ppm	Percent Recovery	Flag
Initial	2.5		2.5		0.5		N
Check 1	2.5	95.3	2.5	95.5	0.5	85.2	
Check 2	2.5	89.6	2.5	98.7	0.5	110.0	N

Approved By: _____



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External Standard Report

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Da File Name	: C:\HPCHEM\3\DATA\101797\012F0201.D		
Operator	: Katherine L. Smith	Page Number	: 1
Instrument	: GC #3 (NP	Vial Number	: 12
Sample Name	: 13070	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 2
Acquired on	: 17 Oct 97 05:19 PM	Instrument Method:	CARB-35.MTH
Report Created on:	20 Oct 97 08:12 AM	Analysis Method	: CARB-35A.MTH
Last Recalib on	: 20 Oct 97 08:08 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\3\DATA\101797\012F0201.D

Ret Time	Area	Type	Width	Ref#	ng/ul	Name
11.763	1055730	VV	0.465	1	7.827	Carbofuran
16.800	114022	BB	0.156	1	2.329	Carbaryl
25.566	3.33317E+007	HBAS	1.291	1	123.313	Sulprofos (Surrogate)

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CASCADE ANALYTICAL, INC.

ENVIRONMENTAL ANALYSIS

3019 G.S. Center Road
Wenatchee, WA 98801
(509) 662-1888

RESIDUE ANALYSIS ORDER FORM

	SAMPLE #	1	2	3	4
SEND RESULTS TO: 1) Client 2) ~~Billing~~ 3) ~~Both~~		X			
SAMPLE REPRESENTS: 1) ~~Food~~ 2) ~~Water~~ 3) Soil 4) ~~Plant Tissue~~ 5) ~~Other~~				X	
SAMPLE BY: 1) Client 2) ~~Field Rep.~~ 3) ~~Quality Control~~ 4) ~~Decade~~ 5) ~~Other~~					
CROP/VARIETY See Reverse side					

BILLED OCT 23 1997

CLIENT NAME/ADDRESS	BILLING NAME/ADDRESS
GARAY STROTHERS ASSOC., INC.	SAME
3150 RICHARDS ROAD SUITE 100	
BELLEVUE, WA 98005	
SAMPLER'S NAME: FRED LUCK	

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
	14OCT97				
(Printed) FRED LUCK	TIME 1730	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE	RECEIVED FOR LAB BY: (Signature)	DATE 10/14/97
(Printed)	TIME	(Printed)	TIME	(Printed) LAURA MEATHEL	TIME 1733

		Sample Date	Sample Time
1	SAMPLE I.D. W0901471	14OCT97	0954
	COMMENT ** ANALYSIS AS PER WENATCHEE TFREC QAPP		
2	SAMPLE I.D. W0901472	14OCT97	0955
	COMMENT		
3	SAMPLE I.D. W0201474	14OCT97	1030
	COMMENT		
4	SAMPLE I.D. /	Sample Date	Sample Time
	COMMENT		

		1	2	3
	INSECTICIDES			
8020	Ambush/Pounce			
8030	Carzol			
8080	Diazinon			
8090	Dimethoate			
8110	Elgitol			
8130	Guthion			
8150	Imidan			
8170	Lorsban			
8180	Malithion			
8210	Mitac/Amitraz			
8230	Morestan			
8240	Omite			
8250	Orthene			
8260	Parathion			
8300	Phosphamidon			
8310	Pydrin			
8000	Sevin/Carbryl			
8320	Supracide			
8010	Temik/Aldicarb			
8330	Thiodan			
8370	Vendex			
8380	Vydate			
8390	Zolone			
9010	8080			
9040	8140			
9510	632			
5141	MOD CARBAM-T	X	X	X
	PLANT GROWTH REG.			
9540	Alar			
	NAA			
	HERBICIDES			
8460	Casoron			
9480	Treflan			
8440	Banvel			
8430	Atrizine			
8560	Karmex			
8570	Kerb			
	Metrabuzin			
	Prowel			
8630	Prometon			
	Simazine			
9310	Sinbar			
9450	Tordon			
8400	2,4-D			
9500	Triazine Scan / 619			
9030	Chlor. Acid Scan/8150			
	POST HARVEST			
	Benlate			
8670	Captan			
8650	OPA			
9470	Ethoxyquin			
	Mertect / TBZ			
9520	SOPP			
	FUNGICIDES			
	Bayleton			
8670	Captan			
	Cyprex			
	Dithane			
	Funginex			
8690	Rovral			
8200	Morestan			
	Rubigan			
	Ziram			

This form also serves as "Chain of Custody".

Sample container received by client was sealed Yes____ No X

Sample container received by laboratory was sealed Yes____ No X

Contract:

This form and enclosed records are complete and accurate to the best of my knowledge. I understand that the analysis performed on this produce is a statement of residue presence/absence at this point in time for the specific materials indicated herein. This sample taken according to specific instructions or sampled by Cascade personnel, is representative of this block, of 40 acres or less, which was treated uniformly using customary or alternative horticultural practices.

Customer Signature _____ Date 14OCT97

Disclaimer:

Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from the use of Cascade test results. Cascade neither assumes nor authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are no other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical Inc.'s liability to customer as a result of customers use of Cascade's test results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work.

0001

Customer Signature _____ Date 14OCT97

MEMORANDUM

DATE: November 7, 1997

TO: Fred Luck, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Waste Sampling October 14, 1997
North Coast Laboratories Report #9710383

Analytical Methods:

- Chevron Method RM-8-10

Data Use Intended:

- Waste Samples: To establish waste designation of selected roll-off bins.

Summary of Qualified and Rejected Data

- Results of analysis on 10/17/97 were rejected due to a procedural problem and flagged with an "R" qualifier. Results for analysis on 10/30/97 were acceptable. The "r" and "RA" qualifiers were used by the laboratory to indicate samples that had exceptions explained in the narrative and to identify results that came from diluted samples. These qualifiers do not indicate data deficiencies.
- "U" qualifiers were not used for undetected results, rather "ND" was placed in the quantitative data field along with the value of the detection limit.

Summary of Method RM-8-10 Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled September 14, 1997: W09O1471, W09O1472 (field duplicate), and W02O1474.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated for this parameter.**
- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration - **Acceptable.**
  Surrogates - **Not Applicable.**
  Matrix Spikes - **Acceptable.**
  Laboratory Control Samples (LCS) - **Acceptable**
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated.**

- Laboratory Precision - **Acceptable.**

- Field Precision - **Acceptable.**

Summary of Data Comparability, Representativeness, and Completeness

- **Field Sampling Issues** - No problems were encountered. The waste samples were taken as composites within the bin noted in the sample number (e.g. W02 is from waste bin #2). The subsamples for each composite were taken from 5 locations within the bin and homogenized according to the Sampling and Analysis Plan.
- **Data Completeness** - The data completeness was 100% for this data set.

Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project, except as noted.

NORTH COAST
LABORATORIES LTD.

October 31, 1997

Gary Struthers Associates, Inc.
3150 Richards Road, Suite 100
Bellevue, WA 98005-4446

Attn: Mike Webb

NCL Work Order#: 9710383

Dear Mr. Webb:

Enclosed is the data package for three soil samples received at North Coast Laboratories on October 16, 1997. The samples were analyzed for paraquat by Chevron RM 8-10.

Attached to this letter is a Case Narrative for the analysis. The remainder of the package consists of a Sample Inventory; Analytical, Quality Control, Calibrations; Extraction Pages, Standard Preparation Logs; Analytical Raw Data; Internal Tracking Documents; and Chain of Custody Forms.

Please call if you have any questions regarding this report.

Sincerely,

Michelle Dostal

Michelle Dostal
Project Manager/
QA Officer

The following NCL personnel attest to the authenticity of the reported data:

Roxanne Golich
Lab Supervisor

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

E. Matrix Spike (MS) Results

F. Matrix Spike (MS) Results for Paraquat Re-analysis on 10/30/97

G. Matrix Spike Duplicate(MSD) Results

H. Matrix Spike Duplicate(MSD) Results for Paraquat Re-analysis on 10/30/97

I. SAMPLE INVENTORY

SAMPLE ID	NCL ID
W09O1471	9710383-01A
W09O1472	9710383-02A
W02O1474	9710383-03A
Method Blank	9710383-04A
Lab.Control Sample	9710383-05A
W09O1472 + Matrix Spike	9710383-06A
W09O1472 + Matrix Spike Dupl.	9710383-07A

II. CASE NARRATIVE

LABORATORY: NORTH COAST LABORATORIES, LTD.
CLIENT: GARRY STRUTHERS ASSOCIATES, INC.

A. Sample Receipt

1. Sample Receipt Information

NCL ID	CLIENT ID	DATE/TIME SAMPLED	DATE/TIME RECEIVED	SAMPLE TEMPERATURE
9710383-01A	W09O1471	10/14/97 09:54	10/16/97 11:30	1°C(Cooler Blk.)
9710383-02A	W09O1472	10/14/97 09:55	10/16/97 11:30	1°C(Cooler Blk.)
9710383-03A	W02O1474	10/14/97 10:30	10/16/97 11:30	1°C(Cooler Blk.)
9710383-04A	Method Blank	N/A	N/A	N/A
9710383-05A	Lab.Control Sample	N/A	N/A	N/A
9710383-06A	W09O1472 + Matrix Spike	10/14/97 09:55	10/16/97 11:30	1°C(Cooler Blk.)
9710383-07A	W09O1472 + Matrix Spk Dup.	10/14/97 09:55	10/16/97 11:30	1°C(Cooler Blk.)

2. Documentation Exceptions:
No exceptions were encountered.

3. Sample Receipt Exceptions:
No exceptions were encountered.

B. Extraction for Chevron RM 8-10

1. Extraction Dates

NCL ID	DATE/TIME SAMPLED	DATE/TIME RECEIVED	DATE/TIME EXTRACTED
9710383-01A	10/14/97 09:45	10/16/97 11:30	10/16/97 15:10
9710383-02A	10/14/97 09:55	10/16/97 11:30	10/16/97 15:10
9710383-03A	10/14/97 10:30	10/16/97 11:30	10/16/97 15:10
9710383-04A	NA	NA	10/16/97 15:10
9710383-05A	NA	NA	10/16/97 15:10
9710383-06A	10/14/97 09:55	10/16/97 11:30	10/16/97 15:10
9710383-07A	10/14/97 09:55	10/16/97 11:30	10/16/97 15:10
9710383-01A (re-extr.)	10/14/97 09:45	10/16/97 11:30	10/28/97 16:00
9710383-02A (re-extr.)	10/14/97 09:55	10/16/97 11:30	10/28/97 16:00
9710383-03A (re-extr.)	10/14/97 10:30	10/16/97 11:30	10/28/97 16:00
9710383-04A (re-extr.)	NA	NA	10/28/97 16:00
9710383-05A (re-extr.)	NA	NA	10/28/97 16:00
9710383-06A (re-extr.)	10/14/97 09:55	10/16/97 11:30	10/28/97 16:00
9710383-07A (re-extr.)	10/14/97 09:55	10/16/97 11:30	10/28/97 16:00

2. Holding Time Exceptions:
No exceptions were encountered.

3. Extraction Exceptions:
The matrix spike and matrix spike duplicate recoveries were low (18.0 and 16.8% respectively). During the portion of the extraction where the samples are heated with acid, it is suspected the temperature regulator dial may have been set to a lower temperature which may have reduced the efficiency of the extraction from the soil matrix. The matrix spike was re-extracted on October 27, 1997 and re-analyzed on October 28, 1997 as a screening to confirm the low recovery. The matrix spike recovery from this analysis was 68.0%. All the samples and their associated quality control were re-extracted on October 28, 1997 and re-analyzed on October 30, 1997 with acceptable results.

C. Data Qualifiers

ND: Indicates the compound was analyzed for but not detected. The number is the reporting limit for the sample.

J: This flag indicates that the value falls between the MDL and the reporting limit and that it is an estimate only.

B: This flag indicates that the analyte was found in the blank, as well as in the sample.

E: Identifies compounds whose concentrations exceed the calibration range of the instrument for a specific analysis.

RA: Identifies all compounds analyzed at a secondary dilution.

r: See Case Narrative for exception

RE: Indicates analysis performed on a re-extracted sample.

T: Indicates analysis performed on the primary column and the preferred value if not "V" flagged on the secondary column.

V: Indicates compound result is preferred and is from the secondary column analysis.

L: Indicates compounds that are not separable using the specified method.

D. Calibration for Chevron RM 8-10

1. Type:
The initial calibration for Chevron RM 8-10 consisted of a straight line fit using three standard concentrations. A r^2 value of 0.995 or greater was established to assess the fit of the curve.

2. Calibration Exceptions:
No exceptions were encountered.

E. Analysis for Chevron RM 8-10

1. Holding Times:
All holding times were met.

2. Analytical Exceptions:
No exceptions were encountered.

F. Quality Control for Chevron RM 8-10

1. Method Blank:

2. Surrogate Recoveries:
No surrogates are associated with this method at this time.

3. Laboratory Control Samples (LCS/LCSD):
The LCS was within acceptance limits. There were two LCSs extracted and analyzed for the re-extracted samples. Only one of the LCS results was reported.

4. Matrix Spike Results:
The matrix spike and the matrix spike duplicate recoveries were below the lower acceptance limit of 60% with values of 18.0 and 16.8%, respectively. For this reason, the samples were re-extracted on October 28, 1997 and re-analyzed on October 30, 1997 (see extraction exceptions in section II B). The re-extracted and re-analyzed matrix spike and matrix spike duplicate recoveries were acceptable with results of 69.6 and 71.6%, respectively.

G. Confirmation of Positive Results
There is no method for confirming positive paraquat results using Chevron RM 8-10. Confirmation by LC/MS is recommended.

III. ANALYTICAL RESULTS

A. Results Data Sheets for Paraquat

NCL Sample ID:9710383-01A Date/Time Analyzed: 10/17/97 13:00

% Moisture: 5.05 %

COMPOUND	CAS NO.	WET WT. CONCENTRATION (µg/g)	DRY WT. CONCENTRATION (µg/g)	QUALIFIER
Paraquat	1910-42-5	ND 1.0	ND 1.1	ND

NCL Sample ID:9710383-02A Date/Time Analyzed: 10/17/97 13:00

% Moisture: 5.00%

COMPOUND	CAS NO.	WET WT. CONCENTRATION (µg/g)	DRY WT. CONCENTRATION (µg/g)	QUALIFIER
Paraquat	1910-42-5	ND 1.0	ND 1.1	ND

NCL Sample ID:9710383-03A Date/Time Analyzed: 10/17/97 13:00

% Moisture: 7.25%

COMPOUND	CAS NO.	WET WT. CONCENTRATION (µg/g)	DRY WT. CONCENTRATION (µg/g)	QUALIFIER
Paraquat	1910-42-5	27	29	RA

B. Results Data Sheets for Paraquat Re-analysis on 10/30/97

NCL Sample ID:9710383-01A Date/Time Analyzed: 10/30/97 13:00

% Moisture: 5.05 %

COMPOUND	CAS NO.	WET WT. CONCENTRATION (µg/g)	DRY WT. CONCENTRATION (µg/g)	QUALIFIER
Paraquat	1910-42-5	ND 1.0	ND 1.1	RE, r

NCL Sample ID:9710383-02A Date/Time Analyzed: 10/30/97 13:00

% Moisture: 5.00%

COMPOUND	CAS NO.	WET WT. CONCENTRATION (µg/g)	DRY WT. CONCENTRATION (µg/g)	QUALIFIER
Paraquat	1910-42-5	ND 1.0	ND 1.1	RE, r

NCL Sample ID:9710383-03A Date/Time Analyzed: 10/30/97 13:00

% Moisture: 7.25%

COMPOUND	CAS NO.	WET WT. CONCENTRATION (µg/g)	DRY WT. CONCENTRATION (µg/g)	QUALIFIER
Paraquat	1910-42-5	53	58	RE, r, RA

IV. INITIAL AND CONTINUING CALIBRATION

A. Initial Calibration

1. Paraquat

Initial Calibration:						
Date/Time: 10/17/97 13:00			Calibration Std#1: 1.0 PPM			
Date/Time: 10/17/97 13:00			Calibration Std#2: 5.0 PPM			
Date/Time: 10/17/97 13:00			Calibration Std#3: 7.5 PPM			
ANALYTE	r^2	RT OF MID LEVEL STD.	RT WINDOW FROM	RT WINDOW TO	TYPE OF FIT	WINDOW SIZE
Paraquat	0.9950	N/A	N/A	N/A	L	N/A

L = Linear
Q = Quadratic

B. Initial Calibration for Paraquat Re-analysis on 10/30/97

1. Paraquat

Initial Calibration:						
Date/Time: 10/30/97 07:30			Calibration Std#1: 1.0 PPM			
Date/Time: 10/30/97 07:30			Calibration Std#2: 5.0 PPM			
Date/Time: 10/30/97 07:30			Calibration Std#3: 7.5 PPM			
ANALYTE	r^2	RT OF MID LEVEL STD.	RT WINDOW FROM	RT WINDOW TO	TYPE OF FIT	WINDOW SIZE
Paraquat	0.9964	N/A	N/A	N/A	L	N/A

L = Linear
Q = Quadratic

C. Second Source Standard

1. Paraquat

Second Source Standard: Date/Time:10/17/97 13:00						
ANALYTE	RT OF STD.	RT WINDOW FROM	RT WINDOW TO	NOM CONC. (µg/g)	CALC.CONC (µg/g)	% REC.
Paraquat	N/A	N/A	N/A	5.0	4.56	91.2

Second Source Standard Acceptance Limits: 85 - 115% Recovery

D. Second Source Standard for Paraquat Re-analysis on 10/30/97

1. Paraquat

Second Source Standard: Date/Time:10/30/97 07:30						
ANALYTE	RT OF STD.	RT WINDOW FROM	RT WINDOW TO	NOM CONC. (µg/g)	CALC.CONC (µg/g)	% REC.
Paraquat	N/A	N/A	N/A	5.0	4.58	91.6

Second Source Standard Acceptance Limits: 85 - 115% Recovery

E. Continuing Calibration

1. Paraquat

Continuing Calibration Verification Standard(CCVS): Date/Time: 10/17/97 13:00						
ANALYTE	RT OF CCVS	RT WINDOW FROM	RT WINDOW TO	NOM CONC. (µg/g)	CALC.CONC (µg/g)	% REC.
Paraquat	N/A	N/A	N/A	5.0	5.15	103

CCVS Acceptance Limits: 90 - 110% Recovery

F. Continuing Calibration for Paraquat Re-analysis on 10/30/97

1. Paraquat

Continuing Calibration Verification Standard(CCVS): Date/Time: 10/30/97 07:30						
ANALYTE	RT OF CCVS	RT WINDOW FROM	RT WINDOW TO	NOM CONC. (µg/g)	CALC.CONC (µg/g)	% REC.
Paraquat	N/A	N/A	N/A	5.0	4.97	99.4
Paraquat	N/A	N/A	N/A	5.0	4.84	96.8

CCVS Acceptance Limits: 90 - 110% Recovery

V. QUALITY CONTROL

A. Blank Results

1. Paraquat

Method Blank: Matrix: Soil Date/Time Extracted: 10/16/97 15:10 Date/Time Analyzed: 10/17/97 13:00		
COMPOUND	CAS NO.	CONCENTRATION(µg/g)
Paraquat	1910-42-5	ND 1.0

Acceptance Criteria for Method Blank:
Each method analyte must be below its reporting limit(RL).

B. Blank Results for Paraquat Re-analysis on 10/30/97

1. Paraquat

Method Blank: Matrix: Soil Date/Time Extracted: 10/28/97 16:00 Date/Time Analyzed: 10/30/97 07:30		
COMPOUND	CAS NO.	CONCENTRATION(µg/g)
Paraquat	1910-42-5	ND 1.0

Acceptance Criteria for Method Blank:
Each method analyte must be below its reporting limit(RL).

C. Laboratory Control Sample (LCS) Results

1. Paraquat

Laboratory Control Sample: Date/Time Extracted: 10/16/97 15:10 Date/Time Analyzed: 10/17/97 13:00					
ANALYTE	SPIKE ADDED (µg/g)	SAMPLE CONCENTRATION (µg/g)	LCS CONCENTRATION (µg/g)	LCS % RECOVERY	QC LIMITS REC.
Paraquat	5.0	ND 1.0	3.97	79.4	75-130

Acceptance Criteria for Laboratory Control Sample:
Percent recovery must be within specified control limits for each analyte.

D. Laboratory Control Sample (LCS) Results for Paraquat Re-analysis on 10/30/97

1. Paraquat

Laboratory Control Sample: Date/Time Extracted: 10/28/97 16:00 Date/Time Analyzed: 10/30/97 07:30					
ANALYTE	SPIKE ADDED (µg/g)	SAMPLE CONCENTRATION (µg/g)	LCS CONCENTRATION (µg/g)	LCS % RECOVERY	QC LIMITS REC.
Paraquat	5.0	ND 1.0	3.86	77.2	75-130

Acceptance Criteria for Laboratory Control Sample:
Percent recovery must be within specified control limits for each analyte.

E. Matrix Spike (MS) Results

1. Paraquat

Matrix Spike: Date/Time Extracted: 10/16/97 15:10 Date/Time Analyzed: 10/17/97 13:00					
ANALYTE	SPIKE ADDED (µg/g)	SAMPLE CONCENTRATION (µg/g)	MS CONCENTRATION (µg/g)	MS % RECOVERY	QC LIMITS REC.
Paraquat	5.0	ND	0.900	18.0	60-140

Acceptance Criteria for Matrix Spike:
Percent recovery must be within specified control limits for each analyte.

F. Matrix Spike (MS) Results for Paraquat Re-analysis on 10/30/97

1. Paraquat

Matrix Spike: Date/Time Extracted: 10/28/97 16:00 Date/Time Analyzed: 10/30/97 07:30					
ANALYTE	SPIKE ADDED (µg/g)	SAMPLE CONCENTRATION (µg/g)	MS CONCENTRATION (µg/g)	MS % RECOVERY	QC LIMITS REC.
Paraquat	5.0	ND	3.48	69.6	60-140

Acceptance Criteria for Matrix Spike:
Percent recovery must be within specified control limits for each analyte.

G. Matrix Spike Duplicate(MSD) Results

1. Paraquat

Matrix Spike Duplicate: Date/Time Extracted: 10/16/97 15:10 Date/Time Analyzed: 10/17/97 13:00						
ANALYTE	SPIKE ADDED (µg/g)	MSD CONCENTRATION (µg/g)	MSD % RECOVERY	RPD	QC LIMITS REC.	RPD LIMITS
Paraquat	5.0	0.840	16.8	6.90	60-140	≤30

Acceptance Criteria for Matrix Spike Duplicate:
Percent recovery and relative percent difference (RPD) must be within specified control limits for each analyte.

H. Matrix Spike Duplicate(MSD) Results for Paraquat Re-analysis on 10/30/97

1. Paraquat

Matrix Spike Duplicate: Date/Time Extracted: 10/28/97 16:00 Date/Time Analyzed: 10/30/97 07:30						
ANALYTE	SPIKE ADDED (µg/g)	MSD CONCENTRATION (µg/g)	MSD % RECOVERY	RPD	QC LIMITS REC.	RPD LIMITS
Paraquat	5.0	3.58	71.6	2.83	60-140	≤30

Acceptance Criteria for Matrix Spike Duplicate:
Percent recovery and relative percent difference (RPD) must be within specified control limits for each analyte.

STANDARD PREPARATION LOGS: CHEVRON RM 8-10

NORTH COAST LABORATORIES LTD ORGANIC STOCK STANDARD LOG

Init.	Date	Method/ Analyte	#Compon.	Supplier	Lot #	Amount Standard	Conc. Standard	Wt. of Std.	Std. Final Vol.	Std. Final Conc.	Std. Lot #	Solvent/ Lot #	Exp. Date
MH	8/12/97	3-Hydroxy Carbofuran	5 of 10	NCL	OL-081297-2	0.06 mL x	1000 µg/mL =	60 µg +	10 mL =	6 PPM	OL 08/12/97-8	Acidified CH_3CN OL-LC-081297-1	10/97
↓	/ / ↓	Oxamyl	6 of 10	NCL	OL-081297-5	0.10 mL x	1000 µg/mL =	100 µg +	10 mL =	10 PPM	OL / / ↓	↓	↓
	/ /	Propoxure	7 of 10	NCL	OL-013097-6	0.10 mL x	1000 µg/mL =	100 µg +	10 mL =	10 PPM	OL / /		
	/ /	Methiocarb	8 of 10	NCL	OL-081297-7	0.10 mL x	1000 µg/mL =	100 µg +	10 mL =	10 PPM	OL / /		
	/ /	Carbaryl	9 of 10	NCL	OL-013097-6	0.10 mL x	1000 µg/mL =	100 µg +	10 mL =	10 PPM	OL / /		
	/ /	Carbofuran	10 of 10	NCL	OL-013097-5	0.10 mL x	1000 µg/mL =	100 µg +	10 mL =	10 PPM	OL / /		
MH	8/13/97	glyphosate	1 of 1	NCL	OL-073197-1	0.50 mL x	1000 µg/mL =	500 µg +	5 mL =	100 PPM	OL 08/13/97-1	HPLC H_2O EM 37062	7/98
KS	8/13/97	undecane	1 of 1	NCL	OL-061497-6	1.0 mL x	5000 µg/mL = (Error, 8-13-97)	5000 µg +	25 mL =	200 PPM	OL 08/13/97-2	Hexane B-J B0185	6/98
DSF	8/14/97	Diesel	1 of 1	Client WO# 9708158	Sample# 9708158-09A	0.0117 g x	10^6 µg/g =	11700 µg +	2.34 mL =	5000 PPM	OL 08/14/97-1	Hexane B+J# B0185	8/14/98
DSF	8/14/97	C_{23}	1 of 1	NCL	OL-012297-4	1.0 mL x	5000 µg/mL =	5000 µg +	25 mL =	200 PPM	OL 08/14/97-2	Hexane B+J B0185	8/14/98
DSF	8/14/97	Diesel	1 of 1	McKinleyville Shell	Lot C-14-90-2	.0483 g x	10^6 µg/g =	48300 µg +	9.66 ~~9.66~~ mL = (Error, dsf 8/14/97)	5000 PPM	OL 08/14/97-3	Hexane B+J# B0185	8/14/98
AB	8/15/97	Glyphosate	1 of 1	NCL	OL-073197-1	0.5 mL x	1000 µg/mL =	500 µg +	5 mL =	100 PPM	OL 08/15/97-1	HPLC H_2O EM 37062	7/31/98
MH	8/18/97	paraquat	1 of 1	ChemService	174-57A	0.0096 g x	9.9×10^5 µg/g =	9504 µg +	5.3695 mL =	1000 PPM	OL 08/18/97-1	HPLC H_2O EM 37062	8/98

(Error MH 8/18/97)

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NORTH COAST LABORATORIES 1 .. ORGANIC STOCK STANDARD LOG

0035

Init.	Date	Method/ Analyte	#Compon.	Supplier	Lot #	Amount Standard	Conc. Standard	Wt. of Std.	Std. Final Vol.	Std. Final Conc.	Std. Lot #	Solvent/ Lot #	Exp. Date
DH	8/21/97	Silvex	6 of 8	NCL	OL-072597-2	0.100 g/mL	5,000 µg/mL	= 500 µg	+ 10 mL	= 50 PPM	OL 08/21/97-2	Methanol BJ BP633	12-97
	/ /	2,4DB	7 of 8	NCL	OL-080497-4	0.100 g/mL	10,000 µg/mL	= 1000 µg	+ mL	= 100 PPM	OL / /		
	/ /	Dinoseb	8 of 8	NCL	OL-071597-5	0.050 g/mL	10,000 µg/mL	= 500 µg	+ mL	= 50 PPM	OL / /	Methanol	
DH	8/21/97	MCPP/MCPA	1 of 1	NCL	OL-080697-1	1.00 mL	50,000 µg/mL	= 50,000 µg	+ 5 mL	= 10,000 PPM	OL 8/21/97-3	DrJBP633	8/98
MH	8/21/97	paraquat	1 of 1	NCL	OL-081897-01	1.0 mL	1000 µg/mL	= 1000 µg	+ 10 mL	= 100 PPM	OL 8/21/97-4	HPLC H2O BRT B1198	8/98
AB	8/21/97	BOMC	1 of 1	NCL	OL022497-1	0.100 mL	1000 µg/mL	= 100 µg	+ 10 mL	= 10 PPM	OL 08/21/97-5	CH_3CN BJ BO777	2/98
MH	8/22/97	Diquat	1 of 1	NCL	OL-072197-1	1.0 mL	1000 µg/mL	= 1000 µg	+ 10 mL	= 100 PPM	OL 08/22/97-1	HPLC H_2O BRT B1198	7/98
SKD	8/26/97	PARAQUAT	1 of 1	NCL	OL-081897-1	0.1 mL	1000 µg/mL	= 100 µg	+ 10 mL	= 10 PPM	OL 08/26/97-1	HPLC H_2O BRT B1198	8/98
	/ /	PARAQUAT	1 of 1	NCL	OL-081897-2	0.1 mL	1000 µg/mL	= 100 µg	+ 10 mL	= 10 PPM	OL 08/26/97-2		9/97
DSF	8/26/97	2-Nitrotoluene	1 of 1	NCL	OL-071897-1	1.5 mL	1000 µg/mL	= 1500 µg	+ 10 mL	= 150 PPM	OL 08/26/97-3	MeOH BJ BP633	8/98
SKD	8/27/97	SIMAZINE	1 of 1	CHEMSERVICE	176-79C	0.0105 mL	9.9×10^5 µg/mL	= 10395 µg	+ 103.95 mL	= 100 PPM	OL 08/27/97-1	MeOH BJ BP633	8/98
AB	8/29/97	531 mix 2 Cat	1 of 1	ULTRA	L.0804	1 mL	100 µg/mL	= 100 µg	+ 10 mL	= 10 PPM	OL 08/29/97-1	MeOH BJ BP633	7/98
DSF	8/29/97	C_{11}	1 of 1	NCL	OL-061697-6	1 mL	5000 µg/mL	= 5000 µg	+ 25 mL	= 200 PPM	OL 08/29/97-2	Hexane BJ BO185	8/98

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NORTH COAST LABORATORIES L ORGANIC STOCK STANDARD LOG

9036

Init.	Date	Method/ Analyte	#Compon.	Supplier	Lot #	Amount Standard	Conc. Standard	Wt. of Std.	Std. Final Vol.	Std. Final Conc.	Std. Lot #	Solvent/ Lot #	Exp. Date
MH	9/2/97	8080mix	1 of 1	Supelco	LA-66004	.050 mL	X 2000 µg/mL =	100 µg	÷ 10 mL =	10 PPM	OL 09/02/97-01	MeOH Lot: BP633	9/98
AB	9/3/97	Glyphosate Lot 1	1 of 1	NCL	OL073197-1	0.05 mL	X 1000 µg/mL =	50 µg	÷ 5 mL =	.10 PPM	OL 09/03/97-1	HPLC H_2O EM 37145	7/98
↓	↓	Glyphosate Lot 2	1 of 1	↓	OL080797-2	0.05 mL	X 1000 µg/mL =	50 µg	÷ 5 mL =	10 PPM	OL 09/03/97-2	↓	8/98
DH	9/4/97	Triclopyr	1 of 1	Axact	CH40712	0.0100 g	X 9.95×10^5 µg/g =	9950 µg	÷ 9.95 mL =	1000 PPM	OL 09/04/97-1	MeOH BP633	7/98
KS	9/4/97	2,6-DBP	1 of 1	Aldrich	03709ZY	0.0100 g	X 9.9×10^5 µg/g =	9900 µg	÷ 9.9 mL =	1000 PPM	OL 09/04/97-2	MeOH BP633	9/98
SKD	9/8/97	METALAXYL	1 of 1	AXACT	30823	.0102 g	X 9.82×10^5 µg/g =	10016.4 µg	÷ 10.064 mL =	1000 PPM	OL 09/08/97-1	CH_3CN B&J BP224	9/98
↓	↓	METALAXYL	1 of 1	NCL	OL-090897-1	1.0 mL	X 10^3 µg/mL =	10^3 µg	÷ 10 mL =	100 PPM	OL 09/08/97-2	CH_3CN B&J BP224	9/98
KG	9/8/97	[illegible]	1 of 1	NCL	OL-012297-4	1.0 mL	X 5000 µg/mL =	5000 µg	÷ 25 mL =	200 PPM	OL 09/08/97-3	Hexane Baker L29301	1/98
MH	9/8/97	paraquat LOT 2	1 of 1	Axact	# 40607	0.0122 g	X 9.9×10^5 µg/g =	12078 µg	÷ 6.824* mL =	1000 PPM	OL 09/08/97-4	HPLC H_2O EM 37062	9/98
DSF	9/8/97	Diesel	1 of 1	McKinleyville Shell	6-14-90-2	0.0400 g	X 10^6 µg/g =	40000 µg	÷ 8 mL =	5000 PPM	OL 09/08/97-5	HEXANE B.Kr #L29301	9/98
SKD	9/9/97	IPRODIONE	1 of 1	AXACT	30527	.0098 g	X 9.98×10^5 µg/g =	9780.4 µg	÷ 9.7804 mL =	1000 PPM	OL 09/09/97-1	CH_3CN B&J BP224	12/97
↓	↓	IPRODIONE	1 of 1	NCL	OL-090997-1	1.0 mL	X 10^3 µg/mL =	10^3 µg	÷ 10 mL =	100 PPM	OL 09/09/97-2	↓	↓
SKD	9/9/97	IPRODIONE	1 of 1	CHEM SERVICE	167-73B	.0098 g	X 9.8×10^5 µg/g =	9604 µg	÷ 9.604 mL =	1000 PPM	OL 09/09/97-3	CH_3CN B&J BP224	9/98

* Correction factor for paraquat std: 1.770 amt of solvent = $\frac{(0.0122g)(9.9 \times 10^5 \mu g/g)}{(1000ppm)(1.770)}$ = 6.824 mL

J:\WPROC\MISC\FORMS\ORGSSLOG

GC Primary Organic Working Standard Log (Part 1)

Analyst	Date	Method/ Analyte	# Components	Stock Lot #	Amount of Stock	Conc. of Stock	Standard Weight	Int. Sample Amount
AB	10/17/97	515mix L.2	1 of 2	~~0L072397~~ 0L082197	20 uL X	Var ng/uL =	Var ng ÷	500 g,mL =
↓	/ /	2,3D	2 of 2	0L100297.2	20 uL X	100 ng/uL =	2000 ng ÷	500 g,mL =
	/ /	BISOW L.1	1 of 3	0L082197.2	100 uL X	Var ng/uL =	Var ng ÷	500 g,mL =
	/ /	2,3D	2 of 3	0L100297.2	100 uL X	100 ng/uL =	10000 ng ÷	500 g,mL =
	/ /	MCPP/MCPA	3 of 3	0L082197.3	25 uL X	10000 ng/uL =	2.5x10⁵ ng ÷	500 g,mL =
	/ /	BISOW L.2	1 of 3	0L061397.2	100 uL X	Var ng/uL =	Var ng ÷	500 g,mL =
	/ /	2.3D	2 of 3	0L100297.2	100 uL X	100 ng/uL =	10000 ng ÷	500 g,mL =
	/ /	MCPP/MCPA	3 of 3	0L082197.3	25 uL X	10000 ng/uL =	2.5x10⁵ ng ÷	500 g,mL =
KS	10/16/97	Endothal Lot 1	1 of 2	0L-070397-4	90 uL X	1000 ng/uL =	90,000 ng ÷	100 g,mL =
↓	/ /	2,3-D	2 of 2	0L-070397-1	100 uL X	1000 ng/uL =	100,000 ng ÷	100 g,mL =
	/ /	Endothal Lot 2	1 of 2	0L-022797-1	90 uL X	1000 ng/uL =	90,000 ng ÷	100 g,mL =
↓	/ /	2,3-D	2 of 2	0L-070397-1	100 uL X	1000 ng/uL =	100,000 ng ÷	100 g,mL =
MDM	10/17/97	AB1260 by 8080 Lot 1	1 of 1	CHEM SER. 187-103B	500 uL X	100 ng/uL =	50000 ng ÷	500 g,mL =
	/ /	AB1260 by 8080 Lot 2	1 of 1	CHEM SER. 173-123B	50 uL X	1000 ng/uL =	50000 ng ÷	500 g,mL =
	/ /	508 mix Lot 1	1 of 2	0L-020597-1	500 uL X	VARIOUS ng/uL =	VARIOUS ng ÷	500 g,mL =
	/ /	CHLOROTALONIL	2 of 2	CHEM SER 177-151B	12.5 uL X	100 ng/uL =	1250 ng ÷	↓ g,mL =
	/ /	508 mix Lot 2	1 of 2	0L-071197-3	500 uL X	VARIOUS ng/uL =	VARIOUS ng ÷	500 g,mL =
	/ /	CHLOROTHALONIL	2 of 2	AXACT 11729696	2.5 uL X	500 ng/uL =	1250 ng ÷	↓ g,mL =
MH	10/17/97	paraquat	1 of 1	0L-082197-4	20 uL X	100 ng/uL =	2000 ng ÷	20 g,mL =
↓	/ /	↓	1 of 1	0L-081897-1	10 uL X	1000 ng/uL =	10000 ng ÷	20 g,mL =
↓	/ /	↓	1 of 1	0L-081897-1	15 uL X	1000 ng/uL =	15000 ng ÷	20 g,mL =

032 K.S. 10.17.97

0001 K.S. 10.17.97

GC Primary Organic Working Standard Log (Part 2)

	Dilution	Final Ext. Vol.	Final Std. Vol.	Working Standard Conc.	Final Solvent	Solvent Lot #	NCL WO Std. ID #
Var ng/g,mL X	10 X	4 mL ÷	8 mL =	10X RL ng/g,mL	Hexane		WO- ~~1016~~ 101797-2
4 ng/g,mL X	10 X	4 mL ÷	8 mL =	20 ng/g,mL	↓		WO- ~~1016~~ 101797-3
Var ng/g,mL X	1 X	4 mL ÷	8 mL =	10XRL ng/g,mL	Hexane		WO- ~~1016~~ 101797-3
20 ng/g,mL X	1 X	4 mL ÷	8 mL =	10 ng/g,mL			WO-
5000 ng/g,mL X	1 X	4 mL ÷	8 mL =	2500 ng/g,mL			WO-
Var ng/g,mL X	1 X	4 mL ÷	8 mL =	10XRL ng/g,mL			WO- 101797-4
20 ng/g,mL X	1 X	4 mL ÷	8 mL =	10 ng/g,mL			WO-
5000 ng/g,mL X	1 X	4 mL ÷	8 mL =	2500 ng/g,mL			WO-
900 ng/g,mL X	1 X	1 mL ÷	1 mL =	900 ng/g,mL	MeCl2	BP395	WO- 101697-3
1000 ng/g,mL X	1 X	1 mL ÷	1 mL =	1000 ng/g,mL			WO- ~~101697-4~~
900 ng/g,mL X	1 X	1 mL ÷	1 mL =	900 ng/g,mL			WO- ~~101697-4~~ 101697-5
1000 ng/g,mL X	1 X	1 mL ÷	1 mL =	1000 ng/g,mL			WO-
100 ng/g,mL X	1 X	1.0 mL ÷	10.0 mL =	10 ng/g,mL	HEX	B&J# BL-450	WO- 101797-5
100 ng/g,mL X	1 X	1.0 mL ÷	10.0 mL =	10 ng/g,mL	↓	↓	WO- 101797-6
VARIOUS ng/g,mL X	1 X	1.0 mL ÷	10.0 mL =	10XDL ng/g,mL	CAR. HEX	B&J# BP409	WO- 101797-7
2.5 ng/g,mL X	↓ X	↓ mL ÷	↓ mL =	0.25 ng/g,mL			WO- ↓
VARIOUS ng/g,mL X	1 X	1.0 mL ÷	10.0 mL =	10XDL ng/g,mL			WO- 101797-8
2.5 ng/g,mL X	↓ X	↓ mL ÷	↓ mL =	0.25 ng/g,mL			WO- ↓
100 ng/g,mL X	1 X	25 mL ÷	2.5 mL =	1000 ng/g,mL	Saturated NaHCO3	OL-052097-2	WO- 101797-9
500 ng/g,mL X	1 X	25 mL ÷	2.5 mL =	5000 ng/g,mL			WO- 101797-10
750 ng/g,mL X	1 X	25 mL ÷	2.5 mL =	7500 ng/g,mL	↓	↓	WO- 101797-11

EXTRACTION NOTEBOOK PAGE: CHEVRON RM 8-10

DATE: 10/16/97 1510

EXTRACTION METHOD: Paraquat Soil

SOP#: ME 024 03

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NORTH COAST LABORATORIES LTD

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SAMPLE EXTRACTION INFORMATION

SR VOL N/A
SR CONC
SR ID
SR LOT#

IN VOL N/A
IN CONC
IN ID
IN LOT#

SPK VOL 100 µl
SPK CONC 1000 ppm
SPK ID paraquat
SPK LOT# ~~OL-080897-4~~ OL-090897-4 (est) MH 10/31/97

QC BATCH # 9710116-01
SPK SMPL# Sand / 9710383-(
VOL (WT) SMPL 20g
SPK FINAL CONC 5.0 mg/kg

	SAMPLE	CLIENT	SAMPLE VOL/WT	FINAL EXT. VOL	SAMPLE DILUTION
1.	method blank		20g (DGT 10/16/97)	25ml	N/A
2.	LCS	KS	20g		
3.	MS *	KS			
4.	MSD *	KS			
5.	9710383-01A				
6.	-02A				
7.	-03A				
8.					
9.					
10.	* spiked with 100 µl @ 1000 ppm paraquat: LOT#: OL-081897-0				
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					

REVIEWED BY:

DATE: 10/20/97

EXTRACTED DATE/INIT. 10/16/97 MH

CONCENTRATED DATE/INIT. NA MH

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DATE: 10/28/97 1600

EXTRACTION METHOD: paraquat soil

SOP#: ME 02403

NORTH COAST LABORATORIES LTD

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SAMPLE EXTRACTION INFORMATION

QC BATCH # 971028-01

SR VOL N/A	IN VOL N/A	SPK VOL 100 µl	SPK SMPL# 9710574-0
SR CONC ↓	IN CONC ↓	SPK CONC 1000 ppm	VOL/WT SMPL 20g
SR ID ↓	IN ID ↓	SPK ID paraquat	SPK FINAL
SR LOT# ↓	IN LOT# ↓	SPK LOT# ~~OL-08-0897-4~~ OL-090897-4	CONC 5ppm

SAMPLE	CLIENT	SAMPLE VOL/WT	FINAL EXT. VOL	SAMPLE DILUTION
1. method blank			25 ml	N/A
2. LCS		20g	↓	↓
3. LCSD		↓	↓	↓
4. MS		↓	↓	↓
5. MSD		↓	↓	↓
6. 9710574-01A	Garstr	↓	↓	↓
7. ↓ -02A		↓	↓	↓
8. 9710383-01A		↓	↓	↓
9. ↓ -02A		↓	↓	↓
10. ↓ -03A		↓	↓	↓
11. MS } 9710383-01A		↓	↓	↓
12. MSD }		↓	↓	↓
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				

REVIEWED BY: [signature]

DATE: 10/31/97

EXTRACTED DATE/INIT. 10/28/97 MH

CONCENTRATED DATE/INIT. N/A

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PERCENT MOISTURE

Sample Number	Date	Container Wt.(g)	Container + Wet Sample	Net wt. of Wet Sample	Init.	Date	Container + Dry Sample	Net Wt of Dry Sample	Init.	Percent Moisture	Sample Type
9710383-01A	10/16	30.73	50.[illegible]	[illegible]	MH	10/17	49.72	18.99	MH	5.0%	soil
-02A	↓	30.78	50.78	20.00	↓	↓	49.78	19.00	↓	5.0%	↓
-03A	↓	30.42	50.42	20.00	↓	↓	48.97	18.55	↓	7.2%	↓
9710467-01A	10/24	30.48	50.48	20.00	MH	10/25	48.70	18.22	MH	8.9%	MH
-02A	↓	30.47	50.47	20.00	↓	↓	48.08	17.61	MH	12%	↓
9710470-01A	10/27	30.93	50.93	20.00	MH	10/28	32.93	2.000	MH	90%	
-02A	↓	30.49	50.49	↓	↓	10/28	31.71	1.220	↓	94%	
-03A	↓	30.42	50.42	↓	↓	10/28	48.40	17.98	↓	10%	
-04A	↓	30.48	50.48	↓	↓	10/28	48.43	17.95	↓	10%	
-05A	↓	30.96	50.96	↓	↓	10/28	48.84	17.88	↓	11%	
-08A	↓	30.48	50.48	↓	↓	10/28	46.40	15.92	↓	20%	
WD0247-4	↓	30.12	50.12	↓	↓	10/28	45.74	18.62	↓	6.9%	
WA0247-1	↓	31.42	51.42	↓	↓	10/28	50.45	19.03	↓	4.8%	
9710574-02A										6.9%	
9710574-01A										4.9%	

ANALYTICAL RAW DATA (NOTEBOOK PAGE)

Malfunction Report

Malfunction Type: A

A. QC Limit(s) Exceeded
B. Equipment Failure
C. Standard(s) out of Range
D. Other

Name: MOLLY HENNESSEY
Department: ORGANIC
Reported to: QA
Date of Malfunction: 10-16-97
Equipment or Test Code: PARAQUAT SOIL
Affected Work Order(s): 9710383
Matrix: ☒ Soil ☐ Drinking Water ☐ Waste Water ☐ Other

Description of Problem: LOW MATRIX RECOVERIES WERE POSSIBLY DUE TO A LOWER TEMPERATURE OF HOT PLATE DURING EXTRACTION. THE LOWER TEMPERATURE MAY HAVE REDUCED THE EFFICIENCY OF THE EXTRACTION OF THE SOIL MATRIX

Corrective Action or Explanation of Malfunction: RE-EXRACTION / RE-ANALYSIS

Date Resolved: 10-28-97
Initials: MH

White - Laboratory Supervisor

Yellow - QAU

COLORIMETRY

Calib. Std & LCS Lot # 1000ppm = OL-081897-01 / 100ppm = OL-082197-4 / OL-090897-4 (CCV) MH 10/31/97

2nd Lot Standard Lot # ~~OL-080797-4~~

Page

Date 10/17/97 1300

LCS/MS Solution Conc.& Volume 100 µl / 1000ppm

Analyst MH

Sample Volume 20g

Test paraquat Soil

LCS/MS Final Conc. 5 ppm

Units mg/kg

Work Order #	Absorbance run	Absorbance re-run or color blk (circle 1)	Dil	Conc.	Reported Value	Comments dry weight (DW) measurements
method blank	0.000			0.000		
1.0 ppm	0.147			0.90	90.0%	WO-101797-9
5.0 ppm	0.563			5.27	105%	WO-101797-10
~~5.0 ppm (lot2)~~	~~0.760~~ (CCV) MH 10/17/97	0.496		4.56	91.2%	
7.5 ppm	0.760			7.34	(CCV) MH 10/17/97 ~~97.7%~~ 97.9%	WO-101797-11
LCS	0.440			3.97	79.4%	
MS 9710383-02A	0.149			0.90	18%	DW = 0.972 ppm
MSD (CCV) MH 10/17/97 ~~0.142~~ 0.139				0.84	16.8%	DW = 0.907 ppm
9710383-01A	0.016			ND	ND	
-02A	0.018			↓	↓	
↓ * -03A	0.694	~~0.149~~ (CCV) MH 10/17/97	1:4	6.64	26.6	initial reading 1.480 BRIGHT BLUE → DW = 28.7 ppm
CCV (5.0ppm)	0.552			5.15	103%	
R^2 = 0.9950			* raise delim for sample 9710383-03A			
int = 0.061558			to 4.0 ppm, due to dilution.			
Slope = 0.0952						
			FPD = 6.9%			REVIEWED BY:
						DATE: 10/20/97
			correction factor for			
			wt.wt → dry wt			
				1A = 1.053		
				2A = 1.053		
				3A = 1.053		

COLORIMETRY

Calib. Std & LCS Lot # 1000 ppm = OC-081897-01 / 100ppm: OC-082197-4 ~~1600~~ (C720) Page 2

2nd Lot Standard Lot # 1000 ppm: ~~OC-080997-4~~ OC-090897-4 Date 10/30/97

CS/MS Solution Conc.& Volume 100 µl / 1000 ppm Analyst MMH

Sample Volume 20g Test Paraquat · Soil

LCS/MS Final Conc. 5 ppm Units mg/kg

Work Order #	Absorbance Run	Color Blank or Re-run	Absorbance - Color Blank	Dil	Conc.	Reported Value	Comments See back for ~~% moisture~~ dryweight concentrations
method blank	0.000						
1.0 ppm	0.148				0.91	91.0%	WO-103097-5
5.0 ppm	0.584				5.23	105%	WO-103097-6
5.0 ppm (LOT 2)	0.519				4.58	91.6%	WO-103097-7
7.5 ppm	~~0.802~~	0.800 MMH 10/30/97			7.36	98.1%	11/31/97 MMH 8.09%
LCS	0.416				3.56	71.2%	RPD = ~~8.4%~~
LCSD	0.446				3.86	77.2%	
MS 9710574-01A	off				NQ	NQ	sample ~~vortex~~ has high concentration
MSD	off				NQ	NQ	of paraquat.
MS 9710383-01A	0.408	MMH 10/30/97			3.48	69.6%	RPD 2.83%
MSD	0.418				3.58	71.6%	
9710574-01A	0.622			1:5	6.00	30.0	BLUE
-02A	0.084				0.28	ND	
9710383-01A	0.063				0.07	ND	
-02A	0.033				-.22	ND	
CCV-5.0ppm	0.558				4.97	99.4%	
-03A	0.595			1:10	5.33	53.3	BLUE
CCV 5.0ppm	0.545				4.84	96.8%	
$R^2 = 0.9964$							

Analyst Signature [signature] 10/30/97

Verified by [signature] Date 10/31/97

REVIEWED BY: M Dockel

DATE: 10/31/97

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NCL WO# 9710383

INTERNAL TRACKING DOCUMENTATION

North Coast Laboratories
SAMPLE CONTROL STORAGE LOG

971016-12

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SAMPLE ID	#	STORED		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
9710380-01B	2	R/4-Yellow/2/5D	DATE	10-16-97	10-27-97										
			TIME	1600	1100										
			INIT	ST	GMH										
			BOTTLE	All											
			TRANSFERRED TO: E L1 (A1) BOX # 115 L2 A2												
9710380-02B	2	R/4-Yellow/2/5D	DATE												
			TIME												
			INIT												
			BOTTLE	All											
			TRANSFERRED TO: E L1 A1 BOX # L2 A2												
9710380-03B	2	R/4-Yellow/2/5D	DATE												
			TIME												
			INIT												
			BOTTLE	All											
			TRANSFERRED TO: E L1 A1 BOX # L2 A2												
9710383-01A	1	4-Yellow/*SeePM*	DATE		10/16 97	10/16 97	10/28 97								
			TIME		1500	1600	1400								
			INIT		MH	MH	MH								
			BOTTLE	All											
			TRANSFERRED TO: E (A1) 10/16/97 BOX # 42 L2 A2												
9710383-02A	1	4-Yellow/*SeePM*	DATE		10/16 97		10/28 97								
			TIME		1500		1200								
			INIT		MH		MH								
			BOTTLE	All											
			TRANSFERRED TO: E L1 (A1) BOX # 42 L2 A2												
9710383-03A	1	4-Yellow/*SeePM*	DATE		10/16 97		10/28 97								
			TIME		1500		1400								
			INIT		MH		MH								
			BOTTLE	All											
			TRANSFERRED TO: E L1 (A1) BOX # 42 L2 A2												
9710384-01A	1	4-Yellow/Homo'ze	DATE		10-27-97										
			TIME		1000										
			INIT		GMH										
			BOTTLE	All											
			TRANSFERRED TO: E L1 (A1) BOX # 18 L2 A2												

Stored Locations with a #-Color are stored in FARE001.

= # of Labels

"Bottle" line is left blank when there is only 1 sample bottle (1 label), or when there is a composite sample ("COMP X->1" written in the stored location).

E=Empty L1=Limbo A1=Archive L2=Relimbo A2=Rearchive "I" (in TIME row)=Immediately upon receipt J:\WPROC\QA\SCSL3.FR

ANALYTICAL REPORT

NORTH COAST LABORATORIES LTD.

Date: 10/30/97

REPORT

REPORT TO
Garry Struthers Associates
3150 Richards Rd., Ste 100
Bellevue, WA 98005-4446

WORK ORDER 97-10-383

INVOICE # 60061874

Attn: Mike Webb

WORK ID: WTFREC 97004.38

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	W0901471
02	W0901472
03	W0201474
04	Method Blank
05	Lab. Control Sample
06	Matrix Spike
07	Matrix Spike Dupe
08	W0901471 (re-extraction)
09	W0901472 (re-extraction)
10	W0201474 (re-extraction)
11	Method Blank (re-extract.)
12	LCS (re-extraction)
13	MS (re-extraction)
14	MSD (re-extraction)

Comments:

Previously reported on 10/27/97.
First reported on 10/20/97.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected
NQ = Not Quantifiable
NR = Not Requested

Date: 10/30/97 REPORT Page 2 of 4
Work Order: 97-10-383
Invoice #: 60061874

SAMPLE ID: W0901471 FRAC.: 01A COLLECTED: 10/14/97 RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT		UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	ND	1.1	R	ug/g	1.0	10/16/97	10/17/97	CHEV.RM8-10
Percent Moisture	5.0	0.10		%				SM2540 G

SAMPLE ID: W0901472 FRAC.: 02A COLLECTED: 10/14/97 RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT		UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	ND	1.1	R	ug/g	1.0	10/16/97	10/17/97	CHEV.RM8-10
Percent Moisture	5.0	0.10		%				SM2540 G

SAMPLE ID: W0201474 FRAC.: 03A COLLECTED: 10/14/97 RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT		UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	29	4.4	R	ug/g	4.0	10/16/97	10/17/97	CHEV.RM8-10
Percent Moisture	7.2	0.10		%				SM2540 G

SAMPLE ID: Method Blank FRAC.: 04A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	ND	1.0	ug/g	1.0	10/16/97	10/17/97	CHEV.RM8-10

SAMPLE ID: Lab. Control Sample FRAC.: 05A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	79.4	N/A	% Rec	1.0	10/16/97	10/17/97	CHEV.RM8-10

SAMPLE ID: Matrix Spike FRAC.: 06A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	18.0	N/A	% Rec	1.0	10/16/97	10/17/97	CHEV.RM8-10

Date: 10/30/97
Work Order: 97-10-383
Invoice #: 60061874

REPORT

SAMPLE ID: Matrix Spike Dupe FRAC.: 07A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	16.8	N/A	% Rec	1.0	10/16/97	10/17/97	CHEV.RM8-10

SAMPLE ID: W0901471 (re-extraction) FRAC.: 08A COLLECTED: 10/14/97 RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	ND	1.1	ug/g	1.0	10/28/97	10/30/97	CHEV.RM8-10

SAMPLE ID: W0901472 (re-extraction) FRAC.: 09A COLLECTED: 10/14/97 RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	ND	1.1	ug/g	1.0	10/28/97	10/30/97	CHEV.RM8-10

SAMPLE ID: W0201474 (re-extraction) FRAC.: 10A COLLECTED: 10/14/97 RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	58	11	ug/g	10	10/28/97	10/30/97	CHEV.RM8-10

SAMPLE ID: Method Blank (re-extract.) FRAC.: 11A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	ND	1.0	ug/g	1.0	10/28/97	10/30/97	CHEV.RM8-10

SAMPLE ID: LCS (re-extraction) FRAC.: 12A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	77.2	N/A	% Rec	1.0	10/28/97	10/30/97	CHEV.RM8-10

SAMPLE ID: MS (re-extraction) FRAC.: 13A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	69.6	N/A	% Rec	1.0	10/28/97	10/30/97	CHEV.RM8-10

Date: 10/30/97
Work Order: 97-10-383
Invoice #: 60061874

REPORT

SAMPLE ID: MSD (re-extraction) FRAC.: 14A COLLECTED: N/A RECEIVED: 10/16/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Paraquat	71.6	N/A	% Rec	1.0	10/28/97	10/30/97	CHEV.RM8-10

NCL WO# 9710383

CHAIN OF CUSTODY

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SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

97-004.38 610585

4813 Pacific Hwy. East
Tacoma, Washington 98424
(253) 922-2310 • FAX (253) 922-5047

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS COC #5

CLIENT: GARRY STRUTHERS ASSOCIATES

PROJECT NAME: WTFREC 97004.38

CONTACT: MIKE WEBB

PHONE NO: letter "O" not "Ø"

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	PARAQUAT
1	WØ901471	10/14/97	9:54	SOIL															X
2	WØ901472	10/14/97	9:55	SOIL															X
3	WØ201474	10/14/97	10:30	SOIL															X
	Temperature blank enclosed																		

	Signature	Printed Name	Firm	Time / Date
Relinquished By	[signature] Couried to Fed X with custody seals	Michael Webb	GSA Inc.	10/15/97 16:30
Received By	[signature]	JAT TARVIN	NCL	10/16/97 1130
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

ARMY CORPS OF ENGINEERS PROJECT
ANALYZE AS PER QAPP.

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LAB NO. ________

PAGE 1 OF 1

COOLER RECEIPT FORM

PROJECT: ______________________ W.O.# ________

COOLER RECEIVED ON 10/16/97 AND OPENED ON 10/16/97 BY JAY TARKIN

(SIGNATURE)

Temperature upon receipt: cooler ______ °C
temp. blank 1 °C.

1. Were custody seals on outside of cooler and intact? (YES) NO
   a. If YES, how many and where: 2, sealing Lid
   b. Were signature and date correct? (YES) NO
2. Were custody papers taped to lid inside cooler? (YES) NO
3. Were custody papers properly filled out (ink, signed, etc)? (YES) NO
4. Did you sign custody papers in the appropriate place? (YES) NO
5. Did you attach shipper's packing slip to this form? (YES) NO
6. What kind of packing material was used? bubble wrap
7. Was sufficient ice used (if appropriate)? (YES) NO
8. Were all bottles sealed in separate plastic bags? (YES) NO
9. Did all bottles arrive in good condition (unbroken)? (YES) NO
10. Were all bottle labels complete (no., date, signed, pres, etc)? (YES) NO
11. Did all bottle labels and tags agree with custody papers? (YES) NO
12. Were correct bottles used for the test indicated? (YES) NO
13. If present, were VOA vials checked for absence of air bubbles and noted if found? YES NO
14. Was sufficient amount of sample sent in each bottle? (YES) NO
15. Were correct preservatives used? (YES) NO
16. Corrective action taken, if necessary:
   a. Name of person contacted: ________________
   b. Date: ________________

MEMORANDUM

DATE: December 17, 1997

TO: Fred Luck, Project Manager

FROM: Michael Webb, Chemical Data Quality Manager

SUBJECT: Contract DACA67-95-G-0001-38
Wenatchee Tree Fruit Research Center Remediation
Summary Chemical Data Quality Control Report:
Waste Sampling October 24, 1997
Sound Analytical Report #68370

Purpose: This assessment summarizes data quality factors that affect usability and provides guidance in the use of these data for the intended purpose.

Analytical Methods:

- Method 8081 for Organochlorine Pesticides.
- Method 8141 for Organophosphorus Pesticides, Modified for GC/MS.
- TCLP (Method 1311) for metals (Method 6010) and pesticides (Method 8081).

Data Use Intended:

- Waste Samples: To establish waste designation of selected roll-off bins.

Summary of Qualified and Rejected Data:

- No soil data were rejected due to quality control problems.
- Some results were below the quantitation limit and were flagged with "J" qualifiers. "C" flags were used to indicate that second-column confirmation had confirmed the results (4,4'-DDD and 2,4'-DDT cannot be confirmed when both are present). "U" qualifiers were not used for undetected results, rather "ND" was placed in the quantitative value data field.

Summary of Method 8081 and TCLP Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 24, 1997, analyzed by Method 8081: WAO247-1, WBO247-2, WCO247-3, WDO247-4, WEO247-5, WFO247-6.

  Sampled October 24, 1997, analyzed by TCLP (Method 1311/8081): WAO247-1, WDO247-4, WEO247-5, WFO247-6.

- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated in this delivery group.**
- Analytical Sensitivity - **Acceptable.** Some samples were diluted prior to analysis due to high analyte concentration, thereby elevating the reporting limits. No waste designation decisions were affected.
- Accuracy -

  Calibration (Initial and Continuing) - **Acceptable.**

DDT and Endrin Breakdown Standards - **Acceptable.** The laboratory reported a nonconformance for one analytical run, but this QC parameter was within the project specifications.
Surrogates - **Acceptable.** Surrogates in some of the samples were not reportable because of the dilutions resulting from high concentrations of target analytes.
Matrix Spikes - **Acceptable.** The MS/MSD was not reportable for one sample due to high concentrations of the analytes in the sample. No corrective action was necessary. The MS/MSD of another sample and the laboratory control sample were acceptable.
Laboratory Control Samples (LCS) - **Acceptable for all analytes except for a slight nonconformance for 2,4'-DDT (batch analyzed 10/27/97).** This batch only included WDO247-4. No corrective action was taken because all other quality indicators were acceptable.
Laboratory Blanks - **Acceptable.**
Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Not evaluated in this delivery group.**

Summary of Method 8141 (Modified) Laboratory and Field Sampling Quality Control:

- Samples Covered - Sampled October 24, 1997: WAO247-1, WBO247-2, WCO247-3, WDO247-4, WEO247-5, WFO247-6.
- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated in this delivery group.**
- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration, Tune, and Internal Standard Response- **Acceptable.** These parameters were verified with the laboratory, however, data summaries for internal standard response were not included in the data package provided by the laboratory.
  Surrogates - **Acceptable.**
  Matrix Spikes - **Acceptable.** Recovery of several compounds was outside of project targets due to the presence of high concentrations of these analytes in the sample. These data are acceptable based on the Laboratory Control Sample results.
  Laboratory Control Samples (LCS) - **Acceptable.**
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Acceptable.**

- Laboratory Precision - **Acceptable.** RPD of the MS/MSD pair for several compounds was outside of project targets due to the presence of high concentrations of these analytes in the sample. The RPD of the spiked sample concentrations was acceptable.
- Field Precision - **Not evaluated in this delivery group.**

Summary of TCLP Metals (Methods 1311/6010 and 7470) Laboratory and Field Sampling Quality Control:

Samples Covered - Sampled October 24, 1997, analyzed by TCLP (Method 1311) for metals: WAO247-1, WDO247-4, WEO247-5, WFO247-6.

- Sample Handling, Holding Time and Chain of Custody - **Acceptable.**
- Performance Evaluation (PE) Results - **Not evaluated for this parameter.**
- Analytical Sensitivity - **Acceptable.**
- Accuracy -

  Calibration and Calibration Verification - **Acceptable.**
  Matrix Spikes - **Acceptable except for silver.** The 77% recovery is only slightly outside of the project target range. The method control based on LCS results is acceptable. These results have not been flagged with a "J" because the concentrations in the samples are undetected and the detection level is far below the regulatory limit.
  Laboratory Control Samples (LCS) - **Acceptable.**
  Serial Dilutions - **Acceptable.** The diluted results are too close to the instrument detection limits to make a definitive conclusion regarding interference. The results are accepted as reported.
  Laboratory Blanks - **Acceptable.**
  Field Blanks - **Not evaluated in this delivery group.**

- Laboratory Precision - **Acceptable.**
- Field Precision - **Not evaluated in this delivery group.**

Summary of Data Comparability, Representativeness, and Completeness

- **Field Sampling Issues** - No problems were encountered. The waste samples were taken as composites within the bins according to the codes (WA, WD, etc.) incorporated in the sample number as follows. The composites were taken from 5 locations within the bins contributing to the composite and homogenized according to the Sampling and Analysis Plan:

  WA: Bins # 5,11,12
  WB: Bins # 13,14,18
  WC: Bins # 15,16,17,19
  WD: Bins # 20,21
  WE: Bins # 22,23
  WF: Bin # 24

- **Data Completeness** - The data completeness was 100% for this phase of work.

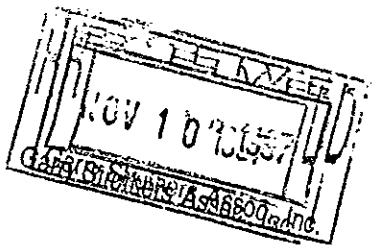
Overall Conclusions

These data are acceptable for use for the intended purposes. The QC results meet the accuracy, precision, and completeness DQOs for the project, except as noted.

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

TRANSMITTAL MEMORANDUM

DATE: November 7, 1997



TO: Mike Webb
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

PROJECT: WTFREC

REPORT NUMBER: 68370

Enclosed are the test results for six samples received at Sound Analytical Services on October 25, 1997.

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

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Lila A Transue

Lila Transue
Project Manager

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc.

Date: November 7, 1997

Project: WTFREC

Lab No.: 68370

Delivered By: Client

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix	Description
68370-1	WA0247-1	10-24-97	Soil	Dry, brown, silt
68370-2	WB0247-2	10-24-97	Soil	Dry, brown, silt
68370-3	WC0247-3	10-24-97	Soil	Dry, brown, silt
68370-4	WD0247-4	10-24-97	Soil	Dry, brown, silt
68370-5	WE0247-5	10-24-97	Soil	Dry, brown, silt
68370-6	WF0247-6	10-24-97	Soil	Dry, brown, silt

SAMPLE EXTRACTION AND ANALYSIS

ORGANOPHOSPHORUS PESTICIDES
Samples 68370-1 through 68370-6 were analyzed for organophosphorus pesticides in accordance with EPA SW-846 Method 8141. The samples were extracted in accordance with EPA SW-846 Method 3540 on 10-26-97 and analyzed on 10-27-97.

The reported value for parathion in sample 68370-1 is based on a secondary dilution.

The percent recovery of disulfoton, parathion and ethion were outside of the quality control limits for the matrix spike and/or the matrix spike duplicate analysis for sample 68370-1 due to the high level of the compounds detected in the sample. The relative percent difference between the matrix spike and matrix spike duplicate for Parathion also exceeded the quality control limits for the same reason.

All other quality control parameters were within acceptance limits.

ORGANOCHLORINE PESTICIDES
Samples 68370-1 through 68370-6 were analyzed for organochlorine pesticides in accordance with EPA SW-846 Method 8081. The samples were extracted in accordance with EPA SW-846 Method 3540 on 10-26-97 and analyzed on 10-27-97 and 10-28-97.

Samples 68370-1 through 68370-4 required dilution prior to analysis. Surrogate recoveries could not be determined for these samples.

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: November 7, 1997

Project: WTFREC Lab No.: 68370

ORGANOCHLORINE PESTICIDES, Continued
The samples required secondary dilution analyses due to the high concentrations of various target analytes.

Matrix spike and matrix spike duplicate analysis of sample 68370-1 are not reported due to high contaminant levels in the original sample. The blank spike extracted with the sample batch had acceptable recoveries.

All detected compounds were confirmed as present using a second dissimilar column. All relative percent difference values between the two analytical columns were less than or equal to 40%, except for beta-BHC in sample 68370-1, and for 4,4'-DDD, which coelutes with 2,4'-DDT on the confirmation column, as most samples that contained 4,4'-DDD contained significant concentrations of 2,4'-DDT.

The final DDT/endrin evaluation standard breakdowns (file 10279735) were slightly above project specified limits.

All other quality control parameters were within acceptance limits.

TOXICITY CHARACTERISTICS LEACHING PROCEDURE (TCLP) EXTRACTION
Samples 68370-1 and 68370-4 through 68370-6 underwent TCLP extraction in accordance with EPA SW-846 Method 1311 on 10-27-97.

TCLP ORGANOCHLORINE PESTICIDES
The TCLP leachates for samples 68370-1 and 68370-4 through 68370-6 were analyzed for organochlorine pesticides in accordance with EPA SW-846 Method 8081. The leachates were extracted in accordance with EPA SW-846 Method 3510 on 10-29-97 and analyzed on 11-03-97.

All quality control parameters were within acceptance limits.

TCLP METALS
The TCLP leachates for samples 68370-1 and 68370-4 through 68370-6 were analyzed for RCRA metals by ICP and CVAA in accordance with EPA SW-846 Method 6010 and 7470. The leachates were digested in accordance with EPA SW-846 Method 3010 on 10-28-97 and analyzed on 10-28-97. The leachates were prepared and analyzed for mercury in accordance with EPA SW-846 Method 7470 on 10-28-97.

Barium was detected in three continuing calibration blanks at levels that are above the instrument detection limits but below the required detection limit. No action was taken as the concentrations of barium in the samples were more than ten times the concentrations found in the calibration blanks.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WA0247-1
Lab ID:	68370-01
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	90.19
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	97		60	140

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND		110	72	
Dimethoate	ND		79	44	
Diazinon	ND		63	62	
Disulfoton		1700	57	37	
Parathion,methyl	ND		71	63	
Malathion	ND		75	53	
Parathion		16000	2000	2000	D
Azinphos,methyl	ND		77	52	
Ethion		1000	74	37	
Paraoxon,methyl	ND		74	37	
Paraoxon,ethyl	ND		74	37	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WB0247-2
Lab ID:	68370-02
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	95.41
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	100		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	100	65	
Dimethoate	ND	72	40	
Diazinon	ND	57	56	
Disulfoton	ND	52	34	
Parathion,methyl	ND	64	57	
Malathion	ND	68	48	
Parathion	ND	92	90	
Azinphos,methyl	ND	70	48	
Ethion	ND	67	33	
Paraoxon,methyl	ND	67	33	
Paraoxon,ethyl	ND	67	33	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WC0247-3
Lab ID:	68370-03
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	93.71
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	103		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	110	68	
Dimethoate	ND	75	42	
Diazinon	ND	60	59	
Disulfoton	ND	54	36	
Parathion,methyl	ND	67	60	
Malathion	ND	71	51	
Parathion	ND	97	94	
Azinphos,methyl	ND	73	50	
Ethion	ND	70	35	
Paraoxon,methyl	ND	70	35	
Paraoxon,ethyl	ND	70	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WD0247-4
Lab ID:	68370-04
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	93.8
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	90		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)		PQL	MDL	Flags
Dichlorvos	ND		110	69	
Dimethoate	ND		76	42	
Diazinon	ND		61	60	
Disulfoton	ND		55	36	
Parathion,methyl	ND		68	61	
Malathion	ND		72	51	
Parathion		100	98	95	
Azinphos,methyl	ND		74	50	
Ethion	ND		71	36	
Paraoxon,methyl	ND		71	36	
Paraoxon,ethyl	ND		71	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WE0247-5
Lab ID:	68370-05
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	94.76
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	86		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	110	68	
Dimethoate	ND	75	42	
Diazinon	ND	60	59	
Disulfoton	ND	54	36	
Parathion,methyl	ND	67	60	
Malathion	ND	71	51	
Parathion	ND	97	94	
Azinphos,methyl	ND	73	50	
Ethion	ND	70	35	
Paraoxon,methyl	ND	70	35	
Paraoxon,ethyl	ND	70	35	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WF0247-6
Lab ID:	68370-06
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	93.96
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	94		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	110	67	
Dimethoate	ND	74	41	
Diazinon	ND	59	58	
Disulfoton	ND	53	35	
Parathion,methyl	ND	66	59	
Malathion	ND	70	50	
Parathion	ND	95	92	
Azinphos,methyl	ND	72	49	
Ethion	ND	69	34	
Paraoxon,methyl	ND	69	34	
Paraoxon,ethyl	ND	69	34	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WA0247-1
Lab ID:	68370-01
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/28/97
% Solids	90.19
Dilution Factor	10

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		3.7	0.55	
alpha-BHC	ND		150	0.57	
beta-BHC		35	150	1.1	J N C
delta-BHC	ND		150	0.58	
gamma-BHC (Lindane)	ND		150	1.3	
Chlordane (technical)	ND		74	18	
4,4'-DDD		560	150	1.3	C
4,4'-DDE		2400	150	2.7	D C
4,4'-DDT		3700	150	9.3	D C
2,4'-DDD		49	150	11	J C
2,4'-DDE		180	150	11	C
2,4'-DDT		650	150	11	C
Dieldrin	ND		7.4	0.53	
Endosulfan I		2700	15	2.4	D C
Endosulfan II		1400	15	1.2	D C
Endosulfan sulfate	ND		15	1.8	
Endrin	ND		7.4	0.9	
Endrin aldehyde	ND		150	6.6	
Heptachlor	ND		150	0.75	
Heptachlor epoxide	ND		150	1.2	
Methoxychlor	ND		150	16	
Toxaphene	ND		150	320	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WB0247-2
Lab ID:	68370-02
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/28/97
% Solids	95.41
Dilution Factor	10

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		3.3	0.5	
alpha-BHC	ND		130	0.51	
beta-BHC	ND		130	0.95	
delta-BHC	ND		130	0.52	
gamma-BHC (Lindane)	ND		130	1.2	
Chlordane (technical)	ND		67	16	
4,4'-DDD		48	130	1.1	J C
4,4'-DDE		1100	130	2.4	D C
4,4'-DDT		2600	130	8.4	D C
2,4'-DDD		24	130	10	J C
2,4'-DDE		78	130	10	J C
2,4'-DDT		420	130	10	C
Dieldrin	ND		6.7	0.48	
Endosulfan I		390	13	2.2	C
Endosulfan II		180	13	1.1	C
Endosulfan sulfate	ND		13	1.6	
Endrin	ND		6.7	0.81	
Endrin aldehyde	ND		130	6	
Heptachlor	ND		130	0.68	
Heptachlor epoxide	ND		130	1.1	
Methoxychlor	ND		130	15	
Toxaphene	ND		130	290	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WC0247-3
Lab ID:	68370-03
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/28/97
% Solids	93.71
Dilution Factor	10

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		3.5	0.52	
alpha-BHC	ND		140	0.54	
beta-BHC	ND		140	1	
delta-BHC	ND		140	0.55	
gamma-BHC (Lindane)	ND		140	1.2	
Chlordane (technical)	ND		70	17	
4,4'-DDD		150	140	1.2	C
4,4'-DDE		2400	140	2.5	D C
4,4'-DDT		1700	140	8.9	D C
2,4'-DDD		39	140	11	J C
2,4'-DDE		64	140	11	J C
2,4'-DDT		400	140	11	C
Dieldrin		200	7	0.5	C
Endosulfan I	ND		14	2.3	
Endosulfan II		15	14	1.2	C
Endosulfan sulfate	ND		14	1.7	
Endrin		15	7	0.85	C
Endrin aldehyde	ND		140	6.3	
Heptachlor	ND		140	0.72	
Heptachlor epoxide	ND		140	1.2	
Methoxychlor	ND		140	16	
Toxaphene	ND		140	310	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WD0247-4
Lab ID:	68370-04
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	93.8
Dilution Factor	50

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	-	X8	63	149
Decachlorobiphenyl	-	X8	57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	380	18	2.7	C
alpha-BHC	ND	710	2.7	
beta-BHC	ND	710	5.1	
delta-BHC	ND	710	2.8	
gamma-BHC (Lindane)	ND	710	6.1	
Chlordane (technical)	ND	360	87	
4,4'-DDD	77	710	6	J C
4,4'-DDE	630	710	13	J C
4,4'-DDT	590	710	45	J C
2,4'-DDD	340	710	53	J C
2,4'-DDE	ND	710	53	
2,4'-DDT	240	710	53	J C
Dieldrin	44000	36	2.5	D C
Endosulfan I	ND	71	12	
Endosulfan II	ND	71	5.9	
Endosulfan sulfate	ND	71	8.6	
Endrin	49000	36	4.3	D C
Endrin aldehyde	4100	710	32	C
Heptachlor	ND	710	3.6	
Heptachlor epoxide	ND	710	5.9	
Methoxychlor	ND	710	79	
Toxaphene	ND	710	1600	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WE0247-5
Lab ID:	68370-05
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/28/97
% Solids	94.76
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	91		63	149
Decachlorobiphenyl	77		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	3	0.35	0.052 C
alpha-BHC	ND		14	0.054
beta-BHC	ND		14	0.1
delta-BHC	ND		14	0.055
gamma-BHC (Lindane)	ND		14	0.12
Chlordane (technical)	ND		7	1.7
4,4'-DDD		2.2	14	0.12 J C
4,4'-DDE		110	14	0.25 D C
4,4'-DDT		95	14	0.88 C
2,4'-DDD	ND		14	1.1
2,4'-DDE		2.7	14	1.1 J C
2,4'-DDT		22	14	1.1 C
Dieldrin		770	0.7	0.05 D C
Endosulfan I	ND		1.4	0.23
Endosulfan II	ND		1.4	0.12
Endosulfan sulfate	ND		1.4	0.17
Endrin		81	0.7	0.085 C
Endrin aldehyde		4.8	14	0.63 J C
Heptachlor	ND		14	0.072
Heptachlor epoxide	ND		14	0.12
Methoxychlor	ND		14	1.6
Toxaphene	ND		14	31

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WF0247-6
Lab ID:	68370-06
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/28/97
% Solids	93.96
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	97		63	149
Decachlorobiphenyl	115		57	143

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	0.34	0.051	
alpha-BHC	ND	14	0.053	
beta-BHC	ND	14	0.098	
delta-BHC	ND	14	0.054	
gamma-BHC (Lindane)	ND	14	0.12	
Chlordane (technical)	ND	6.9	1.7	
4,4'-DDD	ND	14	0.12	
4,4'-DDE	82	14	0.25	C
4,4'-DDT	39	14	0.87	C
2,4'-DDD	ND	14	1	
2,4'-DDE	ND	14	1	
2,4'-DDT	9.6	14	1	J C
Dieldrin	120	0.69	0.049	D C
Endosulfan I	ND	1.4	0.22	
Endosulfan II	ND	1.4	0.11	
Endosulfan sulfate	ND	1.4	0.17	
Endrin	12	0.69	0.083	C
Endrin aldehyde	ND	14	0.61	
Heptachlor	ND	14	0.07	
Heptachlor epoxide	ND	14	0.11	
Methoxychlor	ND	14	1.5	
Toxaphene	ND	14	30	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WA0247-1
Lab ID:	68370-01
Date Received:	10/25/97
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
TCMX	108		30	122
Decachlorobiphenyl	97		59	126

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	ND	1	0.075	
alpha-BHC	ND	1	0.077	
beta-BHC	ND	1	0.14	
delta-BHC	ND	1	0.078	
gamma-BHC (Lindane)	ND	1	0.17	
Chlordane (technical)	ND	10	2.5	
4,4'-DDD	ND	2	0.17	
4,4'-DDE	ND	2	0.36	
4,4'-DDT	ND	2	1.3	
2,4'-DDD	ND	2	1	
2,4'-DDE	ND	2	1	
2,4'-DDT	ND	2	1	
Dieldrin	ND	2	0.071	
Endosulfan I	11	1	0.32	C
Endosulfan II	6.2	2	0.17	C
Endosulfan sulfate	ND	2	0.24	
Endrin	ND	2	0.12	
Endrin aldehyde	ND	2	0.89	
Heptachlor	ND	1	0.1	
Heptachlor epoxide	ND	1	0.17	
Methoxychlor	ND	10	2.2	
Toxaphene	ND	100	54	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WD0247-4
Lab ID:	68370-04
Date Received:	10/25/97
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	98		30	122
Decachlorobiphenyl	117		59	126

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	1	0.075	
alpha-BHC	ND	1	0.077	
beta-BHC	ND	1	0.14	
delta-BHC	ND	1	0.078	
gamma-BHC (Lindane)	ND	1	0.17	
Chlordane (technical)	ND	10	2.5	
4,4'-DDD	ND	2	0.17	
4,4'-DDE	ND	2	0.36	
4,4'-DDT	ND	2	1.3	
2,4'-DDD	ND	2	1	
2,4'-DDE	ND	2	1	
2,4'-DDT	ND	2	1	
Dieldrin	38	2	0.071	C
Endosulfan I	ND	1	0.32	
Endosulfan II	ND	2	0.17	
Endosulfan sulfate	ND	2	0.24	
Endrin	86	2	0.12	C
Endrin aldehyde	5.1	2	0.89	C
Heptachlor	ND	1	0.1	
Heptachlor epoxide	ND	1	0.17	
Methoxychlor	ND	10	2.2	
Toxaphene	ND	100	54	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WE0247-5
Lab ID:	68370-05
Date Received:	10/25/97
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	105		30	122
Decachlorobiphenyl	113		59	126

Analyte		**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		1	0.075	
alpha-BHC	ND		1	0.077	
beta-BHC	ND		1	0.14	
delta-BHC	ND		1	0.078	
gamma-BHC (Lindane)	ND		1	0.17	
Chlordane (technical)	ND		10	2.5	
4,4'-DDD	ND		2	0.17	
4,4'-DDE	ND		2	0.36	
4,4'-DDT	ND		2	1.3	
2,4'-DDD	ND		2	1	
2,4'-DDE	ND		2	1	
2,4'-DDT	ND		2	1	
Dieldrin		7.5	2	0.071	C
Endosulfan I	ND		1	0.32	
Endosulfan II	ND		2	0.17	
Endosulfan sulfate	ND		2	0.24	
Endrin		6.3	2	0.12	C
Endrin aldehyde	ND		2	0.89	
Heptachlor	ND		1	0.1	
Heptachlor epoxide	ND		1	0.17	
Methoxychlor	ND		10	2.2	
Toxaphene	ND		100	54	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WF0247-6
Lab ID:	68370-06
Date Received:	10/25/97
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	102		30	122
Decachlorobiphenyl	108		59	126

Analyte		**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	ND		1	0.075	
alpha-BHC	ND		1	0.077	
beta-BHC	ND		1	0.14	
delta-BHC	ND		1	0.078	
gamma-BHC (Lindane)	ND		1	0.17	
Chlordane (technical)	ND		10	2.5	
4,4'-DDD	ND		2	0.17	
4,4'-DDE	ND		2	0.36	
4,4'-DDT	ND		2	1.3	
2,4'-DDD	ND		2	1	
2,4'-DDE	ND		2	1	
2,4'-DDT	ND		2	1	
Dieldrin		7.9	2	0.071	C
Endosulfan I	ND		1	0.32	
Endosulfan II	ND		2	0.17	
Endosulfan sulfate	ND		2	0.24	
Endrin		2.6	2	0.12	C
Endrin aldehyde	ND		2	0.89	
Heptachlor	ND		1	0.1	
Heptachlor epoxide	ND		1	0.17	
Methoxychlor	ND		10	2.2	
Toxaphene	ND		100	54	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - OP208
Date Received:	-
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	93		60	140

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	ND	100	65	
Dimethoate	ND	71	40	
Diazinon	ND	57	56	
Disulfoton	ND	51	34	
Parathion,methyl	ND	64	57	
Malathion	ND	68	48	
Parathion	ND	92	89	
Azinphos,methyl	ND	69	47	
Ethion	ND	67	33	
Paraoxon,methyl	ND	67	33	
Paraoxon,ethyl	ND	67	33	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	OP208
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
QC Batch ID:	OP208

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dichlorvos	0	330	310	93	
Dimethoate	0	330	300	90	
Diazinon	0	330	300	90	
Disulfoton	0	330	300	90	
Parathion,methyl	0	330	300	91	
Malathion	0	330	310	94	
Parathion	0	330	300	89	
Azinphos,methyl	0	330	320	95	
Ethion	0	330	300	91	
Paraoxon,methyl	0	330	340	103	
Paraoxon,ethyl	0	330	280	83	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SOP208
Date Received:	-
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	84		60	140

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	310	100	65	
Dimethoate	300	71	40	
Diazinon	300	57	56	
Disulfoton	300	51	34	
Parathion,methyl	300	64	57	
Malathion	310	68	48	
Parathion	300	92	89	
Azinphos,methyl	320	69	47	
Ethion	300	67	33	
Paraoxon,methyl	340	67	33	
Paraoxon,ethyl	280	67	33	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	WA0247-1
Lab ID:	68370-01
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
QC Batch ID:	OP208

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dichlorvos	0	355	376	106	317	88.2	18	
Dimethoate	0	355	298	83.8	241	67	22	
Diazinon	0	355	361	102	325	90.4	12	
Disulfoton	1700	355	2050	95.3	1980	76	23	X7a
Parathion,methyl	0	355	279	78.6	270	75	4.7	
Malathion	0	355	373	105	341	94.8	10	
Parathion	16000	355	14600	0	16600	262	200	X7a
Azinphos,methyl	0	355	414	117	379	105	11	
Ethion	1000	355	1180	44.2	1220	56.1	24	X7a
Paraoxon,methyl	0	355	361	102	392	109	6.6	
Paraoxon,ethyl	0	355	338	95.2	298	83	14	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WA0247-1 - ms
Lab ID:	68370S01
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	90.19
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Triphenyl Phosphate	102		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	380	110	69	
Dimethoate	300	76	42	
Diazinon	360	61	60	
Disulfoton	2000	55	36	
Parathion,methyl	280	68	61	
Malathion	370	72	51	
Parathion	15000	98	95	
Azinphos,methyl	410	74	50	
Ethion	1200	71	36	
Paraoxon,methyl	360	71	36	
Paraoxon,ethyl	340	71	36	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WA0247-1 - msd
Lab ID:	68370D01
Date Received:	10/25/97
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	90.19
Dilution Factor	10

Organophosphorus Pesticides by USEPA Method 8141 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Triphenyl Phosphate	93		60	140

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dichlorvos	320	110	70	
Dimethoate	240	77	43	
Diazinon	320	61	61	
Disulfoton	2000	55	36	
Parathion,methyl	270	69	61	
Malathion	340	73	52	
Parathion	17000	99	96	
Azinphos,methyl	380	75	51	
Ethion	1200	72	36	
Paraoxon,methyl	390	72	36	
Paraoxon,ethyl	300	72	36	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE819
Date Received:	-
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	96.37
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	100		63	149
Decachlorobiphenyl	72		57	143

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND		0.35	0.052	
alpha-BHC	ND		14	0.053	
beta-BHC	ND		14	0.098	
delta-BHC	ND		14	0.054	
gamma-BHC (Lindane)	ND		14	0.12	
Chlordane (technical)	ND		6.9	1.7	
4,4'-DDD	ND		14	0.12	
4,4'-DDE	ND		14	0.25	
4,4'-DDT	ND		14	0.87	
2,4'-DDD	ND		14	1	
2,4'-DDE	ND		14	1	
2,4'-DDT	ND		14	1	
Dieldrin	ND		0.69	0.049	
Endosulfan I	ND		1.4	0.22	
Endosulfan II	ND		1.4	0.11	
Endosulfan sulfate	ND		1.4	0.17	
Endrin	ND		0.69	0.084	
Endrin aldehyde	ND		14	0.62	
Heptachlor	ND		14	0.071	
Heptachlor epoxide	ND		14	0.12	
Methoxychlor	ND		14	1.5	
Toxaphene	ND		14	30	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	PE819
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
QC Batch ID:	PE819

Organochlorine Pesticides by USEPA Method 8081

Parameter Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Aldrin	0	17	17	96	
gamma-BHC (Lindane)	0	17	16	91	
4,4'-DDD	0	35	27	77	
4,4'-DDE	0	35	32	92	
4,4'-DDT	0	35	31	89	
2,4'-DDD	0	35	27	78	
2,4'-DDE	0	35	31	89	
2,4'-DDT	0	35	25	73	
Dieldrin	0	35	32	93	
Endrin	0	35	32	93	
Heptachlor	0	17	18	103	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE819
Date Received:	-
Date Prepared:	10/26/97
Date Analyzed:	10/27/97
% Solids	96.37
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	82		63	149
Decachlorobiphenyl	61		57	143

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	17	0.35	0.052	C
gamma-BHC (Lindane)	16	14	0.12	C
4,4'-DDD	27	14	0.12	C
4,4'-DDE	32	14	0.25	C
4,4'-DDT	31	14	0.87	C
2,4'-DDD	27	14	1	C
2,4'-DDE	31	14	1	C
2,4'-DDT	25	14	1	C
Dieldrin	32	0.69	0.049	C
Endrin	32	0.69	0.084	C
Heptachlor	18	14	0.07	C

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - PE823
Date Received:	-
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	98		30	122
Decachlorobiphenyl	126		59	126

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	1	0.075	
alpha-BHC	ND	1	0.077	
beta-BHC	ND	1	0.14	
delta-BHC	ND	1	0.078	
gamma-BHC (Lindane)	ND	1	0.17	
Chlordane (technical)	ND	10	2.5	
4,4'-DDD	ND	2	0.17	
4,4'-DDE	ND	2	0.36	
4,4'-DDT	ND	2	1.3	
2,4'-DDD	ND	2	1	
2,4'-DDE	ND	2	1	
2,4'-DDT	ND	2	1	
Dieldrin	ND	2	0.071	
Endosulfan I	ND	1	0.32	
Endosulfan II	ND	2	0.17	
Endosulfan sulfate	ND	2	0.24	
Endrin	ND	2	0.12	
Endrin aldehyde	ND	2	0.89	
Heptachlor	ND	1	0.1	
Heptachlor epoxide	ND	1	0.17	
Methoxychlor	ND	10	2.2	
Toxaphene	ND	100	54	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE823
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
QC Batch ID:	PE823

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Aldrin	0	25	28.6	114	28.9	116	1.7	
gamma-BHC (Lindane)	0	25	27.3	109	26.9	108	0.92	
4,4'-DDD	0	50	62.9	126	58.8	118	6.6	
4,4'-DDE	0	50	65.5	131	62.7	125	4.7	
4,4'-DDT	0	50	57.4	115	59.4	119	3.4	
2,4'-DDD	0	50	53.9	108	52.9	106	1.9	
2,4'-DDE	0	50	54.3	109	54.3	109	0	
2,4'-DDT	0	50	51.3	103	51	102	0.98	
Dieldrin	0	50	62.7	125	63.3	127	1.6	
Endrin	0	50	62.2	124	63.5	127	2.4	
Heptachlor	0	25	31.2	125	31.3	125	0	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SPE823
Date Received:	-
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	104		30	122
Decachlorobiphenyl	117		59	126

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	29	1	0.075	C
gamma-BHC (Lindane)	27	1	0.17	C
4,4'-DDD	63	2	0.17	C
4,4'-DDE	65	2	0.36	C
4,4'-DDT	57	2	1.3	C
2,4'-DDD	54	2	1	C
2,4'-DDE	54	2	1	C
2,4'-DDT	51	2	1	C
Dieldrin	63	2	0.071	C
Endrin	62	2	0.12	C
Heptachlor	31	1	0.1	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DPE823
Date Received:	-
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	102		30	122
Decachlorobiphenyl	114		59	126

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	29	1	0.075	C
gamma-BHC (Lindane)	27	1	0.17	C
4,4'-DDD	59	2	0.17	C
4,4'-DDE	63	2	0.36	C
4,4'-DDT	59	2	1.3	C
2,4'-DDD	53	2	1	C
2,4'-DDE	54	2	1	C
2,4'-DDT	51	2	1	C
Dieldrin	63	2	0.071	C
Endrin	64	2	0.12	C
Heptachlor	31	1	0.1	C

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	WD0247-4
Lab ID:	68370-04
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
QC Batch ID:	PE823

Organochlorine Pesticides by USEPA Method 8081

Compound Name	Sample Result (ug/L)	Spike Amount (ug/L)	MS Result (ug/L)	MS % Rec.	MSD Result (ug/L)	MSD % Rec.	RPD	Flag
Aldrin	0	25	28.1	112	28.7	115	2.6	
gamma-BHC (Lindane)	0	25	26.8	107	27	108	0.93	
4,4'-DDD	0	50	69.3	139	69	138	0.72	
4,4'-DDE	0	50	67.8	136	67.3	135	0.74	
4,4'-DDT	0	50	57.2	114	57.7	115	0.87	
2,4'-DDD	0	50	52.3	105	52.6	105	0	
2,4'-DDE	0	50	53.8	108	54.2	108	0	
2,4'-DDT	0	50	51.2	102	52	104	1.9	
Dieldrin	38	50	97.4	118	96.6	117	0.85	
Endrin	86	50	146	121	145	120	0.83	
Heptachlor	0	25	30.8	123	31.1	125	1.6	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WD0247-4 - ms
Lab ID:	68370S04
Date Received:	10/25/97
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	105		30	122
Decachlorobiphenyl	122		59	126

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	28	1	0.075	C
gamma-BHC (Lindane)	27	1	0.17	C
4,4'-DDD	69	2	0.17	C
4,4'-DDE	68	2	0.36	C
4,4'-DDT	57	2	1.3	C
2,4'-DDD	52	2	1	C
2,4'-DDE	54	2	1	C
2,4'-DDT	51	2	1	C
Dieldrin	97	2	0.071	C
Endrin	150	2	0.12	C
Heptachlor	31	1	0.1	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	WD0247-4 - msd
Lab ID:	68370D04
Date Received:	10/25/97
Date Prepared:	10/29/97
Date Analyzed:	11/3/97
% Solids	-
Dilution Factor	1

TCLP Organochlorine Pesticides by USEPA Method 8081

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	102		30	122
Decachlorobiphenyl	116		59	126

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	29	1	0.075	C
gamma-BHC (Lindane)	27	1	0.17	C
4,4'-DDD	69	2	0.17	C
4,4'-DDE	67	2	0.36	C
4,4'-DDT	58	2	1.3	C
2,4'-DDD	53	2	1	C
2,4'-DDE	54	2	1	C
2,4'-DDT	52	2	1	C
Dieldrin	97	2	0.071	C
Endrin	150	2	0.12	C
Heptachlor	31	1	0.1	C

DATA QUALIFIER DEFINITIONS

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration 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 detected in the associated method blank. 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).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

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 was 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.

CHAIN OF CUSTODY

SOUND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 98424
(253) 922-2310 • FAX (253) 922-5047

COC #7

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: GARRY STRUTHERS ASSOC
PROJECT NAME: WTFREC
CONTACT: MIKE WEBB
PHONE NO: 425-579-0300 X217

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles (GC Pest only)	TCLP Extraction: Pesticides & Herbicides	TOTAL OP	TOTAL OC	SAMPLE TYPE	BIN # / WASTE #
68370-1	WA0247-1	10/24/97	1615	SOIL	2										✓		✓		✓	✓	COMPOSITE	# 5, 11, 12
2	WB0247-2	10/24/97	1630	SOIL	1														✓	✓	COMPOSITE	# 3, 14, 18
3	WC0247-3	10/24/97	1645	SOIL	1														✓	✓	COMPOSITE	# 15, 16, 17, 19
4	WD0247-4	10/24/97	1700	SOIL	2										✓		✓		✓	✓	COMPOSITE	# 20, 21
5	WE0247-5	10/24/97	1715	SOIL	2										✓		✓		✓	✓	COMPOSITE	# 22, 23
6	WF0247-6	10/24/97	1730	SOIL	2										✓		✓		✓	✓	COMPOSITE	# 24

	Signature	Printed Name	Firm	Time / Date
Relinquished By	Michael Webb	MICHAEL WEBB	GSA INC	14:35 10/25/97
Received By	Dw Nguyen	Dw Nguyen	SAS	1435 10-25-97
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

ARMY CORPS OF ENGINEERS PROJECT
ANALYZE AS PER QAPP
LAB CONTACT: KATIE DOWNIE
HAND DELIVERED 10/25/97
72 HS TAT.

Hand deliver.

SAS LAB NO. 68370

PAGE 1 OF 1

COOLER RECEIPT FORM

PROJECT: WTFREC W.O.# 68370

COOLER RECEIVED ON 10-25-97 AND OPENED ON 10-25-97 BY DN

(SIGNATURE)

Temperature upon receipt: cooler 3 °C
temp. blank 4 °C

1. Were custody seals on outside of cooler and intact? N/A YES NO
   a. If YES, how many and where: _____
   b. Were signature and date correct? YES NO
2. Were custody papers taped to lid inside cooler? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? (YES) NO
4. Did you sign custody papers in the appropriate place? (YES) NO
5. Did you attach shipper's packing slip to this form? N/A YES NO
6. What kind of packing material was used? Blue Ice
7. Was sufficient ice used (if appropriate)? (YES) NO
8. Were all bottles sealed in separate plastic bags? (YES) NO
9. Did all bottles arrive in good condition (unbroken)? (YES) NO
10. Were all bottle labels complete (no., date, signed, pres, etc)? (YES) NO
11. Did all bottle labels and tags agree with custody papers? (YES) NO
12. Were correct bottles used for the test indicated? (YES) NO
13. If present, were VOA vials checked for absence of air bubbles and noted if found? N/A YES NO
14. Adequate volume of VOA vials received per sample? N/A YES NO
15. Was sufficient amount of sample sent in each bottle? (YES) NO
16. Were correct preservatives used? N/A YES NO
17. Corrective action taken, if necessary:
    a. Name of person contacted: _____
    b. Date: _____

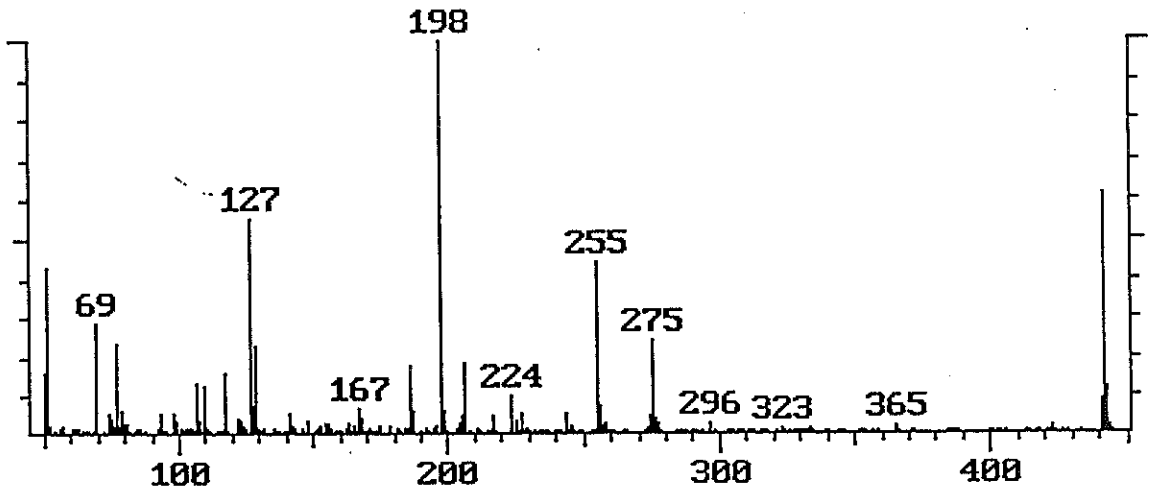
ORGANOPHOSPHORUS PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Method 8270 DFTPP Report

Data File: P25863
Cali File: DFTPP

Acqu Date: 10/22/97
Acqu Time: 17:30



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	42.73	Pass
68	<= 2% of Mass 69	1.75	Pass
69	Exists Only	28.27	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	55.13	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	5.59	Pass
275	10-30% of Mass 198	24.09	Pass
365	>= 1% of Mass 198	1.78	Pass
441	Exists/<= Mass 443	13.25	Pass
442	40-100% of Mass 198	61.38	Pass
443	17-23% of Mass 442	18.73	Pass

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

10/22/97

HIT ANY KEY TO CONTINUE

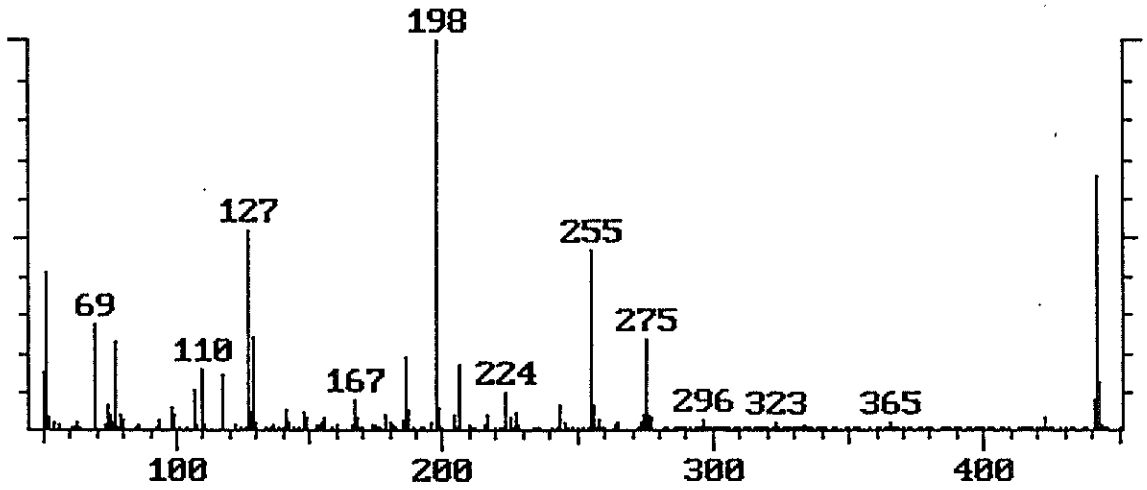
						AVE	RSD
Triphenyl Phosphate	0.244	0.242	0.244	0.267	0.194	0.238	11.3%
Dichlorvos	0.404	0.420	0.422	0.484	0.415	0.429	7.4%
Phorate	0.215	0.208	0.184	0.205	0.181	0.199	7.6%
Dimethoate	0.256	0.297	0.298	0.340	0.292	0.297	10.1%
Diazinon	0.321	0.321	0.338	0.421	0.364	0.353	11.8%
Disulfoton	0.441	0.460	0.374	0.371	0.316	0.393	14.8%
Paraoxon,methyl	0.178	0.211	0.220	0.269	0.221	0.220	14.8%
Phosphamidon	0.424	0.446	0.439	0.460	0.424	0.438	3.5%
Parathion,methyl	0.219	0.260	0.243	0.310	0.279	0.262	13.2%
Paraoxon,ethyl	0.194	0.186	0.170	0.195	0.180	0.185	5.7%
Malathion	0.368	0.414	0.431	0.467	0.411	0.418	8.6%
Chlorpyrifos	0.198	0.206	0.202	0.246	0.230	0.216	9.6%
Parathion	0.114	0.118	0.123	0.162	0.130	0.129	14.7%
Ethion	0.951	1.133	1.091	1.375	1.154	1.141	13.4%
Phosmet	1.638	1.717	1.643	1.816	1.530	1.669	6.3%
Azinphos,methyl	1.128	1.225	1.126	1.126	0.883	1.098	11.6%

CONTINUING CALIBRATION DATA

Method 8270 DFTPP Report

Data File: P25963
Cali File: DFTPP

Acqu Date: 10/27/97
Acqu Time: 17:17



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	41.07	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	27.35	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	51.68	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	5.54	Pass
275	10-30% of Mass 198	23.00	Pass
365	>= 1% of Mass 198	1.53	Pass
441	Exists/<= Mass 443	11.31	Pass
442	40-100% of Mass 198	65.61	Pass
443	17-23% of Mass 442	18.89	Pass

Calibration Check Report

DATAFILE : P25964 ANALYSIS DATE : 10/27/97 18:01
SAMPLE : 1.0 NG/UL 8141 SPECIAL MIX CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.238	0.234	1.541	%
Dichlorvos	0.429	0.415	3.191	%
Dimethoate	0.297	0.260	12.547	%
Diazinon	0.353	0.323	8.507	%
Disulfoton	0.393	0.409	4.120	%
Paraoxon,methyl	0.220	0.216	1.789	%
Parathion,methyl	0.262	0.263	0.280	%
Paraoxon,ethyl	0.185	0.168	8.968	%
Malathion	0.418	0.410	1.924	%
Parathion	0.129	0.111	13.920	%
Ethion	1.141	1.120	1.808	%
Azinphos,methyl	1.098	1.202	9.496	%

Calibration Check Report

DATAFILE : P25975 ANALYSIS DATE : 10/27/97 23:00
SAMPLE : 1.0 NG/UL OCS END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

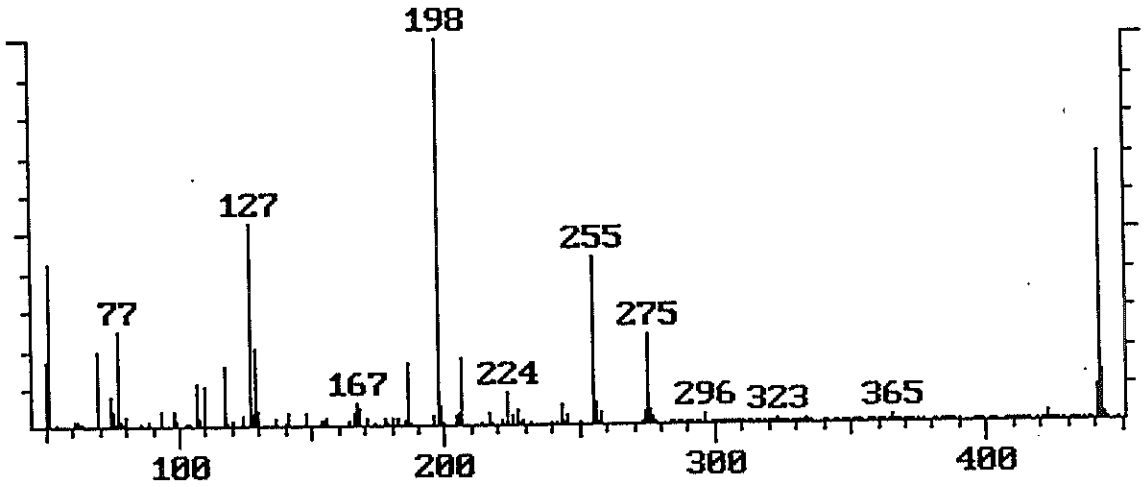
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.238	0.243	1.894	%
Dichlorvos	0.429	0.404	5.773	%
Dimethoate	0.297	0.278	6.352	%
Diazinon	0.353	0.328	7.000	%
Disulfoton	0.393	0.437	11.374	%
Paraoxon,methyl	0.220	0.244	10.874	%
Parathion,methyl	0.262	0.257	2.132	%
Paraoxon,ethyl	0.185	0.174	6.205	%
Malathion	0.418	0.403	3.576	%
Parathion	0.129	0.113	12.482	%
Ethion	1.141	1.110	2.650	%
Azinphos,methyl	1.098	1.232	12.245	%

Method 8270 DFTPP Report

Data File: P25990
Cali File: DFTPP

Acqu Date: 10/28/97
Acqu Time: 11:40



Mass	Acceptance Criterion	Value	Pass/Fail
51	30-60% of Mass 198	42.41	Pass
68	<= 2% of Mass 69	0.00	Pass
69	Exists Only	19.44	Pass
70	<= 2% of Mass 69	0.00	Pass
127	40-60% of Mass 198	52.86	Pass
197	<= 1% of Mass 198	0.00	Pass
198	Base Peak	100.00	Pass
199	5 - 9% of Mass 198	5.18	Pass
275	10-30% of Mass 198	23.02	Pass
365	>= 1% of Mass 198	1.65	Pass
441	Exists/<= Mass 443	12.81	Pass
442	40-100% of Mass 198	69.37	Pass
443	17-23% of Mass 442	18.57	Pass

Calibration Check Report

DATAFILE : P25991 ANALYSIS DATE : 10/28/97 12:20
SAMPLE : 1.0 NG/UL 8141 SPECIAL MIX CCAL STD NO 0104-64-1
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.238	0.250	4.975	%
Dichlorvos	0.429	0.415	3.202	%
Dimethoate	0.297	0.275	7.229	%
Diazinon	0.353	0.397	12.396	%
Disulfoton	0.393	0.435	10.745	%
Paraoxon,methyl	0.220	0.212	3.400	%
Parathion,methyl	0.262	0.235	10.555	%
Paraoxon,ethyl	0.185	0.179	3.231	%
Malathion	0.418	0.399	4.607	%
Parathion	0.129	0.127	1.748	%
Ethion	1.141	1.105	3.096	%
Azinphos,methyl	1.098	1.218	10.925	%

Calibration Check Report

DATAFILE : P25993 ANALYSIS DATE : 10/28/97 13:42
SAMPLE : 1.0 NG/UL 8141+ OCS END OF RUN CALIB. VERIFICATION
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
Triphenyl Phosphate	0.238	0.252	5.679	%
Dichlorvos	0.429	0.416	3.040	%
Dimethoate	0.297	0.260	12.255	%
Diazinon	0.353	0.388	9.918	%
Disulfoton	0.393	0.402	2.434	%
Paraoxon,methyl	0.220	0.217	1.345	%
Parathion,methyl	0.262	0.225	14.298	%
Paraoxon,ethyl	0.185	0.169	8.463	%
Malathion	0.418	0.395	5.453	%
Parathion	0.129	0.123	4.943	%
Ethion	1.141	1.127	1.234	%
Azinphos,methyl	1.098	1.153	4.977	%

CHLORINATED PESTICIDE DATA PACKAGE

INITIAL CALIBRATION DATA

Pesticide %RSD

Date Analyzed: 10-Oct-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	5018	4730	4734	4271	4059	3741	4426	2.2596E-04	441	10.0	0.9951
alpha-BHC	7094	7197	7217	6926	6579	6004	6836	1.4628E-04	430	6.3	0.9958
Lindane	6537	6573	6616	6343	5991	5554	6269	1.5952E-04	383	6.1	0.9968
Heptachlor	6473	6559	6476	6294	5843	5348	6166	1.6219E-04	435	7.1	0.9954
Aldrin	7419	6532	6452	6076	5796	5270	6258	1.5981E-04	669	10.7	0.9957
B-BHC	3041	2425	2426	2401	2240	2100	2439	4.1003E-04	294	12.1	0.9974
D-BHC	5771	6111	6312	6069	5825	5361	5908	1.6926E-04	304	5.1	0.9966
Heptachlor Epoxide	5562	5585	5523	5436	5032	4640	5296	1.8881E-04	348	6.6	0.9959
Endosulfan-I	4834	4794	4575	4789	4407	4236	4606	2.1712E-04	223	4.8	0.9982
gamma-Chlordane	5536	5593	5642	5209	4881	4772	5272	1.8967E-04	345	6.6	0.9990
alpha-Chlordane	5195	5413	5256	5090	4786	4418	5026	1.9895E-04	332	6.6	0.9964
4,4'-DDE	5127	5110	4893	4751	4491	4150	4754	2.1037E-04	346	7.3	0.9967
Dieldrin	6643	5257	4990	4826	4426	4090	5039	1.9846E-04	811	16.1	0.9960
Endrin	3788	3777	3784	3834	3497	3261	3657	2.7345E-04	209	5.7	0.9963
4,4'-DDD	3785	3426	3468	3417	3394	3227	3453	2.8963E-04	167	4.8	0.9990
Endosulfan-II	4825	3708	3652	3639	3593	3357	3796	2.6346E-04	473	12.5	0.9982
4,4'-DDT	4109	3683	3585	3241	3048	2615	3380	2.9585E-04	480	14.2	0.9968
Endrin Aldehyde	1582	1617	1691	1884	1797	1674	1707	5.8566E-04	104	6.1	0.9971
Methox/Endo Sulfate	2841	2363	2242	2156	1988	1819	2235	4.4750E-04	322	14.4	0.9954
Endrin Ketone	3761	3696	3662	3662	3429	3245	3576	2.7967E-04	180	5.0	0.9979
Decachlorobiphenyl	3732	3574	3425	3253	3065	2857	3318	3.0142E-04	297	8.9	0.9972

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
2,4-DDE	4543	4283	4362	4073	3955	4243	2.3567E-04	209	4.9	0.9951
2,4-DDD	3296	3310	3554	3293	3198	3330	3.0028E-04	119	3.6	0.9966
2,4-DDT	4258	4268	4377	4168	4039	4222	2.3686E-04	113	2.7	0.9961

Date Analyzed: 29-Sep-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
2,4-DDE	12668	11847	12373	12281	13204	12474	8.0164E-05	450	3.6	0.9994
2,4-DDD	3982	3648	4019	3817	3842	3861	2.5898E-04	132	3.4	0.9997
2,4-DDT	8550	8474	9495	9413	9817	9150	1.0929E-04	539	5.9	0.9994

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Inserted after pg 53.
m.w. 12-17-97

Pesticide %RSD

Date Analyzed: 10-Oct-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Linear Regression
TCMX	6788	6396	6190	5780	5805	5545	6084	1.6437E-04	421	6.9	0.9992
alpha-BHC	8721	8926	8926	8834	8770	8397	8762	1.1412E-04	180	2.1	0.9992
Lindane	8789	8253	8083	8000	7858	7411	8066	1.2398E-04	415	5.1	0.9986
beta-BHC	4331	3252	3104	3019	2859	2641	3201	3.1239E-04	540	16.9	0.9968
Heptachlor	11452	8338	8243	7750	7385	6932	8350	1.1976E-04	1468	17.6	0.9979
D-BHC	8984	7860	7835	7688	7679	7364	7902	1.2656E-04	510	6.5	0.9993
Aldrin	8344	7833	7715	7414	7276	6801	7564	1.3221E-04	481	6.4	0.9981
Heptachlor Epoxide	6978	7147	6618	6566	6239	5875	6571	1.5219E-04	427	6.5	0.9980
gamma-Chlordane	7774	6720	6527	6455	6061	5674	6535	1.5302E-04	651	10.0	0.9974
alpha-Chlordane	5808	6199	6216	6091	5846	5475	5939	1.6838E-04	261	4.4	0.9978
Endosulfan-I	4930	5523	5516	5657	5347	5081	5342	1.8719E-04	258	4.8	0.9983
4,4'-DDE	6340	5930	5826	5674	5670	5495	5823	1.7174E-04	268	4.6	0.9996
Dieldrin	7699	5924	5610	5638	5401	5246	5920	1.6893E-04	823	13.9	0.9994
Endrin	4385	4391	4318	4440	4181	4047	4294	2.3290E-04	137	3.2	0.9990
4,4'-DDD	4984	4355	4240	4248	4160	4082	4345	2.3016E-04	298	6.8	0.9998
Endosulfan-II	3443	4191	4223	4337	4312	4268	4129	2.4220E-04	311	7.5	0.9999
4,4'-DDT	5235	4335	4251	4265	4217	4136	4406	2.2695E-04	375	8.5	0.9998
Endrin Aldehyde	2469	2665	2629	2612	2533	2381	2548	3.9246E-04	99	3.9	0.9982
Endosulfan Sulfate	2711	3327	3402	3533	3441	3333	3291	3.0386E-04	269	8.2	0.9994
Methoxychlor	1967	1994	1973	2020	2062	2109	2021	4.9481E-04	51	2.5	0.9997
Endrin Ketone	4510	4336	4359	4533	4376	4281	4399	2.2731E-04	92	2.1	0.9996
Decachlorobiphenyl	4304	4605	4453	4154	3961	3725	4200	2.3807E-04	295	7.0	0.9978

Sample Concentration = (Linear Regression Value) x (Analyte Response)

CONTINUING CALIBRATION DATA

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10279707
Date Analyzed: 10/27/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	55.78	11.6%	OK
alpha-BHC	25	27.63	10.5%	OK
Lindane	25	26.26	5.0%	OK
Heptachlor	25	26.37	5.5%	OK
Aldrin	25	26.25	5.0%	OK
B-BHC	25	24.56	1.8%	OK
D-BHC	25	22.27	10.9%	OK
Heptachlor Epoxide	25	22.64	9.4%	OK
Endosulfan-I	25	22.85	8.6%	OK
gamma-Chlordane	25	22.85	8.6%	OK
alpha-Chlordane	25	24.34	2.6%	OK
4,4'-DDE	50	49.31	1.4%	OK
Dieldrin	50	43.52	13.0%	OK
Endrin	50	45.38	9.2%	OK
4,4'-DDD	50	45.38	9.2%	OK
Endosulfan-II	50	44.95	10.1%	OK
4,4'-DDT	50	46.02	8.0%	OK
Endrin Aldehyde	50	47.11	5.8%	OK
Methoxychlor	250	220.22	11.9%	OK
Endosulfan Sulfate	50	42.99	14.0%	OK
Endrin Ketone	50	50.95	1.9%	OK
Decachlorobiphenyl	100	88	11.9%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10279708
Date Analyzed: 10/27/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	18.02	9.9%	OK
2,4-DDD	20	18.03	9.8%	OK
2,4-DDT	20	19	6.6%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10279722
Date Analyzed: 10/27/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	56	12.0%	OK
alpha-BHC	25	27.72	10.9%	OK
Lindane	25	28.26	13.0%	OK
Heptachlor	25	27.62	10.5%	OK
Aldrin	25	27.93	11.7%	OK
B-BHC	25	27.68	10.7%	OK
D-BHC	25	25.26	1.0%	OK
Heptachlor Epoxide	25	26.53	6.1%	OK
Endosulfan-I	25	24.75	1.0%	OK
gamma-Chlordane	25	27.3	9.2%	OK
alpha-Chlordane	25	27.76	11.0%	OK
4,4'-DDE	50	56.23	12.5%	OK
Dieldrin	50	50.44	0.9%	OK
Endrin	50	49.64	0.7%	OK
4,4'-DDD	50	44.42	11.2%	OK
Endosulfan-II	50	46.43	7.1%	OK
4,4'-DDT	50	53.12	6.2%	OK
Endrin Aldehyde	50	49.6	0.8%	OK
Methoxychlor	250	247.47	1.0%	OK
Endosulfan Sulfate	50	43.51	13.0%	OK
Endrin Ketone	50	43.59	12.8%	OK
Decachlorobiphenyl	100	104	3.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10279723
Date Analyzed: 10/28/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	19.46	2.7%	OK
2,4-DDD	20	18.27	8.7%	OK
2,4-DDT	20	19	5.5%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10279736
Date Analyzed: 10/28/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	57.29	14.6%	OK
alpha-BHC	25	28.52	14.1%	OK
Lindane	25	27.21	8.8%	OK
Heptachlor	25	28.01	12.0%	OK
Aldrin	25	26.55	6.2%	OK
B-BHC	25	27.5	10.0%	OK
D-BHC	25	25.55	2.2%	OK
Heptachlor Epoxide	25	27.68	10.7%	OK
Endosulfan-I	25	25.39	1.6%	OK
gamma-Chlordane	25	28.68	14.7%	OK
alpha-Chlordane	25	28.4	13.6%	OK
4,4'-DDE	50	56.48	13.0%	OK
Dieldrin	50	52.19	4.4%	OK
Endrin	50	47.66	4.7%	OK
4,4'-DDD	50	49.93	0.1%	OK
Endosulfan-II	50	47.01	6.0%	OK
4,4'-DDT	50	55.07	10.1%	OK
Endrin Aldehyde	50	53.7	7.4%	OK
Methoxychlor	250	252.73	1.1%	OK
Endosulfan Sulfate	50	45.86	8.3%	OK
Endrin Ketone	50	50.22	0.4%	OK
Decachlorobiphenyl	100	105	4.9%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10279737
Date Analyzed: 10/28/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	20	20.52	2.6%	OK
2,4-DDD	20	19.82	0.9%	OK
2,4-DDT	20	20	2.0%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10279706
Date Analyzed: 10/27/97

DB-1701

Compound	Response (Area)
4,4'-DDE	6427
4,4'-DDD	2274
4,4'-DDT	340084
Endrin Aldehyde	3117
Endrin Ketone	5666
Endrin	180980
DDT % Breakdown	2.5%
Endrin % Breakdown	4.6%
Total % Breakdown	7.1%

DB-17

Compound	Response (Area)
4,4'-DDE	9955
4,4'-DDD	2693
4,4'-DDT	424888
Endrin Aldehyde	9766
Endrin Ketone	4045
Endrin	213098
DDT % Breakdown	2.9%
Endrin % Breakdown	6.1%
Total % Breakdown	9.0%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10279721
Date Analyzed: 10/27/97

DB-1701

Compound	Response (Area)
4,4'-DDE	7769
4,4'-DDD	0
4,4'-DDT	379055
Endrin Aldehyde	7348
Endrin Ketone	10331
Endrin	191578
DDT % Breakdown	2.0%
Endrin % Breakdown	8.4%
Total % Breakdown	10.5%

DB-17

Compound	Response (Area)
4,4'-DDE	9347
4,4'-DDD	0
4,4'-DDT	456557
Endrin Aldehyde	16300
Endrin Ketone	11261
Endrin	209771
DDT % Breakdown	2.0%
Endrin % Breakdown	11.6%
Total % Breakdown	13.6%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10279735
Date Analyzed: 10/28/97

DB-1701

Compound	Response (Area)
4,4'-DDE	8850
4,4'-DDD	0
4,4'-DDT	394272
Endrin Aldehyde	13249
Endrin Ketone	15564
Endrin	180654
DDT % Breakdown	2.2%
Endrin % Breakdown	13.8%
Total % Breakdown	16.0%

DB-17

Compound	Response (Area)
4,4'-DDE	13889
4,4'-DDD	0
4,4'-DDT	471861
Endrin Aldehyde	18850
Endrin Ketone	14639
Endrin	194981
DDT % Breakdown	2.9%
Endrin % Breakdown	14.7%
Total % Breakdown	17.5%

TCLP PESTICIDES DATA PACKAGE

INITIAL CALIBRATION DATA

Pesticide %RSD

Date Analyzed: 3-Nov-97
Instrument: 3400 Dual Column
Analytical Column: DB-1701

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Correlation Coefficient
TCMX	5265	5359	5266	4489	4853	4380	4935	2.0262E-04	390	7.9	0.9951
alpha-BHC	7712	8158	8068	6713	7625	6812	7515	1.3307E-04	564	7.5	0.9975
Lindane	7046	7267	7150	6288	6852	6289	6815	1.4673E-04	393	5.8	0.9971
Heptachlor	7284	7332	7051	6124	6725	6149	6777	1.4755E-04	494	7.3	0.9968
Aldrin	8847	7674	7522	6258	6868	6308	7246	1.3801E-04	896	12.4	0.9969
B-BHC	2951	2723	2634	2206	2343	2156	2502	3.9966E-04	289	11.5	0.9972
D-BHC	5993	6230	6206	5408	5933	5534	5884	1.6996E-04	313	5.3	0.9979
Heptachlor Epoxide	5662	5871	5719	4984	5494	4981	5452	1.8342E-04	350	6.4	0.9963
Endosulfan-I	5426	4920	5008	4181	4518	3989	4674	2.1397E-04	496	10.6	0.9965
gamma-Chlordane	6641	6221	5957	5127	5723	5392	5843	1.7113E-04	504	8.6	0.9980
alpha-Chlordane	6019	5988	5918	4964	5546	5032	5578	1.7928E-04	439	7.9	0.9961
4,4'-DDE	5935	5820	5770	4814	5322	4835	5416	1.8464E-04	459	8.5	0.9962
Dieldrin	5174	5001	4898	4181	4546	4179	4663	2.1444E-04	390	8.4	0.9971
Endrin	4036	4177	4051	3454	3921	3533	3862	2.5894E-04	272	7.0	0.9955
4,4'-DDD	3406	3422	3621	3199	3504	3229	3397	2.9439E-04	147	4.3	0.9973
Endosulfan-II	4288	4143	4132	3366	3856	3434	3870	2.5841E-04	356	9.2	0.9951
4,4'-DDT	3948	3872	3828	3051	3446	2849	3499	2.8583E-04	423	12.1	0.9968
Endrin Aldehyde	1609	1584	1770	1477	2006	1610	1676	5.9666E-04	171	10.2	0.9950
Methox/Endo Sulfate	2341	2313	2224	1872	2079	1827	2109	4.7412E-04	202	9.6	0.9958
Endrin Ketone	3756	3741	3707	3145	3492	3231	3512	2.8473E-04	246	7.0	0.9973
Decachlorobiphenyl	3571	3510	3354	2812	3115	2803	3194	3.1308E-04	309	9.7	0.9955

Sample Concentration = (Linear Regression Value) x (Analyte Response)

Pesticide %RSD

Date Analyzed: 3-Nov-97
Instrument: 3400 Dual Column
Analytical Column: DB-17

COMPOUND	A RF	B RF	C RF	D RF	E RF	F RF	Average RF	Average RF	Stdev.	%RSD	Correlation Coefficient
TCMX	6978	6776	6697	5532	6673	6009	6444	1.5518E-04	505	7.8	0.9965
alpha-BHC	8816	9247	9185	7916	8935	8816	8819	1.1339E-04	437	5.0	0.9986
Lindane	8709	8579	8445	7326	8174	7798	8172	1.2237E-04	480	5.9	0.9984
beta-BHC	3721	3681	3372	2827	3002	2787	3232	3.0944E-04	382	11.8	0.9977
Heptachlor	9393	9126	8296	7176	8051	7483	8254	1.2115E-04	802	9.7	0.9974
D-BHC	7431	7381	7126	6380	7320	6856	7082	1.4120E-04	368	5.2	0.9975
Aldrin	8984	8929	8741	7305	8012	7539	8252	1.2119E-04	670	8.1	0.9980
Heptachlor Epoxide	6794	6744	6618	5740	6289	5968	6359	1.5726E-04	397	6.2	0.9985
gamma-Chlordane	5691	6904	6776	5725	6406	5992	6249	1.6003E-04	480	7.7	0.9976
alpha-Chlordane	7483	6784	6811	5815	6328	5936	6526	1.5323E-04	571	8.7	0.9981
Endosulfan-I	5669	5526	5576	4876	5434	5060	5357	1.8667E-04	288	5.4	0.9976
4,4'-DDE	6742	6353	6331	5419	6153	6039	6173	1.6200E-04	402	6.5	0.9984
Dieldrin	5361	5353	5294	4611	5222	5031	5145	1.9435E-04	263	5.1	0.9984
Endrin	4295	4473	4399	3915	4337	4112	4255	2.3501E-04	188	4.4	0.9984
4,4'-DDD	4188	4061	4142	3681	4140	3945	4026	2.4838E-04	173	4.3	0.9984
Endosulfan-II	3422	4246	4153	3486	4007	3805	3853	2.5953E-04	314	8.1	0.9977
4,4'-DDT	4645	4545	4446	3862	4369	4182	4341	2.3034E-04	258	5.9	0.9983
Endrin Aldehyde	2104	2490	2545	2180	2436	2217	2329	4.2943E-04	168	7.2	0.9963
Endosulfan Sulfate	3547	3638	3559	3151	3527	3263	3447	2.9007E-04	176	5.1	0.9973
Methoxychlor	2010	1970	1945	1665	1976	1944	1919	5.2123E-04	115	6.0	0.9975
Endrin Ketone	4227	4237	4258	3667	4185	3931	4084	2.4485E-04	216	5.3	0.9976
Decachlorobiphenyl	4358	4369	4185	3417	3770	3390	3915	2.5544E-04	412	10.5	0.9954

Sample Concentration = (Linear Regression Value) x (Analyte Response)

CONTINUING CALIBRATION DATA

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 10319734
Date Analyzed: 11/3/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	51.75	3.5%	OK
alpha-BHC	25	27.77	11.1%	OK
Lindane	25	26.52	6.1%	OK
Heptachlor	25	27.13	8.5%	OK
Aldrin	25	26.74	7.0%	OK
B-BHC	25	27.66	10.6%	OK
D-BHC	25	26.65	6.6%	OK
Heptachlor Epoxide	25	27.65	10.6%	OK
Endosulfan-I	25	25.89	3.6%	OK
gamma-Chlordane	25	28.14	12.6%	OK
alpha-Chlordane	25	26.48	5.9%	OK
4,4'-DDE	50	52.17	4.3%	OK
Dieldrin	50	54.78	9.6%	OK
Endrin	50	55.53	11.1%	OK
4,4'-DDD	50	50.31	0.6%	OK
Endosulfan-II	50	50.97	1.9%	OK
4,4'-DDT	50	51.79	3.6%	OK
Endrin Aldehyde	50	51.39	2.8%	OK
Methoxychlor	250	284.52	13.8%	OK
Endosulfan Sulfate	50	52.89	5.8%	OK
Endrin Ketone	50	50.1	0.2%	OK
Decachlorobiphenyl	100	109	9.4%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 11039714
Date Analyzed: 11/3/97

Compound	True Value	Instrument Value	% Difference	OK
TCMX	50	53.88	7.8%	OK
alpha-BHC	25	27.43	9.7%	OK
Lindane	25	27.96	11.8%	OK
Heptachlor	25	28.27	13.1%	OK
Aldrin	25	27.47	9.9%	OK
B-BHC	25	26.94	7.8%	OK
D-BHC	25	28.02	12.1%	OK
Heptachlor Epoxide	25	28.68	14.7%	OK
Endosulfan-I	25	26.59	6.4%	OK
gamma-Chlordane	25	27.92	11.7%	OK
alpha-Chlordane	25	27.26	9.0%	OK
4,4'-DDE	50	53.74	7.5%	OK
Dieldrin	50	56.65	13.3%	OK
Endrin	50	55.62	11.2%	OK
4,4'-DDD	50	51.44	2.9%	OK
Endosulfan-II	50	52.46	4.9%	OK
4,4'-DDT	50	52.79	5.6%	OK
Endrin Aldehyde	50	53.08	6.2%	OK
Methoxychlor	250	281.95	12.8%	OK
Endosulfan Sulfate	50	53.11	6.2%	OK
Endrin Ketone	50	55.09	10.2%	OK
Decachlorobiphenyl	100	109	9.1%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 11039701
Date Analyzed: 11/3/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	13	13.18	1.4%	OK
2,4-DDD	13	12.14	6.6%	OK
2,4-DDT	13	13	2.7%	OK

SOUND ANALYTICAL SERVICES, INC.

Pesticide Continuing Calibration Verification

File Name: 11039715
Date Analyzed: 11/3/97

Compound	True Value	Instrument Value	% Difference	OK
2,4-DDE	13	13.47	3.6%	OK
2,4-DDD	13	12.63	2.8%	OK
2,4-DDT	13	13	0.2%	OK

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 10319733
Date Analyzed: 11/3/97

DB-1701

Compound	Response (Area)
4,4'-DDE	5339
4,4'-DDD	5055
4,4'-DDT	427819
Endrin Aldehyde	17199
Endrin Ketone	10824
Endrin	227352
DDT % Breakdown	2.4%
Endrin % Breakdown	11.0%
Total % Breakdown	13.3%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	510280
Endrin Aldehyde	12419
Endrin Ketone	10585
Endrin	242234
DDT % Breakdown	0.0%
Endrin % Breakdown	8.7%
Total % Breakdown	8.7%

SOUND ANALYTICAL SERVICES, INC.

DDT/Endrin Evaluation Standard

File Name: 11039713
Date Analyzed: 11/3/97

DB-1701

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	446585
Endrin Aldehyde	9205
Endrin Ketone	9911
Endrin	241495
DDT % Breakdown	0.0%
Endrin % Breakdown	7.3%
Total % Breakdown	7.3%

DB-17

Compound	Response (Area)
4,4'-DDE	0
4,4'-DDD	0
4,4'-DDT	541827
Endrin Aldehyde	10755
Endrin Ketone	10631
Endrin	262947
DDT % Breakdown	0.0%
Endrin % Breakdown	7.5%
Total % Breakdown	7.5%

TCLP METALS DATA PACKAGE

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

ab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A__ SAS No.: 68370_ SDG No.:WA0247

SOW No.: ILM02.1

EPA Sample No.	Lab Sample ID
WA0247-1	68370-1
WD0247-4	68370-4
WE0247-5	68370-5
WF0247-6	68370-6

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WA0247-1

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Matrix (soil/water): WATER Lab Sample ID: 68370-1

Level (low/med): LOW__ Date Received: 10/25/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_				NR
7440-36-0	Antimony_				NR
7440-38-2	Arsenic__	749			P_
7440-39-3	Barium___	843			P_
7440-41-7	Beryllium				NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__				NR
7440-47-3	Chromium_	37.3			P_
7440-48-4	Cobalt___				NR
7440-50-8	Copper___				NR
7439-89-6	Iron_____				NR
7439-92-1	Lead_____	1390			P_
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium_	172	B		P_
7440-22-4	Silver___	7.4	U		P_
7440-23-5	Sodium___				NR
7440-28-0	Thallium_				NR
7440-62-2	Vanadium_				NR
7440-66-6	Zinc_____				NR
0000-00-0	Molybdenu				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WD0247-4

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Matrix (soil/water): WATER Lab Sample ID: 68370-4

Level (low/med): LOW__ Date Received: 10/25/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_		_		NR
7440-36-0	Antimony_		_		NR
7440-38-2	Arsenic__	250	_		P_
7440-39-3	Barium___	529	_		P_
7440-41-7	Beryllium		_		NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__		_		NR
7440-47-3	Chromium_	13.9	_		P_
7440-48-4	Cobalt___		_		NR
7440-50-8	Copper___		_		NR
7439-89-6	Iron_____		_		NR
7439-92-1	Lead_____	217	_		P_
7439-95-4	Magnesium		_		NR
7439-96-5	Manganese		_		NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___		_		NR
7440-09-7	Potassium		_		NR
7782-49-2	Selenium_	158	U		P_
7440-22-4	Silver___	7.4	U		P_
7440-23-5	Sodium___		_		NR
7440-28-0	Thallium_		_		NR
7440-62-2	Vanadium_		_		NR
7440-66-6	Zinc_____		_		NR
0000-00-0	Molybdenu		_		NR
			_		

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WE0247-5

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Matrix (soil/water): WATER Lab Sample ID: 68370-5

Level (low/med): LOW__ Date Received: 10/25/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_		_		NR
7440-36-0	Antimony_		_		NR
7440-38-2	Arsenic__	134	U		P_
7440-39-3	Barium___	398	_		P_
7440-41-7	Beryllium		_		NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__		_		NR
7440-47-3	Chromium_	12.8	_		P_
7440-48-4	Cobalt___		_		NR
7440-50-8	Copper___		_		NR
7439-89-6	Iron____		_		NR
7439-92-1	Lead____	67.9	_		P_
7439-95-4	Magnesium		_		NR
7439-96-5	Manganese		_		NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___		_		NR
7440-09-7	Potassium		_		NR
7782-49-2	Selenium_	158	U		P_
7440-22-4	Silver___	7.4	U		P_
7440-23-5	Sodium___		_		NR
7440-28-0	Thallium_		_		NR
7440-62-2	Vanadium_		_		NR
7440-66-6	Zinc____		_		NR
0000-00-0	Molybdenu		_		NR
			_		

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WF0247-6

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Matrix (soil/water): WATER Lab Sample ID: 68370-6

Level (low/med): LOW__ Date Received: 10/25/97

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_				NR
7440-36-0	Antimony_				NR
7440-38-2	Arsenic__	180			P_
7440-39-3	Barium___	408			P_
7440-41-7	Beryllium				NR
7440-43-9	Cadmium__	24.3	U		P_
7440-70-2	Calcium__				NR
7440-47-3	Chromium_	10.6			P_
7440-48-4	Cobalt___				NR
7440-50-8	Copper___				NR
7439-89-6	Iron____				NR
7439-92-1	Lead____	41.7	U		P_
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury__	1.7	U		AV
7440-02-0	Nickel___				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium_	158	U		P_
7440-22-4	Silver___	7.4	U		P_
7440-23-5	Sodium___				NR
7440-28-0	Thallium_				NR
7440-62-2	Vanadium_				NR
7440-66-6	Zinc____				NR
0000-00-0	Molybdenu				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Initial Calibration Source: ENVIR.RESOUR

Continuing Calibration Source: LEEMAN LABS_

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Found	%R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	4000.0	4065.00	101.6	5000.0	5099.00	102.0	5017.00	100.3	P
Barium	50.0	51.00	102.0	500.0	518.00	103.6	492.30	98.5	P
Beryllium									NR
Cadmium	800.0	817.40	102.2	500.0	518.10	103.6	521.40	104.3	P
Calcium									NR
Chromium	100.0	103.70	103.7	500.0	513.80	102.8	508.50	101.7	P
Cobalt									NR
Copper									NR
Iron									NR
Lead	1500.0	1540.00	102.7	5000.0	5043.00	100.9	5026.00	100.5	P
Magnesium									NR
Manganese									NR
Mercury	4.0	3.73	93.2	5.0	5.07	101.4	5.17	103.4	AV
Nickel									NR
Potassium									NR
Selenium	5000.0	4840.00	96.8	5000.0	4975.00	99.5	5033.00	100.7	P
Silver	200.0	196.70	98.3	500.0	523.90	104.8	508.00	101.6	P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenu									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Initial Calibration Source: ENVIR.RESOUR

Continuing Calibration Source: LEEMAN LABS_

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum_									NR
Antimony_									NR
Arsenic__				5000.0	5292.00	105.8			P_
Barium___				500.0	507.70	101.5			P_
Beryllium									NR
Cadmium__				500.0	545.30	109.1			P_
Calcium__									NR
Chromium_				500.0	526.60	105.3			P_
Cobalt___									NR
Copper___									NR
Iron_____									NR
Lead_____				5000.0	5460.00	109.2			P_
Magnesium									NR
Manganese									NR
Mercury__									NR
Nickel___									NR
Potassium									NR
Selenium_				5000.0	5173.00	103.5			P_
Silver___				500.0	533.00	106.6			P_
Sodium___									NR
Thallium_									NR
Vanadium_									NR
Zinc_____									NR
Molybdenu									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3
BLANKS

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	134.1	U	134.1	U	134.1	U	134.1	U	134.100	U	P
Barium	0.7	U	1.0	B	0.8	B	1.1	B	0.700	U	P
Beryllium											NR
Cadmium	24.3	U	24.3	U	24.3	U	24.3	U	24.300	U	P
Calcium											NR
Chromium	4.7	U	4.7	U	4.7	U	4.7	U	4.700	U	P
Cobalt											NR
Copper											NR
Iron											NR
Lead	41.7	U	41.7	U	41.7	U	41.7	U	41.700	U	P
Magnesium											NR
Manganese											NR
Mercury	0.2	U	0.2	U	0.2	U			0.174	U	AV
Nickel											NR
Potassium											NR
Selenium	158.2	U	158.2	U	158.2	U	158.2	U	158.200	U	P
Silver	7.4	U	7.4	U	7.4	U	7.4	U	7.400	U	P
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Molybdenu											NR

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WD0247-4

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Matrix (soil/water): WATER_ Level (low/med): LOW___

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic	75-125	4890.0000		250.3000		5000.00	92.8		P
Barium	75-125	1369.0000		529.2000		1000.00	84.0		P
Beryllium									NR
Cadmium	75-125	879.5000		24.3000	U	1000.00	87.9		P
Calcium									NR
Chromium	75-125	4391.0000		13.9000		5000.00	87.5		P
Cobalt									NR
Copper									NR
Iron									NR
Lead	75-125	4665.0000		217.2000		5000.00	89.0		P
Magnesium									NR
Manganese									NR
Mercury	75-125	22.0200		1.7400	U	20.00	110.1		AV
Nickel									NR
Potassium									NR
Selenium	75-125	1053.0000		158.2000	U	1000.00	105.3		P
Silver	75-125	3868.0000		7.4000	U	5000.00	77.4		P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenu									NR

Comments:

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LABORATORY CONTROL SAMPLE

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Solid LCS Source: _____

Aqueous LCS Source: ENVIR. RESOU

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic	1000.0	1083.00	108.3						
Barium	1000.0	989.30	98.9						
Beryllium									
Cadmium	1000.0	1004.00	100.4						
Calcium									
Chromium	1000.0	992.10	99.2						
Cobalt									
Copper									
Iron									
Lead	1000.0	1038.00	103.8						
Magnesium									
Manganese									
Mercury	2.0	1.82	91.1						
Nickel									
Potassium									
Selenium	10000.0	10120.00	101.2						
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Molybdenu									

7

LABORATORY CONTROL SAMPLE

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Solid LCS Source: _____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver	1000.0	972.90	97.3						
Sodium									
Thallium									
Vanadium									
Zinc									
Molybdenu									

9

ICP SERIAL DILUTION

EPA SAMPLE NO.

WD0247-4

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

Matrix (soil/water): WATER Level (low/med): LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							NR
Antimony							NR
Arsenic	250.30		670.50	U	100.0		P
Barium	529.20		521.50		1.5		P
Beryllium							NR
Cadmium	24.30	U	121.50	U			P
Calcium							NR
Chromium	13.90		23.50	U	100.0		P
Cobalt							NR
Copper							NR
Iron							NR
Lead	217.20		346.00		59.3		P
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium	158.20	U	791.00	U			P
Silver	7.40	U	37.00	U			P
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR

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10

Instrument Detection Limits (Quarterly)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

ICP ID Number: PS3000_____ Date: 10/01/97

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	51.0	P
Antimony			6		NR
Arsenic	193.70		1	134.1	P
Barium	455.50		5	0.7	P
Beryllium			5		NR
Cadmium	226.50		5	24.3	P
Calcium	317.93		5000	2.2	P
Chromium	267.72		10	4.7	P
Cobalt			50		NR
Copper			20		NR
Iron	259.94		100	5.5	P
Lead	220.35		0	41.7	P
Magnesium	279.55		5000	64.9	P
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.03		400	158.2	P
Silver	328.07		50	7.4	P
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

10
Instrument Detection Limits (Quarterly)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

ICP ID Number: _____ Date: 01/10/97

Flame AA ID Number : PS200_____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			6		NR
Arsenic			1		NR
Barium			5		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			20		NR
Iron			100		NR
Lead			0		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.65		0.2	0.2	AV
Nickel			40		NR
Potassium			5000		NR
Selenium			400		NR
Silver			50		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

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11A

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

ICP ID Number: PS3000_____ Date: 01/10/97

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	___
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	
Arsenic	193.70	0.0001000	-0.0000300	0.0003000	-0.0000100	
Barium	455.50	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium	226.50	0.0000500	0.0000050	-0.0001000	0.0000050	
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	
Chromium	267.72	0.0000000	0.0000000	0.0000090	0.0000000	
Cobalt	228.52	0.0000000	0.0000000	0.0000000	0.0000000	
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	
Lead	220.35	0.0003000	-0.0000200	0.0000800	0.0000000	
Magnesium	279.55	0.0000000	0.0000000	0.0000000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0001000	0.0000000	
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium	196.03	-0.0007500	0.0010000	-0.0011000	0.0005000	
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	
Thallium	190.80	-0.0000500	-0.0000100	0.0000800	-0.0000100	
Vanadium	310.23	0.0000000	0.0000000	0.0000000	0.0000000	
Zinc	231.86	0.0000010	0.0000500	0.0000150	0.0000000	

Comments:

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ICP LINEAR RANGES (QUARTERLY)

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.: WA0247

ICP ID Number: PS3000_____ Date: 03/10/97

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	5.00	150000.0	P
Antimony	5.00	100000.0	P
Arsenic	5.00	250000.0	P
Barium	5.00	100000.0	P
Beryllium	5.00	100000.0	P
Cadmium	5.00	100000.0	P
Calcium	5.00	750000.0	P
Chromium	5.00	750000.0	P
Cobalt	5.00	100000.0	P
Copper	5.00	750000.0	P
Iron	5.00	500000.0	P
Lead	5.00	500000.0	P
Magnesium	5.00	750000.0	P
Manganese	5.00	500000.0	P
Mercury			NR
Nickel	5.00	750000.0	P
Potassium	5.00	500000.0	P
Selenium	5.00	100000.0	P
Silver	5.00	250000.0	P
Sodium	5.00	100000.0	P
Thallium	5.00	100000.0	P
Vanadium	5.00	100000.0	P
Zinc	5.00	750000.0	P

Comments:

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PREPARATION LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.:_N/A___ SAS No.: 68370_ SDG No.:WA0247

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	10/28/97		100
LCSW	10/28/97		100
A0247-1	10/28/97		100
ER PREP	10/28/97		100
D0247-4	10/28/97		100
D0247-4	10/28/97		100
D0247-4	10/28/97		100
E0247-5	10/28/97		100
F0247-6	10/28/97		100

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PREPARATION LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.:_N/A___ SAS No.: 68370_ SDG No.:WA0247

Method: AV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	10/28/97		100
LCSW	10/28/97		100
A0247-1	10/28/97		100
ER PREP	10/28/97		100
D0247-4	10/28/97		100
D0247-4	10/28/97		100
D0247-4	10/28/97		100
E0247-5	10/28/97		100
F0247-6	10/28/97		100

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ANALYSIS RUN LOG

Lab Name: SOUND_ANALYTICAL_SERVICES Contract: GS_____

Lab Code: SAS___ Case No.: N/A___ SAS No.: 68370_ SDG No.:WA0247

Instrument ID Number: PS3000_____ Method: P_

Start Date: 10/28/97 End Date: 10/28/97

EPA Sample No.	D/F	Time	% R	Analytes																												
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	MO
ICV	1.00	0708				X	X		X		X				X						X	X					
ICB	1.00	0711				X	X		X		X				X						X	X					
ZZZZZZ	1.00	0728																									
ZZZZZZ	1.00	0731																									
CCV	1.00	1309				X	X		X		X				X						X	X					
CCB	1.00	1311				X	X		X		X				X						X	X					
TER PREP	1.00	1314				X	X		X		X				X						X	X					
WA0247-1	1.00	1317				X	X		X		X				X						X	X					
WE0247-5	1.00	1320				X	X		X		X				X						X	X					
WF0247-6	1.00	1323				X	X		X		X				X						X	X					
LCSW	1.00	1326				X	X		X		X				X						X						
LCSW	1.00	1329																				X					
ZZZZZZ	1.00	1332																									
ZZZZZZ	1.00	1334																									
CCV	1.00	1337				X	X		X		X				X						X	X					
CCB	1.00	1340				X	X		X		X				X						X	X					
WD0247-4	5.00	1343				X	X		X		X				X						X	X					
WD0247-4	1.00	1346				X	X		X		X				X						X	X					
WD0247-4	1.00	1349				X	X		X		X				X						X	X					
WD0247-4	1.00	1352				X	X		X		X				X						X	X					
ZZZZZZ	1.00	1355																									
WD0247-4	1.00	1358				X	X		X		X				X						X	X					
ZZZZZZ	1.00	1401																									
CCB	1.00	1403				X	X		X		X				X						X	X					
ZZZZZZ	1.00	1406																									
CCV	1.00	1409				X	X		X		X				X						X	X					
ICSA	1.00	1505					X		X		X				X						X	X					
ICSAB	1.00	1508					X		X		X				X							X					

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ANALYSIS RUN LOG

Lab Name: SOUND_ANALYTICAL_SERVICES   Contract: GS________

Lab Code: SAS___   Case No.: N/A___   SAS No.: 68370_   SDG No.:WA0247

Instrument ID Number: PS200________   Method: AV

Start Date: 10/28/97   End Date: 10/28/97

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	MO
ICV	1.00	1244																X									
ZZZZZZ	1.00	1246																									
ZZZZZZ	1.00	1249																									
ICB	1.00	1252																X									
ZZZZZZ	1.00	1254																									
CCV	1.00	1340																X									
CCB	1.00	1343																X									
TER PREP	1.00	1346																X									
WA0247-1	1.00	1348																X									
WD0247-4	1.00	1350																X									
D0247-4	1.00	1353																X									
LCSW	1.00	1355																X									
ZZZZZZ	1.00	1358																									
ZZZZZZ	1.00	1400																									
WE0247-5	1.00	1403																X									
WF0247-6	1.00	1405																X									
ZZZZZZ	1.00	1408																									
CCV	1.00	1410																X									
CCB	1.00	1413																X									

Protocol: SIMEPA2 Power: 1.1 KW
Mode: Simultaneous Rev: 3.005 Time: 15:53:37 28 Oct 1997 Coolant: 15 LPM
Folder: #102797 Seq: 271 Plasma: On Print: On Neb: 50 PSI
User: Batch: Id: Cki Cup: 1 46 Auxil: LPM
State: Idle Xmit: Off Autosampler: On

CALIBRATION: Accepted Values

	Current	Accepted	Type	A	B	C	r
As2	Yes	06:58 28-Oct-97	W		1.71649e-4	-7.87386e-2	.999943
Ba1	Yes	06:58 28-Oct-97	W		3.33905e-7	-8.22462e-4	.999797
Cd3	Yes	06:58 28-Oct-97	W		3.35211e-5	1.23768e-2	.999988
Cr4	Yes	06:58 28-Oct-97	W		2.80893e-7	-9.16227e-3	.999924
Pb1	Yes	06:58 28-Oct-97	W		4.57214e-5	-1.94756e-1	.999906
Hg9	Yes	06:58 28-Oct-97	W		3.04444e-5	-4.66650e-2	.981295
Se4	Yes	06:58 28-Oct-97	W		4.22845e-4	-2.76529e-1	.999590
Ag1	Yes	06:58 28-Oct-97	W		8.72198e-7	2.87125e-3	.997661
Cu1	Yes	06:58 28-Oct-97	W		4.87500e-7	-1.01377e-2	.999887
Ni3	Yes	06:58 28-Oct-97	W		1.14485e-5	-5.86633e-2	.999853
Zn1	Yes	06:58 28-Oct-97	W		4.22466e-6	-4.91118e-2	.999974
Be1	Yes	06:58 28-Oct-97	W		1.71028e-7	-8.44445e-5	.999941
Sb1	Yes	06:58 28-Oct-97	W		2.71268e-4	-1.54418e-1	.999977
Tl1	Yes	06:58 28-Oct-97	W		4.76017e-4	3.09901e-1	.999980
Al3	Yes	06:58 28-Oct-97	W		1.52855e-5	-4.16060e-1	.999776

PgDn

Update coefficients

```
Protocol: SIMEPA2                                                    Power: 1.1 KW
Mode: Simultaneous Rev: 3.005   Time: 15:53:39  28 Oct 1997   Coolant:  15 LPM
Folder: #102797    Seq: 271     Plasma: On     Print: On      Neb:      50 PSI
User:              Batch:             Id: Ck1        Cup: 1 46 Auxil:       LPM
State: Idle                                          Xmit: Off Autosampler: On
```

CALIBRATION: Accepted Values

PgUp

	Current	Accepted	Type	A	B	C	r
Co1	Yes	06:58 28-Oct-97	W		4.30018e-6	1.29894e-2	.999957
Fe2	Yes	06:58 28-Oct-97	W		1.02455e-6	1.11624e-3	.999998
Mo1	Yes	06:58 28-Oct-97	W		1.71423e-5	-2.74182e-2	.999997
V 2	Yes	06:58 28-Oct-97	W		4.43161e-7	-1.71235e-1	.999784
Na2	Yes	06:58 28-Oct-97	W		1.17951e-5	-7.62519e-2	.999732
Ca3	Yes	06:58 28-Oct-97	W		2.17917e-5	-2.39037e-1	.999684
K 1	Yes	06:58 28-Oct-97	W		7.77582e-4	-3.42259e-1	.999699
Mg4	Yes	06:58 28-Oct-97	W		1.41728e-5	4.30292e-2	.999770
Mn1	Yes	06:58 28-Oct-97	W		5.40514e-7	1.19561e-3	.999817
Si2	Yes	06:58 28-Oct-97	W		4.36850e-6	-1.53681e-1	.999915
Y 3	Yes	06:58 28-Oct-97	W		3.60522e-6	-2.10629e-2	.999812

Update coefficients

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 4 Ck4 Seq: 172 07:08:23 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		101.6	4.065	4.000	PPM	.0710
Ba1		102.0	.0510	.0500	PPM	.0002
Cd3		102.2	.8174	.8000	PPM	.0092
Cr4		103.7	.1037	.1000	PPM	.0012
Pb1		102.7	1.540	1.500	PPM	.0150
Se4		96.79	4.840	5.000	PPM	.1403
Ag1		98.37	.1967	.2000	PPM	.0029
Al3		109.5	2.191	2.000	PPM	.0149
Fe2		101.3	1.013	1.000	PPM	.0060
Ca3		101.9	5.093	5.000	PPM	.0118
Mg4		104.0	2.080	2.000	PPM	.0045

*** Check Standard: 1 Ck1 Seq: 173 07:11:48 28 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0380	.3000	PPM	.0609
Ba1		.0001	.1000	PPM	.0003
Cd3		-.0019	.1000	PPM	.0018
Cr4		-.0001	.1000	PPM	.0011
Pb1		.0097	.1000	PPM	.0192
Se4		.0269	.3000	PPM	.1501
Ag1		-.0007	.1000	PPM	.0040
Al3		.0158	.3000	PPM	.0206
Fe2		-.0054	1.000	PPM	.0006
Ca3		.0018	1.000	PPM	.0018
Mg4		.0125	1.000	PPM	.0128

*** Check Standard: 6 Ck6 Seq: 179 07:28:05 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		10.53	.0053	.0500	PPM	.0002
Cd3		14.81	.0013	.0090	PPM	.0052
Cr4	L	-411.9	-.0165	.0040	PPM	.0010
Pb1	L	-38.56	-.0231	.0600	PPM	.0148
Se4	H	477.7	.2866	.0600	PPM	.1401
Ag1	L	-242.4	-.0145	.0060	PPM	.0021
Al3		109.9	549.4	500.0	PPM	4.057
Fe2		91.43	182.9	200.0	PPM	1.302
Ca3		92.41	462.0	500.0	PPM	3.058
Mg4		106.4	532.0	500.0	PPM	4.320

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 7 Ck7 Seq: 180 07:31:05 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		97.57	.4878	.5000	PPM	.0021
Cd3		87.02	.8702	1.000	PPM	.0267
Cr4		89.83	.4491	.5000	PPM	.0018
Pb1		87.98	.8798	1.000	PPM	.0433
Ag1		91.44	.9144	1.000	PPM	.0049
Al3		108.1	540.3	500.0	PPM	1.578
Fe2		90.04	180.1	200.0	PPM	.3658
Ca3		91.45	457.2	500.0	PPM	1.284
Mg4		105.0	524.9	500.0	PPM	1.410

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 2 Ck2 Seq: 235 13:09:06 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		102.0	5.099	5.000	PPM	.1542
Ba1		103.6	.5180	.5000	PPM	.0054
Cd3		103.6	.5181	.5000	PPM	.0098
Cr4		102.8	.5138	.5000	PPM	.0042
Pb1		100.9	5.043	5.000	PPM	.0282
Se4		99.49	4.975	5.000	PPM	.2479
Ag1		104.8	.5239	.5000	PPM	.0032

*** Check Standard: 1 Ck1 Seq: 236 13:11:59 28 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0241	.3000	PPM	.0255
Ba1		.0010	.1000	PPM	.0001
Cd3		.0093	.1000	PPM	.0063
Cr4		.0009	.1000	PPM	.0004
Pb1		.0141	.1000	PPM	.0082
Se4		.0226	.3000	PPM	.0793
Ag1		.0013	.1000	PPM	.0013

*** Sample ID: METHOD BLK Seq: 237 13:14:51 28 Oct 1997 ICP

As2	-.0502	PPM	.0488	-.0196	-.1064	-.0244
Ba1	-.0001	PPM	.0003	.0001	-.0001	-.0004
Cd3	.0097	PPM	.0088	.0138	-.0004	.0157
Cr4	-.0010	PPM	.0003	-.0013	-.0006	-.0011
Pb1	-.0146	PPM	.0169	-.0163	-.0306	.0030
Se4	-.0352	PPM	.1815	.1426	-.0280	-.2201
Ag1	-.0063	PPM	.0027	-.0082	-.0033	-.0076

*** Sample ID: 68370-1 Seq: 238 13:17:43 28 Oct 1997 ICP

As2	.7489	PPM	.0586	.7774	.7878	.6814
Ba1	.8428	PPM	.0059	.8441	.8479	.8364
Cd3	.0132	PPM	.0024	.0150	.0143	.0105
Cr4	.0373	PPM	.0012	.0359	.0380	.0380
Pb1	1.392	PPM	.0086	1.383	1.399	1.396
Se4	.1719	PPM	.1934	.2740	.2928	-.0512
Ag1	-.0103	PPM	.0026	-.0078	-.0129	-.0103

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 68370-5				Seq: 239		13:20:35 28 Oct 1997 ICP		
As2	.1192	PPM	.0774	.0773	.2085	.0719		
Ba1	.3979	PPM	.0030	.3953	.3972	.4012		
Cd3	.0062	PPM	.0078	.0148	.0042	-.0004		
Cr4	.0128	PPM	.0011	.0120	.0123	.0140		
Pb1	.0679	PPM	.0205	.0878	.0692	.0469		
Se4	.1548	PPM	.1403	.2842	.0056	.1746		
Ag1	-.0036	PPM	.0033	-.0067	-.0038	-.0002		
*** Sample ID: 68370-6				Seq: 240		13:23:27 28 Oct 1997 ICP		
As2	.1804	PPM	.0231	.1909	.1540	.1964		
Ba1	.4081	PPM	.0038	.4039	.4091	.4113		
Cd3	.0063	PPM	.0045	.0114	.0032	.0043		
Cr4	.0106	PPM	.0023	.0087	.0131	.0099		
Pb1	.0350	PPM	.0319	.0609	.0448	-.0006		
Se4	.0302	PPM	.0286	.0603	.0268	.0035		
Ag1	-.0061	PPM	.0029	-.0072	-.0028	-.0083		
*** Sample ID: WATER ERA				Seq: 241		13:26:19 28 Oct 1997 ICP		
As2	1.083	PPM	.0686	1.154	1.017	1.079		
Ba1	.9893	PPM	.0056	.9895	.9836	.9948		
Cd3	1.004	PPM	.0088	1.007	1.010	.9937		
Cr4	.9921	PPM	.0080	.9959	.9829	.9974		
Pb1	1.038	PPM	.0513	1.089	1.039	.9866		
Se4	10.12	PPM	.1394	10.00	10.09	10.27		
Ag1	-.0073	PPM	.0018	-.0067	-.0058	-.0094		
*** Sample ID: AGTL				Seq: 242		13:29:11 28 Oct 1997 ICP		
As2	.0025	PPM	.0907	.1073	-.0514	-.0483		
Ba1	.0024	PPM	.0007	.0032	.0023	.0017		
Cd3	.0101	PPM	.0035	.0118	.0061	.0124		
Cr4	.0007	PPM	.0010	.0017	.0008	-.0004		
Pb1	-.0110	PPM	.0100	-.0223	-.0075	-.0032		
Se4	.0777	PPM	.1023	-.0397	.1477	.1252		
Ag1	.9729	PPM	.0064	.9667	.9724	.9796		

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: BLKSPK				Seq: 243		13:32:03 28 Oct 1997 ICP		
As2	4.096	PPM	.0623	4.042	4.081	4.164		
Ba1	4.052	PPM	.0433	4.039	4.017	4.101		
Cd3	.1202	PPM	.0061	.1268	.1147	.1191		
Cr4	.3998	PPM	.0021	.3995	.3979	.4021		
Pb1	1.023	PPM	.0046	1.028	1.022	1.019		
Se4	4.088	PPM	.1170	4.222	4.005	4.036		
Ag1	2.156	PPM	.0241	2.145	2.139	2.184		
*** Sample ID: METHOD BLK				Seq: 244		13:34:55 28 Oct 1997 ICP		
As2	.0174	PPM	.0643	.0839	.0130	-.0445		
Ba1	.0019	PPM	.0012	.0032	.0011	.0014		
Cd3	.0087	PPM	.0021	.0063	.0102	.0096		
Cr4	-.0020	PPM	.0013	-.0023	-.0006	-.0031		
Pb1	-.0175	PPM	.0204	-.0276	-.0309	.0059		
Se4	-.0028	PPM	.1274	-.1481	.0895	.0503		
Ag1	.0118	PPM	.0020	.0097	.0138	.0119		

*** Peak Seq: 245 13:35:32 28 Oct 1997

XAp = 234 YAp = 117 Intensity = 749717

*** Check Standard: 2 Ck2 Seq: 246 13:37:56 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		100.3	5.017	5.000	PPM	.0648
Ba1		98.47	.4923	.5000	PPM	.0033
Cd3		104.3	.5214	.5000	PPM	.0206
Cr4		101.7	.5085	.5000	PPM	.0013
Pb1		100.5	5.026	5.000	PPM	.0161
Se4		100.7	5.033	5.000	PPM	.3390
Ag1		101.6	.5080	.5000	PPM	.0042

*** Check Standard: 1 Ck1 Seq: 247 13:40:54 28 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0096	.3000	PPM	.0572
Ba1		.0008	.1000	PPM	.0001
Cd3		.0046	.1000	PPM	.0036
Cr4		.0012	.1000	PPM	.0010
Pb1		.0094	.1000	PPM	.0276
Se4		.1083	.3000	PPM	.0468
Ag1		.0042	.1000	PPM	.0020

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 68370-4				Seq: 248		13:43:46 28 Oct 1997 ICP		
			DIL 1/5					
As2	.0316	PPM	.0778	.1112	-.0444	.0279		
Ba1	.1043	PPM	.0027	.1074	.1028	.1027		
Cd3	.0124	PPM	.0040	.0160	.0082	.0129		
Cr4	.0019	PPM	.0011	.0027	.0006	.0023		
Pb1	.0692	PPM	.0178	.0872	.0690	.0516		
Se4	.1367	PPM	.1295	.1516	.2582	.0004		
Ag1	-.0034	PPM	.0017	-.0034	-.0050	-.0016		
*** Sample ID: 68370-4				Seq: 249		13:46:38 28 Oct 1997 ICP		
As2	.2503	PPM	.0566	.2610	.3007	.1891		
Ba1	.5292	PPM	.0031	.5318	.5301	.5257		
Cd3	.0160	PPM	.0024	.0143	.0187	.0150		
Cr4	.0139	PPM	.0015	.0123	.0141	.0154		
Pb1	.2172	PPM	.0086	.2219	.2072	.2224		
Se4	.0716	PPM	.1049	.0248	-.0018	.1916		
Ag1	-.0052	PPM	.0003	-.0052	-.0049	-.0054		
*** Sample ID: 68370-4D				Seq: 250		13:49:30 28 Oct 1997 ICP		
As2	.2200	PPM	.0372	.2617	.1904	.2079		
Ba1	.5238	PPM	.0071	.5320	.5196	.5198		
Cd3	.0116	PPM	.0035	.0156	.0094	.0099		
Cr4	.0116	PPM	.0003	.0118	.0113	.0118		
Pb1	.2250	PPM	.0106	.2164	.2369	.2218		
Se4	.2117	PPM	.1109	.1960	.1094	.3295		
Ag1	-.0055	PPM	.0012	-.0052	-.0068	-.0044		
*** Sample ID: 68370-4S				Seq: 251		13:52:23 28 Oct 1997 ICP		
As2	4.890	PPM	.0468	4.933	4.897	4.840		
Ba1	1.369	PPM	.0174	1.352	1.387	1.367		
Cd3	.8795	PPM	.0098	.8904	.8763	.8717		
Cr4	4.391	PPM	.0457	4.346	4.437	4.391		
Pb1	4.665	PPM	.0599	4.643	4.733	4.619		
Se4	1.053	PPM	.0921	.9710	1.036	1.153		
Ag1	3.868	PPM	.1041	3.748	3.919	3.937		

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 68370-4SD				Seq: 252		13:55:16 28 Oct 1997 ICP		
As2	4.997	PPM	.1656	4.810	5.125	5.056		
Ba1	1.387	PPM	.0131	1.372	1.391	1.396		
Cd3	.9087	PPM	.0052	.9068	.9146	.9048		
Cr4	4.461	PPM	.0296	4.427	4.474	4.482		
Pb1	4.717	PPM	.0156	4.724	4.728	4.699		
Se4	.9528	PPM	.0449	.9150	1.002	.9409		
Ag1	3.945	PPM	.0481	3.977	3.968	3.889		
*** Sample ID: 68370-4PS				Seq: 253		13:58:09 28 Oct 1997 ICP		
As2	4.251	PPM	.0408	4.219	4.237	4.297		
Ba1	4.202	PPM	.0403	4.178	4.249	4.180		
Cd3	.1119	PPM	.0085	.1195	.1135	.1027		
Cr4	.3889	PPM	.0051	.3857	.3948	.3861		
Pb1	1.167	PPM	.0425	1.147	1.216	1.138		
Se4	4.326	PPM	.2064	4.097	4.498	4.384		
Ag1	.0873	PPM	.0024	.0851	.0899	.0870		
*** Sample ID: METHOD BLK				Seq: 254		14:01:03 28 Oct 1997 ICP		
As2	-.0393	PPM	.0949	-.0424	.0570	-.1326		
Ba1	.0117	PPM	.0021	.0140	.0105	.0105		
Cd3	.0014	PPM	.0062	-.0034	-.0007	.0084		
Cr4	.0040	PPM	.0019	.0059	.0021	.0040		
Pb1	.0298	PPM	.0155	.0436	.0327	.0131		
Se4	.1687	PPM	.1248	.1291	.3085	.0684		
Ag1	.0033	PPM	.0006	.0036	.0025	.0037		

*** Check Standard: 1 Ck1 Seq: 255 14:03:57 28 Oct 1997 ICP

Line	Flag	Found	Range(+/-)	Units	SD/RSD
As2		-.0281	.3000	PPM	.0537
Ba1		.0011	.1000	PPM	.0002
Cd3		.0119	.1000	PPM	.0031
Cr4		.0014	.1000	PPM	.0003
Pb1		.0151	.1000	PPM	.0395
Se4		.0932	.3000	PPM	.1181
Ag1		.0041	.1000	PPM	.0017

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 2 Ck2 Seq: 256 14:06:50 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		108.4	5.422	5.000	PPM	.0867
Ba1		102.5	.5123	.5000	PPM	.0062
Cd3	H	110.7	.5534	.5000	PPM	.0057
Cr4		106.1	.5303	.5000	PPM	.0057
Pb1		109.3	5.466	5.000	PPM	.0730
Se4		104.4	5.222	5.000	PPM	.0993
Ag1		106.6	.5329	.5000	PPM	.0066

*** Peak Seq: 257 14:07:28 28 Oct 1997

XAp = 234 YAp = 117 Intensity = 757689

*** Check Standard: 2 Ck2 Seq: 258 14:09:51 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
As2		105.8	5.292	5.000	PPM	.1083
Ba1		101.5	.5077	.5000	PPM	.0021
Cd3		109.1	.5453	.5000	PPM	.0131
Cr4		105.3	.5266	.5000	PPM	.0015
Pb1		109.2	5.460	5.000	PPM	.0535
Se4		103.5	5.173	5.000	PPM	.2148
Ag1		106.6	.5330	.5000	PPM	.0005

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 6 Ck6 Seq: 268 15:05:46 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		9.773	.0049	.0500	PPM	.0003
Cd3	L	-27.36	-.0025	.0090	PPM	.0028
Cr4	L	-375.0	-.0150	.0040	PPM	.0006
Pb1		7.887	.0047	.0600	PPM	.0527
Se4	H	468.7	.2812	.0600	PPM	.2611
Ag1	L	-312.4	-.0187	.0060	PPM	.0026
Al3		111.3	556.4	500.0	PPM	5.771
Fe2		90.83	181.7	200.0	PPM	1.595
Ca3		92.52	462.6	500.0	PPM	3.373
Mg4		103.9	519.5	500.0	PPM	4.126

*** Check Standard: 7 Ck7 Seq: 269 15:08:40 28 Oct 1997 ICP

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Ba1		98.20	.4910	.5000	PPM	.0031
Cd3		88.90	.8890	1.000	PPM	.0183
Cr4		89.80	.4490	.5000	PPM	.0027
Pb1		88.16	.8816	1.000	PPM	.0038
Ag1		91.66	.9166	1.000	PPM	.0016
Al3		110.4	551.8	500.0	PPM	3.318
Fe2		90.06	180.1	200.0	PPM	.9660
Ca3		92.29	461.4	500.0	PPM	1.988
Mg4		103.2	515.9	500.0	PPM	1.914

Protocol: HIGH-CAL

Rev: 3.000 Time: 12:41:10 28 Oct 1997

Folder: #102497 Seq: 222 Print: On

User: Batch: Id: Std6Rep3 Cup: 2 09 Gas: 0.30 LPM

State: Idle Macro CAL245 51: F3 Print Xmit: Off Autosampler: On

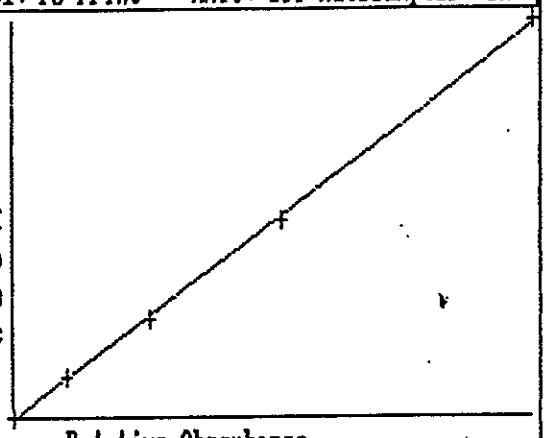
CALIBRATION: Line Calibration

Line: Hg

	Conc.	Calc.	Dev.	Accepted linear
S1	.0000	-.0148	-.0148	Quadratic
S2	.1000	.0637	-.0363	WtdLinear
S3	2.000	2.004	.0039	
S4	5.000	5.244	.2445	Accept
S5	10.00	10.25	.2451	
S6	20.00	19.68	-.3193	StdAdd

A .0000000 r .999568

B 2.47494e-5 C -2.84066e-2



	Mean	%RSD			
S1	551	122.71	1270	455	-72
S2	3722	10.56	3982	3270	3914
S3	85753	1.06	86804	85243	85212
S4	213058	0.51	213819	213538	211795
S5	415100	0.78	418790	413797	412715
S6	796346	0.26	793927	797610	797503

New calibration coefficients stored

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 4 Ck4 Seq: 222 12:44:15 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		93.36	3.734	4.000	PPB	.0000

*** Check Standard: 3 Ck3 Seq: 223 12:46:47 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		89.28	1.786	2.000	PPB	.0000

*** Check Standard: 2 Ck2 Seq: 224 12:49:16 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		103.4	5.172	5.000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 225 12:52:06 28 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0026	.9000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 226 12:54:30 28 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0243	.9000	PPB	.0000

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 4 Ck4 Seq: 222 12:44:15 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		93.36	3.734	4.000	PPB	.0000

*** Check Standard: 3 Ck3 Seq: 223 12:46:47 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		89.28	1.786	2.000	PPB	.0000

*** Check Standard: 2 Ck2 Seq: 224 12:49:16 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		103.4	5.172	5.000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 225 12:52:06 28 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0026	.9000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 226 12:54:30 28 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0243	.9000	PPB	.0000

*** Check Standard: 2 Ck2 Seq: 227 13:40:56 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		101.4	5.072	5.000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 228 13:43:47 28 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0772	.9000	PPB	.0000

*** Sample ID: METHOD BLK Seq: 229 13:46:07 28 Oct 1997 HG

Hg	-.0375	PPB	.0000	-.0375

*** Sample ID: 68370-1 Seq: 230 13:48:25 28 Oct 1997 HG

Hg	.0472	PPB	.0000	.0472

*** Sample ID: 68370-4 Seq: 231 13:50:43 28 Oct 1997 HG

Hg	-.0461	PPB	.0000	-.0461

*** Sample ID: 68370-4S Seq: 232 13:53:01 28 Oct 1997 HG

Hg	2.202	PPB	.0000	2.202

*** Sample ID: WATER ERA Seq: 233 13:55:32 28 Oct 1997 HG

Hg	1.823	PPB	.0000	1.823

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: BLKSPK				Seq: 234	13:58:07 28 Oct 1997 HG			
Hg	2.045	PPB	.0000	2.045				
*** Sample ID: BLKSPKDUP				Seq: 235	14:00:46 28 Oct 1997 HG			
Hg	2.074	PPB	.0000	2.074				
*** Sample ID: 68370-5				Seq: 236	14:03:22 28 Oct 1997 HG			
Hg	-.0314	PPB	.0000	-.0314				
*** Sample ID: 68370-6				Seq: 237	14:05:41 28 Oct 1997 HG			
Hg	-.0240	PPB	.0000	-.0240				
*** Sample ID: METHOD BLK				Seq: 238	14:08:00 28 Oct 1997 HG			
Hg	-.0400	PPB	.0000	-.0400				

*** Check Standard: 2 Ck2 Seq: 239 14:10:20 28 Oct 1997 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		103.5	5.175	5.000	PPB	.0000

*** Check Standard: 1 Ck1 Seq: 240 14:13:08 28 Oct 1997 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.0602	.9000	PPB	.0000